An Iatrogenic Imperative: Weight-Goal Pursuit and Morbidity from Adolescence to Adulthood

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Abstract

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American medicine and public health have spent half a century organizing their approach to the body around a single conviction: that fat is dangerous and that smaller bodies are healthier ones. This weight-centered health paradigm enlists nearly everyone in the ongoing work of monitoring and shrinking themselves, and it has secured for dieting — the most ubiquitous of its prescriptions — the status of an explicit health behavior. A critical literature has contested the science underwriting this paradigm and documented the stigma it generates, but the claim at its center, that the effort to become smaller makes people healthier, has never been examined over the long term in a nationally representative sample. This dissertation takes up that question by relocating the object of analysis from the size of bodies to the demand that they change. Drawing on healthism, the life course perspective, and ecosocial theory, it treats sustained weight-change pursuit as a health exposure in its own right and follows that pursuit across five waves of the National Longitudinal Study of Adolescent to Adult Health. Three studies address three progressive questions: which social conditions sort adolescents into distinct weight-goal trajectories; how those trajectories translate into weight-control practice, including its most dangerous forms; and whether

trajectory and behavior predict cardiometabolic and mental health morbidity by mid-adulthood, net of body size.

Recruitment into weight-goal pursuit proves close to universal and steeply gendered in this cohort, and the way adolescents perceive their bodies matters considerably more than how the clinical apparatus classifies them. Pursuit shapes behavior most forcefully where behavior is most harmful, and dieting independently predicts escalation into clinically extreme practice rather than any broad increase in weight-control activity. By adulthood, those who sustained the pursuit carry more diagnosed conditions across both the physical- and mental-health domains, and body size explains only a small share of this association. Taken together, the findings suggest the weight-centered health paradigm is an iatrogenic process: an apparatus built to avert disease which actually helps generate a share of it, distributes that harm along the same lines of gender, race, and class that structure health inequality more broadly, and then reads the result as evidence of its own necessity. The case this dissertation makes is for turning attention away from the size of bodies and toward the pursuit imposed on them, the conditions that determine who is conscripted into that pursuit, and the structural supports on which health actually rests.

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DEDICATION

For my mother.

Chapter 1

INTRODUCTION

Until we have better data about the risks of being overweight and the benefits and risks of trying to lose weight, we should remember that the cure for obesity may be worse than the condition.

— Jerome P. Kassirer, M.D., and Marcia Angell, M.D.
"Losing Weight — An Ill-Fated New Year's Resolution"
The New England Journal of Medicine (1998)

For the better part of a half-century, American medicine and public health have organized their approach to body weight around a single conviction: that fat is dangerous, that its prevalence constitutes an epidemic, and that the identification and reduction of excess weight will produce healthier and longevous populations. This conviction — what a critical literature has named the weight-centered health paradigm — furnishes the rationale for clinical screening, for the federal government's explicit weight-loss targets, and for the vast commercial and pharmaceutical apparatus organized around weight reduction (Boero 2012; Conrad 2007; Oliver 2006; Saguy 2013). It rests on an implicit premise about the body: that to make it smaller is to make it healthier.

Despite its consensus as a population health problem, there is a robust literature critical of the social construction of obesity as a disease and the implications of its framing as a public health crisis. The former camp argues implicitly that fatness, measured using the Body Mass Index (BMI)[1], is not only associated with diseases that increase one's risk for mortality, but that fatness itself increases mortality risk (Allison et al. 1999; Mokdad et al. 2004). Even research from a social determinants of health perspective, which argues that social conditions are significantly responsible for the patterning of disease and mortality, tacitly accepts the framing that obesity is a health problem requiring a solution (Goosby, Cheadle, and Mitchell 2018; Pampel, Krueger, and Denney 2010). The latter, critical scholarship, however, has traced the racist origins of anti-fat bias (Strings 2019), questioned the legitimacy of obesity as a disease category (Campos 2004; Gaesser 2002; Oliver 2006), shown how stigmatizing a public health framing of "obesity" is to fat people (Boero 2012; Saguy 2013), and criticized the health approach, and its effects, being proffered by the medical and public health establishments (Bacon and Aphramor 2014; see O'Hara and Taylor 2018 for a thorough review). The state of the field is thus bifurcated, with a preponderance of demographic and statistical analyses conducted from the assumed premise that fat is inherently unhealthy, and a rich theoretical literature questioning that assumption and contributing analyses supporting the conclusion that the very framing of the premise has harmful health implications, and that the methods being advocated may themselves cause harm.

What that critical literature has lacked is a long-term, nationally representative test of its central empirical claim. While there have been small-scale and clinical studies examining the effects of weight-loss efforts on health, to date there is no longitudinal analysis of the physical and mental health implications of the sustained pursuit of weight loss across the life course. Since weight reduction has been the central medical and public health prescription for overweight and obesity, and is generally presumed to be

[1] $\frac{Weight\ (kg)}{Height^2\ (m)}$

beneficial to health, it is crucial to understand the long-term consequences of that prescription, particularly given the ubiquity of weight stigma and its adverse health effects. There are, moreover, documented differences by gender and race/ethnicity in both weight-loss attempts (Marquez and Murillo 2017) and rates of being classified as obese (Ogden et al. 2020), which raises the further question of whether the burdens of the paradigm are distributed unequally. This dissertation attempts to fill this empirical gap, and does so by inverting the paradigm's central assumption: rather than asking what a larger body does to health, it asks what are the health-implications of the pursuit of a smaller one.

1.1 The Construction of the Weight-Centered Health Paradigm

1.1.1 Racialized and Gendered Origins of Anti-Fat Bias

The hegemonic ideal of thinness, particularly in Westernized countries, and especially for women (Bordo 1993; Wolf 2009), is a relatively new phenomenon. As with many social constructions, body size preferences have changed over time, geography, and within cultures. Historically, fatness has often symbolized power, health, and wealth due to the physically demanding nature of labor and inconsistent access to food in pre-industrial societies. However, its association with elites also made it a ripe metaphor for all manner of sins, particularly gluttony, sloth, and greed (Oliver 2006). In her book *Fearing the Black Body: The Racial Origins of Fat Phobia*, Sabrina Strings charts out the evolving preferences for certain body types, from the Renaissance to the present day. In so doing she argues that our current obsession with slenderness, and demonization of fatness, was borne out by two historical developments: the transatlantic slave trade and the spread of Protestantism. Racist colonial narratives weaponized fatness to further otherize enslaved Africans, while religious rhetoric tied Enlightenment reverence for ascetic principles (i.e. restraint of base, animal motivations and desires) to a moral imperative. It wasn't until the early 19th century in the United States, Strings argues, that these two strands of thought became mutually reinforcing and developed into a coherent ideology that linked blackness to fatness, and fatness to immorality.

This historical background is essential contextualization for understanding how obesity came to be defined as a disease in the first place. As explicated in the sections that follow, this definition relies on arbitrary categorizations based on non-representative population statistics and was largely made possible due to the widespread cultural and moral disdain for fatness. The gendered and racialized dimensions along which anti-fat bias developed, and continues to operate, is additionally important for understanding the emergence of dieting as a method of social control.

1.1.2 A Brief History of the Body Mass Index

Initially developed in 1842 by the Belgian astronomer and mathematician Adolphe Quetelet, the BMI was originally intended to capture the population-level relationship between weight and height over the life course and was explicitly *not* meant to be applied at the individual level. Quetelet's Index, as it was then known, was premised on the belief that mathematical principles could be applied to human characteristics such that an "ideal" body weight — the statistical average — could be found (Quetelet 1842). Quetelet held that all manner of "deviant" behaviors could be attributed to statistically non-normative physical and behavioral characteristics, and so his concept of *l'homme moyen* - the average man - was not merely descriptive, but an argument about which types of people, and which bodies, were desirable in a society[2].

[2]While Quetelet was somewhat cautious in his use of statistics applied to human characteristics, i.e. he explicitly did not expect all people to conform to the norm nor was that necessarily his goal in developing his concept of "the average

The limitations of Quetelet's population sources[3] and beliefs about "normal" body size were extended by the U.S. life insurance industry in the 20th century. Seeking to quantify the risk associated with early death at Metropolitan Life Insurance Company, statistician Louis Dublin analyzed the data on current policyholders in the 1940s. Policyholders that, it should be noted, were overwhelmingly white, male, middle-class, and living in urban centers (Gilman 2010). He found an association between people whose weight was closer to the average twenty-five-year-olds' and longer life spans, concluding that higher weights were the cause of early death. He created a set of "ideal" height-weight tables that set a range of weights, for each height, sex, and an ad-hoc classification of "frame size," that predicted the longest life span[4]. Though the original purpose of these tables was for MetLife to assign risk to policyholders - which wasn't actually implemented[5] - Dublin himself became a key progenitor of the idea that higher weight was itself a determinant of mortality. Given the cultural context of anti-fat bias described previously[6], the medical establishment and the federal government were easily convinced by Dublin's argument and adopted the MetLife tables to assess population health by classifying body weight.

Despite the tables' wide use in medicine through the 1950s and 1960s, there remained a desire for a simpler measure of fatness. Ancel Keys and his collaborators on the Seven Countries Study made the

man," his work had a major influence on positivist criminology (Beirne 1987) as well as Francis Galton's project of eugenics (Heiberg 2006).

[3] Importantly, the populations Quetelet used to create his index were largely men drawn from England, France, Belgium, and Scotland (Quetelet 1842).

[4] For a thorough examination of the unscientific construction of these tables see Chapter 5 in (Gaesser 2002).

[5] From Campos (2004): "Indeed, when MetLife issued its most recent version of the tables (in 1983), the company admitted that '[the weights recommended by the tables] are not the weights that minimize illness or the incidence of disease. These weights are not used for underwriting or in the computation of premiums.'"

[6] Produced and compounded by the emerging consumer fashion and beauty industries (Gaesser 2002; Oliver 2006).

case for $\frac{W}{H^2}$ — Quetelet's Index, now renamed the Body Mass Index — in their 1972 article "Indices of relative weight and obesity." Comparing the BMI against other indices and against more precise but costly measures of body fatness, they judged it the best of the convenient options for predicting adiposity. The populations used in these analyses were again drawn overwhelmingly from white populations in Europe and the United States, and the authors were explicit about the measure's limits, noting that the BMI accounted for no more than half of the variance in body fatness (Keys et al. 1972). In other words, while predicting half or less of the variance in body fat, the BMI was simply the best and most convenient measure available.

That convenience proved crucial to the transformation of a population-level statistic into an individual-level metric of health. In 1985 the National Institutes of Health convened a consensus conference on "The Health Implications of Obesity," recommending that physicians adopt the measure as an additional factor in evaluating patients (National Institutes of Health 1985). From that recommendation, the BMI was operationalized in clinical settings to assess an individual's level of obesity and, purportedly, their health. The problem with this development goes well beyond the ecological fallacy of applying a population statistic to individuals, fundamental as that bias is. The height-weight tables and the index built upon them excluded racial and gender diversity, constructing a normative, "healthy" bodily ideal based disproportionately on statistics for white men in their twenties — a foundation that, as subsequent research has shown, biases the BMI when applied to African Americans, Asian communities, and women (Jackson et al. 2002; Racette, Deusinger, and Deusinger 2003; The Endocrine Society 2009).

The institutionalization of the measure still left the matter of classification unsettled. Through the 1970s and 1980s, researchers proposed competing cutoffs, with little clarity about the level of fatness —

or the populations — for which health effects could actually be demonstrated (Campos 2004; Gaesser 2002; Oliver 2006). The 1985 NIH conference classified overweight as a BMI of 27.3 for women and 27.8 for men, while U.S. Dietary Guidelines used figures ranging from 24.9 to 27.1 throughout the 1980s and 1990s (Flegal, Troiano, and Ballard-Barbash 2001). In 1997 the World Health Organization (WHO) recommended classifying overweight as a BMI of 25 to 29.9 and obesity as 30 or above, and in 1998 the NIH adopted the WHO's standards as its own (National Heart, Lung, and Blood Institute 1998; World Health Organization 1995). As a result, nearly 40 million Americans were reclassified as "overweight" overnight, with no change in their bodies. The reasoning offered for lowering the thresholds rested on findings that contradicted it: the underlying data did not show that those with a BMI above 25 had significantly higher mortality than those below it (Troiano et al. 1996). The standards were adopted regardless, and obesity researchers finally had a unifying metric on which to build their findings. As Fletcher (2014) observes, this standardization was itself crucial to the framing of obesity as an epidemic, since uniform cutoffs made it possible to build the large datasets and population-level representations through which an "epidemic" could be argued into being — a framing that confirmed a pre-existing anti-fat bias (Strings 2019), tapped into a sense of moral panic (Boero 2012), and foreclosed debate about the association between weight and health.

1.2 Obesity as a Disease

The narrative did not go entirely unchallenged, and one of the better-known controversies in obesity research illustrates how political the field had become. In 2005, a team of CDC researchers led by Katherine Flegal published nationally representative estimates of excess deaths attributable to overweight and obesity in the Journal of the American Medical Association (Flegal et al. 2005). Their estimates were far lower than earlier, highly cited figures (Allison et al. 1999; Mokdad et al. 2004), and they found that the overweight category predicted lower mortality than the healthy-weight range. The response was a sustained campaign of professional attack — one (Flegal 2021) later described as a deliberately manufactured effort to discredit inconvenient findings. That Flegal and her colleagues were not themselves critics of obesity research, but had simply sought better data and methods, only underscores how dogmatic the field had become.

While much of this entrenchment reflected pervasive anti-fat bias, financial and political incentives also drove the growth of obesity research and its eventual classification as a disease. As Oliver (2006) documents in *Fat Politics*, many leading figures in the field were also employed by weight-loss and pharmaceutical interests; the WHO's International Obesity Task Force, the body responsible for the prevailing BMI standards, was itself funded primarily by the manufacturers of two weight-loss drugs. By the time the American Medical Association (AMA) voted to classify obesity as a disease in June 2013, a robust health-industrial complex had been built to facilitate the change. Months earlier, the AMA's own internal committee had concluded that obesity should not be classified as a disease, reasoning that it did not fit the definition and that medicalization risked increasing stigma and encouraging unnecessary treatment (American Medical Association 2013). The membership overrode that advice and voted overwhelmingly to classify it anyway. Campos (2004) captures the underlying market logic in his book *The Obesity Myth*: from the standpoint of a profit-maximizing medical and pharmaceutical industry, the ideal disease would be one that never killed its sufferers, could not be treated effectively, and yet would be treated anyway — and obesity, he argues, fit that description precisely.

The consequence was to relocate both the moral and, now, the medical responsibility for body size onto the individual. If a person fails to lose weight, or fails to attain a "normal" size, the failure is theirs; absent from this framing is any acknowledgment of natural diversity in body size or of the contextual factors that produce it. Weight loss itself was thereby reclassified as a health behavior. Sociologists of medicalization suggest the effect was not what its proponents claimed. Medicalizing a condition does not necessarily strip it of moral content; it can instead lend an existing moral judgment the authority of clinical fact, so that the obligation to manage one's weight now arrives endorsed by medicine and enacted through the routine machinery of the clinical encounter (Conrad 2007; Kwan 2009; Saguy and Riley 2005). For the person on the receiving end, medicalization did not lift the moral weight of body size, it added to it the stigma of a diagnosis.

1.3 Dieting and Health

Inherent in the assumption of obesity as a disease is that there is a "normal" or "healthy" weight range for all people at all points in time. Further, it assumes that those who fall above the "normal" weight range (those with overweight or obesity) will be healthier if they lose weight. Therefore, the treatment recommendations from the AMA and other medical authorities are singularly focused on weight loss as an outcome. The three major approaches include some combination of dieting and exercise, and/or prescription medications and surgery (Fitzpatrick et al. 2016; Jensen and Ryan 2014; Kushner and Ryan 2014; National Institutes of Health 1985). Medication and surgery are recommended for use only after weight loss has been unsuccessful through dieting and exercise. Therefore, the lion's share of medical advice for individuals deemed overweight or obese is to reduce caloric intake and increase physical activity, with the belief being that creating a caloric deficit will result in weight loss and, therefore, health improvements. However, this premise is far too simplistic and requires a better understanding of both the cultural and scientific background of dieting.

As a health practice, dieting can be traced back to the ancient Greeks and Hippocrates' beliefs in using food and food restriction to balance the bodily humors (Gilman 2010). During the Enlightenment, ideas about humans' relationship to the divine began to shift and the body began to be conceptualized more as a machine that could be manipulated by the individual, and not necessarily to religious ends (Gilman 2007). In this context, male intellectuals began associating indulgence in food and drink with a lack of ambition, civility, and rational thought (Strings 2019). In essence, body size, and the ability to manipulate and/or control it, has come to be seen as a manifestation of the unique human ability to exert one's will over their animal nature. This belief has widespread cultural resonance and, since obesity's framing as an epidemic and a disease, has gained immense traction among the medical and scientific communities as well. However, it makes two major assumptions: that dieting is effective for weight loss and that weight loss improves health outcomes. The evidence for both of these points, however, is lacking.

The research on dieting for weight-loss assumes that it will lead to improved health outcomes. However, these studies are confounded by changes to diet and increased physical activity, which have both been shown to be beneficial for health independent of weight loss (Barry et al. 2014; Phillips et al. 2013). Furthermore, most of these studies are either short-term or lack long-term data due to participant drop-out or non-compliance. The few weight-loss studies that are long-term have a failure rate of up to 95% (Gaesser 2009). In fact, one- to two-thirds of those who engage in concerted weight loss efforts will regain all the lost weight and then some in the long term (Mann et al. 2007). With respect to health outcomes, the one study that sought to assess the impact of dieting for weight loss over a longer period of time (1 year post-intervention) found that the improvements to specific health indicators such as cholesterol, triglycerides, blood pressure, and blood glucose, were nominal and none were associated with weight change (Tomiyama, Ahlstrom, and Mann 2013).

Complicating the simplistic notion of the "body as machine," and its associated "calories in-calories out" model for weight maintenance, is growing evidence that the metabolic processes that control an individual's weight consist of a complex interaction of genetics, environmental and socioeconomic context, lifecourse experiences, and individual behaviors (Bacon and Aphramor 2011, 2014; Krieger 1994; VanLeeuwen et al. 1999). Twin and sibling studies suggest that the variation in genetics accounts for 70-80% of the variance of body weight in the population, meaning that body weight is extremely heritable (Friedman 2009; Hsu et al. 2005; Wardle et al. 2008). Relatedly, setpoint theory argues that our bodies have optimal weight ranges which they will fight to maintain, similar to other homeostatic mechanisms such as internal body temperature, and that this range varies for each individual person and is largely determined by our genetics (Bacon and Aphramor 2014). Given this context, it becomes more evident why the mind-over-matter approach to weight loss is difficult to implement and nearly impossible to maintain.

Crucially though, in addition to the ethical implications of prescribing an ineffective treatment, emerging research has shown that dieting for weight loss actually has negative effects on health outcomes. The body has a slew of compensatory processes when the level of food intake decreases relative to physical demands, including increasing hunger signals and slowing down metabolism (Bacon and Aphramor 2014). This is part of the reason dieting for weight loss is challenging and why most people cannot sustain it for long periods of time. Those engaged in dieting for weight-loss are more likely to continually struggle in their efforts, resulting in what's commonly known as yo-yo dieting, or weight-cycling (Ernsberger and Koletsky 1999). The evidence shows that repeated fluctuations in body weight puts enormous stress on the body, leading to a range of adverse physical effects, including many of the comorbidities associated with obesity itself, such as increases in mortality (Diaz, Mainous, and Everett 2005; Lissner et al. 1991; Nguyen et al. 2007; Rzehak et al. 2007), chronic inflammation (Strohacker and McFarlin 2010), hypertension (Guagnano et al. 2000; Kajioka et al. 2002), cancer (Thompson and McTiernan 2011), and diabetes (French et al. 1997; Montani et al. 2006; Vergnaud et al. 2008). These effects compound across cycles, and are by construction most pronounced among those who pursue weight loss most persistently — precisely those the paradigm works hardest to recruit.

Additionally, there are psychological costs associated with repeated and failed attempts at weight loss which include body dissatisfaction, low self-esteem, disordered eating, and the experience of weight-based stigma (Catling and Malson 2012; Cogan and Ernsberger 1999; Ikeda, Crawford, and Woodward-Lopez 2006; Kassirer and Angell 1998; Lawrence, Hazlett, and Abel 2012; Pieterman 2007; Puhl and Heuer 2009; Rees et al. 2011). Of particular relevance is internalized stigma, in which a person accepts the stigmatizing narrative and turns it on themselves. The mechanisms through which this chronic psychological burden is thought to become biological — dysregulation of the hypothalamic-pituitary-adrenal axis, chronic low-grade inflammation, the accumulating wear of allostatic load — are, notably, the same mechanisms the weight-centered literature invokes to explain how body size itself damages health (Hatzenbuehler, Phelan, and Link 2013; Hunger and Major 2015; McEwen 1998; Tomiyama 2014). This convergence is analytically useful rather than confounding: it means the physiological signature attributed to fatness is equally consistent with the chronic strain of the paradigm's own demands.

Though this dissertation does not measure stigma directly, and therefore does not adjudicate its specific contribution, what matters for the argument is that both the behavioral and the psychological pathways predict that the sustained experience of pursuing a smaller body — independent of how large that body actually is — should leave a measurable signature on adult health.

1.4 A Critical Reframing: Healthism, the Life Course, and Embodiment

To take seriously the possibility that pursuing a smaller body damages health requires stepping outside the paradigm's own vocabulary, in which greater effort toward health pursuit can only yield better health outcomes. Three frameworks in the sociology of health make an alternative explanation possible, and together they supply the lens through which this dissertation advances its arguments. Each answers a different question the paradigm cannot: why people persist in a costly and failing pursuit, how that persistence unfolds and compounds over time, and how a sustained pursuit turns into measurable harm.

The first is Crawford's (1980) critique of healthism, the cultural elevation of health from a condition of the body into a standard of personal conduct. Under healthism, to be healthy is not simply to be free of disease but to exhibit discipline, foresight, and self-command; the well-kept body reads as a sign of virtue and the unwell or unruly one as a sign of negligence. The political effect is to privatize what is in large part socially produced — to treat the distribution of sickness as a tally of individual choices, and to interpret the failure to be healthy as a defect of character rather than a feature of circumstance (Crawford 2006; Metzl and Kirkland 2010). Few obligations suit this logic as neatly as the management of body weight, and the weight-centered paradigm is healthism's most fully developed institutional form. It takes the open-ended injunction to look after oneself and attaches to it a number, a threshold, and a clinical setting in which the number is generated and acted upon, converting a vague cultural expectation into a specific and recurring demand that one's body size conform to an arbitrary, but medically-prescribed standard (LeBesco 2011; Levinovitz 2020). Understood this way, the pursuit of weight loss is not an episodic response to a health concern but a perpetual assignment, internalized and felt as one's own — which is precisely why its repeated failure tends to prompt redoubled effort rather than disengagement.

The second framework concerns how an ongoing responsibility of this kind is lived out across time. The life course perspective treats individual lives as sequences of linked trajectories that unfold within particular historical and social settings, and it draws attention to the timing of experiences, to the ways early conditions shape later ones, and to the gradual accumulation of advantage and disadvantage over years and decades (Elder 1998; Shanahan 2000). Two of its emphases bear directly on the argument. First, adolescence is a formative period in which orientations toward the self and the body take shape and can harden into something durable; a weight goal taken up then is potentially the opening of a sustained trajectory rather than a passing preference. Second, an exposure need not be acute to be consequential if it recurs: modest, repeated insults — a cycle of loss and regain, a daily measurement of the body against a standard it cannot satisfy — can accumulate into measurable harm, in the same way that the chronic strain of inhabiting a disadvantaged social position has been shown to weather the body and hasten the onset of disease (Geronimus et al. 2006; McEwen 1998). A weight-goal trajectory is exactly the sort of sustained, repeating exposure whose effects a life-course account would expect to surface not at once but later, in the diagnoses a person carries in adulthood.

The third framework supplies the connection between the social and the biological that the first two assume. Ecosocial theory's concept of embodiment holds that the conditions of a life are not merely correlated with health but are taken into the body and inscribed in its biology, such that the social patterning of disease is, in the final analysis, the material trace of social experience (Krieger 1994, 2001, 2005). From this understanding, the line between a "social" cause and a "biological" one gives way. The stress hormones released in response to a perceived threat, the metabolic changes that follow repeated dieting, and the cardiovascular toll of years spent monitoring one's body are not biological stand-ins for social experience but the physical form that that experience takes. Embodiment is what makes it coherent to treat a goal or an orientation as a health exposure in the first place, and it authorizes the central analytic move of this dissertation: to ask not what a body weighs, but what the sustained effort to change it does to the person who undertakes that pursuit.

Read together, these perspectives invert the sequence the paradigm presupposes. Where the weight-centered account makes body size the cause of disease and its reduction the cure, the framework theorized here locates the operative exposure in the pursuit of weight change itself. Healthism accounts for why that pursuit is sustained and moralized rather than rejected; the life course perspective accounts for how, begun early and repeated over years, it accumulates; and embodiment accounts for how an accumulated orientation becomes part of the body itself. This reframing does not remove body size from the picture. Body size enters the pathway twice: as a motivator of the pursuit, since those classified — or who regard themselves — as too large are the ones most insistently called to correct it, and as a medium through which the pursuit's costs are exacted, since to carry that mark is to absorb the stigma and the stress the paradigm pegs to it. What body size is not, on this account, is the origin of the harm. That place belongs to the pursuit. Two consequences follow and structure the chapters to come. The first is that the harm should fall unevenly: if sickness and longevity are patterned by social position, tracking the same lines of gender, race, and class that organize life chances more broadly (Link and Phelan 1995; Marmot

2005), then a paradigm that recruits some groups into weight-change pursuit more forcefully than others will distribute its costs accordingly, widening the very inequalities it claims to address. The second is methodological: because the paradigm credits body size with the outcomes a critical account credits to the pursuit of altering it, the two explanations can be distinguished only by following pursuit and body size separately across the life course and observing which one adult morbidity actually tracks.

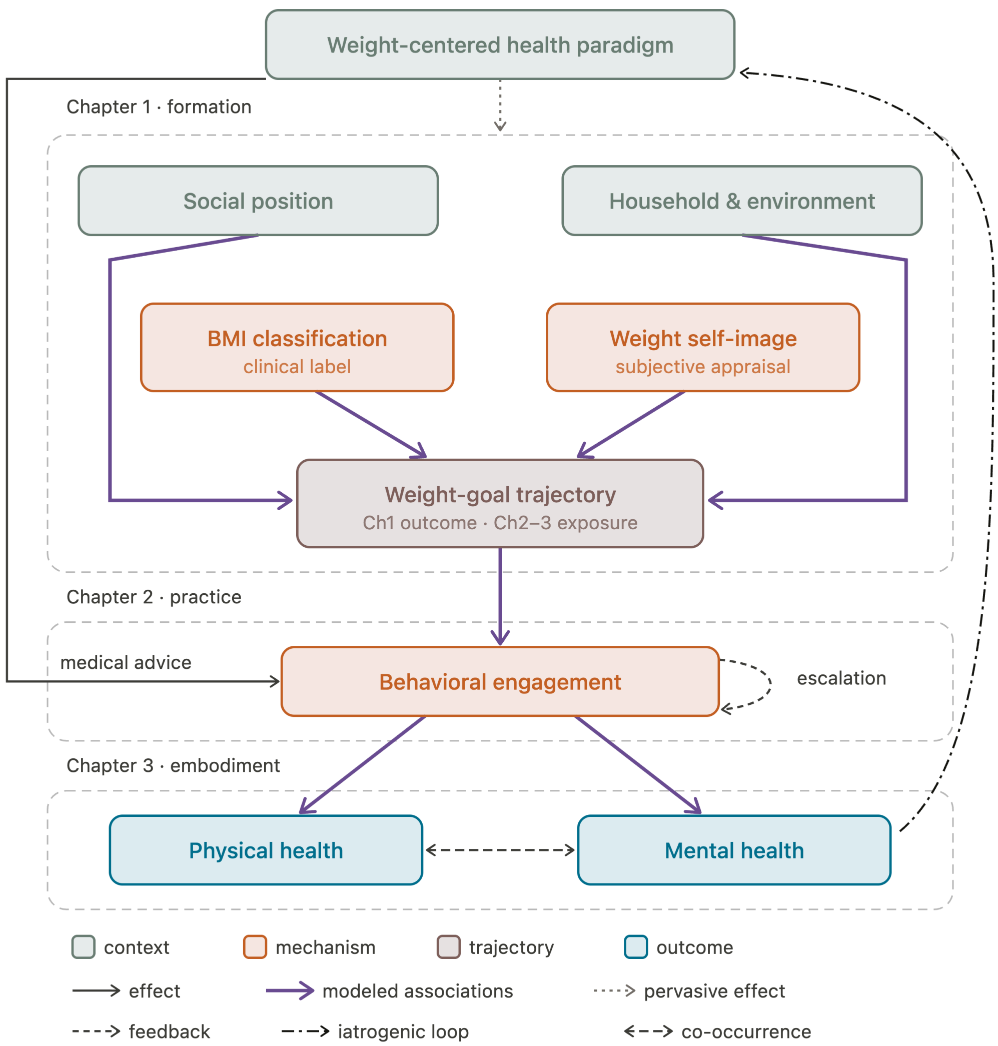
1.5 The Present Study

This dissertation draws on the National Longitudinal Study of Adolescent to Adult Health (Add Health)[7], a nationally representative, multiwave longitudinal study begun in 1994–95 with adolescents in grades 7 through 12 and currently following its participants into their fifties. Across five waves, Add Health combines the necessary sociodemographic measures with extensive information on respondents' mental and physical health diagnoses, and their household and neighborhood contexts. Crucial to the analyses developed here is its longitudinal coverage of the key constructs: the early waves contain repeated questions about weight goals and weight-control behaviors, the first four waves include a measure of body image with respect to weight, and the later waves record the cardiometabolic and mental health diagnoses respondents accumulate by adulthood. This structure makes it possible to capture the object of analysis directly: not a single act of dieting, but the sustained orientation toward weight change, operationalized as membership in distinct weight-goal trajectories traced across adolescence and early adulthood.

Figure 1.1 sets out the conceptual model that organizes the dissertation and locates each empirical chapter within it. Read from the top down, it traces the weight-centered paradigm through three

[7]Support for data access and analyses for this research came from a Eunice Kennedy Shriver National Institute of Child Health and Human Development research infrastructure grant, P2C HD042828, to the Center for Studies in Demography and Ecology at the University of Washington.

Figure 1.1: Conceptual model of the dissertation



successive stages — the formation of a weight goal, the behavior that goal sets in motion, and the morbidity that behavior leaves behind — corresponding to the three substantive chapters. Purple arrows mark the associations the chapters estimate directly; the remaining arrows mark the broader processes the dissertation theorizes but does not model: the paradigm's pervasive reach, the escalation of behavior when weight loss fails, the co-occurrence of physical and mental morbidity, and the iatrogenic loop by which the disease the paradigm helps produce returns to it as apparent vindication. Body size and self-image enter the model not as endpoints but as the proximate channels through which social position and household context give rise to a weight goal — the figure's first expression of the dissertation's argument that classified and perceived size motivate the pursuit rather than originate the harm.

The three substantive chapters follow that orientation through a single sequence — from its social origins, through the behaviors it sets in motion, to the health outcomes it produces — and each is organized around a motivating question.

The first chapter asks **what individual, household, and contextual characteristics predict membership in distinct weight-goal trajectories across adolescence and early adulthood**. Because the construction of the BMI and of body-size norms is itself racialized, gendered, and patterned by class, the question is who the paradigm recruits into the pursuit of weight change, toward what ends, and through what mechanisms — clinical classification, internalized body image, social position, or the social and built environment.

The second chapter asks **how weight-goal trajectory membership translates into engagement in weight-control behaviors — their number, type, and extremity — and whether a history of dieting independently predicts escalation into clinically extreme practice**. If the paradigm produces aspiration, this chapter examines what that aspiration does, and whether the behaviors it sets in motion are the benign, corrective practices the paradigm assumes or something more harmful

The third chapter asks **whether weight-goal trajectories and the behavioral engagement they motivate predict cardiometabolic and mental-health morbidity in adulthood, and to what extent body size accounts for that association**. This is the claim on which the paradigm ultimately rests — that the bodies it works to discipline are healthier as a result — and the chapter tests it directly, asking whether adult morbidity tracks body size, as the paradigm predicts, or the trajectory of pursuit and behavior independent of it, as the argument developed in the following chapters anticipates.

Each study thus build on the one preceding it: recruitment into the pursuit, the behavior the pursuit produces, and the morbidity that accumulates as a result. A concluding chapter draws the three together, considers what their convergence implies for how health is governed, and discusses to what extent the harm so reliably attributed to the size of bodies may instead belong to the pursuit of changing them.

Chapter 2

THE UNEVEN REACH OF THE WEIGHT-LOSS IMPERATIVE: SOCIAL DETERMINANTS OF WEIGHT-GOAL TRAJECTORIES FROM ADOLESCENCE TO YOUNG ADULTHOOD

2.1 Introduction

In any given year, roughly half of all American adults report actively trying to lose weight (Martin et al. 2018; Yaemsiri, Slining, and Agarwal 2011), a figure that has changed remarkably little despite decades of documented failure to sustain weight loss at the population level. The cultural ubiquity of this aspiration is not difficult to explain. Since the latter half of the twentieth century, the medical establishment, the federal government, and a vast commercial diet industry have converged on a unified message: that a higher body weight is a health problem, that the problem is addressable through individual behavioral change, and that wanting to lose weight is therefore not merely a cosmetic preference but a health-rational and morally responsible goal (Levinovitz 2020). When the American Medical Association formally classified obesity as a disease in 2013, it gave institutional imprimatur to a set of beliefs that had been accumulating cultural force for decades (Boero 2012; Oliver 2006; Saguy 2013). The imperative to lose weight, already pervasive, was recast as medical necessity.

And yet the apparent universality of the weight-loss goal is, on closer inspection, neither universal nor ideologically neutral. Not everyone who inhabits a larger body wants to reduce it, and not everyone who wants to reduce it does so for the same reasons, with the same consistency, or in relation to the same cultural referents. Research consistently documents that weight-loss attempts are patterned along the axes of gender, race and ethnicity, and socioeconomic position in ways that reveal the operation of broader social forces: white women are disproportionately represented among those attempting to lose weight (Marquez and Murillo 2017); racial and ethnic differences in body-size ideals mean that the same objective body size can produce very different evaluations and goals depending on one's social location (Altabe 1998; Hughes 2020; Overstreet, Quinn, and Agocha 2010; Winston et al. 2015); and socioeconomic conditions structure both the cultural frames through which bodies are evaluated and the practical resources available for acting on one's goals (Bourdieu 1984; Pampel et al. 2010). To treat the weight-loss goal as simply a rational individual response to a purported medical risk, undifferentiated across social positions, is to misread both its social origins and its social consequences.

This paper treats the social patterning of weight goals as a substantive sociological inquiry worth examining. Before we can understand what people do about their weight, or what the consequences of those actions are for their health, we need to understand what people want for their bodies in the first place and how that varies across key dimensions of identity, social position, and environmental context. The existing literature on weight control has focused heavily on the behavioral end of this sequence, documenting who diets, who exercises to lose weight, and who engages in disordered eating practices. Far less attention has been paid to the upstream question of goal formation: the aspirations, intentions, and self-assessments that precede and organize behavioral engagement. Goals are not the same as behaviors, and treating them as equivalent risks collapsing a theoretically important distinction. Someone who consistently aspires to lose weight over a period of years but is unable to sustain the behaviors required to do so occupies a meaningfully different social position than someone who has no weight goals at all, even if their behavioral profiles look similar in any given moment. The former is subject to the weight-loss imperative in a way the latter is not, and this subjection has its own consequences.

2.2 Weight-Goal Formation as a Life-Course Process

A central premise of the lifecourse perspective is that the biographical significance of any experience depends not only on its content but on its timing, its duration, and its placement within a sequence of prior and subsequent experiences that, taken together, constitute a trajectory (Elder 1998; Shanahan 2000). Applied to health, this perspective directs attention to the ways in which exposures, behaviors, and orientations during particular developmental stages accumulate into health-relevant patterns that are not visible in cross-sectional snapshots (Lynch and Smith 2005). The adolescent and early adult years are widely recognized as one such stage: a period of heightened developmental plasticity in which habits, identities, and dispositions are formed that often persist across subsequent life stages and that are disproportionately consequential for long-term health (Shanahan 2000; Wickrama, Lee, and O'Neal 2022). It is during this period that people first encounter the medical and cultural institutions that persistently classify and prescribe for their bodies – school-based health screenings, adolescent medical visits, peer-group appearance norms – and it is during this period that the orientations toward weight and body management that will organize subsequent behavioral engagement are first consolidated.

But trajectories are not merely individual sequences: their meaning and consequences are conditioned by the historical period in which they unfold and by the cohort that lives through that period (Elder 1998; Ryder 1965). The same orientation toward one's body carries different significance depending on the social and economic moment that frames it — the prevailing labor market, the reach of consumer and media industries, and the institutional standing of the health claims attached to body size. The Add Health cohort is instructive in this regard: its members moved through adolescence and into early adulthood precisely as the weight-centered health paradigm was consolidating its institutional authority, encountering a cultural and medical environment in which the imperative to manage body weight was both more medicalized and more commercially saturated than it had been for earlier cohorts. The trajectories examined here are therefore not timeless developmental patterns but the imprint of a specific paradigm on a specific cohort at a specific historical moment.

Within this theoretical framework, the argument for centering weight goals rather than behaviors is straightforward but often overlooked. The dominant empirical tradition in this literature tracks what people do about their weight – how often they diet, whether they exercise, whether they engage in extreme weight control practices – and asks what predicts these behaviors and what health consequences follow from them. This is obviously a central question, and ultimately a focus of this dissertation, but it begins midway through an oft-overlook, formative process. Behaviors do not emerge from nothing; they are organized by intentions, aspirations, and self-assessments that are themselves socially produced and temporally structured. This premise is not itself novel. The dominant social-psychological models of health behavior — the theory of reasoned action and its successor, the theory of planned behavior — hold that behavior is most proximally governed by behavioral intentions, which are in turn shaped by attitudes and perceived norms (Ajzen 1991; Fishbein and Ajzen 1975). What those models treat as the proximal cause of behavior corresponds, in substance, to the weight goal as defined here. Where the present account departs from them is in its object of explanation. Reasoned-action models take the intention as their starting point and ask how reliably it predicts behavior; they leave the social origins of the intention itself largely unexamined, treating it as an individual cognition. The sociological question is the prior one — where these intentions come from, why they are distributed so unevenly across sex, race, and class, and through what institutions they are produced and sustained. Weight goals are the mechanism through which the cultural weight-loss imperative, and its counterparts in the muscularity ideal for men (Thompson and Cafri 2007) and the body-affirming norms of some racial and ethnic communities, is translated into an individual's orientation toward their own body. Understanding the social patterning of these orientations across the adolescent and early adult years, and understanding their stability or change over time, is analytically prior to understanding both the behaviors they motivate and the health consequences that follow.

The lifecourse concept of sensitive periods – developmental windows in which exposure to particular conditions or experiences has an outsized effect on subsequent trajectories – is particularly relevant here (Ben-Shlomo and Kuh 2002; Shanahan 2000). Adolescence is a sensitive period for body-related attitudes and behaviors for several intersecting reasons. The biological changes of puberty make the body more salient as an object of scrutiny and comparison, precisely when peer-group dynamics are intensifying and media exposure and consumption are increasing. At the same time, adolescents are beginning to encounter health institutions – school nurses, pediatricians, and primary care providers – that translate cultural and medical norms about body size into individual clinical directives. Shanahan (2000) argues that this period is characterized by *heightened* sensitivity: the behaviors, orientations, and social relationships formed during the transition from adolescence to adulthood are particularly consequential for subsequent life trajectories because they are formed at a moment when prior institutional constraints (parental household, school structure) are loosening and new ones (employment, independent living, partnership) have not yet fully consolidated. This is the developmental window Arnett (2000) terms emerging adulthood: a distinct life stage in contemporary industrialized societies, defined less by the assumption of stable adult roles than by exploration, instability, and the provisional "trying out" of identities, relationships, and ways of living amid shifting social networks and contexts. For weight goals, emerging adulthood is doubly consequential. It is a period in which body-related orientations are actively experimented with rather than settled, making them especially responsive to the cultural and institutional pressures described above; and it is a period in which the loosening of parental and school supervision leaves individuals to negotiate those pressures with comparatively little scaffolding. Orientations consolidated under these conditions — provisional, self-authored, and formed in direct contact with the weight-centered paradigm — are precisely the kind the life-course literature expects to be more durable and more consequential than those formed either earlier in childhood, or later in settled adulthood. As Neumark-Sztainer et al. (2011) document using Project EAT's ten-year longitudinal data, this is the period in which the behavioral patterns associated with weight control are first established and begin to track forward: adolescents who diet are more likely than their non-dieting peers to report dieting, disordered eating, and unhealthy weight control behaviors ten years later in young adulthood. In other words, what happens during adolescence with respect to weight-oriented behavior does not simply reflect that developmental stage; it shapes subsequent behavioral trajectories in ways that carry forward into adulthood.

Additionally, the accumulation model, which posits that health outcomes in adulthood reflect the cumulation of exposures and experiences across developmental stages, rather than any single critical period exposure (Dannefer 2003; Kuh et al. 2003) provides the key theoretical logic for understanding why sustained weight-goal orientation over adolescence and early adulthood is likely to be more consequential for long-term health than any single point-in-time report of a weight goal. A person who consistently aspires to lose weight across multiple years is not merely reporting an attitude at each point in time; they are accumulating exposure to the psychological experience of weight-goal orientation – the self-monitoring, the body scrutiny, the chronic gap between aspiration and outcome – and, likely, accumulating engagement with the behavioral practices that expressions of that goal motivates. To the extent that these behavioral practices include cycling in and out of caloric restriction, their effects are themselves cumulative: a well-established literature documents that repeated cycles of weight loss and regain – the modal outcome of sustained dieting attempts – produce progressive metabolic, cardiovascular, and psychological harms that compound over time and by degree (Diaz et al. 2005; Lissner et al. 1991; Montani et al. 2006; Strohacker and McFarlin 2010). The trajectory therefore, provides a crucial lens through which to understand the ways similar patterns of behaviors may emerge from differential embodiment experiences and eventually lead to meaningfully distinct adult health profiles.

2.3 The Social Determinants of Weight-Goal Formation

Weight goals do not arise in a social vacuum. They are formed through encounters with medical institutions that classify bodies, cultural industries that define ideals, households that transmit norms, and neighborhoods that structure the practical and symbolic conditions under which bodies are evaluated and certain ideals are pursued. Furthermore, the weight-centered health paradigm does not bear down on all bodies equally – its reach and enforcement are distributed along the same axes of sex, race, and class that organize health disparities more broadly. These social conditions are theoretically prior to behavioral engagement – shaping the aspirations and orientations from which behaviors emerge, and influencing them in ways that are unevenly structured.

2.3.1 Sex

The cultural mandate for thinness has been applied, historically and contemporaneously, with far greater intensity to women's bodies than to men's, a process that feminist scholars have traced to the disciplining of women's bodies as a form of gendered social control (Bordo 1993; Wolf 2009). The empirical literature bears this out consistently: women are significantly more likely than men to report wanting to lose weight, to diet, and to engage in a broader range of weight-control behaviors at every level of body size, and even holding BMI constant they are more likely to perceive themselves as overweight (D. Neumark-Sztainer et al. 2002; Serdula et al. 1993). This gap is not merely a product of misperception but one of internalization: the tripartite influence model demonstrates that sociocultural pressure from media, peers, and family predicts thin-ideal internalization, which in turn predicts body dissatisfaction and weight-loss aspiration independent of actual size (Shroff and Thompson 2006; Thompson 1999; Thompson and Stice 2001).

Men's bodies are subject to their own structurally enforced appearance ideal, but one oriented toward muscularity and mass rather than thinness — an ideal that, crucially, points in the opposite direction. Mishkind et al. (1986) first systematically documented this asymmetry: where women's idealized body is, on average, thinner than the one they inhabit, men's is larger and more muscular, such that male body dissatisfaction is as often a wish to gain weight as to lose it. This muscular ideal has intensified markedly over recent decades, propagated through media, fitness culture, and a supplement and "fitspiration" industry that has grown alongside its female counterpart (Leit and Pope Jr. 2001; Pope 2000), and its pursuit carries its own continuum of behavioral risk — from restrictive "bulking" and "cutting" regimens to muscle dysmorphia and appearance- and performance-enhancing substance use (Murray et al. 2018;

Pope 2000). The directional opposition is not incidental but ideological: higher gender normativity predicts weight-gain attempts and muscularity-enhancing behaviors in boys while actively protecting against weight-loss attempts (Nagata, Ganson, and Murray 2020) — an embodied expression of what Connell (2005) terms hegemonic masculinity, the culturally exalted form of manhood against which boys learn to measure their bodies. Both ideals carry health risks through the behavioral engagement they motivate: persistent weight-loss aspiration in women is linked to dietary restriction, weight cycling, and psychological harm (Mann et al. 2007; Neumark-Sztainer, Wall, Guo, et al. 2006; Neumark-Sztainer et al. 2007), while muscularity-oriented goal pursuit in men carries its own continuum of risks including muscle dysmorphia and performance-enhancing substance use (Murray et al. 2018; Pope 2000).

The deeper point is that the dimorphism of body ideals is itself a product of gender ideology. The same cultural system that assigns thinness, restraint, and self-surveillance to femininity assigns size, strength, and expansion to masculinity, sorting bodies into opposing projects according to the gendered meanings attached to them rather than to any health logic. This is what makes the structure of recruitment asymmetric. The weight-centered health paradigm, organized entirely around the risks of high body weight, runs with the grain of the female body project and against the grain of the male one. For girls and women, clinical classification and the cultural ideal point the same way — toward reduction — and reinforce one another. For boys and men, the dominant body project points toward gain, a direction the paradigm neither names nor problematizes and which gender ideology actively rewards. The result, anticipated here and borne out in the analysis below, is that weight-loss aspiration is recruited far more readily in female bodies than in male ones at every level of clinically defined size, while male body anxiety, where it exists, is channeled toward an objective the weight-centered health paradigm does not recognize as its concern.

2.3.2 Race and Ethnicity

The dominant body ideal in the United States – thin, controlled, medicalized as healthy – is not a neutral aesthetic but a racialized one, developed in explicit relation to racist constructions of Black bodies as excessive and deviant (Strings 2019). Its enforcement and internalization are therefore uneven across racial and ethnic communities, reflecting distinct body aesthetic traditions and differential exposure to the cultural and medical apparatus of the weight-loss imperative. The most extensively documented difference involves Black women, who across representative samples report higher body satisfaction, higher thresholds for perceiving themselves as overweight, and lower rates of dieting relative to white women at equivalent BMIs – a pattern attributed to community aesthetic traditions that historically value curves and fullness (Altabe 1998; Overstreet et al. 2010; Rucker III and Cash 1992). This 'buffering hypothesis' has been important but requires qualification: Black women are not simply protected from weight-related pressure, and their body image concerns are shaped by intersecting racial, class, and gender dynamics that standard thin-ideal measures do not fully capture (Capodilupo and Kim 2014; Hughes 2020). For Latina women, body aesthetic ideals that historically value a curvy but not fat body exist in tension with the dominant thin ideal, and research finds that acculturation into U.S. culture is associated with increased thin-ideal internalization and disordered eating – suggesting that assimilation itself may introduce the harms the dominant paradigm promotes (Alegría et al. 2007; Cachelin et al. 2000). Asian American women, meanwhile, often face thin-ideal pressures that can be just as, if not more, intense than those experienced by white women, reflecting the extremely slender ideals normative in many East and Southeast Asian cultural contexts (Akoury, Warren, and Culbert 2019; Grabe and Hyde 2006; Tsai, Curbow, and Heinberg 2003).

The broader implication across all racial and ethnic groups is that the meaning and valence of a given body size – and therefore the weight goal it motivates – is not determined by that size alone but by the cultural context in which it is evaluated. The same objective body, classified identically by the BMI, can produce very different goal orientations depending on one's racial and ethnic community and the body norms it has historically valorized or resisted. Understanding the racial and ethnic patterning of weight-goal trajectories is therefore not merely a matter of demographic control but central to the critical project of understanding whose bodies are differentially recruited into a paradigm whose health implications may be harmful.

2.3.3 Body Size

Body size shapes weight-goal formation through two analytically distinct pathways. The first is clinical classification: the assignment of a body to a BMI category carries normative implications for what the body should do about itself, and research consistently finds that receiving an overweight or obese classification significantly increases the probability of reporting weight-loss goals and attempting weight control, net of subjective body assessment (Martin et al. 2018; Serdula et al. 1993). This is the direct pathway from medical classification to goal formation – the clinical encounter as a mechanism of recruitment into the weight-loss imperative. Crucially, this recruitment can itself be harmful: longitudinal evidence shows that receiving an 'obese' label from a health professional predicts subsequent increases in disordered eating, depression, and unhealthy weight control behaviors net of actual weight status

(Hunger and Tomiyama 2018), implicating the act of classification in producing the very pathologies it claims to address.

The second pathway is weight self-image: the individual's own evaluation of where their body falls relative to a culturally specific ideal. This measure diverges from clinical classification in patterned ways that reflect gender and racialized body norms – women, and white women in particular, are more likely to perceive themselves as overweight relative to their BMI classification than men or Black women (Chang and Christakis 2001) – and because it is the subjective appraisal of one's body, not the clinical label, that most directly motivates goal formation, self-image is likely a more proximate influence on the development of long-term weight goals. Importantly, over-perception of overweight status – perceiving one's body as larger than it clinically is – does not produce better health outcomes; it predicts higher rates of dietary restriction, weight cycling, and disordered eating without corresponding reductions in long-term body weight (Neumark-Sztainer et al. 2007; Tomiyama et al. 2013).

2.3.4 Household Context

2.3.4.1 Family and Food Socialization

The household is the first social environment in which children develop their relationship to food, eating, and their bodies – and the character of that relationship shapes weight-goal orientation long before any clinical encounter or cultural exposure to diet culture. Ellyn Satter's Division of Responsibility in Feeding (sDOR) provides the foundational framework: healthy feeding relationships depend on a clear division in which parents determine what food is offered, when, and where, while children retain autonomy over whether and how much to eat (Satter 2007a, 2007b). When parents violate this division – through restriction, pressure, or the instrumentalization of food – children lose access to internal hunger and fullness cues, developing externalized relationships to food that make them more susceptible to diet culture and weight preoccupation in adolescence (Birch and Fisher 1998; Birch, Fisher, and Davison 2003). The degree to which an adolescent has autonomy over their own food choices is therefore not merely a household structural variable but an index of the feeding history that has either supported or undermined the capacity to relate to eating from a position of internal regulation rather than external control.

Shared family meals contribute to this picture through a more contextually nuanced pathway. Research from the Project EAT studies finds that greater family meal frequency is associated with fewer disordered eating behaviors and unhealthy weight control attempts in adolescents – but that these associations are moderated by what happens at those meals (Neumark-Sztainer et al. 2004, 2008). Meals characterized by family weight talk, parental encouragement of dieting, or body-focused criticism produce elevated rates of disordered eating and weight-loss aspiration in adolescents regardless of their frequency (Loth et al. 2015; Neumark-Sztainer et al. 2010). The frequency of shared meals is thus an indicator of the density of household food socialization, but the direction of its effects depends on the weight-related norms and communication styles embedded in that socialization.

2.3.4.2 The Class Structuring of Body Projects

The socioeconomic position of the family of origin structures weight-goal formation through both material and cultural mechanisms. Bourdieu's (1984) analysis of distinction argues that social class shapes the dispositions and bodily orientations through which people inhabit and present themselves – what he terms the *habitus*. Two further Bourdieusian concepts are relevant here. Cultural capital refers to the competencies, knowledge, and dispositions — including the health literacy and familiarity with biomedical frameworks that bear directly on body management — that are unequally distributed across class positions and transmitted within families; social capital refers to the resources and norms a person can access through their social networks (Bourdieu 1986). Applied to body management, this framework suggests that the sustained weight-management orientation characteristic of weight-loss and maintenance trajectories is a class-specific body project, one that requires the cultural capital to receive and interpret health information, the temporal resources to devote sustained attention to body management, and the social capital of peer networks in which such management is valued and modeled (Wills et al. 2011). Empirically, more educated and more affluent women are more likely to report dieting attempts despite having lower mean body weights than less advantaged women (Molarius et al. 2000; Wardle, Waller, and Jarvis 2002). Parental education matters additionally through the health literacy through which medical weight-management prescriptions are received and transmitted to children (Pampel et al. 2010) – though this transmission can shade into the weight-focused household communication shown to elevate disordered eating risk in adolescents (Neumark-Sztainer et al. 2010). The relationship between socioeconomic origins and weight-goal trajectories is therefore not simply positive or negative, but reflects the way class-based health cultural capital is produced in households – sometimes generating health-promoting aspirations, sometimes generating bodily preoccupations that orient individuals towards certain weight goals with potentially lasting negative health consequences.

2.3.5 Conditions for Weight-Goal Formation

2.3.5.1 Neighborhood Social Environment

Neighborhoods shape weight-goal formation through two related mechanisms. The first is material and stress-based: concentrated neighborhood disadvantage is associated with chronic physiological stress through cortisol-mediated pathways that promote weight gain and compromise the cognitive and emotional resources available for sustained goal-orientation (Evans and Kim 2010; Tomiyama 2019). Highly disadvantaged neighborhoods also offer fewer material resources for enacting weight-management goals – fewer recreational facilities, more constrained food environments, greater demands on time and attention that crowd out the self-monitoring weight management requires (Black and Macinko 2008; Diez Roux and Mair 2010). The second mechanism operates through perceived safety: living in a neighborhood experienced as unsafe is associated with elevated chronic stress and reduced outdoor physical activity, which can contribute to a narrowed temporal horizon that makes future-oriented goal orientation less practically reasonable (Clennin et al. 2019; Elliott 2000; Stafford et al. 2005).

2.3.5.2 Neighborhood Physical Environment

The built environment – its physical infrastructure, street design, land use, and physical activity resources – is well established as a predictor of physical activity behaviors and weight outcomes (Gordon-Larsen et al. 2006; Mobley et al. 2006; Sallis et al. 2016). This dissertation introduces a complementary mechanism operating at the level of goal formation rather than behavioral enactment: people form goals in implicit relation to an assessment of what is achievable in their environment, and the walkability, resource availability, land use, and climate of the neighborhood they inhabit shape the practical imaginability of weight-management aspiration. A person who lives in a car-dependent, resource-poor environment with a climate that limits outdoor activity faces a different feasibility landscape for pursuing exercise-based weight management than someone in a dense, walkable neighborhood with abundant recreational infrastructure – and this difference may shape the goals they form as much as the behaviors they engage in. Street connectivity (Frank, Andresen, and Schmid 2004), land use diversity and development intensity (Hartig et al. 2014), the availability of physical activity resources, and regional climate characteristics (Tucker and Gilliland 2007) all condition the opportunity structure through which weight management becomes a practically reasonable or unreasonable aspiration. Importantly, this opportunity structure is itself unequally distributed: the built environments most conducive to active living are disproportionately located in more affluent communities, meaning that the built environment partially mediates the socioeconomic patterning of weight-goal orientation documented above.

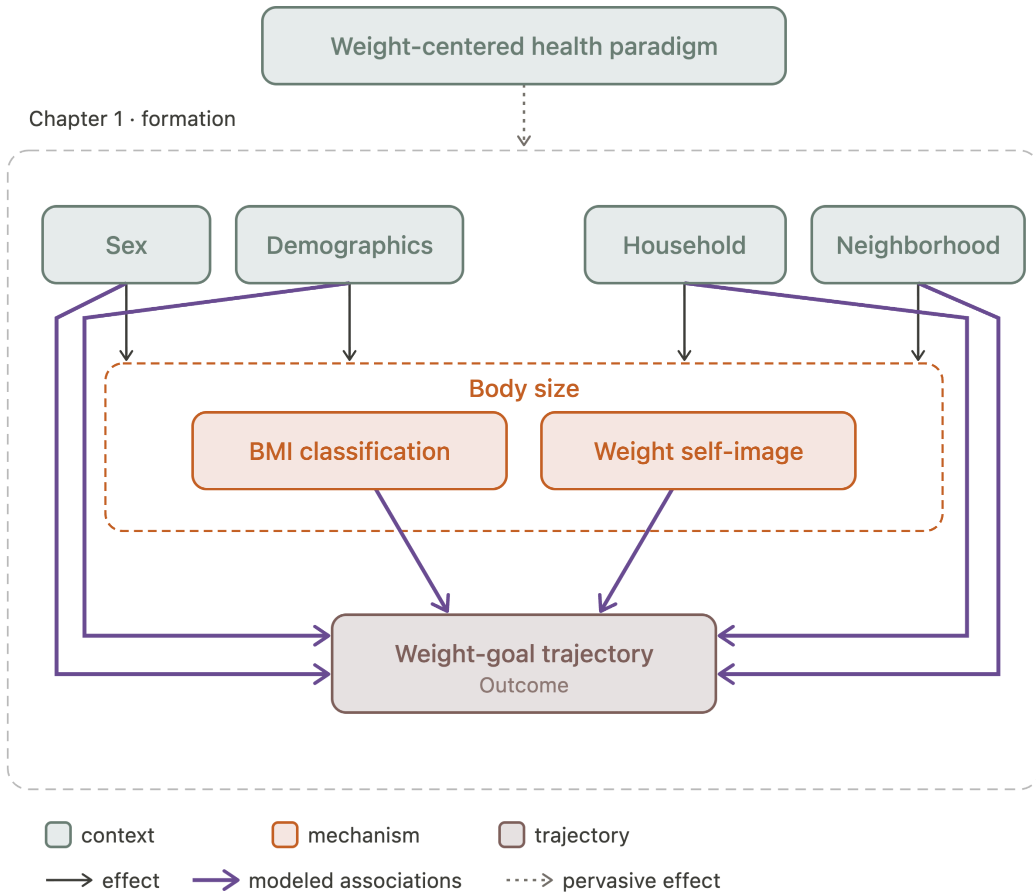
2.3.6 General Health Behaviors

Both average levels of sleep and physical activity are measures often associated with body-size outcomes and body-related self-appraisal in ways that could confound estimated structural effects if left uncontrolled: individuals who meet physical activity guidelines tend to have different relationships to their bodies independent of their social position (Barry et al. 2014), and inadequate sleep is associated with weight gain and heightened attention to body weight through well-documented physiological pathways (Knutson 2012; Taheri et al. 2004). As such, these variables are not predictors of primary interest, but serve as controls of the structural variable domains that are this study's main focus.

2.4 A Conceptual Model of Weight-Goal Formation

Figure 2.1 summarizes the conceptual model developed across this section. Weight-goal trajectory membership appears there as an outcome of social position and context — sex, demographics, household, and neighborhood. Clinically classified body size (BMI category) and subjectively experienced size (weight self-image) enter not as endpoints but as the proximate mechanisms translating that context into a weight goal. The model thus renders graphically the dissertation's claim that classified and perceived size motivate the pursuit of weight change rather than originate the harm, and it previews the modeling

Figure 2.1: Weight-goal formation



strategy that follows: each contextual domain is entered in sequence, with the two body-size mechanisms isolated in their own steps.

2.5 Data

Data for this study comes from the The National Longitudinal Study of Adolescent Health (Add Health), an ongoing and nationally representative school-based survey of adolescents in grades 7-12 during the 1994-5 academic year. Respondents were drawn from a stratified random sample of U.S. High Schools (80) and their feeder middle schools (52) and ~90,000 students completed a 45-minute questionnaire in school. A subsample of 20,745 of these students were selected for participation in an in-home interview (Wave I), as was a parent or guardian (Parent). Respondents who were not seniors in high school at Wave I were followed up for a second interview in 1996 (Wave II[8]) resulting in a sample of 14,738 students. Wave III[9] was administered in 2001-2002 and the 15,197 respondents who participated were primarily drawn from the pool of participants in Wave I.

Add Health is one of the most comprehensive datasets available for studying the causes of health-related behaviors and outcomes across the lifecourse while also taking into account the social environments in which individuals are embedded. Additionally, the Obesity and Neighborhood Health (ONE) database, which includes data about the natural and built environments of Add Health respondents' residential neighborhoods in Wave I, allows for the role(s) of the physical environment to be accounted for as well.

This study utilizes data from Waves I, II, and III, including the Parent interview at Wave I. Individuals with missing data on covariates and those who reported being pregnant or severely disabled[10] in Wave I were excluded from this analysis. This resulted in a final analytic sample of 16,421 total respondents.

Cases were excluded through listwise deletion. The leftmost column of Table 2.1 reports, for each variable, the number of otherwise-eligible respondents missing that measure, and the 2,505 excluded cases were not lost evenly across them. The composite social origins score accounts for the largest share of missingness by a wide margin (1,269 cases), followed by BMI classification (368), parental high-school

[8]Wave II selection also retained 12th-graders who were part of the genetic study of siblings and twins and excluded an oversample of physically disabled adolescents. Additionally, a small number of adolescents were interviewed who had not participated in Wave I.

[9]Wave III required participants to be 18 years of age or older.

[10]Severe disability was coded based on a set of several questions about physical/functional limitations asked in Wave I. See Section 6.4 for more details on this variable.

completion (351), the proportion of dinners shared with a parent (320), food-choice autonomy (301), and the climate and land-cover components (247 each). Most remaining measures are missing for only a handful of respondents — including the demographic items, weight self-image (36), and the weight-goal outcome itself (9). Because missingness clusters in the household socioeconomic and neighborhood measures, the excluded cases differ from the analytic sample in theoretically patterned ways: as Table 2.1 details, they are on average more socioeconomically disadvantaged, more racially diverse, and less likely to have a parent who completed high school. This non-random pattern is additional motivation for the sensitivity analysis described below, which re-estimates the models on a differently constituted sample and so serves in part as a check on the consequences of listwise deletion.

2.5.1 Measures

Summary statistics for all measures used in this analysis are presented in Table 2.1, reported separately for the main analytic sample, the cases excluded through listwise deletion, and the Wave I–III sensitivity panel. The weight-goal trajectory outcome draws on data from Waves I, II, and III; all remaining measures serve as baseline predictors or controls and are drawn from Wave I.

2.5.1.1 Outcome

Respondents were asked a set of body-weight and behavior-related questions in Waves I - III including a direct question about their weight-related goals: "Are you trying to lose weight, gain weight, or stay the same weight?" The available responses to this question were *lose weight*, *gain weight*, *stay the same weight*, and *not trying to do anything about weight*.

To retain as many observations as possible, as well as distinguish more persistent engagement with a particular weight goal, all available waves of data for each respondent were utilized to create a **weight**

goals trajectory measure. Categories for this measure include Consistent Lose, Consistent Gain, Consistent Maintain, and Consistent Nothing for respondents who consistently reported the same weight goal. Two additional categories include Changing Lose/Maintain[11] for those respondents who only ever reported *lose weight* and *maintain weight* and Changing Goals for the remainder of respondents whose trajectories were inconsistent across waves.

About 9% of the analytic sample consists of respondents who only participated in Wave I and therefore, by definition, were categorized in one of the 'Consistent' trajectories. To preserve these cases a categorical variable (**valid waves**) was included in all models indicating how many non-missing waves of data a respondent had for this variable.

2.5.1.2 Demographics

Individual-level demographic indicators available in Wave I included age, sex, race, Latino/a ethnicity, and whether or not the respondent was born in the United States.

Due to inconsistencies in self-reports and/or missingness, **age** was calculated using the most consistently reported birth year and birth month and calculating the difference in years between interview date and birth date[12].

Sex is a binary measure of biological sex reported by respondents. The final analytic sample for the main analysis included 8,224 females and 8,197 males.

Race was constructed using self-reported racial identity across all waves of data available for each respondent (see Section 6.1 for a more detailed description). The final categorization of this measure

[11]This subgroup of the Changing Goals trajectory was operationalized as a separate trajectory given its theoretical similarity to both the Consistent Lose and Consistent Maintain trajectories.

[12]Birth and interview days were not available and were both assigned 15 to carry out this calculation.

included five racial classifications: White, Black, Asian/Pacific Islander (API), Native American, and Multiracial/Other Race.

A binary indicator for **Latino/a ethnicity** was created based on a set[13] of questions related to the respondent's Hispanic or Spanish/Latino origin.

An additional binary variable representing whether or not a respondent was **born in the United States** was created from several questions about residential history. "How old were you when you moved here to your current residence?" was asked of all survey participants and those who answered *lived here since birth* were coded as U.S. born. Any other response to that question included the follow-up, "Were you born in the United States?", coded as U.S. born for affirmative responses and not U.S. born for negative ones. Any remaining missingness on this indicator was derived from the Parent survey question "Was [respondent's name] born in the United States?"

2.5.1.3 Body-Size

Two measures related to body size were included to more fully understand their role in weight goal formation. In concert with the question used to derive the outcome of weight goals trajectories, respondents were also asked "How do you think of yourself in terms of weight?" Response categories for this **weight self-image (WSI)** variable included: *Very Underweight*, *Slightly Underweight*, *About the Right Weight*, *Slightly Overweight*, and *Very Overweight*.

Additionally, **BMI classification** is included to capture respondents' position within a socially consequential weight categorization system, recognizing that these categories structure medical encounters, peer dynamics, and self-appraisal in ways likely to shape weight-related goals and behaviors — irrespective

[13] See Section 6.1 for more information.

of their contested validity as health indicators. Wave I included self-reported weight and height measures (see Section 6.2 for a detailed discussion on the data cleaning methods employed for these variables) which were converted to their corresponding BMI classifications depending upon the age of the respondent. For those aged 19 and older in Wave I[14], the adult BMI classifications were used, with a BMI less than 18.5 classified as 'Underweight,' 18.5 - 24.9 as 'Healthy Weight,' 25 - 29.9 as 'Overweight,' and 30 or above as 'Obese'. For participants younger than 19 years of age, the same classification categories are applied based on the CDC's sex- and age-specific-BMI percentiles derived from data on children in the U.S. during 1963-1980 (Kuczmarski 2000). The corresponding BMI thresholds for adolescents are: less than the 5th percentile for 'Underweight,' the 5th to less than 85th percentile for 'Healthy Weight,' 85th to less than 95th percentile for 'Overweight,' and 95th percentile or greater for 'Obese'.

2.5.1.4 Behaviors

Physical activity was created as a binary measure of engagement in the recommended amount of moderate-to-vigorous physical activity (MVPA) in the week prior, similar to prior studies (Ezzatvar et al. 2025; Gordon-Larsen, Nelson, and Popkin 2004). Respondents were asked a series of questions about the frequency with which they engaged in specific physical activities during the past week including: "... how many times did you go roller-blading, roller-skating, skate-boarding, or bicycling?"; "...how many times did you play an active sport, such as baseball, softball, basketball, soccer, swimming, or football?"; "...how many times did you do exercise, such as jogging, walking, karate, jumping rope, gymnastics or dancing?" The counts of each respondents' answers to these three questions were summed and values of greater than, or equal to, 5 were categorized as **Met MVPA Guidelines** while those with 4 or less, Did

[14] Only 398 respondents were categorized using adult BMI cutoffs.

Not Meet MVPA Guidelines. Physical activity here captures participation in a health behavior that is culturally and clinically coded as weight-relevant — meaning individuals who do or do not meet MVPA guidelines may be differently exposed to institutional messaging, self-monitoring practices, and social reinforcement around weight goals. Crucially, meeting physical activity guidelines is also an independent marker of health behavior engagement that may reflect broader orientations toward the body — whether instrumental (i.e. the body as a project to be managed) or otherwise.

Average hours of sleep was included as a continuous measure based on responses to the question, "How many hours of sleep do you usually get?" Sleep is included here as a control measure, capturing physiological resource availability and daily life constraint.

2.5.1.5 Household

Household-level variables include food choice autonomy, the frequency with which respondent's ate dinner with their parent(s), an Add Health-constructed measure of socioeconomic status, and a binary indicator for whether a respondents' parent has graduated from high school.

Food choice autonomy is included as a binary indicator constructed based on the response to the question, "Do your parents let you make your own decisions about what you eat?". This measure captures the degree to which an adolescent has agency over their own dietary behavior — a prerequisite for meaningful engagement with weight-related goals in the first place. A respondent who does not control what they eat occupies a fundamentally different structural position relative to weight goals than one who does. Given that health behaviors are not simply chosen but are embedded in household power structures, economic conditions, and family dynamics, this is an important dimension of the relationship between individuals' sense of control as well as their ability to enact behaviors related to their desired weight goals.

Based on the question, "On how many of the past 7 days was at least one of your parents in the room with you while you ate your evening meal?" a **proportion of meals shared with at least one parent** was constructed. Frequency of shared meals is intended to capture a dimension of household cohesion that may independently structure adolescents' self-regulatory orientations toward their bodies.

Socioeconomic position is among the most robust predictors of health behavior across the life course, but its specific relationship to weight goals is theoretically complex and under-examined. The composite **social origins score**, constructed as a supplement to the Add Health In-Home Interview data (Belsky, Domingue, and Mullan Harris 2020), represents the first component[15] from a principal component analysis of parental education, parental occupation, household income, and household receipt of public assistance[16]. This measure captures each respondents' household's relative position within the broader stratification system. Higher socioeconomic status confer differential access to health information, exposure to middle-class health norms that emphasize body management and preventive self-care, and material resources that may make the pursuit of weight-related goals feasible. They also confer differential exposure to medicalized body ideals through more frequent and substantive healthcare engagement. Critically, the relationship between socioeconomic origins and weight goals is not straightforward — higher-SES environments may intensify certain forms of weight consciousness, particularly weight loss pursuit among those already at higher weights, while simultaneously normalizing body management as a

[15] According to the documentation, these four measures were correlated at $r > 0.19$ and the first component explained 53% of the variance.

[16] This measure was subsequently standardized for analysis to have a mean of 0 and standard deviation of 1.

feature of responsible self-care. Including a measure of socioeconomic position during adolescence helps ensure that associations between weight goals and other variables are not simply artifacts of class position.

Additionally, a binary indicator representing whether either **parent had graduated from high school** was created based on questions asked during the Parent interview: "How far did you go in school?" and "How far did your current (spouse/ partner) go in school?" Including this binary indicator alongside the continuous social origins score allows for a separate identification of the effects of educational attainment — and its associated cultural and informational resources — from the broader socioeconomic composite, which is weighted more heavily toward economic dimensions of class position. While parental education is partially captured in the social origins score, a binary indicator for whether either parent graduated high school carries distinct theoretical significance related to health literacy, familiarity with biomedical frameworks for understanding the body, and patterns of healthcare engagement - all of which shape how weight and health are understood and discussed within the household. Households where neither parent graduated high school may be differentially positioned relative to medicalized weight norms: less exposed to clinical weight management discourse, though not necessarily less weight-conscious, given the pervasive cultural saturation of thinness ideals across class contexts.

2.5.1.6 Neighborhood (Social Environment)

Neighborhood socioeconomic disadvantage captures the concentrated social and economic conditions of the residential environment in a way that individual- or household-level measures cannot. The composite index used here — drawing on tract-level proportions of female-headed households, poverty, public assistance receipt, low educational attainment, and unemployment — reflects a clustering of structural conditions that together constitute the social fabric of the neighborhood environment.

This measure was constructed (along with the social origins score) as a supplement to the Add Health In-Home Interview data by assigning decile scores to each tract-level proportion for each respondent, summing, and standardizing them for a continuous measure of (relative) neighborhood socioeconomic disadvantage among Add Health participants (Belsky et al. 2020).

Neighborhood violent crime, as measured by number of violent crimes per 100,000, is included as a structural indicator of the safety conditions of the residential environment, with particular relevance for the physical activity and outdoor mobility dimensions of weight goal pursuit. Including violent crime as a continuous measure distinct from the broader neighborhood socioeconomic disadvantage index is important because crime and disadvantage, while correlated, are not interchangeable. High-crime environments impose specific constraints on embodied behavior and outdoor mobility that aggregate disadvantage measures do not fully capture, and isolating this effect helps clarify the mechanisms through which neighborhood conditions shape weight goal formation and persistence.

While the violent crime rate captures an objective structural feature of the neighborhood environment, perceived safety captures the subjective experience of that environment — and it is subjective perception, not objective conditions alone, that most directly shapes behavioral decisions. **Perceived neighborhood safety** is included here as a mediating construct that links structural neighborhood conditions to individual behavior: residents of objectively high-crime neighborhoods do not uniformly perceive those neighborhoods as unsafe, and perceived safety independently predicts outdoor physical activity, active commuting, and use of public spaces regardless of actual crime rates. Perceived safety is theoretically important because weight goal pursuit — particularly goals involving physical activity as a behavioral strategy — is constrained not only by objective environmental conditions but by whether individuals feel they can safely engage with their neighborhood environment at all. Including both the objective crime rate and the subjective safety indicator allows for an examination of whether the effects of neighborhood safety on weight goals operate through material constraint, psychological experience, or both — a distinction with meaningful implications for how neighborhood context shapes health behavior. The measure used in this analysis was constructed as a binary indicator based on responses to the question, “Do you usually feel safe in your neighborhood?”

Metropolitan residence is a fundamental contextual variable that structures virtually every other dimension of the built and social environment. Urban and rural environments differ systematically in the density and diversity of food retail, the availability of recreational infrastructure, the walkability of street networks, access to public transportation, cultural norms around physical activity, and exposure to health-related commercial and institutional messaging. For weight goal trajectories, metropolitan residence captures a broad ecological context within which more specific environmental exposures are embedded. It also carries theoretical significance for the cultural dimensions of weight consciousness: metropolitan environments, with their greater density of media, commercial, and peer influences, may intensify certain forms of body surveillance and weight-related goal formation. Including metropolitan residence as a binary control ensures that the more fine-grained environmental measures in the model — walkability, land use, physical activity resources — are not confounded by the fundamental urban-rural distinction that structures their distribution. This measure was drawn from the ONE Rural-Urban Commuting Area (RUCA) data with a measure for the 1990 RUCA Metropolitan status code (Non-metropolitan or Metropolitan) for the respondent’s residential neighborhood.

2.5.1.7 Neighborhood (Physical Environment)

Climate is an under-appreciated structural determinant of physical activity behavior, with direct implications for the feasibility of outdoor activity and, by extension, the behavioral strategies available to individuals pursuing weight-related goals. The first two principal components derived from the ONE Climate dataset capture meaningful dimensions of the climate environment — including temperature, precipitation, and sunshine patterns — that shape whether and how residents can engage with their outdoor environment across seasons. For adolescents, climate conditions structure after-school physical activity, active transportation, and recreational outdoor behavior in ways that interact with other environmental features like street connectivity and access to physical activity resources. Including climate components ensures that observed associations between the physical environment and weight goal trajectories are not artifacts of geographic climate variation, and allows for the possibility that climate moderates the behavioral consequences of particular weight goals — a weight loss goal pursued in a consistently temperate environment may produce different behavioral patterns than the same goal pursued in a climate hostile to outdoor activity for significant portions of the year.

The availability, density, and type of **physical activity infrastructure in the residential environment** directly shapes the feasibility of activity-based weight goal strategies. The two principal components derived from the ONE Physical Activity Resources dataset (using a 3km radius from respondents' place of residence) capture meaningful dimensions of the local recreational environment — distinguishing variability between, for example, formal facility-based resources (gyms, recreation centers, sports fields) and informal or natural activity spaces (parks, trails). This distinction matters theoretically because different types of physical activity resources are differentially accessible across socioeconomic groups, and because they support different kinds of physical activity with different social meanings and behavioral profiles. Physical activity resources are relevant not only as environmental supports for health behavior, but as indicators of the degree to which a respondent's immediate environment materially enables the kinds of behavioral strategies typically associated with weight loss, maintenance, or gain goals. Environments rich in physical activity infrastructure may both facilitate goal-consistent behavior and reinforce weight management as a local norm through the visible presence of exercise-oriented amenities.

Street connectivity and cul-de-sac density are complementary measures of the navigability and walkability of the street network, capturing the degree to which the built environment supports or impedes pedestrian movement and active transportation. The **beta index** — measuring the ratio of street edges to nodes — provides a continuous indicator of network connectivity, while **cul-de-sac density** captures the prevalence of dead-end street configurations that reduce through-movement and walkability. Both measures were derived from the ONE Street Connectivity dataset, again using a 3km radius to capture the more proximal surroundings of respondents' neighborhoods. Together, these measures characterize the degree to which the neighborhood's physical infrastructure affords incidental physical activity through everyday movement, independent of intentional exercise. For adolescents, highly connected street networks support walking and cycling for transportation, social activity, and recreation in ways that low-connectivity, cul-de-sac-dominated environments do not. Their inclusion reflects a recognition that the behavioral dimensions of weight goal pursuit are not simply a function of individual motivation, but are enabled or constrained by the physical architecture of the neighborhood — and that this architecture is itself socially distributed, with implications for understanding group-level variation in weight goal trajectories.

The **proportion of roads classified as 'Local, Neighborhood, and Rural Road' (CFCC A40-A48)** within the 3km radius of respondents' residence, from the ONE Road Type Length Dataset, was included to captures a dimension of street character that shapes pedestrian comfort, safety, and the practical viability of walking as a mode of transit and recreation. Highly walkable road classifications typically indicate lower vehicle speeds, better pedestrian infrastructure, and more human-scale street environments. This measure complements the structural connectivity indicators by capturing the experiential quality of the street environment: a well-connected network of high-speed arterials may score well on connectivity while remaining functionally hostile to pedestrian activity.

Lastly, several measures from the ONE Land Cover database were included to capture the physical and ecological texture of the neighborhood environment. **Landscape patch density** captures the degree to which land use is fragmented or uniform: high patch density indicates a more heterogeneous, disaggregated landscape, while lower density indicates more homogeneous land use patterns. **Developed, recreational land area (Class 4)** and **undeveloped/natural area (Class 5)** capture the balance between built and natural environments in the residential context. Together, these measures are theoretically relevant for several reasons. Natural environments are associated with restorative psychological effects, greater outdoor physical activity, and reduced stress — all of which may shape both the formation of health-related goals and the psychological resources available to sustain them (Hartig et al. 2014). Developed land use density, by contrast, may capture neighborhood commercial and institutional density with implications for food environment, physical activity infrastructure, and exposure to health-related norms and messaging. Including these land use variables alongside the more conventional walkability and connectivity measures ensures that the model captures the ecological character of the neighborhood — not just its infrastructure — as a contextual determinant of weight goal trajectories.

2.6 Analytic Strategy

To examine the demographic, body-size, behavioral, household-level, and neighborhood-level predictors of weight-goal trajectory membership, a series of seven survey-weighted multinomial logistic regression models were estimated using the `vglm()` function from the `VGAM` package in `R` (Yee 2010), which accommodates the complex sampling design and probability weights of Add Health to produce population-representative estimates. The Consistent Nothing trajectory serves as the reference outcome in all models, such that coefficients for each of the five remaining trajectories reflect the odds-ratios[17] of membership in that trajectory relative to consistent absence from weight-goal orientation. Predictors are entered in seven sequential blocks: demographics, BMI classification, weight self-image, general health behaviors, household context, neighborhood social environment, and neighborhood physical environment. The two body-size measures were intentionally entered in separate steps so that the distinct contributions of clinically assigned and subjectively experienced body size can be read directly from the coefficient structure. This allows for assessment of each domain's independent contribution and of the degree to which earlier-block estimates are impacted by the addition of subsequent contextual variables. Following Freese and Johfre (2022), binary contrast odds ratios are reported for race, which compares each race category to all other categories combined, rather than to a single reference group. This approach avoids the interpretive dependence associated with conventional reference-category coding in

[17] Log-odds were exponentiated to produce more interpretable odds-ratios.

variables with multiple categories, and produces coefficients that reflect the relative distinctiveness of each category[18] rather than contrasts that are artifacts of which reference category was arbitrarily chosen[19].

2.7 Results

2.7.1 Sample Characteristics

The analytic sample comprises 16,421 respondents drawn from the first three waves of Add Health; weighted descriptive statistics for the main and sensitivity samples, alongside the excluded cases, are presented in Table 2.1. The distribution of weight-goal trajectories is dominated by a single heterogeneous category: Changing Goals — respondents whose stated goal shifts across waves — accounts for 48% of the sample. Among the directionally stable trajectories, Consistent Lose is the most common (18%), followed by Changing Lose/Maintain (12%), Consistent Maintain (10%), and Consistent Gain (8.1%). Consistent Nothing, the referent category in all models, is by far the rarest at 3.8% — a figure worth noting at the outset, since the near-absence of respondents who report no weight goal across the observation window is itself among the chapter's central findings. The sample is evenly divided by sex (52% male, 48% female) and majority white (73%), with Black (13%), Native American (5.7%), Multiracial/Other (4.4%), and Asian/Pacific Islander (3.4%) respondents making up the remainder; 12% identify as Latino/a and 95% are U.S.-born. The pronounced differences in trajectory membership between men and women — the

[18] For example, the odds-ratio of Black respondents being in a given trajectory compared to non-Black respondents.

[19] Reference categories can sometimes aid in interpretation if they are meaningful to the analysis, such as Consistent Nothing as the reference outcome in this study and the body size categories of 'Healthy Weight' for BMI classification and *About the Right Weight* for weight self-image. However, oftentimes they are at best arbitrary, and at worst they can contribute to a reification of existing power dynamics by situating dominant groups as the "normative" baseline against which comparisons should be made and understood (Johfre and Freese 2021). Calculating binary contrasts allows for each category to be meaningfully compared to all others in order to facilitate interpretation of each group independently.

descriptive signature of the gendered body ideals discussed above — emerge most clearly in the models and are taken up in Section 2.7.3. With respect to body size, the table reveals an aggregate discordance between clinical classification and self-perception that motivates much of the analysis to follow: 26% of respondents are classified as overweight or obese by BMI, while 31% perceive themselves as slightly or very overweight — more respondents experience their bodies as too large than the clinical thresholds would designate. Finally, the excluded cases (N = 2,505) differ systematically from the analytic sample, as noted in Section 2.5: they are, on average, more socioeconomically disadvantaged and more racially diverse, a pattern that informs the interpretation of the race and class findings and motivates the sensitivity analysis reported in Section 2.8.

2.7.2 Progressive Models

Table 2.2 through Table 2.8 present seven sequential multinomial logistic regression models, each adding a new domain of predictors to the specification while retaining all prior variables. Because single-wave respondents are by construction assigned to one of the Consistent trajectories, the valid-waves indicator returns degenerate odds (OR ≈ 0.00) for the Changing categories at one valid wave; this is a structural feature of the trajectory measure rather than a substantive estimate.

Model M0 (Table 2.2) establishes that demographic characteristics alone produce strong and pervasive differentiation across trajectories. Female sex is by far the dominant demographic predictor: relative to males, females have 3.95 times higher odds of Consistent Lose (95% CI: 3.14-4.97) and 2.78 times higher odds of Changing Lose/Maintain (2.13-3.64), but only 0.21 times the odds of Consistent Gain (0.16-0.30) — a mirror-image pattern consistent with the gendered dimorphism of body ideals described above. Black respondents have elevated odds of Consistent Lose (1.71), Consistent Gain (3.78), and

Changing Goals (1.78) relative to all other groups combined, most dramatically for Consistent Gain. White respondents have lower odds of Consistent Gain (0.39), Changing Goals (0.66) and Consistent Lose (0.70). Asian/Pacific Islander point estimates are elevated for both Consistent Lose (1.49) and Consistent Gain (1.58), consistent with body-ideal pressures operating in multiple directions, though neither reaches significance at this stage. U.S.-born respondents have significantly lower odds of Changing Lose/Maintain (0.52) and Consistent Maintain (0.56), a finding that, consistent with the acculturation literature, suggests immigrant status may be associated with reduced initial exposure to the dominant weight-loss imperative.

Model M1 (Table 2.3) adds BMI classification, and the clinical label is a powerful predictor in its own right: relative to 'healthy-weight' respondents, those classified as 'overweight' have 7.13 times higher odds of Consistent Lose (4.76-10.7) and those classified as 'obese' 10.91 times higher odds (6.46-18.4), while 'underweight' classification sharply reduces loss odds (0.09) and elevates Consistent Gain (2.00). The most theoretically telling result, however, is what BMI does to the female effect. Introducing BMI increases the female–Consistent Lose odds ratio from 3.95 to 6.58 (4.98-8.69). Because women in this cohort are, on average, classified into lower BMI categories than men, holding BMI constant removes a suppressing influence and reveals that women's excess loss-orientation is not a function of carrying more clinically defined weight — if anything, it is larger once body size is accounted for.

Model M2 (Table 2.4) adds weight self-image, and its entry reorganizes the body-size structure decisively. The large BMI effects from M1 contract sharply once self-image is in the model — 'overweight'–Consistent Lose falls from 7.13 to 2.69 and 'obese'–Consistent Lose from 10.91 to 2.64 — indicating that much of what the clinical label appeared to predict in fact operates through how respondents perceive their bodies. Weight self-image, by contrast, produces the largest effects anywhere in the analysis. Perceiving oneself as slightly overweight is associated with 10.21 times higher odds of Consistent Lose (6.73-15.5) and as very overweight with 7.63 (3.72-15.6); perceiving oneself as very underweight is associated with 15.66 times higher odds of Consistent Gain (5.57-44.0), with slightly underweight also large (6.56). The female–Consistent Lose effect, having spiked to 6.58 in M1, settles back to 4.69 (3.56-6.16) once self-image is accounted for — confirming that part, but by no means all, of women's loss-orientation runs through their elevated likelihood of perceiving themselves as overweight. A substantial, independent female effect remains. Taken together, models M1 and M2 provide the clearest single piece of evidence for this paper's central claim: that subjective body appraisal, not the clinical category, is the more proximate and more powerful engine of weight-goal formation.

Model M3 (Table 2.5) adds physical activity and sleep. Meeting MVPA guidelines is positively associated with Consistent Lose (1.35) and Consistent Gain (1.49) — the latter consistent with the expectation that gain-motivated respondents, particularly boys pursuing muscularity, are already physically active — and average sleep hours shows a small positive association with Changing Lose/Maintain (1.10). Neither variable materially alters the body-size or demographic estimates, confirming their role as contextual covariates rather than confounders of the structural effects of primary interest.

Model M4 (Table 2.6) produces two notable results. First, the proportion of dinners shared with a parent is negatively and significantly associated with all five non-referent trajectories (ORs from 0.46 to 0.56), consistent with the Project EAT literature linking the density of family food socialization to lower weight-focused behavioral engagement. However, as noted earlier, this measure cannot capture the content of those meals. Second, having a parent who graduated high school is negatively associated with Consistent Maintain (0.50). Food-choice autonomy and the social-origins score are not significant in any trajectory, suggesting that household socioeconomic position operates primarily through parental education rather than the income and occupational components captured in the composite score.

Model M5 (Table 2.7) adds concentrated disadvantage, violent crime, perceived safety, and metropolitan status, and the most consequential effect is on the race estimates. The Black–Consistent Gain odds ratio falls from 4.33 in M3 to 3.10 once neighborhood social context is included, and the White–Consistent Gain effect strengthens slightly to 0.46 — suggesting that a portion of the race–trajectory associations reflects the differential placement of racial and ethnic groups across disadvantaged neighborhoods rather than individual-level cultural identity alone. The neighborhood social variables themselves are non-significant at conventional thresholds.

Model M6 (Table 2.8), the fully specified model, adds climate, physical-activity resources, street connectivity, road type, and land use. These variables add little explanatory power: the built-environment predictors are mostly non-significant, the exceptions being landscape patch density (significant across all five trajectories, though its per-unit effect is marginal at 1.02) and undeveloped/natural land area, positively associated with Consistent Gain (1.35). The female effect on Consistent Lose (5.04) and the body-size structure are stable across M5 and M6, reinforcing that sex and self-image remain the dominant predictors of weight-loss aspiration once the full contextual apparatus is in place.

2.7.3 An Asymmetric Structure of Recruitment

The fully adjusted model resolves into a structure of weight-goal recruitment that is, above all, asymmetric — and the asymmetry is clearest when the sex effect is read across the full set of trajectories. Figure 2.2 plots the M6 odds of each trajectory for women relative to men. The pattern is a near-mirror image: women are far more likely than men to occupy the loss-oriented trajectories — Consistent Lose (5.04; CI: 3.84-6.60) and Changing Lose/Maintain (3.17; CI: 2.37-4.25) — and more likely to occupy Consistent Maintain (1.66; CI: 1.26-2.18), while being markedly less likely to occupy Consistent Gain (0.23; CI: 0.17-0.32). Only Changing Goals, the heterogeneous instability category, shows no sex difference (1.06; n.s.). The weight-goal landscape, in other words, does not press uniformly on all bodies; it sorts them by sex into opposing orientations, channeling women toward reduction and men toward gain.

Within that gendered structure, the relative weight of clinical classification and subjective self-image is the second defining feature. The weight-centered paradigm's primary instrument — the BMI label — does predict loss aspiration, but its effect is dwarfed by self-image at every corresponding level. In the fully adjusted model, an 'overweight' BMI classification raises the odds of Consistent Lose 2.67-fold (1.80-3.94), whereas merely perceiving oneself as slightly overweight raises them 10.54-fold (7.03-15.8). The same ordering holds at the underweight end, where perceiving oneself as very underweight is the single strongest predictor in the entire analysis — 14.89 times higher odds of Consistent Gain (5.06-43.8) — against a clinical 'underweight' classification that, net of self-image, no longer predicts gain at all (0.95, n.s.). Clinical classification thus functions less as a direct determinant of goal formation than as one pathway through which the broader cultural machinery of the thin and muscular ideals recruits individuals — a pathway largely absorbed, and amplified, by the internalization of appearance norms that self-image captures.

Figure 2.2: Sex asymmetry

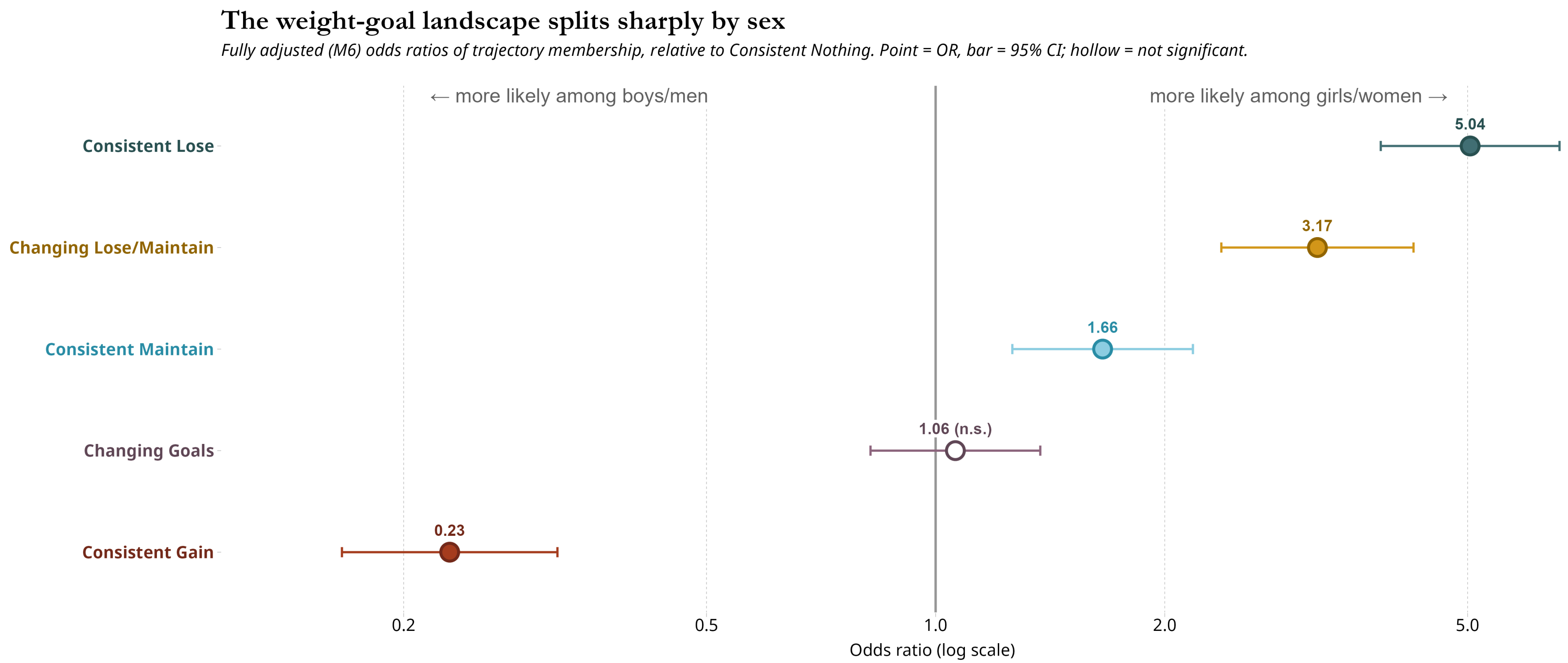


Figure 2.3: Predicted probabilities by body size and sex

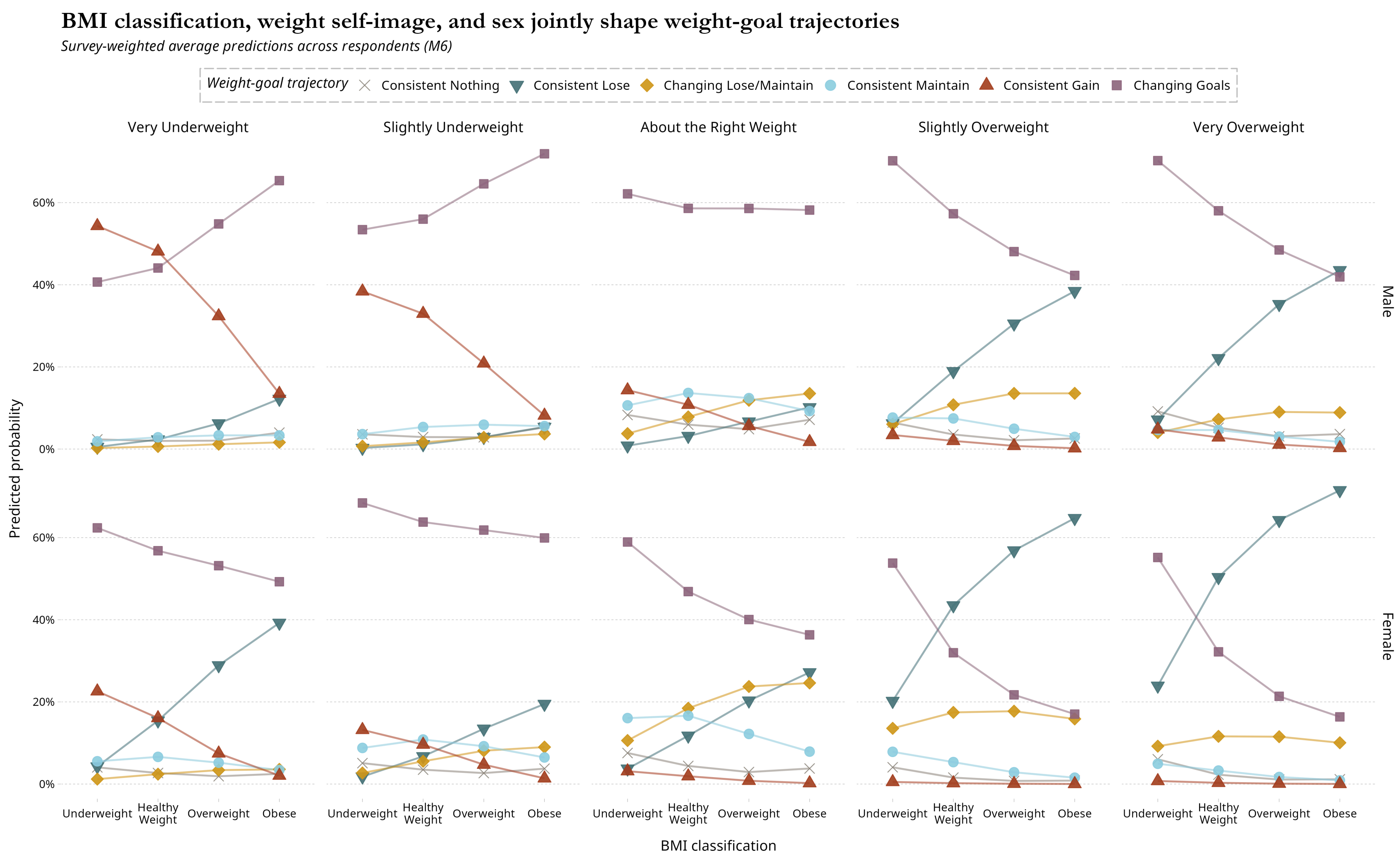


Figure 2.3 makes visible how sex, self-image, and clinical classification combine to produce these trajectories, plotting survey-weighted average predicted probabilities (y-axis) across the joint distribution of BMI classification (x-axis), weight self-image (columns), and sex (rows). Because the predictions are averaged over the observed covariate distribution rather than evaluated at fixed means, they describe how trajectory probabilities actually shift across the population as these three dimensions vary, not the profile of a hypothetical average respondent. Read this way, the figure exposes the asymmetry directly. For men, the Consistent Lose trajectory becomes modal only where high self-perceived weight and high clinical BMI coincide — among men who feel overweight, loss aspiration climbs steadily with BMI but competes with Changing Goals across most of the range, and where self-image is at or below "about the right weight," Consistent Gain and Changing Goals dominate. For women, perceiving oneself as even slightly overweight is sufficient on its own to make Consistent Lose the dominant trajectory across almost the entire BMI distribution — including at the 'healthy weight' classification, where the clinical apparatus would identify no target for intervention. Women who perceive themselves as very underweight still shift toward loss as their BMI rises, and even at "about the right weight," rising BMI pulls women into loss- and maintenance-oriented trajectories that it does not produce in men. The paradigm therefore, reaches female bodies regardless of whether clinical classification or self-image would, on its own, warrant it.

One further feature of Figure 2.3 is its near-empty Consistent Nothing line. Across virtually every combination of sex, self-image, and BMI, the probability of occupying the trajectory defined by the absence of any weight goal is small. Consistent Nothing is not merely an analytic baseline but a genuinely rare orientation — one held by respondents who are, in some fundamental sense, outside the reach of weight-goal thinking altogether. The social conditions that produce this exemption, and what its rarity implies about the near-universal recruitment of this cohort into some form of weight-oriented aspiration, are among the most theoretically significant findings of this paper, and are discussed further in the conclusion.

2.8 Sensitivity Analysis

The main analysis prioritizes sample size and coverage over weighting tidiness. Because the trajectory outcome spans Waves I through III, however, the formally appropriate weight for a fully longitudinal estimand is the Wave I–III longitudinal weight, which corrects for differential attrition across the three waves but is defined only for respondents who participated in all of them. To confirm that the substantive conclusions do not depend on the weighting decision, the full sequence of models was re-estimated on the balanced Wave I–III panel — respondents present in all three in-home waves (N = 9,634) — using the Wave I–III longitudinal weight. This specification is more conservative on two counts: it uses the weight matched to the multi-wave estimand, and, by requiring participation in all three waves, it functions as a check on the listwise deletion described in Section 2.5, since panel attrition and item missingness are correlated with the same socioeconomic and demographic characteristics.

The sensitivity models (Table 2.9 - Table 2.15) reproduce the chapter's central findings. The dominance of female sex and weight self-image over clinical classification, the directional split between loss- and gain-oriented trajectories, and the underweight-self-image-to-gain pattern all persist under longitudinal weighting, with point estimates of comparable magnitude and direction — the female–Consistent Lose effect (6.49), for instance, is even larger in the fully-adjusted panel (Table 2.15) than in the main analysis (5.04), and slightly-overweight self-image continues to predict Consistent Lose an order of magnitude more strongly than overweight BMI classification. As expected from the roughly 40% reduction in sample size, confidence intervals widen throughout, and a small number of sparsely populated weight-self-image cells — most notably the very-underweight category, which has few cases once the sample is restricted — fail to converge reliably and are suppressed. The valid-waves indicator, estimated from only the 18 panel respondents who contribute fewer than three valid waves, is correspondingly unstable and is retained for consistency with the main specification rather than for substantive interpretation. The consistency of the substantive pattern across the two weighting schemes indicates that the main results are not an artifact of retaining single-wave respondents, nor of the cross-sectional weighting used to do so.

2.9 Discussion and Conclusion

Taken together, these results offer a clear empirical account of weight-goal formation as a socially structured process – but one whose structure is deeply asymmetric in ways that reveal the specific character of the weight-centered health paradigm's reach. That paradigm, as the introduction establishes, is organized almost exclusively around the health risks attributed to higher body weight: its diagnostic categories, its clinical thresholds, and its behavioral prescriptions are designed to identify, motivate, and manage weight reduction in individuals classified as overweight or obese. The results of this analysis show that this paradigm operates as a powerful but lopsided force on body-image and goal formation – one that bears down much more heavily on the bodies of girls and women than on boys and men, and that does so not primarily through direct clinical classification but through the internalization of culturally enforced body norms that the paradigm both reflects and amplifies.

The relative magnitude of BMI classification and weight self-image is instructive here. The paradigm's primary instrument — the clinical BMI label — does predict loss-goal formation, but its effects are substantially smaller than those of self-image at every corresponding level. This contrast — a clinical category set against a subjective appraisal of the same region of the weight distribution — is the chapter's central effect-size finding, and it holds across the distribution. Clinical classification functions less as a direct determinant of loss aspiration than as one pathway through which the broader cultural machinery of the thin ideal recruits individuals — a pathway largely absorbed and amplified by the internalization of appearance norms, and at the extremes decoupled from the label itself. The decoupling is most legible at the extremes of the distribution. At the underweight end, perceiving oneself as very underweight is the single strongest predictor of Consistent Gain in the entire analysis (OR = 14.89), while a clinical 'underweight' classification, net of self-image, no longer predicts gain at all (OR = 0.95; n.s.) — the subjective appraisal does virtually all of the work the clinical label is presumed to do. At the overweight end, the 'obese' classification that is the paradigm's explicit target raises the odds of Consistent Lose far less (OR = 2.75) than the mere perception of being slightly overweight (OR = 10.54). In both directions, the paradigm's own diagnostic categories are weaker drivers of the goal orientation they are designed to produce than the cultural internalization of appearance norms that the paradigm both promotes and is promoted by.

The asymmetry becomes most theoretically significant when read through the lens of sex and the dimorphism of body ideals. The paradigm addresses high BMI as a health risk for everyone, but the body-ideal culture it intersects with — operating through weight self-image — applies its most intense pressure in a single direction for girls and women: toward loss and reduction, regardless of clinical status. As Figure 2.3 shows, for female respondents the shift from perceiving oneself as about the right weight to slightly overweight all but eliminates the other trajectories in favor of loss-oriented ones, and it does so across every BMI level, including classifications the paradigm would deem 'healthy' or even 'underweight.' The female effect on Consistent Lose not only survives body-size adjustment but grows with it, from 3.95 in the demographic model to 5.04 in the fully adjusted one. The body-size block is what produces that growth: because women are clinically classified at lower weights than men, adjusting for BMI alone lifts the effect to 6.58, and adjusting for self-image then absorbs part but not all of that increase, leaving a large and stable female effect of roughly five. After accounting for the bodies women actually inhabit and how they perceive them, women's excess orientation toward weight loss is larger, not smaller, than the raw demographic comparison suggests. The paradigm, operating through the cultural intensification of the thin ideal, recruits female bodies into loss aspiration at every point in the BMI distribution — including among those it would not itself identify as requiring intervention.

For male respondents, the pattern is structurally different — and it is gender ideology, not medical oversight alone, that makes it so. Weight-gain aspiration among males is structured by subjective body appraisal just as powerfully as weight-loss aspiration is among females: perceiving oneself as very underweight is the single strongest predictor in the entire analysis (OR = 14.89 for Consistent Gain), while a clinical 'underweight' classification, net of self-image, does not predict gain at all (OR = 0.95; n.s.). The muscularity ideal that generates this aspiration runs through the same mechanism as the thin ideal — the cultural internalization of an appearance norm that produces a dissatisfied self-image and motivates a goal — but it points in the opposite direction, and the weight-centered paradigm neither recognizes nor problematizes that direction. The result is an asymmetric structure of recruitment: gender ideology channels female body anxiety toward reduction, where it is met and reinforced by the paradigm's clinical apparatus, and channels male body anxiety toward gain, where it operates largely outside the paradigm's field of vision. The paradigm bears down most heavily on bodies perceived as too large, generating loss aspiration in girls and women at clinical thresholds that do not warrant it, while the parallel pressure on boys and men runs through a muscularity ideal it does not see as its concern.

The attenuation of race effects between the demographic model and the fully specified one adds a further structural dimension to this account. The Black–Consistent Gain odds ratio, elevated through the early models, falls once neighborhood social context is introduced — from 4.33 in M3 to 3.10 in M5 and 2.78 in M6 — indicating that racial differences in weight-goal orientation are partly explained by neighborhood context rather than being purely products of individual-level cultural identity. This is consistent with the argument that community body norms are not simply carried in the heads of individuals but are partly place-based, reproduced through the social environments that residential segregation concentrates racial and ethnic groups within (Massey and Denton 1988). The weight-loss imperative is not evenly distributed across neighborhoods, and the racial patterning of trajectories partly reflects the uneven geography of its reach. Equally, the persistence of elevated Consistent Gain odds among Black respondents even after neighborhood adjustment indicates that this difference is not fully explained by structural conditions and retains a cultural dimension that warrants further investigation. What the results do not support is any account of racial differences in weight-goal formation as simply individual preferences: they are shaped by cultural traditions, neighborhood context, and the differential reach of medical and commercial weight-management culture in ways this analysis only partly captures.

Several limitations merit acknowledgment. BMI classification and weight self-image enter the models as additive predictors rather than as interacting terms, so the analysis does not directly estimate whether the effect of perceiving oneself as overweight on loss aspiration depends on one's clinical classification, or the reverse[20]. This is a deliberate first-step specification rather than an oversight: the additive model identifies each body-size dimension's independent contribution, and the predicted-probability surface in Figure 2.3 already lets the reader see how the two combine across their joint distribution — that surface reflects additive predictions, not estimated interactions, but it makes the joint structure legible without the parametric demands and interpretive complexity a fully interacted multinomial specification would carry. A formal interaction model is a natural extension — testing directly whether self-perceived overweight matters more among the clinically 'healthy'-weight, where the perception cannot be attributed to clinical confirmation — but it is an elaboration of the present specification rather than a different study, and the additive results already establish the central asymmetry an interaction would only refine.

Additional limitations concern measurement and scope. The weight self-image item is a single five-category measure that does not distinguish the thin ideal from the muscularity ideal as separate normative referents — a limitation especially consequential for male respondents, for whom perceiving oneself as underweight may index aspiration toward muscularity rather than thinness, while perceiving oneself as overweight may reflect paradigm internalization, aesthetic dissatisfaction, or both. As the discussion of sex made clear, these are not interchangeable ideals, and measures that separately captured perceived thinness, fatness, and muscularity would allow a more precise account of how self-image shapes goal formation across sex (Cafri and Thompson 2004; McCreary and Sasse 2000). The weight-goal items likewise do not distinguish aesthetic from health motivations, nor medically-advised from self-initiated goals. Tracing the specific precipitants of goal adoption and change — healthcare encounters, media

[20]Unfortunately, due to the constraints of sample size, this interactive model produced unreliable estimates, limiting this analysis to the basic additive model.

exposure, peer-group transitions, household weight talk — would require longitudinal designs built for that purpose: the kind of new data collection, rather than additional modeling, that the questions raised here ultimately call for.

One finding deserves more theoretical attention than the modeling framework alone can give it: the rarity of the Consistent Nothing trajectory. Across virtually every combination of sex, self-image, and clinical classification, the probability of holding no weight goal at all is vanishingly small — a near-universality of recruitment that is, in its own right, among the chapter's central results. But the small group who do remain outside weight-goal orientation poses a question the analysis can advance more sharply than it can answer. Are these respondents exempt from the weight-centered paradigm, structurally insulated from its reach, or are they in some measure resisting it, occupying a stance of refusal toward the imperative to make the body a project? The data offer only indirect purchase: Consistent Nothing is modestly more common among males, consistent with the broader finding that the paradigm presses less uniformly on male bodies, but the category is too small and too heterogeneous to adjudicate exemption against resistance from these measures alone. The distinction matters because each reading implies a different account of the paradigm's limits. If Consistent Nothing reflects exemption, it marks the outer boundary of the paradigm's reach; if it reflects resistance, it identifies a population whose relationship to their bodies is organized otherwise, and whose existence stands as a counter-example to the inevitability the paradigm assumes. Adjudicating between them is a task for qualitative inquiry into how these respondents understand their own bodies and goals — a promising direction for work that takes the non-recruited, rather than the recruited, as its starting point.

More broadly, this chapter makes a case for treating weight goals as objects of sociological analysis in their own right, rather than as stopovers on the path to behavior. The dominant empirical tradition reads goals instrumentally, as predictors of what people will do; the analysis here reads them as outcomes — socially produced orientations patterned by sex, race, class, and placed before any behavior is enacted. The move has a precedent in the sociology of education, where Mickelson's (1990) insistence on separating abstract aspiration from concrete, structurally conditioned orientation showed that what people say they want for themselves and what their social position actually affords them are distinct phenomena that must be studied separately. The parallel is instructive, with one inversion: where that literature traced how social structure blocks the translation of aspiration into attainment, this chapter traces how social structure produces the aspiration itself — manufacturing, in the weight goal, a desire that is then experienced as personal and freely chosen. Goals and behaviors are not the same thing, and the social processes that bind them together or hold them apart are consequential — for health, for the relationships and institutions in which bodies are evaluated, and for the life chances that follow from inhabiting a body one has been taught to experience as a problem to be solved. That weight-goal formation is socially structured, asymmetrically gendered, and driven more powerfully by internalized body image than by the clinical classifications the paradigm relies on is the foundation on which the chapters that follow build: tracing how these goals translate into behavior, and how that behavior comes in turn to register in the body as health.

2.10 Tables

Table 2.1

Descriptive Statistics by Analytic Sample *Add Health Waves I-III*				
	Excluded		Main Analysis[1]	Sensitivity Analysis[2]
Variable	Missing	N = 2,505[3]	N = 16,421[3]	N = 9,634[3]
Weight Goal Trajectory	9			
Consistent Nothing[4]		127 (5.1%)	602 (3.8%)	178 (2.2%)
Consistent Lose		603 (24%)	3,116 (18%)	1,526 (15%)
Changing Lose/Maintain		262 (10%)	1,952 (12%)	1,297 (13%)
Consistent Maintain		235 (9.4%)	1,619 (10%)	453 (4.8%)
Consistent Gain		214 (8.6%)	1,463 (8.1%)	570 (5.6%)
Changing Goals		1,055 (42%)	7,669 (48%)	5,610 (59%)
Valid Waves	—			
3[4]		1,183 (47%)	9,616 (61%)	9,616 (100%)
2		977 (39%)	5,270 (30%)	18 (0.2%)
1		336 (13%)	1,535 (8.6%)	0 (0%)
0		9 (0.4%)	0 (0%)	0 (0%)
Age	1	16.50 (1.87)	15.91 (1.78)	15.52 (1.60)
Sex	—			
Male[4]		1,085 (43%)	8,197 (52%)	4,612 (51%)
Female		1,420 (57%)	8,224 (48%)	5,022 (49%)
Race	—			
White		1,239 (49%)	10,214 (73%)	6,122 (73%)
Asian/Pacific Islander		367 (15%)	1,117 (3.4%)	640 (3.5%)
Black		524 (21%)	3,143 (13%)	1,708 (13%)
Native American		185 (7.4%)	991 (5.7%)	712 (7.1%)
Multiracial/Other Race		190 (7.6%)	956 (4.4%)	452 (3.5%)
Latino/a[5]	13	525 (21%)	2,730 (12%)	1,496 (12%)
U.S. Born[5]	39	2,176 (88%)	15,199 (95%)	9,032 (95%)
BMI Classification	368			
Healthy Weight[4]		1,451 (68%)	11,770 (71%)	6,885 (71%)
Underweight		68 (3.2%)	421 (2.8%)	230 (2.7%)
Overweight		355 (17%)	2,407 (15%)	1,407 (15%)
Obese		263 (12%)	1,823 (11%)	1,112 (11%)

Weight Self-Image	36			
About the Right Weight[4]		1,170 (47%)	8,506 (52%)	4,942 (52%)
Very Underweight		65 (2.6%)	325 (1.9%)	197 (2.1%)
Slightly Underweight		327 (13%)	2,505 (15%)	1,469 (15%)
Slightly Overweight		748 (30%)	4,520 (28%)	2,679 (27%)
Very Overweight		159 (6.4%)	565 (3.4%)	347 (3.6%)
Met MVPA Guidelines[5]	—	1,496 (60%)	10,725 (66%)	6,488 (69%)
Avg. Sleep Hours	—	7.65 (1.54)	7.85 (1.41)	7.92 (1.39)
Food Choice Autonomy[5]	301	1,765 (80%)	13,444 (81%)	7,736 (79%)
Prop. Dinners w/ Parent(s)	320	0.64 (0.38)	0.67 (0.35)	0.70 (0.34)
Social Origins Score	1,269	-0.15 (1.33)	0.01 (1.35)	0.03 (1.35)
Parent Graduated HS[5]	351	1,646 (76%)	14,402 (89%)	8,512 (89%)
Neighborhood SES Disadvantage	161	0.03 (0.91)	-0.20 (0.91)	-0.20 (0.91)
Violent Crimes/100,000	2	810 (631)	681 (548)	672 (543)
Neighborhood Feels Safe[5]	129	2,021 (85%)	14,626 (90%)	8,586 (90%)
Metropolitan Area[5]	2	1,750 (70%)	13,210 (77%)	7,616 (77%)
Climate PC1	247	-0.29 (2.95)	0.69 (2.58)	0.70 (2.62)
Climate PC2	247	0.08 (2.17)	-0.05 (2.06)	-0.05 (2.09)
Resources PC1	2	-0.34 (2.07)	-0.70 (1.82)	-0.70 (1.80)
Resources PC2	2	0.32 (1.24)	0.29 (1.20)	0.30 (1.19)
Beta Index 3km	2	1.47 (0.16)	1.46 (0.16)	1.46 (0.16)
Cul-de-sac Density 3km	2	4.5 (3.6)	4.22 (3.37)	4.17 (3.33)
Prop. Roads A40-A48 3km	2	0.74 (0.11)	0.76 (0.10)	0.76 (0.10)
Landscape Patch Density 3km	247	44 (22)	42 (21)	41 (21)
Class 4 Area 3km	247	-0.03 (0.96)	0.12 (1.11)	0.09 (1.09)
Class 5 Area 3km	247	-0.02 (1.05)	0.09 (1.04)	0.11 (1.04)

[1] All non-missing observations included; Wave I cross-sectional sampling weights applied.
[2] Sample restricted to respondents surveyed in all three waves; Wave I, II, & III longitudinal sampling weights applied.
[3] All Ns are unweighted w/ survey-weighted statistics for continuous variables. Continuous: Mean (SD); Categorical: n (%).
[4] Reference category in regression models.
[5] Binary indicators (yes/no) display the affirmative category only; the reference is the negation.

2.10.1 Main Analysis

Table 2.2

Main Analysis | M0: Demographics

Survey Design-Based Multinomial Logistic Regression

	Reference Outcome: Consistent Nothing									
	Consistent Lose N = 3,116[1]		Changing Lose/Maintain N = 1,952[1]		Consistent Maintain N = 1,619[1]		Consistent Gain N = 1,463[1]		Changing Goals N = 7,669[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	▽ 0.67**	(0.50, 0.91)	▽ 0.49***	(0.37, 0.64)	▲ 1.39*	(1.05, 1.83)	0.80	(0.59, 1.09)	▽ 0.32***	(0.25, 0.40)
1	▽ 0.41***	(0.29, 0.59)	▽ 0.00***	(0.00, 0.00)	▲ 1.51*	(1.07, 2.13)	▽ 0.54***	(0.38, 0.76)	▽ 0.00***	(0.00, 0.00)
Age	0.94	(0.86, 1.04)	0.91	(0.82, 1.01)	▽ 0.87**	(0.78, 0.96)	0.96	(0.86, 1.08)	0.92	(0.84, 1.01)
Female	▲ 3.95***	(3.14, 4.97)	▲ 2.78***	(2.13, 3.64)	▲ 1.61***	(1.24, 2.10)	▽ 0.21***	(0.16, 0.30)	1.01	(0.80, 1.27)
Race[3]										
White	▽ 0.70*	(0.49, 1.00)	0.73	(0.50, 1.07)	0.77	(0.53, 1.12)	▽ 0.39***	(0.27, 0.57)	▽ 0.66*	(0.46, 0.94)
Asian/Pacific Islander	1.49	(0.62, 3.57)	1.07	(0.41, 2.79)	1.03	(0.42, 2.49)	1.58	(0.68, 3.64)	1.31	(0.59, 2.91)
Black	▲ 1.71*	(1.03, 2.82)	1.62	(0.93, 2.83)	1.66	(0.96, 2.88)	▲ 3.78***	(2.28, 6.27)	▲ 1.78*	(1.06, 2.99)
Native American	0.89	(0.50, 1.57)	0.93	(0.51, 1.69)	0.83	(0.43, 1.63)	0.82	(0.47, 1.46)	0.94	(0.56, 1.56)
Multiracial/Other Race	1.03	(0.60, 1.77)	1.18	(0.69, 2.05)	1.05	(0.60, 1.83)	▲ 1.87*	(1.08, 3.23)	1.27	(0.76, 2.13)
Latino/a	1.80	(0.98, 3.32)	1.01	(0.53, 1.94)	0.90	(0.46, 1.76)	1.29	(0.68, 2.42)	0.96	(0.55, 1.69)
U.S. Born	0.66	(0.41, 1.07)	▽ 0.52*	(0.29, 0.93)	▽ 0.56*	(0.33, 0.96)	0.58	(0.32, 1.05)	0.67	(0.41, 1.11)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.3

Main Analysis | M1: + BMI Classification Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: **Consistent Nothing**									
	Consistent Lose N = 3,116[1]		**Changing Lose/Maintain** N = 1,952[1]		**Consistent Maintain** N = 1,619[1]		**Consistent Gain** N = 1,463[1]		**Changing Goals** N = 7,669[1]	
Variable	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Valid Waves (Ref = 3)										
2	▽ 0.72*	(0.53, 0.96)	▽ 0.49***	(0.38, 0.65)	▲ 1.38*	(1.05, 1.82)	0.79	(0.59, 1.08)	▽ 0.32***	(0.25, 0.40)
1	▽ 0.44***	(0.31, 0.63)	▽ 0.00***	(0.00, 0.00)	▲ 1.48*	(1.05, 2.09)	▽ 0.55***	(0.39, 0.78)	▽ 0.00***	(0.00, 0.00)
Age	0.95	(0.87, 1.05)	0.91	(0.82, 1.01)	▽ 0.87**	(0.78, 0.96)	0.96	(0.85, 1.08)	0.93	(0.84, 1.01)
Female	▲ 6.58***	(4.98, 8.69)	▲ 3.36***	(2.51, 4.51)	▲ 1.57**	(1.19, 2.08)	▽ 0.19***	(0.14, 0.27)	1.06	(0.82, 1.37)
Race[3]										
White	0.83	(0.59, 1.18)	0.77	(0.53, 1.11)	0.76	(0.52, 1.10)	▽ 0.37***	(0.26, 0.55)	▽ 0.65*	(0.46, 0.93)
Asian/Pacific Islander	2.06	(0.92, 4.61)	1.23	(0.49, 3.09)	1.04	(0.44, 2.45)	1.48	(0.64, 3.42)	1.37	(0.63, 2.99)
Black	1.24	(0.77, 2.01)	1.48	(0.86, 2.55)	1.69	(0.98, 2.92)	▲ 4.05***	(2.44, 6.74)	▲ 1.81*	(1.08, 3.01)
Native American	0.87	(0.49, 1.54)	0.93	(0.51, 1.69)	0.86	(0.44, 1.68)	0.85	(0.47, 1.52)	0.94	(0.57, 1.57)
Multiracial/Other Race	0.89	(0.53, 1.50)	1.09	(0.64, 1.88)	1.03	(0.59, 1.80)	▲ 1.93*	(1.10, 3.39)	1.22	(0.73, 2.02)
Latino/a	1.56	(0.84, 2.88)	0.96	(0.50, 1.83)	0.91	(0.47, 1.73)	1.34	(0.70, 2.55)	0.94	(0.53, 1.66)
U.S. Born	▽ 0.53*	(0.32, 0.88)	▽ 0.47**	(0.27, 0.84)	▽ 0.56*	(0.33, 0.96)	0.62	(0.34, 1.12)	0.66	(0.40, 1.08)
BMI Classification (Ref = Healthy Weight)										
Underweight	▽ 0.09***	(0.03, 0.26)	▽ 0.18***	(0.08, 0.40)	0.47	(0.22, 1.04)	▲ 2.00*	(1.04, 3.84)	0.86	(0.44, 1.69)
Overweight	▲ 7.13***	(4.76, 10.7)	▲ 2.91***	(1.94, 4.37)	1.09	(0.67, 1.76)	▽ 0.35***	(0.20, 0.59)	1.46	(0.97, 2.21)
Obese	▲ 10.91***	(6.46, 18.4)	▲ 2.59***	(1.55, 4.34)	▽ 0.45**	(0.25, 0.81)	▽ 0.06***	(0.02, 0.14)	1.11	(0.69, 1.81)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.4

Main Analysis | M2: + Weight Self-Image Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: Consistent Nothing									
	Consistent Lose N = 3,116[1]		Changing Lose/Maintain N = 1,952[1]		Consistent Maintain N = 1,619[1]		Consistent Gain N = 1,463[1]		Changing Goals N = 7,669[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	▽ 0.71*	(0.53, 0.97)	▽ 0.48***	(0.37, 0.63)	▲ 1.38*	(1.04, 1.82)	0.84	(0.62, 1.13)	▽ 0.31***	(0.25, 0.40)
1	▽ 0.49***	(0.33, 0.72)	▽ 0.00***	(0.00, 0.00)	▲ 1.48*	(1.05, 2.09)	▽ 0.65*	(0.47, 0.91)	▽ 0.00***	(0.00, 0.00)
Age	0.93	(0.85, 1.03)	0.91	(0.82, 1.01)	▽ 0.87**	(0.79, 0.97)	0.94	(0.84, 1.05)	0.93	(0.85, 1.01)
Female	▲ 4.69***	(3.56, 6.16)	▲ 3.00***	(2.24, 4.00)	▲ 1.60***	(1.21, 2.10)	▽ 0.22***	(0.16, 0.30)	1.05	(0.82, 1.35)
Race[3]										
White	0.72	(0.51, 1.02)	0.73	(0.51, 1.05)	0.75	(0.52, 1.09)	▽ 0.38***	(0.26, 0.54)	▽ 0.66*	(0.47, 0.92)
Asian/Pacific Islander	1.91	(0.83, 4.39)	1.22	(0.48, 3.06)	1.05	(0.44, 2.48)	1.24	(0.55, 2.79)	1.27	(0.59, 2.75)
Black	1.61	(0.99, 2.62)	1.60	(0.94, 2.73)	1.68	(0.97, 2.89)	▲ 4.24***	(2.56, 7.02)	▲ 1.85*	(1.12, 3.07)
Native American	0.80	(0.44, 1.45)	0.91	(0.50, 1.66)	0.87	(0.44, 1.71)	0.83	(0.45, 1.52)	0.93	(0.56, 1.54)
Multiracial/Other Race	0.98	(0.57, 1.70)	1.15	(0.67, 1.99)	1.06	(0.61, 1.84)	▲ 1.99*	(1.12, 3.53)	1.20	(0.73, 1.99)
Latino/a	1.69	(0.94, 3.04)	0.98	(0.52, 1.85)	0.92	(0.48, 1.75)	1.25	(0.64, 2.43)	0.93	(0.54, 1.62)
U.S. Born	▽ 0.52*	(0.30, 0.91)	▽ 0.46*	(0.25, 0.84)	▽ 0.56*	(0.33, 0.96)	0.55	(0.29, 1.03)	0.65	(0.39, 1.08)
BMI Classification (Ref = Healthy Weight)										
Underweight	▽ 0.17***	(0.06, 0.48)	▽ 0.32**	(0.13, 0.74)	0.52	(0.24, 1.16)	0.90	(0.46, 1.74)	0.72	(0.36, 1.43)
Overweight	▲ 2.69***	(1.78, 4.06)	▲ 2.01**	(1.32, 3.05)	1.11	(0.69, 1.78)	0.67	(0.40, 1.12)	1.34	(0.90, 2.00)
Obese	▲ 2.64***	(1.55, 4.49)	1.53	(0.89, 2.61)	▽ 0.53*	(0.28, 0.98)	▽ 0.13***	(0.05, 0.34)	0.90	(0.55, 1.46)

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight	2.37	(0.79, 7.15)	▽ 0.23*	(0.07, 0.73)	0.69	(0.19, 2.54)	▲ 15.66***	(5.57, 44.0)	2.19	(0.82, 5.87)
Slightly Underweight	0.75	(0.47, 1.19)	▽ 0.42***	(0.26, 0.68)	0.83	(0.52, 1.30)	▲ 6.56***	(4.51, 9.54)	▲ 1.94***	(1.35, 2.77)
Slightly Overweight	▲ 10.21***	(6.73, 15.5)	▲ 2.50***	(1.62, 3.85)	0.90	(0.59, 1.37)	▽ 0.29***	(0.15, 0.56)	▲ 1.82**	(1.21, 2.74)
Very Overweight	▲ 7.63***	(3.72, 15.6)	1.06	(0.48, 2.38)	0.36	(0.12, 1.05)	0.27	(0.04, 1.71)	1.17	(0.54, 2.55)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.5

Main Analysis | M3: + Behaviors Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: Consistent Nothing									
	Consistent Lose N = 3,116[1]		Changing Lose/Maintain N = 1,952[1]		Consistent Maintain N = 1,619[1]		Consistent Gain N = 1,463[1]		Changing Goals N = 7,669[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	▽ 0.72*	(0.53, 0.97)	▽ 0.48***	(0.37, 0.63)	▲ 1.38*	(1.04, 1.82)	0.84	(0.62, 1.14)	▽ 0.31***	(0.25, 0.40)
1	▽ 0.50***	(0.34, 0.73)	▽ 0.00***	(0.00, 0.00)	▲ 1.49*	(1.05, 2.10)	▽ 0.66*	(0.47, 0.92)	▽ 0.00***	(0.00, 0.00)
Age	0.96	(0.87, 1.06)	0.95	(0.85, 1.05)	▽ 0.89*	(0.80, 0.99)	0.98	(0.88, 1.10)	0.94	(0.86, 1.04)
Female	▲ 4.93***	(3.72, 6.54)	▲ 3.12***	(2.31, 4.22)	▲ 1.64***	(1.23, 2.19)	▽ 0.24***	(0.17, 0.33)	1.06	(0.81, 1.38)
Race[3]										
White	0.71	(0.50, 1.00)	0.71	(0.49, 1.03)	0.74	(0.51, 1.07)	▽ 0.37***	(0.25, 0.53)	▽ 0.64*	(0.46, 0.90)
Asian/Pacific Islander	1.96	(0.86, 4.49)	1.27	(0.51, 3.20)	1.08	(0.46, 2.55)	1.29	(0.57, 2.88)	1.33	(0.62, 2.88)
Black	▲ 1.64*	(1.01, 2.67)	1.64	(0.96, 2.79)	1.70	(0.99, 2.92)	▲ 4.33***	(2.63, 7.15)	▲ 1.88*	(1.14, 3.10)
Native American	0.80	(0.44, 1.46)	0.91	(0.50, 1.67)	0.87	(0.44, 1.71)	0.82	(0.45, 1.51)	0.92	(0.56, 1.54)
Multiracial/Other Race	1.00	(0.58, 1.72)	1.18	(0.68, 2.03)	1.07	(0.62, 1.87)	▲ 2.04*	(1.15, 3.64)	1.22	(0.74, 2.02)
Latino/a	1.69	(0.94, 3.03)	0.98	(0.52, 1.85)	0.92	(0.48, 1.75)	1.24	(0.64, 2.41)	0.93	(0.53, 1.61)
U.S. Born	▽ 0.52*	(0.30, 0.91)	▽ 0.46*	(0.25, 0.85)	▽ 0.56*	(0.33, 0.97)	0.56	(0.30, 1.05)	0.65	(0.39, 1.09)
BMI Classification (Ref = Healthy Weight)										
Underweight	▽ 0.18**	(0.06, 0.51)	▽ 0.32**	(0.14, 0.76)	0.53	(0.24, 1.18)	0.93	(0.48, 1.82)	0.74	(0.37, 1.46)
Overweight	▲ 2.66***	(1.76, 4.03)	▲ 1.98**	(1.30, 3.02)	1.10	(0.68, 1.78)	0.65	(0.39, 1.09)	1.32	(0.88, 1.98)
Obese	▲ 2.68***	(1.58, 4.54)	1.54	(0.90, 2.63)	▽ 0.53*	(0.28, 0.99)	▽ 0.13***	(0.05, 0.34)	0.90	(0.55, 1.46)

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight	2.44	(0.80, 7.40)	▽ 0.23*	(0.07, 0.75)	0.70	(0.19, 2.58)	▲ 15.93***	(5.63, 45.0)	2.21	(0.82, 5.99)
Slightly Underweight	0.76	(0.48, 1.21)	▽ 0.42***	(0.26, 0.69)	0.83	(0.53, 1.31)	▲ 6.67***	(4.61, 9.65)	▲ 1.93***	(1.35, 2.76)
Slightly Overweight	▲ 10.58***	(6.98, 16.0)	▲ 2.59***	(1.68, 3.99)	0.92	(0.61, 1.40)	▽ 0.31***	(0.16, 0.59)	▲ 1.86**	(1.24, 2.80)
Very Overweight	▲ 8.11***	(3.96, 16.6)	1.12	(0.50, 2.51)	0.37	(0.13, 1.08)	0.29	(0.05, 1.85)	1.20	(0.55, 2.62)
Met MVPA Guidelines	▲ 1.35*	(1.02, 1.80)	1.25	(0.93, 1.68)	1.16	(0.87, 1.55)	▲ 1.49**	(1.14, 1.96)	1.05	(0.81, 1.34)
Avg. Sleep Hours	1.06	(0.98, 1.16)	▲ 1.10*	(1.01, 1.20)	1.07	(0.98, 1.16)	1.09	(0.99, 1.20)	1.08	(1.00, 1.16)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.6

Main Analysis | M4: + Household Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: Consistent Nothing									
	Consistent Lose N = 3,116[1]		Changing Lose/Maintain N = 1,952[1]		Consistent Maintain N = 1,619[1]		Consistent Gain N = 1,463[1]		Changing Goals N = 7,669[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	▽ 0.70*	(0.52, 0.94)	▽ 0.47***	(0.36, 0.62)	▲ 1.35*	(1.02, 1.78)	0.82	(0.60, 1.11)	▽ 0.30***	(0.24, 0.39)
1	▽ 0.49***	(0.33, 0.73)	▽ 0.00***	(0.00, 0.00)	▲ 1.50*	(1.06, 2.12)	▽ 0.66*	(0.47, 0.93)	▽ 0.00***	(0.00, 0.00)
Age	0.93	(0.83, 1.04)	0.91	(0.81, 1.02)	▽ 0.85**	(0.76, 0.96)	0.94	(0.83, 1.06)	0.91	(0.81, 1.01)
Female	▲ 4.94***	(3.73, 6.56)	▲ 3.11***	(2.30, 4.21)	▲ 1.63***	(1.22, 2.17)	▽ 0.23***	(0.17, 0.32)	1.05	(0.81, 1.37)
Race[3]										
White	0.78	(0.55, 1.10)	0.77	(0.54, 1.11)	0.79	(0.55, 1.14)	▽ 0.41***	(0.29, 0.59)	0.72	(0.52, 1.01)
Asian/Pacific Islander	2.12	(0.91, 4.93)	1.36	(0.53, 3.49)	1.16	(0.48, 2.81)	1.41	(0.61, 3.25)	1.45	(0.65, 3.23)
Black	1.42	(0.86, 2.33)	1.44	(0.83, 2.48)	1.53	(0.89, 2.61)	▲ 3.60***	(2.18, 5.95)	1.59	(0.96, 2.63)
Native American	0.79	(0.43, 1.45)	0.91	(0.49, 1.67)	0.86	(0.43, 1.71)	0.80	(0.43, 1.50)	0.90	(0.54, 1.51)
Multiracial/Other Race	0.92	(0.53, 1.60)	1.10	(0.62, 1.92)	1.01	(0.57, 1.78)	▲ 1.85*	(1.04, 3.30)	1.10	(0.66, 1.84)
Latino/a	1.47	(0.82, 2.61)	0.83	(0.44, 1.57)	0.78	(0.41, 1.47)	1.07	(0.56, 2.07)	0.78	(0.45, 1.35)
U.S. Born	▽ 0.55*	(0.31, 0.97)	▽ 0.49*	(0.27, 0.90)	0.61	(0.35, 1.05)	0.57	(0.30, 1.08)	0.70	(0.42, 1.17)
BMI Classification (Ref = Healthy Weight)										
Underweight	▽ 0.17***	(0.06, 0.49)	▽ 0.33*	(0.14, 0.77)	0.53	(0.24, 1.16)	0.93	(0.48, 1.81)	0.73	(0.37, 1.46)
Overweight	▲ 2.70***	(1.81, 4.02)	▲ 2.02***	(1.34, 3.06)	1.12	(0.70, 1.80)	0.66	(0.40, 1.09)	1.33	(0.90, 1.98)
Obese	▲ 2.78***	(1.68, 4.58)	1.61	(0.97, 2.69)	▽ 0.55*	(0.30, 1.00)	▽ 0.14***	(0.06, 0.34)	0.92	(0.58, 1.47)

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight	2.33	(0.77, 7.04)	▽ 0.22*	(0.07, 0.72)	0.68	(0.18, 2.54)	▲ 15.52***	(5.40, 44.6)	2.12	(0.78, 5.78)
Slightly Underweight	0.76	(0.48, 1.21)	▽ 0.42***	(0.26, 0.68)	0.83	(0.53, 1.31)	▲ 6.77***	(4.69, 9.77)	▲ 1.93***	(1.36, 2.75)
Slightly Overweight	▲ 10.36***	(6.89, 15.6)	▲ 2.53***	(1.66, 3.86)	0.90	(0.60, 1.35)	▽ 0.30***	(0.16, 0.57)	▲ 1.82**	(1.22, 2.71)
Very Overweight	▲ 7.95***	(3.86, 16.4)	1.09	(0.49, 2.46)	0.36	(0.13, 1.06)	0.28	(0.04, 1.78)	1.17	(0.53, 2.55)
Met MVPA Guidelines	▲ 1.39*	(1.05, 1.86)	1.29	(0.95, 1.74)	1.20	(0.89, 1.61)	▲ 1.58**	(1.19, 2.08)	1.09	(0.84, 1.40)
Avg. Sleep Hours	1.08	(0.99, 1.18)	▲ 1.12*	(1.02, 1.22)	1.08	(0.99, 1.19)	▲ 1.12*	(1.01, 1.23)	▲ 1.10*	(1.01, 1.19)
Food Choice Autonomy	1.05	(0.68, 1.62)	1.05	(0.67, 1.65)	1.34	(0.84, 2.14)	1.43	(0.87, 2.35)	1.15	(0.76, 1.72)
Prop. Dinners w/ Parent(s)	▽ 0.52**	(0.34, 0.80)	▽ 0.48**	(0.31, 0.75)	▽ 0.56**	(0.38, 0.84)	▽ 0.46***	(0.29, 0.73)	▽ 0.49***	(0.33, 0.73)
Social Origins Score	0.95	(0.80, 1.13)	1.00	(0.84, 1.17)	0.99	(0.84, 1.18)	0.89	(0.75, 1.06)	0.93	(0.80, 1.08)
Parent Graduated HS	0.64	(0.33, 1.26)	0.52	(0.27, 1.03)	▽ 0.50*	(0.26, 0.94)	0.78	(0.39, 1.53)	0.61	(0.34, 1.08)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.7

Main Analysis | M5: + Neighborhood (Social)										
Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: Consistent Nothing									
	Consistent Lose N = 3,116[1]		Changing Lose/Maintain N = 1,952[1]		Consistent Maintain N = 1,619[1]		Consistent Gain N = 1,463[1]		Changing Goals N = 7,669[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	▽ 0.70*	(0.52, 0.94)	▽ 0.47***	(0.36, 0.61)	▲ 1.34*	(1.02, 1.77)	0.81	(0.60, 1.10)	▽ 0.30***	(0.24, 0.39)
1	▽ 0.49***	(0.33, 0.73)	▽ 0.00***	(0.00, 0.00)	▲ 1.49*	(1.04, 2.12)	▽ 0.65*	(0.46, 0.93)	▽ 0.00***	(0.00, 0.00)
Age	0.93	(0.83, 1.04)	0.91	(0.81, 1.02)	▽ 0.86**	(0.76, 0.96)	0.94	(0.83, 1.06)	0.91	(0.81, 1.01)
Female	▲ 4.97***	(3.74, 6.60)	▲ 3.13***	(2.31, 4.23)	▲ 1.64***	(1.23, 2.19)	▽ 0.23***	(0.17, 0.32)	1.06	(0.81, 1.38)
Race[3]										
White	0.89	(0.64, 1.25)	0.93	(0.64, 1.34)	0.87	(0.61, 1.26)	▽ 0.46***	(0.33, 0.65)	0.78	(0.57, 1.07)
Asian/Pacific Islander	2.09	(0.90, 4.85)	1.37	(0.53, 3.49)	1.17	(0.49, 2.81)	1.40	(0.61, 3.20)	1.50	(0.68, 3.33)
Black	1.16	(0.69, 1.98)	1.11	(0.61, 2.01)	1.32	(0.73, 2.36)	▲ 3.10***	(1.83, 5.25)	1.42	(0.85, 2.37)
Native American	0.78	(0.42, 1.44)	0.89	(0.48, 1.66)	0.85	(0.43, 1.70)	0.78	(0.42, 1.48)	0.88	(0.52, 1.49)
Multiracial/Other Race	0.86	(0.48, 1.52)	0.97	(0.54, 1.73)	0.96	(0.53, 1.73)	1.77	(0.98, 3.19)	1.04	(0.61, 1.80)
Latino/a	1.41	(0.78, 2.52)	0.82	(0.43, 1.56)	0.77	(0.40, 1.48)	1.03	(0.52, 2.02)	0.81	(0.46, 1.43)
U.S. Born	▽ 0.56*	(0.32, 0.99)	▽ 0.50*	(0.28, 0.90)	0.61	(0.36, 1.04)	0.58	(0.31, 1.08)	0.70	(0.42, 1.16)
BMI Classification (Ref = Healthy Weight)										
Underweight	▽ 0.18***	(0.06, 0.49)	▽ 0.33*	(0.14, 0.77)	0.52	(0.23, 1.17)	0.93	(0.47, 1.82)	0.73	(0.37, 1.46)
Overweight	▲ 2.62***	(1.77, 3.89)	▲ 1.97**	(1.31, 2.97)	1.10	(0.69, 1.76)	0.65	(0.39, 1.07)	1.31	(0.89, 1.94)
Obese	▲ 2.70***	(1.63, 4.46)	1.56	(0.93, 2.59)	▽ 0.54*	(0.29, 0.98)	▽ 0.13***	(0.05, 0.33)	0.91	(0.57, 1.44)

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight	2.22	(0.73, 6.73)	▽ 0.22*	(0.07, 0.70)	0.67	(0.18, 2.51)	▲ 15.40***	(5.35, 44.4)	2.08	(0.76, 5.70)
Slightly Underweight	0.75	(0.47, 1.20)	▽ 0.42***	(0.26, 0.68)	0.83	(0.53, 1.31)	▲ 6.77***	(4.69, 9.76)	▲ 1.94***	(1.36, 2.76)
Slightly Overweight	▲ 10.44***	(6.94, 15.7)	▲ 2.55***	(1.67, 3.89)	0.90	(0.60, 1.35)	▽ 0.31***	(0.16, 0.58)	▲ 1.82**	(1.22, 2.71)
Very Overweight	▲ 7.96***	(3.86, 16.4)	1.10	(0.49, 2.47)	0.37	(0.13, 1.06)	0.29	(0.05, 1.81)	1.18	(0.54, 2.58)
Met MVPA Guidelines	▲ 1.42*	(1.06, 1.89)	1.31	(0.97, 1.78)	1.21	(0.90, 1.63)	▲ 1.59**	(1.20, 2.11)	1.10	(0.85, 1.43)
Avg. Sleep Hours	1.08	(0.99, 1.18)	▲ 1.12*	(1.02, 1.22)	1.08	(0.99, 1.19)	▲ 1.12*	(1.01, 1.23)	▲ 1.09*	(1.01, 1.19)
Food Choice Autonomy	1.04	(0.68, 1.60)	1.04	(0.67, 1.62)	1.33	(0.84, 2.10)	1.42	(0.87, 2.31)	1.13	(0.76, 1.69)
Prop. Dinners w/ Parent(s)	▽ 0.52**	(0.34, 0.80)	▽ 0.48**	(0.31, 0.74)	▽ 0.56**	(0.37, 0.84)	▽ 0.46***	(0.29, 0.73)	▽ 0.48***	(0.32, 0.72)
Social Origins Score	0.98	(0.81, 1.17)	1.02	(0.86, 1.21)	1.01	(0.85, 1.20)	0.91	(0.76, 1.09)	0.95	(0.82, 1.11)
Parent Graduated HS	0.65	(0.33, 1.28)	0.53	(0.27, 1.04)	▽ 0.50*	(0.27, 0.95)	0.79	(0.40, 1.55)	0.60	(0.34, 1.07)
Neighborhood SES Disadvantage	1.06	(0.88, 1.29)	1.05	(0.85, 1.28)	1.02	(0.84, 1.25)	1.06	(0.88, 1.27)	1.03	(0.88, 1.20)
Violent Crimes/100,000	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.77	(0.46, 1.31)	0.87	(0.52, 1.45)	0.90	(0.54, 1.50)	0.90	(0.52, 1.54)	0.82	(0.50, 1.34)
Metropolitan Area	0.82	(0.50, 1.34)	0.66	(0.39, 1.12)	0.77	(0.44, 1.35)	0.93	(0.56, 1.52)	0.68	(0.44, 1.06)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.8

Main Analysis | M6: + Neighborhood (Environmental) Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: **Consistent Nothing**									
	Consistent Lose N = 3,116[1]		**Changing Lose/Maintain** N = 1,952[1]		**Consistent Maintain** N = 1,619[1]		**Consistent Gain** N = 1,463[1]		**Changing Goals** N = 7,669[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	▽ 0.70*	(0.52, 0.94)	▽ 0.47***	(0.36, 0.61)	▲ 1.34*	(1.01, 1.77)	0.81	(0.60, 1.10)	▽ 0.30***	(0.24, 0.39)
1	▽ 0.48***	(0.32, 0.72)	▽ 0.00***	(0.00, 0.00)	▲ 1.45*	(1.01, 2.08)	▽ 0.62*	(0.43, 0.90)	▽ 0.00***	(0.00, 0.00)
Age	0.93	(0.83, 1.04)	0.91	(0.81, 1.01)	▽ 0.85**	(0.76, 0.95)	0.94	(0.83, 1.06)	0.91	(0.81, 1.01)
Female	▲ 5.04***	(3.84, 6.60)	▲ 3.17***	(2.37, 4.25)	▲ 1.66***	(1.26, 2.18)	▽ 0.23***	(0.17, 0.32)	1.06	(0.82, 1.37)
Race[3]										
White	0.91	(0.65, 1.27)	0.94	(0.65, 1.36)	0.88	(0.61, 1.29)	▽ 0.49***	(0.35, 0.70)	0.80	(0.57, 1.11)
Asian/Pacific Islander	2.29	(0.93, 5.61)	1.58	(0.58, 4.34)	1.26	(0.49, 3.20)	1.44	(0.60, 3.42)	1.61	(0.68, 3.78)
Black	1.10	(0.63, 1.91)	1.04	(0.56, 1.91)	1.25	(0.68, 2.29)	▲ 2.78***	(1.61, 4.79)	1.35	(0.79, 2.29)
Native American	0.79	(0.41, 1.51)	0.92	(0.48, 1.77)	0.88	(0.43, 1.81)	0.77	(0.40, 1.49)	0.89	(0.51, 1.54)
Multiracial/Other Race	0.87	(0.48, 1.57)	0.96	(0.53, 1.75)	0.95	(0.52, 1.73)	1.70	(0.94, 3.08)	1.04	(0.59, 1.84)
Latino/a	1.59	(0.93, 2.72)	0.96	(0.54, 1.72)	0.93	(0.51, 1.70)	1.09	(0.58, 2.03)	0.95	(0.56, 1.61)
U.S. Born	0.54	(0.28, 1.06)	▽ 0.49*	(0.25, 0.94)	0.58	(0.31, 1.09)	0.58	(0.28, 1.20)	0.66	(0.36, 1.21)
BMI Classification (Ref = Healthy Weight)										
Underweight	▽ 0.18**	(0.07, 0.51)	▽ 0.34*	(0.14, 0.81)	0.55	(0.25, 1.20)	0.95	(0.50, 1.83)	0.75	(0.38, 1.50)
Overweight	▲ 2.67***	(1.80, 3.94)	▲ 2.00***	(1.33, 3.00)	1.11	(0.69, 1.77)	0.64	(0.38, 1.07)	1.32	(0.90, 1.94)
Obese	▲ 2.75***	(1.69, 4.47)	1.59	(0.96, 2.61)	▽ 0.55*	(0.30, 0.99)	▽ 0.13***	(0.05, 0.32)	0.91	(0.58, 1.44)
Weight Self-Image (Ref = About the Right Weight)										
Very Underweight	2.19	(0.71, 6.80)	▽ 0.21*	(0.07, 0.71)	0.65	(0.17, 2.48)	▲ 14.89***	(5.06, 43.8)	2.03	(0.73, 5.66)
Slightly Underweight	0.75	(0.47, 1.18)	▽ 0.41***	(0.26, 0.66)	0.82	(0.53, 1.25)	▲ 6.75***	(4.72, 9.66)	▲ 1.90***	(1.35, 2.69)

Slightly Overweight	▲ 10.54***	(7.03, 15.8)	▲ 2.56***	(1.69, 3.90)	0.90	(0.61, 1.35)	▽ 0.31***	(0.16, 0.58)	▲ 1.82**	(1.23, 2.70)
Very Overweight	▲ 8.29***	(4.01, 17.2)	1.14	(0.50, 2.58)	0.38	(0.13, 1.10)	0.30	(0.04, 1.97)	1.22	(0.55, 2.70)
Met MVPA Guidelines	▲ 1.41*	(1.06, 1.88)	1.31	(0.96, 1.77)	1.19	(0.89, 1.59)	▲ 1.61***	(1.21, 2.13)	1.10	(0.85, 1.42)
Avg. Sleep Hours	1.09	(1.00, 1.18)	▲ 1.12*	(1.02, 1.23)	1.09	(1.00, 1.19)	▲ 1.11*	(1.01, 1.23)	▲ 1.10*	(1.01, 1.19)
Food Choice Autonomy	1.03	(0.68, 1.57)	1.02	(0.66, 1.57)	1.31	(0.84, 2.06)	1.40	(0.87, 2.26)	1.12	(0.76, 1.65)
Prop. Dinners w/ Parent(s)	▽ 0.53**	(0.35, 0.81)	▽ 0.50**	(0.32, 0.76)	▽ 0.58**	(0.39, 0.86)	▽ 0.47**	(0.30, 0.74)	▽ 0.50***	(0.34, 0.74)
Social Origins Score	0.96	(0.80, 1.16)	1.01	(0.85, 1.20)	0.99	(0.84, 1.18)	0.88	(0.74, 1.06)	0.94	(0.80, 1.09)
Parent Graduated HS	0.68	(0.35, 1.32)	0.55	(0.28, 1.06)	▽ 0.52*	(0.28, 0.97)	0.85	(0.44, 1.66)	0.63	(0.36, 1.10)
Neighborhood SES Disadvantage	1.04	(0.84, 1.29)	1.01	(0.80, 1.28)	1.05	(0.84, 1.32)	1.05	(0.85, 1.30)	1.03	(0.85, 1.23)
Violent Crimes/100,000	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.78	(0.46, 1.32)	0.87	(0.52, 1.47)	0.89	(0.53, 1.51)	0.92	(0.53, 1.59)	0.81	(0.49, 1.35)
Metropolitan Area	0.72	(0.43, 1.21)	▽ 0.55*	(0.31, 0.97)	0.61	(0.34, 1.09)	0.84	(0.50, 1.42)	▽ 0.59*	(0.37, 0.94)
Climate PC1	1.02	(0.94, 1.09)	1.04	(0.96, 1.13)	1.05	(0.97, 1.14)	0.97	(0.89, 1.05)	1.02	(0.96, 1.09)
Climate PC2	1.01	(0.91, 1.13)	1.03	(0.92, 1.15)	1.00	(0.89, 1.13)	1.05	(0.94, 1.18)	1.01	(0.92, 1.11)
Resources PC1	0.99	(0.85, 1.15)	1.01	(0.87, 1.18)	1.02	(0.88, 1.19)	1.03	(0.88, 1.21)	1.01	(0.88, 1.15)
Resources PC2	1.06	(0.91, 1.22)	1.03	(0.88, 1.21)	1.05	(0.91, 1.21)	0.98	(0.85, 1.13)	1.04	(0.92, 1.18)
Beta Index 3km	1.07	(0.33, 3.42)	1.31	(0.40, 4.29)	0.57	(0.11, 2.89)	1.32	(0.29, 6.09)	0.73	(0.26, 2.08)
Cul-de-sac Density 3km	0.97	(0.91, 1.03)	0.96	(0.89, 1.04)	0.99	(0.92, 1.06)	0.99	(0.93, 1.06)	0.97	(0.92, 1.03)
Prop. Roads A40-A48 3km	2.52	(0.63, 10.1)	2.56	(0.65, 10.0)	2.77	(0.64, 11.9)	1.36	(0.32, 5.80)	1.43	(0.46, 4.40)
Landscape Patch Density 3km	▲ 1.02**	(1.01, 1.03)	▲ 1.02**	(1.01, 1.04)	▲ 1.02*	(1.00, 1.03)	▲ 1.02*	(1.00, 1.03)	▲ 1.02**	(1.00, 1.03)
Class 4 Area 3km	0.97	(0.84, 1.13)	1.00	(0.84, 1.19)	1.04	(0.88, 1.23)	1.03	(0.87, 1.20)	1.05	(0.92, 1.19)
Class 5 Area 3km	1.12	(0.89, 1.39)	1.17	(0.93, 1.46)	1.12	(0.86, 1.46)	▲ 1.35**	(1.09, 1.67)	1.15	(0.98, 1.36)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

2.10.2 Sensitivity Analysis

Table 2.9

Sensitivity Analysis *(Wave I-III Panel)* | M0: Demographics

Survey Design-Based Multinomial Logistic Regression

	Reference Outcome: Consistent Nothing									
	Consistent Lose N = 1,526[1]		Changing Lose/Maintain N = 1,297[1]		Consistent Maintain N = 453[1]		Consistent Gain N = 570[1]		Changing Goals N = 5,610[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	6.40	(0.78, 52.3)	4.80	(0.31, 74.5)	▲ 21.69**	(2.71, 173)	5.23	(0.47, 58.1)	1.45	(0.19, 11.1)
Age	0.94	(0.82, 1.07)	0.89	(0.78, 1.01)	0.87	(0.75, 1.01)	0.99	(0.85, 1.15)	▽ 0.88*	(0.78, 0.99)
Female	▲ 4.68***	(3.21, 6.84)	▲ 3.17***	(2.18, 4.59)	▲ 2.31***	(1.48, 3.60)	▽ 0.16***	(0.10, 0.26)	1.12	(0.80, 1.56)
Race[3]										
White	0.66	(0.40, 1.11)	0.63	(0.38, 1.05)	0.70	(0.41, 1.22)	▽ 0.37***	(0.22, 0.64)	▽ 0.62*	(0.39, 1.00)
Asian/Pacific Islander	3.42	(0.85, 13.74)	2.98	(0.77, 11.51)	2.42	(0.54, 10.87)	3.10	(0.78, 12.28)	2.85	(0.81, 10.07)
Black	1.20	(0.52, 2.80)	1.19	(0.52, 2.72)	1.19	(0.48, 2.96)	▲ 2.62*	(1.12, 6.11)	1.25	(0.56, 2.77)
Native American	0.97	(0.42, 2.21)	1.04	(0.45, 2.36)	1.01	(0.39, 2.61)	0.87	(0.37, 2.03)	0.98	(0.45, 2.13)
Multiracial/Other Race	1.84	(0.46, 7.30)	2.45	(0.60, 10.05)	1.74	(0.39, 7.87)	▲ 5.55*	(1.23, 24.92)	2.81	(0.70, 11.26)
Latino/a	1.32	(0.61, 2.82)	0.86	(0.40, 1.84)	0.86	(0.38, 1.94)	1.10	(0.50, 2.43)	0.81	(0.40, 1.66)
U.S. Born	0.35	(0.08, 1.47)	0.34	(0.08, 1.38)	0.36	(0.07, 1.84)	0.28	(0.06, 1.35)	0.36	(0.08, 1.55)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.10

Sensitivity Analysis *(Wave I-III Panel)* | M1: + BMI Classification

Survey Design-Based Multinomial Logistic Regression

	Reference Outcome: Consistent Nothing									
	Consistent Lose N = 1,526[1]		Changing Lose/Maintain N = 1,297[1]		Consistent Maintain N = 453[1]		Consistent Gain N = 570[1]		Changing Goals N = 5,610[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	2.90	(0.32, 26.1)	2.98	(0.23, 38.4)	▲ 21.76**	(2.86, 166)	▲ 11.47*	(1.03, 128)	1.15	(0.16, 8.28)
Age	0.95	(0.83, 1.09)	0.89	(0.78, 1.02)	0.87	(0.75, 1.01)	0.99	(0.86, 1.15)	▽ 0.88*	(0.78, 1.00)
Female	▲ 8.59***	(5.81, 12.7)	▲ 3.94***	(2.70, 5.74)	▲ 2.27***	(1.45, 3.57)	▽ 0.15***	(0.09, 0.24)	1.21	(0.86, 1.70)
Race[3]										
White	0.87	(0.53, 1.45)	0.70	(0.43, 1.15)	0.70	(0.40, 1.21)	▽ 0.37***	(0.21, 0.62)	0.64	(0.40, 1.03)
Asian/Pacific Islander	▲ 4.30*	(1.12, 16.49)	3.15	(0.83, 11.97)	2.38	(0.53, 10.65)	2.91	(0.72, 11.82)	2.79	(0.79, 9.85)
Black	0.74	(0.32, 1.73)	1.04	(0.46, 2.35)	1.24	(0.50, 3.06)	▲ 2.62*	(1.13, 6.09)	1.21	(0.55, 2.67)
Native American	0.90	(0.38, 2.12)	0.99	(0.43, 2.27)	1.01	(0.39, 2.60)	0.90	(0.39, 2.10)	0.95	(0.43, 2.11)
Multiracial/Other Race	1.63	(0.39, 6.72)	2.28	(0.56, 9.31)	1.70	(0.38, 7.63)	▲ 6.32*	(1.40, 28.48)	2.74	(0.68, 11.00)
Latino/a	1.13	(0.53, 2.43)	0.83	(0.39, 1.76)	0.87	(0.39, 1.98)	1.09	(0.50, 2.38)	0.80	(0.39, 1.65)
U.S. Born	0.27	(0.06, 1.13)	0.31	(0.08, 1.25)	0.36	(0.07, 1.86)	0.30	(0.06, 1.42)	0.35	(0.08, 1.50)
BMI Classification (Ref = Healthy Weight)										
Underweight	▽ 0.10*	(0.01, 0.83)	0.33	(0.09, 1.27)	0.57	(0.13, 2.48)	▲ 3.85*	(1.23, 12.1)	1.64	(0.52, 5.19)
Overweight	▲ 10.72***	(4.58, 25.1)	▲ 3.75**	(1.67, 8.42)	1.15	(0.45, 2.90)	▽ 0.26*	(0.09, 0.80)	2.01	(0.90, 4.50)
Obese	▲ 26.98***	(11.9, 61.2)	▲ 4.80***	(2.02, 11.4)	0.52	(0.17, 1.64)	▽ 0.10***	(0.03, 0.36)	1.99	(0.86, 4.61)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.11

Sensitivity Analysis *(Wave I-III Panel)* | M2: + Weight Self-Image Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: **Consistent Nothing**									
	Consistent Lose N = 1,526[1]		**Changing Lose/Maintain** N = 1,297[1]		**Consistent Maintain** N = 453[1]		**Consistent Gain** N = 570[1]		**Changing Goals** N = 5,610[1]	
Variable	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Valid Waves (Ref = 3)										
2	2.31	(0.22, 24.6)	2.82	(0.23, 35.1)	▲ 23.54**	(3.17, 175)	▲ 13.16*	(1.48, 117)	0.99	(0.13, 7.26)
Age	0.92	(0.81, 1.06)	0.89	(0.77, 1.01)	0.87	(0.75, 1.01)	0.96	(0.82, 1.12)	▽ 0.88*	(0.78, 0.99)
Female	▲ 6.00***	(4.04, 8.92)	▲ 3.51***	(2.42, 5.10)	▲ 2.42***	(1.54, 3.79)	▽ 0.17***	(0.11, 0.28)	1.18	(0.84, 1.65)
Race[3]										
White	0.75	(0.45, 1.25)	0.66	(0.40, 1.09)	0.70	(0.40, 1.23)	▽ 0.38***	(0.22, 0.66)	0.64	(0.40, 1.03)
Asian/Pacific Islander	▲ 4.27*	(1.08, 16.82)	3.19	(0.83, 12.22)	2.36	(0.52, 10.76)	2.23	(0.53, 9.48)	2.56	(0.72, 9.13)
Black	0.96	(0.41, 2.27)	1.12	(0.49, 2.52)	1.20	(0.49, 2.97)	▲ 2.64*	(1.15, 6.09)	1.24	(0.56, 2.73)
Native American	0.88	(0.36, 2.15)	0.98	(0.43, 2.27)	1.00	(0.39, 2.60)	0.84	(0.34, 2.04)	0.95	(0.43, 2.11)
Multiracial/Other Race	1.80	(0.44, 7.41)	2.46	(0.60, 10.11)	1.75	(0.39, 7.97)	▲ 7.01*	(1.52, 32.41)	2.83	(0.70, 11.38)
Latino/a	1.27	(0.58, 2.77)	0.85	(0.40, 1.84)	0.87	(0.38, 1.97)	1.10	(0.49, 2.44)	0.81	(0.39, 1.67)
U.S. Born	0.29	(0.07, 1.28)	0.31	(0.08, 1.27)	0.35	(0.07, 1.82)	0.27	(0.06, 1.29)	0.36	(0.08, 1.55)
BMI Classification (Ref = Healthy Weight)										
Underweight	0.16	(0.02, 1.40)	0.49	(0.12, 1.99)	0.54	(0.12, 2.39)	1.32	(0.40, 4.33)	1.12	(0.33, 3.80)
Overweight	▲ 4.03***	(1.80, 9.03)	▲ 2.71**	(1.27, 5.80)	1.49	(0.62, 3.57)	0.45	(0.15, 1.35)	1.81	(0.86, 3.79)
Obese	▲ 6.67***	(3.04, 14.6)	▲ 2.94*	(1.23, 7.06)	0.93	(0.28, 3.03)	▽ 0.26*	(0.07, 0.96)	1.62	(0.70, 3.75)

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight[4]	—	—	—	—	—	—	—	—	—	—
Slightly Underweight	0.86	(0.42, 1.76)	▽ 0.43*	(0.20, 0.89)	0.83	(0.41, 1.67)	▲ 6.07***	(3.13, 11.8)	1.75	(0.97, 3.16)
Slightly Overweight	▲ 9.69***	(5.27, 17.8)	▲ 2.08*	(1.14, 3.81)	0.49	(0.23, 1.04)	▽ 0.40*	(0.17, 0.94)	▲ 1.78*	(1.01, 3.16)
Very Overweight	▲ 7.36*	(1.16, 46.6)	1.35	(0.21, 8.48)	▽ 0.01***	(0.00, 0.11)	▽ 0.00***	(0.00, 0.00)	1.07	(0.18, 6.55)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

[4] Estimates that did not converge reliably in this model are suppressed.

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.12

Sensitivity Analysis *(Wave I-III Panel)* | M3: + Behaviors

Survey Design-Based Multinomial Logistic Regression

	Reference Outcome: **Consistent Nothing**									
	Consistent Lose N = 1,526[1]		**Changing Lose/Maintain** N = 1,297[1]		**Consistent Maintain** N = 453[1]		**Consistent Gain** N = 570[1]		**Changing Goals** N = 5,610[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	2.49	(0.22, 28.4)	3.01	(0.24, 37.5)	▲ 25.32**	(3.42, 187)	▲ 14.00*	(1.65, 119)	1.05	(0.14, 7.59)
Age	0.97	(0.83, 1.13)	0.93	(0.80, 1.08)	0.92	(0.78, 1.09)	1.03	(0.87, 1.21)	0.91	(0.79, 1.05)
Female	▲ 6.59***	(4.33, 10.0)	▲ 3.78***	(2.54, 5.63)	▲ 2.66***	(1.67, 4.24)	▽ 0.20***	(0.12, 0.33)	1.26	(0.87, 1.80)
Race[3]										
White	0.72	(0.42, 1.23)	0.63	(0.38, 1.06)	0.67	(0.38, 1.19)	▽ 0.37***	(0.21, 0.64)	0.62	(0.38, 1.01)
Asian/Pacific Islander	▲ 4.29*	(1.10, 16.84)	3.31	(0.87, 12.65)	2.44	(0.54, 10.97)	2.26	(0.53, 9.66)	2.63	(0.73, 9.45)
Black	0.99	(0.41, 2.38)	1.15	(0.50, 2.65)	1.24	(0.50, 3.12)	▲ 2.71*	(1.15, 6.38)	1.27	(0.57, 2.85)
Native American	0.92	(0.37, 2.25)	1.02	(0.44, 2.37)	1.05	(0.40, 2.72)	0.88	(0.36, 2.16)	0.98	(0.44, 2.18)
Multiracial/Other Race	1.89	(0.46, 7.85)	2.59	(0.63, 10.64)	1.86	(0.41, 8.46)	▲ 7.50*	(1.60, 35.18)	2.96	(0.73, 11.94)
Latino/a	1.27	(0.58, 2.80)	0.85	(0.40, 1.83)	0.87	(0.38, 1.99)	1.10	(0.50, 2.42)	0.81	(0.39, 1.67)
U.S. Born	0.29	(0.07, 1.28)	0.31	(0.08, 1.28)	0.35	(0.07, 1.83)	0.28	(0.06, 1.35)	0.36	(0.08, 1.55)
BMI Classification (Ref = Healthy Weight)										
Underweight	0.16	(0.02, 1.42)	0.49	(0.12, 2.00)	0.54	(0.12, 2.43)	1.33	(0.40, 4.44)	1.12	(0.33, 3.84)
Overweight	▲ 4.02***	(1.80, 8.98)	▲ 2.69*	(1.26, 5.75)	1.48	(0.62, 3.54)	0.43	(0.14, 1.29)	1.80	(0.86, 3.76)
Obese	▲ 6.74***	(3.04, 14.9)	▲ 2.95*	(1.22, 7.12)	0.93	(0.28, 3.05)	▽ 0.26*	(0.07, 0.96)	1.62	(0.69, 3.79)

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight[4]	—	—	—	—	—	—	—	—	—	—
Slightly Underweight	0.90	(0.44, 1.83)	▽ 0.44*	(0.21, 0.90)	0.85	(0.43, 1.71)	▲ 6.44***	(3.36, 12.4)	1.79	(1.00, 3.22)
Slightly Overweight	▲ 10.16***	(5.45, 19.0)	▲ 2.17*	(1.17, 4.05)	0.52	(0.24, 1.11)	0.43	(0.18, 1.02)	▲ 1.85*	(1.03, 3.34)
Very Overweight	▲ 7.96*	(1.26, 50.3)	1.44	(0.23, 9.02)	▽ 0.01***	(0.00, 0.12)	▽ 0.00***	(0.00, 0.00)	1.14	(0.19, 6.91)
Met MVPA Guidelines	▲ 1.70*	(1.05, 2.75)	1.46	(0.93, 2.29)	▲ 1.66*	(1.02, 2.68)	▲ 2.41***	(1.47, 3.97)	1.40	(0.92, 2.14)
Avg. Sleep Hours	1.07	(0.93, 1.24)	1.12	(0.97, 1.31)	1.12	(0.96, 1.31)	1.11	(0.93, 1.31)	1.09	(0.95, 1.26)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

[4] Estimates that did not converge reliably in this model are suppressed.

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.13

Variable	Consistent Lose N = 1,526[1] OR[2]	(95% CI)	Changing Lose/Maintain N = 1,297[1] OR[2]	(95% CI)	Consistent Maintain N = 453[1] OR[2]	(95% CI)	Consistent Gain N = 570[1] OR[2]	(95% CI)	Changing Goals N = 5,610[1] OR[2]	(95% CI)
Valid Waves (Ref = 3)										
2	2.40	(0.21, 27.2)	2.84	(0.18, 44.8)	▲ 24.40**	(3.34, 178)	▲ 13.36*	(1.71, 105)	0.99	(0.14, 6.90)
Age	0.91	(0.75, 1.09)	0.86	(0.72, 1.03)	0.86	(0.71, 1.04)	0.98	(0.81, 1.19)	0.85	(0.72, 1.00)
Female	▲ 6.57***	(4.32, 9.99)	▲ 3.77***	(2.53, 5.60)	▲ 2.63***	(1.65, 4.20)	▽ 0.19***	(0.12, 0.31)	1.24	(0.87, 1.79)
Race[3]										
White	0.88	(0.54, 1.45)	0.76	(0.48, 1.22)	0.78	(0.46, 1.32)	▽ 0.46**	(0.28, 0.78)	0.79	(0.50, 1.23)
Asian/Pacific Islander	▲ 4.47*	(1.10, 18.18)	3.38	(0.85, 13.39)	2.52	(0.54, 11.69)	2.37	(0.53, 10.51)	2.75	(0.74, 10.18)
Black	0.75	(0.32, 1.78)	0.89	(0.40, 2.00)	1.01	(0.41, 2.45)	2.05	(0.89, 4.74)	0.92	(0.42, 2.00)
Native American	0.87	(0.35, 2.16)	0.99	(0.43, 2.29)	1.02	(0.39, 2.67)	0.77	(0.31, 1.92)	0.91	(0.41, 2.02)
Multiracial/Other Race	1.53	(0.36, 6.40)	2.11	(0.51, 8.73)	1.58	(0.34, 7.39)	▲ 5.77*	(1.19, 27.86)	2.28	(0.56, 9.39)
Latino/a	1.17	(0.54, 2.53)	0.76	(0.35, 1.64)	0.83	(0.36, 1.93)	1.06	(0.48, 2.37)	0.72	(0.35, 1.47)
U.S. Born	0.30	(0.06, 1.40)	0.32	(0.07, 1.38)	0.35	(0.06, 1.96)	0.27	(0.05, 1.36)	0.37	(0.08, 1.69)
BMI Classification (Ref = Healthy Weight)										
Underweight	0.16	(0.02, 1.49)	0.52	(0.13, 2.10)	0.56	(0.12, 2.54)	1.34	(0.40, 4.48)	1.15	(0.34, 3.95)
Overweight	▲ 3.93***	(1.77, 8.74)	▲ 2.65*	(1.24, 5.67)	1.46	(0.61, 3.52)	0.40	(0.13, 1.21)	1.75	(0.84, 3.64)
Obese	▲ 6.76***	(3.01, 15.2)	▲ 3.01*	(1.25, 7.26)	0.95	(0.29, 3.17)	▽ 0.25*	(0.07, 0.94)	1.61	(0.68, 3.84)

Sensitivity Analysis *(Wave I-III Panel)* | M4: + Household

Survey Design-Based Multinomial Logistic Regression

Reference Outcome: **Consistent Nothing**

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight[4]	—	—	—	—	—	—	—	—	—	—
Slightly Underweight	0.89	(0.44, 1.82)	▽ 0.43*	(0.21, 0.89)	0.85	(0.43, 1.69)	▲ 6.61***	(3.46, 12.6)	1.78	(0.99, 3.19)
Slightly Overweight	▲ 9.99***	(5.34, 18.7)	▲ 2.13*	(1.14, 3.98)	0.51	(0.24, 1.09)	0.43	(0.18, 1.02)	▲ 1.82*	(1.01, 3.28)
Very Overweight	▲ 7.60*	(1.21, 47.9)	1.36	(0.22, 8.50)	▽ 0.01***	(0.00, 0.11)	▽ 0.00***	(0.00, 0.00)	1.07	(0.18, 6.51)
Met MVPA Guidelines	▲ 1.81*	(1.10, 2.98)	1.55	(0.97, 2.48)	▲ 1.75*	(1.06, 2.90)	▲ 2.57***	(1.55, 4.26)	1.51	(0.97, 2.36)
Avg. Sleep Hours	1.11	(0.95, 1.29)	1.16	(0.99, 1.36)	1.16	(0.98, 1.37)	1.13	(0.94, 1.36)	1.13	(0.97, 1.31)
Food Choice Autonomy	1.48	(0.75, 2.93)	1.41	(0.72, 2.79)	1.64	(0.80, 3.36)	1.59	(0.79, 3.24)	1.54	(0.83, 2.88)
Prop. Dinners w/ Parent(s)	▽ 0.37**	(0.17, 0.77)	▽ 0.32**	(0.15, 0.67)	▽ 0.38*	(0.17, 0.83)	0.56	(0.25, 1.27)	▽ 0.32**	(0.16, 0.65)
Social Origins Score	0.84	(0.63, 1.13)	0.89	(0.67, 1.19)	0.89	(0.66, 1.20)	▽ 0.72*	(0.53, 0.97)	0.80	(0.61, 1.05)
Parent Graduated HS	1.12	(0.44, 2.90)	0.87	(0.35, 2.17)	1.10	(0.40, 3.07)	1.85	(0.66, 5.21)	1.15	(0.50, 2.69)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

[4] Estimates that did not converge reliably in this model are suppressed.

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.14

Sensitivity Analysis *(Wave I-III Panel)* | M5: + Neighborhood (Social)										
Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: **Consistent Nothing**									
	Consistent Lose N = 1,526[1]		**Changing Lose/Maintain** N = 1,297[1]		**Consistent Maintain** N = 453[1]		**Consistent Gain** N = 570[1]		**Changing Goals** N = 5,610[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	2.54	(0.21, 30.1)	2.97	(0.18, 49.9)	▲ 25.26**	(3.41, 187)	▲ 14.79*	(1.85, 118)	1.03	(0.14, 7.43)
Age	0.91	(0.76, 1.09)	0.87	(0.73, 1.03)	0.86	(0.71, 1.05)	0.98	(0.81, 1.19)	0.85	(0.72, 1.00)
Female	▲ 6.55***	(4.31, 9.97)	▲ 3.75***	(2.52, 5.59)	▲ 2.62***	(1.64, 4.18)	▽ 0.19***	(0.12, 0.31)	1.24	(0.86, 1.78)
Race[3]										
White	1.09	(0.67, 1.79)	0.96	(0.60, 1.53)	0.90	(0.53, 1.52)	▽ 0.53*	(0.30, 0.92)	0.90	(0.58, 1.40)
Asian/Pacific Islander	▲ 4.76*	(1.19, 19.04)	3.55	(0.90, 14.02)	2.59	(0.56, 12.00)	2.46	(0.56, 10.79)	3.01	(0.82, 11.02)
Black	0.55	(0.24, 1.27)	0.64	(0.28, 1.43)	0.82	(0.34, 1.98)	1.69	(0.72, 4.01)	0.76	(0.35, 1.63)
Native American	0.85	(0.33, 2.16)	0.97	(0.41, 2.29)	1.01	(0.38, 2.70)	0.76	(0.30, 1.93)	0.89	(0.39, 2.02)
Multiracial/Other Race	1.21	(0.28, 5.25)	1.61	(0.38, 6.82)	1.35	(0.28, 6.50)	▲ 5.13*	(1.01, 26.05)	1.91	(0.45, 8.08)
Latino/a	1.12	(0.51, 2.44)	0.74	(0.34, 1.60)	0.81	(0.35, 1.89)	1.01	(0.45, 2.28)	0.74	(0.36, 1.53)
U.S. Born	0.32	(0.07, 1.50)	0.34	(0.08, 1.48)	0.37	(0.07, 2.04)	0.29	(0.06, 1.45)	0.38	(0.08, 1.75)
BMI Classification (Ref = Healthy Weight)										
Underweight	0.17	(0.02, 1.50)	0.51	(0.12, 2.10)	0.55	(0.12, 2.55)	1.33	(0.39, 4.47)	1.14	(0.33, 3.97)
Overweight	▲ 3.79**	(1.70, 8.42)	▲ 2.57*	(1.21, 5.48)	1.43	(0.60, 3.44)	0.38	(0.13, 1.17)	1.71	(0.82, 3.57)
Obese	▲ 6.42***	(2.81, 14.6)	▲ 2.86*	(1.18, 6.92)	0.92	(0.27, 3.10)	▽ 0.24*	(0.06, 0.90)	1.55	(0.65, 3.73)

Weight Self-Image (Ref = About the Right Weight)										
Very Underweight[4]	—	—	—	—	—	—	—	—	—	—
Slightly Underweight	0.90	(0.44, 1.83)	▽ 0.44*	(0.21, 0.90)	0.85	(0.43, 1.70)	▲ 6.64***	(3.48, 12.7)	▲ 1.82*	(1.01, 3.25)
Slightly Overweight	▲ 10.21***	(5.41, 19.3)	▲ 2.19*	(1.17, 4.09)	0.52	(0.24, 1.11)	0.43	(0.18, 1.03)	▲ 1.84*	(1.02, 3.34)
Very Overweight	▲ 7.31*	(1.15, 46.4)	1.32	(0.21, 8.34)	▽ 0.01***	(0.00, 0.11)	▽ 0.00***	(0.00, 0.00)	1.04	(0.17, 6.42)
Met MVPA Guidelines	▲ 1.85*	(1.13, 3.02)	1.59	(1.00, 2.53)	▲ 1.78*	(1.08, 2.95)	▲ 2.60***	(1.57, 4.32)	1.54	(0.99, 2.40)
Avg. Sleep Hours	1.10	(0.95, 1.29)	1.15	(0.98, 1.36)	1.16	(0.97, 1.37)	1.13	(0.94, 1.36)	1.12	(0.96, 1.31)
Food Choice Autonomy	1.48	(0.75, 2.89)	1.41	(0.72, 2.75)	1.63	(0.80, 3.33)	1.60	(0.80, 3.23)	1.54	(0.83, 2.85)
Prop. Dinners w/ Parent(s)	▽ 0.37**	(0.17, 0.77)	▽ 0.32**	(0.15, 0.67)	▽ 0.38*	(0.17, 0.84)	0.57	(0.25, 1.29)	▽ 0.32**	(0.16, 0.65)
Social Origins Score	0.93	(0.68, 1.27)	0.97	(0.72, 1.32)	0.95	(0.69, 1.29)	0.79	(0.57, 1.10)	0.88	(0.66, 1.18)
Parent Graduated HS	1.11	(0.43, 2.87)	0.86	(0.34, 2.17)	1.09	(0.39, 3.03)	1.81	(0.64, 5.10)	1.11	(0.47, 2.61)
Neighborhood SES Disadvantage	▲ 1.36*	(1.02, 1.82)	1.27	(0.95, 1.70)	1.17	(0.84, 1.62)	▲ 1.33*	(1.01, 1.77)	1.28	(1.00, 1.65)
Violent Crimes/100,000	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.70	(0.28, 1.79)	0.68	(0.28, 1.64)	0.65	(0.25, 1.70)	0.57	(0.23, 1.45)	0.65	(0.28, 1.53)
Metropolitan Area	0.75	(0.35, 1.60)	0.66	(0.30, 1.44)	0.76	(0.35, 1.61)	0.98	(0.47, 2.04)	0.67	(0.35, 1.29)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

[4] Estimates that did not converge reliably in this model are suppressed.

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 2.15

Sensitivity Analysis *(Wave I-III Panel)* | M6: + Neighborhood (Environmental)										
Survey Design-Based Multinomial Logistic Regression										
	Reference Outcome: **Consistent Nothing**									
	Consistent Lose N = 1,526[1]		**Changing Lose/Maintain** N = 1,297[1]		**Consistent Maintain** N = 453[1]		**Consistent Gain** N = 570[1]		**Changing Goals** N = 5,610[1]	
Variable	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	2.29	(0.20, 25.7)	2.70	(0.18, 39.9)	▲ 21.43**	(2.76, 166)	▲ 13.99*	(1.71, 114)	0.93	(0.12, 7.27)
Age	0.91	(0.75, 1.09)	0.87	(0.73, 1.03)	0.86	(0.71, 1.04)	0.99	(0.82, 1.20)	0.85	(0.72, 1.00)
Female	▲ 6.49***	(4.26, 9.88)	▲ 3.73***	(2.51, 5.56)	▲ 2.57***	(1.60, 4.13)	▽ 0.19***	(0.11, 0.31)	1.21	(0.84, 1.75)
Race[3]										
White	1.10	(0.67, 1.78)	0.96	(0.60, 1.52)	0.90	(0.53, 1.51)	▽ 0.56*	(0.33, 0.97)	0.90	(0.59, 1.39)
Asian/Pacific Islander	▲ 5.41*	(1.26, 23.30)	4.18	(0.95, 18.30)	2.76	(0.54, 14.22)	2.70	(0.58, 12.66)	3.31	(0.84, 13.05)
Black	0.55	(0.24, 1.23)	0.62	(0.29, 1.34)	0.82	(0.35, 1.94)	1.58	(0.69, 3.60)	0.76	(0.37, 1.56)
Native American	0.84	(0.33, 2.18)	0.99	(0.41, 2.38)	1.03	(0.38, 2.79)	0.75	(0.29, 1.90)	0.88	(0.38, 2.03)
Multiracial/Other Race	1.08	(0.25, 4.58)	1.42	(0.34, 5.93)	1.20	(0.25, 5.65)	4.25	(0.85, 21.15)	1.70	(0.41, 7.02)
Latino/a	1.53	(0.67, 3.48)	0.99	(0.46, 2.14)	1.19	(0.51, 2.78)	1.25	(0.53, 2.92)	0.99	(0.47, 2.11)
U.S. Born	0.27	(0.06, 1.28)	0.30	(0.07, 1.31)	0.31	(0.06, 1.75)	0.26	(0.05, 1.33)	0.32	(0.07, 1.48)
BMI Classification (Ref = Healthy Weight)										
Underweight	0.16	(0.02, 1.46)	0.49	(0.12, 2.12)	0.54	(0.12, 2.57)	1.29	(0.37, 4.43)	1.10	(0.30, 3.98)
Overweight	▲ 3.68**	(1.67, 8.15)	▲ 2.53*	(1.19, 5.35)	1.42	(0.59, 3.40)	0.36	(0.12, 1.09)	1.66	(0.80, 3.45)
Obese	▲ 6.40***	(2.72, 15.0)	▲ 2.88*	(1.14, 7.27)	0.92	(0.26, 3.23)	▽ 0.23*	(0.06, 0.91)	1.54	(0.62, 3.82)
Weight Self-Image (Ref = About the Right Weight)										
Very Underweight[4]	—	—	—	—	—	—	—	—	—	—
Slightly Underweight	0.88	(0.44, 1.76)	▽ 0.42*	(0.21, 0.85)	0.81	(0.42, 1.57)	▲ 6.55***	(3.51, 12.2)	▲ 1.76*	(1.00, 3.10)
Slightly Overweight	▲ 10.10***	(5.24, 19.5)	▲ 2.15*	(1.12, 4.10)	0.50	(0.23, 1.09)	0.43	(0.18, 1.05)	1.81	(0.98, 3.34)

Very Overweight	▲ 7.64*	(1.19, 49.1)	1.35	(0.21, 8.72)	▽ 0.01***	(0.00, 0.11)	▽ 0.00***	(0.00, 0.00)	1.09	(0.17, 6.75)
Met MVPA Guidelines	▲ 1.83*	(1.12, 2.99)	1.56	(0.98, 2.50)	▲ 1.74*	(1.05, 2.89)	▲ 2.60***	(1.58, 4.28)	1.52	(0.97, 2.37)
Avg. Sleep Hours	1.11	(0.95, 1.29)	1.16	(0.99, 1.36)	1.17	(0.98, 1.38)	1.13	(0.94, 1.36)	1.13	(0.97, 1.32)
Food Choice Autonomy	1.44	(0.76, 2.71)	1.37	(0.73, 2.56)	1.61	(0.82, 3.16)	1.59	(0.82, 3.10)	1.51	(0.84, 2.69)
Prop. Dinners w/ Parent(s)	▽ 0.40**	(0.20, 0.79)	▽ 0.35**	(0.18, 0.70)	▽ 0.42*	(0.20, 0.90)	0.62	(0.29, 1.32)	▽ 0.35**	(0.19, 0.67)
Social Origins Score	0.91	(0.67, 1.23)	0.96	(0.71, 1.29)	0.92	(0.68, 1.25)	0.76	(0.56, 1.04)	0.86	(0.65, 1.14)
Parent Graduated HS	1.08	(0.41, 2.83)	0.85	(0.33, 2.15)	1.07	(0.38, 2.96)	1.91	(0.69, 5.29)	1.11	(0.47, 2.59)
Neighborhood SES Disadvantage	1.29	(0.94, 1.77)	1.18	(0.85, 1.64)	1.17	(0.83, 1.65)	1.28	(0.92, 1.78)	1.23	(0.93, 1.64)
Violent Crimes/100,000	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.68	(0.27, 1.72)	0.66	(0.28, 1.59)	0.64	(0.25, 1.66)	0.56	(0.22, 1.43)	0.62	(0.27, 1.47)
Metropolitan Area	0.75	(0.35, 1.59)	0.59	(0.27, 1.28)	0.63	(0.29, 1.37)	1.00	(0.46, 2.18)	0.64	(0.34, 1.22)
Climate PC1	1.06	(0.95, 1.17)	1.08	(0.98, 1.19)	1.11	(0.99, 1.23)	1.00	(0.89, 1.12)	1.05	(0.97, 1.14)
Climate PC2	0.95	(0.82, 1.09)	0.98	(0.84, 1.13)	0.94	(0.82, 1.08)	1.00	(0.86, 1.16)	0.95	(0.84, 1.07)
Resources PC1	0.91	(0.71, 1.16)	0.93	(0.73, 1.17)	0.91	(0.72, 1.16)	0.97	(0.77, 1.23)	0.93	(0.76, 1.14)
Resources PC2	1.10	(0.87, 1.39)	1.07	(0.87, 1.31)	1.18	(0.93, 1.49)	1.02	(0.80, 1.30)	1.07	(0.88, 1.31)
Beta Index 3km	2.28	(0.37, 14.0)	3.00	(0.51, 17.5)	0.75	(0.09, 6.44)	2.10	(0.29, 15.3)	1.27	(0.27, 6.08)
Cul-de-sac Density 3km	0.99	(0.88, 1.11)	0.99	(0.88, 1.12)	1.02	(0.91, 1.14)	1.00	(0.88, 1.12)	0.98	(0.89, 1.09)
Prop. Roads A40-A48 3km	0.58	(0.08, 4.23)	0.54	(0.06, 4.66)	0.40	(0.04, 3.79)	0.32	(0.03, 3.96)	0.33	(0.05, 2.28)
Landscape Patch Density 3km	▲ 1.02*	(1.00, 1.04)	▲ 1.02*	(1.00, 1.04)	1.02	(1.00, 1.04)	1.01	(0.99, 1.03)	1.01	(1.00, 1.03)
Class 4 Area 3km	1.11	(0.87, 1.42)	1.12	(0.88, 1.43)	1.15	(0.89, 1.48)	1.23	(0.97, 1.57)	1.17	(0.95, 1.44)
Class 5 Area 3km	▲ 1.45*	(1.07, 1.95)	▲ 1.41*	(1.02, 1.96)	1.20	(0.84, 1.72)	▲ 1.66**	(1.20, 2.30)	▲ 1.36*	(1.02, 1.80)

[1] Unweighted sample sizes per trajectory; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
▲ indicates a higher relative odds of membership in that trajectory compared to the Consistent Nothing trajectory, while ▽ denotes lower relative odds.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

[4] Estimates that did not converge reliably in this model are suppressed.

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Chapter 3

THE PARADIGM IN PRACTICE:

WEIGHT GOAL TRAJECTORIES, BEHAVIORAL ENGAGEMENT,

AND THE SOCIAL COSTS OF WEIGHT-CENTERED HEALTH CULTURE

3.1 Introduction

The behavioral consequences of wanting to change one's weight are neither straightforward nor uniformly benign. Embedded within the weight-centered health paradigm is a behavioral assumption that has rarely been made explicit: that wanting to lose weight is not only a legitimate goal but a productive one — that the aspiration the paradigm works to produce will reliably translate into the behaviors that reduce weight, and that those behaviors will reliably produce the health improvements the paradigm promises. This logic — from normative goal to motivated behavior to improved outcome — has organized public health messaging, clinical practice, and health policy in ways that are difficult to overstate (Boero 2012; Conrad 2007; Oliver 2006; Saguy 2013). The introduction of BMI-based clinical thresholds into routine medical care, the federal government's explicit weight-loss targets in Healthy People initiatives, the American Medical Association's 2013 classification of obesity as a disease — each of these institutional shifts presupposed that the identification and motivation of weight-loss aspiration would set in motion a beneficial behavioral cascade that would result in population health improvements (Levinovitz 2020; Strings 2019).

The empirical literature has complicated this account in ways the paradigm is intrinsically reluctant to acknowledge. The foundational assumption that weight loss is achievable through sustained caloric restriction turns out to be extraordinarily difficult to fulfill in practice: one- to two-thirds of those who engage in deliberate weight loss efforts regain all lost weight, and more, within several years (Mann et al. 2007), and long-term weight-loss intervention studies report failure rates of up to 95% (Gaesser 2009). The body resists sustained caloric deficit through compensatory physiological mechanisms that operate independently of motivation and that intensify with the duration and severity of restriction (Bacon and Aphramor 2014). These mechanisms are not failures of individual willpower; they are the predictable outputs of homeostatic systems designed to defend a setpoint body weight range that is substantially determined by genetics (Friedman 2009; Wardle et al. 2008). When sustained restriction fails — as it does for most people, most of the time — the result is not a return to baseline but a cycle of restriction and regain whose own health consequences include elevated mortality risk (Diaz et al. 2005; Lissner et al. 1991), chronic inflammation (Strohacker and McFarlin 2010), hypertension (Guagnano et al. 2000), and metabolic disruption (Montani et al. 2006) — many of the very comorbidities the weight-loss imperative claims it is intended to prevent.

What the paradigm has not accounted for is what people do when dieting fails. The evidence suggests the answer is not simply to stop trying. The psychological costs of repeated and failed weight-loss attempts — body dissatisfaction, lowered self-efficacy, intensified weight stigma, and disordered eating — themselves motivate continued and often escalating behavioral engagement (Catling and Malson 2012; Neumark-Sztainer et al. 2007; Puhl and Heuer 2009). Adolescents who diet are not only more likely to diet again as young adults; they are more likely to escalate into a broader and more extreme behavioral repertoire as initial strategies prove insufficient (Neumark-Sztainer, Wall, Guo, et al. 2006; Stice, Marti, and Durant 2011). This escalation dynamic — in which the failure of normative weight-control strategies motivates diversification and intensification of behavioral practice — is particularly consequential given the asymmetric way in which the weight-centered health paradigm recruits adolescents along gendered lines. As Chapter 2 of this dissertation documents, girls are recruited into weight-loss aspiration at higher rates than boys, at lower clinical thresholds, and through more intense body-image mechanisms than BMI classification alone can account for. If the behavioral consequences of failed weight-loss efforts are escalation, and if girls are more intensively recruited into weight-loss aspiration in the first place, the paradigm's asymmetric reach may produce an asymmetric behavioral risk — one concentrated among exactly the adolescents for whom the clinical infrastructure of the weight-centered health paradigm has least acknowledged its harm.

Chapter 2 of this dissertation examined the upstream question of goal formation: how weight goal trajectories — the sustained patterns of aspiration toward losing, gaining, maintaining, or not engaging with one's weight across adolescence and early adulthood — are socially structured by sex, race, BMI classification, weight self-image, household context, and neighborhood environment. Its central findings were that weight-loss aspiration is driven more powerfully by internalized body-image norms than by clinical classification, that these norms operate asymmetrically across gendered lines in ways that recruit girls and women into loss orientation at clinical thresholds that do not warrant it, and that the Consistent Nothing trajectory — genuine exemption from active weight-goal thinking — is occupied by a small and demographically distinctive minority for whom the social conditions of the weight-centered health paradigm have, for whatever reason, not produced goal formation.

The present paper takes those trajectories as given and asks what they produce behaviorally. This is both an extension of Chapter 2 but also a theoretically distinct inquiry, since goal orientation and behavioral engagement are not the same thing. Between aspiration and action lies not a single mediating mechanism but a field of conditions that govern whether, and how, a goal becomes a behavior: the psychological intensity of body dissatisfaction, the behavioral norms a person sees modeled around them, the material resources their enactment would require, and the household and neighborhood contexts that make particular strategies more or less available. These are not ordered steps on a causal path from goal to behavior so much as the contingent circumstances under which the same aspiration may produce very different responses — or none at all. A person who consistently aspires to lose weight over many years may or may not diet, exercise, fast, use supplements, or engage in any of the behaviors the aspiration nominally implies. Understanding what predicts the translation from goal orientation into behavioral practice — and in particular, what predicts escalation into behavioral practices extreme enough to carry clinical risk — is the central question of this paper.

3.2 Weight Control Behaviors

3.2.1 The Behavioral Spectrum and the Failure of Dieting

Weight control behaviors span a wide clinical range that has been conceptualized in several ways in the empirical literature. The most influential distinction is between healthy and unhealthy weight control behaviors, operationalized most systematically in the Project EAT studies (Dianne Neumark-Sztainer et al. 2002; Neumark-Sztainer, Wall, Guo, et al. 2006). Healthy weight control behaviors include eating more fruits and vegetables, reducing fat intake[21], reducing consumption of sweets, and exercising — behaviors that clinical guidelines broadly endorse. Unhealthy weight control behaviors include skipping meals, using diet pills, increased use of cigarettes, purging, misuse of laxatives and/or diuretics, and fasting for extended periods. Very unhealthy or extreme behaviors represent a clinical threshold, i.e. unhealthy or compensatory behaviors that constitute diagnostic criteria for eating disorders when they occur at sufficient frequency and/or in certain combinations (American Psychiatric Association 2013).

This schema has been influential in documenting the prevalence and correlates of different behavioral categories, but it carries a conceptual limitation that matters for the present analysis: the healthy/unhealthy distinction presupposes a clinical standard that is itself contested, and the behavioral categories it defines may not map cleanly onto the social processes that organize behavioral engagement. Fasting, for instance, appears in both clinical eating disorder criteria (when severe and sustained) and mainstream dieting advice[22] (when framed as intermittent fasting); the same behavior, performed by different people in different social contexts, can be simultaneously medicalized as disordered and marketed as healthy lifestyle management. Similarly, exercise can be a healthy behavior at moderate intensities and a component of compulsive exercise disorder at extreme frequencies — a distinction the binary healthy/unhealthy schema collapses. The present analysis therefore organizes behavioral outcomes around an empirical threshold — engagement versus non-engagement, and among those who engage, how many and which behaviors — rather than presuming clinical valence in advance, reserving the extreme designation for

[21]It should be noted that 'reducing fat intake' as an obvious health-promoting behavior is not straightforward. See Teicholz (2014) and Ludwig et al. (2018) for further discussion on the history of the low-fat dieting trend of the 1990s and its implications for health.

[22]While mainstream and definitely constituting dieting advice, several of the most popular books prescribing and advocating fasting are written by a practicing medical doctor (Fung 2016, 2018, 2026).

behaviors with relatively unambiguous clinical risk profiles (steroid use, binge eating, purging, fasting, laxative use, and their combinations) regardless of whether the individual enacting them would classify them as healthy.

The dominant medical and public health prescription for individuals classified as ‘overweight’ or ‘obese’ has been, for decades, to reduce caloric intake and increase physical activity, with the premise that a sustained caloric deficit will produce weight loss and that weight loss will produce health improvements. Both premises are substantially weaker than the paradigm’s confidence in, and consistent promotion of, them suggests. The research most often cited in support of weight loss through dietary intervention is limited by non-representative samples, short follow-up periods, and the confounding of dietary change with concomitant physical activity increases — both of which produce independent health benefits regardless of weight change (Barry et al. 2014; Phillips et al. 2013). Long-term studies with adequate follow-up consistently document failure: one to two thirds of dieters regain all lost weight within three to five years (Mann et al. 2007), and the most rigorous long-term reviews report failure rates approaching 95% (Gaesser 2009). The physiological basis of this failure is increasingly well understood. When caloric intake falls below energy expenditure, the body activates compensatory mechanisms — elevated hunger signaling, suppression of metabolic rate, and hormonal shifts that increase food-seeking behavior — that intensify with the duration and severity of restriction and that operate independently of motivation (Bacon and Aphramor 2011; Rosenbaum and Leibel 2010). These are not the responses of a body failing to cooperate with a reasonable intervention; they are the predictable defense of a setpoint weight range that twin and sibling studies suggest is 70-80% heritable and that the body maintains, similar to other homeostatic processes (Friedman 2009; Hsu et al. 2005; Wardle et al. 2008).

The result of sustained engagement with a physiologically resisted strategy is not simply failure but a characteristic cycle of restriction, compensatory eating, and weight regain — colloquially termed yo-yo dieting and clinically termed weight cycling — whose own health consequences are substantial. Weight cycling is associated with elevated all-cause mortality (Diaz et al. 2005; Lissner et al. 1991; Nguyen et al. 2007), chronic systemic inflammation (Strohacker and McFarlin 2010), hypertension (Guagnano et al. 2000; Kajioka et al. 2002), increased diabetes risk (French et al. 1997; Montani et al. 2006; Vergnaud et al. 2008), and elevated cancer risk (Thompson and McTiernan 2011). These are, with bitter irony, many of the same comorbidities that classify higher body weight as medically problematic in the first place. The paradigm's primary behavioral prescription thus produces, through the mechanism of its own predictable failure, many of the physiological risks it purports to prevent (Ernsberger and Koletsky 1999; Kassirer and Angell 1998).

What this means for the behavioral spectrum is consequential. If the normative strategy the paradigm prescribes — moderate caloric restriction combined with physical activity — is physiologically resisted and reliably fails for most people over the long term, individuals who remain motivated to change their weight are faced with a choice the paradigm does not acknowledge: stop trying or try harder. The evidence suggests most do not simply stop. The psychological costs of repeated failure — body dissatisfaction, intensified self-blame in a cultural environment that attributes dieting failure to personal inadequacy, and the experience of weight stigma — themselves motivate continued behavioral engagement (Catling and Malson 2012; Cogan and Ernsberger 1999; Puhl and Heuer 2009). But the continued engagement that results in is not simply more dieting. It is an escalation toward more intensive, more diverse, and more extreme behavioral strategies in pursuit of a goal the body is actively resisting (Neumark-Sztainer, Wall, Guo, et al. 2006; Stice et al. 2011). This escalation logic — from normative restriction to intensified restriction to compensatory behavior — is the mechanism through which the behavioral spectrum is populated at its extreme end. The extreme behaviors that clinical schemas categorize as disordered are not randomly distributed across the population; they are concentrated among those whose motivational exposure to weight-loss aspiration is most sustained and whose initial behavioral strategies have most consistently failed to produce the promised outcomes.

This escalation account has a direct implication for the present analysis: understanding who is located at the extreme end of the behavioral spectrum requires understanding not only who engages in weight control behavior in the first place, but who is most intensively recruited into the aspiration that motivates it, and whose body-image context makes the failure of normative strategies most psychologically consequential. Those questions — of recruitment, aspiration, and durability — were the subject of Chapter 2 and their behavioral implications are the subject of this paper. The social mechanisms that structure differential exposure to escalation risk — through gender, race and ethnicity, socioeconomic position, and the stigma processes that translate cultural weight norms into individual behavioral risk — are developed in the sections that follow.

3.2.2 Prevalence and Trends

The prevalence of weight control behavior engagement among adolescents in the United States is substantial and has been documented across multiple nationally representative and community-based samples. Project EAT data from the late 1990s and early 2000s found that approximately 56.9% of adolescent girls and 32.7% of adolescent boys reported using at least one unhealthy weight control behavior in the past year, with very unhealthy behaviors reported by 12.4% of girls and 4.6% of boys

(Dianne Neumark-Sztainer et al. 2002). Importantly, engagement in both unhealthy and more extreme weight control behaviors increased markedly for girls over the course of adolescence from 48.6% to 62.2% and 9.4% to 23.9% respectively (Neumark-Sztainer, Wall, Eisenberg, et al. 2006) with additional evidence that this trend is exacerbated by increased engagement with social media (Holland and Tiggemann 2016; Kang et al. 2026). Furthermore, research shows these trends carry into adulthood (Haynos et al. 2018; Neumark-Sztainer et al. 2011; Simone et al. 2022) despite increased awareness of eating disorders and their health risks as well as expanded resources for treatment (Flament et al. 2015; Galmiche et al. 2019).

Among adults, weight control behavior prevalence is similarly high. The National Health and Nutrition Examination Survey documents that approximately 49.1% of U.S. adults report trying to lose weight in any given year (Martin et al. 2018), with the most common strategies being eating less and exercising more — but with a substantial minority reporting caloric restriction extreme enough to qualify as fasting, use of dietary supplements marketed for weight loss, and reliance on meal replacement products (Yaemsiri et al. 2011). The behavioral repertoire available to weight-loss aspirants has expanded substantially over recent decades alongside the commercial diet industry - estimated to have grown to a historic peak of $135 billion in 2025 in the U.S., accelerated by the increasing availability and prescription of GLP-1 classed drugs (Research and Markets 2026) - which markets products and practices with varying and largely unverified efficacy claims to a permanently receptive consumer base.

These prevalence figures take on additional significance when read alongside the evidence on dieting's failure documented in the previous section. The near-universality of weight control behavior engagement in a context where those behaviors are unlikely to produce their intended outcomes suggests that what sustains behavioral engagement is not a rational calculation of expected return but rather a motivational structure; one organized by aspiration, body self-image, social pressure, and stigma that persists in the face of repeated failure. Documenting who engages in weight control behaviors and at what level of intensity is therefore a documentation of who is most thoroughly caught within that motivational structure, and at what cost.

3.2.3 The Social Patterning of Behavioral Engagement and Its Escalation Risks

Weight control behavior engagement is not randomly distributed across the population. It is patterned along the same axes of sex, race and ethnicity, and socioeconomic position that structure weight goal formation and crucially, as it pertains to behavior escalation, these same social axes determine whose behavioral engagement is most likely to escalate toward extreme practices in the face of repeated failure. Understanding this patterning is therefore not simply a matter of documenting who engages in what; it is a matter of identifying which social groups are most thoroughly recruited into the escalation dynamic that the weight-centered health paradigm produces.

Sex and gender. The sex gap in weight control behavior engagement is one of the most robust findings in the literature. Girls and women engage in virtually every category of weight control behavior at higher rates than boys and men, at every level of body size and across study designs and populations examined (Haines et al. 2006; Dianne Neumark-Sztainer et al. 2002; Serdula et al. 1993). This gap is not merely a function of higher weight-loss aspiration among women — it persists net of goal endorsement and body size, suggesting that girls and women translate the same level of aspiration into more intensive behavioral engagement than boys and men. As Chapter 2 documented, this divergence begins upstream: girls are recruited into weight-loss aspiration at higher rates, lower clinical thresholds, and through the more powerful mechanism of internalized body-image norms rather than direct clinical classification.

If the escalation argument is correct — that repeated dieting failure produces movement toward more extreme behavioral strategies — the more intensive initial recruitment of girls into the paradigm creates a correspondingly greater risk of escalation. A girl who begins dieting at a BMI the clinical system does not identify as high-risk, motivated by a subjective body appraisal that perceives her body as larger than clinical classification warrants, is in a different and arguably more precarious position than a boy who diets in response to a clinical recommendation: her motivation is more culturally saturated, her physiological resistance to restriction is the same, and the failure that she's sure to experience is more thoroughly embedded in a culturally-influenced medical environment that will attribute it to personal inadequacy.

At the same time, the emerging literature on male weight control behavior documents a parallel but differently organized set of risks centered on the muscularity ideal rather than thinness. Muscularity-enhancing behaviors — protein supplementation, excessive exercise, anabolic steroid use, and mass-gain dietary strategies — are substantially more prevalent among boys and men than among girls and women (Murray et al. 2018; Nagata et al. 2020), and their clinical risks, while distinct from the restriction-based risks more common among girls, are no less serious: anabolic steroid misuse carries cardiovascular, hormonal, and psychological risks, and muscle dysmorphia — a clinically recognized body image disorder organized around the perception that one's body is insufficiently muscular — shares structural features with anorexia nervosa while largely falling outside the purview of clinical eating disorder infrastructure (Murray et al. 2018; Olivardia, Pope, and Hudson 2000; Pope 2000). The weight-centered health paradigm's exclusive focus on bodies perceived as too large means that these extreme weight-control behaviors are largely invisible within its clinical framework.

Race and ethnicity. The common characterization of weight control behaviors and, at their clinical extreme, eating disorders as conditions afflicting primarily white, affluent girls and women reflects the demographics of the research that produced it more than the epidemiology of the conditions themselves. Clinical samples were concentrated in treatment settings with predominantly white patient populations and the combined effects of differential access to care, clinician recognition, and help-seeking across racial and ethnic groups meant that non-white individuals exhibiting signs of engagement in more extreme weight control behaviors were systematically less likely to be identified or retained in the samples from which prevalence estimates were drawn (Becker et al. 2003; Cachelin et al. 2000; Marques et al. 2011). Community-based and population-representative studies consistently produce prevalence estimates for Black, Latina, Asian American, and Native American populations substantially higher than the clinical literature suggests, and in several behavioral categories higher than estimates for white populations (Goeree, Ham, and Iorio 2011; Marques et al. 2011; Striegel-Moore et al. 2003). The higher average body satisfaction among Black women relative to white women at equivalent body sizes is well-documented (Altabe 1998; Grabe and Hyde 2006; Kronenfeld et al. 2010) but body satisfaction is not equivalent to behavioral protection — and its selective reading as evidence of racial/ethnic immunity to weight control behavioral risk obscures the ways in which these identities intersect with socioeconomic disadvantage, weight stigma, and acculturation processes to produce distinct and, in some respects, elevated behavioral risk profiles (Cachelin et al. 2000; Goeree et al. 2011; Tomiyama et al. 2018).

Population-representative research documents that Black adolescents and young adults show rates of binge eating and purging that meet or exceed those of white peers, alongside lower rates of restriction — a differential profile rather than an absence of risk (Marques et al. 2011; Striegel-Moore et al. 2005;

Taylor et al. 2007). For Latina adolescents, greater acculturation to U.S. cultural norms is associated with elevated dieting, weight dissatisfaction, and unhealthy weight control behaviors, suggesting that the weight-centered health paradigm recruits individuals into its behavioral framework as structural distance from communities of origin narrows (Cachelin et al. 2000; Perez et al. 2002). Asian American adolescents face thin-ideal pressures operating through both U.S. and East and Southeast Asian cultural contexts that produce elevated restrictive eating and weight-related distress, with existing estimates almost certainly depressed due to systematic exclusion from research samples and inadequate clinical identification (Akoury et al. 2019; Wildes, Emery, and Simons 2001). Native American adolescents show some of the highest documented rates of purging, binge eating, and extreme weight control behaviors in population-based data — patterns that must be understood in the context of structural food insecurity, historical displacement of traditional food practices, and intergenerational trauma (Crago, Shisslak, and Estes 1996; Croll et al. 2002; Neumark-Sztainer et al. 1997; Story et al. 1994). For the present analysis, racial and ethnic differences in behavioral engagement reflect the uneven distribution of the social conditions — stigma burden, acculturation exposure, economic disadvantage, and community body-image norms — that organize behavioral risk.

Socioeconomic position. The relationship between socioeconomic position and weight control behavior engagement is complex and does not follow a simple gradient. More advantaged adolescents are more likely to engage in normatively-endorsed weight control behaviors consistent with middle-class body management projects (Bourdieu 1984; Wills et al. 2011), while disadvantaged adolescents may engage in more extreme behaviors in response to the compounded stressors of food insecurity, weight stigma, and limited access to the health infrastructure that moderates behavioral risk (Goeree et al. 2011;

Hazzard et al. 2022; Huryk, Drury, and Loeb 2021). Parental education and socioeconomic position also shape the household transmission of weight-related norms and the character of family food socialization (Hunger and Tomiyama 2018; Loth et al. 2015; D. Neumark-Sztainer et al. 2002; Neumark-Sztainer et al. 2008; Pampel et al. 2010), with higher-education households more likely to model and reinforce body management as a component of responsible self-care. This dynamic shapes both trajectory membership (Chapter 2) and, through the escalation logic outlined above, the subsequent behavioral intensity with which that membership is enacted.

3.2.4 Behavioral Trajectories and Their Consequences

Behavioral escalation is directly supported by the longitudinal literature on weight control behavior, which documents that the behavioral practices established during adolescence organize subsequent behavioral engagement in ways that intensify rather than moderate over time.

Project EAT's ten-year longitudinal follow-up found that adolescents who reported dieting were significantly more likely than their non-dieting peers to report dieting, disordered eating, and unhealthy weight control behaviors ten years later in young adulthood, even after controlling for baseline body weight (Neumark-Sztainer et al. 2011). Critically, this pattern was not limited to escalation within the same behavioral category: dieters were not simply more likely to diet again — they were more likely to engage in a broader and more extreme behavioral repertoire as young adults. This is the longitudinal signature of the escalation dynamic: initial behavioral engagement predicts not simply a stabilization of practice but a diversification and intensification over time, particularly among those for whom initial strategies proved insufficient.

The health consequences of sustained weight control behavioral engagement compound this pattern. Repeated cycles of caloric restriction and weight regain produce progressive metabolic, cardiovascular, and psychological harms (Diaz et al. 2005; Lissner et al. 1991; Strohacker and McFarlin 2010). The psychological costs of this cycle — body dissatisfaction, reduced self-efficacy, disordered eating — are themselves longitudinally predictive of further behavioral escalation (Neumark-Sztainer et al. 2007; Stice et al. 2011), creating a feedback structure in which each perceived failure increases the psychological pressure that motivates subsequent intensification. This sustained experience, of failing at a culturally mandated and physiologically resisted goal, is what produces a progressive narrowing of the gap between normative and disordered behavioral practice. Foregrounding this as a dynamic and longitudinal process underscores the importance of understanding weight goal formation and its durability because it has direct implications for behavioral escalation that may have lasting health consequences.

The Health at Every Size (HAES) framework has provided the most systematic challenge to this status quo from within the health professions (Bacon and Aphramor 2011; Tylka et al. 2014). HAES reorients clinical and public health goals away from weight reduction and toward health-promoting behaviors — joyful movement, intuitive eating, stress management, and social connection — regardless of weight outcome. The empirical literature supporting HAES-consistent interventions documents improvements in metabolic health markers, physical activity, and psychological well-being that equal or exceed those achieved through weight-focused interventions, without the weight cycling, weight stigma, and disordered eating risk associated with diet-focused approaches (Bacon et al. 2005; Bacon and Aphramor 2011; Schaefer and Magnuson 2014). This evidence base is directly relevant to the escalation account: if the alternative to goal-oriented weight-control behavioral engagement — behavioral practice organized around embodied wellbeing rather than weight change — produces comparable or better health outcomes without the disordered eating risk, the escalation that a weight-centered health paradigm produces is not a necessary consequence of health promotion but a specific consequence of health promotion organized around a weight-change target that physiology actively resists.

3.2.5 Weight Stigma

Weight stigma — the social devaluation of individuals based on body size, expressed through discrimination, teasing, harassment, and the internalization of cultural messages equating larger bodies with moral and personal failure — is the mechanism through which the experience of dieting failure escalates into behavioral intensification rather than withdrawal (Puhl and Heuer 2009; Tomiyama et al. 2018).

Weight stigma is not a peripheral feature of the weight-centered health paradigm but one of its constitutive products: when public health messaging frames higher body weight as a personal failure of self-regulation, it simultaneously produces and legitimates the social stigmatization of those bodies (Boero 2012; Saguy 2013; Strings 2019). Its relevance for the behavioral escalation account is direct. When dieting fails an individual experiences that failure in a cultural environment that attributes it not to the physiological resistance of the body but to insufficient motivation, discipline, and self-control. The internalization of this attribution is associated with elevated binge eating, dietary restriction, and compensatory behaviors above and beyond the effects of experienced stigma and BMI (Durso, Latner, and Hayashi 2012; Pearl 2024; Schvey, Puhl, and Brownell 2011). The person who fails to lose weight through dieting in a cultural environment that frames that failure as moral inadequacy is not simply disappointed; they are at elevated psychological risk for the very disordered behavioral practices that constitute the extreme end of the weight control spectrum.

This mechanism operates with differential intensity across social groups in ways that map onto the social patterning documented in the previous section. Experienced weight stigma and weight-based teasing are associated with disordered eating behaviors across multiple study designs and populations (Haines et al. 2006; Lee, Hunger, and Tomiyama 2021; D. Neumark-Sztainer et al. 2002; Puhl and Heuer 2009). Stigma in clinical encounters specifically — including the assignment of an 'overweight' or 'obese' clinical label — predicts subsequent disordered eating among adolescent girls specifically (Hunger and Tomiyama 2018), establishing a direct pathway from clinical weight classification to the escalation dynamic this paper is concerned with. And the neighborhood and school environments in which adolescents encounter weight-related norms shape the degree to which stigma functions as a stressor that motivates behavioral escalation (Eisenberg, Neumark-Sztainer, and Story 2003).

Laboratory studies demonstrate that exposure to weight-stigmatizing content produces immediate increases in caloric intake through stress-eating mechanisms (Major et al. 2014; Schvey et al. 2011), suggesting that the cultural messaging designed to motivate weight loss may produce the compensatory eating behavior that then motivates the next round of restriction — a self-reinforcing cycle at the individual level that mirrors the population-level paradox documented in the longitudinal literature. The weight-centered health paradigm, through its stigmatizing architecture, does not simply fail to prevent disordered behavioral escalation; it actively produces the psychological conditions under which escalation is the most likely behavioral response to the failure it so reliably produces.

The behavioral consequences of weight stigma are therefore not uniformly distributed across social positions. They are concentrated among those most thoroughly recruited into the paradigm's reach — those whose bodies are most persistently classified, most intensively surveilled, and most systematically failed by the behavioral prescriptions the paradigm offers. As Chapter 2 documents in detail, girls, higher-BMI adolescents, and those whose subjective body appraisal has been most successfully captured by the thin-ideal are most susceptible to this recruitment. The present paper examines what that recruitment produces behaviorally — not as individual pathology but as the socially organized outcome of a paradigm whose reach, as the evidence will show, extends even beyond those who consciously identify as its subjects.

3.3 Data

The analyses presented in this paper draw on the same data source and observation window as Chapter 2: Waves I, II, and III of the National Longitudinal Study of Adolescent to Adult Health (Add Health), a nationally representative, school-based longitudinal cohort study of adolescents followed from 1994–95 into adulthood. The dataset's strengths — its longitudinal design, complex probability sampling structure, and richness of individual, household, and neighborhood measurement — are described in detail in Section 2.5. Respondents with valid data available only in Wave I were excluded from all analytic samples to reduce the disparity between behavioral counts, as the majority of universal behavioral questions were administered in Waves II and III, and to support a more genuinely longitudinal analysis. See Table 3.1 - Table 3.3 for characteristics of excluded respondents compared to retained samples.

3.4 Measures

3.4.1 Predictors and Covariates

The primary predictor of interest is **weight goal trajectory**, the six-category longitudinal measure constructed in Chapter 2 from weight goal reports collected in Waves I-III, which takes values of Consistent Lose, Consistent Maintain, Consistent Gain, Consistent Nothing, Changing Lose/Maintain, and Changing Goals. For full details of its construction see Section 2.5.1.1. All individual-level demographic covariates (Section 2.5.1.2), body-size measures (Section 2.5.1.3), baseline behavioral controls (Section 2.5.1.4), household-level covariates (Section 2.5.1.5), and neighborhood-level covariates (Section 2.5.1.6 and Section 2.5.1.7) used in this analysis are identical to those used in Chapter 2 and are described there in detail. Briefly, individual-level covariates include age, sex, race, Latino/a ethnicity, U.S. nativity, meeting moderate-to-vigorous physical activity (MVPA) guidelines, and average sleep hours; household-level covariates include food choice autonomy, proportion of dinners shared with parents, social origins score, and parental educational attainment; and neighborhood-level covariates include measures of socioeconomic disadvantage, violent crime, perceived safety, metropolitan status, climate, physical activity resources, street connectivity, and land cover characteristics.

Table 3.1 - Table 3.3 report the descriptive statistics for the three respective analytic samples, including the near-universal prevalence of the universally-surveyed behaviors and the comparative rarity of extreme weight-control practice.

3.4.2 Behavioral Outcome Measures

3.4.2.1 Universal Behavioral Items

A set of behavioral items administered to all respondents regardless of their reported weight goal was identified to enable direct behavioral comparison across all trajectory groups, including Consistent Nothing respondents who were not administered goal-specific behavioral batteries. These items do not constitute a representative sample of general health behaviors; they are questions with direct or tangential relevance to weight control and body manipulation that happened to be asked universally across the questionnaire. Their universal administration creates the only possible basis for comparing Consistent Nothing respondents to those with active weight goals on any behavioral dimension.

Meal skipping. Three waves of data captured meal-skipping behavior through related but non-identical items. In Wave I, respondents were asked what they usually had for breakfast on a weekday morning, with *nothing* as one available response; reporting nothing was coded as regularly skipping breakfast. In Wave II, respondents were asked on how many of the past seven days they ate breakfast, lunch, and dinner respectively; binary indicators of regularly skipping each meal were constructed by coding responses of two days or fewer as skipping and all other responses as not skipping, aligning operationally with the Wave I threshold. In Wave III, respondents were asked on how many of the past seven days they ate breakfast within an hour of getting up; the same threshold of two days or fewer was applied to construct the Wave III skipping indicator.

Anabolic steroid use. Wave III asked whether respondents had used anabolic steroids or other illegal performance-enhancing substances for athletes[23] in the past year (yes = 1, no = 0).

Legal performance-enhancing drug use. Wave III asked whether respondents had used a legal performance-enhancing substance for athletes — such as creatine monohydrate or androstenedione — in the past year (yes = 1, no = 0).

Binge eating. Wave III asked whether respondents had, in the past seven days, eaten so much in a short period that they would have been embarrassed if others had seen them (yes = 1, no = 0).

Excessive exercise. Wave III asked how many times in the past seven days respondents went to an exercise or fitness center to exercise or work out; responses ranged from 0 to 21. A binary indicator was constructed coding responses of eight or more visits (yes = 1, no = 0), reflecting an average frequency exceeding more than once in a day. This threshold is intended to capture a qualitatively distinct relationship with structured physical activity — one organized around body management as a sustained project rather than routine health maintenance — and is conceptually distinct from the MVPA guidelines variable, which measures whether a respondent has met minimum recommended levels of moderate-to-vigorous physical activity. Locating the threshold at the extreme upper tail of the distribution is intended to capture compulsive engagement with exercise, while acknowledging that frequency alone is a limited proxy for the psychological dimensions of compulsive exercise.

Specialized diet. Wave III asked whether respondents had, in the past twelve months, used specialized diets — such as macrobiotics or fasting — as an alternative or non-Western medical treatment to maintain or enhance their health (yes = 1, no = 0).

[23] This item retained the survey's original phrasing, which framed the practice as something done *for athletes*. Despite that wording it was administered to all respondents rather than restricted to those who identified as athletes, and item non-response was low, so the measure reflects the full sample rather than a self-selected athletic subset.

3.4.2.2 Goal-Specific Behavioral Items

Respondents who reported an active weight goal — *lose*, *maintain*, or *gain* — were administered goal-specific behavioral batteries each wave. Because the questionnaire routing and item wording changed across waves, different items were available depending on the respondent's reported goal and the wave of data collection.

Lose and maintain trajectories. Respondents reporting weight-loss or maintenance goals were asked the same set of questions in Waves I and II: "During the past seven days, which of the following things did you do in order to lose weight or to keep from gaining weight?" Available responses coded as binary indicators (1 = endorsed, 0 = not endorsed) were: *dieted*, *exercised*, *purged (made yourself vomit)*, *took diet pills*, *took laxatives*, and *other*[24]. In Wave III, the same behavioral domain was assessed with revised wording and an expanded response set: *dieted (eating prepackaged weight-loss meals, fewer calories, or less fat)*, *exercised*, *fasted or skipped meals*, *purged (made yourself vomit)*, *took weight-loss pills*, *took laxatives*, *used diuretics (water pills)*, *took food supplements (powders, herbal supplements, mineral pills, or vitamins intended to replace meals or reduce appetite)*, and *participated in an organized weight-loss or weight-control program*.

Gain trajectory. Respondents reporting weight-gain goals were asked: "During the past seven days, which of the following things did you do in order to gain weight or to build muscle?" In Wave I, available responses were: *dieted*, *exercised*, *lifted weights*, *took food supplements*, and *other*. In Wave II, the same items were asked with one addition: *used steroids*. In Wave III, the item set was revised to include *ate different*

[24] Waves I and II also had a indicator for *none* for both sets of weight-goal questions but it was removed in Wave III. Respondents reporting *none* did not engage in any of the available response items.

foods than usual and *ate more* as two distinct indicators of diet modification and *dieted* was removed[25]. Additionally, *used steroids* was removed while *exercised*, *lifted weights*, and *took food supplements* were retained.

3.4.2.3 Classification of Extreme Behaviors

Behaviors were classified a priori as extreme based on their documented associations with negative health outcomes in the clinical and epidemiological literature. This classification scheme was applied consistently across the universal and goal-specific behavioral batteries.

Among the universally asked items, the following were classified as extreme: skipping two or more distinct meal types in Wave II (the only wave in which all three meal types were assessed, enabling a threshold measure of meaningful dietary restriction); anabolic steroid use; binge eating; excessive exercise; and specialized diet use. Meal skipping at the single-meal level was classified as non-extreme on the basis that it is sufficiently prevalent[26] and context-dependent to preclude clinical interpretation as harmful without additional information about said context.

Among the goal-specific items, the following were classified as extreme: purging, taking diet or weight-loss pills, taking laxatives, fasting or skipping meals (as distinct from the universal meal-skipping items)[27], and using diuretics. Exercise, lifting weights, taking food supplements[28], taking part in an

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[25] It should be noted that in the full sample of available responses, respondents with gain as their weight goal reported that they *dieted* at much lower levels (12.5% [N = 509] of respondents in Wave I and 11.4% [N = 318] of respondents in Wave II) than they engaged in its replacement response items of *ate different foods than usual* (28.5%, N = 675) and *ate more* (52.2%, N = 1,235) in Wave III.

[26] Skipping breakfast was quite common among the full data set with 20.3% (N = 4,218), 31% (N = 4,570), and 49.9% (N = 7,578) respondents in Wave I, II, and III respectively reporting engaging in the behavior. Skipping lunch (11.6%, N = 1,714) or dinner (4.17%, N = 614) were decidedly less common.

[27] The universal indicator of meal-skipping and the one directly asked by those who reported lose or maintain as their weight goal were both included since they were captured in different waves (Wave II for the universal question and Wave

organized weight-loss or weight-control program, dieting in its general form, and the gain items reflecting general dietary increases/substitutions were classified as non-extreme. These classifications are consistent with the existing literature on unhealthy and very unhealthy weight control behaviors and reflect a conservative approach that reserves the extreme designation for behaviors with relatively unambiguous clinical risk profiles independent of the frequency or context of their enactment.

3.4.2.4 Behavioral Count and Exposure Variables

For each respondent, separate counts were constructed of: (1) the total number of universal behavioral items administered, (2) the number of universal extreme behavioral items administered, (3) the total number of behavioral items administered across both universal and goal-specific batteries, and (4) the number of extreme behavioral items administered across both batteries. Parallel count variables were constructed for items endorsed. Binary indicators of any behavioral engagement were derived from these counts as well. The item-administered counts serve as offset terms in all models, converting raw endorsement counts to rates per item available and enabling direct comparison across respondents whose differential exposure to the questionnaire was determined by their weight goal reporting and wave participation rather than by their behavioral propensity.

3.4.2.5 Dieting Measure

The dieting item — asking whether the respondent dieted in order to lose weight or keep from gaining weight — appeared across Waves I, II, and III for those reporting *lose* or *maintain* as their weight

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III for the weight-goal specific question) and therefore represent different points in time in which a respondent might have engaged in this behavior.

[28] While prior studies have included taking food supplements as an unhealthy, or even extreme behavior, their broad categorization suggested erring on the side of caution and excluding them from the extreme behaviors analyses.

goal, and in a structurally different form for those reporting *gain* in Wave I and II (asking whether they dieted in order to gain weight or build muscle). Because the theoretical motivation for the dieting analysis concerns dieting as a restrictive eating practice associated with weight-loss aspiration rather than weight-gain aspiration, and because the gain trajectory Wave III behavioral battery replaced dieting-adjacent items with non-specific dietary change items reflecting a substantively different behavioral orientation, the dieting analysis was restricted to respondents in Consistent Lose, Changing Lose/Maintain, Consistent Maintain, and Changing Goals trajectories who had been exposed to the lose/maintain dieting question at least once.

For this analysis, the dieting item was removed from the total behaviors count and from the endorsed behaviors count to enable modeling of dieting history as a predictor of remaining behavioral engagement rather than as part of the outcome. A binary indicator was constructed for whether the respondent ever reported dieting across available waves (yes = 1, no = 0). Respondents who were never administered the lose/maintain dieting question were excluded by design, removing Consistent Nothing and Consistent Gain respondents from this analytic sample.

3.4.3 Analytic Samples

Six primary analytic samples were constructed, corresponding to the six behavioral outcome models, and an additional three samples for the dieting supplementary analysis (see Table 3.1 - Table 3.3 for full sample characteristics). Across all samples, respondents with Wave I data only were excluded.

Universal behavior models: The binary any-engagement outcome[29] and the binary any-extreme-engagement outcome were estimated on the full analytic sample of 14,892 respondents across all six

[29] Part 1 of the universal hurdle model

trajectory groups. The count of universal behaviors among those actively engaged[30] was estimated on the 9,856 respondents who endorsed at least one universal behavioral item.

All-behaviors models: The count of all behaviors and the binary any-extreme-behavior outcome[31] were estimated on 14,482 respondents after excluding Consistent Nothing respondents. The count of extreme behaviors among the actively engaged[32] was estimated on the 3,285 respondents who endorsed at least one extreme behavior.

Dieting models: The count of all behaviors (excluding dieting) and the binary any-extreme-behavior outcome[33] were estimated on 12,274 respondents after additionally excluding Consistent Nothing, Consistent Gain, and respondents never exposed to the lose/maintain dieting question. The count of extreme behaviors among the actively engaged[34] was estimated on the 3,015 respondents who endorsed at least one extreme behavior in this restricted sample.

3.5 Analytic Strategy

3.5.1 Overview and Theoretical Motivation

Figure 3.1 presents the conceptual model of the analytic approach for this study. The weight-centered paradigm operates as the pervasive backdrop, prompting through routine medical advice the dieting it sanctions; within that field, the weight-goal trajectory developed in Chapter 2 is the exposure,

[30] Part 2 of the universal hurdle model (respondents with a value of zero for the *any behavior* model were excluded by design)

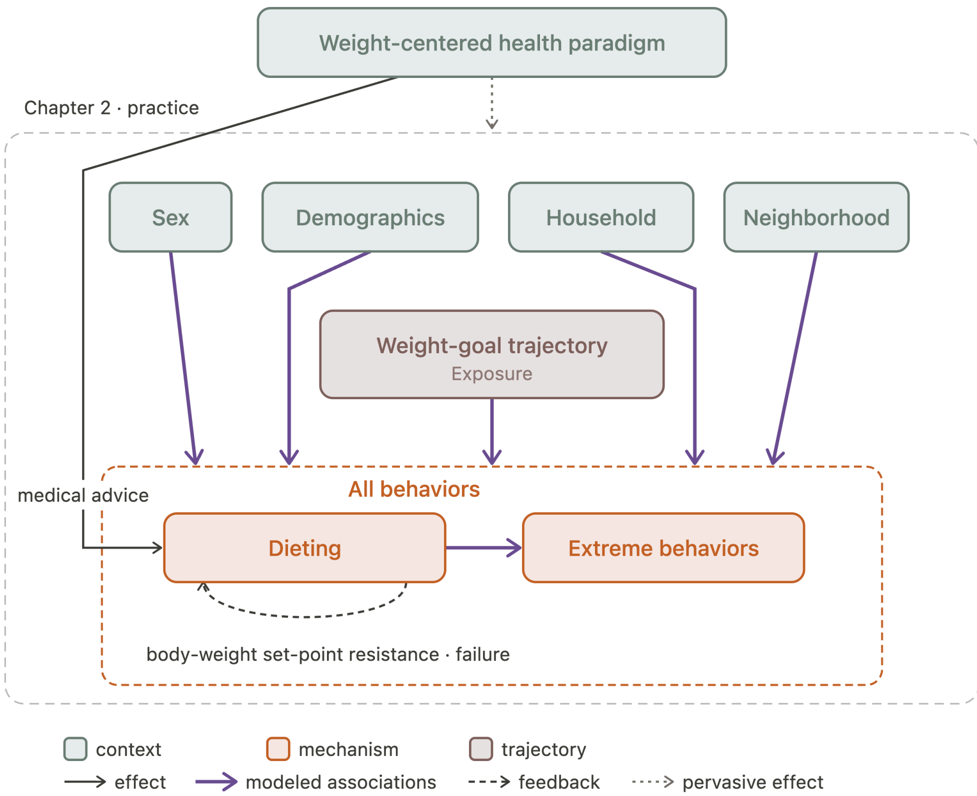
[31] Part 1 of the all-behaviors extreme hurdle model

[32] Part 2 of the all-behaviors extreme hurdle model (respondents with a value of zero for the *any extreme behavior* model were excluded by design)

[33] Part 1 of the dieting extreme hurdle model

[34] Part 2 of the dieting extreme hurdle model (respondents with a value of zero for the *any extreme behavior* model were excluded by design)

Figure 3.1: Conceptual model of weight-control behavioral engagement



and the behaviors it motivates — dieting and, beyond it, the extreme practices into which dieting tends to escalate as the body's set-point defenses make weight loss fail — are the outcomes of interest. Sex, demographic position, household, and neighborhood enter as context: the analysis asks whether each carries an association with behavioral engagement net of trajectory membership, not whether it competes with the trajectory as a cause. Body size appears nowhere in the diagram, and its absence is deliberate. Chapter 2 established clinically classified and self-perceived body size as upstream causes of trajectory formation; conditioning on them here would adjust away part of the exposure's own pathway — the body-size-driven recruitment that the trajectory embodies — and so understate the very effect the chapter sets out to estimate.

Chapter 2 established that weight goal trajectory membership across adolescence and early adulthood is socially structured, asymmetrically gendered, and driven more powerfully by internalized body-image norms than by clinical BMI classification. The present analysis takes these trajectories as the primary predictor of interest and asks whether and how trajectory membership translates into differential engagement in weight control behaviors across the same period. This question is a natural extension of Chapter 2 but also theoretically distinct and important in its own right: a person may persistently orient toward a weight goal without enacting the behaviors that goal nominally motivates — and conversely, two people in the same trajectory may engage in very different behavioral repertoires depending on the intensity, type, and social context of their goal pursuit. Understanding what predicts the translation from goal orientation to behavioral engagement is central to understanding both the health consequences of the weight-centered health paradigm and the mechanisms through which trajectory membership produces health-relevant outcomes.

Three analytic samples are examined in parallel, each addressing a theoretically distinct question. The first includes all analytic respondents regardless of weight goal trajectory, including those who consistently reported not trying to do anything about their weight (Consistent Nothing). This sample is used to model engagement with a set of behaviors administered universally across the Add Health questionnaire — that is, asked of all respondents regardless of their reported weight goal — rather than routed only to those who endorsed an active weight goal. The second analytic sample excludes Consistent Nothing respondents, retaining only the five trajectory groups who reported at least one active weight goal across Waves I-III. This sample is used to model engagement with the full behavioral battery, including goal-specific items asked only of those who endorsed a weight goal. The third analytic sample excludes those never exposed to the dieting for weight lose/maintenance question (Consistent Nothing, Consistent Gain, and those in Changing Goals who never reported *lose* or *maintain* as their weight goal). This sample is used to model the independent effect of dieting itself on engagement in other weight control behaviors.

3.5.2 The Universal Behavior Battery and Its Theoretical Significance

A fundamental feature of the Add Health behavioral data is that the questionnaire routed respondents to different sets of behavioral questions (Section 3.4.2.2) depending on the weight goal a respondent reported. Respondents who said they were trying to *lose* or *maintain* weight were administered a battery of weight control behaviors, distinct from the parallel set given to those trying to *gain* weight, and those who reported *not trying to do anything* about their weight were not administered any weight-specific behavioral questions. This design means that Consistent Nothing respondents — the group theoretically least recruited into the weight-centered health paradigm — cannot be included in models of the full behavioral battery, and that raw behavioral counts are not directly comparable across goal groups because different numbers of questions were administered to each. To enable comparison across all trajectory groups including Consistent Nothing, a set of behaviors was identified that was administered universally across all respondents regardless of their reported weight goal (Section 3.4.2.1).

This design feature has important theoretical implications. These universally asked items were not selected because they are routine or low-intensity health behaviors; several of them are among the more extreme behaviors in the entire Add Health behavioral battery, rivaling or exceeding in clinical severity many of the targeted weight control behaviors asked only of those with active goals. The fact that they were asked universally, combined with the fact that Consistent Nothing respondents do engage in them at non-trivial rates (discussed below), means the universal behavior analysis functions as a test of the reach of the weight-centered health paradigm beyond those who explicitly acknowledge it as their orientation. If trajectory membership does not strongly predict engagement in these behaviors once body size measures are accounted for — and the results show it largely does not — the implication is not that trajectory is unimportant for behavior, but rather that the behaviors captured in this universal battery are not primarily organized by active goal orientation. Their occurrence across trajectory groups, including Consistent Nothing, reflects the pervasive cultural presence of weight-control-adjacent behavior in American adolescence independent of consciously endorsed weight goals.

From the ten universal items, five were classified as extreme behaviors using the same a priori clinical and behavioral criteria applied to the full behavioral battery (Section 3.4.2.3).

3.5.3 Model Families and Specifications

All models are survey-weighted regressions that specify the Add Health complex design through its cluster, strata, and weight variables. Because the behavioral outcomes and the weight-goal trajectory both draw on data collected across Waves I through III, the estimand-appropriate longitudinal weight is keyed to the latest contributing wave — here, Wave III. However, as was the case in Chapter 2, it exists only for respondents observed at all three waves, and applying it would discard a substantial share of the sample. The main models instead use the Wave I cross-sectional weight, which every respondent carries, retaining the largest possible analytic sample; the estimand is correspondingly framed as conditional on the Wave I cohort rather than on complete three-wave participation. To confirm that this choice does not manufacture the results, every model was re-estimated on the restricted Wave I–III panel under the Wave III longitudinal weight (paralleling the same approach used in Chapter 2).

Three different outcomes call for three distinct modeling specifications. Whether a respondent engaged in any behavior, and whether they crossed into any extreme behavior, are **binary outcomes** estimated with a survey-weighted quasi-binomial model using a complementary log-log (cloglog) link and a logged offset for the number of behaviors the respondent was asked about. Because each outcome is "engaged in at least one of the items asked," the cloglog link paired with this offset recovers a per-item, discrete-time hazard of engagement, placing respondents who answered different numbers of questions on common footing; the exponentiated coefficients are hazard ratios, read as the relative per-question probability of engagement for a group against its reference. The cloglog link suits an any-of-N outcome across the full range of prevalence — where the rare-event approximation behind a log link need not hold — and the quasi-binomial form estimates dispersion freely from the data.

The frequency of engagement is a **count outcome**, estimated with survey-weighted quasi-Poisson regression with a log link and the same exposure offset; its coefficients are incidence rate ratios, the relative rate of engagement per item asked. Zeros are rare in the all-behaviors and dieting samples (3.7% and 3.9% of cases), so these counts are modeled directly, with no need for a two-part structure.

The intensity of behavior among those who engaged is the third outcome type, and here a large share of respondents would sit at zero — a genuine behavioral threshold rather than noise. These outcomes use a **hurdle structure**: one model for whether a respondent crosses into any engagement, estimated on the full sample, and a second for how intensively they engage, estimated only among those who do. A hurdle is the right tool here rather than a zero-inflated model, because the zeros represent true non-engagement rather than a mixture of true and spurious zeros, and because the decision to engage and the intensity of engagement are distinct processes worth modeling on their own terms; the two parts are fit independently, without the joint selection correction that defines a Heckman-style model. Estimated only among the engaged, the intensity model has no zeros to accommodate and is fit with a zero-truncated (positive) Poisson likelihood, which avoids the downward bias that fitting an ordinary Poisson to a zero-free count would introduce; its standard errors are corrected for over- or under-dispersion through a Pearson adjustment to the zero-truncated variance function.

Zero-truncated positive Poisson models were estimated via `svy_vglm()`[35] and the remaining models were estimated using the `svyglm()` function from the `survey` package[36] (Lumley et al. 2026) in `R`.

3.5.4 Progressive Model Structure

Each outcome is estimated through a progressive series in which the weight-goal trajectory — the exposure — enters first and contextual covariates follow in theoretically ordered blocks, so that the trajectory association can be watched as each layer of context is taken into account. For the universal and all-behaviors outcomes, M0 contains the trajectory and the exposure offset alone; M1 adds the individual-level covariates, including sex; M2 adds the household block; and M3 adds the neighborhood block. The dieting models follow the same logic with one added step: the trajectory and offset in M0, the binary dieting indicator in M1 — entered first, as the most proximate behavioral predictor — and then the individual, household, and neighborhood blocks across M2 through M4.

The covariates are not treated as rival causes competing with the trajectory but as individual-level and contextual effects: sex, demographic position, household, and neighborhood are read in terms of

[35]From the `svyVGAM` package (Lumley 2026) which provides design-based (survey) inference for the `vglm` function from the `VGAM` package (Yee and Moler 2025), which has a positive poisson distribution available. Unfortunately at this time, the `survey` package has no such family function available.

[36]With additional wrangling made possible using the `srvyr` package (Ellis et al. 2026).

whether each carries an association with behavior net of trajectory membership — that is, whether it bears on behavior through routes the trajectory does not already represent. On this reading a significant sex coefficient net of trajectory is not a nuisance to be partialed out but a substantive finding about a direct, sex-differentiated route into behavior.

Model fit was assessed using quasi-AIC and design-adjusted Wald tests via `regTermTest()`. Average marginal predictions were computed using the `avg_predictions()` function from the `marginaleffects` package (Arel-Bundock et al. 2026) with survey probability weights applied.

3.6 Results

The analysis proceeds across three samples: the all-behaviors models ask how weight-goal trajectory shapes engagement among everyone carrying an active weight goal; the dieting models isolate the paradigm's signature prescription and ask whether it carries risk of its own; and the universally-surveyed models, reported last, ask how far weight-control practice reaches even among adolescents who report no weight goal at all. Table 3.1 - Table 3.3 summarizes each sample's composition and the prevalence of the behaviors — extreme practice is endorsed by roughly a fifth of the all behaviors sample and a fourth of the dieting sample — and Figure 3.2 previews the organizing pattern: the effects of trajectory, sex, and dieting strengthen as the behavior grows more severe.

3.6.1 Weight-goal trajectory and the escalation gradient

Among the 14,482 respondents reporting an active weight goal, with Consistent Maintain as the reference, weight-goal trajectory is the dominant predictor of behavioral engagement — and its effect intensifies as the behavior becomes more extreme. Figure 3.3 traces that gradient across three outcomes:

Figure 3.2: Weight-control behavioral engagement among those with active weight goals

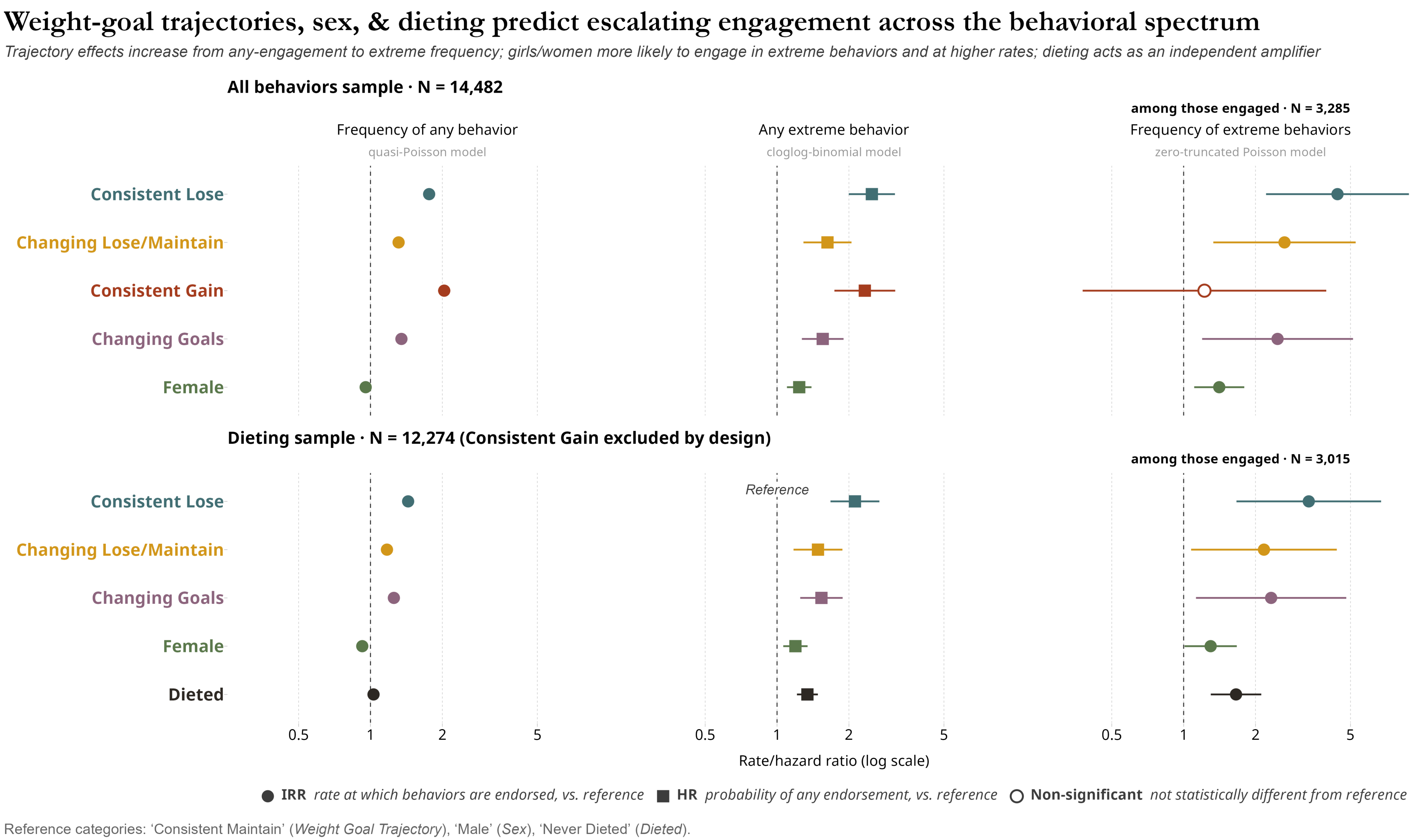
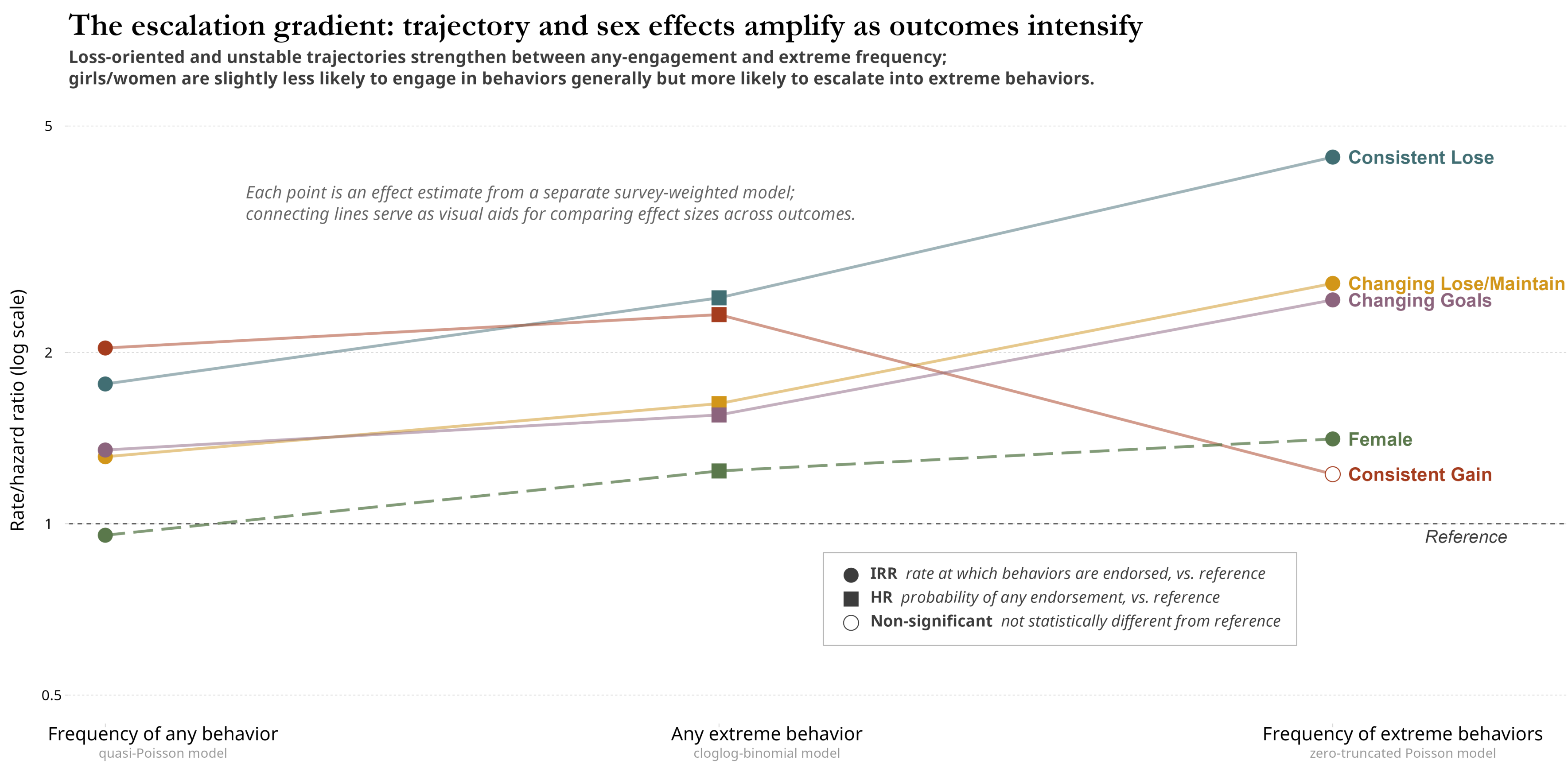


Figure 3.3: Weight-control behavioral escalation among 'all behaviors' sample



how often a respondent engages in any weight-control behavior, whether they cross into a clinically extreme one, and how intensively they engage once they do.

On the frequency of engagement (Table 3.7), every non-maintain trajectory acts at a higher rate than Consistent Maintain, and the differences scarcely move as individual, household, and neighborhood context is added. Consistent Gain engages most often, at roughly twice the maintain rate (IRR = 2.04–2.13), followed by Consistent Lose (1.76–1.77), Changing Goals (1.35–1.37), and Changing Lose/Maintain (1.31–1.32). The two changing trajectories differ in kind: Changing Lose/Maintain captures oscillation within a weight-loss orientation — between actively pursuing loss and holding steady — whereas Changing Goals captures broader directional change across the goal set, including movement into or out of gain or no weight goal at all. The high gain-trajectory rate is consistent with a muscularity-oriented repertoire the paradigm neither names nor tracks. Net of trajectory, female respondents engage slightly less often overall (IRR = 0.95-0.96) — the first turn of a pattern that reverses, and then sharpens, as the outcome grows more severe.

When the outcome changes to crossing into any clinically extreme behavior (Table 3.8), the trajectory effects grow. Consistent Lose and Consistent Gain more than double the probability relative to Consistent Maintain (HR = 2.50–2.70 and 2.29–2.42 respectively), with both 'Changing' trajectories clearly elevated as well (1.55–1.72). And here the female coefficient flips: net of trajectory and all context, female respondents are more likely to cross into extreme behavior (HR = 1.23–1.24) even as they engage in fewer behaviors overall. This reversal — fewer behaviors, but a greater likelihood of the harmful ones — is among the chapter's central findings: a lower behavioral count among adolescent girls does not signal lower risk.

Among the 3,285 respondents who cross into extreme behavior (Table 3.9), the gradient reaches its largest effect size, though estimates are naturally more uncertain due to the implicitly smaller sample size. Consistent Lose engages in extreme behaviors at more than four times the Consistent Maintain rate (IRR = 4.23–4.52), the two 'Changing' trajectories at roughly two and a half times (Changing Lose/Maintain 2.57–2.68; Changing Goals 2.37–2.47), and the female elevation climbs again, to its largest value of the three outcomes (1.41–1.42) — all of them statistically distinguishable from the reference. The single break in the pattern is Consistent Gain, elevated on the first two outcomes but indistinguishable from Consistent Maintain here: the gain repertoire broadens without escalating into the same extreme practices; this finding though may also be reflective of the lower number of extreme behavior items administered for this weight goal. For the loss-oriented and unstable trajectories, and for female sex, the force exerted on behavior rises monotonically across the three panels of Figure 3.3 — weakest where the behavior is most common, strongest where it is most harmful.

Two contextual patterns run through the gradient. The proportion of dinners shared with parents is consistently protective on the frequency and any-extreme outcomes — about a tenth lower engagement on frequency (IRR = 0.88–0.89) and more than a third lower on crossing into extreme (HR = 0.63–0.64) — though it attenuates among the small extreme-engaged subsample. Perceived neighborhood safety is the protective factor that persists all the way into intensity (IRR = 0.68), with social origins adding a smaller association and the built-environment measures null throughout. The shared-meal association almost certainly reflects more than the meals themselves: family dinners plausibly index a broader fabric of parental presence, monitoring, and/or connection that a single measure cannot disentangle, and the estimate should be read as such.

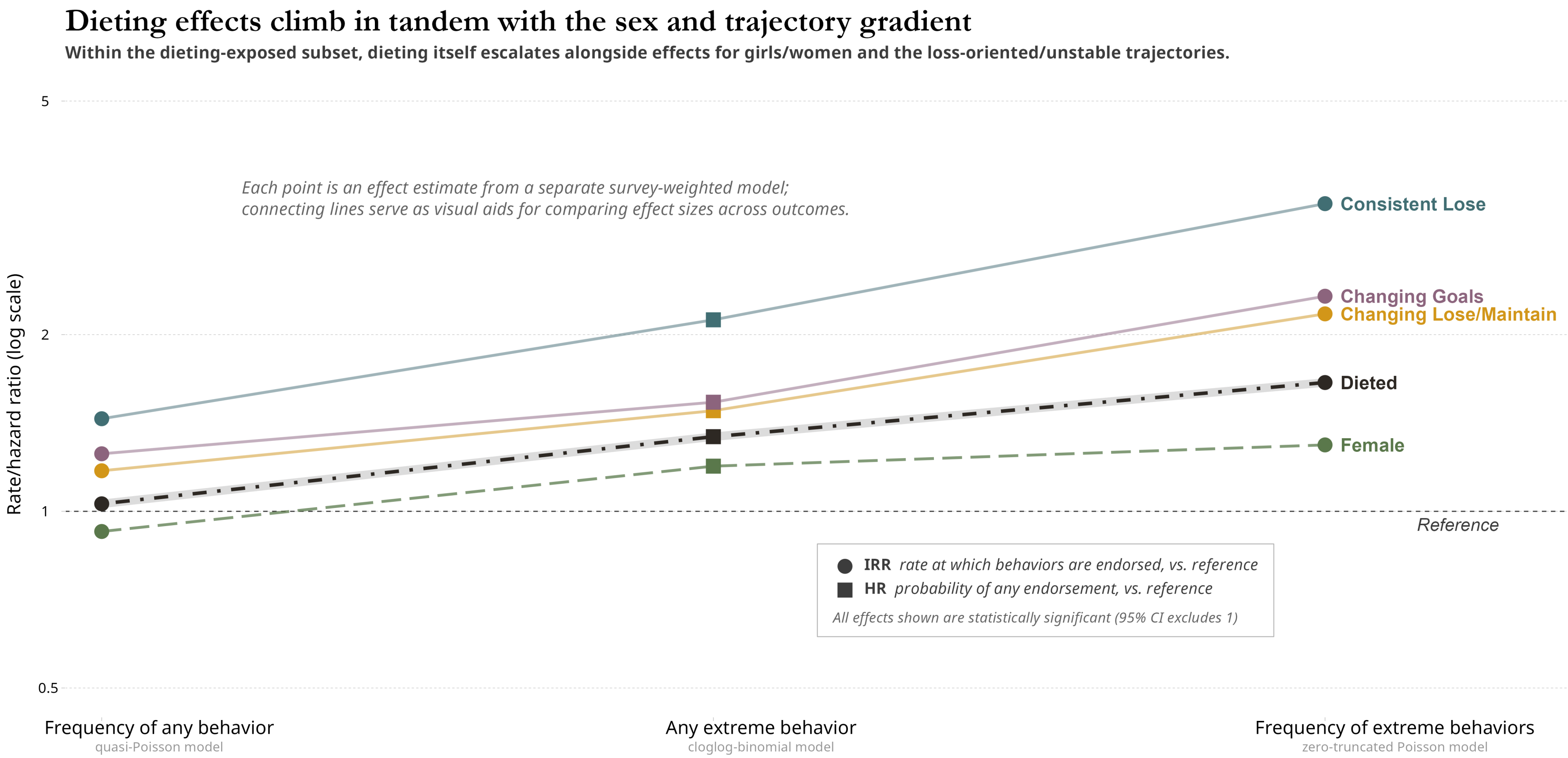
Race tracks this severity gradient in a telling way. At the individual level, Black adolescents are more likely than their peers to cross into extreme behavior and to engage in it intensively (HR and IRR = 1.21–1.25), but both elevations fall to non-significance once household and neighborhood contexts enter the models; Asian/Pacific Islander adolescents instead show a smaller elevation in overall engagement that persists through full adjustment. The remaining contrasts are null or inconsistent across outcomes.

3.6.2 Dieting as an independent amplifier

The dieting models isolate the paradigm's central prescription. Removing dieting from the behavioral outcomes and re-entering it as a binary predictor — ever-dieted versus never, among the 12,274 respondents exposed to the lose/maintain dieting question — tests whether the act the paradigm recommends carries escalation risk of its own, net of the trajectory that motivates it. It does, and it follows precisely the selective logic of the gradient above. On overall engagement frequency (Table 3.19), ever having dieted adds essentially nothing (IRR = 1.03): dieting does not broaden the behavioral repertoire. On the probability of crossing into extreme behavior (Table 3.20) it becomes a clear, independent predictor (HR = 1.32–1.36), emerging as soon as the indicator enters and holding through full adjustment. And among those who cross into extreme behaviors (Table 3.21), its effect becomes even more pronounced (IRR = 1.66–1.72): ever-dieters engage in extreme behaviors at roughly 66% higher rates than never-dieters.

This asymmetry is the point. Dieting predicts not a uniform behavioral elevation but specifically the move into, and the intensification of, the clinically riskiest practices — the same severity-graded signature the trajectories show, now carried by the single behavior the paradigm most directly prescribes. And the trajectory effects persist undiminished alongside it: Consistent Lose remains roughly doubled on crossing

Figure 3.4: Weight-control behavioral escalation among 'dieting' sample



into extreme (HR = 2.12–2.70) and three to four times elevated on intensity (IRR = 3.20–4.52), establishing that a sustained orientation toward weight loss and a history of acting on it through dieting are distinct, additive risk factors. The female reversal recurs here (HR = 1.19 on crossing into extreme and IRR = 1.30 for frequency of extreme engagement), and perceived neighborhood safety is again protective among the engaged (IRR = 0.67). Figure 3.4 shows the dieting indicator climbing in parallel with the loss-oriented trajectories across the same three outcomes.

3.6.3 The paradigm's reach beyond explicit goals

The universally-surveyed models (Table 3.4 - Table 3.6) extend the question to adolescents who report no weight goal, asking whether weight-control-adjacent behaviors are confined to those the paradigm has overtly recruited. They are not — but, with one modest exception, weight-goal trajectory barely differentiates engagement here. Relative to the Consistent Nothing reference, only Consistent Lose is more likely to engage in any behavior (HR = 1.27–1.35), and its edge on the intensity of engagement is marginal at best (IRR = 1.23–1.26); no other trajectory differs on any universal outcome, and none predicts crossing into extreme behavior. These behaviors occur at similar rates across the goal-orientation distribution, including among adolescents who disclaim any weight goal — the pattern one would expect if the paradigm has saturated everyday practice. What is predictive are the same protective effects seen in the two previous samples: shared family meals (HR = 0.71), social origins, perceived neighborhood safety, sleep, and meeting physical-activity guidelines, all attach to lower engagement.

These models carry the least analytic weight of the three. The Consistent Nothing reference is a small share of the sample, the battery asked of everyone is small, and the resulting outcome is coarse; the universal results are best read as corroborating the reach of weight-control practice rather than as a precise estimate of how trajectory shapes it.

3.6.4 Robustness to the weighting scheme

A parallel set of models checks the weighting choice described in Section 3.5.3. Because the main analysis applies the Wave I cross-sectional weight to retain the largest sample, every model was re-estimated on the restricted cohort observed at all three waves, using the Wave III longitudinal weight — the estimand-conservative specification keyed to the latest contributing wave (Table 3.13 - Table 3.21). On the significant outcomes the agreement is close to exact. Across the all-behaviors and dieting samples, the frequency and any-extreme models reproduce the main estimates: the loss-oriented and unstable trajectories carry the same graded elevations (Consistent Lose at IRR = 1.75–1.77 on frequency and HR = 2.58–2.79 on crossing into extreme behavior), the female reversal recurs at the same magnitude (HR = 1.21 on the any extreme outcome), and dieting retains its selective signature — negligible on overall frequency but elevated on crossing into (HR = 1.40–1.43), and intensifying within (IRR = 1.75–1.77), extreme behavior. The one place the restricted cohort loses resolution is the intensity of extreme behavior among the engaged, where the smaller subsample (2,456 and 2,254 respondents for all behaviors and dieting respectively) widens the confidence intervals: the strongest contrasts still hold — Consistent Lose at IRR = 3.2–3.5, and dieting at 1.75–1.77 — while the more modest trajectory contrasts and the female elevation fall to borderline significance. Taken together, the longitudinally weighted models support every substantive conclusion of the main analysis, with the expected loss of precision confined to the rarest outcome.

3.7 Discussion and Conclusion

The findings reported in this paper trace the path from weight-goal orientation to behavioral practice and, in doing so, document the specific ways in which the weight-centered health paradigm produces the behavioral risks it holds individuals responsible for managing. That documentation confronts a paradox the paradigm cannot acknowledge: the practices it motivates — dieting above all, but also the escalating repertoire of strategies that dieting's failure produces — are not merely insufficient to deliver the health it promises; they are, in many cases, actively harmful. The chapter's central finding is a gradient. Weight-goal trajectory predicts engagement across the behavioral spectrum, and its effect strengthens as the behavior turns more dangerous — modest on how often adolescents act, larger on whether they cross into clinically extreme practice, and larger still on how intensively they engage once they do — net of every individual, household, and neighborhood characteristic available in a nationally representative longitudinal dataset. Sex runs along that gradient in reverse and then forward: girls and women engage in fewer behaviors overall but are progressively more likely to cross into extreme practice and to escalate within it. Dieting — the paradigm's signature prescription — follows the identical logic as an independent amplifier, leaving overall engagement untouched while raising both the probability of crossing into, and the intensity of, extreme behavior. And the risk of that escalation is not evenly shared: it concentrates along the same axes of sex, race, and household structure that Chapter 2 tied to the goal orientation from which behavioral escalation flows.

3.7.1 The Paradigm Produces What It Claims to Prevent

The escalation finding is the most theoretically consequential result of this analysis. Dieting predicts a 32–36% higher probability of engaging in any extreme weight-control behavior and roughly 70% higher intensity of extreme engagement among the active — effects that survive adjustment for trajectory, sex, demographic position, and household and neighborhood context. And the trajectory's own signal persists alongside it: a sustained orientation toward weight loss and a history of acting on it through dieting are distinct, additive routes into extreme practice, not two names for the same risk. These are not the effects of a risk factor that happens to co-occur with dieting; they are the behavioral signature of a process in which the normative strategy fails and the individual, operating within a cultural environment that frames that failure as personal inadequacy rather than a physiological response, reaches for more intensive, more diverse, and more dangerous behavioral strategies in pursuit of an outcome the body is actively resisting.

This finding has a specific implication for the clinical framing of weight control behavior risk that the paradigm has resisted acknowledging: the act of clinical prescription is itself a risk factor. When a clinician assigns an 'overweight' or 'obese' label and recommends dietary restriction, the likely trajectory is not successful weight loss but a cycle of restriction, physiological compensation, and weight regain — and the research documented in this paper's theoretical framework establishes that each cycle of this process elevates the probability of escalation toward extreme behavioral practice. The clinical encounter that the paradigm intends as a health-promoting intervention is, for a meaningful proportion of those it recruits into dieting, the beginning of a process that leads to more extreme behaviors such as purging, laxative misuse, and/or restriction-binge cycling. The paradigm's most central behavioral instrument does not simply fail to prevent disordered behavioral escalation — it contributes to producing it (Catling and Malson 2012; Mann et al. 2007).

This conclusion does not require the claim that all dieting is harmful or that all dietary modification is disordered. It requires only the more modest and empirically supported claim that the population-level prescription of caloric restriction to a physiologically and psychologically heterogeneous population, in a cultural environment that stigmatizes its predictable failure, generates a distribution of behavioral outcomes in which a non-trivial minority escalate into clinically dangerous practice — and that the institutional architecture of the weight-centered health paradigm is responsible for this distribution even when it does not intend it.

3.7.2 The Paradigm in Its Contemporary Form: Amplification and New Fronts

The Add Health cohort completed Wave III data collection in 2001–2002, before the social media era and before the most recent intensification of wellness culture, GLP-1 agonist pharmacotherapy, and the online ecosystems that have reorganized the transmission of weight-related behavioral norms. Understanding the present implications of the behavioral patterns documented here requires situating them within the structural changes that have reshaped the paradigm's reach since the data were collected.

Wellness culture and the laundering of diet culture. The early twenty-first century saw the commercial diet industry undergo a significant rebranding, shifting from overtly calorie-focused weight-loss marketing toward a broader "wellness" framework that organized dietary restriction, supplementation, and body management under the language of optimization, vitality, and self-care rather than weight loss per se (Baker 2022; Harrison 2023; Róisín 2022). This rebranding did not eliminate the weight-loss orientation of the underlying practices — it obscured it behind a vocabulary of health that made behavioral engagement harder to identify as disordered and easier to present as virtuous. The "clean eating" movement, intermittent fasting reframed as metabolic health rather than caloric restriction, detox protocols marketed as digestive support, and supplement stacks sold as performance enhancement rather than weight management are all behavioral repertoires documented in the present analysis - specialized diets, meal skipping, legal performance-enhancing drug use — relaunched with new cultural legitimacy. The wellness industry, valued at over $6.8 trillion globally in 2024 (Global Wellness Institute 2025), has substantially expanded the behavioral infrastructure of the weight-centered health paradigm while insulating it from critique by replacing the language of thinness with the language of health.

GLP-1 agonist pharmacotherapy. The approval and widespread adoption of GLP-1 receptor agonists — semaglutide (Ozempic, Wegovy) and tirzepatide (Mounjaro, Zepbound), among others — for weight management represents the most significant institutional development in the weight-centered health paradigm since the AMA's 2013 classification of obesity as a disease. These medications produce substantial short-term weight loss through appetite suppression, and their rapid diffusion into clinical practice and popular culture has reinvigorated the cultural message that weight loss is both achievable and medically warranted (Kolata 2026; Wilding et al. 2021). Several dynamics make this development relevant to the behavioral escalation patterns documented here. First, the demand for GLP-1 medications — including substantial off-label use by individuals without clinical diabetes or obesity diagnoses — reflects and reinforces the cultural equation of lower body weight with better health and more attractive appearance, extending the paradigm's reach further down the BMI distribution and into populations the paradigm's own clinical thresholds would not identify as requiring intervention. Second, the medications' side effect profile includes nausea, vomiting, and severe gastrointestinal distress (Filippatos, Panagiotopoulou, and Elisaf 2014; Shetty et al. 2022; Tobaiqy 2024) — symptoms that are behaviorally and experientially proximate to the purging and compensatory behaviors this paper documents as extreme weight control practices, raising clinical concern about their potential to normalize or amplify these behavioral tendencies in vulnerable individuals. Third, the widespread cultural visibility of GLP-1 weight loss — documented on social media as "Ozempic face," "Ozempic body," and debated in the context of celebrity appearance changes — has elevated the social salience of weight-loss aspiration and the normative pressure to achieve it in ways that may accelerate trajectory formation and the behavioral escalation processes this paper documents.

Social media, self-surveillance, and the acceleration of body comparison. Perhaps the most consequential structural change since the Add Health cohort's adolescence is the transformation of the social environment in which body-image norms are transmitted and internalized. The weight-centered health paradigm's reach has always operated partly through media — through advertising, fashion, medical messaging, and popular culture that establish and reinforce appearance norms. The social media era has not simply amplified this transmission; it has restructured its basic character. Social media platforms create environments of near-continuous body comparison through curated image presentation, algorithmically optimized content delivery that directs users toward appearance-focused material, and interactive feedback mechanisms — likes, comments, follower counts — that convert body presentation into quantified social evaluation (Fardouly and Vartanian 2015; Perloff 2014; Tiggemann and Slater 2013). The result is what Fredrickson and Roberts (1997) described theoretically as objectification — the adoption of an outside observer's perspective on one's own body as the primary mode of self-evaluation — now operationalized at the population level through the architecture of platforms that are literally organized around self-presentation and its social reception.

The behavioral implications are documented across a rapidly growing literature. Social media use is associated with elevated body dissatisfaction, thin-ideal internalization, and disordered eating behaviors in adolescent girls and young women across multiple study designs and populations (Fardouly and Vartanian 2015; Holland and Tiggemann 2016; Wilksch et al. 2020). Experimental studies show that exposure to idealized body images on Instagram produces immediate increases in body dissatisfaction and dietary restriction intentions (Kleemans et al. 2018; Sherlock and Wagstaff 2019). And the social comparison processes that social media accelerates are not limited to passive consumption: the selfie culture of social media — the practice of photographing, evaluating, filtering, and presenting one's own body for social feedback — creates a form of continuous self-surveillance that internalizes the outside observer's gaze as a near-constant psychological presence (Mascheroni, Vincent, and Jimenez 2015; McLean et al. 2015). For present-day adolescents navigating the developmental period this paper examines, social media has substantially raised both the intensity of body-image pressure and the behavioral infrastructure available for responding to it — with weight-loss influencers, diet content, and disordered eating communities available at scale, alongside the clinical information that once served as the paradigm's primary point of contact with individuals.

The landscape is not entirely one-sided though. The same platforms carry genuine countercurrents — fat-acceptance and body-positivity movements, plus-size visibility, and anti-diet and Health at Every Size advocacy that reach large audiences and contest the thin ideal directly. Their presence is real, and for some users protective. But they operate inside the same attention economy that rewards appearance-focused content, and the evidence linking platform use to body dissatisfaction and disordered eating is more consistent than the evidence that body-positive content offsets it (Fardouly and Vartanian 2015;

Holland and Tiggemann 2016). These countercurrents complicate the picture without necessarily reversing it.

The hegemonic masculinity of disordered body management. The present analysis documents a sex reversal in extreme behavioral engagement — females show elevated extreme behavior rates despite lower overall engagement — and the theoretical framework attributes this partly to the differential operation of thin-ideal pressure on girls and women. But the emergence of new male-oriented behavioral repertoires since the Add Health cohort's adolescence has complicated this picture in ways that the analysis cannot fully capture and that warrant discussion. The muscularity ideal documented in the framework has, in the social media era, been institutionalized into a set of explicit behavioral practices — steroid and supplement use, extreme exercise frequency, strategic dietary manipulation — organized by fitness and bodybuilding influencer communities that have expanded dramatically in reach and normative authority over the past two decades (Beos, Kemps, and Prichard 2025; Murray et al. 2016; Nagata et al. 2020). More recently, the emergence of explicitly appearance-focused online communities organized around so-called "looksmaxxing" — the practice of systematically modifying one's appearance, including through dietary manipulation, hormone supplementation, and extreme exercise protocols, to maximize perceived physical attractiveness — represents a new and largely undocumented front in the behavioral ecology of body management among young men (Halpin et al. 2025; Rothfeld 2026). These communities, primarily concentrated on platforms including Kick, TikTok, Instagram, and dedicated forums, promote behavioral repertoires that overlap substantially with the clinically extreme behaviors this paper documents — anabolic steroid use, extreme exercise frequency, restrictive dietary protocols, food supplement use, in addition to newer, more extreme forms of bodily manipulation including *bone-*

smashing (using a hammer to alter one's facial structure), limb-lengthening (and other forms of cosmetic) surgery, and drug abuse (notably, methamphetamines as an appetite suppressant and anabolic steroids to increase muscular definition)[37]. These practices are not framed as part of a weight-control regimen but as a means to gain sexual competitive advantage. The clinical infrastructure of eating disorder treatment, already poorly equipped to identify and serve male patients with disordered eating (Murray et al. 2018; Pope 2000), is even less prepared to address behavioral risk organized around a hegemonic-masculinity body-optimization framework that does not engage the vocabulary of eating disorders at all.

3.7.3 Structural Protections and Their Implications

Against this account of escalating paradigm reach, the present analysis also documents a consistent and practically significant protective finding: the proportion of dinners shared with parents was the most consistent protective predictor across the models — lowering engagement by roughly a tenth on overall frequency and by about a third on the probability of crossing into extreme behavior, with a comparable reduction in universal engagement, though the association attenuated among the small subset already engaged in extreme practice. It survived adjustment for socioeconomic position, neighborhood characteristics, and trajectory membership, establishing family meal structure as a genuine protective factor rather than a proxy for socioeconomic advantage.

The mechanism is most plausibly understood through two complementary pathways. Family meals create a structured eating environment that reduces the opportunity and the psychological availability for the restrictive and compensatory practices that characterize extreme weight control behavior (Fulkerson

[37] Part of the spectacle and feedback loop of looksmaxxing in particular involves the extreme lengths adherents will go to achieve their desired ends, all while keenly aware of the platforms they're using to promote their regimens, and the type of content that generates traffic.

et al. 2008; Neumark-Sztainer et al. 2008). They also function as a site of intergenerational transmission of food and body norms — a site where the thin-ideal messaging of the paradigm either is or is not endorsed, modeled, and reinforced by the adults with whom adolescents share their most regular eating experience (Birch and Fisher 1998; Birch et al. 2003). At the same time, shared meals are unlikely to be acting alone: they plausibly index a broader fabric of parental presence and monitoring that the measure cannot isolate, so the estimate is best read as marking that relational context rather than the meal in itself. The robustness of this finding across behavioral domains, model specifications, and both the universal and active-goal samples establishes it as the most actionable contextual predictor in the analysis — one that operates before the paradigm's clinical and cultural machinery has its full effect, and that appears to buffer against the escalation trajectory this paper documents.

Neighborhood safety also emerged as a consistent protective predictor for extreme behavioral engagement, particularly in the fully adjusted models — adolescents in neighborhoods perceived as safe were substantially less likely to engage in extreme behaviors even after household and individual factors were controlled; notably it was the protective factor that reached furthest along the gradient, remaining significant even for the intensity of extreme behavior among those engaged. This is consistent with the neighborhood stress literature's documentation that perceived environmental threat elevates physiological and psychological stress reactivity (Browning and Cagney 2002; Ross and Mirowsky 2001), and with the mechanisms linking stress to compensatory and disordered eating documented in the weight stigma literature (Major et al. 2014; Tomiyama 2019). It also points to an under-examined pathway: the behavioral consequences of the weight-centered health paradigm are not simply individual and psychological but are moderated by the physical and social safety of the environments in which adolescents live — environments distributed unequally by race, class, and residential segregation.

That unequal distribution is visible directly in the race effects. Black adolescents are more likely than their peers to cross into extreme weight-control behavior and to engage in it intensively — a pattern that complicates a clinical literature long inclined to treat disordered eating as a largely white concern — but the elevation does not survive adjustment for household and neighborhood context. It operates through the same protective resources catalogued above: the family-meal structure, social origins, and perceived neighborhood safety that are themselves distributed unequally by race. What presents as a racial difference in extreme behavior is, on this evidence, a difference in the contexts that race sorts people into rather than in race as such. The contrasting Asian/Pacific Islander pattern — a smaller elevation in overall engagement that persists through adjustment and is not concentrated at the extreme end of the spectrum — underscores the distinction by showing a race effect that is not contextually mediated in the same way.

3.7.4 Limitations

Several limitations of this analysis warrant acknowledgment. The behavioral data were collected across three waves with different question sets administered depending on weight goal and wave, requiring the offset framework that facilitated this analysis, but that also means behavioral comparisons are comparisons of rates rather than absolute counts. Additionally, the behavioral items available in Add Health were not designed to assess eating disorder symptomatology in a clinical sense, and the extreme behavior classification scheme applied here, while grounded in prior literature, remains a proxy for clinical risk rather than a diagnostic assessment. Additionally, the Add Health cohort's adolescence predates both the social media era and the GLP-1 pharmacotherapy moment, meaning the behavioral patterns documented here represent a conservative baseline relative to the amplified paradigm reach that the contemporary environment produces.

3.7.5 Behavioral Risk and Long-Term Health Outcomes

The findings of this paper establish the behavioral practices that weight goal trajectories produce. What they do not yet establish is what those practices produce in turn — what the health consequences of trajectory-organized behavioral engagement are across the adult life course. Chapter 4 of this dissertation takes up that question directly, examining whether the behavioral patterns documented here translate into differential trajectories of physical and mental health outcomes across the subsequent years of the Add Health observation window. The theoretical logic of that analysis follows directly from the findings here: if trajectory membership and dieting history independently predict extreme behavioral engagement, and if extreme behavioral engagement carries independent health risk — through weight cycling, metabolic disruption, eating disorder pathology, and the psychological costs of sustained engagement with behavioral strategies that cannot deliver on the paradigm's promises — then the social patterning of trajectory formation documented in Chapter 2 should produce a corresponding social patterning of health outcomes, mediated by the behavioral practices this paper has mapped. Whether that prediction is borne out — and for whom the behavioral risks documented here carry the greatest long-term health costs — is the question addressed in the next chapter.

3.8 Tables

Table 3.1

Descriptive Statistics by Analytic Sample | Universally-Surveyed Behaviors *Add Health Waves I-III*				
	Excluded		Main Analysis[1]	Sensitivity Analysis[2]
Variable	Missing	N = 4,032[3]	N = 14,892[3]	N = 9,634[3]
Any Behaviors[4]	9	1,966 (49%)	9,856 (66%)	6,927 (72%)
Frequency of Behaviors	9	0.75 (0.96)	1.12 (1.08)	1.29 (1.15)
Any Extreme Behaviors[4]	1,865	316 (15%)	2,098 (14%)	1,594 (16%)
Valid Waves	—			
3[5]		1,183 (29%)	9,616 (67%)	9,616 (100%)
2		979 (24%)	5,268 (33%)	18 (0.2%)
1		1,861 (46%)	8 (<0.1%)	0 (0%)
0		9 (0.2%)	0 (0%)	0 (0%)
Weight Goal Trajectory	9			
Consistent Nothing[5]		319 (7.9%)	410 (3.0%)	178 (2.2%)
Consistent Lose		1,080 (27%)	2,638 (17%)	1,526 (15%)
Changing Lose/Maintain		263 (6.5%)	1,951 (13%)	1,297 (13%)
Consistent Maintain		763 (19%)	1,090 (7.7%)	453 (4.8%)
Consistent Gain		542 (13%)	1,135 (7.0%)	570 (5.6%)
Changing Goals		1,056 (26%)	7,668 (52%)	5,610 (59%)
Age	1	16.71 (1.82)	15.81 (1.74)	15.52 (1.60)
Sex	—			
Male[5]		1,934 (48%)	7,347 (51%)	4,612 (51%)
Female		2,098 (52%)	7,545 (49%)	5,022 (49%)
Race	—			
White		2,133 (53%)	9,319 (73%)	6,122 (73%)
Asian/Pacific Islander		485 (12%)	999 (3.3%)	640 (3.5%)
Black		877 (22%)	2,790 (13%)	1,708 (13%)
Native American		202 (5.0%)	974 (6.2%)	712 (7.1%)
Multiracial/Other Race		335 (8.3%)	810 (4.2%)	452 (3.5%)
Latino/a[4]	12	801 (20%)	2,454 (12%)	1,496 (12%)
U.S. Born[4]	38	3,523 (88%)	13,851 (95%)	9,032 (95%)

Met MVPA Guidelines[4]	—	2,398 (59%)	9,823 (67%)	6,488 (69%)
Avg. Sleep Hours	—	7.61 (1.51)	7.88 (1.40)	7.92 (1.39)
Food Choice Autonomy[4]	299	3,054 (82%)	12,155 (81%)	7,736 (79%)
Prop. Dinners w/ Parent(s)	318	0.62 (0.37)	0.68 (0.35)	0.70 (0.34)
Social Origins Score	1,267	-0.07 (1.32)	0.00 (1.35)	0.03 (1.35)
Parent Graduated HS[4]	349	2,959 (80%)	13,089 (89%)	8,512 (89%)
Neighborhood SES Disadvantage	159	-0.04 (0.91)	-0.20 (0.91)	-0.20 (0.91)
Violent Crimes/100,000	—	847 (649)	673 (544)	672 (543)
Neighborhood Feels Safe[4]	127	3,377 (86%)	13,270 (90%)	8,586 (90%)
Metropolitan Area[4]	—	3,059 (76%)	11,901 (77%)	7,616 (77%)
Climate PC1	245	-0.23 (2.90)	0.72 (2.58)	0.70 (2.62)
Climate PC2	245	0.07 (2.14)	-0.06 (2.06)	-0.05 (2.09)
Resources PC1	—	-0.29 (2.08)	-0.71 (1.80)	-0.70 (1.80)
Resources PC2	—	0.26 (1.22)	0.29 (1.20)	0.30 (1.19)
Beta Index 3km	—	1.47 (0.16)	1.46 (0.16)	1.46 (0.16)
Cul-de-sac Density 3km	—	4.7 (3.6)	4.17 (3.34)	4.17 (3.33)
Prop. Roads A40-A48 3km	—	0.75 (0.10)	0.76 (0.10)	0.76 (0.10)
Landscape Patch Density 3km	245	45 (21)	42 (22)	41 (21)
Class 4 Area 3km	245	0.01 (1.01)	0.11 (1.10)	0.09 (1.09)
Class 5 Area 3km	245	-0.04 (1.01)	0.10 (1.04)	0.11 (1.04)

[1] All non-missing observations included; Wave I cross-sectional sampling weights applied.
[2] Sample restricted to respondents surveyed in all three waves; Wave I, II, & III longitudinal sampling weights applied.
[3] All Ns are unweighted w/ survey-weighted statistics for continuous variables. Continuous: Mean (SD); Categorical: n (%).
[4] Binary indicators (yes/no) display the affirmative category only; the reference is the negation.
[5] Reference category in regression models.

Table 3.2

Descriptive Statistics by Analytic Sample | All Behaviors *Add Health Waves I-III*				
	Excluded		**Main Analysis**[1]	**Sensitivity Analysis**[2]
Variable	Missing	N = 4,442[3]	N = 14,482[3]	N = 9,456[3]
Frequency of Behaviors	9	2.28 (2.09)	3.65 (2.17)	4.15 (2.25)
Any Extreme Behavior[4]	645	627 (17%)	3,285 (22%)	2,456 (25%)
Frequency of Extreme Behaviors	645	0.21 (0.54)	0.27 (0.58)	0.32 (0.63)
Valid Waves	—			
3[5]		1,359 (31%)	9,440 (68%)	9,440 (100%)
2		1,211 (27%)	5,036 (32%)	16 (0.2%)
1		1,863 (42%)	6 (<0.1%)	0 (0%)
0		9 (0.2%)	0 (0%)	0 (0%)
Weight Goal Trajectory	9			
Consistent Nothing		729 (16%)		
Consistent Lose		1,080 (24%)	2,638 (18%)	1,526 (16%)
Changing Lose/Maintain		263 (5.9%)	1,951 (13%)	1,297 (13%)
Consistent Maintain[5]		763 (17%)	1,090 (7.9%)	453 (5.0%)
Consistent Gain		542 (12%)	1,135 (7.2%)	570 (5.8%)
Changing Goals		1,056 (24%)	7,668 (54%)	5,610 (60%)
Age	1	16.67 (1.82)	15.79 (1.73)	15.51 (1.60)
Sex	—			
Male[5]		2,162 (49%)	7,119 (51%)	4,519 (51%)
Female		2,280 (51%)	7,363 (49%)	4,937 (49%)
Race	—			
White		2,425 (55%)	9,027 (73%)	5,991 (73%)
Asian/Pacific Islander		511 (12%)	973 (3.4%)	631 (3.6%)
Black		919 (21%)	2,748 (13%)	1,687 (13%)
Native American		231 (5.2%)	945 (6.2%)	699 (7.1%)
Multiracial/Other Race		356 (8.0%)	789 (4.2%)	448 (3.5%)
Latino/a[4]	12	853 (19%)	2,402 (12%)	1,480 (12%)
U.S. Born[4]	38	3,913 (89%)	13,461 (95%)	8,860 (95%)

Met MVPA Guidelines[4]	—	2,639 (59%)	9,582 (67%)	6,386 (69%)
Avg. Sleep Hours	—	7.62 (1.51)	7.88 (1.40)	7.93 (1.39)
Food Choice Autonomy[4]	299	3,393 (82%)	11,816 (80%)	7,597 (80%)
Prop. Dinners w/ Parent(s)	318	0.63 (0.37)	0.68 (0.35)	0.70 (0.34)
Social Origins Score	1,267	-0.02 (1.33)	-0.01 (1.35)	0.02 (1.35)
Parent Graduated HS[4]	349	3,335 (81%)	12,713 (89%)	8,349 (89%)
Neighborhood SES Disadvantage	159	-0.07 (0.91)	-0.19 (0.91)	-0.20 (0.91)
Violent Crimes/100,000	—	834 (648)	675 (544)	673 (545)
Neighborhood Feels Safe[4]	127	3,756 (87%)	12,891 (90%)	8,416 (90%)
Metropolitan Area[4]	—	3,399 (77%)	11,561 (77%)	7,465 (77%)
Climate PC1	245	-0.15 (2.91)	0.72 (2.58)	0.71 (2.61)
Climate PC2	245	0.03 (2.15)	-0.04 (2.06)	-0.04 (2.09)
Resources PC1	—	-0.30 (2.09)	-0.72 (1.79)	-0.71 (1.79)
Resources PC2	—	0.26 (1.23)	0.29 (1.19)	0.30 (1.19)
Beta Index 3km	—	1.47 (0.16)	1.46 (0.16)	1.46 (0.16)
Cul-de-sac Density 3km	—	4.6 (3.6)	4.17 (3.34)	4.16 (3.33)
Prop. Roads A40-A48 3km	—	0.75 (0.10)	0.76 (0.10)	0.76 (0.10)
Landscape Patch Density 3km	245	44 (21)	42 (22)	41 (21)
Class 4 Area 3km	245	0.01 (1.01)	0.11 (1.11)	0.10 (1.09)
Class 5 Area 3km	245	-0.03 (1.01)	0.10 (1.04)	0.11 (1.04)

[1] All non-missing observations included; Wave I cross-sectional sampling weights applied.
[2] Sample restricted to respondents surveyed in all three waves; Wave I, II, & III longitudinal sampling weights applied.
[3] All Ns are unweighted w/ survey-weighted statistics for continuous variables. Continuous: Mean (SD); Categorical: n (%).
[4] Binary indicators (yes/no) display the affirmative category only; the reference is the negation.
[5] Reference category in regression models.

Table 3.3

Descriptive Statistics by Analytic Sample | Dieting & Behavior *Add Health Waves I-III*				
	Excluded		**Main Analysis**[1]	**Sensitivity Analysis**[2]
Variable	Missing	N = 6,650[3]	N = 12,274[3]	N = 8,162[3]
Frequency of Behaviors	3,655	2.22 (1.84)	3.10 (1.84)	3.52 (1.89)
Any Extreme Behavior[4]	645	897 (15%)	3,015 (24%)	2,254 (27%)
Frequency of Extreme Behaviors	645	0.18 (0.48)	0.30 (0.61)	0.34 (0.65)
Valid Waves	—			
3[5]		2,651 (40%)	8,148 (69%)	8,148 (100%)
2		2,127 (32%)	4,120 (31%)	14 (0.2%)
1		1,863 (28%)	6 (<0.1%)	0 (0%)
0		9 (0.1%)	0 (0%)	0 (0%)
Weight Goal Trajectory	9			
Consistent Nothing		729 (11%)		
Consistent Lose		1,080 (16%)	2,638 (21%)	1,526 (18%)
Changing Lose/Maintain		263 (4.0%)	1,951 (16%)	1,297 (16%)
Consistent Maintain[5]		763 (11%)	1,090 (9.2%)	453 (5.7%)
Consistent Gain		1,677 (25%)		
Changing Goals		2,129 (32%)	6,595 (54%)	4,886 (61%)
Dieted[4]	3,655	947 (32%)	4,487 (36%)	3,150 (38%)
Age	1	16.53 (1.76)	15.74 (1.74)	15.47 (1.60)
Sex	—			
Male[5]		3,975 (60%)	5,306 (45%)	3,467 (46%)
Female		2,675 (40%)	6,968 (55%)	4,695 (54%)
Race	—			
White		3,609 (54%)	7,843 (75%)	5,290 (75%)
Asian/Pacific Islander		670 (10%)	814 (3.3%)	534 (3.5%)
Black		1,485 (22%)	2,182 (12%)	1,375 (12%)
Native American		365 (5.5%)	811 (6.2%)	605 (7.1%)
Multiracial/Other Race		521 (7.8%)	624 (3.8%)	358 (3.1%)
Latino/a[4]	12	1,192 (18%)	2,063 (12%)	1,288 (11%)
U.S. Born[4]	38	5,951 (90%)	11,423 (95%)	7,651 (95%)

Met MVPA Guidelines[4]	—	4,214 (63%)	8,007 (66%)	5,446 (68%)
Avg. Sleep Hours	—	7.67 (1.48)	7.89 (1.40)	7.93 (1.39)
Food Choice Autonomy[4]	299	5,207 (82%)	10,002 (80%)	6,559 (80%)
Prop. Dinners w/ Parent(s)	318	0.62 (0.37)	0.69 (0.34)	0.71 (0.34)
Social Origins Score	1,267	-0.03 (1.35)	0.01 (1.34)	0.04 (1.34)
Parent Graduated HS[4]	349	5,246 (83%)	10,802 (89%)	7,226 (90%)
Neighborhood SES Disadvantage	159	-0.08 (0.90)	-0.20 (0.91)	-0.21 (0.91)
Violent Crimes/100,000	—	831 (640)	668 (541)	669 (545)
Neighborhood Feels Safe[4]	127	5,718 (88%)	10,929 (90%)	7,275 (90%)
Metropolitan Area[4]	—	5,169 (78%)	9,791 (76%)	6,448 (77%)
Climate PC1	245	-0.09 (2.87)	0.75 (2.60)	0.73 (2.63)
Climate PC2	245	0.02 (2.13)	-0.08 (2.05)	-0.07 (2.08)
Resources PC1	—	-0.34 (2.04)	-0.73 (1.78)	-0.73 (1.78)
Resources PC2	—	0.25 (1.20)	0.29 (1.20)	0.30 (1.20)
Beta Index 3km	—	1.46 (0.16)	1.46 (0.16)	1.46 (0.16)
Cul-de-sac Density 3km	—	4.7 (3.6)	4.17 (3.36)	4.16 (3.34)
Prop. Roads A40-A48 3km	—	0.75 (0.10)	0.76 (0.10)	0.76 (0.10)
Landscape Patch Density 3km	245	44 (21)	42 (22)	41 (21)
Class 4 Area 3km	245	0.00 (0.99)	0.11 (1.11)	0.09 (1.09)
Class 5 Area 3km	245	-0.01 (1.01)	0.10 (1.04)	0.11 (1.04)

[1] All non-missing observations included; Wave I cross-sectional sampling weights applied.
[2] Sample restricted to respondents surveyed in all three waves; Wave I, II, & III longitudinal sampling weights applied.
[3] All Ns are unweighted w/ survey-weighted statistics for continuous variables. Continuous: Mean (SD); Categorical: N (%).
[4] Binary indicators (yes/no) display the affirmative category only; the reference is the negation.
[5] Reference category in regression models.

3.8.1 Main Analysis

Table 3.4

Main Analysis | Universally-Surveyed Behaviors Survey Design-Based Quasi-Binomial Regression[1]								
	Outcome: binary indicator of engagement in *any* behavior | N = 14,892[2]							
	M0: Trajectory		M1: + Individual		M2: + Household		M3: + Neighborhood	
Variable	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**
Valid Waves (Ref = 3)								
2	1.20	(1.12, 1.28)	1.13	(1.06, 1.22)	1.11	(1.03, 1.19)	1.11	(1.03, 1.19)
1	1.53	(0.50, 4.70)	1.44	(0.50, 4.13)	1.48	(0.42, 5.17)	1.49	(0.37, 6.02)
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Lose	1.32	(1.07, 1.61)	1.35	(1.10, 1.65)	1.30	(1.07, 1.59)	1.27	(1.05, 1.53)
Changing Lose/Maintain	1.06	(0.85, 1.32)	1.09	(0.88, 1.37)	1.06	(0.86, 1.31)	1.03	(0.84, 1.27)
Consistent Maintain	0.83	(0.66, 1.04)	0.86	(0.68, 1.08)	0.84	(0.67, 1.05)	0.82	(0.66, 1.02)
Consistent Gain	1.06	(0.85, 1.31)	1.04	(0.82, 1.30)	0.99	(0.79, 1.24)	0.98	(0.79, 1.21)
Changing Goals	1.12	(0.92, 1.36)	1.13	(0.92, 1.39)	1.10	(0.90, 1.33)	1.08	(0.89, 1.30)
Age			1.02	(1.00, 1.05)	1.01	(0.98, 1.03)	1.01	(0.99, 1.03)
Female			0.93	(0.86, 1.00)	0.93	(0.87, 1.00)	0.93	(0.87, 1.01)
Race[4]								
White			0.88	(0.83, 0.94)	0.98	(0.92, 1.04)	1.02	(0.95, 1.09)
Asian/Pacific Islander			1.14	(0.99, 1.33)	1.18	(1.02, 1.36)	1.26	(1.07, 1.48)
Black			1.14	(1.06, 1.24)	1.00	(0.92, 1.08)	0.94	(0.84, 1.04)
Native American			1.01	(0.90, 1.13)	0.98	(0.88, 1.09)	0.97	(0.87, 1.08)
Multiracial/Other Race			1.10	(0.94, 1.30)	1.00	(0.85, 1.17)	0.96	(0.81, 1.14)
Latino/a			1.00	(0.91, 1.09)	0.94	(0.85, 1.03)	0.98	(0.88, 1.09)
U.S. Born			1.04	(0.90, 1.20)	1.04	(0.90, 1.19)	1.01	(0.88, 1.16)
Met MVPA Guidelines			0.87	(0.82, 0.93)	0.89	(0.83, 0.95)	0.90	(0.84, 0.96)
Avg. Sleep Hours			0.97	(0.95, 0.98)	0.97	(0.95, 0.99)	0.97	(0.95, 0.99)
Food Choice Autonomy					1.07	(0.98, 1.16)	1.07	(0.98, 1.16)
Prop. Dinners w/ Parent(s)					0.71	(0.65, 0.77)	0.71	(0.65, 0.77)
Social Origins Score					0.90	(0.87, 0.93)	0.92	(0.89, 0.95)
Parent Graduated HS					1.10	(0.97, 1.26)	1.10	(0.96, 1.25)

Neighborhood SES Disadvantage	1.04	(1.00, 1.09)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.85	(0.77, 0.94)
Metropolitan Area	0.96	(0.87, 1.06)
Climate PC1	1.01	(1.00, 1.03)
Climate PC2	1.02	(1.00, 1.04)
Resources PC1	0.96	(0.94, 0.98)
Resources PC2	0.99	(0.95, 1.02)
Beta Index 3km	1.24	(0.97, 1.59)
Cul-de-sac Density 3km	1.00	(0.99, 1.02)
Prop. Roads A40-A48 3km	1.04	(0.76, 1.43)
Landscape Patch Density 3km	1.00	(1.00, 1.00)
Class 4 Area 3km	0.99	(0.96, 1.02)
Class 5 Area 3km	1.00	(0.96, 1.05)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.
[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.
[3] **Values > 1** indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.
[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)
Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.5

Main Analysis | Universally-Surveyed Behaviors Survey Design-Based Positive Poisson Regression[1]								
	Outcome: *frequency* of behaviors among those engaged | N = 9,856[2]							
	MA0: Trajectory		MA1: + Individual		MA2: + Household		MA3: + Neighborhood	
Variable	**IRR[3]**	**(95% CI)**	**IRR[3]**	**(95% CI)**	**IRR[3]**	**(95% CI)**	**IRR[3]**	**(95% CI)**
Valid Waves (Ref = 3)								
2	0.98	(0.91, 1.06)	0.92*	(0.84, 1.00)	0.91*	(0.84, 0.99)	0.91*	(0.84, 0.99)
1	1.50	(0.91, 2.47)	1.35	(0.81, 2.24)	1.59	(0.94, 2.68)	1.69	(0.90, 3.17)
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Lose	1.25*	(1.00, 1.56)	1.26*	(1.02, 1.57)	1.24	(1.00, 1.54)	1.23	(1.00, 1.52)
Changing Lose/Maintain	1.08	(0.87, 1.35)	1.11	(0.89, 1.38)	1.09	(0.87, 1.35)	1.08	(0.87, 1.33)
Consistent Maintain	0.99	(0.77, 1.27)	1.02	(0.80, 1.31)	1.00	(0.78, 1.27)	1.00	(0.79, 1.26)
Consistent Gain	1.04	(0.82, 1.33)	1.06	(0.83, 1.35)	1.04	(0.82, 1.32)	1.03	(0.81, 1.31)
Changing Goals	1.06	(0.87, 1.30)	1.09	(0.89, 1.32)	1.05	(0.87, 1.28)	1.04	(0.86, 1.27)
Age			1.04**	(1.01, 1.07)	1.02	(0.99, 1.05)	1.02	(1.00, 1.05)
Female			1.01	(0.93, 1.08)	0.99	(0.92, 1.07)	1.00	(0.92, 1.07)
Race[4]								
White			0.91**	(0.84, 0.97)	0.96	(0.90, 1.03)	0.99	(0.91, 1.08)
Asian/Pacific Islander			1.11	(0.94, 1.30)	1.12	(0.96, 1.30)	1.21*	(1.02, 1.44)
Black			1.04	(0.96, 1.13)	0.96	(0.89, 1.04)	0.92	(0.82, 1.02)
Native American			1.14*	(1.03, 1.26)	1.14**	(1.03, 1.25)	1.11*	(1.01, 1.22)
Multiracial/Other Race			1.08	(0.95, 1.23)	1.01	(0.89, 1.16)	0.96	(0.83, 1.12)
Latino/a			1.03	(0.95, 1.11)	1.00	(0.92, 1.09)	1.04	(0.94, 1.14)
U.S. Born			1.23*	(1.02, 1.50)	1.23*	(1.02, 1.47)	1.24*	(1.02, 1.50)
Met MVPA Guidelines			0.93*	(0.87, 0.99)	0.94*	(0.88, 1.00)	0.95	(0.89, 1.01)
Avg. Sleep Hours			0.95***	(0.93, 0.97)	0.95***	(0.94, 0.98)	0.95***	(0.93, 0.98)
Food Choice Autonomy					1.03	(0.96, 1.11)	1.03	(0.96, 1.10)
Prop. Dinners w/ Parent(s)					0.71***	(0.65, 0.77)	0.70***	(0.65, 0.76)
Social Origins Score					0.95***	(0.92, 0.97)	0.96**	(0.93, 0.98)
Parent Graduated HS					1.09	(0.97, 1.23)	1.10	(0.97, 1.23)

Neighborhood SES Disadvantage	1.02	(0.97, 1.06)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.96	(0.88, 1.05)
Metropolitan Area	0.92	(0.82, 1.05)
Climate PC1	1.00	(0.99, 1.01)
Climate PC2	1.04*	(1.01, 1.06)
Resources PC1	0.99	(0.98, 1.01)
Resources PC2	1.00	(0.97, 1.03)
Beta Index 3km	0.97	(0.75, 1.26)
Cul-de-sac Density 3km	0.99	(0.98, 1.01)
Prop. Roads A40-A48 3km	0.99	(0.67, 1.45)
Landscape Patch Density 3km	1.00	(1.00, 1.00)
Class 4 Area 3km	0.99	(0.97, 1.02)
Class 5 Area 3km	0.99	(0.94, 1.03)

[1] Standard errors adjusted via Pearson dispersion correction using the zero-truncated Poisson variance function (φ 0.97-0.99 across models)

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001; $^{+}$ p <0.1. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.6

Main Analysis | Universally-Surveyed Behaviors Survey Design-Based Quasi-Binomial Regression[1]								
	Outcome: binary indicator of engagement in *any extreme* behavior | N = 14,892[2]							
	ME0: Trajectory		ME1: + Individual		ME2: + Household		ME3: + Neighborhood	
Variable	**HR**[3]	**(95% CI)**	**HR**[3]	**(95% CI)**	**HR**[3]	**(95% CI)**	**HR**[3]	**(95% CI)**
Valid Waves (Ref = 3)								
2	1.07	(0.92, 1.23)	1.04	(0.88, 1.24)	1.03	(0.87, 1.22)	1.02	(0.86, 1.21)
1	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Lose	1.36	(0.87, 2.13)	1.28	(0.82, 1.99)	1.23	(0.79, 1.91)	1.19	(0.76, 1.86)
Changing Lose/Maintain	1.02	(0.66, 1.58)	0.98	(0.63, 1.51)	0.95	(0.61, 1.48)	0.92	(0.59, 1.43)
Consistent Maintain	0.90	(0.57, 1.42)	0.88	(0.56, 1.38)	0.86	(0.55, 1.35)	0.85	(0.54, 1.33)
Consistent Gain	1.15	(0.70, 1.87)	1.14	(0.69, 1.87)	1.10	(0.67, 1.80)	1.06	(0.64, 1.75)
Changing Goals	1.02	(0.68, 1.53)	1.00	(0.67, 1.51)	0.96	(0.64, 1.45)	0.93	(0.61, 1.40)
Age			0.99	(0.95, 1.04)	0.97	(0.92, 1.03)	0.98	(0.93, 1.03)
Female			1.13	(0.97, 1.31)	1.12	(0.97, 1.31)	1.13	(0.97, 1.31)
Race[4]								
White			0.82**	(0.71, 0.94)	0.93	(0.81, 1.06)	0.97	(0.83, 1.14)
Asian/Pacific Islander			1.00	(0.75, 1.34)	1.03	(0.77, 1.37)	1.18	(0.86, 1.62)
Black			1.25**	(1.08, 1.46)	1.07	(0.91, 1.26)	1.01	(0.82, 1.25)
Native American			1.01	(0.77, 1.31)	0.96	(0.74, 1.24)	0.91	(0.71, 1.16)
Multiracial/Other Race			1.41*	(1.01, 1.97)	1.25	(0.90, 1.72)	1.15	(0.78, 1.68)
Latino/a			1.12	(0.94, 1.34)	1.02	(0.84, 1.22)	1.16	(0.97, 1.39)
U.S. Born			1.05	(0.73, 1.51)	1.07	(0.75, 1.52)	1.04	(0.72, 1.51)
Met MVPA Guidelines			0.93	(0.82, 1.04)	0.95	(0.85, 1.07)	0.98	(0.87, 1.11)
Avg. Sleep Hours			0.95**	(0.91, 0.99)	0.95**	(0.92, 0.99)	0.95**	(0.92, 0.98)
Food Choice Autonomy					1.06	(0.89, 1.26)	1.05	(0.89, 1.25)
Prop. Dinners w/ Parent(s)					0.69***	(0.58, 0.81)	0.68***	(0.58, 0.80)
Social Origins Score					0.88***	(0.83, 0.93)	0.90***	(0.85, 0.95)
Parent Graduated HS					1.02	(0.81, 1.30)	0.99	(0.78, 1.25)

Neighborhood SES Disadvantage	0.99	(0.92, 1.08)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.74**	(0.62, 0.89)
Metropolitan Area	0.82	(0.65, 1.05)
Climate PC1	1.01	(0.98, 1.04)
Climate PC2	1.05	(0.99, 1.11)
Resources PC1	1.00	(0.95, 1.05)
Resources PC2	1.02	(0.94, 1.12)
Beta Index 3km	0.93	(0.50, 1.73)
Cul-de-sac Density 3km	0.98	(0.95, 1.02)
Prop. Roads A40-A48 3km	1.29	(0.60, 2.77)
Landscape Patch Density 3km	1.00	(1.00, 1.01)
Class 4 Area 3km	0.95	(0.89, 1.02)
Class 5 Area 3km	1.08	(0.98, 1.18)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.7

Variable	M0: Trajectory IRR[2]	M0: (95% CI)	M1: + Individual IRR[2]	M1: (95% CI)	M2: + Household IRR[2]	M2: (95% CI)	M3: + Neighborhood IRR[2]	M3: (95% CI)
Main Analysis | All Behaviors — Survey Design-Based Quasi-Poisson Regression — Outcome: *frequency* of behaviors | N = 14,482[1]								
Valid Waves (Ref = 3)								
2	0.99	(0.97, 1.01)	0.97*	(0.95, 1.00)	0.97*	(0.95, 0.99)	0.97*	(0.95, 0.99)
1	0.79	(0.55, 1.13)	0.77	(0.56, 1.06)	0.79	(0.57, 1.08)	0.77	(0.56, 1.06)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.76***	(1.68, 1.84)	1.77***	(1.69, 1.85)	1.77***	(1.69, 1.85)	1.76***	(1.68, 1.84)
Changing Lose/Maintain	1.31***	(1.25, 1.38)	1.32***	(1.26, 1.39)	1.32***	(1.25, 1.39)	1.31***	(1.24, 1.38)
Consistent Gain	2.13***	(2.01, 2.25)	2.05***	(1.94, 2.18)	2.05***	(1.93, 2.17)	2.04***	(1.92, 2.16)
Changing Goals	1.37***	(1.31, 1.43)	1.36***	(1.30, 1.42)	1.35***	(1.30, 1.41)	1.35***	(1.29, 1.41)
Age			1.02***	(1.01, 1.03)	1.02***	(1.01, 1.02)	1.02***	(1.01, 1.02)
Female			0.96***	(0.93, 0.98)	0.95***	(0.93, 0.98)	0.95***	(0.93, 0.98)
Race[3]								
White			0.99	(0.96, 1.01)	1.00	(0.97, 1.02)	1.01	(0.98, 1.04)
Asian/Pacific Islander			1.07*	(1.01, 1.12)	1.06*	(1.01, 1.12)	1.09**	(1.03, 1.16)
Black			0.99	(0.96, 1.02)	0.97	(0.95, 1.00)	0.96*	(0.92, 0.99)
Native American			1.04	(0.99, 1.09)	1.05	(1.00, 1.09)	1.03	(0.99, 1.08)
Multiracial/Other Race			0.99	(0.93, 1.05)	0.98	(0.92, 1.04)	0.97	(0.90, 1.04)
Latino/a			1.00	(0.96, 1.03)	1.00	(0.96, 1.03)	1.00	(0.97, 1.04)
U.S. Born			1.07*	(1.01, 1.13)	1.06*	(1.00, 1.12)	1.07*	(1.01, 1.13)
Met MVPA Guidelines			1.10***	(1.07, 1.12)	1.10***	(1.08, 1.12)	1.10***	(1.08, 1.13)
Avg. Sleep Hours			0.98***	(0.97, 0.99)	0.98***	(0.98, 0.99)	0.98***	(0.98, 0.99)
Food Choice Autonomy					1.02	(0.99, 1.05)	1.02	(0.99, 1.05)
Prop. Dinners w/ Parent(s)					0.89***	(0.86, 0.91)	0.88***	(0.86, 0.91)
Social Origins Score					1.00	(0.99, 1.01)	1.00	(0.99, 1.01)
Parent Graduated HS					1.03	(0.99, 1.07)	1.02	(0.98, 1.07)

Neighborhood SES Disadvantage	1.01	(0.99, 1.03)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.98	(0.94, 1.01)
Metropolitan Area	0.99	(0.95, 1.04)
Climate PC1	1.00	(0.99, 1.00)
Climate PC2	1.01**	(1.00, 1.02)
Resources PC1	0.99	(0.99, 1.00)
Resources PC2	0.99	(0.98, 1.00)
Beta Index 3km	1.07	(0.96, 1.18)
Cul-de-sac Density 3km	1.00	(0.99, 1.00)
Prop. Roads A40-A48 3km	1.06	(0.91, 1.22)
Landscape Patch Density 3km	1.00	(1.00, 1.00)
Class 4 Area 3km	0.99	(0.98, 1.00)
Class 5 Area 3km	1.01	(0.99, 1.03)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.8

Main Analysis | All Behaviors Survey Design-Based Quasi-Binomial Regression[1]								
	Outcome: binary indicator of engagement in *any extreme* behavior | N = 14,482[2]							
	ME0: Trajectory		ME1: + Individual		ME2: + Household		ME3: + Neighborhood	
Variable	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**
Valid Waves (Ref = 3)								
2	0.93	(0.83, 1.05)	0.90	(0.79, 1.02)	0.88*	(0.78, 1.00)	0.88*	(0.77, 1.00)
1	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	2.70***	(2.14, 3.40)	2.56***	(2.04, 3.21)	2.53***	(2.02, 3.18)	2.50***	(2.00, 3.12)
Changing Lose/Maintain	1.72***	(1.36, 2.18)	1.68***	(1.33, 2.12)	1.66***	(1.32, 2.09)	1.63***	(1.29, 2.05)
Consistent Gain	2.29***	(1.73, 3.04)	2.42***	(1.82, 3.22)	2.38***	(1.78, 3.17)	2.33***	(1.74, 3.13)
Changing Goals	1.59***	(1.30, 1.95)	1.61***	(1.31, 1.98)	1.58***	(1.29, 1.94)	1.55***	(1.27, 1.90)
Age			1.03	(0.99, 1.07)	1.01	(0.97, 1.05)	1.01	(0.97, 1.05)
Female			1.23***	(1.09, 1.38)	1.23***	(1.09, 1.39)	1.24***	(1.10, 1.39)
Race[4]								
White			0.84**	(0.74, 0.94)	0.95	(0.84, 1.07)	1.02	(0.89, 1.17)
Asian/Pacific Islander			0.97	(0.77, 1.22)	0.99	(0.78, 1.24)	1.08	(0.84, 1.39)
Black			1.21**	(1.07, 1.37)	1.03	(0.90, 1.17)	0.94	(0.80, 1.10)
Native American			1.14	(0.93, 1.39)	1.10	(0.91, 1.34)	1.03	(0.86, 1.24)
Multiracial/Other Race			1.18	(0.91, 1.53)	1.05	(0.81, 1.35)	0.96	(0.73, 1.28)
Latino/a			1.06	(0.91, 1.24)	0.96	(0.81, 1.13)	1.02	(0.87, 1.21)
U.S. Born			1.11	(0.82, 1.50)	1.13	(0.83, 1.53)	1.12	(0.81, 1.53)
Met MVPA Guidelines			0.96	(0.87, 1.07)	0.99	(0.89, 1.10)	1.01	(0.91, 1.13)
Avg. Sleep Hours			0.96*	(0.93, 0.99)	0.96*	(0.93, 0.99)	0.96*	(0.93, 0.99)
Food Choice Autonomy					1.00	(0.87, 1.14)	0.99	(0.87, 1.13)
Prop. Dinners w/ Parent(s)					0.64***	(0.56, 0.74)	0.63***	(0.55, 0.72)
Social Origins Score					0.89***	(0.85, 0.93)	0.91***	(0.86, 0.96)
Parent Graduated HS					0.99	(0.83, 1.19)	0.98	(0.81, 1.17)

Neighborhood SES Disadvantage	1.05	(0.99, 1.12)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.83**	(0.72, 0.95)
Metropolitan Area	0.91	(0.76, 1.09)
Climate PC1	0.99	(0.97, 1.01)
Climate PC2	1.03	(1.00, 1.07)
Resources PC1	0.99	(0.96, 1.03)
Resources PC2	1.04	(0.95, 1.13)
Beta Index 3km	1.09	(0.70, 1.70)
Cul-de-sac Density 3km	0.99	(0.97, 1.02)
Prop. Roads A40-A48 3km	1.34	(0.76, 2.37)
Landscape Patch Density 3km	1.00	(1.00, 1.01)
Class 4 Area 3km	0.98	(0.93, 1.03)
Class 5 Area 3km	1.09*	(1.02, 1.17)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.9

Main Analysis | All Behaviors Survey Design-Based Positive-Poission Regression[1]								
	Outcome: *frequency* of *extreme* behaviors among those engaged | N = 3,285[2]							
	MAE0: Trajectory		MAE1: + Individual		MAE2: + Household		MAE3: + Neighborhood	
Variable	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**
Valid Waves (Ref = 3)								
2	0.87	(0.64, 1.17)	0.84	(0.62, 1.14)	0.84	(0.62, 1.15)	0.82	(0.61, 1.10)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	4.52***	(2.17, 9.44)	4.23***	(2.02, 8.87)	4.23***	(2.02, 8.86)	4.41***	(2.08, 9.37)
Changing Lose/Maintain	2.68**	(1.27, 5.64)	2.58*	(1.23, 5.39)	2.57*	(1.22, 5.38)	2.65*	(1.25, 5.60)
Consistent Gain	1.00	(0.28, 3.58)	1.20	(0.34, 4.20)	1.20	(0.34, 4.21)	1.22	(0.34, 4.42)
Changing Goals	2.37*	(1.07, 5.25)	2.46*	(1.12, 5.38)	2.46*	(1.12, 5.39)	2.47*	(1.12, 5.48)
Age			1.02	(0.95, 1.08)	1.02	(0.96, 1.08)	1.03	(0.97, 1.09)
Female			1.42*	(1.08, 1.85)	1.42*	(1.09, 1.85)	1.41*	(1.08, 1.84)
Race[4]								
White			0.84	(0.71, 1.00)	0.84*	(0.70, 0.99)	0.87	(0.69, 1.10)
Asian/Pacific Islander			0.76	(0.45, 1.29)	0.77	(0.45, 1.31)	0.83	(0.49, 1.38)
Black			1.24*	(1.01, 1.53)	1.25	(1.00, 1.56)	1.17	(0.88, 1.54)
Native American			1.33	(0.93, 1.90)	1.33	(0.93, 1.89)	1.29	(0.87, 1.90)
Multiracial/Other Race			0.98	(0.59, 1.61)	0.99	(0.60, 1.63)	0.99	(0.58, 1.68)
Latino/a			0.99	(0.75, 1.31)	0.98	(0.71, 1.35)	0.98	(0.70, 1.38)
U.S. Born			0.99	(0.57, 1.71)	1.00	(0.56, 1.78)	1.04	(0.58, 1.85)
Met MVPA Guidelines			0.90	(0.71, 1.13)	0.89	(0.71, 1.13)	0.91	(0.72, 1.14)
Avg. Sleep Hours			0.96	(0.89, 1.04)	0.96	(0.89, 1.04)	0.97	(0.89, 1.04)
Food Choice Autonomy					0.96	(0.75, 1.21)	0.94	(0.74, 1.19)
Prop. Dinners w/ Parent(s)					1.04	(0.82, 1.32)	1.01	(0.80, 1.28)
Social Origins Score					1.02	(0.92, 1.12)	1.01	(0.92, 1.12)
Parent Graduated HS					0.92	(0.61, 1.38)	0.91	(0.60, 1.38)

Neighborhood SES Disadvantage	0.90	(0.77, 1.04)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.68**	(0.54, 0.86)
Metropolitan Area	0.98	(0.77, 1.24)
Climate PC1	0.99	(0.94, 1.03)
Climate PC2	1.02	(0.97, 1.07)
Resources PC1	1.01	(0.93, 1.09)
Resources PC2	1.04	(0.96, 1.13)
Beta Index 3km	1.12	(0.48, 2.61)
Cul-de-sac Density 3km	0.98	(0.93, 1.03)
Prop. Roads A40-A48 3km	1.00	(0.39, 2.57)
Landscape Patch Density 3km	1.00	(0.99, 1.01)
Class 4 Area 3km	0.97	(0.85, 1.10)
Class 5 Area 3km	1.07	(0.91, 1.26)

[1] Standard errors adjusted via Pearson dispersion correction using the zero-truncated Poisson variance function (φ 1.18-1.22 across models)

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; $^{+}$ $p < 0.1$. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.10

Main Analysis | Dieting & Behavior Survey Design-Based Quasi-Poisson Regression										
	Outcome: *frequency* of behaviors | N = 12,274[1]									
	M0: Trajectory		M1: + Dieted		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**
Valid Waves (Ref = 3)										
2	1.01	(0.98, 1.03)	1.01	(0.98, 1.04)	0.99	(0.97, 1.02)	0.99	(0.97, 1.02)	0.99	(0.97, 1.02)
1	0.66	(0.22, 1.96)	0.66	(0.22, 1.98)	0.64	(0.20, 1.98)	0.65	(0.22, 1.95)	0.65	(0.21, 1.95)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.45***	(1.39, 1.53)	1.44***	(1.37, 1.52)	1.45***	(1.38, 1.52)	1.45***	(1.38, 1.52)	1.44***	(1.37, 1.51)
Changing Lose/Maintain	1.18***	(1.13, 1.24)	1.18***	(1.12, 1.23)	1.18***	(1.13, 1.24)	1.18***	(1.13, 1.24)	1.17***	(1.12, 1.23)
Changing Goals	1.28***	(1.22, 1.33)	1.28***	(1.22, 1.33)	1.26***	(1.21, 1.32)	1.26***	(1.21, 1.31)	1.25***	(1.20, 1.31)
Dieted			1.01	(0.98, 1.04)	1.03	(1.00, 1.06)	1.03	(1.00, 1.06)	1.03*	(1.00, 1.06)
Age					1.01*	(1.00, 1.02)	1.01	(1.00, 1.01)	1.01	(1.00, 1.01)
Female					0.92***	(0.90, 0.95)	0.92***	(0.90, 0.95)	0.92***	(0.90, 0.95)
Race[3]										
White					0.94***	(0.92, 0.97)	0.96*	(0.94, 0.99)	0.98	(0.95, 1.01)
Asian/Pacific Islander					1.13***	(1.05, 1.21)	1.13***	(1.05, 1.21)	1.15***	(1.07, 1.23)
Black					1.05**	(1.01, 1.08)	1.02	(0.98, 1.05)	0.99	(0.96, 1.04)
Native American					1.01	(0.95, 1.07)	1.01	(0.96, 1.06)	0.99	(0.94, 1.05)
Multiracial/Other Race					1.05	(0.98, 1.12)	1.03	(0.96, 1.09)	1.01	(0.94, 1.08)
Latino/a					1.02	(0.98, 1.06)	1.01	(0.97, 1.05)	1.01	(0.97, 1.05)
U.S. Born					1.09*	(1.01, 1.16)	1.08*	(1.01, 1.16)	1.08*	(1.01, 1.15)
Met MVPA Guidelines					1.11***	(1.08, 1.14)	1.12***	(1.09, 1.15)	1.12***	(1.09, 1.16)
Avg. Sleep Hours					0.98***	(0.97, 0.99)	0.98***	(0.97, 0.99)	0.98***	(0.97, 0.99)

Food Choice Autonomy	1.02	(0.98, 1.05)	1.02	(0.98, 1.05)
Prop. Dinners w/ Parent(s)	0.88***	(0.85, 0.91)	0.88***	(0.85, 0.91)
Social Origins Score	0.98*	(0.97, 1.00)	0.99	(0.98, 1.00)
Parent Graduated HS	1.03	(0.99, 1.07)	1.03	(0.99, 1.07)
Neighborhood SES Disadvantage			1.00	(0.99, 1.02)
Violent Crimes/100,000			1.00	(1.00, 1.00)
Neighborhood Feels Safe			0.96*	(0.92, 0.99)
Metropolitan Area			1.00	(0.95, 1.05)
Climate PC1			0.99	(0.99, 1.00)
Climate PC2			1.01*	(1.00, 1.02)
Resources PC1			0.99	(0.98, 1.00)
Resources PC2			1.00	(0.98, 1.01)
Beta Index 3km			1.16**	(1.05, 1.29)
Cul-de-sac Density 3km			1.00	(0.99, 1.00)
Prop. Roads A40-A48 3km			1.02	(0.88, 1.19)
Landscape Patch Density 3km			1.00	(1.00, 1.00)
Class 4 Area 3km			0.99	(0.98, 1.01)
Class 5 Area 3km			1.02*	(1.00, 1.05)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.11

Main Analysis | Dieting & Behavior Survey Design-Based Quasi-Binomial Regression[1]										
	Outcome: binary indicator of engagement in *any extreme* behavior | N = 12,274[2]									
	ME0: Trajectory		ME1: + Dieted		ME2: + Individual		ME3: + Household		ME4: + Neighborhood	
Variable	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	0.94	(0.84, 1.06)	0.98	(0.87, 1.10)	0.93	(0.82, 1.06)	0.92	(0.81, 1.04)	0.92	(0.80, 1.04)
1	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	2.70***	(2.15, 3.41)	2.27***	(1.77, 2.90)	2.20***	(1.72, 2.81)	2.16***	(1.70, 2.75)	2.12***	(1.67, 2.68)
Changing Lose/Maintain	1.73***	(1.36, 2.18)	1.55***	(1.22, 1.98)	1.54***	(1.21, 1.95)	1.52***	(1.20, 1.92)	1.48**	(1.17, 1.88)
Changing Goals	1.58***	(1.29, 1.95)	1.58***	(1.28, 1.95)	1.59***	(1.29, 1.96)	1.57***	(1.27, 1.93)	1.53***	(1.25, 1.88)
Dieted			1.36***	(1.23, 1.51)	1.32***	(1.19, 1.46)	1.33***	(1.20, 1.48)	1.34***	(1.21, 1.48)
Age					1.02	(0.99, 1.06)	1.00	(0.96, 1.04)	1.01	(0.97, 1.04)
Female					1.19**	(1.06, 1.34)	1.19**	(1.06, 1.34)	1.19**	(1.06, 1.34)
Race[4]										
White					0.81**	(0.72, 0.92)	0.93	(0.81, 1.05)	0.98	(0.85, 1.14)
Asian/Pacific Islander					1.01	(0.80, 1.29)	1.02	(0.80, 1.31)	1.10	(0.85, 1.44)
Black					1.27***	(1.11, 1.44)	1.08	(0.93, 1.24)	1.00	(0.84, 1.19)
Native American					1.12	(0.91, 1.38)	1.08	(0.88, 1.32)	1.01	(0.83, 1.23)
Multiracial/Other Race					1.20	(0.90, 1.60)	1.05	(0.78, 1.40)	0.98	(0.73, 1.33)
Latino/a					1.09	(0.93, 1.28)	0.98	(0.83, 1.16)	1.05	(0.88, 1.24)
U.S. Born					1.11	(0.80, 1.54)	1.12	(0.81, 1.57)	1.10	(0.78, 1.55)
Met MVPA Guidelines					0.95	(0.85, 1.07)	0.98	(0.87, 1.10)	1.00	(0.89, 1.12)
Avg. Sleep Hours					0.96*	(0.92, 0.99)	0.96*	(0.93, 0.99)	0.96*	(0.93, 0.99)

Food Choice Autonomy	0.98	(0.85, 1.13)	0.98	(0.85, 1.13)
Prop. Dinners w/ Parent(s)	0.66***	(0.57, 0.76)	0.65***	(0.56, 0.75)
Social Origins Score	0.88***	(0.84, 0.93)	0.90***	(0.85, 0.95)
Parent Graduated HS	1.01	(0.85, 1.21)	0.99	(0.83, 1.19)
Neighborhood SES Disadvantage			1.04	(0.98, 1.11)
Violent Crimes/100,000			1.00	(1.00, 1.00)
Neighborhood Feels Safe			0.81**	(0.70, 0.93)
Metropolitan Area			0.96	(0.81, 1.14)
Climate PC1			0.99	(0.97, 1.01)
Climate PC2			1.02	(0.99, 1.06)
Resources PC1			1.00	(0.96, 1.04)
Resources PC2			1.04	(0.95, 1.13)
Beta Index 3km			1.17	(0.71, 1.93)
Cul-de-sac Density 3km			0.99	(0.97, 1.02)
Prop. Roads A40-A48 3km			1.32	(0.76, 2.30)
Landscape Patch Density 3km			1.00*	(1.00, 1.01)
Class 4 Area 3km			0.98	(0.93, 1.04)
Class 5 Area 3km			1.11**	(1.03, 1.21)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.12

Main Analysis | Dieting & Behavior Survey Design-Based Positive-Poission Regression[1]										
	Outcome: *frequency* of *extreme* behaviors among those engaged | N = 3,015[2]									
	MAE0: Trajectory		MAE1: + Dieted		MAE2: + Individual		MAE3: + Household		MAE4: + Neighborhood	
Variable	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**
Valid Waves (Ref = 3)										
2	0.87	(0.64, 1.18)	0.92	(0.68, 1.24)	0.89	(0.66, 1.21)	0.90	(0.66, 1.22)	0.87	(0.64, 1.17)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	4.52***	(2.16, 9.47)	3.33**	(1.57, 7.03)	3.20**	(1.52, 6.75)	3.20**	(1.52, 6.75)	3.34**	(1.56, 7.15)
Changing Lose/Maintain	2.68*	(1.26, 5.67)	2.16*	(1.00, 4.64)	2.11	(0.99, 4.49)	2.10	(0.98, 4.47)	2.17*	(1.01, 4.66)
Changing Goals	2.43*	(1.09, 5.41)	2.26*	(1.03, 4.97)	2.32*	(1.07, 5.04)	2.32*	(1.07, 5.03)	2.33*	(1.06, 5.12)
Dieted			1.72***	(1.31, 2.26)	1.67***	(1.27, 2.18)	1.66***	(1.27, 2.19)	1.66***	(1.27, 2.16)
Age					1.01	(0.94, 1.08)	1.01	(0.95, 1.08)	1.02	(0.96, 1.08)
Female					1.31	(0.99, 1.72)	1.31	(0.99, 1.72)	1.30	(0.99, 1.71)
Race[4]										
White					0.82*	(0.69, 0.98)	0.82*	(0.69, 0.98)	0.85	(0.67, 1.08)
Asian/Pacific Islander					0.80	(0.47, 1.36)	0.81	(0.47, 1.38)	0.86	(0.52, 1.45)
Black					1.31*	(1.06, 1.64)	1.32*	(1.04, 1.66)	1.23	(0.92, 1.64)
Native American					1.20	(0.83, 1.74)	1.20	(0.83, 1.73)	1.17	(0.78, 1.75)
Multiracial/Other Race					1.04	(0.65, 1.68)	1.06	(0.65, 1.72)	1.06	(0.63, 1.76)
Latino/a					1.05	(0.79, 1.38)	1.03	(0.74, 1.42)	1.03	(0.73, 1.45)
U.S. Born					0.99	(0.58, 1.69)	1.01	(0.58, 1.76)	1.05	(0.60, 1.83)
Met MVPA Guidelines					0.90	(0.71, 1.14)	0.90	(0.71, 1.14)	0.91	(0.72, 1.15)
Avg. Sleep Hours					0.97	(0.89, 1.05)	0.96	(0.89, 1.04)	0.97	(0.89, 1.05)

Food Choice Autonomy	0.94	(0.75, 1.19)	0.92	(0.73, 1.16)
Prop. Dinners w/ Parent(s)	1.01	(0.79, 1.28)	0.98	(0.77, 1.24)
Social Origins Score	1.02	(0.93, 1.12)	1.02	(0.93, 1.12)
Parent Graduated HS	0.89	(0.59, 1.35)	0.88	(0.58, 1.33)
Neighborhood SES Disadvantage			0.89	(0.77, 1.04)
Violent Crimes/100,000			1.00	(1.00, 1.00)
Neighborhood Feels Safe			0.67***	(0.53, 0.85)
Metropolitan Area			0.98	(0.78, 1.24)
Climate PC1			0.99	(0.95, 1.03)
Climate PC2			1.02	(0.97, 1.06)
Resources PC1			1.00	(0.93, 1.08)
Resources PC2			1.03	(0.96, 1.11)
Beta Index 3km			1.21	(0.53, 2.77)
Cul-de-sac Density 3km			0.98	(0.93, 1.03)
Prop. Roads A40-A48 3km			1.06	(0.41, 2.71)
Landscape Patch Density 3km			1.00	(0.99, 1.01)
Class 4 Area 3km			0.97	(0.85, 1.10)
Class 5 Area 3km			1.08	(0.92, 1.26)

[1] Standard errors adjusted via Pearson dispersion correction using the zero-truncated Poisson variance function (φ 1.17-1.24 across models)

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001; † p <0.1. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

3.8.2 Sensitivity Analysis

Table 3.13

Sensitivity Analysis *(Wave I-III Panel)* | Universally-Surveyed Behaviors

Survey Design-Based Quasi-Binomial Regression[1]

	Outcome: binary indicator of engagement in *any* behavior | N = 9,634[2]							
	S0: Trajectory		S1: + Individual		S2: + Household		S3: + Neighborhood	
Variable	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**
Valid Waves (Ref = 3)								
2	1.14	(0.54, 2.41)	1.02	(0.43, 2.41)	1.02	(0.46, 2.29)	1.08	(0.47, 2.51)
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Lose	1.38*	(1.05, 1.83)	1.47*	(1.09, 1.97)	1.37*	(1.02, 1.82)	1.31*	(1.01, 1.71)
Changing Lose/Maintain	1.08	(0.81, 1.43)	1.14	(0.84, 1.53)	1.07	(0.80, 1.43)	1.02	(0.79, 1.33)
Consistent Maintain	0.81	(0.60, 1.10)	0.85	(0.62, 1.18)	0.81	(0.59, 1.12)	0.78	(0.58, 1.05)
Consistent Gain	1.11	(0.83, 1.49)	1.07	(0.78, 1.48)	0.99	(0.72, 1.36)	0.97	(0.72, 1.30)
Changing Goals	1.19	(0.91, 1.55)	1.22	(0.92, 1.62)	1.14	(0.86, 1.51)	1.11	(0.86, 1.43)
Age			1.04***	(1.02, 1.07)	1.02	(1.00, 1.05)	1.02	(1.00, 1.05)
Female			0.90*	(0.82, 0.98)	0.91*	(0.83, 0.99)	0.91*	(0.83, 0.99)
Race[4]								
White			0.85***	(0.79, 0.92)	0.96	(0.89, 1.03)	0.99	(0.91, 1.07)
Asian/Pacific Islander			1.12	(0.93, 1.35)	1.13	(0.94, 1.36)	1.22	(0.98, 1.51)
Black			1.19***	(1.09, 1.31)	1.04	(0.94, 1.15)	0.97	(0.86, 1.10)
Native American			1.08	(0.95, 1.22)	1.03	(0.91, 1.17)	1.04	(0.92, 1.18)
Multiracial/Other Race			1.08	(0.88, 1.31)	0.95	(0.78, 1.16)	0.90	(0.74, 1.11)
Latino/a			0.97	(0.87, 1.09)	0.93	(0.82, 1.04)	0.96	(0.84, 1.10)
U.S. Born			1.14	(0.94, 1.38)	1.12	(0.93, 1.36)	1.09	(0.91, 1.32)
Met MVPA Guidelines			0.91*	(0.84, 0.98)	0.92*	(0.85, 1.00)	0.93	(0.86, 1.01)
Avg. Sleep Hours			0.98	(0.96, 1.00)	0.98	(0.96, 1.01)	0.98	(0.96, 1.01)
Food Choice Autonomy					1.05	(0.96, 1.16)	1.06	(0.96, 1.16)
Prop. Dinners w/ Parent(s)					0.72***	(0.64, 0.81)	0.73***	(0.65, 0.81)
Social Origins Score					0.89***	(0.86, 0.92)	0.91***	(0.88, 0.95)
Parent Graduated HS					1.18*	(1.01, 1.37)	1.18*	(1.01, 1.37)

Neighborhood SES Disadvantage	1.02	(0.97, 1.08)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.81***	(0.72, 0.90)
Metropolitan Area	0.98	(0.88, 1.08)
Climate PC1	1.02*	(1.00, 1.04)
Climate PC2	1.03*	(1.01, 1.05)
Resources PC1	0.95***	(0.92, 0.97)
Resources PC2	0.97	(0.94, 1.01)
Beta Index 3km	1.20	(0.92, 1.57)
Cul-de-sac Density 3km	1.00	(0.98, 1.02)
Prop. Roads A40-A48 3km	1.00	(0.68, 1.46)
Landscape Patch Density 3km	1.00	(1.00, 1.00)
Class 4 Area 3km	0.99	(0.95, 1.02)
Class 5 Area 3km	0.97	(0.92, 1.02)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.14

Sensitivity Analysis *(Wave I-III Panel)* | Universally-Surveyed Behaviors Survey Design-Based Positive Poisson Regression[1]								
	Outcome: *frequency* of behaviors among those engaged | N = 6,927[2]							
	SA0: Trajectory		SA1: + Individual		SA2: + Household		SA3: + Neighborhood	
Variable	**IRR[3]**	**(95% CI)**	**IRR[3]**	**(95% CI)**	**IRR[3]**	**(95% CI)**	**IRR[3]**	**(95% CI)**
Valid Waves (Ref = 3)								
2	0.62	(0.27, 1.43)	0.64	(0.29, 1.42)	0.59	(0.26, 1.35)	0.60	(0.25, 1.43)
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Lose	1.29	(0.99, 1.67)	1.28	(1.00, 1.63)	1.22	(0.96, 1.56)	1.21	(0.96, 1.52)
Changing Lose/Maintain	1.16	(0.90, 1.51)	1.18	(0.92, 1.51)	1.12	(0.88, 1.43)	1.11	(0.88, 1.40)
Consistent Maintain	0.96	(0.71, 1.31)	1.00	(0.74, 1.33)	0.94	(0.71, 1.26)	0.94	(0.72, 1.24)
Consistent Gain	1.10	(0.83, 1.45)	1.10	(0.85, 1.42)	1.06	(0.82, 1.36)	1.05	(0.83, 1.34)
Changing Goals	1.11	(0.88, 1.41)	1.13	(0.90, 1.41)	1.07	(0.85, 1.33)	1.05	(0.85, 1.31)
Age			1.06***	(1.03, 1.09)	1.04**	(1.01, 1.07)	1.04***	(1.02, 1.07)
Female			1.02	(0.95, 1.11)	1.01	(0.94, 1.10)	1.02	(0.94, 1.10)
Race[4]								
White			0.87***	(0.81, 0.94)	0.93*	(0.86, 0.99)	0.96	(0.88, 1.04)
Asian/Pacific Islander			1.11	(0.94, 1.31)	1.11	(0.95, 1.30)	1.21*	(1.01, 1.45)
Black			1.07	(0.98, 1.17)	0.98	(0.90, 1.08)	0.93	(0.83, 1.04)
Native American			1.22***	(1.11, 1.35)	1.22***	(1.12, 1.34)	1.20***	(1.10, 1.30)
Multiracial/Other Race			1.07	(0.93, 1.23)	1.00	(0.87, 1.15)	0.94	(0.80, 1.10)
Latino/a			1.03	(0.96, 1.12)	1.00	(0.92, 1.09)	1.04	(0.94, 1.14)
U.S. Born			1.26	(1.00, 1.58)	1.25*	(1.01, 1.56)	1.26*	(1.00, 1.60)
Met MVPA Guidelines			0.94*	(0.88, 1.00)	0.95	(0.89, 1.01)	0.96	(0.90, 1.02)
Avg. Sleep Hours			0.94***	(0.92, 0.96)	0.95***	(0.93, 0.97)	0.95***	(0.93, 0.97)
Food Choice Autonomy					1.03	(0.96, 1.11)	1.03	(0.96, 1.11)
Prop. Dinners w/ Parent(s)					0.69***	(0.64, 0.75)	0.69***	(0.64, 0.74)
Social Origins Score					0.96**	(0.93, 0.99)	0.97	(0.95, 1.00)
Parent Graduated HS					1.05	(0.92, 1.19)	1.05	(0.92, 1.19)

Neighborhood SES Disadvantage	1.03	(0.98, 1.08)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.95	(0.86, 1.04)
Metropolitan Area	0.92	(0.81, 1.04)
Climate PC1	1.00	(0.99, 1.02)
Climate PC2	1.04**	(1.01, 1.07)
Resources PC1	0.99	(0.97, 1.01)
Resources PC2	1.00	(0.97, 1.03)
Beta Index 3km	1.00	(0.77, 1.31)
Cul-de-sac Density 3km	0.99	(0.98, 1.01)
Prop. Roads A40-A48 3km	1.05	(0.71, 1.55)
Landscape Patch Density 3km	1.00	(1.00, 1.00)
Class 4 Area 3km	1.00	(0.97, 1.02)
Class 5 Area 3km	0.99	(0.95, 1.03)

[1] Standard errors adjusted via Pearson dispersion correction using the zero-truncated Poisson variance function (φ 0.93-0.98 across models)

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001; $^{+}$ p <0.1. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.15

Sensitivity Analysis *(Wave I-III Panel)* | Universally-Surveyed Behaviors Survey Design-Based Quasi-Binomial Regression[1]								
	Outcome: binary indicator of engagement in *any extreme* behavior | N = 9,634[2]							
	SE0: Trajectory		SE1: + Individual		SE2: + Household		SE3: + Neighborhood	
Variable	**HR**[3]	**(95% CI)**	**HR**[3]	**(95% CI)**	**HR**[3]	**(95% CI)**	**HR**[3]	**(95% CI)**
Valid Waves (Ref = 3)								
2	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Lose	1.34	(0.77, 2.32)	1.27	(0.72, 2.22)	1.16	(0.67, 2.01)	1.10	(0.65, 1.88)
Changing Lose/Maintain	1.01	(0.59, 1.74)	0.99	(0.57, 1.71)	0.91	(0.53, 1.55)	0.86	(0.51, 1.44)
Consistent Maintain	0.80	(0.44, 1.44)	0.79	(0.43, 1.44)	0.74	(0.41, 1.33)	0.71	(0.40, 1.25)
Consistent Gain	1.20	(0.65, 2.18)	1.19	(0.65, 2.19)	1.09	(0.60, 1.98)	1.05	(0.58, 1.89)
Changing Goals	1.05	(0.63, 1.74)	1.05	(0.63, 1.77)	0.96	(0.58, 1.59)	0.91	(0.56, 1.49)
Age			1.05	(1.00, 1.10)	1.02	(0.96, 1.07)	1.02	(0.97, 1.07)
Female			1.17	(1.00, 1.36)	1.16	(0.99, 1.35)	1.17	(1.00, 1.36)
Race[4]								
White			0.77***	(0.67, 0.89)	0.87	(0.76, 1.01)	0.91	(0.77, 1.08)
Asian/Pacific Islander			0.95	(0.69, 1.30)	0.94	(0.69, 1.29)	1.12	(0.79, 1.57)
Black			1.31**	(1.11, 1.56)	1.11	(0.93, 1.33)	1.05	(0.83, 1.32)
Native American			1.16	(0.89, 1.52)	1.11	(0.87, 1.43)	1.05	(0.82, 1.35)
Multiracial/Other Race			1.50*	(1.05, 2.15)	1.32	(0.93, 1.89)	1.20	(0.79, 1.83)
Latino/a			1.11	(0.92, 1.36)	1.01	(0.82, 1.24)	1.18	(0.94, 1.47)
U.S. Born			1.10	(0.73, 1.67)	1.11	(0.74, 1.66)	1.09	(0.71, 1.66)
Met MVPA Guidelines			0.94	(0.82, 1.08)	0.97	(0.85, 1.11)	1.00	(0.87, 1.14)
Avg. Sleep Hours			0.95*	(0.91, 1.00)	0.96	(0.92, 1.00)	0.96	(0.92, 1.00)
Food Choice Autonomy					1.10	(0.92, 1.32)	1.10	(0.92, 1.32)
Prop. Dinners w/ Parent(s)					0.63***	(0.52, 0.76)	0.62***	(0.52, 0.75)
Social Origins Score					0.90***	(0.85, 0.96)	0.92**	(0.86, 0.98)
Parent Graduated HS					0.99	(0.76, 1.28)	0.95	(0.74, 1.23)

Neighborhood SES Disadvantage	0.99	(0.89, 1.09)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.72***	(0.60, 0.86)
Metropolitan Area	0.82	(0.64, 1.06)
Climate PC1	1.02	(0.98, 1.06)
Climate PC2	1.06*	(1.01, 1.12)
Resources PC1	1.00	(0.95, 1.05)
Resources PC2	1.04	(0.96, 1.13)
Beta Index 3km	1.00	(0.54, 1.86)
Cul-de-sac Density 3km	0.99	(0.95, 1.03)
Prop. Roads A40-A48 3km	1.21	(0.52, 2.78)
Landscape Patch Density 3km	1.00	(1.00, 1.01)
Class 4 Area 3km	0.97	(0.90, 1.04)
Class 5 Area 3km	1.05	(0.96, 1.15)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.16

Sensitivity Analysis *(Wave I-III Panel)* | All Behaviors Survey Design-Based Quasi-Poisson Regression								
	Outcome: *frequency* of behaviors | N = 9,456[1]							
	S0: Trajectory		S1: + Individual		S2: + Household		S3: + Neighborhood	
Variable	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**
Valid Waves (Ref = 3)								
2	0.83	(0.61, 1.13)	0.83	(0.60, 1.15)	0.82	(0.61, 1.11)	0.83	(0.61, 1.13)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.75***	(1.66, 1.85)	1.77***	(1.68, 1.86)	1.77***	(1.68, 1.86)	1.75***	(1.66, 1.85)
Changing Lose/Maintain	1.32***	(1.24, 1.39)	1.33***	(1.25, 1.40)	1.32***	(1.25, 1.40)	1.31***	(1.24, 1.39)
Consistent Gain	2.18***	(2.04, 2.34)	2.08***	(1.94, 2.23)	2.08***	(1.94, 2.23)	2.07***	(1.93, 2.22)
Changing Goals	1.39***	(1.32, 1.46)	1.37***	(1.30, 1.44)	1.37***	(1.30, 1.44)	1.36***	(1.29, 1.43)
Age			1.03***	(1.02, 1.04)	1.02***	(1.01, 1.03)	1.02***	(1.01, 1.03)
Female			0.94***	(0.92, 0.97)	0.94***	(0.91, 0.96)	0.94***	(0.92, 0.97)
Race[3]								
White			0.98	(0.95, 1.01)	0.99	(0.97, 1.02)	1.00	(0.97, 1.03)
Asian/Pacific Islander			1.04	(0.98, 1.11)	1.04	(0.98, 1.11)	1.08*	(1.01, 1.16)
Black			1.01	(0.98, 1.04)	0.98	(0.95, 1.01)	0.96	(0.93, 1.00)
Native American			1.05	(0.99, 1.11)	1.06*	(1.00, 1.11)	1.04	(0.99, 1.10)
Multiracial/Other Race			0.97	(0.91, 1.05)	0.96	(0.89, 1.03)	0.94	(0.87, 1.02)
Latino/a			1.01	(0.97, 1.04)	1.00	(0.96, 1.04)	1.01	(0.97, 1.05)
U.S. Born			1.07	(0.99, 1.16)	1.07	(0.99, 1.15)	1.07	(1.00, 1.16)
Met MVPA Guidelines			1.11***	(1.08, 1.14)	1.11***	(1.08, 1.14)	1.12***	(1.09, 1.15)
Avg. Sleep Hours			0.98***	(0.97, 0.99)	0.98***	(0.97, 0.99)	0.98***	(0.97, 0.99)
Food Choice Autonomy					1.01	(0.98, 1.04)	1.01	(0.98, 1.04)
Prop. Dinners w/ Parent(s)					0.87***	(0.84, 0.90)	0.87***	(0.84, 0.90)
Social Origins Score					1.00	(0.99, 1.01)	1.00	(0.99, 1.01)
Parent Graduated HS					1.02	(0.97, 1.07)	1.01	(0.97, 1.06)

Neighborhood SES Disadvantage	1.01	(0.99, 1.03)
Violent Crimes/100,000	1.00*	(1.00, 1.00)
Neighborhood Feels Safe	0.97	(0.93, 1.01)
Metropolitan Area	1.00	(0.95, 1.05)
Climate PC1	1.00	(0.99, 1.00)
Climate PC2	1.02***	(1.01, 1.03)
Resources PC1	0.99	(0.99, 1.00)
Resources PC2	0.99	(0.98, 1.00)
Beta Index 3km	1.06	(0.94, 1.20)
Cul-de-sac Density 3km	1.00	(0.99, 1.00)
Prop. Roads A40-A48 3km	1.08	(0.92, 1.25)
Landscape Patch Density 3km	1.00	(1.00, 1.00)
Class 4 Area 3km	0.99	(0.98, 1.00)
Class 5 Area 3km	1.01	(0.99, 1.03)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.17

Sensitivity Analysis *(Wave I-III Panel)* | All Behaviors Survey Design-Based Quasi-Binomial Regression[1]								
	Outcome: binary indicator of engagement in *any extreme* behavior | N = 9,456[2]							
	SE0: Trajectory		SE1: + Individual		SE2: + Household		SE3: + Neighborhood	
Variable	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**
Valid Waves (Ref = 3)								
2	1.25	(0.19, 8.19)	1.27	(0.21, 7.60)	1.22	(0.18, 8.08)	1.24	(0.18, 8.72)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	2.79***	(2.09, 3.72)	2.67***	(2.01, 3.56)	2.63***	(1.98, 3.50)	2.58***	(1.95, 3.42)
Changing Lose/Maintain	1.79***	(1.33, 2.41)	1.76***	(1.31, 2.37)	1.74***	(1.29, 2.34)	1.70***	(1.26, 2.28)
Consistent Gain	2.42***	(1.71, 3.41)	2.50***	(1.78, 3.50)	2.44***	(1.74, 3.42)	2.40***	(1.71, 3.37)
Changing Goals	1.67***	(1.28, 2.17)	1.70***	(1.30, 2.22)	1.66***	(1.27, 2.16)	1.63***	(1.25, 2.11)
Age			1.04*	(1.00, 1.08)	1.01	(0.97, 1.06)	1.02	(0.98, 1.06)
Female			1.19**	(1.05, 1.35)	1.20**	(1.06, 1.36)	1.21**	(1.06, 1.37)
Race[4]								
White			0.82**	(0.72, 0.92)	0.94	(0.83, 1.06)	1.00	(0.87, 1.15)
Asian/Pacific Islander			0.94	(0.72, 1.23)	0.94	(0.73, 1.22)	1.07	(0.81, 1.42)
Black			1.25**	(1.09, 1.44)	1.05	(0.91, 1.21)	0.96	(0.80, 1.15)
Native American			1.15	(0.92, 1.45)	1.11	(0.90, 1.37)	1.04	(0.85, 1.28)
Multiracial/Other Race			1.26	(0.95, 1.68)	1.10	(0.82, 1.46)	1.00	(0.72, 1.38)
Latino/a			1.13	(0.94, 1.36)	1.00	(0.83, 1.21)	1.05	(0.87, 1.27)
U.S. Born			1.13	(0.80, 1.60)	1.15	(0.82, 1.63)	1.17	(0.81, 1.70)
Met MVPA Guidelines			1.01	(0.89, 1.15)	1.05	(0.92, 1.19)	1.06	(0.94, 1.21)
Avg. Sleep Hours			0.95*	(0.91, 0.99)	0.95*	(0.92, 0.99)	0.95*	(0.92, 0.99)
Food Choice Autonomy					1.01	(0.88, 1.16)	1.01	(0.89, 1.15)
Prop. Dinners w/ Parent(s)					0.62***	(0.53, 0.72)	0.61***	(0.52, 0.71)
Social Origins Score					0.89***	(0.85, 0.94)	0.91**	(0.86, 0.96)
Parent Graduated HS					0.94	(0.77, 1.15)	0.93	(0.76, 1.14)

Neighborhood SES Disadvantage	1.04	(0.97, 1.12)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.85	(0.72, 1.00)
Metropolitan Area	0.93	(0.75, 1.14)
Climate PC1	0.99	(0.97, 1.02)
Climate PC2	1.05*	(1.01, 1.09)
Resources PC1	1.01	(0.97, 1.05)
Resources PC2	1.03	(0.95, 1.11)
Beta Index 3km	1.09	(0.68, 1.75)
Cul-de-sac Density 3km	0.98	(0.95, 1.01)
Prop. Roads A40-A48 3km	1.42	(0.75, 2.69)
Landscape Patch Density 3km	1.00	(1.00, 1.01)
Class 4 Area 3km	1.01	(0.95, 1.07)
Class 5 Area 3km	1.07	(0.99, 1.15)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.18

Sensitivity Analysis *(Wave I-III Panel)* | All Behaviors Survey Design-Based Positive Poisson Regression[1]								
	Outcome: *frequency* of *extreme* behaviors among those engaged | N = 2,456[2]							
	SAE0: Trajectory		SAE1: + Individual		SAE2: + Household		SAE3: + Neighborhood	
Variable	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**	**IRR**[3]	**(95% CI)**
Valid Waves (Ref = 3)								
2	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	3.47**	(1.54, 7.84)	3.22**	(1.43, 7.25)	3.24**	(1.45, 7.27)	3.39**	(1.48, 7.77)
Changing Lose/Maintain	2.22	(0.97, 5.05)	2.10	(0.94, 4.70)	2.11	(0.95, 4.72)	2.19	(0.96, 4.98)
Consistent Gain	0.82	(0.19, 3.47)	0.89	(0.21, 3.71)	0.90	(0.22, 3.73)	0.94	(0.22, 4.01)
Changing Goals	1.91	(0.80, 4.57)	1.92	(0.82, 4.49)	1.94	(0.84, 4.52)	1.97	(0.83, 4.67)
Age			1.01	(0.95, 1.08)	1.02	(0.96, 1.09)	1.03	(0.97, 1.09)
Female			1.26	(0.96, 1.67)	1.27	(0.96, 1.67)	1.28	(0.98, 1.67)
Race[4]								
White			0.85	(0.71, 1.03)	0.84	(0.70, 1.00)	0.85	(0.67, 1.08)
Asian/Pacific Islander			0.71	(0.39, 1.27)	0.70	(0.38, 1.29)	0.74	(0.41, 1.34)
Black			1.25*	(1.03, 1.53)	1.29*	(1.04, 1.59)	1.24	(0.95, 1.61)
Native American			1.22	(0.85, 1.76)	1.22	(0.85, 1.75)	1.22	(0.82, 1.81)
Multiracial/Other Race			1.07	(0.67, 1.68)	1.08	(0.68, 1.69)	1.07	(0.67, 1.73)
Latino/a			1.08	(0.82, 1.41)	1.11	(0.80, 1.54)	1.14	(0.80, 1.62)
U.S. Born			0.90	(0.53, 1.51)	0.89	(0.51, 1.58)	0.91	(0.52, 1.60)
Met MVPA Guidelines			0.87	(0.69, 1.09)	0.86	(0.68, 1.09)	0.87	(0.69, 1.10)
Avg. Sleep Hours			0.94	(0.88, 1.01)	0.94	(0.87, 1.01)	0.94	(0.88, 1.01)
Food Choice Autonomy					0.93	(0.72, 1.20)	0.91	(0.71, 1.17)
Prop. Dinners w/ Parent(s)					1.10	(0.85, 1.43)	1.06	(0.82, 1.38)
Social Origins Score					1.02	(0.92, 1.12)	1.02	(0.92, 1.13)
Parent Graduated HS					1.03	(0.65, 1.65)	1.02	(0.64, 1.64)

Neighborhood SES Disadvantage	0.93	(0.81, 1.08)
Violent Crimes/100,000	1.00	(1.00, 1.00)
Neighborhood Feels Safe	0.79	(0.62, 1.02)
Metropolitan Area	0.91	(0.71, 1.17)
Climate PC1	0.99	(0.95, 1.04)
Climate PC2	1.01	(0.96, 1.05)
Resources PC1	1.00	(0.92, 1.09)
Resources PC2	1.03	(0.94, 1.12)
Beta Index 3km	1.52	(0.63, 3.66)
Cul-de-sac Density 3km	0.99	(0.94, 1.04)
Prop. Roads A40-A48 3km	1.48	(0.60, 3.62)
Landscape Patch Density 3km	1.00	(0.99, 1.01)
Class 4 Area 3km	0.94	(0.83, 1.07)
Class 5 Area 3km	1.06	(0.89, 1.26)

[1] Standard errors adjusted via Pearson dispersion correction using the zero-truncated Poisson variance function (φ 1.08-1.11 across models)

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001; † p <0.1. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.19

Sensitivity Analysis *(Wave I-III Panel)* | Dieting & Behavior Survey Design-Based Quasi-Poisson Regression										
	Outcome: *frequency* of behaviors | N = 8,162[1]									
	S0: Trajectory		S1: + Dieted		S2: + Individual		S3: + Household		S4: + Neighborhood	
Variable	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**	**IRR**[2]	**(95% CI)**
Valid Waves (Ref = 3)										
2	0.84	(0.56, 1.28)	0.85	(0.56, 1.29)	0.84	(0.54, 1.30)	0.83	(0.55, 1.26)	0.85	(0.56, 1.28)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.47***	(1.39, 1.55)	1.44***	(1.36, 1.52)	1.44***	(1.36, 1.53)	1.44***	(1.36, 1.53)	1.43***	(1.34, 1.51)
Changing Lose/Maintain	1.20***	(1.14, 1.27)	1.18***	(1.12, 1.25)	1.19***	(1.12, 1.25)	1.18***	(1.12, 1.25)	1.17***	(1.11, 1.24)
Changing Goals	1.31***	(1.24, 1.38)	1.31***	(1.24, 1.37)	1.29***	(1.22, 1.36)	1.28***	(1.22, 1.35)	1.28***	(1.21, 1.34)
Dieted			1.04*	(1.01, 1.07)	1.06***	(1.03, 1.09)	1.06***	(1.02, 1.09)	1.06***	(1.02, 1.09)
Age					1.02**	(1.01, 1.03)	1.01	(1.00, 1.02)	1.01*	(1.00, 1.02)
Female					0.91***	(0.88, 0.94)	0.91***	(0.88, 0.93)	0.91***	(0.88, 0.94)
Race[3]										
White					0.94***	(0.91, 0.97)	0.96*	(0.93, 0.99)	0.97	(0.94, 1.01)
Asian/Pacific Islander					1.12**	(1.04, 1.20)	1.11**	(1.03, 1.19)	1.14***	(1.06, 1.23)
Black					1.06***	(1.03, 1.10)	1.03	(1.00, 1.07)	1.01	(0.97, 1.05)
Native American					1.02	(0.96, 1.09)	1.02	(0.97, 1.09)	1.01	(0.96, 1.07)
Multiracial/Other Race					1.02	(0.94, 1.11)	0.99	(0.92, 1.08)	0.97	(0.90, 1.06)
Latino/a					1.03	(0.99, 1.07)	1.02	(0.98, 1.06)	1.01	(0.97, 1.06)
U.S. Born					1.11*	(1.01, 1.21)	1.10*	(1.01, 1.20)	1.11*	(1.02, 1.20)
Met MVPA Guidelines					1.12***	(1.08, 1.16)	1.12***	(1.09, 1.16)	1.13***	(1.09, 1.17)
Avg. Sleep Hours					0.98***	(0.97, 0.99)	0.98**	(0.97, 0.99)	0.98**	(0.97, 0.99)

Food Choice Autonomy	1.02	(0.98, 1.05)	1.02	(0.99, 1.05)
Prop. Dinners w/ Parent(s)	0.87***	(0.84, 0.91)	0.87***	(0.84, 0.90)
Social Origins Score	0.99*	(0.97, 1.00)	0.99	(0.98, 1.01)
Parent Graduated HS	1.01	(0.97, 1.06)	1.01	(0.97, 1.06)
Neighborhood SES Disadvantage			1.01	(0.99, 1.03)
Violent Crimes/100,000			1.00	(1.00, 1.00)
Neighborhood Feels Safe			0.95*	(0.92, 0.99)
Metropolitan Area			1.01	(0.95, 1.06)
Climate PC1			0.99	(0.99, 1.00)
Climate PC2			1.01*	(1.00, 1.02)
Resources PC1			1.00	(0.99, 1.01)
Resources PC2			0.99	(0.98, 1.00)
Beta Index 3km			1.17*	(1.03, 1.32)
Cul-de-sac Density 3km			1.00	(0.99, 1.00)
Prop. Roads A40-A48 3km			1.08	(0.91, 1.27)
Landscape Patch Density 3km			1.00	(1.00, 1.00)
Class 4 Area 3km			0.99	(0.97, 1.01)
Class 5 Area 3km			1.02*	(1.00, 1.05)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 3.20

Sensitivity Analysis *(Wave I-III Panel)* | Dieting & Behavior Survey Design-Based Quasi-Binomial Regression[1]										
	Outcome: binary indicator of engagement in *any extreme* behavior | N = 8,162[2]									
	SE0: Trajectory		SE1: + Dieted		SE2: + Individual		SE3: + Household		SE4: + Neighborhood	
Variable	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**	**HR[3]**	**(95% CI)**
Valid Waves (Ref = 3)										
2	1.33	(0.20, 8.77)	1.38	(0.19, 9.88)	1.41	(0.22, 9.08)	1.37	(0.20, 9.47)	1.40	(0.19, 10.1)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	2.79***	(2.09, 3.72)	2.26***	(1.66, 3.08)	2.22***	(1.63, 3.02)	2.17***	(1.60, 2.95)	2.12***	(1.57, 2.86)
Changing Lose/Maintain	1.79***	(1.33, 2.41)	1.58**	(1.15, 2.16)	1.58**	(1.16, 2.15)	1.55**	(1.14, 2.12)	1.51**	(1.11, 2.05)
Changing Goals	1.64***	(1.26, 2.14)	1.63***	(1.24, 2.14)	1.66***	(1.27, 2.18)	1.62***	(1.24, 2.13)	1.59***	(1.22, 2.08)
Dieted			1.43***	(1.27, 1.61)	1.39***	(1.23, 1.57)	1.40***	(1.24, 1.57)	1.40***	(1.25, 1.58)
Age					1.04	(1.0, 1.08)	1.01	(0.97, 1.06)	1.01	(0.97, 1.05)
Female					1.16*	(1.02, 1.32)	1.16*	(1.02, 1.32)	1.17*	(1.03, 1.34)
Race[4]										
White					0.81**	(0.70, 0.92)	0.93	(0.81, 1.07)	0.98	(0.84, 1.14)
Asian/Pacific Islander					0.97	(0.73, 1.29)	0.96	(0.73, 1.28)	1.09	(0.80, 1.48)
Black					1.31***	(1.13, 1.52)	1.09	(0.94, 1.27)	1.02	(0.85, 1.22)
Native American					1.13	(0.90, 1.43)	1.07	(0.86, 1.33)	1.01	(0.81, 1.26)
Multiracial/Other Race					1.22	(0.88, 1.69)	1.04	(0.74, 1.45)	0.96	(0.68, 1.37)
Latino/a					1.15	(0.95, 1.39)	1.00	(0.83, 1.22)	1.05	(0.86, 1.28)
U.S. Born					1.12	(0.77, 1.62)	1.14	(0.79, 1.67)	1.15	(0.77, 1.72)
Met MVPA Guidelines					1.00	(0.88, 1.14)	1.04	(0.91, 1.19)	1.06	(0.93, 1.20)
Avg. Sleep Hours					0.95*	(0.91, 1.00)	0.95*	(0.91, 1.00)	0.95*	(0.91, 1.00)

Food Choice Autonomy	0.98	(0.85, 1.13)	0.98	(0.85, 1.13)
Prop. Dinners w/ Parent(s)	0.64***	(0.54, 0.75)	0.63***	(0.53, 0.74)
Social Origins Score	0.88***	(0.83, 0.93)	0.90***	(0.85, 0.95)
Parent Graduated HS	0.93	(0.76, 1.13)	0.91	(0.74, 1.12)
Neighborhood SES Disadvantage			1.03	(0.95, 1.11)
Violent Crimes/100,000			1.00	(1.00, 1.00)
Neighborhood Feels Safe			0.82*	(0.70, 0.97)
Metropolitan Area			0.95	(0.78, 1.15)
Climate PC1			0.99	(0.97, 1.02)
Climate PC2			1.04*	(1.00, 1.08)
Resources PC1			1.02	(0.98, 1.06)
Resources PC2			1.03	(0.96, 1.10)
Beta Index 3km			1.11	(0.66, 1.87)
Cul-de-sac Density 3km			0.98	(0.94, 1.01)
Prop. Roads A40-A48 3km			1.39	(0.75, 2.58)
Landscape Patch Density 3km			1.00	(1.00, 1.01)
Class 4 Area 3km			1.00	(0.94, 1.07)
Class 5 Area 3km			1.08*	(1.00, 1.18)

[1] Cloglog link with logged offset for differential question exposure yields discrete-time hazard ratios.

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher per-question probability of engagement; **values < 1** indicate a lower probability.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: HR = Hazard Ratio, CI = Confidence Interval

Table 3.21

Variable	SAE0: Trajectory IRR[3]	SAE0: Trajectory (95% CI)	SAE1: + Dieted IRR[3]	SAE1: + Dieted (95% CI)	SAE2: + Individual IRR[3]	SAE2: + Individual (95% CI)	SAE3: + Household IRR[3]	SAE3: + Household (95% CI)	SAE4: + Neighborhood IRR[3]	SAE4: + Neighborhood (95% CI)
Sensitivity Analysis *(Wave I-III Panel)* | Dieting & Behavior Survey Design-Based Positive Poisson Regression[1]										
	Outcome: *frequency* of *extreme* behaviors among those engaged | N = 2,254[2]									
Valid Waves (Ref = 3)										
2	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)	0.00***	(0.00, 0.00)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	3.47**	(1.54, 7.84)	2.54*	(1.12, 5.73)	2.42*	(1.10, 5.32)	2.43*	(1.11, 5.31)	2.52*	(1.12, 5.69)
Changing Lose/Maintain	2.22	(0.97, 5.05)	1.77	(0.78, 4.05)	1.71	(0.77, 3.77)	1.71	(0.78, 3.76)	1.76	(0.78, 3.97)
Changing Goals	1.96	(0.82, 4.70)	1.85	(0.79, 4.33)	1.85	(0.81, 4.19)	1.86	(0.83, 4.18)	1.87	(0.81, 4.32)
Dieted			1.77***	(1.36, 2.32)	1.75***	(1.35, 2.28)	1.75***	(1.34, 2.28)	1.75***	(1.35, 2.27)
Age					1.01	(0.94, 1.08)	1.02	(0.95, 1.08)	1.02	(0.96, 1.09)
Female					1.16	(0.87, 1.54)	1.16	(0.87, 1.55)	1.17	(0.88, 1.55)
Race[4]										
White					0.83	(0.69, 1.01)	0.82*	(0.69, 0.98)	0.83	(0.65, 1.06)
Asian/Pacific Islander					0.75	(0.41, 1.38)	0.75	(0.41, 1.40)	0.80	(0.43, 1.46)
Black					1.34**	(1.09, 1.65)	1.36**	(1.09, 1.70)	1.31	(1.00, 1.73)
Native American					1.10	(0.75, 1.61)	1.10	(0.76, 1.60)	1.10	(0.73, 1.66)
Multiracial/Other Race					1.16	(0.76, 1.77)	1.17	(0.77, 1.79)	1.19	(0.76, 1.85)
Latino/a					1.13	(0.86, 1.48)	1.16	(0.83, 1.60)	1.19	(0.84, 1.71)
U.S. Born					0.91	(0.55, 1.51)	0.91	(0.53, 1.58)	0.92	(0.54, 1.59)
Met MVPA Guidelines					0.87	(0.69, 1.10)	0.86	(0.68, 1.09)	0.87	(0.69, 1.10)
Avg. Sleep Hours					0.95	(0.88, 1.02)	0.95	(0.88, 1.02)	0.95	(0.88, 1.02)

Food Choice Autonomy	0.92	(0.72, 1.18)	0.90	(0.70, 1.15)
Prop. Dinners w/ Parent(s)	1.05	(0.81, 1.36)	1.02	(0.79, 1.32)
Social Origins Score	1.02	(0.93, 1.12)	1.03	(0.93, 1.14)
Parent Graduated HS	1.00	(0.63, 1.58)	0.98	(0.61, 1.57)
Neighborhood SES Disadvantage			0.94	(0.81, 1.08)
Violent Crimes/100,000			1.00	(1.00, 1.00)
Neighborhood Feels Safe			0.78	(0.61, 1.01)
Metropolitan Area			0.91	(0.71, 1.17)
Climate PC1			1.00	(0.95, 1.04)
Climate PC2			1.01	(0.96, 1.05)
Resources PC1			1.00	(0.92, 1.08)
Resources PC2			1.02	(0.94, 1.11)
Beta Index 3km			1.69	(0.70, 4.05)
Cul-de-sac Density 3km			0.99	(0.94, 1.05)
Prop. Roads A40-A48 3km			1.60	(0.64, 4.01)
Landscape Patch Density 3km			1.00	(0.99, 1.01)
Class 4 Area 3km			0.95	(0.83, 1.08)
Class 5 Area 3km			1.07	(0.90, 1.26)

[1] Standard errors adjusted via Pearson dispersion correction using the zero-truncated Poisson variance function (φ 1.08-1.11 across models)

[2] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[3] * p <0.05; ** p < 0.01; *** p <0.001; † p <0.1. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher rate of engagement per-question asked; **values < 1** indicate a lower rate.

[4] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022)

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Chapter 4

EMBODYING THE PARADIGM:

WEIGHT-GOAL PURSUIT AND MORBIDITY ACROSS EARLY ADULTHOOD

4.1 Introduction

The weight-centered health paradigm makes an implicit promise about the body. It holds that the identification of 'excess' weight, the motivation of weight-loss aspiration, and the behavioral pursuit of weight reduction will, in the aggregate, produce healthier populations — fewer cases of diabetes, hypertension, and heart disease, and a concomitant slew of psychological benefits that the paradigm assumes result from a body brought into the normative range (Boero 2012; Conrad 2007; Oliver 2006; Saguy 2013). The previous two chapters of this dissertation examined the upstream assumptions of that promise and found them wanting. Chapter 2 made the case for the significance of the recruitment process itself into different paradigmatic orientations, finding that weight-goal aspiration is manufactured more powerfully by internalized body-image norms than by the clinical classifications the paradigm treats as its rational basis. Furthermore, the analyses provided evidence that this manufacture proceeds asymmetrically, recruiting girls and women into loss orientation at thresholds their bodies do not clinically warrant, while orienting boys and men toward a goal of weight gain that the paradigm, organized entirely around the risks of excess, has no vocabulary to recognize[38]. Chapter 3 argued that the behavioral engagement this aspiration motivates does not reliably reduce weight or improve health, but instead furthers participation

[38] The finding that the Consistent Gain orientation appeared across the BMI distribution underscores how poorly clinical classification captures the bodily aspirations that actually organize behavior.

in an increasing and escalating spectrum of weight control practices - the most extreme of which are disproportionately engaged in by those the paradigm has most intensively recruited. What remains is the paradigm's final and most consequential claim: that the bodies it has worked to discipline are, in the end, healthier as a result.

This chapter takes up that claim directly. If the weight-centered health paradigm produces aspiration, and aspiration produces behavior, then the question that closes the sequence is whether the resulting trajectories of goal pursuit and behavioral engagement leave a measurable signature on adult physical and mental health — and if they do, whether that signature is the one the paradigm predicts. The paradigm anticipates that those who pursued weight loss will, to the extent they succeeded, be protected from the cardiometabolic and psychological burdens attributed to higher body weight. The argument developed across the preceding chapters anticipates something closer to the opposite: that sustained recruitment into weight-loss aspiration - and the escalating behavioral engagement it motivates - themselves constitute a form of health exposure, one whose consequences accumulate across the adolescent and early-adult years and express themselves in adulthood as precisely the conditions the paradigm claims to prevent.

The distinction matters because the two accounts make different predictions about whose health suffers and why. According to the paradigm's accounting, body size is the operative variable: health follows from where the body sits relative to clinical thresholds, and the trajectory of one's goals and behaviors matters only insofar as it moves the body across them. The argument being made here is that the operative variables lie in the goals and behaviors themselves — in the chronic self-surveillance of sustained weight-loss orientation, in the metabolic and psychological insults of repeated dietary restriction and weight cycling, in the cumulative burden of inhabiting a body one has been taught to experience as a problem to be solved. These pathways do not require the body to change size in order to damage health. They predict that two people of identical body size, one who has spent a decade pursuing weight loss and one who has not, will arrive at meaningfully different health profiles — and that the difference will run in the direction the paradigm does not expect.

Adjudicating between these accounts is the empirical task of this chapter. Using the same weight-goal trajectories developed in Chapter 2 and the same behavioral engagement measures developed in Chapter 3, it asks whether trajectory and behavior predict adult physical and mental health outcomes, to what extent they predict the comorbidity of these outcomes, and whether these associations survive adjustment for body size classification and internalized body norms. The remainder of this introduction situates these questions within a theoretical framework that treats the paradigm not as a neutral apparatus of risk detection but as a moral and institutional regime that recruits individuals into a project of perpetual bodily management — a regime whose costs are paid, over the life course, in the body.

4.1.1 The Pursuit of Health as a Pathway to Harm

The intuition that pursuing health could itself be unhealthy is counterintuitive only if one accepts the paradigm's framing of health as a straightforward objective toward which more effort yields more benefit. Sociologists of health have long resisted that framing. In his foundational critique, Crawford (1980) named healthism as the elevation of health to a super-value: a moral imperative in which the maintenance and improvement of one's own body becomes the primary terrain of personal responsibility, virtue, and self-worth. Healthism relocates the determinants of well-being from the social to the individual, recasting structural conditions as matters of private discipline and reframing the failure to achieve health as a failure of character. Its signature move is to make the body a perpetual project — never finished, always improvable, and always one's own responsibility to improve. The weight-centered health paradigm is healthism's most fully institutionalized expression. It supplies a single, visible, quantifiable index of bodily virtue, attaches that index to a clinical apparatus of measurement and prescription, and thereby converts the diffuse cultural imperative to be healthy into a concrete and continuous obligation to manage one's weight (Crawford 2006; LeBesco 2011; Levinovitz 2020; Metzl and Kirkland 2010).

Read through the lens of healthism helps to foreground the significance of the the findings from the previous two chapters. The asymmetric recruitment into weight-loss aspiration documented in Chapter 2 is not simply the operation of a thin ideal but the distribution of a moral obligation — an obligation that falls most heavily on those whose bodies the culture has marked as most in need of correction, and whose pursuit of correction is therefore most relentlessly demanded and most readily judged. The behavioral escalation documented in Chapter 3 is what the obligation looks like when it is taken up in earnest and repeatedly fails: not abandonment of the project but its intensification and the diversification of strategies in the face of a goal that recedes as it is pursued. Healthism thus supplies the connective logic running through the three substantive chapter of this dissertation. It explains why the paradigm produces sustained aspiration rather than episodic concern, why the failure of normative strategies (i.e. dieting, caloric restriction, self-monitoring, structured exercise) motivates escalation rather than exit, and why the entire apparatus is experienced not as an external imposition but as a personal responsibility whose non-fulfillment is felt as personal inadequacy. This last feature is essential to the health argument that follows, because an obligation experienced as one's own is one that is internalized, and therefore more likely to be met through repeated effort over time. It is this repetition, not any single act, whose physiological and psychological consequences accumulate over time.

The medicalization of obesity gave this moral apparatus a clinical edge. When the American Medical Association classified obesity as a disease in 2013, it completed a decades-long process through which body size was transformed from an aesthetic or behavioral matter into a medical diagnosis warranting professional intervention (Conrad 2007; Kwan 2009; Saguy 2013). Proponents argued that medicalization would reduce stigma by relocating responsibility from the individual's character to their physiology. The sociological literature on medicalization suggests a more complicated outcome. Medicalizing a condition does not necessarily de-moralize it; it can instead lend the existing moral judgment the authority of clinical fact, so that the obligation to manage one's weight now arrives endorsed by medicine and enacted through the routine machinery of the clinical encounter — the screening, the BMI calculation, the prescription to lose weight (Saguy and Riley 2005). For the individual on the receiving end, medicalization does not lift the moral weight of body size; it adds the weight of a diagnosis. The clinical encounter the paradigm intends as a health-promoting intervention becomes, as Chapter 3 argued, the entry point into a behavioral process whose endpoint is often the opposite of health. The framework of this chapter takes that argument one step further: not only does the medicalized pursuit of weight loss produce disordered behavior, but the sustained occupation of that pursuit — the trajectory itself — constitutes an exposure with measurable consequences for the body.

4.1.2 From Goals and Behaviors to Health

To claim that a trajectory of weight-related aspiration affects adult health is to claim that something social — a goal, an orientation, a pattern of behavior — becomes something biological. The concept that names this translation is embodiment: the proposition, central to ecosocial theory, that human bodies literally incorporate the material and social conditions of their existence, so that the patterning of disease in a population is, at root, the biological expression of that population's social experience (Krieger 2001, 2005). Embodiment refuses the partition of the social and the biological into separate explanatory domains. It insists that the chronic activation of stress physiology, the metabolic consequences of dietary practice, and the psychological residue of repeated self-evaluation are not metaphors for social experience but its physical instantiation. Applied to the weight-centered health paradigm, embodiment reframes the entire sequence this dissertation has traced. The paradigm's moral demand does not merely shape what people think and do about their bodies; over time, and through identifiable physiological channels, it shapes the bodies themselves.

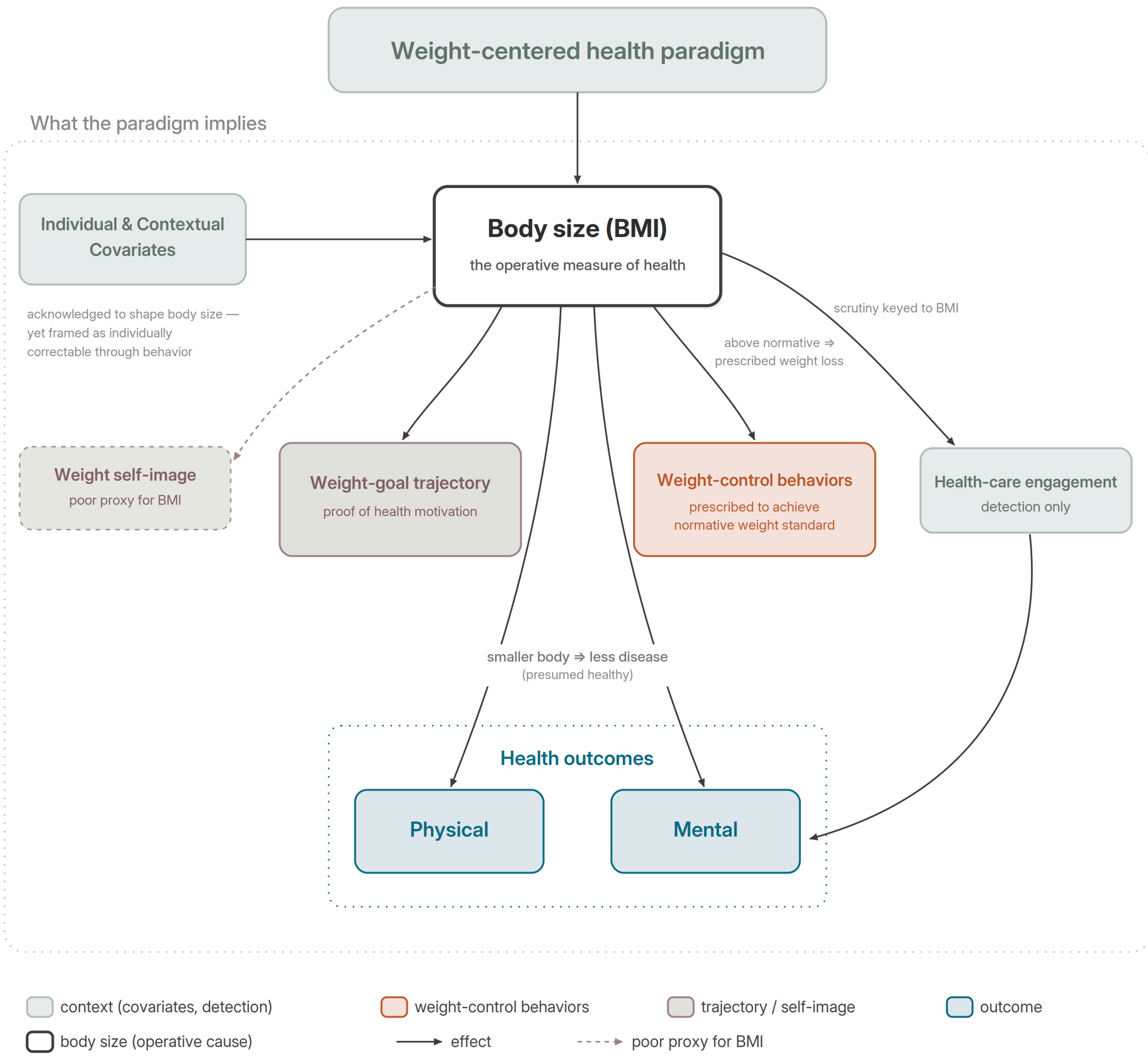
Embodiment becomes an analyzable proposition rather than a general orientation when paired with the life-course logic developed in Chapter 2. The accumulation model of life-course epidemiology holds that adult health reflects the summation of exposures across developmental stages rather than the effect of any single moment, and that exposures sustained across a sensitive developmental window carry disproportionate weight (Ben-Shlomo and Kuh 2002; Dannefer 2003; Kuh et al. 2003; Lynch and Smith 2005). Adolescence and the transition to adulthood constitute exactly such a window for weight-related experience: it is when the body becomes a salient object of scrutiny, when the institutions that classify and prescribe for it are first and consistenty encountered, and when the orientations toward bodily management that will organize subsequent behavior are consolidated (Elder 1998; Shanahan 2000). A weight-goal trajectory is, in this framework, a measure of accumulated exposure. A person who has consistently aspired to lose weight across the adolescent and early-adult years has not merely held an attitude at successive points in time; they have accumulated years of the self-monitoring, body scrutiny, and chronic discrepancy between aspiration and outcome that sustained weight-loss orientation entails, and they have likely accumulated years of the behavioral engagement that orientation motivates. The trajectory is thus the temporal structure through which a social exposure becomes a cumulative biological one — the mechanism by which the paradigm's demand, sustained over a formative decade, is given time to embody.

But exactly what gets embodied, and through what channels? Two broad pathways connect sustained weight-related exposure to physical and mental health, and the existing literature has tended to treat them separately even though the present argument suggests they operate in concert. The first is physiological, running through the behavioral practices the paradigm prescribes. The modal outcome of sustained dieting is not durable weight loss but weight cycling — the repeated loss and regain that follows from the body's homeostatic defense of its weight (Bacon and Aphramor 2011; Mann et al. 2007). Weight cycling is not metabolically neutral. A substantial literature links it to chronic inflammation, hypertension, metabolic disruption, and elevated cardiovascular and mortality risk — effects that compound across repeated cycles and that are, by construction, more pronounced among those who diet more persistently (Diaz et al. 2005; Guagnano et al. 2000; Lissner et al. 1991; Montani et al. 2006; Strohacker and McFarlin 2010). The extreme behaviors documented in Chapter 3 carry their own, often more acute, physiological costs. The behavioral pathway thus predicts that those whose trajectories produced the most sustained and escalating engagement will show the heaviest cardiometabolic burden in adulthood — not because their bodies are larger, but because of what they did to them in the attempt to make them smaller.

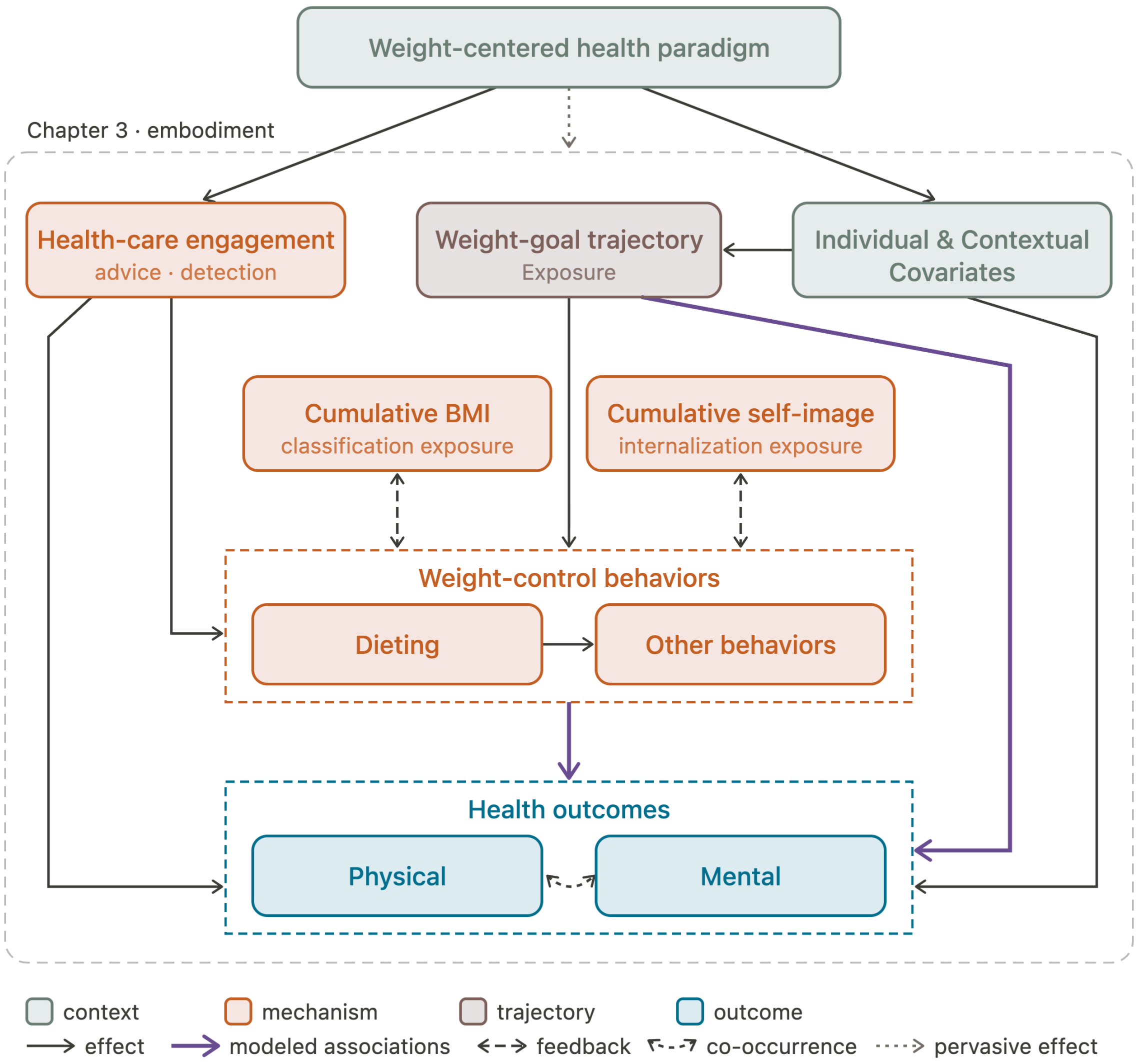
The second pathway is psychological, running through the chronic experience of inhabiting a body defined as a problem. Sustained weight-loss orientation entails sustained body dissatisfaction, sustained self-surveillance, and sustained exposure to the gap between the body one has and the body one is obligated to pursue — conditions the literature links to depression, anxiety, and disordered relationships with eating that are themselves prospective predictors of poorer mental health (Hunger and Tomiyama 2014; Neumark-Sztainer, Wall, Guo, et al. 2006; Puhl and Heuer 2009). The mechanisms most often invoked to explain how this psychological burden becomes physiological — dysregulation of the hypothalamic-pituitary-adrenal axis, chronic low-grade inflammation, allostatic load — are, notably, the same mechanisms the weight-centered literature invokes to explain how body size itself damages mental health (Hatzenbuehler et al. 2013; Tomiyama 2014). That the two accounts converge on the same physiological mechanisms is analytically useful rather than confounding. It means that the physiological signature the paradigm attributes to body size is equally consistent with the chronic stress of the paradigm's own demands, and that distinguishing the two requires precisely the comparison this dissertation is positioned to make: whether health outcomes track body size, or whether they track the trajectory of goal pursuit and behavioral engagement independent of body size.

Taken together, the two pathways suggest that the paradigm's influence on health is unlikely to be confined to a single domain. If sustained weight-related exposure damages health through both behavioral-physiological and psychological-physiological channels, it should leave a signature on physical and mental health alike — and the two should travel together, concentrated among the same individuals and the same trajectories. This expectation motivates the joint analysis of physical and mental health outcomes that distinguishes this chapter from the disease-by-disease structure of much of the existing literature. The question is not only whether paradigm exposure raises the risk of any particular condition, but whether it produces the kind of correlated, multi-domain health burden that a shared upstream cause would predict — and whether that burden is better explained by the trajectories and concomittant behaviors the paradigm demands, than by the body size those demands take as their justification.

Figure 4.1: Conceptual models: competing accounts of weight-goal pursuit and morbidity
(a) Weight-centered health paradigm



(b) Weight-goal pursuit as health exposure



These two pathways, and the larger argument in which they sit, can be made concrete by setting the causal structure the paradigm assumes beside the one this chapter advances. Figure 4.1 shows this contrast. On the paradigm's account (Figure 4.1a), body size is the operative measure of health and the proximate cause of disease, the hub to which everything else refers. Individual and contextual covariates are allowed to shape body size, but their influence is recast as individually correctable — a matter of personal conduct rather than circumstance. Because a body classified above the normative standard is itself treated as the problem, its correction is prescribed; the weight-goal trajectory and the weight-control behaviors that enact it are that prescribed correction, valued as evidence of health motivation and mattering only for the smaller body they are meant to produce. Weight self-image enters merely as an imperfect proxy for clinical classification, and health-care engagement serves to detect disease, its scrutiny keyed to BMI. Physical and mental conditions are each expected to follow from body size on their own. This structure carries three sharp implications: holding body size constant should absorb whatever association the trajectory and behaviors display with morbidity; self-image should add nothing once measured classification is in the model; and, sharing no common antecedent, the two outcome domains should not travel together. The account developed here (Figure 4.1b) makes the trajectory itself — the sustained pursuit of weight change — the exposure, and recasts accumulated body-size classification, weight self-image, and the behavioral and health-care channels as co-temporal mechanisms through which that pursuit reaches the body. None of these pathways requires the body to change size; self-image bears on morbidity independently of measured classification; and because the physical and mental domains draw on a shared exposure, the harm they register should be correlated rather than isolated. The empirical sections that follow are organized to distinguish between these two competing accounts.

4.1.3 The Current Study

The theoretical framework explicated above yields a set of expectations that stand in deliberate contrast to those of the weight-centered health paradigm, and the empirical analyses that follow are designed to adjudicate between them. The paradigm predicts that adult health is organized by body size: that the cardiometabolic and psychological burdens it catalogues should track BMI classification, and that weight-goal trajectories should matter for health only as proxies for the body sizes they produce.

The framework of this chapter predicts instead that trajectory and behavioral engagement carry health consequences of their own — that the sustained pursuit of weight loss and the behavioral escalation it motivates predict adult physical and mental health burden independent of body size, that this burden operates substantially through the behavioral pathways documented in Chapter Two, and that it manifests as correlated harm across physical and mental domains rather than as the isolated, body-size-driven conditions the paradigm anticipates.

The paradigm makes a specific, testable prediction: if body size is what drives morbidity, then accounting for it should absorb the associations between weight-goal pursuit and health, leaving trajectory and behavior with little to explain once the body is held constant. Should the data show this, the paradigm's account would be supported on its own terms. The framework advanced here predicts the opposite — that trajectory and behavioral effects persist after body size classification is accounted for — and locates their cause in pathways that do not require the body to change: the repeated cycling, the chronic surveillance, and the stress-physiology that sustained weight-goal pursuit entails. The one pattern that would not, on its own, vindicate the paradigm is an attenuation of trajectory effects when body size enters, because body size classifications in these data do not precede the trajectories but are contemporaneous with them; where it bears on health, it is as plausibly the embodied residue of years of weight cycling and metabolic insult as their cause. The chapter is structured, then, not simply to ask whether the paradigm's apparatus detects real risk, but to locate that risk — and to ask whether it lies in the body the paradigm has taught a population to fear, or in the demand that taught the population to fear it.

This relocation is this dissertation's central claim, and this chapter is where it meets the outcomes that matter most. The paradigm justifies itself by appeals to health: it asks individuals to surveil, restrict, and discipline their bodies on the promise that doing so will protect them from disease. If the sustained acceptance of that demand instead predicts the very diseases it invokes — if the pursuit of health, embodied across a formative developmental period, is itself a pathway to harm — then the paradigm does not merely fail to deliver on its promise: it produces, in the bodies of those who believed it, the very outcomes it promised to prevent.

4.2 Data and Measures

4.2.1 Data Source and Analytic Samples

The analysis draws on the National Longitudinal Study of Adolescent to Adult Health (Add Health), the nationally representative, school-based cohort that anchors the two preceding chapters. Add Health followed a probability sample of U.S. adolescents in grades 7–12 beginning in the 1994–95 school year (Wave I), with follow-up interviews at Wave II (1996), Wave III (2001–02), Wave IV (2008), and Wave V (2016–18). Its stratified, clustered sampling design, its repeated measurement of body size, weight self-image, weight goals, and weight-control behaviors across adolescence and early adulthood, and its collection of self-reported, medically-diagnosed health conditions across Waves III - V make it suited to the questions this chapter pursues: whether the trajectory of weight-goal pursuit and the behavioral engagement it motivates leave a measurable signature on adult physical and mental health.

The chapter inherits its central exposures directly from the earlier analyses. Chapter 2 derived a weight-goal trajectory typology from respondents' weight goals across Waves I–III and Chapter 3 used that typology to model weight-control behavior. Given the findings about the effects of dieting on behavioral engagement and escalation, the primary analytic sample used in this study is carried forward from the dieting analysis from Chapter 3: respondents who reported at least one active weight goal across Waves I–III, retained with valid trajectory assignment, complete covariate data, and valid sampling weights. An additional healthcare access measure is added to these models (described below: Section 4.2.4) and due to additional missingness on that variable, 232 respondents who were otherwise eligible could not be retained. This resulted in a primary analytic sample of 12,042. Table 4.1 displays the summary statistics for the main analytic sample and for all missing and excluded respondents, as well as each analytic sample used in this chapter to aid in the comparison of compositional differences.

Two further samples constructed in Chapter 3 are carried forward to test whether the findings depend on how the sample is defined. The all-behaviors sample (N = 14,203) additionally distinguishes the Consistent Gain trajectory and incorporates the full behavioral battery. The universally-surveyed sample (N = 14,597) retains respondents who reported no active weight goal at any wave (Consistent Nothing) and restricts attention to only those weight control behaviors administered to all respondents regardless of goal. Each is subject to the same health care access-related exclusion. Their analytic role is described below and revisited in the results.

The diagnosis outcomes record whether a respondent had ever been told they had a given condition — a cumulative status assessed at the most recent wave, not a quantity measured repeatedly over time. The appropriate design adjustment is therefore a cross-sectional sampling weight, which renders a wave's respondents representative of the population sampled at that wave, and two such weights are candidates here. The Wave V weight is the more exact match to the outcome, since it corrects for the sampling design, nonresponse, and cumulative attrition specific to the wave at which the lifetime diagnosis counts are finalized; but it is defined only for respondents surveyed at Wave V, and restricting the sample accordingly reduces the analytic N and the statistical power to detect the trajectory and behavioral associations of interest. The Wave I weight, by contrast, is carried by every analytic case — the weight-goal trajectory is anchored at Wave I, so all retained respondents have a valid Wave I weight — and it is the weight used throughout the main analyses in the two preceding chapters. The main analyses apply the Wave I cross-sectional weight, which keeps the weighting consistent across the dissertation and retains the largest defensible sample, at the cost of being less precisely matched to the wave at which the outcomes are observed. To gauge whether that trade-off distorts the results, a sensitivity analysis re-estimates the models on the subsample of respondents who completed the diagnosis items at Wave V using the Wave V cross-sectional weight — the specification better matched to the outcome — and is reported first among the sensitivity analyses.

4.2.2 Outcome Measures: Cardiometabolic and Mental Health Diagnosis Counts

Starting in Wave III respondents were asked a series of questions about their health history, including any diagnoses they had previously received from a "doctor, nurse, or other health-care provider." The list of conditions surveyed was expanded in both Waves IV and V and additional retrospective questions were asked about respondents' age at first diagnosis for each condition[39]. This chapter's two focal outcomes are counts of these self-reported diagnoses, assembled into two indices. The **cardiometabolic count** sums ten conditions — diabetes, hypertension, high cholesterol, heart disease, heart failure, arterial disease, atrial fibrillation, blood clots, kidney disease, and stroke — and the **mental health count** sums four:

[39]See Section 6.3 for a full description of the data cleaning conducted to derive the most complete medical history for each respondent.

depression, anxiety, post-traumatic stress disorder, and attention-deficit/hyperactivity disorder. Each index records how many distinct conditions within its family a respondent had ever been told they had.

The decision to model counts rather than individual conditions follows from the theoretical framework. The weight-centered literature is overwhelmingly organized disease by disease: it asks whether higher body weight raises the risk of a given condition, treating each diagnosis as a separate endpoint with its own biological mechanism. Through the lens of embodiement, however, if sustained weight-goal pursuit damages health through weight cycling, chronic stress-physiology, and the cumulative burden of inhabiting a body defined as a problem, those insults are systemic rather than organ-specific — allostatic load, hypothalamic-pituitary-adrenal dysregulation, and chronic inflammation do not confine themselves to a single condition (Krieger 2005; McEwen 1998; Tomiyama 2014). Modeling the count of conditions operationalizes this expectation directly. It asks not whether weight-goal pursuit causes hypertension specifically, but whether it raises the overall burden of cardiometabolic morbidity a person carries — the quantity a cumulative, life-course account of exposure predicts. The two families were selected because they correspond to the two domains in which the paradigm advances its strongest claims: cardiometabolic disease, where its mechanistic account is most developed, and mental health, where, as the introduction established, that account is thinner and rests on the same stress-physiological mechanisms the critical literature attributes to the paradigm's own demands. Examining both in parallel, and subsequently in combination, is what allows the analysis to ask whether a single upstream exposure produces correlated harm across both domains.

Counts of accumulated conditions, rather than the timing of first onset that a survival or event-history model would center, are likewise the quantity the life-course framework calls for. The argument is about cumulative burden — the total morbidity a body carries as the embodied residue of sustained exposure — not about the rate at which any single condition first appears; a count measures that burden directly, whereas a time-to-event model would recast it as a question about onset timing the theory does not pose. Several features of the data also contribute to the decision to operationalization morbidity using counts. Respondents reach only their mid-forties by the final wave, truncating the window in which later-onset chronic disease can surface; age at diagnosis is reported retrospectively and only coarsely, making precise event timing unreliable; and respondents routinely carry several conditions at once, which a single-event survival specification accommodates poorly. The count outcome avoids these difficulties while keeping the analysis aligned with the cumulative, life-course theory that motivates it.

Eating disorder diagnoses, though available in Add Health, are not included in the mental health count. Within the framework of this dissertation, disordered eating belongs to the behavioral pathway through which weight-goal pursuit operates — it lies between the trajectory and the downstream morbidity rather than at the endpoint — and including it in the outcome would fold a component of the proposed mechanism into the quantity being explained. Eating disorders are instead presented among the supplementary individual-diagnosis models, where their strong association with extreme behavioral engagement serves to corroborate the behavioral measures.

Diagnoses are counted across the full observation window rather than at a single wave. Cardiometabolic and chronic psychiatric conditions accrue over the life course, and the age-at-diagnosis distributions confirm that onset is spread across the waves rather than concentrated at any one[40]; a respondent first told

[40]The preponderance of cases in the main analytic sample were diagnosed after the Wave I-III exposure period: Average (mean | median) ages reported for each diagnosis were: diabetes (30.1 | 31.9), hypertension (28.7 | 29), high cholesterol (29.2 | 30), heart disease (27.2 | 29), heart failure (30.6 | 32), arterial disease (33.7 | 34), atrial fibrillation (32.4 | 35), blood

they had hypertension at Wave III and one first told at Wave V both carry the condition, and restricting to one wave would misread the timing of accrual as the presence or absence of disease. Counting any valid report across waves therefore yields lifetime diagnostic burden as of the most recent observation, in-line with a life-course argument about accumulated bodily cost. Because this measure spans the full window, the temporal ordering of exposure and outcome is addressed directly through an additional sensitivity analysis restricted only to respondents with conditions first reported after the trajectory window, which poses the same question for a distinct population of later-onset cases.

4.2.3 Focal Predictors: Weight-Goal Trajectory and Behavioral Engagement

The central predictor is the **weight-goal trajectory** typology developed in Chapter 2, which classifies respondents by the direction, consistency, and stability of their weight goals across Waves I–III. In the primary sample the categories are Consistent Maintain, Consistent Lose, Changing Lose/Maintain, and Changing Goals; the all-behaviors sample additionally includes Consistent Gain, and the universally-surveyed sample also adds in Consistent Nothing. Consistent Maintain serves as the reference in the primary models because this group sustains engagement with the weight-management paradigm but is oriented toward stability rather than change, which isolates the consequences of pursuing a different body from the consequences of simply holding a weight goal. It is a comparison the weight-centered literature has lacked, since that literature typically compares people by body size and so conflates the experience of being in a larger body with the experience of trying to alter one.

clots (30.7 | 32), kidney disease (31.7 | 34.5), stroke (31.7 | 34), depression (25.5 | 25), anxiety (27.8 | 28), PTSD (28.8 | 30), ADHD (14.5 | 12).

Three behavioral measures, carried forward from Chapter 3, capture the practices through which the trajectory is theorized to act. A binary indicator of having **dieted** to lose/maintain weight captures the paradigm's central and most sanctioned behavioral instrument. Two counts capture behavioral breadth and escalation: a **count of standard weight-control behaviors** and a separate **count of extreme weight-control behaviors** — those carrying recognized clinical risk, such as fasting, purging, and the misuse of compensatory substances. In contrast to their operationalization in Chapter 3 the two counts are constructed to be disjoint, partitioning the behavioral repertoire rather than nesting within one another: the standard count tallies only non-extreme practices and the extreme count tallies only the clinically risky ones, so that each coefficient represents the effect of one additional behavior of that type and the two are independently interpretable. This partition is also the substantively informative one, since it allows the per-behavior risk gradient of standard practice to be compared directly against that of extreme practice — the escalation contrast the theoretical framework anticipates.

Because the number of behavioral items a respondent was asked depended on the waves at which they participated and on the goal-contingent branching of the questionnaire, each behavioral count enters its models alongside the number of relevant items that respondent was validly asked. Including this response-opportunity count as a covariate allows the model to interpret a given count relative to how many behaviors the respondent had the chance to report — distinguishing, for instance, three behaviors out of five asked from three out of twelve — so that the coefficients reflect engagement net of differential assessment rather than artifacts of the questionnaire's structure. As a general principle, each opportunity count is included in precisely those models where its corresponding focal predictor appears, which is why the behavioral and access opportunity terms enter all models while the routine-checkup opportunity term, described in the section below, is confined to the mechanism models in which the checkup count itself is estimated.

4.2.4 Health-Care Access and Engagement Measures

Four measures appear for the first time in this chapter, each constructed to occupy a specific position in the analysis. Two terms in the chapter's causal language recur throughout and are worth fixing in place at the outset. A confounder is a variable that influences both who enters a given exposure and who develops the outcome, producing an association between them that is not itself causal; adjusting for a confounder is necessary to avoid mistaking the association it produces for a causal effect. A mediator, by contrast, lies on the causal pathway between exposure and outcome — it is a consequence of the exposure and in turn a cause of the outcome — so that adjusting for a mediator removes the portion of the effect that travels through it and reveals what remains. The distinction is not statistical but temporal and theoretical: a variable measured before the exposure can confound it, whereas a variable that the exposure produces cannot, and conditioning on the latter as though it were the former removes part of the very effect one means to estimate. Which role a given variable plays is therefore settled by its timing and by the theory, not by the model, and the measures below are positioned accordingly.

Health-care access enters as a confounder. A diagnosis can be recorded only if a condition is detected, and detection requires contact with a medical system that people without coverage reach less reliably; access thus shapes both who pursues weight goals and who accumulates recorded diagnoses, independent of underlying disease. It is captured by an **ever-uninsured indicator**, coded one for respondents who reported no insurance coverage at either Wave I (parent-reported[41]) or Wave III (self-reported[42]), and zero for those covered at both points. Collapsing the two reports into a single "ever" indicator, rather than an additive count, makes the measure robust to the differences between the parent-reported childhood item and the self-reported young-adult item: each validly registers some period without coverage, interpretable as health-care access diasadvantage. Ever-uninsured is included in the main individual-level covariate set for all models.

Three further measures index the channels through which weight-goal pursuit is theorized to reach the body, and are introduced only in the supplementary adjustment models described below, where they function as mediators rather than controls. **Cumulative BMI classification exposure** comprises two directional counts — the number of waves across I–III at which a respondent was clinically classified as above-normative ('overweight' or 'obese') or below-normative ('underweight') — each accompanied by its valid-wave count[43]. These variables do not measure how heavy a respondent is at a point in time; they measure accumulated exposure to non-normative clinical classification, how repeatedly across the devel-

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[41]The Parent's survey in Wave I asked "what kind of insurance does [respondent's name] have?" with options Medicare (from Social Security), Medicaid, Individual or Group Private Coverage, Prepaid Health Plan, Other, Don't Know, and None. Additionally they were asked, "In the past 12 months, has there been a time when [respondent's name] had no health insurance?". Respondents were coded one for no insurance if their parent reported "None" on the insurance-type question OR "Yes" to the gap-in-coverage question.

[42]Respondent's were asked "Which of the following best describes your current health insurance situation?" with available options: [you] have no health insurance, are covered by your parents' insurance, are covered by your husband's or wife's insurance, get insurance through work, get insurance through a union, get insurance through school, are covered because you are active-duty military, buy private insurance yourself, are on Medicaid, are covered through the Indian Health Service, don't know what your health insurance coverage is. Respondents were coded one for no insurance if they responded "you have no health insurance."

[43]'Underweight' and 'overweight' are both coded one while 'obese' is coded two thereby enabling the measure to capture the exposure *and* degree to which a respondent was subject to non-normative weight classifications. Valid-wave count captures the number of waves in which these data are available for each individual.

opmental window a person was sorted by the paradigm's central instrument into a category marked for intervention. Within the embodiment framework, repeated classification as overweight is not a rival biological pathway to be removed but an operationalization of paradigm pressure itself. **Cumulative weight self-image exposure** is constructed identically but from subjective self-classification: two directional counts of the waves at which a respondent perceived their own weight as above- or below-normative, with valid-wave counts[44]. This parallel construction is deliberate: the two sets of measures differ in one respect only — objective clinical classification versus subjective self-perception — across an identical window, which is what allows the analysis to ask whether the operative pathway runs through the body as the clinical system classifies it, the body as the person experiences it, or both. **Cumulative routine-checkup engagement**, a count of the waves at which a respondent reported a past-year routine physical with its valid-wave count, captures realized health-care contact, the recurring engagement through which chronic and asymptomatic conditions are detected. This measure occupies a dual position. It is in part a detection-related confounder, since more frequent contact yields more recorded diagnoses regardless of disease, but under the framework it is also in part a mediator, since weight-goal pursuit drives health-care contact under a weight-centered health paradigm and that contact is one channel through which the paradigm produces both behavioral escalation and diagnosis. The theoretical framework of this chapter posits that the routine medical encounter is not simply a neutral instrument of detection but the site at which the body is weighed, classified, and counseled to reduce — so repeated clinical contact is itself

[44]Slightly Underweight and Slightly Overweight are both coded one while Very Underweight and Very Overweight are coded two. It should be noted that the symmetry of the weight self-image measure is not a feature of the BMI classification system, which speaks to its inherent focus on the higher end of the non-normative weight spectrum with much less emphasis and clinical pre-occupation paid to the lower end.

a form of paradigm exposure, not merely a route to recording disease. Positioning it as a mediator lets the analysis recover how much of the trajectory's association with morbidity travels through realized clinical contact, while its exclusion from the baseline covariate set keeps that contact from being adjusted away before the total effect is estimated. The detection-confounding concern is instead carried by the structural-access measure in the main models, leaving the engagement measure free to register the channel it is meant to capture. Because its timing places it during the exposure window and its content is plausibly shaped by the trajectory, it is positioned alongside the body-classification measures as a mechanism rather than a baseline control.

4.2.5 Additional Covariates

The models adjust for the covariates established in Chapter 2 as predictors of trajectory membership: sex, age, race and ethnicity, Latino/a ethnicity, U.S. nativity, and a set of household and neighborhood measures including social origins, parental education, the proportion of family dinners shared with a parent, neighborhood socioeconomic disadvantage, perceived neighborhood safety, and selected built- and natural-environment indices[45]. Apart from the access and engagement measures discussed above, these covariates are all drawn from Wave I.

Anchoring the conditioning set at Wave I, rather than substituting more temporally proximate measures, follows from the confounding logic set out above. These covariates are meant to capture the social conditions that shaped both who entered which trajectory and who was at differential risk of later morbidity — the common causes that must precede an exposure to confound it. Wave I measures, collected in early adolescence at the opening of the trajectory window, satisfy that requirement: they

[45] See Section 2.5.1 for full descriptions of these variables.

establish the baseline social position from which trajectories diverged. Measures taken at Wave III or IV would not. Because the trajectory unfolds across Waves I–III, a later covariate is contemporaneous with, or subsequent to, the exposure and is plausibly shaped by it; conditioning on such a variable would adjust away part of the trajectory's effect, or introduce bias by holding constant a consequence of the exposure that also bears on the outcome. The usefulness of the Wave I controls therefore rests on their temporal priority to both trajectory development and health outcomes.

4.3 Analytic Strategy

4.3.1 Research Questions and Competing Accounts

This chapter is built to adjudicate between two accounts of how the weight-centered health paradigm relates to adult health. The paradigm holds that body size is the operative variable: cardiometabolic and psychological burden should track BMI classification, and weight-goal trajectories should matter only as proxies for the body sizes they produce. The framework developed in the introduction — healthism's account of the body as a perpetual moral project, the weight-cycling and behavioral-pathway physiology that links sustained dieting to cardiometabolic insult, and the ecosocial proposition that social experience is embodied over the life course — predicts instead that trajectory and behavior carry health consequences of their own, operating through the behavioral and psychological channels the paradigm's demands set in motion rather than through body size as such.

Three motivating questions structure the analysis. The first asks whether sustained weight-goal pursuit predicts cardiometabolic and mental health burden into adulthood, and how that association behaves as the social conditions and behaviors surrounding it are taken into account. The second asks whether the two forms of morbidity co-occur within individuals beyond what their separate prevalences would imply, and whether that co-occurrence is patterned by goal pursuit and behavior — the question the weight-centered health paradigm answers by attributing the clustering to shared causation by body size while the theoretical framework articulated above answers by attributing it to shared exposure to the paradigm's demands. The third question asks through which channel the exposure reaches the body: the clinical classification of it, the subjective experience of it, the medical contact the paradigm prescribes, or the practice of dieting and/or other weight-control behavioral engagement.

Framing the analysis as an adjudication requires that it be capable of supporting either account, and the design is constructed so that it can. The paradigm's claim makes a specific, falsifiable prediction: if body size is the operative cause, then accumulated 'overweight' classification should account for weight-goal trajectory and the weight-control behavioral associations with health, and subjective weight self-image should add little once objective classification is held constant, since under this account self-image is merely an imperfect reading of the body size that does the causal work. Should the data show this pattern — trajectory and behavioral effects attenuating, or weakening, as body-classification measures are introduced, with BMI classification carrying the association and self-image redundant to it — the paradigm's account would be supported on its own terms. The framework articulated above predicts instead that trajectory and behavior carry health consequences that persist after clinical classification is taken into account, and, critically, that weight self-image and BMI classification each carry independent weight rather than the latter subsuming the former. The matched construction of the two classification measures is what makes this a genuine test rather than a foregone conclusion: because they differ only in whether the body is classified by the clinical system or experienced by the person, a result in which self-image matters as much as measured size, or in which the trajectory survives both, cannot be reconciled with a pathway running primarily through body size.

4.3.2 Estimation and the Progressive Adjustment Sequence

All models incorporate the Add Health survey design — stratification, clustering, and sampling weights — so that estimates and standard errors reflect the target population. The two count outcomes are estimated by survey-weighted negative binomial regression, which suits the count structure of the morbidity indices and accommodates the overdispersion they exhibit while yielding design-corrected inference; coefficients are reported as incidence rate ratios (IRRs), interpreted as the multiplicative change in the expected number of conditions associated with a predictor. Co-occurrence is examined with a joint model of binary versions of the two count outcomes — the presence of any cardiometabolic condition and any mental health condition — estimating the marginal probability of each alongside a joint odds ratio that captures how strongly the two cluster within individuals beyond what their separate prevalences would imply (this structure and its constrained and unconstrained forms are detailed in the next section). The individual-diagnosis models (a supplementary reference), in which each outcome is binary, are estimated by survey-weighted logistic regression and reported as odds ratios (ORs). All models were estimated in `R` using the `VGAM` package (Yee and Moler 2025) with accounting for survey-design and weights using the `svyVGAM` package (Lumley 2026).

Predictors enter in a fixed sequence of theoretically ordered blocks, M0 through M4, so that the trajectory association can be observed as each block is added. M0 estimates the trajectory–outcome association with no further adjustment. M1 adds the behavioral measures: dieting and both types of behavioral engagement. M2 adds the individual-level covariates including the ever-uninsured health-care access measure. M3 adds the household-level covariates and the fully-adjusted model, M4, adds the neighborhood-level covariates. The ordering carries an argument rather than a neutral set of controls. Entering the behaviors first registers how much of the trajectory–health association travels through the practices the paradigm motivates; carrying the trajectory term through the full sequence shows whether the association survives the social and contextual conditions that might otherwise account for the trajectory-health association. Throughout, behaviors, classification and weight-self image exposures, and health-care engagement are interpreted as mechanisms along the causal pathway — mediators that the trajectory produces — since each is measured during the trajectory window and therefore cannot be a prior common cause of it. Where the trajectory association attenuates as one of these enters, and the introduced measure is itself associated with the outcome, the attenuation is evidence that the trajectory operates in part through that channel; the more the trajectory weakens and the more strongly the introduced measure predicts the outcome, the larger the share of the association that channel plausibly carries.

For each significant association, an E-value is reported. The E-value is a sensitivity measure: it gives the minimum strength of association, on the risk-ratio scale, that an unmeasured confounder would need to have with both the exposure and the outcome — over and above the measured covariates — to fully explain away an observed effect (VanderWeele and Ding 2017). A large E-value indicates that only a strong and specifically structured unmeasured confounder could account for the result, and so speaks to how robust an observational association is to the threat the design cannot eliminate. E-values were calculated using the `EValue` package (Mathur et al. 2025) and are reported both for the point estimate and for the confidence limit nearest the null, the latter being the more conservative quantity[46].

4.3.3 Three Components of the Analysis

The first component is the pair of count models described above, estimated separately for the cardiometabolic and mental health counts. These establish the basic relationship between weight-goal pursuit and each outcome family and trace how it behaves under adjustment.

The second component models the two outcomes jointly to address co-occurrence. Treating any cardiometabolic and any mental health condition as paired binary outcomes, a bivariate logistic regression estimates the marginal probability of each outcome alongside a joint odds ratio relating them — a measure of how much more, or less, the two co-occur than their separate prevalences would predict. Two specifications are estimated: the constrained model holds the joint odds ratio fixed across respondents, yielding a single covariate-adjusted estimate of the average co-occurrence, net of all predictors in the marginal equations; the unconstrained model allows the joint odds ratio to vary with predictors, identifying whether any predictor strengthens or weakens the coupling itself. Because the full battery of cardiometabolic and mental health conditions was administered to every respondent, the joint association is not threatened by differential assessment — no respondent had more opportunity than another to screen positive in either family based on their responses to the survey — and therefore no assessment-opportunity adjustment is required. Comparing the two specifications, and tracking each

[46]The E-value for a point estimate measures the minimum strength of unmeasured confounding needed to reduce the observed effect to the null. The E-value for the confidence interval (CI) calculates the same threshold required to pull the limit of the confidence interval closest to the null so that the overall effect is no longer statistically significant. Given that it would take less unmeasured confounding to shift the closest bound of the confidence interval towards non-significance than it would the point-estimate, the single CI E-value is the more robust measure of unmeasured confounding of the two.

across the adjustment sequence, distinguishes a co-occurrence that paradigm exposure generates from one that merely persists alongside it.

The third component examines the channels through which the trajectory reaches health. Beginning from the fully adjusted count models, it introduces the cumulative exposure measures in steps — BMI classification exposure, weight self-image exposure, and routine-checkup engagement, separately and then together (the M4.1 through M4.4 series). Because these measures are co-temporal with the trajectory and plausibly produced by it, the exercise is one of mediation: each step asks how much of the trajectory–health association is transmitted through that channel, and the trajectory coefficient that remains after a mediator is introduced estimates the portion of the effect operating through other channels — a controlled direct effect rather than a more thoroughly adjusted total effect. It should be made explicit that this is an informal mediation analysis, not a formal decomposition. The design does not estimate indirect effects or partition the total effect into mediated and unmediated portions. It reads the attenuation of the trajectory coefficient as each co-temporal measure enters the model as evidence that the trajectory operates in part through that channel. The inference is therefore about whether body-size classification and self-image behave as mediators — whether they lie on the pathway and carry part of the association — not about the precise share each transmits. The parallel construction of the objective and subjective classification measures makes the decisive comparison available. If both carry independent weight when entered together, and if the trajectory association survives their joint inclusion, the operative mechanism is classification and self-perception as such rather than body size that a weight-centered account would require to carry the effect. This component is where the chapter contributes a form of evidence the paradigm's own framework cannot generate. The same mediation-adjustment progression is carried out for both the unconstrained and constrained joint outcomes models to see the effect of these mechanisms on comorbidity as well.

4.3.4 Sensitivity Analyses

A set of sensitivity analyses surrounds the three components, each addressing a specific alternative explanation or testing the durability of a finding against a particular choice; each is summarized together at the end of the results section. A sample restricted to respondents surveyed in Wave V (with cross-sectional Wave V weights applied) allows for an accurate accounting of non-response and the probability of attrition in the uncertainty estimates. The post–Wave III incidence analysis restricts the analytic sample to only those respondents with no diagnosis in either of the two count outcomes before Wave IV, testing temporal ordering on a distinct population of later-onset cases. Sex-interaction models test whether the trajectory–health relationships differ by sex. Behavior-interaction models test whether behavioral and trajectory effects combine multiplicatively or additively. The two alternative samples from Chapter 3 — the all-behaviors sample and the universally-surveyed sample — test dependence on sample construction and reference-group choice, and a parallel set of joint and joint-mechanism models on the universally-surveyed sample, using the least paradigm-exposed group (Consistent Nothing) as the reference, tests whether the co-occurrence and mediation findings are reproduced using an entirely different comparison. The individual-diagnosis models report the constituent conditions within each count, documenting where the aggregate associations concentrate.

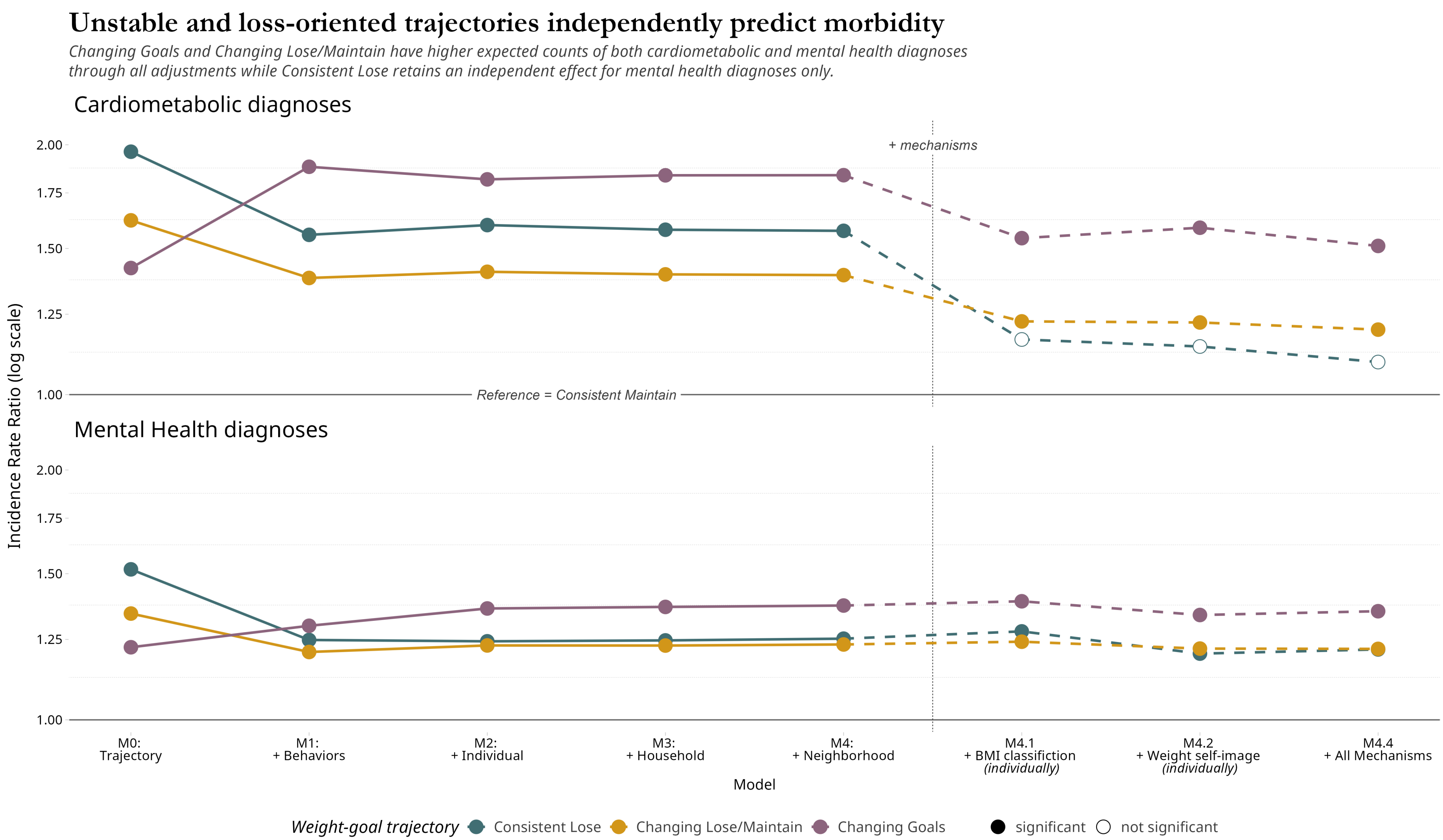
4.4 Results

4.4.1 Weight-Goal Pursuit and the Burden of Cardiometabolic and Mental Health Conditions

The count models establish the chapter's first finding. Relative to those who consistently sought to maintain their weight, respondents who pursued weight change carried more cardiometabolic (Table 4.2) and more mental health conditions (Table 4.3) in adulthood, and these elevations held through adjustment for behavior, sex, demographic position, and household and neighborhood contexts. Figure 4.2 traces these associations for both outcome families across the entire model sequence, from the unadjusted model through the mechanism series examined below.

In the unadjusted cardiometabolic model, the Consistent Lose group had roughly twice the expected number of conditions as the Consistent Maintain reference (IRR ≈ 1.96), the Changing Lose/Maintain group about 1.62 times, and the Changing Goals group about 1.42 times. The two loss-oriented trajectories attenuated as the behavioral block of covariates was added, remaining stable through the addition of subsequent covariates, settling at 1.58 and 1.39 in the fully adjusted model. The mental health count showed the same structure at smaller magnitude, with all active-goal trajectories elevated (IRRs from 1.22 to 1.52 unadjusted), similar attenuation with the addition of behaviors, and stable effects through full adjustment (IRRs from 1.23-1.37). The associations are not readily attributed to unmeasured confounding. For the cardiometabolic trajectory effects, E-values for the point estimates in the fully adjusted model fell between roughly 2.13 and 3.08, for the confidence limits nearest the null, between roughly 1.66 and 2.39 — meaning that an unmeasured common cause would need an association of that strength with both trajectory and morbidity, exceeding the strength of the measured covariates, to account for

Figure 4.2: Weight-goal trajectory and adult morbidity across the adjustment sequence



the result. The mental health associations were less robust, with confidence-limit E-values between 1.28 to 1.54, though still beyond what a weak confounder could supply.

The Changing Goals trajectory behaves distinctively across the adjustment sequence, and its pattern is informative for the framework. Where the two loss-oriented trajectories attenuate as behaviors enter, Changing Goals does not: for the cardiometabolic outcome it rises, from an IRR of 1.42 unadjusted to 1.88 with the addition of behaviors and 1.84 in the fully adjusted model, with a corresponding rise in its point estimate E-value from 1.75 to 2.09 (CI: 1.32 to 1.54). The covariates correlated with an unstable, shifting pattern of goals were partially obscuring its association with later morbidity, and adjustment clarifies their relationship. This is consistent with the weight-cycling account, on which the repeated loss and regain that follows from sustained but unsteady restriction — rather than the direction of the goal at any single moment — carries the cardiometabolic cost (Lissner et al. 1991; Montani et al. 2006; Rhee 2017). An unstable trajectory is, in the framework's terms, the trajectory most likely to entail repeated cycles.

The behavioral measures distribute across the two outcomes in the pattern the theoretical framework anticipates. Dieting and the count of standard and extreme weight-control behaviors are all positively associated with the cardiometabolic count. Dieting's effect is the strongest of the three and it increases across the progressive models (IRR 1.21-1.29) while the count of standard and extreme weight-control effects are modest but stable throughout (IRRs of 1.04-1.03 and 1.08-1.07 respectively). E-values reflect these differential effect sizes with values in the fully adjusted model for dieting of 1.91 (point-estimate) and 1.62 (CI), with standard behaviors at 1.22 (point-estimate) and 1.06 (CI), and extreme behaviors at 1.35 (point-estimate) and 1.13 (CI). The effect of dieting on the mental health count is weaker (IRR

1.18-1.10; E-values of 1.42 for the point-estimate and 1.12 for the CI) than its cardiometabolic effect, and while standard behaviors are not significant at any stage, extreme behaviors show a larger effect in these models (IRR 1.2-1.17; E-values of 1.62 for the point-estimate and 1.48 for the CI). This separation maps onto the two channels the introduction distinguished: dieting and the breadth of standard practice index the weight-cycling route to metabolic dysregulation, while extreme engagement indexes the disordered-eating and distress route to psychological morbidity. That each behavior loads where the framework predicts lends internal coherence to the behavioral-pathway argument.

Two demographic associations recur across the models and, although they are not the relationships this chapter sets out to test directly, they warrant attention because they situate its findings within a broader landscape of patterned morbidity and because findings from Chapter 2 and Chapter 3 bear directly on how they should be read. Women carried a lower cardiometabolic burden and a substantially higher mental health burden than men. Both halves of this contrast are well established: the epidemiology of cardiometabolic disease documents lower and later-onset risk among women relative to men, while women are diagnosed with depression and anxiety at roughly twice the rate of men (Cavanagh et al. 2017; Gerdts and Regitz-Zagrosek 2019; Mauvais-Jarvis et al. 2020). The mechanisms proposed for these differences are themselves a mix of the biological and the social — sex differences in hormonal and metabolic physiology on one side, and differences in stress exposure, symptomatology, help-seeking, and the clinical recognition and labeling of distress on the other — and the literature increasingly treats the social and diagnostic mechanisms as inseparable from the biological ones (Mauvais-Jarvis et al. 2020). Racial and ethnic differences also appeared, most visibly in the mental health models, where almost all minoritized groups carried lower counts of recorded diagnoses than White respondents. Here the interpretive caution is sharper still: a substantial literature reads such gaps not as differences in underlying need but as differences in detection, diagnosis, and access produced by structural inequities in care, including unequal insurance coverage, differential treatment within the clinical encounter, and the under-recognition of distress in minoritized patients (Alegría et al. 2008; Williams 2018). Recorded diagnoses are, in this sense, a measure of morbidity filtered through a system of unequal access, diagnostic criteria, and detection, and the racial patterning observed here is consistent with that filtering. These patterns matter for the present argument because of what the evidence from Chapter 2 and Chapter 3 suggests about how people arrive at the trajectories and behaviors under study. The previous chapters established that, in a sample almost entirely comprised of individuals engaged in some active weight goal, entry into weight-goal trajectories — and the behavioral engagement and escalation those trajectories motivated — was strongly patterned by sex and largely engaged in at similar rates across racial groups. The weight-centered health paradigm does not bear on all bodies equally: its demands fall most heavily on women, whose worth it most tightly couples to body size, and its stigmatizing effects are distributed along the intersecting lines of sex and race, such that the experience of being classified, judged, and pressed to intervene on one's body is itself sex-specific and racialized (Himmelstein, Puhl, and Quinn 2017; Puhl and Heuer 2009). The demographic associations observed here are therefore best understood not as the operation of sex and race as fixed individual risk factors layered on top of the trajectory effects, but as one expression of a process that is socially patterned from its origin — the same structural and systemic forces that sort people unequally into the paradigm's demands, and that mediate their access to diagnosis and care, also shape the morbidity that stems from those demands. Read against the structural inequities the health disparities literature documents, the patterning of health observed in this chapter is continuous with, rather than separate from, the social patterning of weight-goal pursuit that this dissertation has traced from aspiration through behavior to embodied outcome.

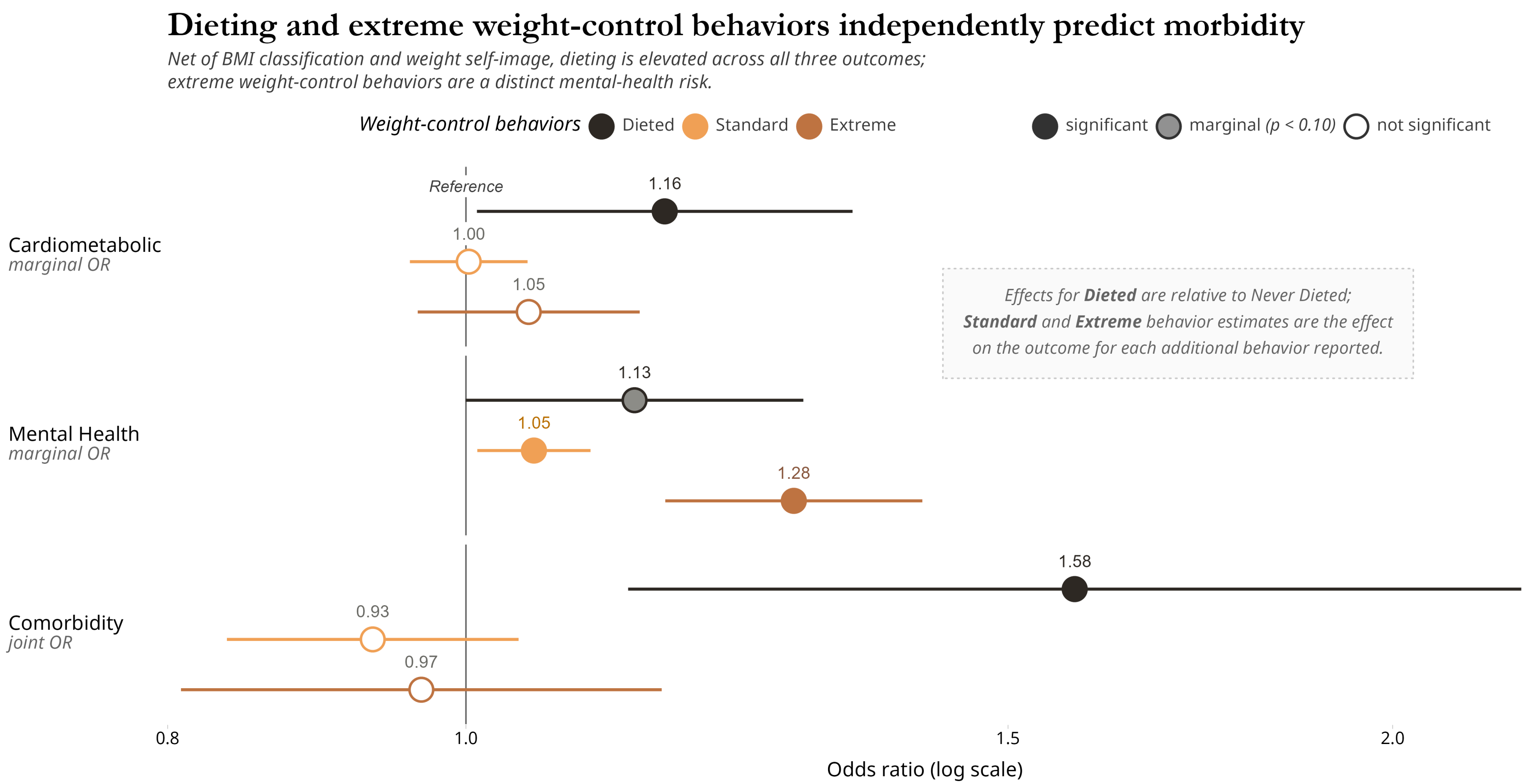
4.4.2 Cardiometabolic and Mental Health Conditions Co-Occur, and Dieting Concentrates their Co-Occurrence

The joint models address whether the two forms of morbidity accumulate within the same people and the findings provide evidence to that effect. In the constrained model (Table 4.6), which estimates a single average co-occurrence net of all covariates, the joint odds ratio ranged from 1.96 to 2.19 across the entire adjustment sequence - decreasing from 2.03 after the addition of behavioral covariates and remaining stable at 2.19 through the remaining model adjustments. Net of the full covariate set, a respondent with any cardiometabolic condition had roughly twice the odds of also carrying a mental health diagnosis (and vice-versa) as their separate prevalences would imply. This co-occurrence is the chapter's most robust finding with respect to unmeasured confounding, with E-values for the point estimate of 3.8 and for the confidence limit 3.28, in the fully adjusted model.

The behavior of this association under adjustment is consistent with the account developed above and difficult to reconcile with a weight-centered reading. The latter treats physical–mental co-occurrence as a signature of shared causation by body size; by that logic, conditioning on the factors tied to body size should erode the coupling toward the disease-by-disease independence the paradigm's framing assumes. Instead, the joint odds ratio remains large and relatively stable across the sequence. It dips modestly when the behavioral measures enter, indicating that a small share of the co-occurrence travels through measured behavioral engagement — one of the channels the framework anticipates — but the great majority does not. It then returns to roughly 2.2 when sex is added with the other individual-level covariates and holds there through full adjustment; because sex (Female) pulls the two margins in opposite directions, lowering cardiometabolic and raising mental health risk, conditioning on it removes a source of discordance and reveals the underlying positive coupling at its full strength. What remains after the full covariate set is a substantial residual co-occurrence between cardiometabolic and mental health that the measured factors do not explain away — the pattern expected if the two families of conditions share upstream causes, such as the chronic stress-physiology, weight cycling, and stigma identified in the introduction, that the available measures capture only in part.

Within the constrained models, the way predictors move the two margins clarifies how the modeled co-occurrence arises. Every weight-goal trajectory raised both the cardiometabolic and the mental health margin together; this concordant elevation is itself a source of co-occurrence, since the same trajectories make both families of conditions more likely in the same people. The unconstrained models (Table 4.7), which allow the strength of co-occurrence to vary by each covariate, locate a specific source of the clustering. Weight-goal trajectory did not modify the joint odds ratio at any stage — the strength of the physical–mental coupling does not differ from Consistent Maintain across the loss-oriented and unstable trajectory groups. Dieting, however, did modify the co-occurrence, increasing it at every stage of the sequence. The joint-odds-ratio for dieting of 1.43 to 1.56, strengthening slightly under adjustment, and with E-values for the point estimate of 2.49 and the confidence interval of 1.56 in the full model. Dieting thus does two distinct things: it raises the independent probability of each outcome family, and, beyond that, it raises the odds that the two occur in the same individual. Those who dieted are not only more likely to carry cardiometabolic disease and, separately, a mental health diagnosis; they are disproportionately the people carrying both. That this holds net of trajectory and demographics locates the clustering

Figure 4.3: Weight-control behaviors and adult morbidity (M4.4 in Table 4.9)



in the behavioral practice itself, where the weight-cycling-and-stigma account anticipates it — the paradigm's most sanctioned and prescribed instrument is associated not merely with each form of morbidity but also with their co-occurrence. Figure 4.3 collects the behavioral associations from the joint models in one view: dieting is elevated for the cardiometabolic margin and, most strongly, for the joint odds ratio, while extreme weight-control behavior stands apart as a distinct mental-health risk.

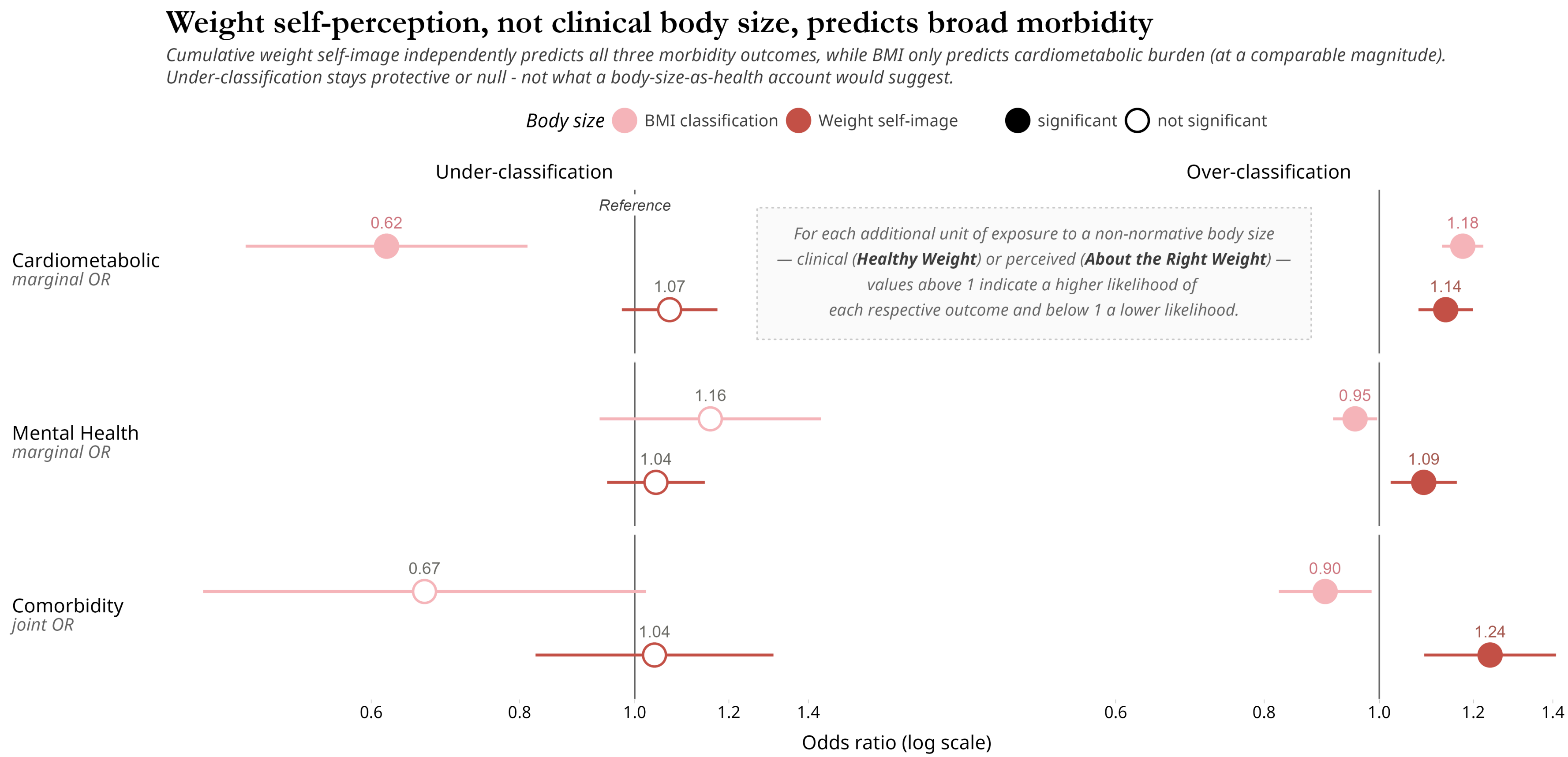
4.4.3 The Pathway Runs Through Classification and Self-Image

The mechanism models trace the channels through which weight-goal pursuit reaches the body, and they yield a pattern the weight-centered account would not predict. This model sequence begins from the fully adjusted count model for each disease category and introduces the cumulative exposure measures in turn; because these measures are co-temporal with the trajectory and plausibly produced by it, the trajectory coefficient remaining after each mechanism is added estimates the effect operating through channels other than the one introduced.

When cumulative BMI classification exposure entered the cardiometabolic model (Table 4.4), the trajectories diverged (Figure 4.2, M4.1). The Consistent Lose association fell to non-significance: its elevated cardiometabolic burden, robust through the count sequence, was transmitted almost entirely through accumulated classification as overweight or obese — these are respondents repeatedly sorted into the paradigm's intervention categories, and their morbidity travels through that accumulated classification. The Changing Lose/Maintain and Changing Goals associations, by contrast, survived the introduction of classification exposure (IRRs of 1.23 and 1.54 respectively) and remained significant through every step, including the model that conditions on clinical classification, subjective self-image, and health-care engagement together (IRRs of 1.20 and 1.51 respectively) - see Figure 4.2 M4.4. Their fully-adjusted E-values, respectively, 1.69 and 2.39 for the point estimate and 1.17 and 1.81 for the confidence interval. This suggests that the cost of an unstable trajectory operates through channels that classification does not capture — the behavioral churn and weight cycling the instability entails. A model in which body size carries the causal work has no account of why an unstable pattern of goals would bear on cardiometabolic health independent of how heavy a person was ever classified as being.

Figure 4.4 sets the two body-size exposures side by side across the three outcomes and both directions of classification, and the contrast is the chapter's sharpest: cumulative overweight self-image tracks all three outcomes, clinically classified 'overweight' tracks only cardiometabolic burden and, if anything, loosens the physical–mental coupling, and exposure in the under-classified direction carries no penalty at all. The parallel construction of the two body-size exposure measures enables an important comparison. When entered together, cumulative BMI classification exposure and cumulative weight self-image exposure each retain an independent, significant association with the cardiometabolic outcome, and the two were closely comparable in magnitude. This is a critical finding, because the two accounts make opposing predictions about it. Under the weight-centered account, subjective body-image should be largely redundant once clinical classification is held constant, since self-perception would simply be a noisier reading of the 'objective' body size that does the causal work; the BMI, being a direct measurement of body size, should absorb it. Instead, each carries a distinct and comparable portion of the association. The incidence rate ratio for BMI over-exposure was 1.17 entered on its own and 1.13 in the fully adjusted mechanism specification, while the parallel values for weight self-image over-exposure were 1.22 and 1.09. That the subjective measure is not subsumed by the objective one indicates that the operative exposure

Figure 4.4: Body-size and adult morbidity (M4.4 in Table 4.9)



does not reduce to body size: accumulating the experience of perceiving oneself as overweight predicts morbidity beyond what clinical classification of the body can explain.

The under-exposure terms sharpen this reading, because they reveal an asymmetry built into the very structure of the paradigm. Repeated clinical classification as 'underweight' carries a protective association with cardiometabolic burden (IRR 0.71 in both specifications), whereas repeatedly perceiving oneself as underweight had no association in either model. Were deviation from normative weight harmful in a symmetric fashion, both directions should matter and both measures should track them, but they do not. Bodies that sit consistently at the low end of the classification system are, by definition, the bodies the weight-centered paradigm never marks as problems: they are rarely if ever sorted into the categories that trigger the prescription to lose weight, and so are largely spared the sustained pressure to alter themselves that the over-exposed direction entails. Read this way, the protective effect of 'underweight' BMI classification is a marker of non-exposure — an index of having escaped the classification-driven cycle of restriction, regain, and surveillance whose cumulative toll the framework locates at the center of the over-exposure findings. That this exposure, or its absence, is measured across adolescence and early adulthood is central to this argument: these are formative years in which a person's relationship to their own body is developed, and an ecosocial account holds that the resulting orientation — whether one comes to inhabit a body the paradigm leaves alone or one it repeatedly marks for correction — is literally embodied and carried forward, shaping behavior, self-perception, and physiology well into adulthood. The bodies the paradigm privileges in adolescence are the bodies it leaves alone, and that early reprieve compounds across the life course. That perceiving oneself as underweight carries no consequence, shows that what matters in self-perception is not distance from a normative weight in any direction but the stigmatized direction specifically: being and feeling above the norm (the direction the weight-centered culture marks for intervention) rather than below it (the direction it holds up as the ideal). The signature across all four terms is that of a pathway operating through classification and self-perception, and through the socially- and medically-stigmatizing meaning attached specifically to bodies 'over' the threshold of what the paradigm constitutes as a 'healthy' body size.

The mental health outcome sharpens the contrast (Table 4.5). There, cumulative BMI classification exposure carried essentially no association — it was null or somewhat protective — while cumulative weight self-image for over-exposure is significant in the fully adjusted model with an IRR of 1.07 (on par with its effect on cardiometabolic outcomes). The mental health burden associated with weight-goal pursuit is not transmitted by how the clinical system classified the body; it is transmitted, in part, through the accumulated experience of perceiving one's own body as overweight. This is consistent with the introduction's observation that the paradigm's account of mental health rests on the same stress-physiological mechanisms the critical literature attributes to the experience of stigma and bodily self-evaluation, and it indicates that the relevant exposure is the experience of the body rather than its measured size.

Turning to the joint outcome models for these mechanism models, in the unconstrained specification (Table 4.9) cumulative subjective overweight self-image increased the physical–mental coupling (OR 1.12 entered individually, increasing to OR 1.24 fully-adjusted), while cumulative BMI 'overweight' classification, in the fully adjusted model, slightly reduced it (OR 0.9). The margins make the divergence legible: subjective self-image raised both families of conditions together, the pattern of a stigma-and-distress exposure that implicates both physiology and psychology alike, whereas clinical classification operated as a cardiometabolic-specific signal (Figure 4.4). Health-care engagement, the third mechanism channel, left the trajectory associations close to their fully adjusted levels, which speaks to the detection concern: the trajectory–health associations do not seem to be an artifact of weight-conscious respondents attending more appointments and accruing more diagnoses. Engagement did carry an independent association with the mental health margin however, which is consistent with its dual character as both a route to detection and a form of contact with the weight-centered health paradigm.

Taken together, these results support the theoretical framing developed across this and the previous chapters: the medicalization of body size as a condition in itself, and the prescription to reduce it through the behaviors the paradigm sanctions, are associated with greater rather than lesser morbidity, transmitted through the clinical and internalized classifications of the body. These results also speak to a question the clinical framing tends to obscure: how far the subjective experience of feeling overweight diverges from the medical definition of it, and whether that divergence matters; the results of this analysis suggest that it does. Net of cumulative clinical classification, accumulated self-perception as above the norm carries an independent association with morbidity — and for mental health it is the perceived body, not the measured one, that carries the association. What the clinical encounter records and what a person comes to feel about their body are not interchangeable, and the latter does work the former cannot explain. To the extent these associations reflect a causal process, the apparatus organized to detect and correct bodily risk is implicated in producing the very burden it names — the defining signature of an iatrogenic process.

4.4.4 Sensitivity Analyses

A series of sensitivity analyses tested the durability of these findings and addressed specific alternative explanations; their results are largely consistent with the main analysis.

The first sensitivity analysis addresses the weighting choice set out in the data and measures section. Restricting the sample to the 8,358 respondents who completed the diagnosis items at Wave V and applying the Wave V cross-sectional weight — the specification better matched to the wave at which the outcomes are observed — reproduces the substance of the main findings, most fully for the cardiometabolic outcome (Table 4.14) and the behavioral pathway. For the cardiometabolic count, every active weight-goal trajectory remained elevated and significant through full adjustment at magnitudes close to the main estimates (Consistent Lose IRR 1.57, Changing Lose/Maintain 1.36, Changing Goals 1.53), as did dieting (1.30) and extreme behavioral engagement (1.11); only the standard-behavior count, modest throughout, lost significance in the fully adjusted model. For the mental health count (Table 4.15), the behavioral associations were likewise robust — dieting (1.12) and extreme behaviors (1.19) both retained significance through full adjustment — while the trajectory associations attenuated unevenly: Changing Lose/Maintain remained significant (1.23), whereas Consistent Lose and Changing Goals fell to non-significance.

The second analysis speaks directly to the ordering of exposure and outcome. Restricting the sample to respondents with no reported diagnosis in either outcome group at the time the exposure was measured isolates a distinct population of later-reported diagnoses for which the exposure clearly precedes the recorded outcome[47]. The cardiometabolic associations (Table 4.16) held across this stricter test: each active weight-goal trajectory remained positively associated with the count of later-reported

[47]This design establishes that the recorded diagnosis postdates the measured exposure, which is the strongest temporal ordering these data permit. It does not, however, establish true disease onset, since the outcomes are self-reported diagnoses rather than direct clinical assessments; conditions that went undiagnosed — including those left undetected by unequal access to and engagement with the health-care system — are not captured, so the analysis speaks to the timing of diagnosis rather than of disease itself.

diagnoses in the fully adjusted model (IRRs 1.38 – 1.83), as did dieting (IRR 1.22) and standard weight-control behavioral engagement (IRR 1.06). The mental health associations narrowed (Table 4.17), with Changing Goals the only trajectory to remain significant in the full model (IRR 1.41), alongside standard (IRR 1.06) and extreme (IRR 1.10) behavioral engagement.

Across these two sensitivity tests the mental health trajectory results diverge, and that divergence deserves some discussion. Neither restricted sample reproduces the main-analysis trajectory effects in full, and the two weaken in different places: the Wave V analysis retains Changing Lose/Maintain while dropping Consistent Lose and Changing Goals, whereas the post–Wave III analysis retains Changing Goals while dropping Consistent Lose and Changing Lose/Maintain. They do not agree on which trajectory survives, but they agree on something more basic. In each, it is the stable loss orientation — Consistent Lose — that falls away, while one of the two unstable, goal-shifting trajectories holds a significant association with mental health burden. These are the trajectories the framework identifies as most exposed to repeated loss-and-regain cycling and sustained self-monitoring, the pathway through which the stigma-and-weight-cycling account expects mental health to suffer. Read this way, it is the shifting, unstable pursuit of weight change — rather than steady commitment to a single goal — that is most likely to leave a lasting mark on mental health, even as which particular unstable trajectory clears significance moves with the composition and power of a given sample.

Two considerations help account for the rest of the pattern, one specific to the data and one more general. In the post–Wave III sample, where restricting to later-reported cases yields the sparsest diagnosis counts and so the tightest constraint on power, the largest trajectory group is the one with enough cases to retain significance — and Changing Goals, at 56% of that sample and 55% of the primary analytic sample (N = 5,095 and 6,510, respectively), is by a wide margin the largest trajectory group. More generally, the mental health trajectory effects are the first to weaken under any of these restrictions because the mental health index spans only four conditions compared to the cardiometabolic index's ten; its trajectory associations are correspondingly smaller, and both sensitivity samples are smaller than the main analytic sample, so the more strongly powered cardiometabolic associations reproduce throughout while the slighter mental health trajectory effects do not. That the cardiometabolic findings are recovered intact, and that the mental health signal continues to settle on unstable weight-goal pursuit across two independent restrictions serves to bolster the findings from the main analysis.

Two sets of interaction models returned informative null results. The trajectory-by-sex interactions (Table 4.10 and Table 4.11) were almost uniformly non-significant for both outcomes: although the level of morbidity differs by sex, the health consequences of a given trajectory operate similarly for women and men. The social patterning of trajectory formation and the extreme behaviors it motivates are strongly sex-specific, as the earlier chapters established, but the trajectory-to-health relationship is not — a distinction worth preserving. The trajectory-by-behavior interactions (Table 4.12 and Table 4.13) were likewise almost entirely null, indicating that behavioral and trajectory effects combine additively rather than multiplicatively, which is consistent with treating the behaviors as mediators on a shared pathway rather than as moderators that amplify trajectory effects.

The two alternative samples serve to bracket the primary findings. In the all-behaviors sample (Table 4.18 and Table 4.19), the Consistent Gain trajectory showed the largest cardiometabolic (IRR 2.18) associations of any group and mental health (IRR 1.39) effects on par with the Changing Goals trajectory. The significance and magnitude of these relationships emerged only under adjustment for behavioral engagement — indicating that the embodied cost of weight-goal pursuit is not confined to the pursuit of weight loss but has implications for active weight goal pursuit of all types. Additionally, both standard and extreme weight goal behaviors were significant through all specifications for both outcome groups. In the universally-surveyed sample (Table 4.20 and Table 4.21), which retains the never-recruited Consistent Nothing group (reference) and uses only behaviors common to all respondents, the cardiometabolic trajectory associations compressed, with most weight-goal contrasts losing significance. Retaining significance through full adjustment are Consistent Lose (IRR 1.6) and Changing Lose/Maintain (1.33). Noteworthy, for the mental health outcomes, Consistent Lose and Changing Lose/Maintain are significant through behavior adjustment but attenuate completely through subsequent model adjustments while Consistence Gain shows the reverse pattern - becoming significant only after the addition of individual-level covariates and remaining stable through to the full specification (IRR 1.30). Interestingly, the standard and extreme behaviors are consistently positively associated with increased mental health diagnoses whereas only extreme behaviors survived full adjustment for the cardiometabolic outcomes.

The joint and joint-mechanism models were re-estimated on the universally-surveyed sample with Consistent Nothing — the theoretically least paradigm-exposed group — as the reference, and the two findings anchoring the co-occurrence story reproduced. The constrained average joint odds ratio (Table 4.22) remained near 2.14 across the last three models of the sequence, matching the primary sample and unmoved by sample or reference choice. In the unconstrained, mediation-adjustment models (Table 4.24) the cardiometabolic margins for both BMI classification and weight self-image were again on par with one another (ORs of 1.18 and 1.16 respectively) and their opposing effects on comorbidity was substantiated, with cumulative overweight self-image again increasing the physical–mental coupling (OR 1.25) and cumulative BMI overweight classification again reducing it under full adjustment (0.89). That this contrast reproduces across two samples and two reference groups corroborates the comorbidity and mechanism findings from the main analysis.

The individual-diagnosis models show that the cardiometabolic count (Table 4.25) association is carried primarily by hypertension and high cholesterol — the conditions most closely tied to the weight-cycling and metabolic-dysregulation pathway — and that the mental health (Table 4.26) count association is concentrated in depression, the condition with the most-established link to dieting and disordered eating in the prior literature (Neumark-Sztainer, Wall, Guo, et al. 2006; Stice et al. 2011). Several low-prevalence conditions produced unstable estimates with wide confidence intervals and are reported without interpretation.

4.4.5 Limitations and Directions for Future Research

The principal limitation concerns causal inference. The temporal structure places the weight-goal trajectory before the health outcomes, and the post–Wave III incidence analysis sharpens that ordering on a distinct population with later-in-life diagnoses, but the design cannot exclude every unmeasured common cause of trajectory membership and morbidity. The interpretive framework treats behavior, classification exposure, weight self-image exposure, and health-care engagement as mediators rather than confounders, on the grounds that each is measured during or after the exposure and so cannot precede it; a reader committed to the weight-centered health paradigm might prefer to treat body size as a confounder. The response is that this alternative is temporally incoherent — the body-size measures do not precede the trajectory they would purportedly confound — and conditioning on a post-exposure consequence of the trajectory that also bears on the outcome introduces bias rather than removing it. For this reason the fully adjusted count models, which do not condition on the body-size mediators, are taken as the estimate of the trajectory's total effect, and the mechanism models are read as estimating what portion travels through which channel. Relatedly, that mechanism reading is an informal mediation analysis rather than a formal one: it infers mediation from the attenuation of the trajectory coefficient as each co-temporal measure enters, not from estimated indirect effects or a decomposition of the total effect, so its conclusions concern which channels carry part of the association rather than the exact share each transmits. The E-values quantify the residual threat directly: across the main associations they indicate that only a strong and specifically structured unmeasured confounder, generally stronger than the measured covariates, could account for the findings.

The outcomes are self-reported accounts of health-care provider diagnoses rather than clinical assessments, and therefore depend on detection through contact with the medical system. This is the reason the analysis included a structural-access measure in the main models and a realized-engagement measure among the mechanism models; the full diagnosis battery in both outcome families was administered to every respondent, so the joint estimate is not subject to differential assessment, and the stability of the trajectory associations under the engagement measure speaks to the robustness of the findings. Residual detection effects cannot be ruled out entirely, however. Counting diagnoses across the full window captures lifetime burden but blurs the timing of onset, which the post–Wave III analysis was designed to address, and the concordance of the two is reassuring on that point.

The behavioral measures were not designed as clinical assessments of disordered eating, and the extreme-behavior classification remains a proxy for clinical risk. The cumulative exposure measures, constructed to parallel one another, depend on the spacing of the waves and cannot register classification or self-image change occurring entirely between observations. The Add Health cohort also completed its early waves before the wide adoption of the internet and social-media, a key development that has most likely intensified the paradigm's reach since these data were collected, so the associations documented here may understate the contemporary magnitude of the phenomenon.

These limitations indicate productive directions for future work. Bringing temporally finer data to bear on the mechanism — through random-intercept cross-lagged panel models using the repeated depressive-symptom and self-rated-health measures available across waves — would speak to the bidirectionality the weight-centered literature claims, separating within-person change from between-person stability. Jointly modeling the trajectories of body size and depressive symptoms would test whether the two co-evolve as the shared-cause reading predicts. Formal causal mediation analysis, with bounds for unmeasured confounding, would extend the E-value logic into the mechanism models themselves. And replication in a cohort whose adolescence coincided with the contemporary intensification of the paradigm would test whether the embodied cost of weight-goal pursuit has grown as the paradigm's behavioral infrastructure has expanded. What the analysis does establish, within the limits of the data, is that the sustained pursuit of weight change is associated with greater cardiometabolic and mental health morbidity in adulthood, that the two cluster within the same individuals, that dieting in particular concentrates that clustering, and that the pathway runs through the classification and subjective experience of the body - a configuration the weight-centered health paradigm's causal account neither predicts nor can readily explain.

4.5 Discussion

This chapter asked whether the sustained pursuit of a thinner body, together with the behaviors that pursuit recruits, accumulates into measurable disease by the time a cohort reaches middle age — and whether any such accumulation could be dismissed as an artifact of the bodies doing the pursuing. The evidence points consistently in one direction: across both the cardiometabolic and the mental health domains, adolescents and young adults drawn into ongoing weight-loss aspiration, and who acted on it through dieting and other weight-control behaviors, carried a heavier load of diagnosed conditions in adulthood than those who were not, and that load did not dissolve once body size entered the models. Where attenuation occurred it was partial and patterned: the association attached to a steady loss orientation ran substantially through accumulated classification as 'overweight' as one would expect of a body that is heavier on average, whereas the associations attached to the unstable, goal-shifting trajectories persisted after classification and self-image were accounted for. Body size behaved as a channel through which part of the exposure reached the body, not as the thing that made people ill. That reading survived a deliberately demanding set of checks. The trajectory and behavioral associations with cardiometabolic morbidity reproduced under a weighting scheme built for the latest outcome wave and under a specification restricting the sample to diagnoses recorded only after the exposure was measured, foreclosing the most obvious form of reverse ordering. The E-values indicated that an unmeasured confounder would have to be both implausibly strong *and* specific to weight-goal pursuit to reduce the principal estimates to nothing. The mental health associations were smaller and less uniformly robust — unsurprising for an index assembled from almost a third as many conditions — but they did not disappear so much as concentrate in the trajectories marked by instability and change, precisely where a mechanism rooted in repeated loss and regain would predict the heaviest cost.

Taken together, these patterns are difficult to square with the claim that body size is the engine of the morbidity attributed to it, and they lend support to an account in which the engine is the demand placed on the body to change. The mechanisms are not exotic. Repeated loss and regain impose recurrent physiological adjustment; chronic surveillance of one's own eating and shape sustains a low-grade stress response; and the internalized sense of falling short of a sanctioned body feeds the same neuroendocrine pathways that convert social adversity into biological wear (Geronimus et al. 2006; McEwen 1998). This is the logic of embodiment in ecosocial theory — that the body incorporates the conditions of the world it moves through, including the conditions a health paradigm itself creates (Krieger 1994, 2001) — joined to the recognition that stigma operates as a fundamental cause, reproducing disease across whatever proximate mechanisms happen to be available (Hatzenbuehler et al. 2013; Link and Phelan 1995). On this reading the weight-centered paradigm does not merely fail to deliver the health it promises; it manufactures a share of the disease it later cites as its justification, and does so most heavily among the people it most relentlessly enjoins to change (Crawford 1980).

4.5.1 The reach of the paradigm

A consequential implication of these results may lie less in what they say about individuals than in what they reveal about how the harms of weight-focused health are studied. The paradigm's grip is strong enough that even research devoted to documenting its damage tends to reason within its terms. O'Hara and Taylor (2018) draw a useful distinction between innovations that enhance a dominant paradigm and those that would shift it; the weight-stigma and weight-cycling literatures, for all their critical force, frequently land on the enhancing side of that line. Consider the well-replicated finding that dieting predicts later weight gain, often past the point where the dieter began - (Mann et al. 2007; Neumark-Sztainer et al. 2012; Stice et al. 1999). The harm in these accounts is typically located in the regained weight: the higher BMI is the adverse outcome the analysis is centered on, rather than the physiological churn and psychological strain of chasing a target the body is prone to resist. The present results invert that emphasis. If sustained pursuit predicts morbidity even where it does not durably alter body size, then body size is the wrong endpoint: the pursuit is the exposure, and its cost is paid in the stress of repeated adjustment and chronic self-monitoring (Tomiyama et al. 2014, 2013). A literature that relocated its outcome accordingly — from the size a body ends up to the wear it accrues getting there — would be far better placed to identify what actually increases morbidity.

A parallel constraint limits research on so-called obesogenic environments. This is in many ways the most sociological approach of weight science: it resists the healthist reflex to blame individuals, names commercial and structural forces, and insists that bodies are shaped by the conditions surrounding them (Guthman 2011). Yet it generally retains, as an unexamined first principle, the premise that a body classified as 'overweight' or 'obese' is for that reason unhealthy — and so it turns its considerable structural imagination toward making bodies smaller rather than making lives better. The empirical footing for that premise is shakier than its prominence suggests: reviews find little consistent association between the food environment and the dietary behaviors it is supposed to drive (Giskes et al. 2011), and BMI misclassifies cardiometabolic health in a large share of the population (Tomiyama et al. 2016). Were this work to suspend the equivalence of size with sickness, its structural commitments would likely point somewhere more defensible and durable. Grounded in fundamental-cause and ecosocial reasoning (Krieger 2001;

Link and Phelan 1995; Marmot 2005; Phelan, Link, and Tehranifar 2010), the same energy could argue for changes that improve health across the size spectrum rather than for any body type in particular: wages and labor protections that lift the chronic financial strain, known to register as cardiometabolic and psychological risk, and that enable and encourage leisure time and adequate rest; built and transit environments that make active, unhurried daily life feasible; housing people can afford without the long commutes that erode sleep and community connection. The decisive point is that such measures would be defended as ways to reduce the stressors a body weathers (Geronimus et al. 2006; McEwen 1998) and to support what a weight-inclusive model terms life-enhancing movement and connection (Bacon and Aphramor 2011; Tylka et al. 2014) — not as instruments for reducing population-level body size. Reframed this way, the structural case becomes at once more honest about the evidence and arguably more likely to produce longer-lasting positive effects for population health.

4.5.2 Body size as the wrong target

Beneath both observations lies a more basic one. The conviction that body size is the predominant threat to health does not merely overstate a real risk; it points the field's attention in the wrong direction. The diagnostic instrument at the paradigm's center performs poorly at the task assigned to it: a large fraction of people in the higher BMI categories are metabolically healthy, a meaningful fraction in the 'normal' category are not, and adjusting for fitness, activity, and behavior repeatedly attenuates the size–mortality associations that motivate intervention in the first place (O'Hara and Taylor 2018; Tomiyama et al. 2016). When health-promoting habits are held constant, the mortality gap across BMI categories narrows sharply (Matheson, King, and Everett 2012). Health is produced by many things at once — material security, social connection, rest, movement, freedom from chronic threat — and a science organized around a single number on a height-and-weight chart is poorly situated to direct its attention to any of them. The preoccupation with body size does not so much miss the forest for the trees as fix its gaze on one tree while the relevant forest grows elsewhere.

For research, the immediate implication is as much methodological as substantive: studies of weight and health should measure the pursuit of weight change as an exposure in its own right rather than as a covariate or a stand-in for size, and should treat body size as a candidate mediator of that exposure rather than as the default cause. For clinical and public health practice, the longitudinal pattern documented here adds consequence to the case for weight-inclusive approaches that uncouple care from the scale and target the behaviors and conditions known to benefit people of every size (Bacon and Aphramor 2011; Tylka et al. 2014). And for policy, the results suggest that the strongest levers on the diseases conventionally blamed on fatness may lie in the structural determinants of chronic stress, not in the perpetual and largely unsuccessful effort to make a population thinner. These conclusions rest on observational data and self-reported diagnoses, and the design adjudicates among competing accounts rather than settling causation outright, as the limitations above make clear; but the direction in which the evidence converges is not easily attributed to chance.

4.6 Conclusion

A substantial portion of the ill health charged to fat bodies appears, on this evidence, to be the ill health of the campaign waged against them. Following a national cohort from adolescence into mid-adulthood, it is the sustained pursuit of weight change — and the dieting and more extreme behaviors that pursuit sets in motion — rather than body size as such that accumulates into cardiometabolic and mental health morbidity; body size serves mainly as one of the routes by which that exposure reaches the body, and accounts for only part of it. The finding carries an uncomfortable corollary for the science of weight itself. So long as research keeps body size at its analytic center — even research meant to expose the paradigm's harms — it will keep attributing to body size the harm actually produced by the pursuit of weight change, and recommending more of that pursuit in response. Setting the body's size aside as the object of concern, and taking up in its place the pursuit imposed on the body and the conditions that genuinely shape health, is the reorientation this paradigm has long needed yet continues to resist.

4.7 Tables

Table 4.1

Descriptive Statistics by Analytic Sample

Add Health (Waves I-V)

	Main Analysis			Sensitivity Analysis			
Variable	Missing N = 2,213[1]	**Excluded** N = 6,882[1]	**Dieting** *(wave 1 weights)* N = 12,042[1]	**Dieting** *(wave 5 weights)* N = 8,358[1]	**Dieting** *(post Wave III)* N = 9,246[1]	**All Behaviors** N = 14,203[1]	**Universally-Surveyed Behaviors** N = 14,597[1]
Outcomes: Cardiometabolic							
Cardiometabolic Diagnosis Count	—	0.41 (0.78)	0.49 (0.83)	0.62 (0.91)	0.34 (0.71)	0.48 (0.81)	0.48 (0.81)
Any Cardiometabolic Diagnosis[2]	—	1,886 (27%)	4,031 (34%)	3,447 (41%)	2,221 (24%)	4,606 (33%)	4,715 (33%)
Outcomes: Mental Health							
Mental Health Diagnosis Count	—	0.43 (0.82)	0.61 (0.92)	0.73 (0.99)	0.37 (0.74)	0.59 (0.91)	0.59 (0.91)
Any Mental Health Diagnosis[2]	—	1,787 (26%)	4,001 (37%)	3,332 (42%)	1,958 (24%)	4,577 (36%)	4,702 (35%)
Focal Predictors							
Weight Goal Trajectory	9						
Consistent Maintain[3]		813 (12%)	1,040 (9.1%)	698 (9.1%)	875 (10.0%)	1,040 (7.8%)	1,040 (7.5%)
Consistent Lose		1,151 (17%)	2,567 (20%)	1,798 (20%)	1,816 (19%)	2,567 (17%)	2,567 (17%)
Changing Lose/Maintain		289 (4.2%)	1,925 (16%)	1,396 (16%)	1,460 (15%)	1,925 (14%)	1,925 (13%)
Changing Goals		2,214 (32%)	6,510 (55%)	4,466 (55%)	5,095 (56%)	7,569 (54%)	7,569 (53%)
Consistent Gain		1,677 (24%)	0 (0%)	0 (0%)	0 (0%)	1,102 (7.1%)	1,102 (6.9%)
Consistent Nothing[4]		729 (11%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	394 (2.9%)
Dieted[2]	3,655	1,014 (31%)	4,420 (36%)	3,183 (36%)	3,111 (32%)	—	—
Standard Behaviors (Count)	3,655	1.99 (1.53)	2.82 (1.60)	2.82 (1.61)	2.75 (1.58)	3.40 (1.95)	0.98 (0.93)
Extreme Behaviors (Count)	645	0.18 (0.48)	0.30 (0.61)	0.30 (0.61)	0.25 (0.54)	0.27 (0.58)	0.15 (0.37)

Mediators							
BMI Classification Exposure (Over)	—	0.71 (1.29)	1.46 (1.86)	1.53 (1.89)	1.36 (1.78)	1.30 (1.79)	1.28 (1.78)
BMI Classification Exposure (Under)	—	0.12 (0.43)	0.06 (0.28)	0.05 (0.27)	0.06 (0.28)	0.09 (0.36)	0.09 (0.37)
Weight Self-Image Exposure (Over)	—	0.55 (1.04)	1.18 (1.37)	1.21 (1.38)	1.06 (1.29)	1.02 (1.33)	1.01 (1.32)
Weight Self-Image Exposure (Under)	—	0.67 (1.05)	0.28 (0.66)	0.28 (0.68)	0.28 (0.67)	0.44 (0.88)	0.44 (0.88)
Routine Health Screenings (Count)	—	1.23 (0.93)	1.66 (0.95)	1.70 (0.95)	1.62 (0.95)	1.65 (0.95)	1.64 (0.96)
Individual-Level							
Valid Waves	—						
3[3]		2,659 (39%)	8,140 (70%)	5,959 (72%)	6,133 (68%)	9,432 (69%)	9,608 (68%)
2		2,345 (34%)	3,902 (30%)	2,399 (28%)	3,113 (32%)	4,771 (31%)	4,989 (32%)
1		1,869 (27%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
0		9 (0.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sex	—						
Male[3]		4,075 (59%)	5,206 (45%)	3,230 (45%)	4,210 (48%)	6,979 (51%)	7,202 (51%)
Female		2,807 (41%)	6,836 (55%)	5,128 (55%)	5,036 (52%)	7,224 (49%)	7,395 (49%)
Age	1	16.53 (1.75)	15.73 (1.74)	15.74 (1.74)	15.71 (1.75)	15.78 (1.74)	15.80 (1.74)
Race	—						
White		3,710 (54%)	7,742 (75%)	5,878 (78%)	5,717 (73%)	8,904 (73%)	9,185 (74%)
Asian/Pacific Islander		707 (10%)	777 (3.3%)	474 (3.4%)	671 (3.9%)	928 (3.3%)	953 (3.3%)
Black		1,554 (23%)	2,113 (12%)	1,613 (14%)	1,720 (13%)	2,665 (13%)	2,704 (13%)
Native American		365 (5.3%)	811 (6.3%)	248 (2.6%)	623 (6.4%)	944 (6.3%)	973 (6.3%)
Multiracial/Other Race		546 (7.9%)	599 (3.7%)	145 (1.4%)	515 (4.2%)	762 (4.1%)	782 (4.1%)
Latino/a[2]	12	1,241 (18%)	2,014 (11%)	1,234 (12%)	1,648 (12%)	2,347 (11%)	2,395 (11%)
U.S. Born[2]	38	6,137 (90%)	11,237 (95%)	7,898 (95%)	8,551 (95%)	13,238 (95%)	13,612 (95%)
Avg. Sleep Hours	—	7.67 (1.48)	7.89 (1.40)	7.88 (1.37)	7.93 (1.36)	7.89 (1.40)	7.88 (1.40)

Met MVPA Guidelines[2]	—	4,364 (63%)	7,857 (66%)	5,413 (66%)	6,083 (67%)	9,397 (67%)	9,631 (67%)
Ever Uninsured[2]	886	1,936 (32%)	3,714 (31%)	2,478 (32%)	2,844 (31%)	4,467 (32%)	4,593 (32%)
Household-Level							
Food Choice Autonomy[2]	299	5,395 (82%)	9,814 (80%)	6,847 (81%)	7,534 (81%)	11,585 (80%)	11,909 (80%)
Prop. Dinner w/ Parent(s)	318	0.62 (0.37)	0.69 (0.34)	0.69 (0.35)	0.69 (0.34)	0.68 (0.35)	0.68 (0.35)
Social Origins Score	1,267	-0.03 (1.33)	0.01 (1.34)	0.06 (1.33)	-0.01 (1.34)	0.00 (1.35)	0.00 (1.36)
Parent HS Graduate[2]	349	5,440 (83%)	10,608 (89%)	7,481 (90%)	8,085 (89%)	12,479 (89%)	12,840 (89%)
Neighborhood-Level							
Neighborhood SES Disadvantage	159	-0.08 (0.90)	-0.21 (0.91)	-0.21 (0.91)	-0.19 (0.91)	-0.20 (0.91)	-0.20 (0.91)
Violent Crimes/100,000	—	836.41 (639.41)	664.86 (539.96)	665.58 (540.29)	672.38 (541.56)	671.72 (543.12)	670.24 (542.63)
Neighborhood Feels Safe[2]	127	5,922 (88%)	10,725 (90%)	7,476 (90%)	8,255 (91%)	12,643 (90%)	13,007 (90%)
Metropolitan Area[2]	—	5,363 (78%)	9,597 (76%)	6,639 (76%)	7,335 (76%)	11,330 (77%)	11,658 (77%)
Climate PC1	245	-0.11 (2.87)	0.76 (2.60)	0.77 (2.58)	0.68 (2.62)	0.74 (2.57)	0.74 (2.58)
Climate PC2	245	0.03 (2.13)	-0.09 (2.05)	-0.07 (2.06)	-0.06 (2.08)	-0.05 (2.06)	-0.07 (2.06)
Resources PC1	—	-0.34 (2.04)	-0.74 (1.78)	-0.74 (1.80)	-0.73 (1.78)	-0.72 (1.79)	-0.72 (1.79)
Resources PC2	—	0.25 (1.19)	0.29 (1.20)	0.30 (1.20)	0.30 (1.20)	0.29 (1.19)	0.29 (1.20)
Beta Index 3km	—	1.46 (0.16)	1.46 (0.16)	1.46 (0.16)	1.46 (0.16)	1.46 (0.16)	1.46 (0.16)
Cul-de-sac Density 3km	—	4.70 (3.63)	4.16 (3.37)	4.19 (3.37)	4.14 (3.39)	4.16 (3.35)	4.16 (3.35)
Prop. Roads A40-A48 3km	—	0.75 (0.10)	0.76 (0.10)	0.76 (0.10)	0.76 (0.10)	0.76 (0.10)	0.76 (0.10)
Landscape Patch Density 3km	245	44.45 (21.39)	41.50 (21.56)	41.75 (21.53)	41.22 (21.54)	41.66 (21.55)	41.53 (21.54)
Class 4 Area 3km	245	0.01 (1.00)	0.11 (1.11)	0.12 (1.11)	0.09 (1.10)	0.11 (1.10)	0.11 (1.10)
Class 5 Area 3km	245	-0.02 (1.01)	0.10 (1.04)	0.11 (1.04)	0.11 (1.04)	0.10 (1.04)	0.10 (1.05)

[1] All Ns are unweighted w/ survey-weighted statistics for continuous variables. Continuous: Mean (SD); Categorical: N (%).

[2] Binary indicators (yes/no) display the affirmative category only; the reference is the negation.

[3] Reference category in regression models.

[4] Reference category in universally-surveyed behaviors models.

4.7.1 Main Analysis

Table 4.2

Main Analysis: Cardiometabolic Diagnosis (Count)

Survey Design-Based Negative Binomial Regression

All Focal Predictors Shown, Otherwise Significant Effects Only

	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.85***	(0.77, 0.93)	1.22*	(1.02, 1.47)	1.10	(0.91, 1.32)	1.11	(0.93, 1.34)	1.11	(0.92, 1.34)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.96***	(1.65, 2.33)	1.56***	(1.29, 1.87)	1.60***	(1.33, 1.93)	1.58***	(1.32, 1.90)	1.58***	(1.31, 1.90)
Changing Lose/Maintain	1.62***	(1.38, 1.90)	1.38***	(1.18, 1.62)	1.41***	(1.20, 1.65)	1.40***	(1.19, 1.64)	1.39***	(1.19, 1.63)
Changing Goals	1.42***	(1.22, 1.66)	1.88***	(1.54, 2.29)	1.82***	(1.49, 2.21)	1.84***	(1.51, 2.23)	1.84***	(1.51, 2.23)
Dieted			1.21***	(1.10, 1.33)	1.29***	(1.17, 1.42)	1.29***	(1.17, 1.42)	1.29***	(1.17, 1.42)
Behaviors (Count)			1.04**	(1.01, 1.08)	1.03*	(1.00, 1.07)	1.03*	(1.00, 1.06)	1.03*	(1.00, 1.06)
Extreme Behaviors (Count)			1.08**	(1.02, 1.14)	1.08**	(1.02, 1.15)	1.07*	(1.02, 1.14)	1.07*	(1.01, 1.13)
Female					0.69***	(0.62, 0.78)	0.69***	(0.61, 0.77)	0.69***	(0.61, 0.77)
Age					1.03*	(1.00, 1.06)	1.03*	(1.01, 1.06)	1.03*	(1.01, 1.06)
Race[3]										
White					0.95	(0.85, 1.06)	0.99	(0.89, 1.11)	1.08	(0.97, 1.20)
Asian/Pacific Islander					1.02	(0.81, 1.28)	1.04	(0.83, 1.30)	1.01	(0.81, 1.27)
Black					1.48***	(1.35, 1.62)	1.41***	(1.28, 1.55)	1.27***	(1.14, 1.42)
Native American					0.79	(0.61, 1.03)	0.76*	(0.59, 0.98)	0.73**	(0.59, 0.92)
Multiracial/Other Race					0.60**	(0.43, 0.84)	0.57***	(0.41, 0.80)	0.54***	(0.39, 0.75)

U.S. Born	1.37**	(1.10, 1.71)	1.38**	(1.10, 1.72)	1.36**	(1.10, 1.69)
Ever Uninsured	1.12**	(1.03, 1.22)	1.07	(0.98, 1.16)	1.06	(0.97, 1.15)
Social Origins Score			0.92***	(0.89, 0.96)	0.94**	(0.90, 0.98)
Neighborhood SES Disadvantage					1.11**	(1.04, 1.18)
Beta Index 3km					0.64*	(0.43, 0.97)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.3

Main Analysis: Mental Health Diagnoses (Count) Survey Design-Based Negative Binomial Regression *All Focal Predictors Shown, Otherwise Significant Effects Only*										
	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.86***	(0.79, 0.93)	0.95	(0.83, 1.09)	1.11	(0.95, 1.29)	1.11	(0.95, 1.30)	1.11	(0.95, 1.30)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.52***	(1.30, 1.78)	1.25**	(1.07, 1.46)	1.24**	(1.06, 1.45)	1.25**	(1.07, 1.46)	1.25**	(1.08, 1.46)
Changing Lose/Maintain	1.34***	(1.15, 1.56)	1.21*	(1.03, 1.41)	1.23**	(1.05, 1.44)	1.23**	(1.05, 1.44)	1.23**	(1.05, 1.44)
Changing Goals	1.22**	(1.06, 1.41)	1.30**	(1.08, 1.56)	1.36**	(1.13, 1.64)	1.37***	(1.14, 1.65)	1.37***	(1.14, 1.65)
Dieted			1.18***	(1.09, 1.27)	1.08*	(1.00, 1.17)	1.08	(1.00, 1.17)	1.10*	(1.01, 1.19)
Behaviors (Count)			1.02	(0.99, 1.04)	1.03	(1.00, 1.06)	1.02	(0.99, 1.05)	1.03	(1.00, 1.06)
Extreme Behaviors (Count)			1.20***	(1.14, 1.26)	1.18***	(1.13, 1.24)	1.18***	(1.12, 1.24)	1.17***	(1.12, 1.23)
Female					1.67***	(1.54, 1.80)	1.66***	(1.54, 1.80)	1.66***	(1.53, 1.79)
Age					0.97**	(0.94, 0.99)	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)
Race[3]										
White					1.77***	(1.61, 1.95)	1.82***	(1.64, 2.01)	1.82***	(1.63, 2.04)
Asian/Pacific Islander					0.45***	(0.33, 0.62)	0.45***	(0.33, 0.62)	0.44***	(0.32, 0.61)
Black					0.66***	(0.59, 0.74)	0.63***	(0.56, 0.71)	0.63***	(0.55, 0.72)
Native American					0.79**	(0.67, 0.94)	0.80**	(0.67, 0.94)	0.81*	(0.68, 0.95)
Multiracial/Other Race					0.49***	(0.35, 0.70)	0.48***	(0.34, 0.69)	0.48***	(0.34, 0.68)
Latino/a					0.80**	(0.67, 0.94)	0.80*	(0.67, 0.96)	0.84	(0.69, 1.03)
U.S. Born					1.59**	(1.18, 2.14)	1.56**	(1.16, 2.10)	1.55**	(1.16, 2.07)

Avg. Sleep Hours	0.97*	(0.94, 1.00)	0.97*	(0.94, 1.00)	0.97	(0.94, 1.00)
Ever Uninsured	1.25***	(1.16, 1.35)	1.24***	(1.14, 1.34)	1.23***	(1.14, 1.34)
Prop. Dinners w/ Parent(s)			0.86**	(0.78, 0.95)	0.88*	(0.79, 0.97)
Neighborhood Feels Safe					0.84**	(0.74, 0.95)
Climate PC1					1.02*	(1.00, 1.05)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.4

BMI-WSI-HCE Mediation-Adjustment: Cardiometabolic Diagnosis (Count)

Survey Design-Based Negative Binomial Regression

All Mediation Effects Shown, Otherwise Significant Predictors Only (Main Analysis displayed in leftmost column for reference)

	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M4: + Neighborhood		M4.1: + BMI		M4.2: + WSI		M4.3: + HCE		M4.4: + All	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	1.11	(0.92, 1.34)	1.19	(0.80, 1.75)	2.24**	(1.38, 3.64)	1.57	(0.69, 3.55)	2.03**	(1.26, 3.27)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.58***	(1.31, 1.90)	1.17	(0.97, 1.41)	1.14	(0.94, 1.39)	1.58***	(1.31, 1.91)	1.09	(0.90, 1.33)
Changing Lose/Maintain	1.39***	(1.19, 1.63)	1.23*	(1.05, 1.43)	1.22*	(1.04, 1.44)	1.39***	(1.19, 1.64)	1.20*	(1.02, 1.41)
Changing Goals	1.84***	(1.51, 2.23)	1.54***	(1.28, 1.86)	1.59***	(1.31, 1.92)	1.84***	(1.51, 2.24)	1.51***	(1.25, 1.82)
Dieted	1.29***	(1.17, 1.42)	1.16**	(1.05, 1.28)	1.15**	(1.04, 1.27)	1.29***	(1.17, 1.42)	1.13*	(1.02, 1.25)
Behaviors (Count)	1.03*	(1.00, 1.06)	1.00	(0.97, 1.03)	1.01	(0.98, 1.04)	1.03*	(1.00, 1.06)	1.00	(0.97, 1.03)
Extreme Behaviors (Count)	1.07*	(1.01, 1.13)	1.07*	(1.01, 1.13)	1.03	(0.97, 1.09)	1.07*	(1.02, 1.14)	1.05	(1.00, 1.11)
Female	0.69***	(0.61, 0.77)	0.83**	(0.74, 0.93)	0.69***	(0.62, 0.78)	0.68***	(0.60, 0.76)	0.79***	(0.70, 0.89)
BMI Classification Exposure (Over)			1.17***	(1.14, 1.20)					1.13***	(1.10, 1.16)
BMI Classification Exposure (Under)			0.71**	(0.57, 0.88)					0.71**	(0.56, 0.89)
Weight Self-Image Exposure (Over)					1.22***	(1.18, 1.26)			1.09***	(1.05, 1.13)
Weight Self-Image Exposure (Under)					0.99	(0.93, 1.06)			1.03	(0.97, 1.11)
Yearly Routine Physicals							1.05	(1.00, 1.10)	1.05	(1.00, 1.11)
Age	1.03*	(1.01, 1.06)	1.03**	(1.01, 1.06)	1.03**	(1.01, 1.06)	1.03*	(1.01, 1.06)	1.03**	(1.01, 1.06)

Race[3]										
White	1.08	(0.97, 1.20)	1.11	(1.00, 1.24)	1.06	(0.95, 1.18)	1.08	(0.97, 1.21)	1.10	(0.98, 1.23)
Asian/Pacific Islander	1.01	(0.81, 1.27)	1.07	(0.86, 1.33)	1.05	(0.84, 1.31)	1.03	(0.82, 1.28)	1.08	(0.87, 1.34)
Black	1.27***	(1.14, 1.42)	1.18**	(1.06, 1.30)	1.29***	(1.16, 1.43)	1.26***	(1.13, 1.41)	1.19**	(1.07, 1.32)
Native American	0.73**	(0.59, 0.92)	0.76*	(0.61, 0.94)	0.74**	(0.60, 0.93)	0.73**	(0.59, 0.91)	0.75*	(0.61, 0.94)
Multiracial/Other Race	0.54***	(0.39, 0.75)	0.53***	(0.38, 0.74)	0.55***	(0.39, 0.78)	0.54***	(0.38, 0.75)	0.54***	(0.39, 0.75)
U.S. Born	1.36**	(1.10, 1.69)	1.27*	(1.02, 1.59)	1.36**	(1.09, 1.70)	1.36**	(1.09, 1.68)	1.29*	(1.03, 1.61)
Social Origins Score	0.94**	(0.90, 0.98)	0.96	(0.93, 1.00)	0.95**	(0.91, 0.99)	0.94**	(0.90, 0.98)	0.96*	(0.92, 1.00)
Neighborhood SES Disadvantage	1.11**	(1.04, 1.18)	1.08*	(1.01, 1.15)	1.08*	(1.01, 1.16)	1.11**	(1.04, 1.18)	1.08*	(1.01, 1.15)
Beta Index 3km	0.64*	(0.43, 0.97)	0.65*	(0.44, 0.97)	0.64*	(0.43, 0.96)	0.64*	(0.42, 0.96)	0.64*	(0.43, 0.96)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.5

BMI-WSI-HCE Mediation-Adjustment: Mental Health Diagnoses (Count)

Survey Design-Based Negative Binomial Regression

All Mediation Effects Shown, Otherwise Significant Predictors Only (Main Analysis displayed in leftmost column for reference)

	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M4: + Neighborhood		M4.1: + BMI		M4.2: + WSI		M4.3: + HCE		M4.4: + All	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	1.11	(0.95, 1.30)	1.15	(0.87, 1.53)	0.25***	(0.16, 0.41)	0.89	(0.65, 1.21)	0.29***	(0.16, 0.53)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.25**	(1.08, 1.46)	1.28**	(1.09, 1.50)	1.20*	(1.03, 1.41)	1.26**	(1.08, 1.47)	1.22*	(1.04, 1.42)
Changing Lose/Maintain	1.23**	(1.05, 1.44)	1.24**	(1.06, 1.46)	1.22*	(1.04, 1.43)	1.23**	(1.05, 1.45)	1.22*	(1.04, 1.43)
Changing Goals	1.37***	(1.14, 1.65)	1.39***	(1.15, 1.68)	1.34**	(1.11, 1.61)	1.37***	(1.14, 1.65)	1.35**	(1.12, 1.63)
Dieted	1.10*	(1.01, 1.19)	1.11*	(1.02, 1.20)	1.08	(1.0, 1.18)	1.09*	(1.01, 1.18)	1.08	(1.0, 1.18)
Behaviors (Count)	1.03	(1.00, 1.06)	1.03	(1.00, 1.06)	1.03	(1.00, 1.05)	1.02	(1.00, 1.05)	1.03	(1.00, 1.06)
Extreme Behaviors (Count)	1.17***	(1.12, 1.23)	1.17***	(1.12, 1.23)	1.16***	(1.11, 1.22)	1.18***	(1.12, 1.23)	1.16***	(1.11, 1.22)
Female	1.66***	(1.53, 1.79)	1.63***	(1.51, 1.77)	1.66***	(1.54, 1.79)	1.62***	(1.50, 1.76)	1.57***	(1.44, 1.71)
BMI Classification Exposure (Over)			0.99	(0.97, 1.01)					0.96*	(0.94, 0.99)
BMI Classification Exposure (Under)			1.08	(0.96, 1.22)					1.07	(0.93, 1.22)
Weight Self-Image Exposure (Over)					1.03	(1.00, 1.06)			1.07**	(1.02, 1.11)
Weight Self-Image Exposure (Under)					1.06*	(1.00, 1.12)			1.05	(0.98, 1.11)
Yearly Routine Physicals							1.09***	(1.04, 1.14)	1.09***	(1.04, 1.14)
Age	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)

Race[3]										
White	1.82***	(1.63, 2.04)	1.82***	(1.63, 2.04)	1.82***	(1.62, 2.03)	1.83***	(1.64, 2.06)	1.81***	(1.62, 2.02)
Asian/Pacific Islander	0.44***	(0.32, 0.61)	0.44***	(0.32, 0.61)	0.44***	(0.32, 0.61)	0.46***	(0.33, 0.63)	0.46***	(0.33, 0.63)
Black	0.63***	(0.55, 0.72)	0.63***	(0.55, 0.73)	0.63***	(0.55, 0.72)	0.62***	(0.54, 0.71)	0.63***	(0.55, 0.73)
Native American	0.81*	(0.68, 0.95)	0.80**	(0.68, 0.95)	0.81*	(0.69, 0.96)	0.81*	(0.69, 0.96)	0.81*	(0.68, 0.95)
Multiracial/Other Race	0.48***	(0.34, 0.68)	0.48***	(0.34, 0.68)	0.48***	(0.34, 0.69)	0.48***	(0.33, 0.68)	0.48***	(0.34, 0.68)
U.S. Born	1.55**	(1.16, 2.07)	1.55**	(1.16, 2.08)	1.55**	(1.16, 2.07)	1.55**	(1.17, 2.07)	1.58**	(1.19, 2.10)
Ever Uninsured	1.23***	(1.14, 1.34)	1.23***	(1.14, 1.33)	1.23***	(1.14, 1.34)	1.26***	(1.16, 1.37)	1.26***	(1.16, 1.37)
Prop. Dinners w/ Parent(s)	0.88*	(0.79, 0.97)	0.88*	(0.80, 0.97)	0.88*	(0.79, 0.97)	0.87**	(0.79, 0.96)	0.87**	(0.79, 0.97)
Neighborhood Feels Safe	0.84**	(0.74, 0.95)	0.84**	(0.74, 0.95)	0.84**	(0.74, 0.95)	0.83**	(0.73, 0.94)	0.83**	(0.74, 0.94)
Climate PC1	1.02*	(1.00, 1.05)	1.02*	(1.00, 1.05)	1.02*	(1.00, 1.05)	1.02	(1.00, 1.04)	1.02	(1.00, 1.04)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.6

Main Analysis: Cardiometabolic × Mental Health (Constrained)										
Survey Design-Based Bivariate Logistic Regression *Only Focal Predictors Shown*										
	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variables	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Joint ORs[3]										
Joint OR	2.03***	(1.81, 2.27)	1.96***	(1.75, 2.19)	2.19***	(1.94, 2.48)	2.19***	(1.93, 2.48)	2.19***	(1.93, 2.48)
Cardiometabolic margins										
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.80***	(1.45, 2.23)	1.36**	(1.08, 1.72)	1.42**	(1.12, 1.81)	1.41**	(1.11, 1.80)	1.41**	(1.10, 1.81)
Changing Lose/Maintain	1.52***	(1.22, 1.89)	1.25*	(1.00, 1.57)	1.30*	(1.04, 1.63)	1.29*	(1.03, 1.62)	1.30*	(1.03, 1.63)
Changing Goals	1.24*	(1.02, 1.51)	1.84***	(1.44, 2.34)	1.76***	(1.37, 2.28)	1.78***	(1.38, 2.30)	1.80***	(1.39, 2.32)
Dieted			1.28***	(1.13, 1.45)	1.36***	(1.20, 1.54)	1.36***	(1.20, 1.55)	1.37***	(1.21, 1.55)
Behaviors (Count)			1.06*	(1.01, 1.10)	1.05	(1.00, 1.09)	1.04	(1.00, 1.09)	1.05*	(1.00, 1.09)
Extreme Behaviors (Count)			1.08	(1.00, 1.17)	1.08	(1.00, 1.17)	1.08	(0.99, 1.17)	1.07	(0.99, 1.16)
Female					0.65***	(0.56, 0.75)	0.64***	(0.55, 0.75)	0.64***	(0.55, 0.74)
Mental Health margins										
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.71***	(1.40, 2.10)	1.27*	(1.03, 1.58)	1.29*	(1.03, 1.62)	1.30*	(1.04, 1.63)	1.31*	(1.04, 1.63)
Changing Lose/Maintain	1.41***	(1.17, 1.69)	1.18	(0.98, 1.44)	1.21	(0.98, 1.48)	1.21	(0.98, 1.49)	1.22	(0.98, 1.50)
Changing Goals	1.25*	(1.04, 1.50)	1.47***	(1.17, 1.85)	1.58***	(1.24, 2.01)	1.58***	(1.24, 2.02)	1.60***	(1.26, 2.04)

Dieted	1.28***	(1.14, 1.43)	1.13	(1.00, 1.27)	1.13	(1.00, 1.27)	1.14*	(1.01, 1.29)
Behaviors (Count)	1.04	(1.00, 1.08)	1.06*	(1.01, 1.10)	1.05*	(1.01, 1.10)	1.05*	(1.01, 1.10)
Extreme Behaviors (Count)	1.30***	(1.19, 1.43)	1.31***	(1.19, 1.44)	1.30***	(1.18, 1.44)	1.30***	(1.18, 1.43)
Female			2.02***	(1.81, 2.26)	2.02***	(1.80, 2.26)	2.01***	(1.79, 2.25)

[1] Unweighted sample size; coefficients and 95% CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] The Joint OR is the odds ratio for co-occurence of the cardiometabolic and mental health outcomes (their comorbidity).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.7

Main Analysis: Cardiometabolic × Mental Health (Unconstrained) Survey Design-Based Bivariate Logistic Regression *Only Focal Predictors Shown*										
	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variables	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Joint ORs[3]										
Joint OR	1.50	(0.98, 2.28)	2.20***	(1.42, 3.42)	3.36**	(1.43, 7.86)	3.61**	(1.40, 9.33)	2.96*	(1.07, 8.22)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.25	(0.79, 1.98)	1.14	(0.68, 1.93)	1.23	(0.69, 2.18)	1.22	(0.68, 2.18)	1.25	(0.70, 2.24)
Changing Lose/Maintain	1.28	(0.77, 2.14)	1.26	(0.73, 2.17)	1.38	(0.75, 2.54)	1.36	(0.73, 2.51)	1.40	(0.76, 2.58)
Changing Goals	1.42	(0.93, 2.15)	0.81	(0.51, 1.29)	0.78	(0.46, 1.31)	0.77	(0.45, 1.30)	0.74	(0.44, 1.23)
Dieted			1.43*	(1.07, 1.90)	1.53**	(1.13, 2.08)	1.54**	(1.13, 2.10)	1.56**	(1.15, 2.12)
Behaviors (Count)			0.94	(0.86, 1.03)	0.95	(0.86, 1.06)	0.96	(0.86, 1.06)	0.95	(0.86, 1.06)
Extreme Behaviors (Count)			0.92	(0.78, 1.09)	0.97	(0.81, 1.17)	0.98	(0.81, 1.18)	0.98	(0.82, 1.18)
Female					0.81	(0.63, 1.05)	0.81	(0.63, 1.04)	0.81	(0.63, 1.04)
Cardiometabolic margins										
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.79***	(1.44, 2.23)	1.37**	(1.08, 1.73)	1.43**	(1.12, 1.81)	1.41**	(1.11, 1.80)	1.42**	(1.11, 1.82)
Changing Lose/Maintain	1.51***	(1.22, 1.88)	1.25	(1.00, 1.57)	1.29*	(1.03, 1.62)	1.29*	(1.02, 1.62)	1.29*	(1.02, 1.63)
Changing Goals	1.24*	(1.02, 1.50)	1.83***	(1.43, 2.34)	1.75***	(1.36, 2.26)	1.77***	(1.37, 2.28)	1.78***	(1.37, 2.29)
Dieted			1.28***	(1.13, 1.45)	1.37***	(1.21, 1.55)	1.37***	(1.21, 1.56)	1.38***	(1.22, 1.57)
Behaviors (Count)			1.06*	(1.01, 1.10)	1.05*	(1.00, 1.09)	1.05*	(1.00, 1.09)	1.05*	(1.00, 1.09)
Extreme Behaviors (Count)			1.08	(0.99, 1.17)	1.08	(1.00, 1.18)	1.08	(0.99, 1.17)	1.08	(1.0, 1.17)
Female					0.65***	(0.56, 0.75)	0.64***	(0.55, 0.75)	0.64***	(0.55, 0.74)

Mental Health margins										
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.71***	(1.40, 2.09)	1.29*	(1.04, 1.60)	1.30*	(1.04, 1.62)	1.31*	(1.05, 1.63)	1.31*	(1.05, 1.64)
Changing Lose/Maintain	1.41***	(1.17, 1.69)	1.20	(0.99, 1.46)	1.21	(0.99, 1.49)	1.21	(0.99, 1.49)	1.22	(0.99, 1.51)
Changing Goals	1.24*	(1.03, 1.50)	1.48***	(1.18, 1.86)	1.58***	(1.24, 2.01)	1.58***	(1.24, 2.02)	1.58***	(1.24, 2.02)
Dieted			1.27***	(1.14, 1.42)	1.12	(1.00, 1.27)	1.12	(1.0, 1.27)	1.14*	(1.01, 1.28)
Behaviors (Count)			1.04	(1.00, 1.08)	1.06*	(1.01, 1.10)	1.05*	(1.01, 1.10)	1.05*	(1.01, 1.10)
Extreme Behaviors (Count)			1.30***	(1.19, 1.43)	1.30***	(1.18, 1.44)	1.29***	(1.17, 1.43)	1.29***	(1.17, 1.42)
Female					2.01***	(1.79, 2.25)	2.00***	(1.79, 2.24)	2.00***	(1.79, 2.24)

[1] Unweighted sample size; coefficients and 95% CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] The Joint OR is the odds ratio for co-occurence of the cardiometabolic and mental health outcomes (their comorbidity).
Covariate estimates in this group are the effect of each covariate on the strength of that comorbidity association (a ratio of odds ratios).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.8

Main Analysis (BMI-WSI-HCE Mediation Adjustment):
Cardiometabolic × Mental Health (Constrained)

Survey Design-Based Bivariate Logistic Regression
Only Focal Predictors Shown

	Analytic sample: *dieting and behaviors* | N = 12,042[1]							
	M4.1: + BMI		M4.2: + WSI		M4.3: + HCE		M4.4: + All	
Variables	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Joint ORs[3]								
Joint OR	2.27***	(2.00, 2.58)	2.21***	(1.94, 2.51)	2.19***	(1.94, 2.48)	2.27***	(2.00, 2.57)
Cardiometabolic margins								
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	0.95	(0.74, 1.23)	0.90	(0.70, 1.17)	1.42**	(1.11, 1.81)	0.86	(0.67, 1.11)
Changing Lose/Maintain	1.11	(0.88, 1.40)	1.09	(0.86, 1.38)	1.30*	(1.03, 1.64)	1.07	(0.85, 1.35)
Changing Goals	1.46**	(1.14, 1.87)	1.51**	(1.17, 1.94)	1.81***	(1.40, 2.34)	1.42**	(1.10, 1.82)
Dieted	1.20**	(1.05, 1.38)	1.18*	(1.03, 1.36)	1.37***	(1.21, 1.55)	1.16*	(1.01, 1.34)
Behaviors (Count)	1.00	(0.96, 1.05)	1.01	(0.97, 1.06)	1.05*	(1.00, 1.09)	1.00	(0.96, 1.05)
Extreme Behaviors (Count)	1.07	(0.99, 1.16)	1.02	(0.94, 1.11)	1.07	(0.99, 1.16)	1.05	(0.96, 1.14)
Female	0.82**	(0.70, 0.95)	0.65***	(0.56, 0.76)	0.64***	(0.55, 0.74)	0.77**	(0.66, 0.90)
BMI Classification Exposure (Over)	1.24***	(1.19, 1.28)					1.17***	(1.13, 1.22)
BMI Classification Exposure (Under)	0.63***	(0.49, 0.82)					0.62***	(0.47, 0.82)
Weight Self-Image Exposure (Over)			1.32***	(1.26, 1.39)			1.14***	(1.08, 1.20)
Weight Self-Image Exposure (Under)			1.00	(0.92, 1.09)			1.07	(0.98, 1.18)
Yearly Routine Physicals					1.03	(0.96, 1.11)	1.04	(0.96, 1.12)

Mental Health margins								
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.33*	(1.06, 1.69)	1.24	(0.97, 1.58)	1.32*	(1.05, 1.64)	1.25	(0.98, 1.60)
Changing Lose/Maintain	1.23	(0.99, 1.52)	1.19	(0.96, 1.48)	1.22	(0.99, 1.50)	1.19	(0.96, 1.48)
Changing Goals	1.62***	(1.27, 2.08)	1.55***	(1.21, 1.99)	1.60***	(1.26, 2.04)	1.58***	(1.23, 2.01)
Dieted	1.16*	(1.02, 1.31)	1.13	(0.99, 1.28)	1.14*	(1.01, 1.29)	1.13	(0.99, 1.29)
Behaviors (Count)	1.06*	(1.01, 1.11)	1.05*	(1.01, 1.10)	1.05*	(1.01, 1.10)	1.06*	(1.01, 1.10)
Extreme Behaviors (Count)	1.30***	(1.18, 1.43)	1.28***	(1.17, 1.41)	1.30***	(1.18, 1.44)	1.28***	(1.17, 1.41)
Female	1.97***	(1.75, 2.22)	2.02***	(1.80, 2.26)	1.97***	(1.76, 2.20)	1.88***	(1.67, 2.11)
BMI Classification Exposure (Over)	0.99	(0.96, 1.02)					0.96*	(0.92, 1.00)
BMI Classification Exposure (Under)	1.16	(0.96, 1.40)					1.15	(0.92, 1.43)
Weight Self-Image Exposure (Over)			1.04	(0.99, 1.09)			1.09*	(1.02, 1.16)
Weight Self-Image Exposure (Under)			1.07	(0.98, 1.16)			1.05	(0.95, 1.15)
Yearly Routine Physicals					1.11**	(1.03, 1.19)	1.11**	(1.03, 1.19)

[1] Unweighted sample size; coefficients and 95% CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant: **Values > 1** indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] The Joint OR is the odds ratio for co-occurence of the cardiometabolic and mental health outcomes (their comorbidity).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.9

Main Analysis (BMI-WSI-HCE Mediation Adjustment):
Cardiometabolic × Mental Health (Unconstrained)

Survey Design-Based Bivariate Logistic Regression
Only Focal Predictors Shown

	Analytic sample: *dieting and behaviors* | N = 12,042[1]							
	M4.1: + BMI		M4.2: + WSI		M4.3: + HCE		M4.4: + All	
Variables	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Joint ORs[3]								
Joint OR	3.72*	(1.23, 11.2)	2.66	(0.56, 12.8)	4.77*	(1.37, 16.6)	3.01	(0.70, 12.9)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.23	(0.68, 2.20)	1.07	(0.59, 1.97)	1.25	(0.70, 2.24)	1.04	(0.57, 1.88)
Changing Lose/Maintain	1.40	(0.75, 2.59)	1.38	(0.75, 2.55)	1.40	(0.76, 2.58)	1.33	(0.72, 2.46)
Changing Goals	0.72	(0.44, 1.19)	0.68	(0.42, 1.12)	0.74	(0.44, 1.23)	0.68	(0.41, 1.11)
Dieted	1.65**	(1.19, 2.28)	1.49*	(1.07, 2.08)	1.57**	(1.16, 2.14)	1.58**	(1.13, 2.20)
Behaviors (Count)	0.94	(0.84, 1.04)	0.93	(0.83, 1.04)	0.96	(0.86, 1.06)	0.93	(0.84, 1.04)
Extreme Behaviors (Count)	1.01	(0.85, 1.21)	0.96	(0.80, 1.16)	0.98	(0.82, 1.19)	0.97	(0.81, 1.16)
Female	0.78	(0.59, 1.02)	0.76*	(0.59, 0.97)	0.82	(0.63, 1.06)	0.70*	(0.53, 0.92)
BMI Classification Exposure (Over)	0.99	(0.92, 1.07)					0.90*	(0.82, 0.99)
BMI Classification Exposure (Under)	0.65*	(0.44, 0.98)					0.67	(0.43, 1.02)
Weight Self-Image Exposure (Over)			1.12*	(1.00, 1.25)			1.24***	(1.09, 1.41)
Weight Self-Image Exposure (Under)			0.99	(0.80, 1.23)			1.04	(0.82, 1.31)
Yearly Routine Physicals					1.01	(0.87, 1.17)	0.98	(0.85, 1.15)

Cardiometabolic margins								
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	0.96	(0.75, 1.23)	0.91	(0.70, 1.17)	1.43**	(1.12, 1.83)	0.87	(0.67, 1.12)
Changing Lose/Maintain	1.10	(0.87, 1.39)	1.08	(0.85, 1.37)	1.29*	(1.03, 1.64)	1.07	(0.84, 1.36)
Changing Goals	1.44**	(1.12, 1.84)	1.49**	(1.15, 1.91)	1.79***	(1.39, 2.32)	1.40**	(1.09, 1.80)
Dieted	1.21**	(1.06, 1.38)	1.19*	(1.03, 1.36)	1.38***	(1.21, 1.56)	1.16*	(1.01, 1.34)
Behaviors (Count)	1.01	(0.96, 1.05)	1.01	(0.97, 1.06)	1.05*	(1.00, 1.09)	1.00	(0.96, 1.05)
Extreme Behaviors (Count)	1.07	(0.99, 1.17)	1.03	(0.94, 1.12)	1.08	(1.00, 1.17)	1.05	(0.96, 1.14)
Female	0.82**	(0.71, 0.95)	0.65***	(0.56, 0.75)	0.63***	(0.55, 0.74)	0.77***	(0.66, 0.90)
BMI Classification Exposure (Over)	1.24***	(1.19, 1.29)					1.18***	(1.13, 1.22)
BMI Classification Exposure (Under)	0.63***	(0.49, 0.82)					0.62***	(0.47, 0.81)
Weight Self-Image Exposure (Over)			1.32***	(1.26, 1.39)			1.14***	(1.08, 1.20)
Weight Self-Image Exposure (Under)			1.00	(0.92, 1.09)			1.07	(0.98, 1.17)
Yearly Routine Physicals					1.03	(0.96, 1.10)	1.03	(0.96, 1.11)
Mental Health margins								
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.33*	(1.05, 1.68)	1.24	(0.97, 1.58)	1.33*	(1.06, 1.65)	1.25	(0.98, 1.59)
Changing Lose/Maintain	1.23	(0.99, 1.52)	1.20	(0.97, 1.48)	1.23	(1.00, 1.52)	1.19	(0.96, 1.48)
Changing Goals	1.59***	(1.25, 2.04)	1.52***	(1.19, 1.94)	1.58***	(1.24, 2.02)	1.55***	(1.21, 1.97)
Dieted	1.16*	(1.02, 1.31)	1.12	(0.99, 1.28)	1.14*	(1.01, 1.28)	1.13	(1.00, 1.29)
Behaviors (Count)	1.05*	(1.01, 1.10)	1.05*	(1.01, 1.10)	1.05*	(1.01, 1.10)	1.05*	(1.01, 1.10)
Extreme Behaviors (Count)	1.29***	(1.17, 1.42)	1.28***	(1.16, 1.41)	1.30***	(1.18, 1.43)	1.28***	(1.16, 1.41)
Female	1.97***	(1.75, 2.22)	2.01***	(1.79, 2.25)	1.96***	(1.75, 2.19)	1.86***	(1.66, 2.10)

BMI Classification Exposure (Over)	0.99	(0.96, 1.03)					0.95*	(0.91, 1.00)
BMI Classification Exposure (Under)	1.16	(0.96, 1.40)					1.16	(0.93, 1.43)
Weight Self-Image Exposure (Over)			1.04	(0.99, 1.09)			1.09**	(1.02, 1.16)
Weight Self-Image Exposure (Under)			1.06	(0.98, 1.16)			1.04	(0.95, 1.15)
Yearly Routine Physicals					1.10**	(1.03, 1.19)	1.10**	(1.03, 1.19)

[1] Unweighted sample size; coefficients and 95% CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] The Joint OR is the odds ratio for co-occurence of the cardiometabolic and mental health outcomes (their comorbidity).
Covariate estimates in this group are the effect of each covariate on the strength of that comorbidity association (a ratio of odds ratios).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.10

Sex Interactions: Cardiometabolic Diagnosis (Count) Survey Design-Based Negative Binomial Regression *All Interaction Effects Shown, Otherwise Significant Predictors Only*										
	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.83***	(0.76, 0.91)	1.19	(0.99, 1.43)	1.09	(0.91, 1.32)	1.11	(0.92, 1.34)	1.11	(0.91, 1.34)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.89***	(1.48, 2.43)	1.45**	(1.13, 1.86)	1.47**	(1.14, 1.89)	1.44**	(1.12, 1.85)	1.44**	(1.11, 1.86)
Changing Lose/Maintain	1.75***	(1.41, 2.18)	1.40**	(1.13, 1.73)	1.45***	(1.17, 1.78)	1.42**	(1.15, 1.75)	1.43***	(1.16, 1.76)
Changing Goals	1.19	(0.98, 1.44)	1.61***	(1.28, 2.03)	1.58***	(1.26, 1.99)	1.61***	(1.28, 2.01)	1.62***	(1.29, 2.03)
Female	0.62***	(0.47, 0.82)	0.58***	(0.44, 0.77)	0.59***	(0.44, 0.78)	0.58***	(0.43, 0.78)	0.59***	(0.44, 0.79)
Weight Goal Trajectory * Female										
Consistent Lose * Female	1.23	(0.87, 1.72)	1.28	(0.88, 1.85)	1.22	(0.84, 1.77)	1.23	(0.85, 1.79)	1.22	(0.84, 1.78)
Changing Lose/Maintain * Female	0.97	(0.69, 1.36)	1.06	(0.74, 1.51)	1.00	(0.70, 1.44)	1.02	(0.71, 1.46)	1.01	(0.70, 1.44)
Changing Goals * Female	1.43*	(1.05, 1.96)	1.39*	(1.01, 1.92)	1.34	(0.97, 1.85)	1.33	(0.96, 1.84)	1.30	(0.94, 1.80)
Dieted			1.32***	(1.15, 1.53)	1.34***	(1.16, 1.54)	1.34***	(1.17, 1.55)	1.35***	(1.17, 1.55)
Dieted * Female			0.92	(0.76, 1.11)	0.93	(0.77, 1.13)	0.93	(0.76, 1.12)	0.92	(0.77, 1.12)
Behaviors (Count)			1.04**	(1.01, 1.08)	1.04*	(1.01, 1.08)	1.04*	(1.01, 1.08)	1.04*	(1.01, 1.08)
Behaviors (Count) * Female			0.98	(0.93, 1.03)	0.98	(0.94, 1.03)	0.98	(0.93, 1.03)	0.98	(0.93, 1.03)
Extreme Behaviors (Count)			1.03	(0.92, 1.16)	1.02	(0.91, 1.15)	1.02	(0.90, 1.15)	1.02	(0.90, 1.15)
Extreme Behaviors (Count) * Female			1.10	(0.96, 1.26)	1.10	(0.96, 1.25)	1.09	(0.95, 1.25)	1.08	(0.94, 1.24)

Age	1.03*	(1.00, 1.06)	1.03*	(1.01, 1.06)	1.03*	(1.01, 1.06)
Race[3]						
White	0.95	(0.86, 1.06)	1.00	(0.90, 1.11)	1.08	(0.97, 1.20)
Asian/Pacific Islander	1.02	(0.81, 1.27)	1.04	(0.83, 1.30)	1.01	(0.81, 1.26)
Black	1.47***	(1.34, 1.61)	1.40***	(1.27, 1.54)	1.27***	(1.14, 1.42)
Native American	0.79	(0.61, 1.02)	0.76*	(0.60, 0.97)	0.73**	(0.59, 0.92)
Multiracial/Other Race	0.60**	(0.43, 0.83)	0.57***	(0.41, 0.79)	0.54***	(0.39, 0.75)
U.S. Born	1.38**	(1.11, 1.72)	1.38**	(1.11, 1.73)	1.37**	(1.10, 1.70)
Ever Uninsured	1.12**	(1.03, 1.22)	1.07	(0.99, 1.17)	1.06	(0.98, 1.16)
Social Origins Score			0.92***	(0.89, 0.96)	0.94**	(0.90, 0.98)
Neighborhood SES Disadvantage					1.11**	(1.03, 1.18)
Beta Index 3km					0.64*	(0.42, 0.96)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.11

Sex Interactions: Mental Health Diagnoses (Count)										
Survey Design-Based Negative Binomial Regression *All Interaction Effects Shown, Otherwise Significant Predictors Only*										
	Analytic sample: *dieting and behaviors* | N = 12,042[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**
Valid Waves (Ref = 3)										
2	0.89**	(0.82, 0.97)	0.99	(0.85, 1.14)	1.12	(0.95, 1.31)	1.12	(0.96, 1.31)	1.11	(0.95, 1.31)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.19	(0.86, 1.65)	1.11	(0.80, 1.53)	1.19	(0.86, 1.64)	1.18	(0.86, 1.63)	1.17	(0.85, 1.61)
Changing Lose/Maintain	1.52*	(1.10, 2.12)	1.46*	(1.05, 2.03)	1.55**	(1.13, 2.15)	1.54**	(1.11, 2.13)	1.56**	(1.13, 2.14)
Changing Goals	1.42**	(1.09, 1.84)	1.44**	(1.09, 1.91)	1.48**	(1.12, 1.95)	1.48**	(1.12, 1.95)	1.50**	(1.14, 1.97)
Female	1.84***	(1.40, 2.43)	1.83***	(1.38, 2.42)	1.87***	(1.40, 2.48)	1.85***	(1.39, 2.46)	1.86***	(1.40, 2.47)
Weight Goal Trajectory * Female										
Consistent Lose * Female	1.17	(0.83, 1.65)	1.05	(0.74, 1.51)	1.02	(0.71, 1.47)	1.03	(0.71, 1.48)	1.04	(0.73, 1.50)
Changing Lose/Maintain * Female	0.77	(0.54, 1.11)	0.75	(0.52, 1.08)	0.71	(0.50, 1.02)	0.73	(0.51, 1.04)	0.72	(0.50, 1.02)
Changing Goals * Female	0.86	(0.64, 1.15)	0.86	(0.64, 1.15)	0.89	(0.66, 1.19)	0.89	(0.67, 1.20)	0.88	(0.66, 1.18)
Dieted			1.08	(0.89, 1.31)	1.06	(0.88, 1.28)	1.06	(0.88, 1.28)	1.08	(0.90, 1.29)
Dieted * Female			1.03	(0.83, 1.29)	1.03	(0.84, 1.28)	1.03	(0.83, 1.28)	1.03	(0.83, 1.27)
Behaviors (Count)			1.01	(0.96, 1.05)	1.00	(0.96, 1.05)	1.00	(0.96, 1.04)	1.00	(0.96, 1.04)
Behaviors (Count) * Female			1.04	(0.99, 1.10)	1.05	(0.99, 1.10)	1.05	(0.99, 1.10)	1.05	(1.0, 1.10)
Extreme Behaviors (Count)			1.15*	(1.00, 1.33)	1.16*	(1.01, 1.34)	1.16*	(1.00, 1.34)	1.17*	(1.02, 1.35)
Extreme Behaviors (Count) * Female			1.01	(0.87, 1.18)	1.01	(0.87, 1.18)	1.01	(0.87, 1.18)	1.0	(0.86, 1.16)

Age	0.97*	(0.94, 0.99)	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)
Race[3]						
White	1.77***	(1.61, 1.95)	1.82***	(1.64, 2.01)	1.82***	(1.63, 2.04)
Asian/Pacific Islander	0.45***	(0.33, 0.62)	0.45***	(0.33, 0.62)	0.44***	(0.32, 0.61)
Black	0.66***	(0.59, 0.74)	0.64***	(0.57, 0.71)	0.63***	(0.55, 0.72)
Native American	0.79**	(0.67, 0.94)	0.80**	(0.67, 0.94)	0.81*	(0.68, 0.95)
Multiracial/Other Race	0.49***	(0.35, 0.69)	0.48***	(0.34, 0.68)	0.48***	(0.34, 0.68)
Latino/a	0.80**	(0.67, 0.95)	0.81*	(0.68, 0.96)	0.85	(0.70, 1.03)
U.S. Born	1.60**	(1.19, 2.15)	1.57**	(1.17, 2.11)	1.56**	(1.17, 2.08)
Avg. Sleep Hours	0.97*	(0.94, 1.0)	0.97*	(0.94, 1.00)	0.97	(0.94, 1.00)
Ever Uninsured	1.25***	(1.16, 1.35)	1.24***	(1.14, 1.34)	1.23***	(1.14, 1.34)
Prop. Dinners w/ Parent(s)			0.86**	(0.78, 0.95)	0.88*	(0.79, 0.97)
Neighborhood Feels Safe					0.83**	(0.74, 0.95)
Climate PC1					1.02*	(1.00, 1.05)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.12

Behavior Interactions: Cardiometabolic Diagnosis (Count)

Survey Design-Based Negative Binomial Regression

All Interaction Effects Shown, Otherwise Significant Predictors Only

	Analytic sample: *dieting and behaviors* | N = 12,042[1]							
	M4: + Neighborhood		M4: + Dieted		M4: + Standard Behaviors		M4: + Extreme Behaviors	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.58***	(1.31, 1.90)	1.55***	(1.21, 1.98)	1.59***	(1.31, 1.94)	1.66***	(1.36, 2.02)
Changing Lose/Maintain	1.39***	(1.19, 1.63)	1.32**	(1.08, 1.63)	1.38***	(1.17, 1.63)	1.47***	(1.24, 1.74)
Changing Goals	1.84***	(1.51, 2.23)	1.81***	(1.48, 2.21)	1.82***	(1.48, 2.22)	1.93***	(1.56, 2.37)
Dieted	1.29***	(1.17, 1.42)	1.15	(0.78, 1.71)	1.29***	(1.17, 1.42)	1.29***	(1.17, 1.42)
Weight Goal Trajectory * Dieted								
Consistent Lose * Dieted			1.11	(0.74, 1.67)				
Changing Lose/Maintain * Dieted			1.18	(0.76, 1.82)				
Changing Goals * Dieted			1.11	(0.75, 1.64)				
Behaviors (Count)	1.03*	(1.00, 1.06)	1.03*	(1.00, 1.07)	1.07	(0.94, 1.21)	1.03*	(1.00, 1.06)
Weight Goal Trajectory * Behaviors (Count)								
Consistent Lose * Behaviors (Count)					0.94	(0.83, 1.07)		
Changing Lose/Maintain * Behaviors (Count)					0.96	(0.83, 1.11)		
Changing Goals * Behaviors (Count)					0.98	(0.87, 1.11)		
Extreme Behaviors (Count)	1.07*	(1.01, 1.13)	1.07*	(1.01, 1.13)	1.07*	(1.01, 1.14)	0.80	(0.56, 1.14)
Weight Goal Trajectory * Extreme Behaviors (Count)								
Consistent Lose * Extreme Behaviors (Count)							1.33	(0.92, 1.92)
Changing Lose/Maintain * Extreme Behaviors (Count)							1.23	(0.84, 1.80)
Changing Goals * Extreme Behaviors (Count)							1.46*	(1.00, 2.11)

Female	0.69***	(0.61, 0.77)	0.69***	(0.61, 0.77)	0.69***	(0.61, 0.77)	0.69***	(0.61, 0.77)
Age	1.03*	(1.01, 1.06)	1.03*	(1.01, 1.06)	1.03*	(1.01, 1.06)	1.03*	(1.01, 1.06)
Race[3]								
White	1.08	(0.97, 1.20)	1.08	(0.97, 1.20)	1.08	(0.97, 1.20)	1.08	(0.97, 1.20)
Asian/Pacific Islander	1.01	(0.81, 1.27)	1.01	(0.81, 1.27)	1.01	(0.81, 1.27)	1.01	(0.81, 1.26)
Black	1.27***	(1.14, 1.42)	1.27***	(1.14, 1.42)	1.27***	(1.14, 1.42)	1.28***	(1.15, 1.42)
Native American	0.73**	(0.59, 0.92)	0.74**	(0.59, 0.92)	0.74**	(0.59, 0.92)	0.73**	(0.59, 0.91)
Multiracial/Other Race	0.54***	(0.39, 0.75)	0.54***	(0.39, 0.75)	0.54***	(0.39, 0.75)	0.54***	(0.39, 0.75)
U.S. Born	1.36**	(1.10, 1.69)	1.36**	(1.09, 1.68)	1.36**	(1.09, 1.69)	1.36**	(1.09, 1.69)
Social Origins Score	0.94**	(0.90, 0.98)	0.94**	(0.90, 0.98)	0.94**	(0.90, 0.98)	0.94**	(0.90, 0.98)
Neighborhood SES Disadvantage	1.11**	(1.04, 1.18)	1.11**	(1.03, 1.18)	1.11**	(1.04, 1.19)	1.11**	(1.04, 1.18)
Beta Index 3km	0.64*	(0.43, 0.97)	0.64*	(0.43, 0.97)	0.64*	(0.42, 0.97)	0.64*	(0.42, 0.96)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.13

Behavior Interactions: Mental Health Diagnoses (Count) Survey Design-Based Negative Binomial Regression *All Interaction Effects Shown, Otherwise Significant Predictors Only*								
	Analytic sample: *dieting and behaviors* | N = 12,042[1]							
	M4: + Neighborhood		M4: + Dieted		M4: + Standard Behaviors		M4: + Extreme Behaviors	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.25**	(1.08, 1.46)	1.16	(0.92, 1.46)	1.19*	(1.02, 1.39)	1.24**	(1.06, 1.45)
Changing Lose/Maintain	1.23**	(1.05, 1.44)	1.17	(0.95, 1.45)	1.22*	(1.04, 1.43)	1.22*	(1.04, 1.44)
Changing Goals	1.37***	(1.14, 1.65)	1.36**	(1.10, 1.68)	1.34**	(1.11, 1.61)	1.35**	(1.13, 1.62)
Dieted	1.10*	(1.01, 1.19)	0.95	(0.69, 1.31)	1.10*	(1.02, 1.19)	1.09*	(1.01, 1.19)
Weight Goal Trajectory * Dieted								
Consistent Lose * Dieted			1.23	(0.85, 1.80)				
Changing Lose/Maintain * Dieted			1.20	(0.84, 1.73)				
Changing Goals * Dieted			1.11	(0.79, 1.56)				
Behaviors (Count)	1.03	(1.00, 1.06)	1.03	(1.00, 1.06)	1.07	(0.97, 1.19)	1.03	(1.00, 1.05)
Weight Goal Trajectory * Behaviors (Count)								
Consistent Lose * Behaviors (Count)					1.01	(0.90, 1.13)		
Changing Lose/Maintain * Behaviors (Count)					0.94	(0.83, 1.07)		
Changing Goals * Behaviors (Count)					0.94	(0.85, 1.04)		
Extreme Behaviors (Count)	1.17***	(1.12, 1.23)	1.17***	(1.12, 1.23)	1.17***	(1.11, 1.23)	1.40*	(1.04, 1.88)
Weight Goal Trajectory * Extreme Behaviors (Count)								
Consistent Lose * Extreme Behaviors (Count)							0.83	(0.61, 1.12)
Changing Lose/Maintain * Extreme Behaviors (Count)							0.79	(0.58, 1.07)
Changing Goals * Extreme Behaviors (Count)							0.86	(0.63, 1.16)

Female	1.66***	(1.53, 1.79)	1.66***	(1.54, 1.79)	1.65***	(1.53, 1.79)	1.65***	(1.53, 1.79)
Age	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)	0.96**	(0.94, 0.99)
Race[3]								
White	1.82***	(1.63, 2.04)	1.82***	(1.63, 2.04)	1.83***	(1.63, 2.04)	1.83***	(1.63, 2.04)
Asian/Pacific Islander	0.44***	(0.32, 0.61)	0.44***	(0.32, 0.61)	0.44***	(0.32, 0.61)	0.44***	(0.32, 0.61)
Black	0.63***	(0.55, 0.72)	0.63***	(0.55, 0.72)	0.63***	(0.55, 0.72)	0.63***	(0.55, 0.72)
Native American	0.81*	(0.68, 0.95)	0.81*	(0.68, 0.95)	0.81*	(0.68, 0.95)	0.81*	(0.68, 0.95)
Multiracial/Other Race	0.48***	(0.34, 0.68)	0.48***	(0.34, 0.68)	0.48***	(0.34, 0.68)	0.48***	(0.34, 0.68)
U.S. Born	1.55**	(1.16, 2.07)	1.54**	(1.15, 2.07)	1.55**	(1.16, 2.08)	1.54**	(1.15, 2.06)
Ever Uninsured	1.23***	(1.14, 1.34)	1.23***	(1.14, 1.34)	1.23***	(1.14, 1.34)	1.23***	(1.14, 1.34)
Prop. Dinners w/ Parent(s)	0.88*	(0.79, 0.97)	0.88*	(0.79, 0.97)	0.88*	(0.79, 0.97)	0.88*	(0.79, 0.97)
Neighborhood Feels Safe	0.84**	(0.74, 0.95)	0.84**	(0.74, 0.95)	0.84**	(0.74, 0.95)	0.84**	(0.74, 0.95)
Climate PC1	1.02*	(1.00, 1.05)	1.02*	(1.00, 1.05)	1.02*	(1.00, 1.05)	1.02*	(1.00, 1.05)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

4.7.2 Sensitivity Analysis

Table 4.14

Sensitivity Analysis - Cardiometabolic Diagnoses (Count)

Survey Design-Based Negative Binomial Regression

All Focal Predictors Shown, Otherwise Significant Effects Only

	Analytic sample: dieting and behaviors *(wave V panel)* | N = 8,358[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.87***	(1.56, 2.24)	1.52***	(1.25, 1.86)	1.57***	(1.29, 1.91)	1.56***	(1.28, 1.89)	1.57***	(1.29, 1.91)
Changing Lose/Maintain	1.55***	(1.30, 1.86)	1.37***	(1.14, 1.65)	1.36***	(1.14, 1.62)	1.36***	(1.14, 1.62)	1.36***	(1.14, 1.62)
Changing Goals	1.45***	(1.22, 1.72)	1.57***	(1.26, 1.97)	1.51***	(1.22, 1.88)	1.53***	(1.23, 1.90)	1.53***	(1.24, 1.90)
Dieted			1.19***	(1.08, 1.33)	1.31***	(1.17, 1.46)	1.31***	(1.17, 1.46)	1.30***	(1.17, 1.45)
Behaviors (Count)			1.04*	(1.01, 1.08)	1.03	(1.0, 1.06)	1.03	(1.00, 1.07)	1.03	(1.00, 1.06)
Extreme Behaviors (Count)			1.12**	(1.04, 1.20)	1.12***	(1.05, 1.19)	1.11***	(1.04, 1.19)	1.11**	(1.04, 1.19)
Female					0.65***	(0.57, 0.73)	0.65***	(0.57, 0.73)	0.64***	(0.57, 0.73)
Race[3]										
White					0.72***	(0.66, 0.80)	0.75***	(0.68, 0.83)	0.82***	(0.73, 0.91)
Asian/Pacific Islander					1.10	(0.87, 1.38)	1.12	(0.89, 1.40)	1.09	(0.86, 1.38)
Black					1.39***	(1.26, 1.52)	1.33***	(1.20, 1.47)	1.19**	(1.05, 1.35)
Native American					1.40*	(1.02, 1.91)	1.35	(0.99, 1.84)	1.35	(0.98, 1.86)
Multiracial/Other Race					1.28	(0.82, 1.99)	1.21	(0.80, 1.84)	1.19	(0.79, 1.79)

Ever Uninsured	1.12*	(1.02, 1.23)	1.08	(0.97, 1.19)	1.07	(0.96, 1.18)
Age	1.03	(1.00, 1.06)	1.03*	(1.00, 1.06)	1.03*	(1.00, 1.06)
Social Origins Score			0.93***	(0.89, 0.96)	0.94**	(0.90, 0.98)
Neighborhood SES Disadvantage					1.10*	(1.02, 1.18)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.15

Sensitivity Analysis - Mental Health Diagnoses (Count)										
Survey Design-Based Negative Binomial Regression *All Focal Predictors Shown, Otherwise Significant Effects Only*										
	Analytic sample: dieting and behaviors *(wave V panel)* | N = 8,358[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.37**	(1.13, 1.67)	1.15	(0.95, 1.39)	1.13	(0.94, 1.37)	1.14	(0.94, 1.37)	1.14	(0.95, 1.37)
Changing Lose/Maintain	1.30*	(1.06, 1.58)	1.21	(0.99, 1.47)	1.23*	(1.01, 1.49)	1.23*	(1.01, 1.49)	1.23*	(1.01, 1.49)
Changing Goals	1.18*	(1.00, 1.39)	1.01	(0.82, 1.24)	1.06	(0.86, 1.31)	1.06	(0.86, 1.31)	1.07	(0.86, 1.32)
Dieted			1.21***	(1.10, 1.32)	1.12*	(1.02, 1.23)	1.11*	(1.01, 1.22)	1.12*	(1.02, 1.23)
Behaviors (Count)			1.02	(0.99, 1.06)	1.03	(1.00, 1.07)	1.03	(0.99, 1.06)	1.03	(1.00, 1.07)
Extreme Behaviors (Count)			1.21***	(1.14, 1.29)	1.19***	(1.11, 1.26)	1.18***	(1.11, 1.26)	1.19***	(1.11, 1.27)
Female					1.57***	(1.44, 1.72)	1.57***	(1.44, 1.71)	1.56***	(1.43, 1.71)
Age					0.96**	(0.94, 0.99)	0.96**	(0.93, 0.99)	0.96**	(0.93, 0.99)
Race[3]										
White					1.50***	(1.31, 1.73)	1.56***	(1.35, 1.79)	1.56***	(1.35, 1.81)
Asian/Pacific Islander					0.57**	(0.39, 0.82)	0.57**	(0.39, 0.82)	0.55**	(0.38, 0.79)
Black					0.64***	(0.55, 0.75)	0.62***	(0.53, 0.72)	0.62***	(0.52, 0.72)
Native American					1.07	(0.75, 1.53)	1.08	(0.75, 1.55)	1.10	(0.77, 1.59)
Multiracial/Other Race					1.09	(0.63, 1.90)	1.07	(0.63, 1.83)	1.06	(0.63, 1.78)
Latino/a					0.83*	(0.68, 1.00)	0.83	(0.68, 1.01)	0.84	(0.68, 1.05)
U.S. Born					1.56**	(1.12, 2.18)	1.55**	(1.11, 2.16)	1.55**	(1.11, 2.15)

Avg. Sleep Hours	0.96*	(0.93, 1.00)	0.96	(0.93, 1.00)	0.97	(0.93, 1.01)
Ever Uninsured	1.25***	(1.14, 1.38)	1.24***	(1.12, 1.36)	1.24***	(1.12, 1.36)
Prop. Dinners w/ Parent(s)			0.84**	(0.74, 0.95)	0.86*	(0.76, 0.98)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.16

Sensitivity Analysis - Cardiometabolic Diagnoses (Count) All Focal Predictors Shown, Otherwise Significant Effects Only										
	Analytic sample: dieting and behaviors *(post-wave III diagnoses)* | N = 9,246[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.96	(0.84, 1.09)	1.46**	(1.13, 1.88)	1.36*	(1.05, 1.75)	1.38*	(1.07, 1.78)	1.38*	(1.08, 1.77)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.65***	(1.33, 2.04)	1.37**	(1.10, 1.71)	1.47***	(1.17, 1.84)	1.46***	(1.17, 1.82)	1.47***	(1.17, 1.84)
Changing Lose/Maintain	1.51***	(1.22, 1.88)	1.32*	(1.07, 1.64)	1.37**	(1.11, 1.69)	1.37**	(1.11, 1.69)	1.38**	(1.12, 1.70)
Changing Goals	1.34**	(1.10, 1.64)	1.79***	(1.39, 2.31)	1.77***	(1.38, 2.28)	1.80***	(1.40, 2.32)	1.83***	(1.42, 2.36)
Dieted			1.09	(0.97, 1.23)	1.20**	(1.07, 1.35)	1.20**	(1.07, 1.35)	1.22**	(1.08, 1.37)
Behaviors (Count)			1.08***	(1.03, 1.12)	1.07**	(1.02, 1.11)	1.07**	(1.02, 1.11)	1.06**	(1.02, 1.11)
Extreme Behaviors (Count)			1.05	(0.95, 1.16)	1.03	(0.94, 1.14)	1.03	(0.93, 1.13)	1.02	(0.92, 1.12)
Female					0.61***	(0.52, 0.70)	0.61***	(0.52, 0.70)	0.60***	(0.52, 0.70)
Race[3]										
White					0.91	(0.79, 1.06)	0.94	(0.82, 1.08)	1.02	(0.88, 1.19)
Asian/Pacific Islander					1.29	(0.95, 1.75)	1.31	(0.97, 1.78)	1.27	(0.94, 1.72)
Black					1.63***	(1.42, 1.87)	1.57***	(1.36, 1.81)	1.44***	(1.23, 1.70)
Native American					0.67*	(0.48, 0.92)	0.65**	(0.48, 0.89)	0.61**	(0.46, 0.83)
Multiracial/Other Race					0.58*	(0.37, 0.90)	0.56**	(0.36, 0.85)	0.53**	(0.34, 0.82)
U.S. Born					1.62***	(1.22, 2.15)	1.58**	(1.19, 2.10)	1.52**	(1.15, 2.01)
Ever Uninsured					1.27***	(1.12, 1.43)	1.23**	(1.08, 1.40)	1.21**	(1.07, 1.38)

Social Origins Score	0.93**	(0.88, 0.98)	0.94*	(0.89, 1.00)
Parent Graduated HS	1.33**	(1.07, 1.65)	1.35**	(1.08, 1.69)
Neighborhood SES Disadvantage			1.14**	(1.05, 1.25)
Beta Index 3km			0.50*	(0.29, 0.86)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.17

Sensitivity Analysis - Mental Health Diagnoses (Count)										
All Focal Predictors Shown, Otherwise Significant Effects Only										
	Analytic sample: dieting and behaviors *(post-wave III diagnoses)* | N = 9,246[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.90	(0.80, 1.02)	1.01	(0.84, 1.21)	1.30**	(1.08, 1.58)	1.32**	(1.09, 1.61)	1.31**	(1.08, 1.58)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.37*	(1.07, 1.75)	1.19	(0.93, 1.54)	1.15	(0.88, 1.48)	1.15	(0.89, 1.49)	1.16	(0.89, 1.51)
Changing Lose/Maintain	1.23*	(1.00, 1.52)	1.13	(0.91, 1.41)	1.17	(0.93, 1.46)	1.17	(0.94, 1.47)	1.19	(0.95, 1.50)
Changing Goals	1.12	(0.90, 1.39)	1.24	(0.95, 1.63)	1.38*	(1.05, 1.80)	1.40*	(1.07, 1.84)	1.41*	(1.08, 1.85)
Dieted			1.08	(0.94, 1.24)	0.99	(0.86, 1.14)	0.99	(0.85, 1.14)	1.00	(0.86, 1.15)
Behaviors (Count)			1.05*	(1.00, 1.10)	1.07**	(1.02, 1.12)	1.06*	(1.01, 1.11)	1.06**	(1.02, 1.11)
Extreme Behaviors (Count)			1.11*	(1.02, 1.21)	1.10*	(1.01, 1.21)	1.10*	(1.00, 1.20)	1.10*	(1.00, 1.20)
Female					1.80***	(1.57, 2.05)	1.79***	(1.57, 2.05)	1.79***	(1.56, 2.05)
Age					0.95**	(0.91, 0.99)	0.94**	(0.90, 0.98)	0.94**	(0.90, 0.98)
Race[3]										
White					1.75***	(1.51, 2.03)	1.80***	(1.55, 2.10)	1.81***	(1.53, 2.14)
Asian/Pacific Islander					0.52***	(0.37, 0.73)	0.52***	(0.37, 0.73)	0.53***	(0.37, 0.76)
Black					0.71***	(0.60, 0.84)	0.68***	(0.57, 0.81)	0.67***	(0.56, 0.81)
Native American					0.68*	(0.50, 0.93)	0.68*	(0.50, 0.93)	0.68*	(0.51, 0.93)
Multiracial/Other Race					0.53*	(0.32, 0.87)	0.52**	(0.32, 0.84)	0.51**	(0.31, 0.83)
U.S. Born					1.63**	(1.17, 2.26)	1.58**	(1.13, 2.20)	1.53*	(1.09, 2.14)
Ever Uninsured					1.40***	(1.25, 1.57)	1.38***	(1.22, 1.56)	1.39***	(1.23, 1.57)

Prop. Dinners w/ Parent(s)	0.84*	(0.72, 0.97)	0.85*	(0.73, 0.99)
Beta Index 3km			0.56*	(0.32, 0.97)
Prop. Roads A40-A48 3km			1.80*	(1.07, 3.01)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.18

Sensitivity Analysis - Cardiometabolic Diagnoses (Count) Survey Design-Based Negative Binomial Regression *All Focal Predictors Shown, Otherwise Significant Effects Only*										
	Analytic sample: *all behaviors* | N = 14,203[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.86***	(0.79, 0.94)	1.15	(0.97, 1.35)	1.03	(0.88, 1.21)	1.04	(0.88, 1.22)	1.04	(0.88, 1.22)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.97***	(1.66, 2.33)	1.64***	(1.36, 1.97)	1.70***	(1.41, 2.06)	1.69***	(1.41, 2.04)	1.69***	(1.40, 2.05)
Changing Lose/Maintain	1.63***	(1.39, 1.91)	1.44***	(1.23, 1.70)	1.48***	(1.26, 1.74)	1.48***	(1.26, 1.74)	1.47***	(1.25, 1.74)
Consistent Gain	1.16	(0.96, 1.40)	2.14***	(1.64, 2.81)	2.12***	(1.64, 2.75)	2.16***	(1.67, 2.80)	2.18***	(1.68, 2.83)
Changing Goals	1.40***	(1.20, 1.62)	1.80***	(1.50, 2.16)	1.73***	(1.44, 2.07)	1.74***	(1.45, 2.09)	1.75***	(1.46, 2.09)
Behaviors (Count)			1.05***	(1.03, 1.08)	1.05***	(1.03, 1.08)	1.05***	(1.03, 1.08)	1.05***	(1.03, 1.08)
Extreme Behaviors (Count)			1.09**	(1.03, 1.15)	1.09**	(1.03, 1.15)	1.08**	(1.02, 1.14)	1.08**	(1.02, 1.14)
Female					0.73***	(0.65, 0.81)	0.72***	(0.65, 0.80)	0.72***	(0.64, 0.80)
Age					1.04**	(1.01, 1.07)	1.04**	(1.01, 1.06)	1.04**	(1.01, 1.06)
Race[3]										
White					0.97	(0.87, 1.08)	1.01	(0.91, 1.12)	1.09	(0.98, 1.21)
Asian/Pacific Islander					0.99	(0.80, 1.23)	1.01	(0.82, 1.25)	0.99	(0.80, 1.22)
Black					1.44***	(1.32, 1.57)	1.37***	(1.24, 1.51)	1.25***	(1.12, 1.40)
Native American					0.78	(0.60, 1.03)	0.77*	(0.59, 0.99)	0.74**	(0.59, 0.93)
Multiracial/Other Race					0.60***	(0.45, 0.80)	0.58***	(0.43, 0.77)	0.54***	(0.40, 0.73)
U.S. Born					1.31*	(1.06, 1.63)	1.30*	(1.05, 1.62)	1.30*	(1.05, 1.61)

Met MVPA Guidelines	0.92*	(0.85, 0.99)	0.92*	(0.85, 1.00)	0.93	(0.86, 1.00)
Ever Uninsured	1.13**	(1.04, 1.22)	1.08	(1.00, 1.18)	1.08	(0.99, 1.17)
Social Origins Score			0.93***	(0.90, 0.97)	0.95*	(0.91, 0.99)
Neighborhood SES Disadvantage					1.11**	(1.04, 1.18)
Beta Index 3km					0.68*	(0.47, 0.96)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant: **Values > 1** indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.19

Sensitivity Analysis - Mental Health Diagnoses (Count)

Survey Design-Based Negative Binomial Regression

All Focal Predictors Shown, Otherwise Significant Effects Only

	Analytic sample: *all behaviors* | N = 14,203[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**	**IRR[2]**	**95% CI**
Valid Waves (Ref = 3)										
2	0.85***	(0.79, 0.92)	0.94	(0.83, 1.07)	1.11	(0.97, 1.28)	1.12	(0.97, 1.29)	1.11	(0.96, 1.28)
Weight Goal Trajectory (Ref = Consistent Maintain)										
Consistent Lose	1.52***	(1.29, 1.78)	1.29**	(1.11, 1.51)	1.24**	(1.06, 1.45)	1.24**	(1.06, 1.45)	1.25**	(1.07, 1.46)
Changing Lose/Maintain	1.34***	(1.15, 1.56)	1.24**	(1.06, 1.44)	1.24**	(1.06, 1.44)	1.24**	(1.06, 1.44)	1.24**	(1.06, 1.45)
Consistent Gain	1.03	(0.84, 1.26)	1.39*	(1.05, 1.86)	1.36*	(1.05, 1.78)	1.37*	(1.05, 1.79)	1.39*	(1.06, 1.82)
Changing Goals	1.19*	(1.03, 1.37)	1.29**	(1.08, 1.55)	1.38***	(1.15, 1.66)	1.39***	(1.16, 1.67)	1.39***	(1.16, 1.67)
Behaviors (Count)			1.04**	(1.01, 1.06)	1.04**	(1.01, 1.06)	1.03**	(1.01, 1.06)	1.04***	(1.02, 1.06)
Extreme Behaviors (Count)			1.20***	(1.14, 1.25)	1.18***	(1.13, 1.23)	1.18***	(1.12, 1.23)	1.17***	(1.12, 1.23)
Female					1.68***	(1.56, 1.81)	1.68***	(1.56, 1.80)	1.67***	(1.56, 1.80)
Age					0.97**	(0.94, 0.99)	0.97**	(0.94, 0.99)	0.97**	(0.94, 0.99)
Race[3]										
White					1.77***	(1.61, 1.94)	1.81***	(1.64, 2.00)	1.82***	(1.63, 2.03)
Asian/Pacific Islander					0.45***	(0.35, 0.59)	0.45***	(0.35, 0.59)	0.44***	(0.34, 0.58)
Black					0.65***	(0.59, 0.72)	0.63***	(0.56, 0.70)	0.62***	(0.55, 0.70)
Native American					0.81**	(0.70, 0.94)	0.81**	(0.70, 0.94)	0.82**	(0.70, 0.95)
Multiracial/Other Race					0.53***	(0.39, 0.73)	0.52***	(0.38, 0.72)	0.52***	(0.37, 0.73)
Latino/a					0.80**	(0.69, 0.94)	0.81*	(0.69, 0.96)	0.84	(0.70, 1.01)
U.S. Born					1.50**	(1.14, 1.96)	1.47**	(1.13, 1.92)	1.47**	(1.13, 1.90)

Avg. Sleep Hours	0.97*	(0.94, 1.00)	0.97*	(0.94, 1.00)	0.97	(0.95, 1.00)
Ever Uninsured	1.23***	(1.14, 1.32)	1.21***	(1.12, 1.31)	1.21***	(1.12, 1.31)
Prop. Dinners w/ Parent(s)			0.88**	(0.80, 0.96)	0.90*	(0.81, 0.99)
Parent Graduated HS			1.18	(1.00, 1.41)	1.19*	(1.00, 1.41)
Neighborhood Feels Safe					0.83**	(0.74, 0.94)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.20

Sensitivity Analysis - Cardiometabolic Diagnoses (Count)

Survey Design-Based Negative Binomial Regression
All Focal Predictors Shown, Otherwise Significant Effects Only

	Analytic sample: *universally-surveyed behaviors* | N = 14,597[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.87**	(0.80, 0.95)	0.79	(0.43, 1.43)	0.74	(0.40, 1.37)	0.76	(0.43, 1.36)	0.76	(0.43, 1.34)
Weight Goal Trajectory (Ref = Consistent Nothing)										
Consistent Maintain	0.74*	(0.56, 0.98)	0.85	(0.64, 1.12)	0.89	(0.68, 1.17)	0.89	(0.68, 1.17)	0.87	(0.67, 1.14)
Consistent Lose	1.46**	(1.13, 1.89)	1.50**	(1.16, 1.93)	1.64***	(1.28, 2.11)	1.63***	(1.28, 2.09)	1.60***	(1.25, 2.05)
Changing Lose/Maintain	1.21	(0.96, 1.53)	1.25	(0.99, 1.57)	1.35*	(1.07, 1.71)	1.35**	(1.08, 1.70)	1.33*	(1.06, 1.66)
Consistent Gain	0.86	(0.65, 1.14)	0.94	(0.71, 1.25)	0.88	(0.66, 1.17)	0.88	(0.66, 1.17)	0.87	(0.66, 1.15)
Changing Goals	1.04	(0.82, 1.32)	1.05	(0.83, 1.34)	1.08	(0.85, 1.36)	1.07	(0.85, 1.35)	1.05	(0.84, 1.32)
Behaviors (Count)			1.07**	(1.03, 1.12)	1.05*	(1.01, 1.10)	1.04	(1.00, 1.09)	1.04	(1.0, 1.08)
Extreme Behaviors (Count)			1.12*	(1.01, 1.23)	1.12*	(1.02, 1.23)	1.11*	(1.01, 1.22)	1.11*	(1.01, 1.22)
Female					0.78***	(0.70, 0.87)	0.77***	(0.70, 0.86)	0.77***	(0.69, 0.86)
Age					1.03*	(1.01, 1.06)	1.03*	(1.01, 1.06)	1.03**	(1.01, 1.05)
Race[3]										
White					1.01	(0.91, 1.11)	1.05	(0.95, 1.16)	1.14*	(1.03, 1.27)
Asian/Pacific Islander					0.98	(0.80, 1.21)	1.00	(0.81, 1.24)	0.98	(0.80, 1.21)
Black					1.38***	(1.27, 1.51)	1.32***	(1.20, 1.45)	1.19**	(1.07, 1.32)
Native American					0.78	(0.59, 1.02)	0.76*	(0.58, 0.98)	0.73**	(0.59, 0.92)
Multiracial/Other Race					0.57***	(0.43, 0.77)	0.55***	(0.41, 0.74)	0.51***	(0.38, 0.70)
U.S. Born					1.31*	(1.05, 1.63)	1.31*	(1.05, 1.63)	1.31*	(1.05, 1.62)

Ever Uninsured	1.11*	(1.02, 1.20)	1.06	(0.98, 1.15)	1.05	(0.97, 1.14)
Social Origins Score			0.93***	(0.90, 0.97)	0.95*	(0.91, 0.99)
Neighborhood SES Disadvantage					1.11**	(1.04, 1.18)
Beta Index 3km					0.69*	(0.48, 0.98)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.21

Sensitivity Analysis: Mental Health Diagnoses (Count) Survey Design-Based Negative Binomial Regression *All Focal Predictors Shown, Otherwise Significant Effects Only*										
	Analytic sample: *universally-surveyed behaviors* | N = 14,597[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variable	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**	**IRR**[2]	**95% CI**
Valid Waves (Ref = 3)										
2	0.84***	(0.78, 0.91)	0.85	(0.51, 1.43)	0.80	(0.48, 1.34)	0.81	(0.49, 1.36)	0.80	(0.48, 1.33)
Weight Goal Trajectory (Ref = Consistent Nothing)										
Consistent Maintain	0.97	(0.75, 1.25)	1.02	(0.80, 1.31)	0.93	(0.73, 1.19)	0.93	(0.73, 1.19)	0.91	(0.71, 1.16)
Consistent Lose	1.47**	(1.15, 1.87)	1.45**	(1.14, 1.86)	1.26	(0.99, 1.60)	1.26	(0.99, 1.60)	1.24	(0.98, 1.57)
Changing Lose/Maintain	1.30*	(1.02, 1.64)	1.30*	(1.03, 1.65)	1.17	(0.93, 1.48)	1.17	(0.93, 1.47)	1.15	(0.91, 1.45)
Consistent Gain	1.00	(0.76, 1.30)	1.02	(0.79, 1.33)	1.34*	(1.03, 1.73)	1.33*	(1.02, 1.72)	1.30*	(1.01, 1.69)
Changing Goals	1.15	(0.92, 1.44)	1.15	(0.92, 1.44)	1.16	(0.93, 1.46)	1.16	(0.92, 1.45)	1.14	(0.91, 1.42)
Behaviors (Count)			1.06***	(1.02, 1.09)	1.07***	(1.03, 1.10)	1.06**	(1.02, 1.10)	1.06**	(1.02, 1.09)
Extreme Behaviors (Count)			1.21***	(1.10, 1.33)	1.22***	(1.11, 1.34)	1.22***	(1.11, 1.34)	1.21***	(1.11, 1.33)
Female					1.66***	(1.55, 1.78)	1.66***	(1.55, 1.78)	1.66***	(1.55, 1.78)
Age					0.96**	(0.94, 0.99)	0.96**	(0.94, 0.98)	0.96**	(0.94, 0.99)
Race[3]										
White					1.76***	(1.60, 1.94)	1.79***	(1.62, 1.98)	1.81***	(1.61, 2.02)
Asian/Pacific Islander					0.45***	(0.35, 0.58)	0.45***	(0.35, 0.59)	0.45***	(0.34, 0.58)
Black					0.65***	(0.58, 0.72)	0.63***	(0.57, 0.70)	0.63***	(0.55, 0.71)
Native American					0.81**	(0.69, 0.94)	0.81**	(0.70, 0.94)	0.81**	(0.70, 0.95)
Multiracial/Other Race					0.54***	(0.39, 0.75)	0.53***	(0.38, 0.74)	0.53***	(0.38, 0.75)
Latino/a					0.80**	(0.68, 0.93)	0.81*	(0.69, 0.95)	0.84	(0.70, 1.01)

U.S. Born	1.49**	(1.14, 1.96)	1.47**	(1.13, 1.92)	1.47**	(1.13, 1.91)
Avg. Sleep Hours	0.97*	(0.94, 1.00)	0.97	(0.95, 1.00)	0.98	(0.95, 1.00)
Ever Uninsured	1.21***	(1.12, 1.30)	1.20***	(1.11, 1.30)	1.20***	(1.11, 1.29)
Prop. Dinners w/ Parent(s)			0.88**	(0.80, 0.97)	0.90*	(0.82, 0.99)
Neighborhood Feels Safe					0.82***	(0.73, 0.92)
Beta Index 3km					0.73*	(0.54, 0.98)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate a higher expected count while **values < 1** indicate a lower expected count.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: IRR = Incidence Rate Ratio, CI = Confidence Interval

Table 4.22

Sensitivity Analysis: Cardiometabolic × Mental Health (Constrained)										
Survey Design-Based Bivariate Logistic Regression *Only Focal Predictors Shown*										
	Analytic sample: *universally-surveyed behaviors* | N = 14,597[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variables	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Joint ORs[3]										
Joint OR	2.02***	(1.81, 2.26)	1.98***	(1.77, 2.21)	2.14***	(1.91, 2.41)	2.14***	(1.90, 2.41)	2.14***	(1.90, 2.41)
Cardiometabolic margins										
Weight Goal Trajectory (Ref = Consistent Nothing)										
Consistent Maintain	0.84	(0.61, 1.17)	0.97	(0.69, 1.35)	1.04	(0.73, 1.46)	1.04	(0.73, 1.46)	1.01	(0.71, 1.43)
Consistent Lose	1.52**	(1.12, 2.07)	1.57**	(1.15, 2.13)	1.77***	(1.28, 2.44)	1.77***	(1.28, 2.44)	1.72**	(1.25, 2.38)
Changing Lose/Maintain	1.29	(0.97, 1.72)	1.33	(0.99, 1.78)	1.49**	(1.11, 2.02)	1.49**	(1.10, 2.02)	1.46*	(1.08, 1.97)
Consistent Gain	0.80	(0.57, 1.12)	0.87	(0.63, 1.22)	0.83	(0.59, 1.16)	0.83	(0.59, 1.16)	0.81	(0.58, 1.13)
Changing Goals	1.04	(0.79, 1.38)	1.05	(0.79, 1.40)	1.10	(0.82, 1.46)	1.09	(0.82, 1.46)	1.07	(0.80, 1.42)
Behaviors (Count)			1.10***	(1.04, 1.15)	1.07*	(1.01, 1.13)	1.06*	(1.00, 1.12)	1.05	(1.00, 1.11)
Extreme Behaviors (Count)			1.09	(0.96, 1.24)	1.10	(0.97, 1.25)	1.10	(0.96, 1.25)	1.09	(0.96, 1.24)
Female					0.75***	(0.66, 0.86)	0.75***	(0.66, 0.86)	0.75***	(0.65, 0.85)
Mental Health margins										
Weight Goal Trajectory (Ref = Consistent Nothing)										
Consistent Maintain	0.92	(0.66, 1.29)	1.01	(0.72, 1.41)	0.93	(0.66, 1.32)	0.93	(0.66, 1.32)	0.90	(0.64, 1.27)
Consistent Lose	1.57**	(1.12, 2.20)	1.57**	(1.12, 2.22)	1.38	(0.97, 1.94)	1.38	(0.98, 1.94)	1.35	(0.96, 1.89)
Changing Lose/Maintain	1.29	(0.93, 1.77)	1.31	(0.95, 1.81)	1.17	(0.84, 1.63)	1.17	(0.84, 1.63)	1.14	(0.82, 1.60)
Consistent Gain	0.94	(0.67, 1.33)	1.0	(0.70, 1.41)	1.46*	(1.02, 2.08)	1.44*	(1.01, 2.07)	1.40	(0.98, 2.00)
Changing Goals	1.10	(0.81, 1.48)	1.10	(0.81, 1.49)	1.16	(0.84, 1.59)	1.15	(0.84, 1.58)	1.12	(0.82, 1.55)

Behaviors (Count)	1.10***	(1.05, 1.15)	1.13***	(1.08, 1.19)	1.12***	(1.06, 1.18)	1.12***	(1.06, 1.18)
Extreme Behaviors (Count)	1.25***	(1.10, 1.43)	1.27***	(1.11, 1.46)	1.27***	(1.11, 1.46)	1.27***	(1.11, 1.45)
Female			1.99***	(1.81, 2.20)	1.99***	(1.80, 2.20)	1.99***	(1.80, 2.20)

[1] Unweighted sample size; coefficients and 95% CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] The Joint OR is the odds ratio for co-occurence of the cardiometabolic and mental health outcomes (their comorbidity).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.23

Sensitivity Analysis: Cardiometabolic × Mental Health (Unconstrained)										
Survey Design-Based Bivariate Logistic Regression *Only Focal Predictors Shown*										
	Analytic sample: *universally-surveyed behaviors* | N = 14,597[1]									
	M0: Trajectory		M1: + Behaviors		M2: + Individual		M3: + Household		M4: + Neighborhood	
Variables	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**	**OR**[2]	**(95% CI)**
Joint ORs[3]										
Joint OR	2.06**	(1.23, 3.46)	2.42**	(1.30, 4.53)	2.81*	(1.11, 7.09)	2.99*	(1.19, 7.55)	2.68*	(1.03, 6.98)
Weight Goal Trajectory (Ref = Consistent Nothing)										
Consistent Maintain	0.74	(0.39, 1.42)	0.70	(0.36, 1.36)	0.74	(0.36, 1.55)	0.74	(0.35, 1.54)	0.75	(0.36, 1.55)
Consistent Lose	0.92	(0.55, 1.53)	0.85	(0.50, 1.43)	1.03	(0.57, 1.85)	1.01	(0.56, 1.84)	1.05	(0.59, 1.88)
Changing Lose/Maintain	0.94	(0.54, 1.63)	0.89	(0.51, 1.55)	1.07	(0.58, 1.98)	1.05	(0.57, 1.96)	1.07	(0.58, 1.98)
Consistent Gain	0.96	(0.53, 1.74)	0.86	(0.48, 1.57)	0.83	(0.43, 1.62)	0.82	(0.42, 1.61)	0.82	(0.42, 1.58)
Changing Goals	1.02	(0.63, 1.64)	0.97	(0.60, 1.57)	1.01	(0.59, 1.74)	1.00	(0.58, 1.73)	1.01	(0.59, 1.73)
Behaviors (Count)			1.04	(0.93, 1.17)	1.04	(0.92, 1.17)	1.04	(0.92, 1.17)	1.03	(0.92, 1.16)
Extreme Behaviors (Count)			0.95	(0.73, 1.23)	0.94	(0.71, 1.26)	0.94	(0.71, 1.26)	0.96	(0.72, 1.27)
Female					0.89	(0.72, 1.11)	0.89	(0.72, 1.11)	0.90	(0.73, 1.11)
Cardiometabolic margins										
Weight Goal Trajectory (Ref = Consistent Nothing)										
Consistent Maintain	0.84	(0.61, 1.17)	0.96	(0.69, 1.35)	1.03	(0.73, 1.46)	1.03	(0.73, 1.46)	1.00	(0.71, 1.42)
Consistent Lose	1.52**	(1.12, 2.07)	1.57**	(1.15, 2.13)	1.78***	(1.29, 2.46)	1.78***	(1.29, 2.46)	1.74***	(1.26, 2.40)
Changing Lose/Maintain	1.29	(0.97, 1.72)	1.33	(0.99, 1.78)	1.50**	(1.11, 2.02)	1.50**	(1.11, 2.03)	1.45*	(1.08, 1.97)
Consistent Gain	0.80	(0.57, 1.12)	0.88	(0.63, 1.23)	0.83	(0.59, 1.16)	0.82	(0.59, 1.16)	0.81	(0.58, 1.13)
Changing Goals	1.04	(0.78, 1.38)	1.05	(0.79, 1.40)	1.10	(0.82, 1.47)	1.09	(0.82, 1.46)	1.06	(0.80, 1.41)

Behaviors (Count)			1.10***	(1.04, 1.15)	1.07*	(1.01, 1.13)	1.06*	(1.00, 1.12)	1.06	(1.00, 1.11)
Extreme Behaviors (Count)			1.10	(0.97, 1.24)	1.10	(0.97, 1.25)	1.10	(0.97, 1.25)	1.09	(0.96, 1.24)
Female					0.75***	(0.66, 0.86)	0.75***	(0.65, 0.86)	0.74***	(0.65, 0.85)
Mental Health margins										
Weight Goal Trajectory (Ref = Consistent Nothing)										
Consistent Maintain	0.92	(0.66, 1.29)	1.00	(0.72, 1.39)	0.93	(0.66, 1.31)	0.93	(0.66, 1.31)	0.91	(0.64, 1.28)
Consistent Lose	1.57**	(1.12, 2.21)	1.57**	(1.12, 2.22)	1.37	(0.97, 1.94)	1.38	(0.97, 1.95)	1.36	(0.96, 1.91)
Changing Lose/Maintain	1.29	(0.94, 1.78)	1.31	(0.95, 1.81)	1.17	(0.84, 1.62)	1.17	(0.84, 1.63)	1.15	(0.83, 1.61)
Consistent Gain	0.94	(0.67, 1.33)	0.99	(0.69, 1.40)	1.45*	(1.01, 2.07)	1.44*	(1.01, 2.07)	1.41	(0.98, 2.02)
Changing Goals	1.10	(0.81, 1.48)	1.10	(0.81, 1.49)	1.16	(0.84, 1.59)	1.15	(0.84, 1.59)	1.13	(0.82, 1.57)
Behaviors (Count)			1.10***	(1.05, 1.15)	1.13***	(1.08, 1.19)	1.12***	(1.07, 1.18)	1.12***	(1.06, 1.18)
Extreme Behaviors (Count)			1.25***	(1.10, 1.43)	1.27***	(1.11, 1.46)	1.27***	(1.11, 1.45)	1.26***	(1.11, 1.45)
Female					1.98***	(1.80, 2.19)	1.98***	(1.79, 2.19)	1.99***	(1.80, 2.20)

[1] Unweighted sample size; coefficients and 95% CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] The Joint OR is the odds ratio for co-occurence of the cardiometabolic and mental health outcomes (their comorbidity).
Covariate estimates in this group are the effect of each covariate on the strength of that comorbidity association (a ratio of odds ratios).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.24

Sensitivity Analysis (BMI-WSI-HCE Mediation Adjustment):
Cardiometabolic × Mental Health (Unconstrained)

Survey Design-Based Bivariate Logistic Regression
Only Focal Predictors Shown

	Analytic sample: ***universally-surveyed behaviors*** **| N = 14,597[1]**							
	M4.1: + BMI		M4.2: + WSI		M4.3: + HCE		M4.4: + All	
Variables	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**	**OR[2]**	**(95% CI)**
Joint ORs[3]								
Joint OR	3.35*	(1.15, 9.71)	1.80	(0.53, 6.16)	2.89*	(1.11, 7.53)	2.31	(0.70, 7.57)
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Maintain	0.66	(0.32, 1.37)	0.64	(0.31, 1.33)	0.72	(0.34, 1.52)	0.61	(0.29, 1.30)
Consistent Lose	0.96	(0.51, 1.82)	0.76	(0.41, 1.41)	1.02	(0.57, 1.83)	0.71	(0.37, 1.39)
Changing Lose/Maintain	0.98	(0.52, 1.86)	0.91	(0.48, 1.72)	1.05	(0.56, 1.94)	0.85	(0.43, 1.67)
Consistent Gain	0.77	(0.41, 1.47)	0.70	(0.37, 1.32)	0.80	(0.41, 1.56)	0.66	(0.34, 1.26)
Changing Goals	0.89	(0.52, 1.53)	0.87	(0.51, 1.47)	0.98	(0.57, 1.70)	0.79	(0.45, 1.39)
Behaviors (Count)	1.02	(0.91, 1.15)	1.02	(0.91, 1.15)	1.03	(0.92, 1.16)	1.02	(0.90, 1.14)
Extreme Behaviors (Count)	0.99	(0.74, 1.31)	0.96	(0.71, 1.28)	0.97	(0.73, 1.29)	0.96	(0.72, 1.29)
Female	0.85	(0.68, 1.06)	0.82	(0.66, 1.01)	0.91	(0.73, 1.12)	0.77*	(0.61, 0.97)
BMI Classification Exposure (Over)	0.98	(0.92, 1.05)					0.89**	(0.82, 0.97)
BMI Classification Exposure (Under)	0.71	(0.49, 1.01)					0.66*	(0.45, 0.97)
Weight Self-Image Exposure (Over)			1.11*	(1.01, 1.23)			1.25***	(1.11, 1.41)
Weight Self-Image Exposure (Under)			1.03	(0.88, 1.19)			1.08	(0.93, 1.26)
Yearly Routine Physicals					1.02	(0.91, 1.14)	0.97	(0.86, 1.10)

Cardiometabolic margins								
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Maintain	0.99	(0.71, 1.39)	1.04	(0.74, 1.45)	1.00	(0.72, 1.40)	1.01	(0.74, 1.40)
Consistent Lose	1.04	(0.76, 1.42)	0.97	(0.70, 1.35)	1.75***	(1.29, 2.38)	0.91	(0.67, 1.24)
Changing Lose/Maintain	1.16	(0.86, 1.56)	1.15	(0.86, 1.54)	1.46**	(1.10, 1.94)	1.12	(0.85, 1.47)
Consistent Gain	0.98	(0.70, 1.38)	0.92	(0.66, 1.29)	0.81	(0.59, 1.12)	0.96	(0.69, 1.34)
Changing Goals	1.00	(0.76, 1.33)	1.00	(0.76, 1.33)	1.07	(0.82, 1.39)	0.99	(0.77, 1.29)
Behaviors (Count)	1.01	(0.96, 1.07)	1.01	(0.96, 1.07)	1.06*	(1.00, 1.12)	1.01	(0.95, 1.07)
Extreme Behaviors (Count)	1.09	(0.96, 1.23)	1.05	(0.92, 1.19)	1.09	(0.96, 1.24)	1.07	(0.94, 1.21)
Female	0.88	(0.77, 1.01)	0.70***	(0.61, 0.80)	0.74***	(0.64, 0.84)	0.81**	(0.70, 0.94)
BMI Classification Exposure (Over)	1.26***	(1.22, 1.30)					1.18***	(1.14, 1.23)
BMI Classification Exposure (Under)	0.83	(0.69, 1.01)					0.84	(0.69, 1.03)
Weight Self-Image Exposure (Over)			1.36***	(1.30, 1.42)			1.16***	(1.10, 1.22)
Weight Self-Image Exposure (Under)			0.97	(0.91, 1.03)			1.02	(0.95, 1.09)
Yearly Routine Physicals					1.05	(0.99, 1.11)	1.05	(0.98, 1.12)
Mental Health margins								
Weight Goal Trajectory (Ref = Consistent Nothing)								
Consistent Maintain	0.91	(0.65, 1.28)	0.92	(0.65, 1.30)	0.89	(0.63, 1.26)	0.91	(0.65, 1.29)
Consistent Lose	1.38	(0.97, 1.95)	1.26	(0.88, 1.78)	1.34	(0.95, 1.90)	1.25	(0.88, 1.79)
Changing Lose/Maintain	1.16	(0.83, 1.63)	1.13	(0.81, 1.58)	1.14	(0.82, 1.58)	1.12	(0.80, 1.56)
Consistent Gain	1.39	(0.97, 1.98)	1.32	(0.91, 1.92)	1.39	(0.97, 1.99)	1.28	(0.88, 1.85)
Changing Goals	1.13	(0.82, 1.56)	1.11	(0.80, 1.54)	1.12	(0.81, 1.55)	1.09	(0.79, 1.51)

Behaviors (Count)	1.12***	(1.06, 1.17)	1.12***	(1.06, 1.17)	1.12***	(1.07, 1.18)	1.12***	(1.06, 1.18)
Extreme Behaviors (Count)	1.27***	(1.11, 1.45)	1.25***	(1.10, 1.43)	1.27***	(1.11, 1.45)	1.25***	(1.10, 1.43)
Female	1.97***	(1.78, 2.18)	1.99***	(1.80, 2.20)	1.96***	(1.77, 2.17)	1.87***	(1.69, 2.07)
BMI Classification Exposure (Over)	1.00	(0.97, 1.03)					0.96*	(0.92, 1.00)
BMI Classification Exposure (Under)	1.11	(0.97, 1.27)					1.08	(0.93, 1.25)
Weight Self-Image Exposure (Over)			1.05*	(1.00, 1.11)			1.10**	(1.03, 1.18)
Weight Self-Image Exposure (Under)			1.08*	(1.01, 1.14)			1.06	(1.00, 1.14)
Yearly Routine Physicals					1.08*	(1.01, 1.15)	1.08*	(1.01, 1.16)

[1] Unweighted sample size; coefficients and 95% CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] The Joint OR is the odds ratio for co-occurence of the cardiometabolic and mental health outcomes (their comorbidity).
Covariate estimates in this group are the effect of each covariate on the strength of that comorbidity association (a ratio of odds ratios).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

4.7.3 Supplementary Analysis

Table 4.25

Supplementary Analysis - Individual Cardiometabolic Diagnoses

Survey Design-Based Binomial Regression

All Focal Predictors Shown, Otherwise Significant Effects Only

(Heart Failure, Stroke, Atrial Fibrillation, and Arterial Disease Removed Due to Low Counts)

	Analytic sample: *dieting and behaviors* | N = 12,042[1]											
	Diabetes		Hypertension		Cholesterol		Heart Disease		Blood Clot		Kidney Disease	
Variable	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**
Weight Goal Trajectory (Ref = Consistent Maintain)												
Consistent Lose	1.52	(0.89, 2.59)	1.85***	(1.39, 2.46)	1.80***	(1.35, 2.41)	2.74	(0.50, 15.1)	0.53	(0.21, 1.35)	15.7*	(1.86, 133)
Changing Lose/Maintain	1.28	(0.76, 2.17)	1.42*	(1.05, 1.92)	1.64***	(1.26, 2.13)	3.41	(0.71, 16.5)	0.85	(0.35, 2.06)	14.2*	(1.68, 120)
Changing Goals	2.00*	(1.14, 3.51)	2.09***	(1.49, 2.92)	2.02***	(1.49, 2.73)	3.61	(0.68, 19.1)	1.42	(0.58, 3.46)	13.7*	(1.39, 135)
Dieted	1.53***	(1.20, 1.97)	1.39***	(1.21, 1.61)	1.27**	(1.10, 1.48)	1.03	(0.56, 1.89)	1.58	(0.98, 2.55)	1.27	(0.56, 2.89)
Behaviors (Count)	1.08	(1.00, 1.17)	1.06*	(1.01, 1.12)	1.00	(0.95, 1.06)	1.15	(0.96, 1.38)	1.10	(0.88, 1.37)	0.95	(0.77, 1.17)
Extreme Behaviors (Count)	1.18*	(1.01, 1.37)	1.06	(0.96, 1.16)	1.05	(0.95, 1.17)	0.88	(0.62, 1.25)	1.18	(0.85, 1.65)	1.27	(0.79, 2.05)
Female	0.81	(0.62, 1.06)	0.49***	(0.41, 0.59)	0.67***	(0.58, 0.77)	1.04	(0.54, 2.00)	1.28	(0.73, 2.24)	0.61	(0.31, 1.20)
Age	1.05	(0.98, 1.13)	1.01	(0.97, 1.06)	1.06**	(1.01, 1.10)	1.01	(0.88, 1.17)	1.09	(0.92, 1.28)	1.12	(0.89, 1.40)
Race[3]												
White	0.91	(0.71, 1.18)	0.93	(0.79, 1.10)	1.39***	(1.18, 1.65)	1.43	(0.85, 2.42)	1.83	(0.82, 4.05)	20.9***	(9.63, 45.4)
Asian/Pacific Islander	0.93	(0.57, 1.52)	1.01	(0.69, 1.48)	1.25	(0.84, 1.84)	0.06***	(0.02, 0.20)	0.71	(0.14, 3.55)	0.08**	(0.01, 0.42)
Black	1.53**	(1.12, 2.09)	1.71***	(1.44, 2.04)	0.96	(0.79, 1.16)	1.24	(0.58, 2.65)	1.72	(0.90, 3.28)	1.96	(0.75, 5.14)
Native American	0.84	(0.53, 1.34)	0.66**	(0.49, 0.89)	0.65**	(0.50, 0.85)	1.64	(0.78, 3.48)	0.12*	(0.02, 0.72)	2.48	(0.92, 6.65)
Multiracial/Other Race	0.65	(0.36, 1.18)	0.58**	(0.39, 0.86)	0.33***	(0.19, 0.58)	0.45	(0.11, 1.92)	0.37	(0.07, 2.01)	0.00***	(0.00, 0.00)

U.S. Born	2.00*	(1.07, 3.74)	1.52*	(1.10, 2.09)	1.21	(0.92, 1.60)	1.90	(0.27, 13.4)	21.5***	(5.29, 87.3)	0.53	(0.06, 5.18)
Met MVPA Guidelines	1.00	(0.80, 1.25)	0.93	(0.82, 1.05)	0.85*	(0.75, 0.97)	1.14	(0.70, 1.86)	1.58	(0.98, 2.54)	1.03	(0.51, 2.05)
Social Origins Score	0.85***	(0.78, 0.93)	0.91***	(0.86, 0.96)	0.97	(0.92, 1.04)	0.83	(0.67, 1.03)	1.01	(0.79, 1.29)	1.40	(0.95, 2.07)
Neighborhood SES Disadvantage	1.18*	(1.02, 1.36)	1.15**	(1.05, 1.25)	1.05	(0.95, 1.16)	1.55*	(1.09, 2.22)	1.15	(0.76, 1.73)	1.16	(0.76, 1.77)
Resources PC2	0.91*	(0.84, 0.99)	1.05	(0.99, 1.11)	0.99	(0.93, 1.06)	0.96	(0.69, 1.33)	0.98	(0.81, 1.19)	0.78*	(0.64, 0.97)
Beta Index 3km	0.75	(0.30, 1.84)	0.39***	(0.22, 0.68)	0.65	(0.33, 1.27)	0.32	(0.03, 3.06)	8.73**	(1.83, 41.7)	0.88	(0.06, 13.3)
Landscape Patch Density 3km	1.00	(0.99, 1.01)	1.00	(1.00, 1.01)	1.01*	(1.00, 1.01)	0.99	(0.97, 1.01)	1.00	(0.99, 1.02)	1.01	(0.99, 1.04)
Class 4 Area 3km	1.03	(0.95, 1.12)	1.09*	(1.02, 1.17)	0.98	(0.92, 1.05)	1.07	(0.78, 1.45)	1.10	(0.86, 1.41)	1.16	(0.82, 1.66)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.26

Supplementary Analysis - Individual Mental Health Diagnoses Survey Design-Based Binomial Regression *All Focal Predictors Shown, Otherwise Significant Effects Only*								
	Analytic sample: *dieting and behaviors* | N = 12,042[1]							
	Depression		Anxiety		PTSD		ADHD	
Variable	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**	**OR**[2]	**95% CI**
Valid Waves (Ref = 3)								
2	1.40**	(1.10, 1.79)	1.00	(0.78, 1.27)	1.11	(0.70, 1.76)	0.93	(0.54, 1.60)
Weight Goal Trajectory (Ref = Consistent Maintain)								
Consistent Lose	1.34*	(1.05, 1.71)	1.32	(1.00, 1.75)	1.09	(0.68, 1.73)	1.67	(0.85, 3.27)
Changing Lose/Maintain	1.26	(0.99, 1.61)	1.08	(0.84, 1.40)	1.36	(0.88, 2.11)	2.29*	(1.21, 4.34)
Changing Goals	1.85***	(1.38, 2.47)	1.27	(0.94, 1.71)	1.18	(0.71, 1.96)	1.62	(0.89, 2.98)
Dieted	1.18*	(1.03, 1.36)	1.01	(0.88, 1.16)	1.37*	(1.08, 1.74)	1.25	(0.93, 1.68)
Behaviors (Count)	1.06**	(1.01, 1.11)	1.03	(0.98, 1.09)	1.06	(0.98, 1.15)	0.92	(0.83, 1.02)
Extreme Behaviors (Count)	1.31***	(1.20, 1.45)	1.19***	(1.07, 1.31)	1.13	(0.97, 1.32)	1.63***	(1.35, 1.97)
Female	2.34***	(2.07, 2.64)	2.47***	(2.15, 2.84)	1.58***	(1.27, 1.98)	0.43***	(0.32, 0.57)
Age	0.95**	(0.91, 0.99)	0.93***	(0.89, 0.97)	0.95	(0.88, 1.02)	1.00	(0.92, 1.10)
Race[3]								
White	2.09***	(1.78, 2.45)	2.55***	(2.11, 3.09)	1.73**	(1.23, 2.43)	2.42***	(1.63, 3.61)
Asian/Pacific Islander	0.42***	(0.28, 0.62)	0.34***	(0.20, 0.58)	0.26**	(0.11, 0.64)	0.42	(0.15, 1.12)
Black	0.53***	(0.43, 0.64)	0.49***	(0.40, 0.61)	0.89	(0.60, 1.32)	0.31***	(0.17, 0.55)
Native American	0.76*	(0.60, 0.97)	0.58***	(0.44, 0.76)	0.80	(0.54, 1.19)	1.66*	(1.05, 2.63)
Multiracial/Other Race	0.46***	(0.31, 0.68)	0.36***	(0.21, 0.62)	0.37*	(0.16, 0.85)	0.28*	(0.11, 0.75)
Latino/a	0.70**	(0.55, 0.91)	0.85	(0.65, 1.13)	1.16	(0.77, 1.74)	0.50*	(0.25, 0.98)
U.S. Born	1.49*	(1.06, 2.09)	1.84**	(1.21, 2.80)	1.63	(0.82, 3.23)	2.06	(0.70, 6.05)

Avg. Sleep Hours	0.95*	(0.91, 1.00)	0.96	(0.92, 1.01)	0.97	(0.87, 1.08)	1.02	(0.93, 1.11)
Met MVPA Guidelines	0.99	(0.86, 1.13)	1.13	(0.97, 1.31)	1.30*	(1.03, 1.63)	1.11	(0.83, 1.50)
Ever Uninsured	1.28***	(1.13, 1.45)	1.42***	(1.26, 1.61)	1.30*	(1.04, 1.63)	1.15	(0.88, 1.49)
Prop. Dinners w/ Parent(s)	0.76***	(0.65, 0.89)	0.83*	(0.70, 1.00)	0.83	(0.61, 1.13)	1.31	(0.86, 1.97)
Social Origins Score	0.96	(0.90, 1.02)	0.97	(0.91, 1.04)	0.90*	(0.81, 1.00)	1.10	(0.96, 1.27)
Neighborhood SES Disadvantage	1.07	(0.97, 1.18)	1.02	(0.92, 1.14)	1.20**	(1.05, 1.38)	0.84	(0.67, 1.05)
Neighborhood Feels Safe	0.77**	(0.64, 0.93)	0.93	(0.75, 1.15)	0.76	(0.57, 1.01)	0.66*	(0.43, 1.00)
Climate PC1	1.02	(0.99, 1.05)	1.06**	(1.02, 1.09)	1.01	(0.95, 1.07)	1.04	(0.97, 1.11)
Resources PC2	1.05	(0.98, 1.11)	0.97	(0.92, 1.03)	1.14*	(1.00, 1.30)	1.01	(0.90, 1.14)
Beta Index 3km	0.90	(0.58, 1.38)	0.48*	(0.27, 0.87)	0.70	(0.29, 1.68)	1.08	(0.40, 2.90)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Table 4.27

Supplementary Analysis - All Other Individual Diagnoses

Survey Design-Based Binomial Regression
All Focal Predictors Shown, Otherwise Significant Effects Only
(Aortic Aneurysm Removed Due to Low Count)

	Analytic sample: *dieting and behaviors* | N = 12,042[1]											
	Cancer		Respiratory Disease		Sleep Apnea		Migraines		Seizures		Eating Disorder	
Variable	**OR[2]**	**95% CI**	**OR[2]**	**95% CI**	**OR[2]**	**95% CI**	**OR[2]**	**95% CI**	**OR[2]**	**95% CI**	**OR[2]**	**95% CI**
Valid Waves (Ref = 3)												
2	1.35	(0.78, 2.33)	0.96	(0.71, 1.29)	1.12	(0.75, 1.68)	1.12	(0.85, 1.48)	1.32	(0.56, 3.13)	2.49*	(1.04, 5.95)
Weight Goal Trajectory (Ref = Consistent Maintain)												
Consistent Lose	1.08	(0.60, 1.94)	1.55**	(1.16, 2.07)	2.41**	(1.34, 4.33)	1.06	(0.72, 1.57)	0.52*	(0.28, 0.96)	0.49**	(0.29, 0.83)
Changing Lose/Maintain	1.44	(0.76, 2.73)	1.58**	(1.12, 2.23)	2.01*	(1.15, 3.49)	1.09	(0.80, 1.47)	0.71	(0.37, 1.38)	0.62	(0.35, 1.10)
Changing Goals	1.97*	(1.05, 3.70)	1.68**	(1.22, 2.32)	1.96*	(1.05, 3.68)	1.29	(0.90, 1.84)	1.19	(0.51, 2.81)	1.01	(0.50, 2.04)
Dieted	0.92	(0.66, 1.28)	0.97	(0.83, 1.13)	1.16	(0.89, 1.52)	1.09	(0.91, 1.30)	0.98	(0.62, 1.55)	1.54*	(1.08, 2.22)
Behaviors (Count)	1.16*	(1.01, 1.34)	1.01	(0.95, 1.07)	1.05	(0.95, 1.15)	1.06*	(1.00, 1.12)	1.03	(0.93, 1.15)	1.09	(0.96, 1.22)
Extreme Behaviors (Count)	1.04	(0.85, 1.27)	1.14*	(1.03, 1.26)	1.27**	(1.08, 1.49)	1.26***	(1.13, 1.40)	1.82***	(1.48, 2.23)	1.80***	(1.54, 2.11)
Female	2.62***	(1.80, 3.83)	1.33**	(1.12, 1.59)	0.32***	(0.23, 0.43)	2.60***	(2.18, 3.11)	0.86	(0.55, 1.35)	10.2***	(5.02, 20.9)
Age	1.06	(0.95, 1.17)	1.00	(0.96, 1.04)	1.11**	(1.04, 1.19)	1.02	(0.97, 1.06)	1.01	(0.88, 1.16)	0.96	(0.86, 1.07)
Race[3]												
White	1.47*	(1.02, 2.12)	1.11	(0.94, 1.32)	1.38*	(1.02, 1.88)	1.65***	(1.33, 2.05)	1.45	(0.75, 2.78)	2.24**	(1.37, 3.68)
Asian/Pacific Islander	0.93	(0.35, 2.48)	0.64*	(0.42, 0.97)	0.89	(0.39, 2.00)	0.18***	(0.09, 0.36)	0.03***	(0.00, 0.16)	0.91	(0.28, 2.99)
Black	0.79	(0.53, 1.18)	1.33**	(1.11, 1.59)	1.80***	(1.31, 2.48)	0.76*	(0.60, 0.97)	1.89	(0.93, 3.82)	0.45*	(0.23, 0.86)
Native American	0.63	(0.34, 1.18)	0.68**	(0.52, 0.90)	0.20***	(0.10, 0.40)	0.97	(0.71, 1.32)	1.19	(0.53, 2.67)	0.71	(0.38, 1.35)
Multiracial/Other Race	0.59	(0.25, 1.39)	0.69	(0.42, 1.12)	0.49*	(0.26, 0.94)	0.76	(0.49, 1.18)	0.42	(0.10, 1.87)	0.28	(0.04, 2.14)
U.S. Born	2.21	(0.88, 5.59)	2.15***	(1.43, 3.23)	2.80*	(1.19, 6.60)	1.19	(0.79, 1.78)	3.28	(0.56, 19.1)	1.36	(0.38, 4.83)

Met MVPA Guidelines	0.98	(0.73, 1.31)	1.02	(0.89, 1.16)	1.03	(0.79, 1.35)	1.00	(0.86, 1.17)	0.77	(0.50, 1.21)	1.56**	(1.13, 2.15)
Prop. Dinners w/ Parent(s)	1.35	(0.86, 2.12)	1.34**	(1.11, 1.63)	0.99	(0.73, 1.32)	1.16	(0.94, 1.44)	1.44	(0.83, 2.50)	0.87	(0.51, 1.48)
Social Origins Score	1.01	(0.86, 1.19)	0.93*	(0.86, 0.99)	1.03	(0.93, 1.14)	0.94	(0.87, 1.02)	1.00	(0.79, 1.26)	1.18*	(1.00, 1.39)
Parent Graduated HS	1.00	(0.51, 1.95)	1.44**	(1.09, 1.90)	1.29	(0.79, 2.13)	1.20	(0.91, 1.58)	1.07	(0.51, 2.26)	0.63	(0.33, 1.21)
Neighborhood Feels Safe	0.76	(0.46, 1.27)	1.05	(0.85, 1.30)	0.60**	(0.41, 0.88)	0.90	(0.71, 1.14)	0.87	(0.41, 1.87)	1.22	(0.71, 2.10)
Metropolitan Area	0.86	(0.57, 1.27)	1.20	(1.00, 1.44)	1.27	(0.94, 1.73)	1.01	(0.83, 1.23)	2.41**	(1.29, 4.49)	1.25	(0.83, 1.87)
Climate PC1	1.01	(0.94, 1.07)	0.98	(0.95, 1.02)	1.02	(0.97, 1.06)	0.99	(0.96, 1.03)	0.94	(0.85, 1.05)	1.10*	(1.02, 1.18)
Climate PC2	0.96	(0.89, 1.03)	0.95**	(0.91, 0.98)	1.00	(0.93, 1.06)	0.96*	(0.92, 1.00)	0.95	(0.83, 1.09)	0.99	(0.92, 1.06)
Resources PC2	0.92	(0.77, 1.09)	0.97	(0.91, 1.04)	1.08	(0.97, 1.20)	1.06	(0.95, 1.18)	1.19*	(1.00, 1.41)	1.06	(0.91, 1.22)
Cul-de-sac Density 3km	1.02	(0.96, 1.09)	1.00	(0.97, 1.03)	1.01	(0.95, 1.06)	1.01	(0.97, 1.05)	1.03	(0.95, 1.11)	1.08*	(1.01, 1.15)
Class 4 Area 3km	0.92	(0.77, 1.09)	1.01	(0.95, 1.08)	0.91	(0.79, 1.04)	1.10*	(1.02, 1.19)	1.05	(0.87, 1.26)	1.03	(0.93, 1.15)

[1] Unweighted sample size; coefficient estimates and CIs are estimated using survey weights.

[2] * p <0.05; ** p < 0.01; *** p <0.001. Estimates highlighted in color are statistically significant:
Values > 1 indicate higher odds of diagnosis while **values < 1** indicate lower odds of diagnosis.

[3] Binary contrasts: each race category is compared to all other categories combined (Freese & Johfre 2022).

Abbreviation: OR = Odds Ratio, CI = Confidence Interval

Chapter 5

CONCLUSION

This dissertation began from a deceptively simple reversal. Where the dominant approach to weight and health treats the larger body as a problem to be explained and corrected, the chapters here asked what follows if the sustained pursuit of a smaller body — culturally mandated and medically endorsed — is treated as the operative exposure. On this account body size does not drop out of the picture; it is woven into the pathway that runs from the weight-centered paradigm to disease. Body size helps draw people into the pursuit in the first place, and it is one of the channels through which the paradigm's stigma is registered in the body. What it is not, the evidence here suggests, is the root cause of the morbidity so reliably attributed to it. Read together, the three studies follow weight-goal pursuit along that pathway in three steps: from its social origins, through the behaviors it sets in motion, to the disease that accumulates by adulthood.

Chapter 2 established that the pursuit is a socially structured phenomenon, and a strikingly common one. Across the cohort, a settled indifference to weight was rare: fewer than one in twenty adolescents occupied the trajectory defined by no weight goal at all, a finding that points to the near-total recruitment of a generation into some form of weight-oriented aspiration. Who is recruited, and toward what end, falls along familiar and asymmetric lines — girls and women sorted overwhelmingly into trajectories of sustained loss, boys and men toward gain, in a mirror-image pattern that tracks the gendered body ideals the paradigm encodes. But the chapter's central result concerned the relative force of measured and perceived body size. Clinical BMI classification did predict entry into loss pursuit, yet perceived weight status predicted it far more powerfully: an adolescent who saw herself as slightly overweight had on the order of nine times the odds of sustained loss pursuit, against roughly threefold odds for one clinically classified as overweight. Self-perception, not the clinical label, was the dominant driver — and the gendered gap actually widened once body size was held constant, meaning women's heightened orientation toward loss cannot be explained away as a response to being larger. The paradigm, in short, recruits less through its diagnostic thresholds than through the internalized standard those thresholds help install, and it installs that standard most insistently in women.

Chapter 3 asked what the pursuit does once underway, and found that it translates into behavior along two distinct tracks. The everyday weight-control behaviors the survey asked of everyone turned out to saturate the whole cohort, occurring at nearly identical rates regardless of weight goal; so thoroughly has the paradigm folded such practices into ordinary life that even adolescents with no weight goal engaged in them as often as anyone else. The goal-directed behaviors were a different matter. Here trajectory membership was the dominant predictor, surviving adjustment for body size, individual, and household and neighborhood contextual effects without meaningful attenuation: relative to those who merely maintained, every active trajectory — and sustained loss most of all — involved substantially more weight-control behavior and markedly higher odds of crossing into clinically extreme practices, with consistent loss pursuit roughly two and a half times as likely to involve some extreme behavior. Two further findings sharpen the picture. Dieting, the paradigm's signature prescription, did not raise the overall volume of behavior but specifically predicted escalation into the extreme — evidence that when ordinary restriction fails, as it usually does, the response is intensification rather than abandonment.

And women, though they engaged in fewer behaviors overall, were more likely to cross into the extreme range and to act more intensively once there, a reversal with the unsettling clinical implication that lower behavioral counts among adolescent girls conceal, rather than signal, lower risk. As in Chapter 2, what consistently buffered against this escalation was not anything in the built environment but the ordinary social fact of family connection: sharing regular meals with parents was protective across every behavioral outcome.

Chapter 4 closed the pathway, asking whether sustained pursuit and its behaviors accumulate into measurable disease by adulthood, and whether body size could account for whatever accumulation appeared. Carried into their thirties and forties, adolescents and young adults marked by sustained weight goal pursuit bore a heavier burden of diagnosed conditions across both the cardiometabolic and the mental-health domains, and the dieting and extreme behaviors that pursuit recruited carried their own elevated risk. Adjusting for body size absorbed part of this association — the part consistent with the stigma and physiological strain of being classified, and of seeing oneself, as larger — but it left the rest intact, and the portion attached to the most unstable, goal-shifting trajectories survived classification entirely. The cardiometabolic results held under rigorous tests using alternative analytic samples and proved resistant to plausible unmeasured confounding; the mental-health results were smaller and concentrated, as the underlying mechanism would predict, in the trajectories defined by repeated change. Body size, then, sits squarely within the pathway from the paradigm to disease rather than at its origin: it helps motivate weight goal pursuit and transmits part of the pursuit's cost, but the harm cannot be reduced to body size.

Set end to end, the three chapters describe a single process and identify it as iatrogenic in the strict sense — a harm produced by the very intervention meant to prevent it. A paradigm organized around the dangers of fat bodies recruits a near-totality of the population into the work of bodily correction; it does so most forcefully through an internalized standard rather than a clinical one, and most heavily among girls and women; it converts that standard into behavior, including the extreme behavior that shades into self-harm; and it ends by collecting, as evidence of the danger of fat bodies, a measurable share of the morbidity its own demands helped create. And because that pursuit is pressed most insistently on those already marked as falling short of an approved body, the paradigm does more than manufacture disease: it sorts that disease onto the populations already carrying the largest share of social disadvantage, widening the inequalities it casts itself as repairing. What presents itself as a remedy for a health crisis is, in part, a mechanism for producing one and assigning it unequally.

One thread runs through all three studies and deserves to be named explicitly, because it is the empirical heart of the argument. At every stage — goal formation, behavioral engagement, and the morbidity that followed — the internalized sense of being too large did more work than the measured fact of body size. Perceived weight status outpredicted clinical classification in who took up the pursuit and how they acted on it, and the disease that accrued was only partly explained by measured size, with self-perception contributing in its own right. This is just what one would expect if the operative exposure is a culturally installed standard rather than adiposity itself: what injures the body is the demand to be other than it is, felt through self-perception, not the body's actual dimensions. What gives that standard its grip, though, is not culture alone but its medical endorsement. Thinness was once dismissible as vanity — an aesthetic preference with no real claim on anyone's conscience — until the medicalization of obesity recast the smaller body as the healthier one and the pursuit of thinness as synonymous with the pursuit of health. Under the healthist logic from which this dissertation begins, in which health is treated as an individual moral responsibility (Crawford 1980), that shift is decisive: it turns a matter of appearance into a matter of virtue so that the demand to be smaller arrives not as fashion but as obligation, and falling short of it registers as moral failure.

The reach of this paradigm becomes easier to see once it is set within a longer cultural lineage. Its hold depends on a prior assumption that health is something one either possesses or lacks — a fixed status to be achieved and maintained — when health is in fact a fluid condition that every person passes into and out of across their life, shifting with age, circumstance, and forces well beyond individual control. Treating it as a stable attainment quietly imports an ableist standard and recasts the ordinary passage through illness, injury, and decline as a personal failing to be corrected. Onto this static picture the paradigm grafts a moral logic with deep historical roots: as Strings (2019) shows, the equation of fatness with disorder and thinness with virtue took shape within a racialized Western project of distinguishing the rational, self-governing person from the body and its appetites. Its newest form is the idiom of optimization, in which the body is discussed as something to be hacked, programmed, and upgraded, tuned like a machine toward greater output and longevity — an idiom now made literal in the life-extension and transhumanist ambitions of a segment of the technological elite. Set beside Strings' account, these projects look less like novelty than continuity: another attempt to escape the condition of being an embodied animal with needs and limits rather than a system to be engineered, and one that, as Émile Torres has argued, carries forward the eugenic impulse to rank and perfect human bodies (Gebru and Torres 2024; Torres 2024)[48]. The weight-centered health paradigm is one ordinary, daily expression of that same drive to discipline the unruly body toward an idealized and governable form. Its ubiquity is also what makes it so damaging: lodged in routine medical advice and daily self-scrutiny, the demand reaches nearly everyone and has harmful consequences for individuals' health and quality of life.

Governing health this way carries costs beyond the bodies it acts on directly. A medical and public-health apparatus that prescribes a regimen which is difficult to sustain, ineffective on its own terms, and — as this dissertation argues — implicated in the harm it claims to avert, gives people good reason to doubt it. The erosion of trust in scientific and medical authority now visible across the ideological spectrum draws on a real history in which that authority was turned against the people it claimed to serve, from the Tuskegee study (Gamble 1997; Reverby 2009) to the racialization of psychiatric diagnosis documented by (Metzl 2010) among many other examples. When confidence in established expertise fails, the pursuit of health does not stop; it moves toward alternative authorities and a largely unregulated wellness market, much of which rests on no evidence and some of which does real harm[49]. A paradigm

[48] These moral logics appear in especially stark forms at the cultural margins: in the explicitly religious idiom of weight-loss ministries such as Gwen Shamblin's Remnant Fellowship, where thinness is treated as a sign of spiritual worth (the subject of the 2021 documentary *The Way Down*), and in the secular perfectionism chronicled in Lauren Greenfield's films *Thin* (2006) and *Generation Wealth* (2018), which document the lengths to which the pursuit of an idealized body and life is carried.

[49] A handful of practices marketed under the wellness banner do have a genuine evidence base — mindfulness meditation and certain forms of yoga among them — but they are exceptions within a largely unregulated and unevidenced market. Even these reach the Western wellness consumer largely severed from their cultural and religious origins, extracted from the South Asian and Buddhist traditions in which they developed and repackaged as one more commodity to be bought in the pursuit of individual health — frequently, as (Róisín 2022) documents, sold at a premium by and to those least connected to the communities from which they were taken.

that breeds this distrust while failing to deliver what it promises is poorly placed to object to the remedies that rush in to fill the void.

The more defensible response is to shift the work of health away from the individual body and toward the conditions that produce health in the first place. Health is socially produced and unequally distributed, patterned by gender, race, and class just as other life chances are; the interventions most capable of improving it are therefore structural rather than individual. Stable and fairly paid work, secure and affordable housing, dependable access to food and medical care, and communities built for movement, connection, and rest shape health more deeply than any instruction about what or how much to eat — and they do so for people of every body size (Krieger 2001; Link and Phelan 1995; Marmot 2005). The findings of this dissertation point in the same direction. Across all three studies, the factors that most consistently protected adolescents against weight-goal pursuit and its most damaging behaviors were markers of social connection and security — regular family meals above all, along with neighborhood safety and the resources of a more advantaged social origin — while the built-environment features at the center of "obesogenic environment" research did almost nothing. What protects health, in other words, lies largely outside the narrow domain the paradigm polices.

These broader observations run ahead of what the present data can demonstrate, and are offered in that spirit — as the wider field within which the empirical findings sit, and as directions worth pursuing. The studies conducted in the previous three chapters are observational and rest on self-reported diagnoses; they adjudicate among competing accounts rather than rendering a final verdict on cause. Future work might measure the pursuit of weight change directly and across additional cohorts, examine how a culture of bodily optimization reshapes who takes up that pursuit and in what form, and treat the distrust and wellness-seeking that follow iatrogenic policy as outcomes in their own right.

What this dissertation finally argues for is a change in where we look. For half a century the science and policy of weight have fixed their attention on the size of bodies and have asked individuals to shoulder the work of changing them. The evidence assembled here suggests that this attention has been misplaced in three connected ways. It has mistaken a marker for a cause, settling on body size when the operative exposure is the pursuit of changing it. It has mistaken an individual failing for a structural condition, asking people to correct on their own a pattern that social arrangements produce and unequally distribute. And it has mistaken a fixed endpoint for a fluid process, treating health as a state to be reached and held rather than one each person moves through unevenly across a lifetime. Setting the body's size aside as the object of concern — and taking up in its place the pursuit imposed upon it, the unequal conditions that determine who is enlisted and who is harmed, and the structural supports on which health genuinely depends — is the reorientation toward which these findings point. It is, in the end, an empirical correction and a moral one at once: a way of ceasing to produce the very harm we have so long misread as the fault of the bodies that bear it.

Chapter 6

APPENDIX: DATA CLEANING AND OPERATIONALIZATION

6.1 Race and Latino/a Ethnicity

Add Health measured race and Latino/a ethnicity through several distinct item formats, and the wording, structure, and response options of those items changed across waves. Three formats are relevant here: a set of “mark all that apply” binary indicators, one for each racial category; a single-response item asking which one category best describes the respondent’s racial background; and detailed follow-up items on Hispanic, Asian, and Pacific Islander national origin. Waves I, III, and V each fielded some combination of these. Constructing measures comparable across waves therefore required harmonizing the source items before any classification rules could be applied.

Two adjustments aligned the national-origin categories. The Wave I and III Hispanic-origin items distinguished Mexican from Chicano respondents, while Wave V offered these as a single option; the two were collapsed into one category. Conversely, Wave V separated Central American from South American origin, which Waves I and III had combined; these were collapsed to match the earlier waves.

A single Latino/a background measure was then constructed from the detailed origin item together with the binary origin indicators. Respondents reporting more than one Hispanic origin were assigned to an “other Hispanic or multiple origin” category. Because the Wave V origin items were structured differently, the single best-describing-race item was also consulted at that wave to identify Latino/a identification not captured by the origin items alone. An analogous consolidation was performed for Asian background, drawing on the general Asian-origin item, the country-specific origin indicators, and the best-describing-race item. Pacific Islander origin was measured least consistently: no general origin item was fielded, so classification relied on the country-specific binary indicators, supplemented at Wave V by the best-describing-race item. All three background measures were subsequently harmonized within person, such that respondents reporting more than one origin at any wave carry the corresponding multiple-response category at every wave.

Two of the "mark all that apply" indicators were augmented before being used to classify race. Because the Asian/Pacific Islander (API) classification combines groups that Add Health measured separately, a single API indicator was set affirmative if either the Asian or the Pacific Islander binary item was marked, or if either constructed background measure was non-missing. The Native American indicator was set affirmative if the corresponding binary item was marked, if the best-describing-race item indicated American Indian/Native American, or — at Wave III — if the first country of ancestry reported was America, a category that in Add Health's coding scheme encompasses Native American and Eskimo ancestry. The White, Black, and Other Race indicators were used as reported.

The binary indicator for Latino/a ethnicity was coded affirmative if the constructed Latino/a background measure was non-missing or, at Wave V, if the respondent marked the Hispanic-origin indicator or the best-describing-race item indicated Hispanic or Latino origin. Consistent with the two-question standard for measuring race and Hispanic origin, this indicator is maintained separately from race, so that Latino/a respondents also carry a racial classification.

Within each wave, race was assigned in two stages. Where the single best-describing-race item was answered, it took precedence, mapping to White, Black, Native American, API, or Other Race; "don't know," "refused," and remaining nonresponse codes were set to missing before this step. Where the item was missing, classification fell to the "mark all that apply" indicators. Respondents marking exactly one category were assigned to it. Respondents marking White together with exactly one other category were assigned that other category. Respondents marking two or more categories other than White were classified Multiracial.

Because respondents did not report race at every wave, missing values on race, the Latino/a indicator, and the three background measures were filled within person across waves in both directions before a time-invariant measure was constructed. That measure takes the classification recorded at the respondent's last observed wave. Twelve respondents whose reports could not be classified at any wave were recoded using interviewer observation of race; one of these could not be classified on that basis either and was left missing. This final measure is the race variable entered in all models.

Two indicators retain a record of these decisions: one flagging respondents whose final classification differs from the race coded at an earlier wave, and one flagging the cases in which interviewer-observed race was substituted for self-report. Sensitivity analyses were run including these two indicators but they had no effect on any substantive findings so these results were not reported.

6.2 Height and Weight

Add Health data includes self-reported measures for weight and height in all five waves of data used across the studies of this dissertation. Additionally, starting in Wave II and continuing through Wave V, respondents also had their height and weight measured by the interviewer. Given much of the focus of this dissertation is on adjudicating the role of BMI classification on health outcomes, great care was taken to make sure the BMI calculations for respondents were accurate.

6.2.1 Height

When running descriptive statistics for both self-reported and interviewer-measured height, several outliers and respondent-level inconsistencies emerged that warranted further investigation. A few studies have looked at the reliability of self-reported weight and height measures (Clarke et al. 2014; Goodman, Hinden, and Khandelwal 2000; Hussey et al. 2015), but their focus was on the reliability of self-reported versus interviewer-measured reports in order to compare the validity of BMI calculations derived from each. To my knowledge, no study has assessed the consistency of either self-reported or interviewer-measured heights, which should be fairly stable once respondents enter adulthood. In assessing the longitudinal differences between the two, however, there were a substantial number of inconsistencies — both between measures and across the same measure within individuals — particularly after Wave III, when all respondents were over the age of 18.

Before settling on the approach described below, I first attempted to identify and correct implausible heights using a set of rule-based functions that flagged values falling outside fixed thresholds. This proved both unwieldy and overly dependent on my own judgment about which values constituted errors, introducing precisely the kind of investigator bias I hoped to avoid. I therefore reframed the task as one of anomaly detection, in which a model — rather than a fixed set of rules — learns to distinguish plausible from implausible heights from labeled examples.

I assembled a working dataset containing each respondent's self-reported and interviewer-measured heights across all available waves, standardized to a common metric, together with the demographic characteristics most relevant to growth (age, sex, and race). To give the model information about what constituted plausible change, I added an expected-growth benchmark drawn from published age-, sex-, and race-specific height trajectories for U.S. children and adolescents (Kelly et al. 2014), along with the observed change in height between consecutive waves — computed across every pairing of self-reported and interviewer-measured values — and standardized scores capturing how far each height departed from a respondent's own typical value.

Because anomaly detection of this kind requires labeled examples to learn from, I drew a stratified random sample of roughly five percent of respondents, balanced on sex, race, and the number of waves each contributed. For every respondent in this sample I plotted the full height trajectory and manually labeled each wave with one of four decisions: accept the interviewer-measured value, accept the self-reported value, take the average of the two, or flag the value as anomalous. These labeled cases were then partitioned into a training set, used to fit the model, and a held-out test set, reserved for evaluating it.

Because some heights were missing and the model required complete information on every predictor, I imputed missing values using nearest-neighbor imputation — estimating each missing value from the most similar complete cases — implemented within the tidymodels framework (Kuhn and Wickham 2020). I compared this against several alternatives, including tree-based and predictive-mean-matching imputation, and retained nearest-neighbor imputation because it produced the most physiologically plausible values. Where an imputed value nonetheless remained implausible, I substituted the average of the adjacent waves, or the nearest available measurement when only one neighbor existed. I also retained indicators marking which values had been imputed, both so the model could learn from any systematic patterns in missingness and so that imputed values could be treated with appropriate caution.

Anomalous heights were, by design, rare relative to valid ones, so I evaluated a range of strategies for handling this class imbalance, including simple upsampling of the rare cases and several syntheticoversampling techniques that generate plausible artificial examples of the minority class. I also varied the set of predictors supplied to the model, ranging from a minimal specification to one incorporating all of the derived growth and deviation measures described above. An initial comparison across modeling algorithms clearly favored gradient-boosted decision trees, and I carried this method forward, tuning its settings first with a computationally efficient racing procedure and then with Bayesian optimization. Candidate models were compared primarily on the area under the precision-recall curve — a metric well suited to detecting rare events — with the area under the ROC curve as a secondary criterion. The best-performing specification combined the full predictor set, upsampling of anomalous cases, and the missingness indicators.

This model was fit on the full training data, evaluated against the held-out test set, and then used to flag anomalous heights throughout the remainder of the sample. I visualized every respondent's predicted trajectory and reviewed them in order to correct by hand the relatively small number of evident misclassifications. Remaining anomalous or missing values were resolved with a set of decision rules grounded in the developmental stability of adult height — for example, interpolating an interior wave from age when the flanking waves were valid, or carrying forward the nearest reliable measurement for respondents who had already reached adulthood. A small residual set of missing values was resolved through individual visual inspection.

Finally, I compared the corrected height variable against a raw version, defined as the interviewer-measured value where available and the self-reported value otherwise. Of the 16,421 respondents in the most inclusive analytic sample used in the main analysis of Chapter 2, 3,710 respondents (22.6%) had their Wave I height recoded. Wave I is the wave most exposed to correction precisely because it carries no interviewer measurement: the self-report is the only height available, so it can be evaluated only against the respondent's own subsequent trajectory, and every correction there necessarily departs from the raw value. Uncorrected Wave I heights averaged 171.46 cm (SD 10.36) against 168.10 cm (SD 9.79) after correction, a mean paired difference of 3.22 cm (95% CI 3.09–3.35); the procedure additionally resolved 111 cases carrying no usable uncorrected value. Corrections therefore ran predominantly downward — implausibly tall self-reports were the dominant anomaly and the narrower corrected standard deviation reflects the removal of extreme values.

6.2.2 Weight

Add Health collected weight in two forms. Respondents self-reported their weight in pounds at every wave, and beginning at Wave II interviewers also recorded a direct measurement — in pounds at Waves II and III, and in kilograms at Waves IV and V. I converted measured values to pounds so that the two series could be compared on a common scale. Wave I carries no interviewer measurement, so error in the Wave I self-report is detectable only against a respondent's own subsequent trajectory.

Weight does not admit the stability assumption that makes anomaly detection tractable for height, so I screened it on four rule-based criteria instead: a within-wave difference of more than 20 pounds between the self-reported and measured value; implausible values on either measure, below 75 or above 500 pounds; probable data-entry errors, identified by comparing the digits of two weight values for transpositions and for omitted or duplicated keystrokes; and wave-to-wave change exceeding 25 pounds per year of elapsed age. The last two criteria were applied only where the within-wave discrepancy flag was also present, so that genuine weight change would not be read as error.

No flagged value was corrected automatically. I plotted every flagged respondent's full weight history, reviewed each against the rest of their record, and entered corrections by hand only where the trajectory identified both a specific erroneous value and its likely replacement. Because weight is genuinely labile, and because divergence between self-reported and measured weight is a well-documented reporting phenomenon rather than a data error, I held the standard for correction deliberately conservative and retained the large majority of flagged cases as reported.

Only three respondents in the most-inclusive analytic sample from Chapter 2 had a Wave I weight recoded, and they divide between the two mechanisms the screening was designed to catch. In two cases the respondent's self-reports ran consistently above their interviewer-measured weight across the waves in which both were available, indicating systematic over-reporting rather than an isolated error; for these I substituted the Wave II measured value for the Wave I self-report, a substitution the short interval between the first two waves makes reasonably safe. The third was a physiologically implausible value — 50 pounds — flagged by the range criterion as a probable data-entry error and corrected to 90 pounds on review of the respondent's full weight history.

6.2.3 BMI

BMI was then computed as corrected weight in kilograms divided by the square of corrected height in meters, and the resulting values assigned to classifications using the age-specific thresholds described in Section 2.5.1.3. Sensitivity analyses were conducted including binary indicators for both corrected height and corrected weight, as well as a version of BMI calculated with the uncorrected height and weight values. These results did not affect the substantive findings of any analysis and were not reported.

6.3 Health Conditions and Age of Onset

Add Health asks respondents at multiple waves whether a doctor or health professional has ever told them they have a given condition, and, for most conditions, how old they were when first diagnosed. Because these items are retrospective and repeated, a respondent contributes several reports of the same event, and those reports frequently disagree: a condition affirmed at one wave is denied at a later one, ages at diagnosis differ across waves, or a reported age exceeds the respondent's age at the interview in which it was given. Constructing a single ever-diagnosed indicator and a single age at onset therefore requires an explicit reconciliation rule rather than a simple decision to accept any affirmative report. I wrote a general function to apply that rule uniformly across conditions and to record, for every respondent, which rule produced their final value.

Six conditions — diabetes, hypertension, high cholesterol, heart disease, kidney disease, and stroke — carry an additional administration of the same diagnosis question, asked of respondents who completed the Wave V biomarker survey. This is the identical self-report item fielded in a second setting rather than an objective measurement, so I treat it as one more report rather than as independent confirmation: it enters as a synthetic observation carrying the respondent's Wave V age and ordered immediately after the Wave V record. Five conditions — diabetes, hypertension, high cholesterol, heart disease, and kidney disease — additionally carry a clinically derived classification. These classifications do not enter the constructed indicators, which rest entirely on self-report.

Implausible ages. An age at diagnosis was flagged as implausible if it exceeded the respondent's current age at the wave in which it was reported, if it fell below a plausibility floor specific to the condition, or if it was negative. Flagged values were set to missing for reconciliation purposes while the flag itself was retained.

The floors encode the earliest age at which onset is clinically credible for each condition, and are deliberately permissive: their purpose is to identify reports that cannot be right rather than to enforce typical age of onset. A floor of zero was used wherever congenital or perinatal onset is documented. This includes stroke, which by convention encompasses perinatal events occurring between twenty weeks' gestation and twenty-eight days of life and which accounts for roughly a quarter of all pediatric strokes (Dunbar and Kirton 2019; Srivastava and Kirton 2021), and kidney disease, where congenital anomalies of the kidney and urinary tract are the leading cause of pediatric chronic kidney disease (Mahmoud et al. 2024), as well as diabetes, hypertension, high cholesterol, and blood clots. A floor of five was used for conditions in which onset in the first years of life is not credible: heart disease, heart failure, atrial fibrillation, and arterial disease.

The mental health floors follow the youngest ages at which each diagnosis has been validated. PTSD carries the lowest floor, at one and a half years, reflecting evidence that trauma-related disorders can be identified in infants and toddlers once developmentally appropriate criteria are used (Scheeringa 2026). Depression is floored at three, the age at which a clinically significant depressive syndrome has been shown to be distinguishable from other early-onset disorders and continuous with later childhood depression (Luby 2009). Anxiety and ADHD are floored at four, the former reflecting the validation of structured diagnostic assessment of anxiety disorders in preschoolers (Franz et al. 2013) and the latter the lower bound of the American Academy of Pediatrics diagnostic guideline (Wolraich et al. 2019).

Bounds. Reports were then collapsed to one row per respondent, retaining counts of affirmative and negative reports, the range of disagreement among valid ages, and indicators for each inconsistency detected. Two bounds constrain any candidate onset age. The upper bound is the respondent's age at the wave in which a given age was reported, further capped by their age at the earliest affirmative report, since that report establishes the diagnosis had already occurred by then. The lower bound is the respondent's age at the latest wave preceding the first affirmative report at which they denied the diagnosis, or the condition's plausibility floor where no such denial exists. Ages differing by more than five years across waves were flagged as substantial disagreement.

Reconciliation. A hierarchy of ten paths was applied in fixed order, with the first applicable path determining the outcome. Before the hierarchy ran, one pre-filter applied: where reported ages spanned more than the disagreement threshold, single-digit ages were dropped as probable typographical errors, provided at least one two-digit age remained.

1. *Never diagnosed* — no affirmative report at any wave.
2. *Multiple affirmations override denial* — two or more affirmative reports whose ages agree within the threshold, or which carry no ages at all, contradicted by a denial. The affirmations are trusted and the denial discarded for bound-setting; the onset age is chosen from reports satisfying the upper bound, or anchored to the age at the earliest affirmative report where none does.
3. *Affirmation overridden by multiple denials* — a single affirmative report followed by two or more denials. The affirmation is treated as a misreport and the ever-diagnosed indicator set to zero.
4. *Standard reconciliation* — at least one reported age satisfies both bounds, and the reconciliation rule selects among the survivors. The case is labeled clean where every reported age was in bounds, bound-filtered where some were dropped, and multi-age resolved where several distinct in-bound ages remained.
5. *Digit correction* — no reported age satisfies the bounds. Two typographical patterns are considered: an omitted tens digit, as in 5 reported for 25, and, for single-digit reports only, an omitted ones digit, as in 2 for 23. Candidates falling within the bounds are pooled. Where no denial precedes the first

affirmation, the largest valid candidate is taken; where one does, a candidate is accepted only if exactly one non-boundary candidate exists, and ambiguity otherwise falls through to the next path.

6. *Interval imputation* — a denial precedes the first affirmation and no age was recovered. Onset is assigned the midpoint between the respondent's age at that denial and their age at the earliest affirmation.
7. *Earliest-affirmation anchor* — no usable age and no preceding denial. Onset is assigned the respondent's age at the earliest affirmative report, the latest point at which there is direct evidence the diagnosis had already occurred. This places onset as late as the data permit.
8. *Ambiguous affirmation and denial* — exactly one affirmative report followed by exactly one denial. The two are equally credible and the direction of error is indeterminate. Onset is left missing and the strict binary indicator set to missing, while the permissive binary counts the respondent as diagnosed.
9. *Unresolvable, no age* — affirmations exist but no age was ever reported and no imputation qualified.
10. *Unresolvable, age failed* — every reported age failed the bounds and could not be corrected.

Where several ages survived filtering, the earliest-reported rule was applied, taking the age given at the earliest wave rather than the numerically smallest age. A post-reconciliation check confirms that no reconciled onset age falls before a wave at which the respondent denied the diagnosis; a positive result here indicates an edge case the hierarchy did not handle and flags the case for manual review.

Performance. Across all fourteen conditions in the main analytic sample for Chapter 4, no respondent fell into either unresolvable path: every affirmative report was resolved either directly, through correction, or through imputation. The share requiring intervention nonetheless varied substantially by condition, and did so in a way that tracks how many waves asked about the condition rather than the reliability of any particular item. Conditions ascertained at a single wave - blood clot, atrial fibrillation, and arterial disease - resolved cleanly by construction. Conditions asked repeatedly across waves carried far more reconciliation: of respondents ever reporting depression, fewer than half resolved cleanly, with a comparable number requiring correction and a further 445 requiring age imputation.

Analytic variables. Reconciliation yields two binary indicators per condition. The permissive indicator counts ambiguous cases as diagnosed; the strict indicator sets them missing. Primary analyses use the permissive version, which retains respondents whose diagnosis is well supported but whose onset timing is not. A post-Wave III indicator supports sensitivity analysis: it is coded one where the respondent was diagnosed and reconciled onset exceeds their Wave III age, zero where they were never diagnosed, and missing where reconciliation was ambiguous, where onset falls at or before the Wave III age, or where onset is unknown. Anchor-imputed ages equal to the Wave III age fail the strict comparison by construction and are excluded, since post-Wave III timing cannot be established for them.

Conditions are then aggregated into two theoretically motivated groups. The cardiometabolic group comprises hypertension, high cholesterol, diabetes, heart disease, arterial disease, heart failure, stroke, atrial fibrillation, blood clot, and kidney disease. The mental health group comprises depression, anxiety, PTSD, and ADHD. For each group, a composite indicator takes the value one if any constituent condition is affirmative and a count records how many are. The two composites are the outcomes in the joint odds-ratio models and the two counts the outcomes in the count models, with the post-Wave III restricted versions of each used in the corresponding sensitivity analyses.

6.4 Severe Disability

If a respondent answered affirmatively to the question, "Do you have difficulty using your hands, arms, legs, or feet because of a permanent physical condition?" *and* met the conditions of any of the following, they were coded as having a severe physical disability.

- Respondent answered affirmatively to any of these questions:

    - Do you use a cane, crutches, walker, medically prescribed shoes, wheelchair, or scooter to get around because of a permanent physical condition?
    - Do you use a brace for your hand, arm, leg, or foot because of a permanent physical condition?
    - Do you use an artificial hand, arm, leg, or foot?
- Respondent answered affirmatively to having trouble doing any of the following activities "by [themselves] and not using aids," *and* reported their difficulty level was "a lot/unable to do this":
    - Walking up 10 steps without resting
    - Walking one-quarter of a mile, or about three city blocks?
    - Standing for about 20 minutes
    - Reaching up over your head, or reaching out as if to shake someone's hand
    - Using your fingers to grasp or handle something, for example, picking up a glass
    - Holding a pen or pencil
- Respondent answered affirmatively to needing help from another person or special equipment for any of the following tasks due to their condition:
    - Eating
    - Bathing
    - Dressing
    - Getting on/off the toilet
    - Shopping

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