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Exploring the role of physical activity in maintaining health through DNA repair, thyroid cancer prevention, and obesity-specific quality of life

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**Abstract**

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**Background.** Regular physical activity has an abundance of physical and mental health benefits; however much remains to be elucidated about the benefits of long-term versus short-term activity for cancer prevention, potential mechanisms linking activity and cancer prevention, and the relationship between activity and quality of life. The goal of this research was to investigate these questions and contribute to the understanding of the role of physical activity in maintaining health across the life span. **Methods.** The association between long-term physical activity and risk of papillary thyroid cancer was investigated among 116,939 women in the California Teachers Study (CTS) using Cox proportional hazards regression to estimate relative risks (RRs) and 95% confidence intervals (CIs). Recent physical activity

was examined in relation to DNA damage and repair among 122 healthy, older participants in the Vitamins and Lifestyle (VITAL) cohort validation sample using linear regression to estimate beta coefficients and 95% CIs. Finally, associations of physical activity and sedentary behavior with log-transformed obesity-specific quality of life (QoL) scores were investigated among women in the Socioeconomic Status and Obesity (SESO) Study using linear regression to estimate back-transformed geometric means and 95% CIs. All analyses additionally examined the role of body mass index (BMI) in associations. **Results.** Long-term physical activity was significantly associated with a reduced risk of papillary thyroid cancer in the CTS only for normal-weight women (BMI < 25 kg/m<sup>2</sup>). Recent physical activity was significantly positively associated with 60-minute DNA repair among VITAL participants, even when adjusting for BMI. Physical activity was significantly positively associated with obesity-specific QoL scores in the SESO Study to varying degrees among Non-Hispanic White (NHW), English-speaking Hispanic (ESH), and Spanish-speaking Hispanic women. Sedentary time was significantly negatively associated with obesity-specific QoL for NHW and ESH women. Many observed associations were attenuated or accounted for when additionally adjusting for dietary behaviors or BMI. **Discussion.** Results indicate that physical activity is beneficial for thyroid cancer prevention, DNA repair, and obesity-specific QoL. Additional longitudinal analyses are needed to assess the long-term benefits of increasing physical activity levels and to parse out mechanisms and potential subgroup differences.

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# **Chapter I: Recreational physical activity and risk of papillary thyroid cancer among women in the California Teachers Study**

## ***Abstract***

Little is known about the relationship between physical activity and thyroid cancer risk, and few cohort data on this association exist. Thus, the present study aimed to prospectively examine long-term activity and risk of papillary thyroid cancer among women. 116,939 women in the California Teachers Study, aged 22 to 79 years with no history of thyroid cancer at cohort entry, were followed from 1995-1996 through 2009; 275 were diagnosed with invasive papillary thyroid cancer. Cox proportional hazards regression provided relative risk (RR) estimates and 95% confidence intervals (CI) for associations between thyroid cancer and combined strenuous and moderate recreational physical activity both in the long-term (high school through age 54 years or current age if younger than 54 years) and recently (during the three years prior to joining the cohort). Overall, women whose long-term recreational physical activity averaged at least 5.5 MET-hours/week (i.e. were active) had a non-significant 23% lower risk of papillary thyroid cancer than inactive women (RR=0.77, 95% CI: 0.57, 1.04). RR estimates were stronger among normal weight or underweight women (body mass index, BMI<25.0 kg/m<sup>2</sup>, trend  $p=0.03$ ) than among overweight or obese women (trend  $p=0.35$ ; homogeneity-of-trends  $p=0.03$ ). A similar pattern of risk was observed for recent activity (BMI<25 kg/m<sup>2</sup>, trend  $p=0.11$ ; BMI $\geq$ 25 kg/m<sup>2</sup>, trend  $p=0.16$ ; homogeneity-of-trends  $p=0.04$ ). Associations for long-term activity did not appear to be

driven by activity in any particular life period (e.g. youth, adulthood). Physical activity may reduce the risk of papillary thyroid cancer in normal weight and underweight women.

## ***Introduction***

Rates of thyroid cancer in women in the US (18.5 per 100,000) are three times those of men (5.9 per 100,000) and age-specific incidence patterns differ by sex<sup>1</sup>. Rates among women increase rapidly during adolescence and young adult years, and plateau around menopause<sup>2</sup>. Rates for men increase slowly and steadily throughout life until age 74 years, after which they decline<sup>2</sup>. Papillary thyroid cancer, the most common type of thyroid cancer<sup>3</sup>, accounts for approximately 86% of thyroid cancers in the US<sup>1</sup>. The median age of papillary thyroid cancer diagnosis is 46 years<sup>4</sup>. Notably, the age-adjusted incidence rates of papillary thyroid cancer have tripled among women and doubled among men between 1980 and 2005<sup>5</sup>. While improved imaging and diagnostic techniques probably account for some portion of the observed increase in incidence<sup>6, 7</sup>, other factors are also likely involved<sup>8</sup>.

Established risk factors for thyroid cancer include ionizing radiation (particularly exposures in infancy and childhood)<sup>7, 9</sup> and family history of proliferative thyroid disease<sup>10</sup> (including goiter, benign nodules and adenomas<sup>7, 10</sup>). Hyperthyroidism/ hypothyroidism<sup>10-13</sup>, iodine deficiency (for follicular subtype)<sup>14</sup>, and certain hormonal and reproductive factors have also been associated with increased risk<sup>7, 15</sup>. However, few studies have examined physical activity, which may affect risk of thyroid cancer through DNA repair<sup>16-18</sup>, and hormonal<sup>19-21</sup>, metabolic<sup>21-23</sup>, and anti-inflammatory<sup>24, 25</sup> pathways.

While the relationship between physical activity and reduced risk of some cancers (e.g., breast cancer<sup>26-29</sup>) is well-established, its relationship with thyroid cancer has only been

minimally addressed. One study<sup>30</sup> found that any strenuous recreational exercise on a regular basis (at least 24 times per year) in the two years prior to the diagnosis or reference date was associated with a 24% reduced risk of papillary thyroid cancer. Other studies<sup>8, 13, 31-34</sup> showed null results, but either the method of physical activity measurement was not described in detail<sup>31, 32</sup>, or physical activity was measured using instruments assessing only current activity<sup>33, 34</sup> or activity during the previous year at the time of cohort enrollment<sup>8, 13, 34</sup>. Body size may also influence thyroid cancer risk<sup>35, 36</sup>.

Although the aforementioned studies on physical activity and thyroid cancer risk have primarily measured current or recent activity<sup>8, 13, 32-34</sup>, activity performed earlier in life or throughout the life span may be a more important determinant of cancer risk. To date, only one study<sup>30</sup> has examined the association between physical activity during adolescence and thyroid cancer risk, and results showed a 17%, statistically non-significant risk reduction among women who reported exercising regularly between ages 12 and 21 years. No prospective cohort study has examined the association between long-term physical activity and thyroid cancer risk.

The hypothesis for this study was that long-term recreational physical activity is associated with decreased relative risk of papillary thyroid cancer among women participating in the California Teachers Study (CTS). The possible confounding or modifying effects of body mass index (BMI) were also examined.

## **Methods**

### **Study population and data collection**

The CTS is a prospective cohort study of 133,479 female public school teachers and administrators who were current or retired public school professionals and members of the California State Teachers Retirement System at the time the study began in 1995<sup>37</sup>. Women joined the cohort by completing a mailed baseline questionnaire in 1995-1996. The baseline questionnaire collected information on demographics; personal and family history of selected diseases and conditions (including some cancers); smoking; diet during the past year (as measured by Block's food frequency questionnaire<sup>38</sup>); alcohol consumption in various life periods; menstrual and reproductive histories; use of hormones; height; weight; and recreational physical activity.

The CTS was developed by a consortium of 11 investigators from the California Department of Health Services; Cancer Prevention Institute of California (formerly the Northern California Cancer Center); the University of California, Irvine; and the University of Southern California. The CTS was approved by the institutional review board at each of the four participating centers in accord with assurances filed with and approved by the US Department of Health and Human Services.

The physical activity assessment provided examples of moderate activities (e.g. brisk walking and golf) and strenuous activities (e.g. swimming laps, running). Participants were asked to estimate for total moderate activities and for total strenuous activities how many hours per week (none, ½, 1, 1 ½, 2, 3, 4-6, 7-10, and 11 or more hours per week) and months per year (1-3, 4-6, 7-9, and 10-12 months per year) they performed these activities during six time intervals (during high school; between the ages of 18-24, 25-34, 35-44 and 45-54 years; and during the past 3 years). Annual hours per week for each period was calculated

separately for mean strenuous activity and mean moderate activity by multiplying the hours per week (using values of 5 hours, 8.5 hours, and 12 hours per week for the three upper activity categories) by the portion of the year in which the woman engaged in the activity. Approximate metabolic equivalent (MET) values from the compendium of energy costs of common physical activities<sup>39</sup> were assigned to each of moderate activities (4.5 METs) and strenuous activity (6.5 METs). Total MET-hours per week per year were calculated for each age period by multiplying the average hours per week per year in each category of activity (moderate or strenuous) by the appropriate MET value. Within each age period, this computed value was assigned to each year of age that the woman completed (e.g., for a 50 year-old woman, this value was assigned for the years from age 45 through age 50 years).

Long-term recreational physical activity was defined for this analysis as MET-hours per week of recreational physical activity from high school through age 54 years (or the participant's age at cohort entry if younger), and was calculated separately for moderate and strenuous activity by averaging the aforementioned period-specific MET hours per week per year values across all relevant age periods. Recent physical activity was defined as activity reported for the 3-year period prior to cohort entry and MET hours per week were assigned as described above. Measures of moderate and strenuous physical activity were also combined by summing the MET-hours per week per year values. MET-hours per week of combined moderate and strenuous activity were categorized as <5.5, 5.5-16.4, 16.5-32.9, and 33.0+ (approximate quartiles). Risk for  $\geq 5.5$  MET-hours per week of combined moderate and strenuous activity compared to <5.5 MET-hours per week was considered a proxy for any vs. no activity. Finally, a 4-level summary variable describing combined moderate and strenuous

activity (active vs. inactive) in both early adulthood (ages 18-24) and middle adulthood (ages 25-54) was examined.

To define the eligible cohort, excluded in sequence were: women who were not residents of California at baseline (n=8,867, 6.6%), who restricted their participation to the study of breast cancer (n=18), who had a prior history of thyroid cancer as of baseline (n=557, 0.4%) or whose history of prior cancer was unknown (n=662, 0.5%), for whom baseline questionnaire responses were deemed to be unreliable (n=3), and who were 80 years or older at baseline (n=5,728, 4.3%). Also excluded were women who did not complete the physical activity section on the baseline questionnaire (n=665, 0.5%), and women whose reported time spent in daily activities (casual walking, housework, standing or walking at work, sitting, and sleeping) was improbable (n=40). Thus, 116,939 women comprised the analytic cohort.

### **Assessment of thyroid cancer incidence**

Participants diagnosed with a first primary papillary thyroid cancer (ICD-O-3 site code C73.9 and histology codes 8050, 8260, 8340-8344, and 8350) after joining the cohort and before January 1, 2010 were identified through linkage with the California Cancer Registry (CCR), a legally-mandated statewide population-based cancer reporting system. CCR ascertainment of newly-diagnosed cancers is estimated to be 99% complete<sup>40</sup>.

Person-time of follow-up began on the date the baseline questionnaire was completed in 1995-1996 and ended with the first of the following: a thyroid cancer diagnosis of any type (n=309 total), a permanent move outside of California (n=10,822), death (n=10,512), or December 31, 2009 (n=95,296). Residence was monitored through annual mailings of a

newsletter or questionnaire, annual linkages with the US Postal Service national change-of-address database, and change-of-address postcards submitted by participants; a permanent move outside of California was considered to occur when a woman left California for at least four months. The eligible cohort accrued 1,488,391 person-years of follow-up for analysis; median follow-up time was 12.7 years. Analyses were restricted to papillary thyroid cancer (n=275), the most common type of thyroid cancer, as the number of cases of other histologic subtypes (n=34) was too small for evaluation and etiologies of subtypes vary. Women with histologic subtypes other than papillary thyroid cancer, who moved out of California or who died were censored on the dates these events occurred.

### **Statistical analyses**

The hazard rate ratio (represented as the relative risk [RR] and corresponding 95% confidence interval [CI]) was estimated for associations between long-term and recent physical activity and papillary thyroid cancer risk by fitting multivariable Cox proportional hazards regression models<sup>41</sup>. The time scale (in days) was defined from age at baseline to age at event, censoring or end of follow-up. All Cox models were stratified by age at baseline (in years) to adjust for calendar effects. Models were also adjusted for race/ethnicity (non-Hispanic White, Other) as an a priori potential confounder. The 911 (0.8%) women who declined to state their race/ethnicity were combined with women of other races or ethnicities.

Candidate covariates were selected based upon associations documented in the literature between measured variables and both the exposure of physical activity and the outcome of papillary thyroid cancer. Covariates (assessed at baseline) were evaluated for confounding using a stringent 5% change in the race/ethnicity-adjusted and age-stratified

physical activity RR when adjusting for each covariate (individually). Health history covariates included history of thyroid disease, family history of thyroid cancer, history of smoking at least 100 cigarettes, alcohol intake during the past year, and tertiles of daily energy intake (kcal). Menstruation variables included age at menarche and a variable combining cycle length and time elapsing before menstrual periods became regular (assessed as the age at which a girl was able to predict within a few days when her next period would start). Additional reproductive history covariates included any oral contraceptive use, time between a woman's last pregnancy and joining the cohort, and a combined variable for menopausal status and hormone therapy. Of these potential confounders, only oral contraceptive use (ever, never, unknown) met the study definition of a confounder, and thus was the only other covariate included in the multivariable-adjusted models. Analyses examining separate effects of moderate activity and strenuous activity were mutually adjusted. BMI ( $<25.0$ ,  $25.0-29.9$ ,  $\geq 30.0$  kg/m<sup>2</sup>) was treated as a potential mediating variable, and multivariable-adjusted models were further adjusted for BMI to evaluate how much of the physical activity association, if any, could be attributed to BMI. All potential confounders and BMI were included in their categorical forms.

Tests for trend were conducted to examine the dose-response relationship between physical activity and papillary thyroid cancer risk by using ordinal values corresponding to each exposure category and determining whether or not the slope parameter differed from zero using the Wald test<sup>42</sup>. Analyses involving the categorical variable for various combinations of activity in early adulthood and adulthood were limited to women aged 54 years or older, who had complete activity histories through age 54 years.

BMI ( $<25.0$ ,  $\geq 25.0$  kg/m<sup>2</sup>) was also examined as a potential effect modifier. In order to test for effect modification of physical activity by BMI, two physical activity variables were created, each representing the 4 categories of physical activity, one for women with BMI  $<25.0$  kg/m<sup>2</sup> and another for women with BMI  $\geq 25.0$  kg/m<sup>2</sup> (Table 2). Homogeneity-of-trends was tested using a likelihood ratio (LR) test in which a model that fit a single variable representing the trend across 4 categories of physical activity (and adjusting for BMI) was compared to a model (also adjusted for BMI) that fit the two physical activity trend variables.

All statistical significance levels (*p* values) reported are two-sided. *P* values  $\leq 0.05$  were considered statistically significant and were not corrected for multiple testing.

Statistical analyses were conducted using Stata/IC (version 11.0; StataCorp LP, College Station, TX).

## **Results**

Select characteristics of women in the analytic cohort are shown in Table 1. The median age at diagnosis was 57.0 years. Non-Hispanic White women and women using oral contraceptives tended to report higher levels of long-term physical activity.

Women whose long-term physical activity averaged at least 5.5 MET-hours per week per year of combined moderate and strenuous activity were estimated to have a 23% lower risk of papillary thyroid cancer than women who averaged less activity (i.e. were “inactive”), but the confidence interval contained 1.0 (RR=0.77 95% CI: 0.57, 1.04, Table 2). Inclusion of BMI in the model did not attenuate the risk estimate (RR=0.77, 95% CI: 0.57, 1.04). Similarly, no association was observed between recent physical activity (activity during the three years before baseline) and papillary thyroid cancer.

BMI modified the effect of long-term combined moderate and strenuous physical activity on papillary thyroid cancer risk (homogeneity-of-trends across BMI categories  $p=0.03$ ; Table 3). Risk declined with increasing long-term activity among women with BMI under  $25.0 \text{ kg/m}^2$  (i.e. those who were normal weight or underweight). Among these women, those performing  $33.0+$  MET-hours/week of long-term moderate and strenuous activity experienced a lower risk of papillary thyroid cancer (RR=0.63, 95% CI: 0.39, 1.02) than those performing less than  $5.5$  MET-hours/week (trend  $p=0.03$ ). A similar pattern was not observed among overweight or obese women. When examining moderate and strenuous long-term activity separately, the greater protection associated with higher levels of combined activity did not appear to be driven by strenuous activity (trend  $p=0.34$ ), but rather by moderate activity (trend  $p=0.06$ ). Further analyses revealed that physical activity in early adulthood appeared to confer risk reduction that was similar to activity in middle adulthood (data not shown).

Examining recent physical activity, BMI also modified the effect of recent combined moderate and strenuous physical activity on papillary thyroid cancer risk (homogeneity-of-trends  $p=0.04$ ; Table 3). For normal and underweight women (BMI $<25.0 \text{ kg/m}^2$ ), higher levels of physical activity were associated with lower risk, but for overweight or obese women, the trend was reversed; however, neither test for trend was statistically significant (trend  $p=0.11$  and  $0.16$ , respectively).

## **Discussion**

This study found no association between physical activity and risk of thyroid cancer in the overall study population, but results suggest that physical activity is associated with a

decreased risk of papillary thyroid cancer among normal weight or underweight women; among these women, those who averaged at least 16.5 MET-hours per week per year of activity from high school through age 54 years experienced approximately a 40% risk reduction. No such association was observed for overweight or obese women (BMI  $\geq$  25.0 kg/m<sup>2</sup>).

Two<sup>8,32</sup> of the five<sup>8,13,30,32,33</sup> prior studies of physical activity and thyroid cancer did not provide specific results for papillary thyroid cancer among women, and no studies have examined the role of long-term physical activity in thyroid cancer risk. Kolonel et al.<sup>32</sup> observed no statistically significant association between thyroid cancer risk and heavy occupational physical activity in women (OR=0.9, 95% CI: 0.6, 1.5), but neither the time period that was assessed, nor the duration of activity, was described. Similarly, Meinhold et al.<sup>13</sup>, Leitzmann et al.<sup>8</sup>, and Kabat et al.<sup>33</sup> found no association in their prospective studies. Meinhold et al.<sup>13</sup> reported a relative risk (RR) of 0.81 (95% CI: 0.51, 1.29) among women for one hour or more of strenuous activity per week in the year prior to enrollment, and note that restriction to papillary subtype did not markedly change their findings. Leitzmann et al.<sup>8</sup> reported a RR for papillary thyroid cancer of 0.89 (95% CI: 0.59, 1.36) among both men and women for 20 minutes or more of vigorous activity, five times per week within the year prior to enrollment, but did not present RRs for women. Both of these studies only examined recent activity, within the year prior to cohort enrollment. While Kabat et al.<sup>33</sup> examined physical activity prospectively, the “usual” pattern of activity rather than long-term activity was assessed, and their study was restricted to postmenopausal women having a mean age at diagnosis of nearly 62 years, whereas the distribution of age in the present study was

younger, with a median age at diagnosis of 57 years. In the only study to evaluate papillary-specific results in women and report a significant association, regular (at least 24 times per year) strenuous recreational exercise in the two years prior to the diagnosis or reference date was associated with a 24% reduction in the odds of papillary thyroid cancer (odds ratio [OR]=0.76, 95% confidence interval [CI]=0.59, 0.98) with similar results for activity between the ages of 12 and 21 years, but no dose-response relationship was observed<sup>30</sup>.

A pooled analysis, the largest study of physical activity and thyroid cancer risk to date, examined five cohorts<sup>34</sup> (including the Meinhold et al.<sup>13</sup> and Leitzmann et al.<sup>8</sup> cohorts) and reported no association between physical activity and thyroid cancer; however, all five cohorts assessed only current or recent activity characterized by study-specific tertiles (low, medium, high), three cohorts assessed only vigorous/strenuous activity, and although results were presented for women and for all participants with papillary subtype, results specific to women with papillary subtype were not provided. The results from the present study showed that more moderate levels of physical activity were associated with reduced risk of papillary thyroid cancer among women specifically, so it is possible that the lack of a significant association in the pooled analysis can be explained by the broader study population and choice of physical activity measurement (e.g. an emphasis on recent, strenuous activity).

The current study examined both long-term and recent recreational physical activity, and provides some evidence for an association with lower papillary thyroid cancer risk, unlike prior cohort studies<sup>8, 13, 33</sup> showing little or no association. The magnitude of risk reduction found in this study for long-term combined moderate and strenuous physical activity among women who were normal weight or underweight was approximately 40% for

an average of at least 16.5 MET-hours per week of activity from high school through age 54 years; this is slightly larger than risk reductions observed in the aforementioned studies<sup>8, 13, 30, 32, 33</sup>. While Leitzman et al.<sup>8</sup> presented the effects of physical activity separately for each BMI group (<25.0, 25.0-29.9,  $\geq$ 30.0 kg/m<sup>2</sup>), both men and women were included in their analysis and, for their measure of recent activity, no trend across levels of physical activity was observed within any of the BMI groups.

Several pathways may be relevant in explaining associations between physical activity and thyroid cancer risk, including DNA repair, and anti-inflammatory and hormonal mechanisms. DNA damage, in particular single and double strand breaks<sup>43</sup>, has been shown to be associated with thyroid cancer risk<sup>17</sup>, and moderate physical activity may protect against DNA damage and increase DNA repair<sup>16-18</sup>, likely through increased telomerase action and reduced telomere shortening<sup>44</sup>. Physical activity is also associated with elevated levels of adiponectin, an anti-inflammatory factor<sup>21, 45</sup> which may be associated with decreased risk of thyroid cancer<sup>46</sup>. However, these potential mechanisms may not explain why the association between physical activity and thyroid cancer risk was restricted to normal- or underweight women.

A hormonal hypothesis may also shed light on the results. Long-term physical activity appears to reduce levels of circulating, biologically available sex hormones such as estrogen and androgens<sup>19</sup> which drive cell proliferation and increase the chances of random genetic mutations<sup>20</sup>, in turn reducing the risk of cancer. Physical activity may also increase amounts of circulating sex-hormone binding globulin, thereby reducing the availability of hormones, such as estradiol, to influence target tissues<sup>19, 47</sup>, in turn reducing proliferation of

thyroid cancer cells<sup>48</sup>. Decreased levels of female hormones may also lower levels of thyroid stimulating hormone (TSH) which is associated with thyroid hyperplasia and possibly cancer<sup>7</sup>. Thus, the aforementioned mechanisms, independently and combined, could lead to a decreased risk of thyroid cancer, which has been proposed as a hormone-related cancer<sup>20, 49</sup>. The lack of any association among overweight or obese women is puzzling; issues of measurement error may be greater among overweight and obese women.

The present study has several limitations. Data on physical activity, BMI (previously validated<sup>50</sup>) and other potential confounders were assessed by self-report, and are thus subject to reporting error. The mean age at cohort entry was 51.9 years (standard deviation 13.1 years), so the recall period for activity in the earlier age periods (e.g. 18-24 years in particular) would be greater for older women. Validity information of the physical activity measure is not available given that no historical data on physical activity of these women is available for comparison. Nonetheless, because this is a prospective cohort study, any errors in reporting would likely be non-differential between women who later developed papillary thyroid cancer and those who did not, but could theoretically differ based on personal characteristics such as weight. Non-differential reporting errors would bias the relative risk estimates toward the null value. Previous results have shown that the activity measures used in this study are associated with a decreased risk of breast cancer<sup>28</sup> and colon cancer<sup>51</sup> among women in the CTS. This study did not assess occupational or household physical activity, which could be important determinants of total energy expenditure<sup>28, 52</sup> that may affect risk of thyroid cancer.

The majority of women in the study are non-Hispanic White, and thus it was not possible to determine whether risk varies by race or ethnicity. In addition, education and income were not assessed on the baseline survey, but education levels should be similar (all women would be expected to have college degrees) and even if income levels differed, socioeconomic status (as measured from follow-up surveys and by census data related to residential address at baseline) has not been found to be a confounder in similar CTS studies (e.g. physical activity and breast cancer).

Despite its limitations, the present study has several noteworthy strengths. It is the first study to assess long-term physical activity and thyroid cancer risk in a cohort study. By collecting information on physical activity at baseline (prior to diagnosis), differential recall by disease status, as is often present in case-control studies, is minimized. With 116,939 women and 1,488,391 person-years of follow-up, this is one of the largest cohort studies to examine physical activity and thyroid cancer risk prospectively, and the study size afforded us the opportunity to assess risk by BMI strata and to observe potentially important effect modification.

In summary, the present study found that long-term physical activity averaging at least 16.5 MET-hours per week was associated with reduced risk of papillary thyroid cancer in women with a BMI under 25.0 kg/m<sup>2</sup>.

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## Tables

**Table 1. CTS Table 1. Age-adjusted<sup>a</sup> percent distribution of baseline characteristics overall and by average annual moderate plus strenuous long-term physical activity for 116,939 women aged less than 80 years in the California Teachers Study**

	Total (N)	Average annual moderate + strenuous long-term recreational activity (MET-hours/week), % <sup>b</sup>			
		<5.5 (n=20,567)	5.5-16.4 (n=33,844)	16.5-32.9 (n=32,595)	≥33.0 (n=29,933)
<b>Race</b>					
Non-Hispanic White	100,955	16.4	30.1	28.8	24.7
Other/not stated	15,984	22.6	28.5	25.3	23.7
<b>History of benign thyroid disease/condition</b>					
No	105,163	17.1	29.7	28.5	24.8
Yes	11,776	18.9	31.7	27.1	22.3
<b>Family history of thyroid cancer</b>					
No	111,871	17.2	29.9	28.4	24.5
Yes	1,461	16.8	28.3	29.6	25.4
Adopted/unknown	3,607	19.9	28.6	26.1	25.5
<b>History of lifetime smoking 100+ cigarettes</b>					
No	76,890	17.5	29.7	28.3	24.5
Yes	39,441	16.7	30.2	28.5	24.6
Unknown	608	18.3	30.6	31.6	19.6
<b>Alcohol intake in the past year</b>					
No	37,041	21.1	30.6	26.3	22.1
Yes	74,131	15.2	29.6	29.4	25.8
Unknown	5,767	20.5	28.4	27.3	23.8
<b>Tertiles of daily caloric intake, kcal/day</b>					
First	35,673	20.0	30.9	27.5	21.6
Second	35,635	16.4	30.6	28.9	24.1
Third	35,685	14.1	28.4	29.2	28.3
Unknown	9,946	22.4	28.9	25.8	23.0
<b>Oral contraceptive use</b>					
Never	35,126	22.8	28.8	24.9	23.6
Ever	77,472	15.2	30.2	29.7	24.9
Unknown	4,341	20.9	30.2	24.6	24.4
<b>Body mass index, kg/m<sup>2</sup></b>					
<25.0	68,657	15.3	28.9	29.1	26.7
25.0-29.9	28,094	18.5	30.9	28.3	22.2
≥30.0	16,098	21.5	32.5	26.1	20.0
Unknown	4,090	24.3	28.2	24.8	22.8

<sup>a</sup>Variables in table are adjusted to the age distribution (5-year age groups) of the 116,939 women ages 22-79 years who comprise the eligible cohort for the analysis .

<sup>b</sup>Percentages may not sum to 100% due to rounding.

**Table 2. CTS Table 2. Relative risks for the association between long-term and recent physical activity and papillary thyroid cancer in 116,939 women under 80 years of age in the California Teachers Study**

	Observed person-years	No. cases	Adjusted relative risk <sup>a</sup> (95% confidence interval)	
			Multivariable adjusted <sup>a</sup>	Multivariable and BMI <sup>a,b</sup> adjusted
<b>AVERAGE ANNUAL MODERATE PHYSICAL ACTIVITY (MET-hours/week)<sup>c</sup></b>				
<b>Long-term</b>				
<5.5	294,078	59	Reference	Reference
≥5.5	1,194,313	216	0.83 (0.61-1.12)	0.82 (0.61-1.12)
5.5-16.4	377,549	70	0.85 (0.60-1.21)	0.85 (0.59-1.21)
16.5-32.9	387,847	71	0.84 (0.59-1.21)	0.84 (0.58-1.20)
33.0+	428,917	75	0.80 (0.55-1.17)	0.80 (0.55-1.16)
Trend <i>p</i>			0.29	0.28
<b>Past 3 years</b>				
<5.5	382,983	75	Reference	Reference
≥5.5	1,105,408	200	0.90 (0.68-1.18)	0.89 (0.67-1.18)
5.5-16.4	310,186	61	0.98 (0.70-1.39)	0.98 (0.69-1.39)
16.5-32.9	307,855	53	0.85 (0.59-1.22)	0.84 (0.58-1.22)
33.0+	487,367	86	0.87 (0.62-1.21)	0.87 (0.62-1.21)
Trend <i>p</i>			0.32	0.32
<b>AVERAGE ANNUAL STRENOUS PHYSICAL ACTIVITY (MET-hours/week)<sup>c</sup></b>				
<b>Long-term</b>				
<5.5	424,329	73	Reference	Reference
≥5.5	1,064,062	202	1.03 (0.77-1.37)	1.03 (0.77-1.37)
5.5-16.4	355,292	71	1.10 (0.79-1.54)	1.10 (0.78-1.54)
16.5-32.9	329,012	56	0.91 (0.63-1.32)	0.91 (0.63-1.32)
33.0+	379,757	75	1.08 (0.75-1.56)	1.08 (0.75-1.57)
Trend <i>p</i>			0.91	0.90
<b>Past 3 years</b>				
<5.5	753,141	132	Reference	Reference
≥5.5	735,250	143	1.07 (0.83-1.38)	1.07 (0.83-1.38)
5.5-16.4	231,147	41	0.97 (0.67-1.39)	0.97 (0.67-1.39)
16.5-32.9	188,237	33	0.98 (0.66-1.45)	0.98 (0.66-1.46)
33.0+	315,866	69	1.24 (0.90-1.70)	1.25 (0.91-1.72)

	Observed person-years	No. cases	Adjusted relative risk <sup>a</sup> (95% confidence interval)	
			Multivariable adjusted <sup>a</sup>	Multivariable and BMI <sup>a,b</sup> adjusted
Trend <i>p</i>			0.24	0.23
<b>AVERAGE ANNUAL MODERATE+STRENUOUS PHYSICAL ACTIVITY (MET-hours/week)</b>				
<b>Long-term</b>				
<5.5	256,838	53	Reference	Reference
≥5.5	1,231,553	222	0.77(0.57-1.04)	0.77(0.57-1.04)
5.5-16.4	431,698	77	0.78(0.55-1.11)	0.78(0.55-1.11)
16.5-32.9	417,536	76	0.76(0.53-1.09)	0.76(0.53-1.09)
33.0+	382,318	69	0.76 (0.53-1.10)	0.76 (0.53-1.10)
Trend <i>p</i>			0.21	0.21
<b>Past 3 years</b>				
<5.5	453,222	86	Reference	Reference
≥5.5	1,035,169	189	0.94(0.73-1.22)	0.94(0.73-1.23)
5.5-16.4	394,207	76	0.99 (0.73-1.36)	0.99 (0.73-1.35)
16.5-32.9	330,304	54	0.84 (0.60-1.19)	0.84 (0.60-1.19)
33.0+	310,658	59	0.99 (0.71-1.38)	0.99 (0.71-1.39)
Trend <i>p</i>			0.67	0.70

BMI: Body Mass Index

<sup>a</sup>Stratified by age (years) and adjusted for categories of race (non-Hispanic White, Other/unknown) and oral contraceptive use (ever, never, unknown).

<sup>b</sup>Additionally adjusted for BMI (<25, 25-29.9, ≥30 kg/m<sup>2</sup>, unknown).

<sup>c</sup>Moderate physical activity and strenuous physical activity mutually adjusted for each other.

**Table 3. CTS Table 3. Relative risks for the association between physical activity and papillary thyroid cancer in 112,849 women aged less than 80 years with BMI reported in the California Teachers Study**

	No. cases		Adjusted relative risk (95% Confidence Interval)	
	BMI<25kg/m <sup>2</sup>	BMI≥25kg/m <sup>2</sup>	BMI<25 kg/m <sup>2</sup>	BMI≥25 kg/m <sup>2</sup>
<b>AVERAGE ANNUAL MODERATE PHYSICAL ACTIVITY (MET-hours/week)<sup>b</sup></b>				
<b>Long-term</b>				
<5.5	37	21	Reference	Reference
5.5-16.4	40	28	0.76 (0.48-1.19)	0.97 (0.55-1.72)
16.5-32.9	43	26	0.75 (0.48-1.18)	0.93 (0.52-1.68)
33.0+	41	33	0.62 (0.39-0.99)	1.13 (0.64-1.99)
Trend <i>p</i>			0.06	0.69
Homogeneity-of-trends <i>p</i>			0.12	
<b>Past 3 years</b>				
<5.5	42	31	Reference	Reference
5.5-16.4	40	20	1.10 (0.71-1.71)	0.84 (0.47-1.48)
16.5-32.9	29	22	0.71 (0.44-1.15)	1.06 (0.61-1.85)
33.0+	50	35	0.72 (0.47-1.11)	1.23 (0.75-2.03)
Trend <i>p</i>			0.05	0.32
Homogeneity-of-trends <i>p</i>			0.04	
<b>AVERAGE ANNUAL STRENOUS PHYSICAL ACTIVITY (MET-hours/week)<sup>b</sup></b>				
<b>Long-term</b>				
<5.5	44	28	Reference	Reference
5.5-16.4	42	25	1.02 (0.67-1.57)	1.06 (0.61-1.84)
16.5-32.9	30	25	0.73 (0.45-1.17)	1.22 (0.70-2.12)
33.0+	45	30	0.87 (0.55-1.37)	1.56 (0.91-2.70)
Trend <i>p</i>			0.34	0.10
Homogeneity-of-trends <i>p</i>			0.04	
<b>Past 3 years</b>				
<5.5	73	57		
5.5-16.4	23	16	Reference	Reference
16.5-32.9	18	14	0.89 (0.56-1.44)	0.97 (0.55-1.70)
33.0+	47	21	0.79 (0.47-1.33)	1.27 (0.70-2.32)

	No. cases		Adjusted relative risk (95% Confidence Interval)	
	BMI<25kg/m <sup>2</sup>	BMI≥25kg/m <sup>2</sup>	BMI<25 kg/m <sup>2</sup>	BMI≥25 kg/m <sup>2</sup>
			1.09 (0.74-1.60)	1.60 (0.95-2.68)
Trend <i>p</i>			0.82	0.08
Homogeneity-of-trends <i>p</i>			0.19	
<b>AVERAGE ANNUAL MODERATE+STRENUOUS PHYSICAL ACTIVITY (MET-hours/week)</b>				
<b>Long-term</b>				
<5.5	30	21	Reference	Reference
5.5-16.4	51	24	0.83 (0.53-1.30)	0.67 (0.37-1.20)
16.5-32.9	39	35	0.59 (0.37-0.96)	1.05 (0.61-1.82)
33.0+	41	28	0.63 (0.39-1.02)	1.07 (0.60-1.88)
Trend <i>p</i>			0.03	0.35
Homogeneity-of-trends <i>p</i>			0.03	
<b>Past 3 years</b>				
<5.5	49	37	Reference	Reference
5.5-16.4	44	29	0.87 (0.58-1.31)	1.04 (0.64-1.70)
16.5-32.9	30	21	0.62 (0.40-0.99)	1.12 (0.65-1.91)
33.0+	38	21	0.77 (0.50-1.18)	1.52 (0.89-2.61)
Trend <i>p</i>			0.11	0.16
Homogeneity-of-trends <i>p</i>			0.04	

BMI: Body Mass Index; number of cases are fewer than those indicated in Table 2 due to missing data on BMI status.

<sup>a</sup>Stratified by age (years); adjusted for race (non-Hispanic White, Other/unknown) and oral contraceptive use (ever, never, unknown).

<sup>b</sup>Moderate physical activity and strenuous physical activity mutually adjusted for each other.

## **Chapter II: Recent physical activity in relation to DNA damage and repair using the comet assay (Vitamins and Lifestyle study)**

### ***Abstract***

Limited evidence suggests that very high-intensity exercise is positively associated with DNA damage but moderate exercise may be associated with DNA repair. Since excessive DNA damage is related to carcinogenesis, moderate physical activity may represent a means of lowering cancer risk. This study examined physical activity's relation to DNA damage and repair among healthy older adults. Participants were 220 Washington State 50-76 year-olds in the validity/biomarker sub-study of the VITamins And Lifestyle (VITAL) cohort, who provided blood samples and completed questionnaires assessing recent physical activity and demographic and health factors. Measures included nested subsets of activity: total activity, moderate- plus high-intensity activity, and high-intensity activity. The comet assay was used to measure DNA damage (n=122) and repair (n=99). Multivariate linear regression was used to estimate regression coefficients and associated 95% confidence intervals (CIs) for relationships between MET-hours per week of physical activity and outcomes that included DNA damage (Olive tail moment measures) and DNA repair capacity (15-minute and 60-minute post-irradiation). DNA damage was not associated with total activity, moderate- plus high-intensity activity, or high-intensity activity. However, 60-minute DNA repair was positively associated with both total activity ( $\beta=0.21$ , 95% CI: 0.0057, 0.412;  $p=0.044$ ) and high-intensity activity ( $\beta=0.31$ , 95% CI: 0.20, 0.60;  $p=0.036$ ), adjusting for age, sex, BMI, and current multivitamin use. This study is the first to assess broad ranges of activity

intensity levels related to DNA damage and repair. Physical activity was unrelated to DNA damage but was associated with increased repair.

## ***Introduction***

DNA damage is associated with cancer risk<sup>53, 54</sup>; thus, preventing DNA damage and increasing DNA repair may enhance cancer prevention. Of the modifiable factors that may protect against DNA damage or impaired DNA repair, physical activity is of particular interest, since higher levels of physical activity are associated with lower risk of various types of cancers, including breast<sup>26-29, 55</sup>, colon<sup>56, 57</sup>, and thyroid<sup>30</sup> cancers.

Evidence from some animal studies suggests that regular exercise decreases DNA damage and increases DNA repair<sup>18, 58</sup>. One study found that voluntary chronic physical activity on an exercise wheel was associated with elevated mitochondrial DNA template levels in mature (adult) mice<sup>18</sup>. No effect was observed in senescent mice, which the study authors attributed to lower running speeds of the aged mice<sup>18</sup>. However, another study has shown no association between short-term spontaneous exercise wheel running and DNA damage in the lymphocytes of adult mice<sup>59</sup>. A third study has shown DNA damage in muscle tissue of adult mice two days after spontaneous exercise on a wheel for an entire night (intense exercise)<sup>60</sup>. In terms of DNA repair, at least one study has shown regular exercise is beneficial – eight weeks of treadmill running resulted in increased repair in the muscle tissue of middle- and older-aged rats<sup>58</sup>.

Few studies have examined the relationship between physical activity and DNA damage and repair capacity in humans. In one of the first studies, white blood cells of three participants who ran at an increasing speed to exhaustion showed a pattern suggestive of

DNA damage in the single cell gel electrophoresis (SCG) assay (comet assay). On the other hand, when the participants were asked to run for 45 minutes at a constant speed, no DNA damage was observed<sup>61</sup>. The authors concluded that physical activity above the aerobic-anaerobic threshold causes detectable white blood cell alterations<sup>61</sup>. However, since the study was so small the ability to draw inferences is limited. Another study examined runners during an ultra-marathon and found DNA damage in lymphocytes mid-race, but the effect subsided two hours post-race<sup>62</sup>. Thus, this evidence suggests that extremely high intensity physical activity may lead to DNA damage, at least in the short term.

The possibility of a threshold effect, whereby intense but not moderate activity may be positively associated with DNA damage, is a consistent theme in the literature. Although an approximately two- to three-fold increase in oxidative damage in muscle tissue has been noted following exhaustive exercise,<sup>63</sup> this is not seen with moderate activity. In a randomized trial of short-term moderate and high intensity exercise programs in colorectal cancer patients, urinary excretions of 8-oxo-7,8-dihydro-2'-deoxyguanosine (8-oxodG), a marker of oxidative DNA damage, were significantly decreased in the individuals completing the moderate intensity program and non-significantly increased in individuals completing the high intensity program<sup>64</sup>. Similarly, another study found that urinary 8-oxodG excretions were significantly decreased among individuals performing moderate exercise (<5 hours per week)<sup>65</sup>. In fact, investigators have proposed that exercise is related to DNA damage in a U-shaped fashion, whereby too little exercise may not confer benefit, and excessive intense exercise may cause DNA damage, but moderate exercise may protect against DNA damage<sup>66</sup>. Body mass index (BMI) may also play a role in the relationships between physical

activity and DNA damage and repair. Several cross-sectional studies<sup>65, 67</sup> and at least one longitudinal study<sup>68</sup> have found that BMI and urinary 8-oxdG excretions were inversely associated, but these relationships are still not well-understood.

The hypothesis of the present study was that physical activity is associated with reduced baseline DNA damage and increased DNA repair as measured by the comet assay in healthy older adults. Secondly, an exploratory analysis investigated if these associations varied with BMI.

## ***Methods***

### **Study population and data collection**

The VITamins And Lifestyle (VITAL) study is a prospective cohort study of 77,738 men and women in Washington State, aged 50-76 years at baseline, designed to examine the role of vitamins and other dietary supplements in relation to cancer risk. Baseline data were collected from October 2000 to December 2002 via a 24-page mailed, self-administered, sex-specific questionnaire. Questions assessed use of supplements, diet, physical activity, and health history<sup>69</sup>. In addition, a sub-study was conducted among 220 participants and included a repeat baseline questionnaire, an in-home interview to obtain more detailed information on certain factors and collection of blood and other biospecimens for biomarkers<sup>70</sup>. Data from this subsample assessment are used for the present analysis. The VITAL study was approved by the Fred Hutchinson Cancer Research Center institutional review board and is in accordance with an assurance filed with and approved by the U.S. Department of Health and Human Service and all participants signed written informed consent.

### **Assessment of physical activity**

Physical activity data were collected via the repeat baseline questionnaire completed before the in-home visit. This was a version of the VITAL baseline physical activity questionnaire<sup>71</sup>, modified to assess recreational physical activity over the prior month. Participants estimated by category how many days per week (1-2, 3-4, 5-7) and minutes per day (10-25, 30-40, 45-55, 60+) they participated in each of 13 types of activity, plus an “other” category. For analyses, the midpoint value of each category was assigned (e.g., 35 was assigned to the 30-40 minutes per day category), and a value of 65 was assigned to the category of 60+ minutes per week<sup>71</sup>. For walking, participants estimated pace as follows: casual (30 minutes per mile or more), moderate (20-29 minutes per mile), or fast (19 minutes per mile or less). For missing data (<5%), age- (50-64, 65-75) and sex-specific values for minutes per day and days per week were imputed based on the most common response (the mode) for each strata<sup>71</sup>. The number of flights of stairs climbed each day was also ascertained.

Metabolic equivalent task (MET) values were assigned to each of the activities (e.g., walking, running, swimming), based on Ainsworth et al.’s Compendium of Physical Activities<sup>39</sup>. Activity-specific MET-hours per week for the 1-month time span were calculated:  $[(\text{days per week}) * (\text{minutes per day}) * (\text{MET for activity})] \div [(60 \text{ minutes/hour})]$ . MET-hours per week were then summed across all activities for total MET-hours per week. Physical activity predictors were quantified as MET-hours per week of the following five groupings: walking, stair climbing, moderate plus high-intensity activity (for activities with MET values of 4 or higher, excluding walking), high-intensity activity (for activities with MET values of 6 or higher), and total activity (walking, stair climbing, moderate, and high

intensity activities combined).

### **Assessment of baseline DNA damage and repair**

Semifasting ( $\geq 6$  hours) blood samples were collected from participants by phlebotomists at the in-home interviews. All specimens were transported to the Fred Hutchinson Cancer Research Center Specimen Processing Laboratory and processed within two hours of collection. Viable leukocytes were isolated by Ficoll-gradient centrifugation, re-suspended, and underwent controlled step-rate freezing. The cryovials with these specimens were placed in a  $-70^{\circ}\text{C}$  freezer overnight and were transferred to liquid nitrogen storage vessels within 48 hours.

Baseline DNA damage was assessed using a single gel electrophoresis (SCG) assay (comet assay), which is a rapid, sensitive, and reliable technique to detect single and double strand breaks in DNA from individual cells<sup>72, 73</sup>. Measurement of damage varies, but one common technique is the Olive tail moment, which is measured in arbitrary units but is expressed as the difference between the tail mean and the head mean multiplied by the percent of DNA and divided by 100<sup>74</sup>. A variation of the standard comet assay was used in this study to enable measurement of baseline DNA damage, response to oxidative stress-induced DNA damage, and repair capacity at two time points<sup>75</sup>. Measuring both DNA damage and repair is an important feature, as it is ultimately the loss of equilibrium between damage and repair that promotes carcinogenesis<sup>76, 77</sup>.

Cells were tested for viability using Trypan blue staining and cell morphology was examined. Samples were placed on ice to prevent repair until electrophoresis was conducted for each of the measures. Baseline DNA damage was measured for those samples having

viable cells, then the cells were subjected to 1.23 gray of gamma radiation at 4 degrees Celsius (9 seconds of exposure) to induce DNA damage. Repair capacity measurements were then taken at 15 minutes and 60 minutes post-induced damage and expressed as a percentage. For this study, 15-minute DNA repair capacity was considered to be 1 minus (the Olive tail moment at 15 minutes divided by the baseline Olive tail moment after irradiation), based on seminal comet assay work<sup>75</sup>. An analogous calculation was made for DNA repair capacity at 60 minutes. Comet assays were conducted at the German Cancer Research Center (DKFZ), and values were measured using the Metafer4 system (MetaSystems, Altussheim, Germany).

Although serum specimens were obtained for all 220 subsample participants, 35 were excluded from the comet assay analysis due to a previous cancer diagnosis (reported on their baseline questionnaire). There remained 122 participants with valid baseline DNA damage data after excluding 63 samples with non-viable lymphocytes or samples deemed ineligible for baseline damage analysis because fewer than 60 cells could be scored,  $\geq 50\%$  of cells were 'ghost' cells meaning no viable cells were present 24 hours after thawing. DNA repair capacity was not calculated when either the baseline damage or the residual damage from the induced damage was higher than the induced damage, because these measures were considered unreliable and likely due to laboratory measurement error. Of the 122 participants with baseline damage measures, all had data for at least one physical activity variable, and 99 had data available for the 15- and 60-minute DNA repair capacity assessments. The 23 individuals who had baseline damage measures but not repair measures were dropped from analyses due to the aforementioned exclusions at the repair measure time point.

## Statistical analyses

Descriptive statistics were used to characterize the study population. Linear regression was used to estimate adjusted  $\beta$ -coefficients and 95% confidence intervals (95% CIs) for associations between MET-hours per week of physical activity and Olive tail moment measures of baseline DNA damage, 15-minute DNA repair, and 60-minute DNA repair. Total physical activity was considered the primary predictor, and components of total activity were also explored. Although there is no consensus on which repair measure (15-minute or 60-minute) is better, it has been observed in at least one study that cells can take as long as 30 minutes or more to repair<sup>78</sup>; thus, the 60-minute repair measure was emphasized *a priori* as the primary repair outcome, in order to capture as much repair as possible.

All models were *a priori* adjusted for age, sex, and BMI (continuous) given that they are known to be independently associated with both physical activity and DNA damage and repair<sup>68, 79</sup>. For participants missing BMI (n=7), the BMI from their original baseline questionnaire was used if available (n=3). Additional covariates were evaluated in groups in order to construct a more parsimonious multivariate model and to have final models that were more comparable to each other. Groups were formed by clustering similar variables and were included as follows: 1) demographic/behavioral: race (White, non-White), education (college or higher, less), current cigarette smoking (Y/N), current alcohol use (Y/N); 2) current multivitamin use (Y/N); 3) current antioxidant use: vitamin C (mg), vitamin E (mg dL alpha tocopherol), selenium (mcg); 4) current use of minerals/pro-oxidants: iron (mg), zinc (mg); 5) current use of fish oil, EPA, omega 3, or cod liver oil (Y/N), and 6) history of cardiovascular disease or diabetes (Y/N). Dose calculations for each of the vitamins and

supplements included amounts supplied by a multivitamin. The correlation matrix for variables within groups was examined to ensure that included variables were not highly correlated with each other. Each covariate group was added to the model for total activity and 60-minute DNA repair (main analysis) and evaluated for significance using a Likelihood ratio test. Only significant groups of variables were included in final models. For the main analysis of total activity and 60-minute DNA repair, the only additional predictor was multivitamin use; thus, all “final adjusted” analyses are adjusted for age, sex, BMI (continuous), and multivitamin use (Y/N).

In an exploratory analysis, BMI ( $<30.0$ ,  $\geq 30.0$  kg/m<sup>2</sup>) was examined as a potential effect modifier. Multiplicative interaction terms were generated by creating a cross-product term between each physical activity measure and each BMI category and tested for significance in the univariate model using a likelihood ratio test.

All statistical significance levels (*P* values) reported are two-sided. *P* values of  $\leq 0.05$  were considered statistically significant. Statistical analyses were conducted using Stata/SE (version 11.0; StataCorp LP, College Station, TX).

## **Results**

Demographic and health information for the 122 participants with complete information on at least one measure of reported physical activity and a measure of baseline DNA damage in the study sample are shown in Table 1 by sex. The majority of participants were non-Hispanic White (95.0%) and non-smokers (93.0%). Men were slightly more physically active than women; differences were most apparent for moderate-intensity, high-intensity, and total activity, while stair climbing and walking were similar between men and

women (Table 1). Men had a slightly higher mean BMI, and a higher proportion of men had a history of cardiovascular disease or diabetes (Table 1).

Table 2 displays the results of each of the five physical activity predictors and their relation to baseline DNA damage and 15-minute and 60-minute DNA repair capacity. Associations between baseline DNA damage and total activity, moderate- plus high-intensity activity, and high-intensity activity were small and not statistically significant.

Physical activity was not significantly associated with 15-minute DNA repair; however, total activity and high-intensity activity were each significantly associated with 60-minute DNA repair. When adjusting for age, sex, BMI, and current multivitamin use, total activity was positively associated with 60-minute DNA repair ( $p=0.044$ ); for each additional MET-hour of physical activity per week, the mean DNA repair capacity was 0.21% higher ( $\beta=0.21$ , 95% CI: 0.0057, 0.42). Similarly, when adjusting for age, sex, BMI, and current multivitamin use, high-intensity activity was positively associated with 60-minute DNA repair ( $p=0.036$ ); for each additional MET-hour of high-intensity activity per week, the mean DNA repair capacity was 0.31% higher ( $\beta=0.31$ , 95% CI: 0.20, 0.60). Moderate- plus high-intensity activity was associated with a non-significant 25% higher 60-minute DNA repair capacity ( $\beta=0.25$ , 95% CI: -0.0098, 0.51).

Given the small sample size of this study, there was limited power to detect effect modification by BMI. Thus, overall results (not separated by BMI status) have been presented.

## ***Discussion***

In this study of generally healthy, older adults in Washington State, physical activity was not associated with overall baseline DNA damage, but was associated with enhanced DNA repair. Meeting physical activity recommendations of 150 minutes per week<sup>80</sup>, which is approximately equivalent to 7.5 MET-hours per week, would be associated with a 1.6% higher DNA repair capacity at 60 minutes. The benefit of total physical activity for DNA repair appears to be driven primarily by higher-intensity activities, such as running, swimming laps, or fast cycling. Given that DNA repair counteracts DNA damage, and excessive DNA damage is involved in carcinogenesis, these results are important because they demonstrate that physical activity may be beneficial for cancer prevention in older, healthy adults. Previous studies examining physical activity and DNA damage and repair have either used exhaustive treadmill tests to measure physical activity, or they have focused on aerobically trained individuals; however, this study used a measure of usual physical activity that allows for varying intensities of recreational physical activity. While a previous study showed that DNA damage was significantly decreased among individuals performing moderate exercise (<5 hours per week)<sup>65</sup>, no association was observed in the present study. This study, however, is the first study to examine physical activity and DNA repair in humans and show that physical activity is associated with increased repair. These results are similar to the aforementioned study showing that eight weeks of treadmill training resulted in increased DNA repair in the muscle tissue of middle- and older-aged rats, which are more likely to perform moderate-intensity activity compared to high-intensity activity<sup>58</sup>. The results of the present study are also consistent with another study showing that levels of 8-

oxoG-DNA glycosylase (OGG1), a base excision repair enzyme, increased in moderately- and strenuously-trained rats but not in rats trained at a higher intensity<sup>81</sup>.

This study is one of only a handful of studies that have considered BMI as a potential confounding factor in the relationship between physical activity and DNA damage and repair. In one of the first small studies, BMI was accounted for via a crossover design; however this study only included three people<sup>61</sup>. Allgayer et al.<sup>64</sup> examined BMI as a potential confounder but it was not associated with their measure of DNA damage and thus was not considered a confounder. Kasai et al.<sup>65</sup> included BMI in their multivariate analysis of moderate physical activity and urinary 8-oxodG excretion, but their study was restricted to men.

Biologically, physical activity may impact DNA repair through the creation and stimulation of oxygen radical scavenger enzymes and repair enzymes<sup>65</sup>. It is possible that the action of such enzymes is delayed, which may help explain why an effect of physical activity on DNA repair was observed at 60 minutes but not at 15 minutes. The hypothesis of a non-immediate effect is consistent with the report from Mastaloudis et al.<sup>62</sup> who observed that any damage induced during an ultra-marathon subsided to baseline levels two hours after the event.

This study has several strengths. It is the first study to assess how usual physical activity with a range of intensity and duration relates to baseline DNA damage and repair using the comet assay among older, more “average” activity level individuals. It is also the largest study to date to examine physical activity and baseline DNA damage and repair capacity in both men and women. The comet assay has been used extensively in

biomonitoring studies<sup>73, 82, 83</sup> and more recently in epidemiologic investigations with reliable and reproducible results<sup>75, 84</sup>.

Nonetheless, this study has several limitations. Data on physical activity, BMI, and other demographic variables and potential confounders were assessed by self-report, and as such are subject to reporting error, including that due to social desirability<sup>85, 86</sup>. This is an observational, cross-sectional study, and it is possible that the observed association could be due to residual confounding. The sample size was too small to effectively examine effect modification by BMI. Finally, the majority of VITAL participants are non-Hispanic White and non-smokers, so results may not be generalizable to other subgroups of the population; however, the homogeneity offers a degree of control for confounding.

Although there are many assays available to assess DNA damage and the comet assay has its limitations, only one assay was able to be used in the present study, and the ability of the (relatively inexpensive) comet assay to rapidly and reliably simultaneously assess DNA damage and repair was an important feature in the current study. The statistical power to assess baseline DNA damage and repair was somewhat limited by the number of individuals with viable lymphocytes suitable for the comet assay. Nevertheless, an association was detected between physical activity and 60-minute DNA repair, and it was determined that participants who were included in the final analytic sample (i.e. those who had at least one comet assay measure) did not differ from participants who were excluded (i.e. those who did not have a comet assay measure) in terms of physical activity, demographics, and other measured characteristics.

In summary, recent physical activity does not appear to be associated with increased DNA damage as has been suggested by limited evidence in the literature. In fact, usual exercise may stimulate DNA repair, possibly through an oxygen radical scavenger enzyme or repair enzyme mechanism. In order to better assess the relationship between physical activity and DNA damage and repair, larger studies are needed, and particularly those that address remaining questions, including whether or not the associations observed vary by BMI. Nonetheless, our results are consistent with US Centers for Disease Control and Prevention physical activity guidelines for adults and older adults that a mix of moderate and vigorous physical activities is beneficial for health, and that some physical activity is better than none<sup>87</sup>.

### ***Acknowledgments***

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## Tables

**Table 4. VITAL Table 1. Characteristics by sex for 122 participants with at least one physical activity measure and a measure of DNA damage in the VITAL study validity/biomarker sub-study**

	<b>Males N=67</b>	<b>Females N=55</b>
	<b>N (%)<sup>a</sup></b>	<b>N (%)<sup>a</sup></b>
Race		
Non-Hispanic White	63 (94.0)	53 (96.4)
Other	4 (6.0)	2 (3.8)
Education		
Less than college graduate	24 (35.8)	30 (54.6)
College graduate or advanced degree	43 (64.2)	25 (45.5)
Current Cigarette smoker		
Yes	3 (4.5)	5 (9.1)
No	64 (95.5)	50 (90.9)
Alcohol in the past month		
Any	50 (75.8)	37 (67.3)
None	16 (24.2)	18 (32.7)
History of diabetes or cardiovascular disease		
Yes	12 (17.9)	3 (5.5)
No	55 (82.1)	52 (94.5)
Current multivitamin use		
Yes	33 (49.3)	39 (70.9)
No	34 (50.8)	16 (29.1)
	<b>Mean (SD)</b>	<b>Mean (SD)</b>
Age (years)	59.9 (7.5)	62.2 (7.8)
BMI (kg/m <sup>2</sup> )	27.6 (4.3)	25.3 (4.5)
MET-hours per week of walking	4.1 (5.0)	4.6 (5.1)
MET-hours per week of stair-climbing	2.3 (1.7)	1.9 (1.9)
MET-hours per week of moderate+high intensity activity	9.9 (14.7)	5.9 (9.2)
MET-hours per week of high intensity activity	6.8 (12.4)	3.3 (7.1)
MET-hours per week of total activity	18.7 (17.7)	13.5 (11.1)
Olive tail moment for baseline DNA damage	3.0 (2.7)	3.5 (3.7)
Olive tail moment for 15-minute DNA repair capacity (%)	38.4 (12.3)	40.1 (18.7)
Olive tail moment for 60-minute DNA repair capacity (%)	61.5 (13.9)	64.2 (15.7)

<sup>a</sup> N's may not sum to 122 due to missing data, %'s may not sum to 100% due to rounding

BMI: Body Mass Index

**Table 5. VITAL Table 2. Adjusted beta coefficients and 95% confidence intervals for the association between MET-hours per week of physical activity and baseline DNA damage and DNA repair capacity in the VITAL validity/biomarker sub-study**

Average MET-hours per week of physical activity	$\beta$ (95% confidence interval)	
	Model 1 – a priori adjusted <sup>a</sup>	Model 2 – final adjusted <sup>b</sup>
<b>Baseline DNA damage</b>		
Walking (n=120)	0.08 (-0.08, 0.24) p=0.32	0.08 (-0.08, 0.23) p=0.33
Stairs (n=122)	0.14 (-0.18, 0.46) p=0.38	0.14 (-0.18, 0.46) p=0.39
Moderate+high-intensity activity (n=120)	-0.02 (-0.06, 0.02) p=0.28	-0.02 (-0.06, 0.01) p=0.20
High-intensity activity (n=120)	-0.02 (-0.06, 0.02) p=0.29	-0.03 (-0.07, 0.01) p=0.20
Total activity (n=120)	-0.01 (-0.03, 0.02) p=0.70	-0.01 (-0.04, 0.02) p=0.62
<b>15-minute DNA repair capacity</b>		
Walking (n=97)	0.24 (-0.33, 0.82) p=0.40	0.26 (-0.27, 0.80) p=0.33
Stairs (n=99)	0.35 (-1.52, 2.22) p=0.71	0.40 (-1.44, 2.25) p=0.67
Moderate+high-intensity activity (n=97)	0.06 (-0.20, 0.33) p=0.65	0.09 (-0.17, 0.36) p=0.48
High-intensity activity (n=97)	0.07 (-0.25, 0.38) p=0.67	0.10 (-0.21, 0.42) p=0.53
Total activity (n=97)	0.02 (-0.20, 0.25) p=0.86	0.03 (-0.20, 0.27) p=0.78
<b>60-minute DNA repair capacity</b>		
Walking (n=97)	0.40 (-0.16, 0.94) p=0.16	0.42 (-0.11, 0.95) p=0.12
Stairs (n=99)	1.09 (-0.49, 2.67) p=0.17	1.15 (-0.46, 2.75) p=0.16
Moderate+high-intensity activity (n=97)	0.19 (-0.07, 0.46) p=0.15	0.25 (-0.01, 0.51) p=0.059

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High-intensity activity (n=97)	0.25 (-0.05, 0.56) p=0.10	0.31 (0.20, 0.60) p=0.036
Total activity (n=97)	0.19 (-0.01, 0.39) p=0.065	0.21 (0.01, 0.41) p=0.044

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BMI: Body Mass Index

<sup>a</sup>Adjusted for age, sex, and BMI (continuous)

<sup>b</sup>Adjusted for age, sex, and BMI (continuous), and multivitamin use (Y/N)

## **Chapter III: Associations of physical activity and sedentary behavior with obesity-specific quality of life: differences in associations by ethnicity/acclulturation (the SESO Study)**

### ***Abstract***

Obesity is associated with impaired health-related quality of life, but to what extent does this association apply to obesigenic behaviors such as physical activity? The Socioeconomic Status and Obesity (SESO) is a cohort study with 498 non-Hispanic White (NHW) women and 490 Hispanic women (of whom 79 were English- (ESH), and 392 were Spanish-speaking (SSH) in the home) who were aged 30-50 years at baseline. Demographic and behavior characteristics were assessed by self-administered questionnaire. Body mass index (BMI) was calculated from measured height and weight. In this analysis, multivariate linear regression was used to estimate associations between physical activity and sedentary time measures and log-transformed Obesity and Weight Loss Quality of Life (OWLQOL) scores adjusting for age and education, and additionally adjusting for dietary behaviors and BMI. Godin leisure-time activity score was positively associated with OWLQOL score in both NHW women and ESH women when controlling for age and education; using ordinal categories (<14, 14-23, and >23 units), a one-category increase in Godin score was associated with a geometric mean OWLQOL score 12% higher (95% CI: 5%, 20%;  $p=0.001$ ) for NHW women and 22% higher (95% CI: 7%, 39%;  $p=0.004$ ) for ESH women. Weekday sedentary time was negatively associated with OWLQOL score, after adjusting for age and education, among NHW women ( $p=0.019$ ), and weekend sedentary time was negatively associated among both NHW women ( $p<0.001$ ) and ESH women ( $p=0.039$ ). Many of these associations were attenuated or accounted for when additionally adjusting for dietary

behaviors or BMI. Higher levels of physical activity and lower levels of sedentary time appear to be associated with higher obesity-specific quality of life to varying degrees among NHW, ESH, and SSH women. This is the first study to investigate ethnic differences in the relationship between physical activity and obesity-specific quality of life.

## ***Introduction***

The health benefits of physical activity have been recognized for decades, and researchers are now also beginning to appreciate the risks associated with sedentary behavior, even among those who are physically active<sup>88</sup>; however, a vast majority of the literature regarding physical activity and sedentary behavior focuses on physical health and neglects outcomes such as quality of life. As such, Healthy People 2010<sup>89</sup> expanded its 2000 goal of longevity to include increased quality of life (QoL) and overall well-being<sup>90</sup>, and Healthy People 2020<sup>91</sup> has emphasized this goal by including the promotion of health-related quality of life (HRQoL) as an overarching theme and new topic area<sup>92</sup>.

Measures of quality of life are intended to capture aspects of life experienced only by the individual reporting them, and represent how one feels his/her goals, standards, and concerns are affected by specific conditions and circumstances<sup>93</sup>. Several studies have found that obesity is associated with lower perceived QoL<sup>94-98</sup>, and a higher Body Mass Index (BMI) has been shown to be associated with impaired physical, social, and emotional domains of QoL<sup>90,98</sup>. Furthermore, measures specific to weight, such as the Impact of Weight on Quality of Life-Lite instrument<sup>99</sup>, have been used to demonstrate that individuals with higher BMIs were more likely to report impaired weight-related HRQoL<sup>96,100</sup> and that weight loss is strongly related to improved weight-related HRQoL<sup>101</sup>. The relationship

between obesity and QoL may be bi-directional, in that obesity negatively affects perceived QoL, but lower perceived QoL can also predict future weight gain<sup>98</sup>.

Physical activity may be one way to modify QoL (e.g. through weight loss)<sup>102-104</sup>. Data from the 2001 Behavioral Risk Factor Surveillance System survey indicate that individuals who meet physical activity recommendations had significantly lower odds of reporting 14 or more mental and physical unhealthy days<sup>103</sup>. Although anthropometric measures such as BMI, weight, and body fat may account for some portion of the relationship between physical activity and quality of life, data also suggest that physical activity is associated with improved QoL independent of BMI<sup>105</sup>. For example, additional BRFSS data indicate that regardless of BMI, individuals who reported moderate or vigorous physical activity reported fewer physical and mental unhealthy days when compared to individuals reporting light physical activity<sup>106</sup>. Similarly, a recent study examining physical activity and BMI in combination found that physical activity was the more important predictor of QoL, regardless of weight status<sup>107</sup>, and in another study, adjustment for BMI merely attenuated the effect of physical activity on QoL<sup>108</sup>. Furthermore, stratified analyses have shown that even among overweight/obese individuals, those who meet recommended physical activity levels report higher QoL compared to their inactive counterparts<sup>109</sup>. Nonetheless, studies regarding the association between physical activity and obesity-specific quality of life are few, but may provide important detail in interpreting the association with health-related variables, beyond the broad general construct of QoL.

Research also suggests that ethnic differences in reporting of QoL and body satisfaction exist<sup>106, 110-112</sup>. A recent study in adolescents demonstrated that Caucasians are at

an elevated risk of reporting lower weight-related quality of life compared to Mexican-Americans<sup>110</sup>. Another study showed that among obese individuals, Hispanics report fewer mental and physical unhealthy days than their non-Hispanic White (NHW) counterparts, with the difference being more pronounced at higher BMIs<sup>106</sup>, suggesting one interpretation that weight may have a larger impact on quality of life for NHWs compared to Hispanics. Similarly, Lopez et al.<sup>111</sup> found that while non-Hispanic White and more acculturated Hispanic women reported a similar degree of body dissatisfaction, less acculturated Hispanic women reported decreased body dissatisfaction compared to White women<sup>111</sup>. The authors concluded that as Hispanic women acculturate, their behavior and body image may be more strongly influenced by the dominant culture, and their level of body dissatisfaction may increase<sup>111</sup>. Indeed, body image, acceptance, and ideals of individuals in a specific race or ethnic group are likely related to broader, culture-wide beliefs and norms. Researchers have found that the perception of normal body weight within low-SES Puerto Rican women greatly exceeds the definition of normal weight according to medical standards<sup>113</sup>, and larger women are considered healthy and more attractive in many Latin American and African traditional cultures compared to European and European descendant cultures<sup>114</sup>.

To date, only one study has examined ethnic differences in the relationship between physical activity and QoL; Luncheon and Zack (2011)<sup>115</sup> found that physical activity was associated with fewer reported physical unhealthy, mental unhealthy, recent activity limitation, and overall unhealthy days in White women, compared to only fewer reported overall unhealthy days in Latinas, independent of BMI<sup>115</sup>; however, no formal interaction test results were reported, and the study measured general quality of life rather than obesity-

specific quality of life. Thus, the present study aims to fill some of these gaps by examining the association between physical activity and obesity-specific quality of life in a population of NHW and Hispanic adult women. In particular, it further evaluates any change in effect estimate when adjusting for BMI. The hypothesis is that higher levels of physical activity and lower levels of sedentary time are associated with higher reported obesity-specific quality of life, and that this relationship persists even when adjusting for BMI. Secondly, potential differences in observed associations based on levels of ethnicity/acclimation, as measured by ethnicity and language spoken in the home, will be investigated. The hypothesis is that the associations of physical activity and sedentary time with obesity-specific quality of life would be stronger for non-Hispanic White women, for whom lean body mass appears to be more desirable.

## ***Methods***

### **Study population and data collection**

The Socioeconomic Status and Obesity (SESO) study is a longitudinal cohort study aiming to elucidate the pathways between socioeconomic status (SES) and obesity by examining social, environmental, psychological, and biological factors in relation to weight and weight change. Non-Hispanic White (NHW) (n=510) and Hispanic (n=530) Seattle women were recruited through multi-stage sampling, using block groups stratified by income and education as of the 2000 census as primary sampling unit. Segments of contiguous dwelling units were defined within block groups, and segments were sampled for the next stage. Within the selected segments, more than 25,000 households were approached by study staff, and approximately 20,000 households were screened, and eligible women were

stratified by years of education. Eligibility criteria included being 30-50 years old and an expectation that women would not move their home residence for three years. A stratified sample of eligible and interested women was drawn, with sampling fractions dependent on ethnicity and education stratum. Because women with fewer years of education had a higher sampling fraction within the NHW ethnicity, the overall eligibility rate was 10.5%, but the cooperation rate<sup>116</sup> was 72.5% yielding a joint response rate of 41.9%. 1,040 women were successfully enrolled in the study, exceeding the target of 1,000 women. In these analyses, women were excluded from analyses if they did not fall within the target age range of 30-50 years at the time of the baseline survey (n=22) or if they had missing information for age (n=30). This resulted in an analytic sample of 988 women.

The SESO study includes a baseline assessment and two annual follow-up assessments, each of which involves the following: wearing an accelerometer for a 7-day period; completion of a comprehensive self-administered questionnaire assessing physical activity, dietary, psychosocial, health, and demographic factors; and measured height and weight. The questionnaire was offered in both English and Spanish versions. Data for the present study used only baseline data, collected from May 2010 through September 2011.

### **Assessment of physical activity and sedentary time**

A number of physical activity measures were assessed in the baseline questionnaire. The primary measure of physical activity for this study was leisure-time activity of at least 10 minutes, assessed using a modified Godin leisure-time exercise questionnaire<sup>117</sup>, which asked about the frequency during a typical 7-day period of strenuous, moderate, and mild exercise (assessed separately), which were then weighted using approximate metabolic equivalents

(METs) of 9, 5, and 3 respectively<sup>117-119</sup>. A total weighted score can be calculated by summing weighted frequencies across all three categories; however, given that mild activity contributes minimally to various health outcomes, we calculated a total score based on the contributions of moderate and strenuous activity only, in accordance with Godin's updated recommendation<sup>119</sup>. This approach has also been used by others<sup>120, 121</sup>. It was assumed that a woman may not have filled in responses for categories for which she did no activity; thus for a woman who answered either moderate or strenuous activity an overall score was calculated using the reported frequency for the completed, and zero frequency for the missing, response. Godin score was also categorized according to the following recommended cutpoints by Godin<sup>119</sup> based on the Surgeon General's recommended physical activity levels<sup>122</sup>: <14 units (<7 kcal/kg/week), 14-23 units (7-13.9 kcal/kg/week), and >23 units (>14 kcal/kg/week). A separate question, not factored into the total score, asked about frequency of engaging in sweat-inducing free-time activity in a typical 7-day period (often, sometimes, never/rarely)<sup>123</sup>. Godin and Shephard have demonstrated the reliability and validity of their measure of leisure-time activity in relation to maximal oxygen consumption (VO<sub>2</sub> max)<sup>118</sup>.

Total walking was assessed using two questions from the short-form International Physical Activity Questionnaire, a reliable and valid measure of physical activity<sup>124</sup>. A primary question asked about the number days per week during the past 7 days a woman walked for a least 10 minutes at a time for any purpose (e.g. recreation, transportation). A secondary question asked how many hours and minutes she usually walked on one of those days. Reported hours were multiplied by 60 minutes and summed with reported minutes to create a variable for minutes per day. This minutes per day variable was multiplied by days

per week to create a total minutes per week variable. As per the International Physical Activity Questionnaire (IPAQ) scoring protocol, for minutes per day, values above 180 were truncated to 180. Similarly, values for minutes per week above 1,260 (based on 180 minutes per day for 7 days a week) were truncated to 1,260.

Time spent sitting (sedentary time) was evaluated using two questions from the long-form IPAQ<sup>124, 125</sup>. Participants reported hours and minutes usually spent sitting in a day during the past 7 days. One question asked about weekday sitting and the other asked about sitting on weekend days. Similar to the IPAQ-short walking questions, reported hours were multiplied 60 and summed with reported minutes to create a variable for minutes spent sitting per day. This variable was created separately for weekdays and for weekend days. As per IPAQ scoring protocol, values for sitting minutes per day above 960 were truncated to 960, based on the assumption that 16 hours of the day could be spent doing activities other than sleeping (8 hours).

Walking in the neighborhood was also assessed using a slightly modified version of Giles-Corti et al.'s Neighborhood Physical Activity Questionnaire, a reliable and valid measure of walking in the neighborhood<sup>126</sup>. Test-retest reliability was reported to be strong ( $\kappa=0.84$ , percent agreement = 94%)<sup>126</sup>. In the current study, questions about days per week and minutes per day of walking in the neighborhood were modified to ask about walking during the last 7 days, rather than usual activity, to be more comparable to the IPAQ walking questions. Analyses of the IPAQ have shown that reliability and validity estimates are comparable for the "usual week" and "7 days" versions<sup>124</sup>. A separate question also assessed how many minutes per day a woman walked in her neighborhood on a typical day.

### **Assessment of obesity-specific quality of life**

Obesity-specific quality of life was measured using the Obesity and Weight Loss Quality of Life (OWLQOL) Questionnaire<sup>127, 128</sup>, a 17-item self-administered questionnaire developed cross-culturally based on Maslow's theory of human needs<sup>129</sup>. All items address unobservable but fundamental needs such as freedom from stigma and attainment of culturally-appropriate goals. For example, the OWLQOL asks the degree to which weight affects respondent's energy. Reliability and validity are well-established and have exceeded recommended minimum values within obese populations<sup>130</sup>. The Guttman-Cronbach's  $\alpha$  of 0.96, indicates high internal consistency, and factor analyses supports a single factor<sup>130</sup>. The overall OWLQOL score, the primary outcome measure, was calculated and used in continuous form after log-transformation to reduce skewness for analyses; the values were then back-transformed for presentation.

### **Assessment of demographic and health factors**

During the screening interview, participants reported information on ethnicity (NHW, Hispanic) and highest level of education completed (less than high school (HS), HS graduate or equivalent, some college, bachelor's degree, graduate or professional degree). If screening data were not available for these variables, baseline survey responses were substituted (n=15, 1.4% for ethnicity; n=118, 11.3% for race; and n=14, 1.3% for education) in the analysis. No participant lacked information on ethnicity, since it was an important factor in defining the eligible cohort. Data on additional demographic factors were collected in the baseline survey and included date of birth (from which age was calculated), country of birth, and primary language spoken. A combined ethnicity/acculturation variable was defined and referred to in

this paper as a woman's ethnicity and "acculturation" status, which was defined by primary language spoken in the home (English, Spanish); resulting categories for this ethnicity/acculturation variable were as follows: NHW women, English-speaking Hispanic women, and Spanish-speaking Hispanic women.

Health and dietary behaviors were also collected in the baseline survey. Participants were asked whether or not they had smoked at least 100 cigarettes in their lifetime. Dietary factors such as servings of fruits and vegetables per day, fast food meals per month, frequency of consuming soft drinks (diet or regular), and frequency of eating while engaging in another activity (e.g. watching television, working) were also assessed. Body Mass Index (BMI,  $\text{kg}/\text{m}^2$ ) was calculated using height and weight measured in the home with a calibrated study stadiometer and scale.

### **Statistical analyses**

Linear regression was used to estimate regression coefficients and 95% confidence intervals (CIs) between each of the continuous physical activity variables and continuous, log-transformed OWLQOL score. The interpretation of regression results that use a log-transformed outcome is that a particular unit change in the predictor is associated with a particular unit change in the geometric mean of the outcome, where the geometric mean is simply the mean of a log-transformed variable. Regression results using this method are hereafter referred to as the linear effect estimate. The interquartile range (IQR) for each physical activity predictor was calculated for the overall study sample (NHWs and Hispanics combined), and regression results are presented as the back-transformed version of the

product between the beta coefficient and the IQR, with similar calculations conducted for the lower and upper CI limits.

Multiple imputation ( $m=20$ ) using iterative Markov chain Monte Carlo methods was employed to impute values for missing physical activity and sedentary time variables based on models that included OWLQOL score and all aforementioned covariates; this method has been shown to be less biased than complete case analysis approaches<sup>131</sup>. Missingness was most problematic for Spanish-speaking Hispanic women, and ranged from 1.8% to 21.7% depending on the physical activity measure of interest (Supplementary Table 1). Missingness in physical activity and sedentary time variables was not assumed to be Missing Completely at Random (MCAR), but was assumed to be Missing at Random (MAR) given that missingness was associated with factors such as Hispanic ethnicity, education, and primary language spoken. Similar observations and decisions have been noted in at least one other study<sup>132</sup>. Imputation accounted for factors observed to be associated with missingness. We acknowledge that this is an assumption that inherently presumes no additional selection bias impacted missing data.

Age (continuous) and education (less than high school, high school graduate or equivalent, some college or associates degree, bachelor's degree, graduate or professional degree) were considered *a priori* confounders. Additional covariates, which were selected based on factors associated with both physical activity and quality of life in the literature, were then tested in groups for significant (Wald  $p<0.05$ ) contribution to the *a priori* model between Godin score and log-transformed, continuous OWLQOL score using a multiply imputed data post-estimation F-test. Variables were clustered according to the following

groups: 1) additional demographic variables: marital status (never married, divorced or separated, widowed or presently married, or living in a marriage-like relationship) and household income (<\$25,000, \$25,000-\$49,999, \$50,000-\$74,999, \$75,000-\$99,999, \$100,000+, don't know); 2) dietary behaviors: servings of fruits and vegetables (<1, 1-2, 3-4, 5+), fast food meals per month (zero, 1-4, 5-9, 10+), frequency of drinking regular or diet soft drinks/soda (never, less than once a week, about once a week, 2-5 times per week, about once a day, 2+ times a day), and eating while doing another activity (never, seldom, sometimes, most of the time/always); and 3) smoking history: smoked 100 cigarettes in lifetime (yes, no). BMI was also considered a covariate in the final model. Main analyses were conducted as follows: 1) adjusted for *a priori* demographic covariates (Model 1); 2) Model 1 additionally adjust for dietary behavior covariates found to be significant additions to Model 1; 3) Model 1 plus BMI; and 4) Model 1 plus significant dietary predictors *and* BMI.

In exploratory analyses, effect modification was investigated using a Wald test to test the coefficient of a multiplicative term between categorical Godin score (the primary physical activity predictor) and ethnicity/acclturation in a univariate model (not adjusting for covariates). A likelihood ratio test was not used given that physical activity values were imputed prior to testing for effect modification and running analyses, and the use of likelihood estimation in a multiple imputation setting does not have clear interpretation<sup>133</sup>. Analyses were restricted to women with complete information on OWLQOL score and ethnicity/acclturation (n=969) and were conducted separately for NHW women (n=498), English-speaking Hispanic women (n=79), and Spanish-speaking Hispanic women (n=392),

since ethnicity/acclimation modified the association between categorical Godin score and continuous, log-transformed OWLQOL score.

All statistical tests were two-sided. Statistical analyses were conducted using Stata/IC (version 11.0; StataCorp LP, College Station, TX).

## **Results**

Demographic information and behavioral and health characteristics for the 969 women with complete information for an Obesity and Weight Loss Quality of Life (OWLQOL) score, primary language spoken, and at least one measure of reported physical activity prior to imputation, are shown in Table 1. All results are presented separately for NHW women, English-speaking Hispanic women, and Spanish-speaking Hispanic women since ethnicity/acclimation modified the association between categorical Godin leisure time exercise score and continuous, log-transformed OWLQOL score (Wald test:  $p=0.031$ ). Non-Hispanic White (NHW) women had more years of education and higher household incomes compared to Hispanic women (Table 1). NHW women were primarily born in the United States, whereas Spanish-speaking Hispanic women were primarily born in Mexico; similarly, the proportion of English-speaking Hispanic women born in the US was higher than that for English-speaking Hispanic women born in Mexico. A lower proportion of Spanish-speaking Hispanic women than NHW women had smoked 100 cigarettes and a higher proportion were overweight or obese. Godin leisure-time exercise scores and walking were similar between NHW and English-speaking Hispanic women, but NHW women reported greater sitting time.

Table 2 displays the results of each of the Godin physical activity predictors (after imputation) and their relation to OWLQOL score. Godin score was positively associated with OWLQOL score in both NHW women and English-speaking Hispanic women when controlling for age and education. Comparing two NHW women in adjacent categories of ordinal Godin score (<14, 14-23, and >23 units), women who performed activity consistent with a higher category had a 12% higher linear effect estimate of OWLQOL score (95% CI: 5%, 20%;  $p=0.001$ ) than women who performed activity consistent at one category lower. However, this significant association disappeared when additionally adjusting for either BMI or dietary behaviors. Similarly, comparing two English-speaking Hispanic women in adjacent categories of ordinal Godin score as above, women who performed activity consistent with a higher category had a 22% higher linear effect estimate of OWLQOL score (95% CI: 7%, 39%;  $p=0.004$ ) than the women who performed activity consistent at one category lower; unlike NHW, this association persisted when additionally adjusting for BMI or dietary behaviors. For Spanish speaking women, only frequency of engaging in sweat-inducing activity was associated with OWLQOL score when adjusting for age and education; comparing two women engaging in sweat-inducing exercise “often” compared to “sometimes”, or “sometimes” compared to “never/rarely”, the woman with a higher frequency of sweat-inducing had a linear effect estimate of OWLQOL score that was 10% higher (95% CI: 2%, 19%;  $p=0.010$ ) than that for the women engaging in sweat-inducing exercise less often. This association was independent of BMI but not independent of dietary behaviors.

Table 3 displays the results of walking and sedentary time predictors (after imputation) and their relation to OWLQOL score. Minutes of neighborhood walking in a typical day was not associated with OWLQOL score in NHW women, but was positively associated with OWLQOL score in English-speaking Hispanic women; an additional 25 minutes of neighborhood walking per day was associated with a 12% higher OWLQOL linear effect estimate (95% CI: 1%, 24%;  $p=0.040$ ). This association persisted when adjusting for BMI but disappeared when adjusting for dietary behaviors.

Weekday sedentary time was negatively associated with OWLQOL score among NHW women when controlling for age and education; an additional 300 minutes (5 hours) of sedentary time per weekday was associated with a 9% lower linear effect estimate (95% CI: 2%, 16%;  $p=0.019$ ) for NHW women. Weekend sedentary time was negatively associated with OWLQOL score among both NHW women and English-speaking Hispanic women when controlling for age and education; an additional 180 minutes (3 hours) of weekend day sitting time was associated with a linear effect estimate that was 10% lower (95% CI: 5%, 15%;  $p<0.001$ ) for NHW women and 13% lower (95% CI: 1%, 24%;  $p=0.039$ ) for English-speaking Hispanic women. However, the only significant association that was independent of dietary behaviors was that observed within NHW women, and significant associations disappeared when adjusting for BMI.

Among Spanish-speaking Hispanic women, total walking and neighborhood walking were not significant predictors of OWLQOL score in models that only adjusted for age and education. When further adjusting only for BMI, weekly neighborhood walking time ( $p=0.045$ ), typical daily neighborhood walking time ( $p=0.035$ ), weekday sedentary time

( $p=0.022$ ), and weekend sedentary time ( $p=0.016$ ) became statistically significant. For example, daily neighborhood walking was positively associated with OWLQOL score when controlling for age, education, and BMI; an additional 25 minutes of daily neighborhood walking was associated with a 5% higher linear effect estimate for OWLQOL score (95% CI: 0%, 10%;  $p=0.035$ ) within Spanish-speaking Hispanic women. However, these significant associations disappeared when further adjusting for dietary behaviors.

## ***Discussion***

In this study of 969 women in the SESO Study, higher levels of physical activity and lower levels of sedentary time were associated with higher obesity-specific quality of life independent of age and education. These associations were stronger among Non-Hispanic White (NHW) women and English-speaking Hispanic women than among Spanish-speaking Hispanic women. For Godin measures of physical activity, associations in NHW largely disappeared when adjusting for body mass index (BMI), associations in Spanish-speaking women largely disappeared when adjusting for dietary predictors, and associations in English-speaking Hispanic women persisted independent of both dietary behaviors and BMI. Similarly, any associations for walking or sedentary time were diminished when adjusting for dietary behaviors or BMI. The results presented demonstrate that while physical activity and reduced sedentary time are likely important correlates of higher quality of life, much of the inverse association, if causal, may operate through BMI for NHW women; in contrast, there may be a residual association between physical activity and higher quality of life for English-speaking Hispanic women that is independent of BMI and dietary behaviors.

Previous studies examining physical activity and quality of life have either not examined obesity-specific quality of life or have not investigated potential ethnic and acculturation differences in associations. This study contributes important information about how the associations between physical activity or sedentary behavior and obesity-specific quality of life differ based on combined ethnicity/acculturation. Furthermore, the data presented here provide support for the contention that any association of physical activity is accounted for by BMI among NHW women, but not necessarily among Hispanic women.

Results from this study are similar to those of Luncheon and Zack(2011)<sup>115</sup> who examined ethnic differences in the relationship between physical activity and generic health-related QoL and found that physical activity was associated more with measures of unhealthy days in White women compared to Latinas; however, their study showed that the association of physical activity with measures of quality of life after adjustment for BMI, whereas in the present study, this was largely only true for English-speaking Hispanic women. In addition, the present study reported formal interaction test results, whereas Luncheon and Zack<sup>115</sup> did not.

This study has several strengths. It is the first study to assess how activity is related to obesity-specific quality of life in a large cohort study of both NHW and Hispanic women. The large number of women in the study allowed for investigation of differences in associations based on a measure that combines ethnicity/ and acculturation (combined ethnicity and primary language spoken). By using a number of various physical activity measures, the baseline survey was able to capture associations with a range of activities, including sweat-inducing activities, walking (both total walking and neighborhood walking),

and sitting behavior.

Nonetheless, this study has several limitations. Physical activity in the current study was assessed by self-report survey data and is thus subject to reporting error; on the other hand, physical activity questions included in the surveys were well-validated<sup>118, 124, 126</sup>. Missingness was high for some physical activity measures, particularly for Spanish-speaking Hispanic women; however, multiple imputation was used, and sensitivity analyses revealed that results from multiply-imputed data models were similar to those without imputation that excluded women with missing data. This study did not assess occupational or household physical activity, which could be important determinants of total energy expenditure<sup>28, 52</sup>. Data are cross-sectional, limiting our ability to draw inferences about causality. Finally, it should be noted that findings are restricted to women, and should not be generalized to men.

In summary, physical activity appears to be positively associated with obesity-specific quality of life independent of age and education. This association is strongest in NHW women, but disappears when adjusting for BMI, perhaps speaking to the importance of body image among NHW women. On the other hand, for English-speaking Hispanic women, physical activity is positively associated with quality of life independent of BMI and dietary behaviors, perhaps due to mechanisms not involving actual weight or obesity status. In order to better understand the mechanisms behind improved obesity-specific quality of life, longitudinal analyses are needed to assess whether increasing physical activity levels and reducing sedentary time can be used to increase obesity-specific quality of life, particularly among Non-Hispanic Whites and Hispanics.

## ***Acknowledgements***

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## Tables

**Table 6. SESO Table 1. Baseline characteristics for 969 women in the SESO Study with data on ethnicity/acclulturation, at least one measure of reported physical activity (prior to imputation), and a measure of Obesity and Weight Loss Quality of Life (OWLQOL)**

	<b>Non-Hispanic White women N=498</b>	<b>English-speaking Hispanic women N=79</b>	<b>Spanish-speaking Hispanic women N=392</b>
	<b>N (%)<sup>a</sup></b>	<b>N (%)<sup>a</sup></b>	<b>N (%)<sup>a</sup></b>
<b>Education (highest level completed)</b>			
Less than high school	10 (2.0)	6 (7.6)	228 (58.2)
High school graduate or equivalent	94 (18.9)	19 (24.1)	100 (25.5)
Some college / associates degree	146 (29.3)	29 (36.7)	35 (8.9)
Bachelor's degree	146 (29.3)	18 (22.8)	27 (6.9)
Graduate or professional degree	102 (20.5)	7 (8.9)	2 (0.50)
<b>Annual household income</b>			
<\$25,000	83 (16.9)	16 (21.3)	168 (45.8)
\$25,000-\$49,999	89 (18.1)	15 (20.0)	120 (32.7)
\$50,000-\$74,999	101 (20.5)	21 (28.0)	17 (4.6)
\$75,000-\$99,999	89 (18.1)	11 (14.7)	2 (0.54)
\$100,000+	114 (23.2)	7 (9.3)	2 (0.27)
Don't know	16 (3.3)	5 (6.7)	59 (16.1)
<b>Marital status</b>			
Never married	80 (16.1)	14 (18.0)	30 (7.7)
Divorced or separated	60 (12.1)	11 (14.1)	46 (11.8)
Presently married or widowed	292 (58.9)	43 (55.1)	244 (62.4)
Living in a marriage-like relationship	64 (12.9)	10 (12.8)	71 (18.2)
<b>Country of birth</b>			
United States	473 (95.0)	55 (69.6)	8 (2.1)
Mexico	1 (0.2)	14 (17.7)	314 (84.2)
Other	24 (4.8)	10 (12.7)	51 (34.7)
<b>Smoked at least 100 cigarettes in lifetime</b>			
No	248 (50.2)	40 (51.3)	324 (87.1)
Yes	246 (49.8)	38 (48.7)	48 (12.9)

Servings of fruits and vegetables per day			
<1	4 (0.8)	0 (0.0)	9 (2.4)
1-2	153 (30.9)	29 (36.7)	206 (54.2)
3-4	208 (42.0)	35 (44.3)	118 (31.1)
5+	130 (26.3)	15 (19.0)	47 (12.4)
Fast food meals per month			
Zero	178 (36.0)	23 (30.0)	49 (13.4)
1-4	238 (48.1)	38 (49.4)	262 (71.4)
5-9	44 (8.9)	11 (14.3)	32 (8.7)
10+	35 (7.1)	5 (6.5)	24 (6.5)
Frequency of drinking soft drinks/soda (regular or diet)			
Never	97 (19.5)	12 (15.4)	42 (11.1)
Less than once a week	172 (34.6)	23 (29.5)	86 (22.6)
About once a week	53 (10.7)	12 (15.4)	98 (25.8)
2-5 times per week	66 (13.2)	17 (21.8)	74 (19.5)
About once a day	56 (11.3)	6 (7.7)	53 (14.0)
2+ times per day	53 (10.7)	8 (10.3)	27 (7.1)
Frequency of eating while doing another activity			
Never	10 (2.0)	4 (5.1)	50 (13.3)
Seldom	73 (14.7)	15 (19.0)	117 (31.2)
Sometimes	216 (43.6)	36 (45.6)	147 (39.2)
Most of the time / always	197 (39.7)	24 (30.4)	61 (16.3)
BMI (kg/m <sup>2</sup> )			
<25.0	188 (37.8)	15 (19.0)	46 (11.8)
25.0-29.9	112 (22.5)	26 (32.9)	153 (39.2)
≥30.0	197 (39.6)	38 (48.1)	191 (49.0)
Godin leisure-time exercise score <sup>b</sup>			
<14 units (<7 kcal/kg/week)	114 (23.7)	19 (26.0)	124 (38.5)
14-23 units (7-13.9 kcal/kg/week)	107 (22.2)	11 (15.1)	66 (20.5)
>23 units (>14 kcal/kg/week)	261 (54.2)	43 (58.9)	132 (41.0)
Godin frequency of engaging in sweat- inducing exercise <sup>b</sup>			
Never/rarely	143 (29.1)	20 (26.0)	143 (37.1)
Sometimes	244 (49.7)	33 (42.9)	170 (44.2)
Often	104 (21.2)	24 (31.2)	72 (18.7)

	<b>Median (IQR)</b>	<b>Median (IQR)</b>	<b>Median (IQR)</b>
Age (years)	39.1 (10.5)	36.1 (7.6)	38.2 (9.0)
Godin leisure-time exercise score <sup>b</sup>	24.0 (27.0)	30.0 (26.0)	15.0 (28.0)
Minutes per week of total walking in past 7 days <sup>b</sup>	140.0 (315.0)	202.5 (320.0)	140.0 (420.0)
Minutes per week of neighborhood walking in past 7 days <sup>b</sup>	20 (100.0)	27.5 (127.5)	60.0 (122.5)
Minutes per day of neighborhood walking in a typical day <sup>b</sup>	0.0 (20.0)	0.0 (20.0)	15.0 (30.0)
Minutes per day of weekday sitting in past 7 days <sup>b</sup>	390.0 (360.0)	345.0 (240.0)	180.0 (210.0)
Minutes per day of weekend day sitting in past 7 days <sup>b</sup>	300.0 (276.0)	240.0 (180.0)	210.0 (180.0)
Obesity and Weight Loss Quality of Life (OWLQOL) score	63.2 (33.3)	59.8 (32.4)	65.6 (31.4)
BMI (kg/m <sup>2</sup> )	27.4 (11.4)	29.7 (9.7)	29.9 (7.7)

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<sup>a</sup> N's may not sum to 969 due to missing data, %'s may not sum to 100% due to rounding

<sup>b</sup> N's and %'s do not take into account imputed values, as imputation and regression analyses occurred simultaneously (see Tables 2 and 3)

IQR = Interquartile Range; BMI: Body Mass Index

**Table 7. SESO Table 2. Multivariate linear regression results for associations between Godin physical activity measures (imputed values included) and Obesity and Weight Loss Quality of Life (OWLQOL) score among 969 women in the SESO Study with data on ethnicity/acclulturation, at least one measure of reported physical activity, and an OWLQOL score**

	Godin leisure-time exercise score (continuous) <sup>a</sup>	Godin leisure-time exercise score (ordinal categories: <14 units, 14-23 units, >23 units) <sup>b</sup>	Godin frequency of engaging in sweat-inducing exercise (ordinal categories: never/rarely, sometimes, often) <sup>b</sup>
<b>Non-Hispanic White (NHW) women (N=498)</b>			
Model 1 (adjusted for <i>a priori</i> demographic variables) <sup>c</sup>	1.09 (1.01, 1.17) n=494	1.12 (1.05, 1.20) n=494	1.13 (1.04, 1.22) n=496
Model 2 (adjusted for <i>a priori</i> demographic variables and dietary behaviors) <sup>d</sup>	1.03 (0.95, 1.10) N=487	1.06 (0.99, 1.12) N=487	1.07 (0.99, 1.16) N=487
Model 3 (adjusted for <i>a priori</i> demographic variables and BMI) <sup>e</sup>	1.18 (0.81, 1.71) n=493	1.05 (0.99, 1.10) n=493	1.07 (1.01, 1.14) n=495
Model 4 (adjusted for <i>a priori</i> demographic variables, dietary behaviors, and BMI) <sup>f</sup>	0.97 (0.66, 1.42) n=486	1.02 (0.96, 1.07) n=486	1.05 (0.98, 1.12) n=486
<b>English-speaking Hispanic women (N=79)</b>			
Model 1 (adjusted for <i>a priori</i> demographic variables) <sup>c</sup>	1.16 (1.01, 1.33) n=79	1.22 (1.07, 1.39) n=79	1.18 (1.01, 1.38) n=79
Model 2 (adjusted for <i>a priori</i> demographic variables and dietary behaviors) <sup>d</sup>	1.11 (0.97, 1.27) N=67	1.16 (1.02, 1.32) N=76	1.12 (0.95, 1.31) N=76
Model 3 (adjusted for <i>a priori</i> demographic variables and BMI) <sup>e</sup>	1.99 (0.84, 4.70) N=79	1.18 (1.04, 1.33) N=79	1.15 (0.99, 1.33) n=79

Model 4 (adjusted for <i>a priori</i> demographic variables, dietary behaviors, and BMI) <sup>f</sup>	1.65 (0.72, 3.73) n=76	1.14 (1.01, 1.29) n=76	1.08 (0.93, 1.26) n=76
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**Spanish-speaking  
Hispanic women (N=392)**

Model 1 (adjusted for <i>a priori</i> demographic variables) <sup>c</sup>	1.06 (0.98, 1.14) n=359	1.04 (0.97, 1.10) n=359	1.10 (1.02, 1.19) n=388
Model 2 (adjusted for <i>a priori</i> demographic variables and dietary behaviors) <sup>d</sup>	0.99 (0.91, 1.09) N=327	1.00 (0.93, 1.07) N=327	1.07 (0.99, 1.16) N=341
Model 3 (adjusted for <i>a priori</i> demographic variables and BMI) <sup>e</sup>	1.34 (0.82, 2.18) n=359	1.04 (0.98, 1.11) n=359	1.10 (1.03, 1.17) n=386
Model 4 (adjusted for <i>a priori</i> demographic variables, dietary behaviors, and BMI) <sup>f</sup>	0.96 (0.59, 1.57) n=327	1.01 (0.94, 1.07) n=327	1.07 (0.99, 1.15) n=340

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BMI: Body Mass Index

<sup>a</sup> Associations for continuous Godin score are presented as the exponentiated (back-transformed) version of the product of the slope (beta coefficient) and the interquartile range (IRQ) (IQR=28)

<sup>b</sup> Associations for categorical predictors are presented as the exponentiated (back-transformed) slope (beta coefficient).

<sup>c</sup> Adjusted for age and education; N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

<sup>d</sup> Adjusted for age, education, and dietary behaviors (servings of fruits and vegetables per day, fast food meals per month, frequency of soda consumption, and frequency of eating while doing another activity); N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

<sup>e</sup> Adjusted for age, education, and BMI (continuous); N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

<sup>f</sup> Adjusted for age, education, dietary behaviors (servings of fruits and vegetables per day, fast food meals per month, frequency of soda consumption, and frequency of eating while doing another activity), and BMI (continuous); N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

**Table 8. SESO Table 3. Multivariate linear regression results for associations between walking and sitting measures (imputed values included) and Obesity and Weight Loss Quality of Life (OWLQOL) score among 969 women in the SESO Study with data on ethnicity/acculturation, at least one measure of reported physical activity, and an OWLQOL score**

	Minutes per week of total walking <sup>a</sup>	Minutes per week of neighborhood walking <sup>a</sup>	Minutes per day of neighborhood walking in a typical day <sup>a</sup>	Minutes per day of weekday sitting <sup>a</sup>	Minutes per day of weekend day sitting <sup>a</sup>
<b>Non-Hispanic White (NHW) women (N=498)</b>					
Model 1 (adjusted for <i>a priori</i> demographic variables) <sup>b</sup>	1.02 (0.98, 1.06) n=496	1.02 (0.97, 1.06) n=496	1.04 (0.98, 1.11) n=495	0.91 (0.84, 0.98) n=494	0.90 (0.85, 0.95) n=494
Model 2 (adjusted for <i>a priori</i> demographic variables and dietary behaviors) <sup>c</sup>	1.01 (0.97, 1.05) N=487	1.00 (0.94, 1.05) N=487	1.01 (0.95, 1.07) N=486	0.96 (0.88, 1.04) N=486	0.93 (0.88, 0.98) N=486
Model 3 (adjusted for <i>a priori</i> demographic variables and BMI) <sup>d</sup>	1.01 (0.98, 1.04) n=495	1.01 (0.98, 1.05) n=495	1.03 (0.98, 1.09) n=494	0.98 (0.92, 1.05) n=493	0.98 (0.93, 1.02) n=493
Model 4 (adjusted for <i>a priori</i> demographic variables, dietary behaviors, and BMI) <sup>e</sup>	1.00 (0.97, 1.03) n=486	1.01 (0.97, 1.04) n=486	1.01 (0.96, 1.07) n=485	1.01 (0.94, 1.08) n=485	0.99 (0.95, 1.04) n=485

**English-speaking Hispanic women (N=79)**

Model 1 (adjusted for <i>a priori</i> demographic variables) <sup>b</sup>	1.04 (0.95, 1.13) n=79	1.08 (1.00, 1.17) n=78	1.12 (1.01, 1.24) n=79	0.90 (0.73, 1.11) n=78	0.87 (0.76, 0.99) n=78
Model 2 (adjusted for <i>a priori</i> demographic variables and dietary behaviors) <sup>c</sup>	1.03 (0.95, 1.12) n=76	1.06 (0.98, 1.14) n=75	1.07 (0.97, 1.19) n=76	0.94 (0.78, 1.14) n=76	0.93 (0.81, 1.05) n=76
Model 3 (adjusted for <i>a priori</i> demographic variables and BMI) <sup>e</sup>	1.02 (0.94, 1.11) n=79	1.07 (1.00, 1.16) n=78	1.11 (1.00, 1.22) n=79	0.93 (0.77, 1.13) n=78	0.90 (0.80, 1.03) n=78
Model 4 (adjusted for <i>a priori</i> demographic variables, dietary behaviors, and BMI) <sup>d</sup>	1.02 (0.94, 1.10) n=76	1.05 (0.98, 1.13) n=75	1.07 (0.98, 1.18) n=76	0.95 (0.80, 1.14) n=76	0.97 (0.86, 1.09) n=76

**Spanish-speaking Hispanic women (N=392)**

Model 1 (adjusted for <i>a priori</i> demographic variables) <sup>b</sup>	1.00 (0.97, 1.02) n=375	1.02 (0.98, 1.07) n=370	1.02 (0.96, 1.08) n=370	0.93 (0.86, 1.01) n=369	0.95 (0.89, 1.00) n=370
Model 2 (adjusted for <i>a priori</i> demographic variables and dietary behaviors) <sup>c</sup>	0.99 (0.96, 1.02) n=336	1.00 (0.96, 1.05) n=329	0.99 (0.93, 1.05) n=334	0.96 (0.88, 1.04) n=334	0.96 (0.91, 1.02) n=335

Model 3 (adjusted for <i>a priori</i> demographic variables and BMI) <sup>d</sup>	1.01 (0.99, 1.03) n=373	1.04 (1.00, 1.08) n=368	1.05 (1.00, 1.10) n=368	0.92 (0.86, 0.99) n=367	0.94 (0.89, 0.99) n=370
Model 4 (adjusted for <i>a priori</i> demographic variables, dietary behaviors, and BMI) <sup>e</sup>	1.00 (0.98, 1.03) n=335	1.02 (0.98, 1.06) n=328	1.00 (0.95, 1.06) n=329	0.94 (0.88, 1.01) n=333	0.95 (0.90, 1.00) n=334

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BMI: Body Mass Index

<sup>a</sup> Associations for continuous predictors are presented as the exponentiated (back-transformed) version of the product of the slope (beta coefficient) and the interquartile range (IRQ) for each predictor: minutes per week of total walking (IQR=360), minutes per week of neighborhood walking (IQR=110), minutes per day of neighborhood walking on a typical day (IQR=25), minutes per day of weekday sitting (IQR=300), and minutes per day of weekend day sitting (IQR=180).

<sup>b</sup> Adjusted for age and education; N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

<sup>c</sup> Adjusted for age, education, and dietary behaviors (servings of fruits and vegetables per day, fast food meals per month, frequency of soda consumption, and frequency of eating while doing another activity); N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

<sup>d</sup> Adjusted for age, education, and BMI (continuous); N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

<sup>e</sup> Adjusted for age, education, dietary behaviors (servings of fruits and vegetables per day, fast food meals per month, frequency of soda consumption, and frequency of eating while doing another activity), and BMI (continuous); N's may not sum to 988 due to missing data on covariates other than physical activity (post-imputation) or OWLQOL score.

**Table 9. SESO Supplementary Table 1. Missingness (N's and %'s) in physical activity measures by ethnicity/acculturation**

<b>Physical activity measure</b>	<b>Non-Hispanic White women N=498</b>	<b>English-speaking Hispanic women N=79</b>	<b>Spanish-speaking Hispanic women N=392</b>
	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>
Godin leisure-time exercise score (both continuous and categorical versions)	16 (3.2)	6 (7.8)	70 (17.9)
Godin frequency of engaging in sweat-inducing exercise (ordinal categories: Never/rarely, Sometimes, Often)	7 (1.4)	2 (2.5)	7 (1.8)
Minutes per week of total walking	17 (3.4)	6 (7.6)	55 (14.0)
Minutes per week of neighborhood walking	22 (4.4)	3 (3.8)	57 (14.5)
Minutes per day of neighborhood walking in a typical day	16 (3.2)	2 (2.5)	85 (21.7)
Minutes per day of weekday sitting	7 (1.4)	5 (6.3)	33 (8.4)
Minutes per day of weekend day sitting	5 (1.0)	5 (6.3)	31 (7.9)

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## **Appendix A: California Teachers Study (CTS) Questionnaire**

A+

For Informational Use  
Not to be used without CTS permission  
This Form is Non-Scannable

# California Teachers Study

Report Card

A+

## Marking Instructions

- Answer each question as best as you can – estimate if you aren't sure.
- Use only a #2, ordinary pencil.
- Be certain to completely blacken in each of your answers, and erase completely if you make any changes.
- Do not make any other marks on this form.
- If you wish to make comments, please use a separate piece of paper.



Correct Mark ●

Incorrect Marks ☒ ☓ ☉ ☏


1. Is there an error in your name or address at the left?

- No     Yes (please write the correct information)

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Although men sometimes do get breast cancer, at this time the California Teachers Study focuses on women. If you are a man,  please mark here and mail back the uncompleted questionnaire.

This looks like a breeze!



USC School of Medicine  
1540 Alcazar Suite 215 Los Angeles CA 90033 (800) 568-9471



# B Background & E nvironment

2. Please fill in your birthdate:

MO		DAY		YEAR	
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

3. Were you adopted?

- No  
 Yes

4. Are you a twin?

- No  
 Yes  
 Don't Know

5. Where were you and your biological parents born? (Leave bubble blank if unknown)

	MOTHER	FATHER	YOU
California			
Other US or Canada			
Mexico, South America, Central America or Caribbean			
Asia or Pacific Islands			
Eastern Europe or former Soviet Union			
Western Europe, Scandinavia or UK			
Middle East or Israel			
Africa			
Other			

6. To what race/ethnic group do you and your biological parents belong? (Leave bubble blank if unknown)

Black or African American		
Chinese		
Filipino		
Hawaiian		
Japanese		
Korean		
Mexican or other Hispanic/Latino		
Native American		
Vietnamese		
White or Caucasian		
Other		

7. How old were your biological mother and your biological father when you were born?

- |                                    |                                    |
|------------------------------------|------------------------------------|
| <b>MOTHER</b>                      | <b>FATHER</b>                      |
| <input type="radio"/> Under age 20 | <input type="radio"/> Under age 20 |
| <input type="radio"/> 20-24        | <input type="radio"/> 20-24        |
| <input type="radio"/> 25-29        | <input type="radio"/> 25-29        |
| <input type="radio"/> 30-34        | <input type="radio"/> 30-34        |
| <input type="radio"/> 35-39        | <input type="radio"/> 35-39        |
| <input type="radio"/> 40-44        | <input type="radio"/> 40-44        |
| <input type="radio"/> 45 or older  | <input type="radio"/> 45 or older  |
| <input type="radio"/> Don't know   | <input type="radio"/> Don't know   |

8. Please indicate the number of full brothers and sisters that were live-born both before and after you.  Don't know (go to question 9)

	FULL BROTHERS	FULL SISTERS
BORN BEFORE YOU	<input type="radio"/> 0 <input type="radio"/> 3 <input type="radio"/> 1 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 5 or more	<input type="radio"/> 0 <input type="radio"/> 3 <input type="radio"/> 1 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 5 or more
BORN AFTER YOU	<input type="radio"/> 0 <input type="radio"/> 3 <input type="radio"/> 1 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 5 or more	<input type="radio"/> 0 <input type="radio"/> 3 <input type="radio"/> 1 <input type="radio"/> 4 <input type="radio"/> 2 <input type="radio"/> 5 or more

9. In what capacities have you ever been employed in a California school system?

	Ever (Mark all that apply)	Current (if currently employed mark one)	Longest (Mark one)
<b>Teacher:</b>			
Preschool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elementary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mid/Jr High	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Pupil Services Administration</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. At how many different schools have you worked as your regular place of employment?

- 1  6-8  
 2-3  9-12  
 4-5  Over 12

11. How many years in total have you worked with a California school system?

- Less than 1 year  10-14  
 1-4  15-19  
 5-9  20 years or more

12. Complete the following information about your school employment. Please mark all four columns. Mark the current year in the "End" column if still employed at that school.

Current/Most Recent School		School Where Employed Longest	
Start:	End:	Start:	End:
19	19	19	19
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

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13. Have you ever lived or worked within 1/2 mile of the following?

	NO	YES
Chemical plant	<input type="radio"/>	<input type="radio"/>
Power plant	<input type="radio"/>	<input type="radio"/>
Pulp mill	<input type="radio"/>	<input type="radio"/>
Oil refinery	<input type="radio"/>	<input type="radio"/>
Landfill site	<input type="radio"/>	<input type="radio"/>

14. What types of overhead power lines exist within 1 block of school property:

	Current/Most Recent School (Choose one)	School Where Employed Longest (Choose one)
No power lines	<input type="radio"/>	<input type="radio"/>
Power lines on poles	<input type="radio"/>	<input type="radio"/>
Power lines on towers	<input type="radio"/>	<input type="radio"/>
Power lines on poles AND towers	<input type="radio"/>	<input type="radio"/>
Don't know	<input type="radio"/>	<input type="radio"/>

15. Complete the following information for your current place of residence and the residence where you lived the longest.

Mark here if your current residence is also where you lived the longest; then only complete the left column.

What types of overhead power lines exist within 1 block of residence:

	Current Residence (Choose one)	Residence Where Lived Longest (Choose one)
No power lines	<input type="radio"/>	<input type="radio"/>
Power lines on poles	<input type="radio"/>	<input type="radio"/>
Power lines on towers	<input type="radio"/>	<input type="radio"/>
Power lines on poles AND towers	<input type="radio"/>	<input type="radio"/>
Don't know	<input type="radio"/>	<input type="radio"/>

16. For each of the ages below that apply, please answer the following questions:

	Under Age 15	Age 15 - 35	Over Age 35
Did you use insect repellent on your skin or clothing?	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently
Were pesticides or herbicides used in your home, lawn or garden?	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently
Were you ever in a public place when insects or plants were sprayed so that you were in a cloud of spray?	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently
Did you live or work on a farm or ranch where pesticides were used?	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently	<input type="radio"/> No <input type="radio"/> Yes - occasionally <input type="radio"/> Yes - frequently

17. Indicate if you have used any of the following while sleeping at home during the past year:

Item	Used during past year?		Number of months	Average number of days per week	Average number of hours per night	Average setting during a week's use
	No:	Yes:	MONTHS 0 3 4 6 7 9 10+	DAYS 1 3 4 5 6+	HOURS 1 2 3 4 5 6 7+	SETTING Low Med High
Electric blanket (turned on)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>
Electrically heated water bed (turned on)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>
Room heat on at night while sleeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>
Bright light on at night while sleeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>

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18. If you were in the hot sun without protection for one hour what would happen?

- Severe burn with blistering
- Severe burn without blistering
- Mild burn, then tan or darken
- No burn, but would tan or darken
- No burn or tan

19. If you were in the sun repeatedly what would eventually happen?

- Deeply tan or darken
- Moderately tan or darken
- Lightly tan or darken
- Would not tan or darken

20. Have you ever been sunburned severely enough to cause blistering?

- No (go to question 21)
- Yes

At what age did this first occur?

- 5 or younger
- 6-10
- 11-15
- 16-20
- 21-25
- 26 or older

How many times did this occur?

- 1-2 times
- 3-4
- 5-9
- 10 or more times

## Reproductive History

21. How old were you when you had your first menstrual period?

- Never had a period (go to question 24)
- Under age 10
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- Over 16

22. How long after your first menstrual period did your periods become regular (that is, when you could predict within a few days when your next period would start)?

- Never became regular (go to question 27)
- Less than a year
- 1 year
- 2 years
- 3 years
- 4 years
- 5 years or more

23. Once your periods became regular, about how many days were there from the start of one period until the start of the next? Please exclude any time you were on birth control pills.

- 24 days or less
- 25-26
- 27-28
- 29-30
- 31-32
- 33 or more

24. Did you ever take birth control pills (oral contraceptives) for one month or longer?

- No (go to question 27)
- Yes, and I am currently taking them
- Yes, but I am no longer taking them

25. How old were you when you first used birth control pills, and (if no longer taking) how old were you when you last used them?

	First Used	Last Used
AGE:	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

26. How many years in total have you used birth control pills (exclude those periods when you temporarily stopped)?

- Less than 1 year
- 1-2
- 3-4
- 5-9
- 10-14
- 15-19
- 20-24
- 25 years or more

27. Have you ever been pregnant?

- No (go to question 32)
- Yes



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28. Please indicate the outcome of each of your pregnancies next to the age when it ended (consider a multiple birth as one pregnancy).

AGE	TUBAL PREGNANCY	ABORTION	MISCARRIAGE	STILLBIRTH	LIVE BIRTH
Under 15					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
Over 45					

29. How old were you when you first breast fed a child?

- Never have breast fed (go to question 31)
- Under age 18       30-34  
 18-19             35-39  
 20-24               40 or older  
 25-29

30. You may need scratch paper for this question. Please add together the number of months you breast fed each of your children. Enter the total months you have breast fed your children:

- Less than 6 months       36-47  
 6-11                         48-59  
 12-23                       60 or more  
 24-35

31. Have you ever taken DES (diethylstilbestrol) to prevent miscarriage?

- No  
 Yes

32. Was there ever a time in your life when you tried (for at least 1 year) to become pregnant and could not?

- No  
 Yes

33. Did you ever take any of the following fertility drugs to try to become pregnant? (Mark all that apply)

- Clomid (Clomiphene)       Nolvadex (Tamoxifen)  
 Danazol                       Pergonal  
 Danocrine                   Serophene  
 hCG                             Synarel Nasal Solution  
 Mifeprene                   Other  
 Lupron Depot               None

34. Have your menstrual periods stopped permanently?

- No (go to question 37)  
 Yes - within the last 6 months  
 Yes - more than 6 months ago

35. When did you have your last period?

- Before age 35               47-49  
 35-39                         50-52  
 40-43                         53-55  
 44-46                         56 or older

36. Why did your periods stop?

- Natural menopause (change of life)  
 Surgery (a hysterectomy to remove your uterus and/or an oophorectomy to remove your ovaries)  
 Medication or chemotherapy  
 Radiation  
 Other

37. Have you ever had a hysterectomy (that is, surgery to remove your uterus or womb)? If so, at what age?

- Never had one               50-54  
 Before age 25                 55-59  
 25-34                          60-64  
 35-44                          65 or older  
 45-49

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38. Have you ever had an ovary removed?

- No (go to question 40)
- Yes, but only one or part of one
- Yes, both at the SAME time
- Yes, both, but at DIFFERENT times
- Yes, but don't know whether one or both
- Don't know (go to question 40)

39. At what age did you first have an ovary (or part of an ovary) removed?

- Before age 25       50-54
- 25-34       55-59
- 35-44       60-64
- 45-49       65 or older

40. Have you ever had your "tubes tied" (tubal ligation)? If so, at what age?

- Never had       30-34
- Before age 20       35-39
- 20-24       40-44
- 25-29       45 or older

41. Have you ever taken estrogen ("female hormones") for symptoms of menopause (the change of life) or for other reasons?

- No (go to question 51)
- Yes, and I am currently taking estrogens
- Yes, but I am no longer taking estrogens

42. The most frequently used estrogen is oral Premarin. Have you ever taken Premarin by mouth (as pills)?

- No (go to question 47)
- Yes

43. At what age did you first take Premarin?

- Before age 45       60-64
- 45-49       65-69
- 50-54       70 or older
- 55-59

44. At what age did you last take Premarin?

- Currently taking       55-59
- Before age 45       60-64
- 45-49       65-69
- 50-54       70 or older

45. How many years in total did you take Premarin (exclude those periods when you temporarily stopped)?

YEARS:

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

(If less than 1 year mark as 1)

46. Five commonly used doses of Premarin can be distinguished by the color of the pill. Please indicate any you have ever used, and the one you used for the longest period.

	Ever Used (Answer for each)		Longest Used (Mark one)
	No	Yes	
Green (0.3 mg)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brown/Red (0.625 mg)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
White (0.9 mg)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yellow/Orange (1.25 mg)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purple (2.5 mg)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

47. Have you ever used estrogen other than Premarin pills? (Answer for each)

	No	Yes
Estrogen by mouth	<input type="radio"/>	<input type="radio"/>
Estrogen by injection	<input type="radio"/>	<input type="radio"/>
Estrogen by patch or implant	<input type="radio"/>	<input type="radio"/>
Estrogen vaginal cream or suppository	<input type="radio"/>	<input type="radio"/>

If you answered no to all parts of question 47, go to question 51.

48. At what age did you first use estrogens other than Premarin pills?

- Before age 45       60-64
- 45-49       65-69
- 50-54       70 or older
- 55-59

49. At what age did you last use estrogens other than Premarin pills?

- Currently taking       55-59
- Before age 45       60-64
- 45-49       65-69
- 50-54       70 or older

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50. How many years in total did you take estrogens other than Premarin pills (exclude any time when you temporarily stopped)?

- Less than 1 year     10-14  
 1-2     15-19  
 3-5     20 years or more  
 6-9

51. Sometimes another type of female hormone, progesterone (or "progestin"), is given for symptoms of menopause, either alone or in combination with estrogen. The most frequently used progestin is Provera (medroxyprogesterone acetate). Have you ever used progesterone or a progestin?

- No (go to question 57)  
 Provera only  
 Another type only  
 Provera and another type of progestin  
 Yes, but don't know type

52. At what age did you first take progesterone or a progestin?

- Before age 40     55-59  
 40-44     60-64  
 45-49     65-69  
 50-54     70 years or older

53. At what age did you last take progesterone or a progestin?

- Currently taking     55-59  
 Before age 45     60-64  
 45-49     65-69  
 50-54     70 years or older

54. How many years in total did you take progesterone or a progestin (exclude any time when you temporarily stopped)?

- Less than 1 year     10-14  
 1-2     15-19  
 3-5     20 years or more  
 6-9

55. If you used Provera, what was your usual dose?

- Did not use Provera  
 2.5 mg per day  
 5.0 mg per day  
 10 mg per day  
 20 mg per day  
 Another dose  
 Don't know

56. When using a progestin or progesterone, for how many days each month would you usually take it?

DAYS:

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

## Health History

57. Have you ever had breast cancer?

- No (go to question 59)     Yes

58. At what age were you first diagnosed with breast cancer?

AGE:

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

59. Have you ever had breast implants?

- No (go to question 62)  
 Yes - after breast cancer  
 Yes - for other reasons

60. At what age did you first have breast implants?

- Before age 25     45-49  
 25-29     50-54  
 30-34     55-59  
 35-39     60-64  
 40-44     65 or older

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61. Which kind of breast implants have you had?

- Silicone gel
- Saline
- Both
- Don't know

62. Have you ever had any of the following exams? If yes, please mark how long it has been since you last had the test.

	Ever had?		Number of years since last exam		
	No	Yes	Less than 1 year	1 to 2 years	3 years or more
Mammogram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breast exam by health provider	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PAP smear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

63. In the last year how often have you examined your breasts for unusual signs or lumps (a breast self exam)?

- Rarely or never
- 2 or 3 times
- Every 2 or 3 months
- Once a month
- More than once a month

64. Have you ever had a blood transfusion?

- No
- Before age 35
- 35-44
- 45-54
- 55-64
- After age 64

65. What are your height and weight today, and what were they when you were age 18?

Today			Age 18		
HEIGHT		WEIGHT	HEIGHT		WEIGHT
ft.	in.	lb.	ft.	in.	lb.
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

66. Have you taken any of the following medications regularly (at least once a week)? If so, indicate how many total years you took it and how often you took it.

MEDICATION	HOW MANY TOTAL YEARS						HOW OFTEN ON AVERAGE			
	DIDN'T TAKE REGULARLY	LESS THAN 1 YR	1 YR	2 YRS	3-4 YRS	5-9 YRS	10+ YRS	1-3 DAYS PER WEEK	4-6 DAYS PER WEEK	EVERY DAY
Aspirin (Anacin, Bufferin, Excedrin)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acetaminophen (Tylenol, Anacin-3, Panadol, Aspirin Free Excedrin, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ibuprofen (Advil, Motrin, Nuprin)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tagamet (Cimetidine) or Zantac	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reserpine (Raudixin, Ser-Ap-Es, Hydropres, Rauwolfia, Metatensin)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Pills for High Blood Pressure (Duril, Hydrodiuril, Dyazide, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other High Blood Pressure medications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calcium Supplements (Tums, Os Cal, Roloids, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



This next part looks like a bear!

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# Personal and Family Medical History

67. Have you or any relatives had any of the following cancers or other medical conditions?  
Do not include adoptive, half, or step relatives.

Please note the following:

- If a relative has or had more than one of the listed conditions, please fill in all that apply on the same line for that relative.
- For combined relatives please fill in all conditions that apply for any of them on the same line.

**Example:** If you have not had any other medical conditions, your mother had both high blood pressure and diabetes, and your father had high blood pressure, you would mark your answers as shown:

High Blood Pressure	<input type="checkbox"/>
Diabetes	<input checked="" type="checkbox"/>
Never Had Any of Above	<input type="checkbox"/>
Myself	<input type="checkbox"/>
Mother	<input checked="" type="checkbox"/>
Father	<input checked="" type="checkbox"/>

Cancers										Other Medical Conditions									
Breast Cancer (AFTER age 50 OR don't know age)					Breast Cancer (BEFORE age 50)					High Blood Pressure					Heart Attack/Myocardial Infarction				
Endometrial Cancer (Body of Uterus/Womb)					Cervix Cancer					Stroke					Many Large Moles or Moles Removed				
Ovary Cancer					Lung Cancer					Thyroid Disease (not Cancer)					Colon or Rectum Polyps (not Cancer)				
Leukemia					Hodgkin's Disease or Lymphoma					Breast Biopsy (not Cancer)					Migraine Headaches				
Colon/Rectum Cancer					Prostate Cancer					Endometriosis					Fibroids in the Womb				
Thyroid Cancer					Malignant Melanoma					Hip Fracture					Diabetes				
Other Skin Cancer					Other Skin Cancer					Gall Stones					Never Had Any of Above				
Never Had Any of Above					Never Had Any of Above					Never Had Any of Above					Never Had Any of Above				
Myself										Myself									
Mother										Mother									
Father										Father									
Mother's Mother										Mother's Mother									
Mother's Father										Mother's Father									
Father's Mother										Father's Mother									
Father's Father										Father's Father									
Sister 1										Sister 1									
Sister 2										Sister 2									
Sister 3										Sister 3									
All Other Sisters Combined										All Other Sisters Combined									
Brother 1										Brother 1									
Brother 2										Brother 2									
Brother 3										Brother 3									
All Other Brothers Combined										All Other Brothers Combined									
Daughter 1										Daughter 1									
Daughter 2										Daughter 2									
Daughter 3										Daughter 3									
All Other Daughters Combined										All Other Daughters Combined									
Son 1										Son 1									
Son 2										Son 2									
Son 3										Son 3									
All Other Sons Combined										All Other Sons Combined									
All Mother's Sisters Combined										All Mother's Sisters Combined									
All Mother's Brothers Combined										All Mother's Brothers Combined									
All Father's Sisters Combined										All Father's Sisters Combined									
All Father's Brothers Combined										All Father's Brothers Combined									

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# Physical Activity

Following are questions about your physical activity at various times in your life. For each of the ages below that apply, please estimate the average amount of time each week and the average number of months each year that you spent in these activities.

## 68. STRENUOUS EXERCISE

How often did you participate in STRENUOUS exercise activities or sports (e.g., swimming laps, aerobics, calisthenics, running, jogging, basketball, cycling on hills, racquetball)?

	Average hours per week:										Average months per year:			
	None	1/2 hr	1 hr	1 1/2 hrs	2 hrs	3 hrs	4-6 hrs	7-10 hrs	11 or more hrs	1-3	4-6	7-9	10-12	
During High School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 18 and 24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 25 and 34	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 35 and 44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 45 and 54	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Past 3 years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 69. MODERATE EXERCISE

How often did you participate in MODERATE exercise activities or sports (e.g., brisk walking, golf, volleyball, cycling on level streets, recreational tennis, or softball)?

	Average hours per week:										Average months per year:			
	None	1/2 hr	1 hr	1 1/2 hrs	2 hrs	3 hrs	4-6 hrs	7-10 hrs	11 or more hrs	1-3	4-6	7-9	10-12	
During High School	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 18 and 24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 25 and 34	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 35 and 44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Between Ages 45 and 54	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Past 3 years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 70. OTHER ACTIVITIES

In the past year, on average, how many hours per day did you spend in each of the following activities?

	Average hours per day:									Days per week:			
	None	<1	1	2	3-4	5-6	7-9	10 or More	1	2-3	4-5	6-7	
Casual walking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doing housework	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Standing or walking at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sitting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sleeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Gotta keep movin'!

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71. During the past year have you taken any vitamins or minerals regularly (at least once a week)?  
 No (go to 73)

IF YES, WHAT DO YOU TAKE REGULARLY?

VITAMIN TYPE	HOW OFTEN				FOR HOW MANY YEARS?					
	DON'T TAKE	1-3 DAYS PER WEEK	4-6 DAYS PER WEEK	EVERY DAY	LESS THAN 1 YR.	1 YEAR	2 YEARS	3-4 YEARS	5-9 YEARS	10+ YEARS
<b>Multiple Vitamins</b>										
Regular One-A-Day, Centrum, or Thera type	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Single Vitamins (not part of multiple vitamins)</b>										
Vitamin A (not beta-carotene)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beta-carotene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vitamin C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vitamin E	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selenium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

72. If you take any of the following vitamins (alone or as part of a multiple vitamin), you might want to go and get the bottle(s). Please indicate how much of each vitamin you take, on the days you take it: (choose the closest measure)

- Vitamin A OR Beta-carotene (IU)  5000  6000  10000  20000+
- (Part of multiple vitamin only)
- Vitamin A (Separate Pills only) (IU)  5000  8000  10000  16000+
- Beta-carotene (Separate Pills only) (IU)  6000  10000  25000  50000+
- Vitamin C (Alone or multiple vitamin) (mg.)  100  250  500  750  1000  1500  2000  3000+
- Vitamin E (IU)  50  200  400  800  1000  2000+
- Selenium (mcg.)  10  15  20  30  40  50+

If you take multiple vitamin(s), please print the brand name(s) here: \_\_\_\_\_

The next section is about your *usual* eating habits over the past year. We know that this section is long and can become tedious but it is very important for our understanding of breast cancer risk and may help in finding ways to prevent this disease.

73. **FIRST:** Mark the column to show HOW OFTEN, on the average, you ate the food during the past year.  
**SECOND:** Mark the column to show HOW MUCH you usually eat of each food.

- Sometimes the "how much" is asked as number of pieces, such as 1 egg, 2 eggs or 3 eggs. Mark your serving size as the number you usually eat ON THE DAYS YOU EAT IT.
- Sometimes the "how much" is asked as small-medium-large (S-M-L). A "medium" serving is indicated for each food, but only as a guideline. Mark "small" if you think you usually eat a smaller portion of that food than other women of your age. Mark "large" if you eat more of it than other women of your age.

EXAMPLE: This person eats one medium size banana per week.

TYPE OF FOOD	HOW OFTEN								HOW MUCH			
	NEVER OR LESS THAN ONCE PER MONTH	1 PER MON.	2-3 PER MON.	1 PER WEEK	2 PER WEEK	3-4 PER WEEK	5-6 PER WEEK	EVERY DAY	MEDIUM SERVING	YOUR SERVING SIZE		
										S	M	L
EXAMPLE: Bananas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<b>FRUIT</b>												
Bananas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples, applesauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oranges (not including juice)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grapefruit (not including juice)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cantaloupe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1.4 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peaches, apricots (fresh, in season)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TYPE OF FOOD	HOW OFTEN								HOW MUCH			
	NEVER OR LESS THAN ONCE PER MONTH	1 PER MON.	2-3 PER MON.	1 PER WEEK	2 PER WEEK	3-4 PER WEEK	5-6 PER WEEK	EVERY DAY	MEDIUM SERVING	YOUR SERVING SIZE		
										S	M	L
Peaches, apricots (canned or dried)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium or 1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prunes, or prune juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Watermelon (in season)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 slice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strawberries, other berries (in season)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other fruit, including kiwi, fruit cocktail, grapes, raisins, mangoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>EGGS, DAIRY, CEREALS</b>												
Fiber cereals like raisin bran, granola or Shredded Wheat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. bowl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sweetened cereals like Frosted Flakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. bowl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other cold cereals like corn flakes or Cheerios	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. bowl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooked cereal like oatmeal, oat bran or grits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. bowl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk on cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breakfast bars, granola bars, power bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 serving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breakfast shakes, diet shakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 serving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pancakes or waffles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 med.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 egg=sm. 2 eggs=med.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Egg substitutes, Egg Beaters, egg whites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sausage or bacon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 patties or pieces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cottage cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other cheeses and cheese spreads (regular or lowfat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 slices or 2 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yogurt, frozen yogurt (regular or lowfat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8 oz. container	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>VEGETABLES (fresh, frozen or canned, or in restaurants)</b>												
String beans, green beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chili with beans (with or without meat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other beans such as baked beans, pintos, kidney (not including soup)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3/4 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Corn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alfalfa sprouts, including on sandwiches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tomatoes, tomato juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium or 6 oz. glass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salsa, ketchup, taco sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 tablesp.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broccoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cauliflower or brussels sprouts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spinach (cooked or raw)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mustard greens, turnip greens, collards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cole slaw, cabbage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carrots, or mixed vegetables containing carrots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green salad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. bowl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salad dressing & mayonnaise (regular or lowfat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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TYPE OF FOOD	HOW OFTEN								HOW MUCH			
	NEVER OR LESS THAN ONCE PER MONTH	1 PER MON.	2-3 PER MON.	1 PER WEEK	2 PER WEEK	3-4 PER WEEK	5-6 PER WEEK	EVERY DAY	MEDIUM SERVING	YOUR SERVING SIZE		
										S	M	L
French fries and fried potatoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3/4 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Sweet potatoes, yams	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Other potatoes, including boiled, baked, mashed & potato salad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium or 1/2 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Any other vegetable, such as cooked onions, summer squash	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Butter, margarine or other fat added to veg., potatoes, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 pats	<input type="radio"/> 1 pat	<input type="radio"/> 2 pats	<input type="radio"/> 3 pats
Tofu, bean curd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Meat substitutes made from soy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cup or patty	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
<b>MEATS, SOUPS, PASTA</b>												
Hamburgers, cheeseburgers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. or 4 oz.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Burritos or tacos with meat or beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium or 2 small	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Beef roasts, steaks, sandwiches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 ounces	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Beef stew or pot pie with carrots or other vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Liver, including chicken livers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 ounces	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Pork, including chops, roasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 chops or 4 ounces	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Fried chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 small or 1 large poe.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Chicken or turkey (roasted or broiled, including on sandwiches)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 small or 1 large poe.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Chicken stew or mixed dish with chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Fried fish or fish sandwich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 ounces or 1 sandwich	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Tuna, tuna salad, tuna casserole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Oysters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5 pieces, 1/4 cup or 3 oz.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Shell fish, (shrimp, crab, lobster, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5 pieces, 1/4 cup or 3 oz.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Other fish (broiled or baked)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 pieces or 4 ounces	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Spaghetti, lasagna, other pasta with tomato sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 1/2 cups	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Cheese dishes without tomato sauce, like macaroni and cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Pasta salad, other pasta without tomato sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3/4 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Pizza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 slices	<input type="radio"/> 1 slice	<input type="radio"/> 2 slices	<input type="radio"/> 3 slices
Hot dogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 hot dogs	<input type="radio"/> 1 dog	<input type="radio"/> 2 dogs	<input type="radio"/> 3 dogs
Ham, bologna, other lunch meats (regular or made with turkey)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 slices or 2 ounces	<input type="radio"/> 1 slice	<input type="radio"/> 2 slices	<input type="radio"/> 3 slices
Vegetable soups with carrots or tomatoes, such as vegetable beef or tomato soup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. bowl	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Lentil, pea and bean soups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. bowl	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L
Other soups, like chicken noodle, mushroom, Cup-A-Soup, ramen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				

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TYPE OF FOOD	HOW OFTEN									HOW MUCH				
	NEVER OR LESS THAN ONCE PER MONTH	1 PER MON.	2-3 PER MON.	1 PER WEEK	2 PER WEEK	3-4 PER WEEK	5-6 PER WEEK	EVERY DAY	2+ PER DAY	MEDIUM SERVING	YOUR SERVING SIZE			
											S	M	L	XL
<b>BREADS, SNACKS, SPREADS</b> (Please note that the categories for these columns are different.)														
Biscuits, muffins, (including fast foods)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium piece	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Bagels, English muffins, hamburger buns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium piece	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
White bread, French or Italian bread, including sandwiches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	# slices each time	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Dark bread, such as whole wheat, rye, pumpernickel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	# slices each time	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Corn bread, corn muffins	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	# pieces each time	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Tortillas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	# slices each time	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Snacks like nachos with cheese, potato skins with topping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium serving	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Salty snacks, like potato chips, corn chips, popcorn, crackers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 handfuls or 1 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Peanuts, peanut butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 tablesp.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Margarine on bread or rolls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 pats	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Butter on bread or rolls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 pats	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Rice, or dishes made with rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3/4 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
<b>SWEETS</b>														
Ice cream (regular or lowfat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 scoop or 1/2 cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Doughnuts, pastry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 piece	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Cookies or cake (regular or lowfat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3-5 cookies	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Pumpkin pie, sweet potato pie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. slice	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Other pies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. slice	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Chocolate candy, candy bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 small bar or 1 oz.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Other candy or jelly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3 pieces or 1 tablesp.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
<b>BEVERAGES</b> (Please note that the categories for these columns are different.)														
Orange juice or grapefruit juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6 oz. glass	<input type="radio"/> 4 oz.	<input type="radio"/> 6 oz.	<input type="radio"/> 8 oz.	<input type="radio"/> 10 oz.
Apple juice, grape juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6 oz. glass	<input type="radio"/> 4 oz.	<input type="radio"/> 6 oz.	<input type="radio"/> 8 oz.	<input type="radio"/> 10 oz.
Whole milk (or chocolate whole milk), not including on cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8 oz. glass	<input type="radio"/> 5 oz.	<input type="radio"/> 8 oz.	<input type="radio"/> 10 oz.	<input type="radio"/> 12 oz.
2% milk (or chocolate 2% milk), not including on cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8 oz. glass	<input type="radio"/> 5 oz.	<input type="radio"/> 8 oz.	<input type="radio"/> 10 oz.	<input type="radio"/> 12 oz.
Skim milk, 1% milk, not including on cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8 oz. glass	<input type="radio"/> 5 oz.	<input type="radio"/> 8 oz.	<input type="radio"/> 10 oz.	<input type="radio"/> 12 oz.
Kool-Aid, Hi-C, or other drinks with added vitamin C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8 oz. glass	<input type="radio"/> 5 oz.	<input type="radio"/> 8 oz.	<input type="radio"/> 10 oz.	<input type="radio"/> 12 oz.
Snapple, Calistoga, sweetened bottled waters or iced teas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 bottle	<input type="radio"/> 8 oz.	<input type="radio"/> 12 oz.	<input type="radio"/> 16 oz.	<input type="radio"/> 20 oz.
Regular soft drinks (not diet soda)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	12 oz. can or bottle	<input type="radio"/> 8 oz.	<input type="radio"/> 12 oz.	<input type="radio"/> 16 oz.	<input type="radio"/> 20 oz.
Coffee or tea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 med. cup	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Non-dairy creamer in coffee or tea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 tablesp.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL
Cream (real) or Half-and-Half in coffee or tea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 tablesp.	<input type="radio"/> S	<input type="radio"/> M	<input type="radio"/> L	<input type="radio"/> XL

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TYPE OF FOOD	HOW OFTEN								HOW MUCH				
	NEVER OR LESS THAN ONCE PER MONTH	1-3 PER MON	1 PER WEEK	2-4 PER WEEK	5-6 PER WEEK	1 PER DAY	2-3 PER DAY	4 PER DAY	5+ PER DAY	MEDIUM SERVING	YOUR SERVING SIZE		
											S	M	L
Milk in coffee or tea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 tablesp.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sugar or honey in coffee or tea or on cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 teaspoons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

74. SUMMARY QUESTIONS	AVERAGE USE LAST YEAR								
	LESS THAN ONCE PER WEEK	1-2 PER WEEK	3-4 PER WEEK	5-6 PER WEEK	1 PER DAY	1 1/2 PER DAY	2 PER DAY	3 PER DAY	4+ PER DAY
a. How often do you use fat or oil in cooking?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. About how many servings of vegetables do you eat, not counting salad or potatoes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. About how many servings of fruit do you eat, not counting juices?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. About how many servings of cold cereal do you eat?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. About how many glasses of milk (or chocolate milk) do you drink?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Wow! Survived the hardest part!

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75. What kinds of fat do you usually use in cooking (to fry, stir-fry or saute)? Mark the one or two you use most often.

- Don't know       Pam or no oil       Lard, fatback, baconfat       Crisco  
 Stick margarine       Soft tub margarine       Low calorie margarine  
 Butter       Olive oil or canola oil       Corn oil, vegetable oil

76. What kinds of fat do you usually add to vegetables, potatoes, etc.? Mark the one or two you use most often.

- Don't add fat       Lard, fatback, baconfat       Crisco  
 Stick margarine       Soft tub margarine       Low calorie margarine  
 Butter       Whipped butter       Olive oil

77. When you eat the following foods, how often do you eat a low-fat or non-fat version of that food?

- Cheese       Always low-fat       Sometimes       Rarely low-fat  
 Ice cream or yogurt       Always low-fat       Sometimes       Rarely low-fat  
 Salad dressing       Always low-fat       Sometimes       Rarely low-fat  
 Cake or cookies       Always low-fat       Sometimes       Rarely low-fat

78. How often do you add salt to your food?       Seldom/Never       Sometimes       Often

79. How often do you eat the skin on chicken?       Seldom/Never       Sometimes       Often

80. How often do you eat the fat on meat?       Seldom/Never       Sometimes       Often

81. How often do you charbroil/fry your meat?       Seldom/Never       Sometimes       Often

82. How do you like your meat cooked?       Rare       Medium       Well done

# Alcohol & Tobacco Use

83. Please indicate how much and how often you usually drank each beverage.

1 Drink is: 1 bottle, can, or glass of beer 1 glass of wine, champagne, or wine cooler 1 cocktail, shot, or mixed drink of liquor		Drinks per week (Choose 1 for each row)						How many days of the week did you have at least 1 drink?							
		N o n e	3 o r L e s s	4 t o 1 0	11 t o 1 7	18 t o 2 4	25 o r M o r e	1	2	3	4	5	6	7	
Age 18-22	Beer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Wine, Champagne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Cocktails, Iguor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Age 30-35	Beer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Wine, Champagne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Cocktails, Iguor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Past Year	Beer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Wine, Champagne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Cocktails, Iguor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

84. Have you smoked at least 100 cigarettes in your entire life?

- No (go to question 87)
- Yes, and I currently smoke
- Yes, and I no longer smoke

85. How old were you when you first smoked fairly regularly, and (if no longer smoking) how old were you when you last smoked?

- Never Smoked Regularly

	First Smoked	Last Smoked
AGE:	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9	<input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9

86. On average, about how many cigarettes a day do you/did you smoke?

- Less than 1 cigarette
- 15-19
- 1-4
- 20-29
- 5-9
- 30-39
- 10-14
- 40 or more

87. Did your parents smoke in the house when you lived with them?

- Father only
- Mother only
- Both parents
- Neither parent

88. As an adult have the persons with whom you have lived smoked?

- Never
- Rarely
- Some of time
- Yes, usually
- Have lived alone

89. Please give us your telephone number to call if we have a question.

HOME TELEPHONE NUMBER											
( )											
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

90. Fill in today's date.

MO	DAY	YEAR
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 1995
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 1996
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 1997
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 1998
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 1999
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 2000
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 2001
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 2002
<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 2003
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

91. Please tell us your Social Security number (this will be used for identification purposes only).

SOCIAL SECURITY NUMBER								
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



A+


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## **Appendix B: Vitamins And Lifestyle (VITAL) Study Questionnaire**

## VITamins And Lifestyle (VITAL) Questionnaire for Women

### INSTRUCTIONS

This questionnaire is only for the person named in the letter. If you received the questionnaire for the wrong sex, call us at 1-888-328-1124.

- Please use **pencil**. 
- Answer by filling in the correct oval.
  - Yes       No
- Answer each question as best as you can. You may put comments on the back page.
- You may skip any question that you do not want to answer.
- Some questions have a follow-up question. Follow the arrows.
  - Yes → **If yes, answer this question too**
  - No

### DAILY ACTIVITIES



1. How many flights of stairs do you climb up each day at home, work or elsewhere?

- 0-1                       5-9  
 2-4                       10 or more

2. Are you able to walk a half mile (5-8 city blocks) without stopping?  
*Mark only one.*

- Yes, at a moderate or fast pace  
 Yes, slowly  
 No, not able  
 No, doctor doesn't allow  
 No, not able due to temporary condition (such as recent surgery)

3. Are you currently employed (including self-employed)?

- Yes → **On average, how many hours do you work each week?**  
 No
- 1-29 hours       45-54  
 30-44               55+ hours

4. Have you ever smoked cigarettes regularly (at least 1 cigarette a day) for at least a year?

- No → Go to Question 5, next page  
 Yes

a) How old were you when you **first** started smoking cigarettes daily?

- 14 or younger       18-21  
 15-17                   22-29  
                               30 or older

b) During the years you smoked, how many cigarettes did you usually smoke each day?

- 1-4                       35-44  
 5-14                     45-54  
 15-24                   55+  
 25-34

c) How many years have you been (or were you) a regular smoker? Do not count times you stayed off cigarettes.

- 1-4 years               20-29  
 5-9                       30-39  
 10-19                   40 years or more

d) Do you smoke cigarettes now?

- Yes  
 No

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Bar Code

PLEASE DO NOT WRITE IN THIS AREA



①



## EXERCISE

In the **past month**, did you do any of the following activities at least once a week? *Do not include gardening, housework or work on the job.*

15. In the **past month**, did you **WALK** for exercise? *Include walking on a treadmill.*

Yes, at least once a week

No

a) Days per week?

- 1-2       5-7  
 3-4

b) Minutes per day?

- 10-25       45-55  
 30-40       60+

c) Usual pace?

- Casual (each mile takes 30 minutes or more)  
 Moderate (each mile takes 20-29 minutes)  
 Fast (each mile takes 19 minutes or less)

16. In the **past month**, did you **LIFT WEIGHTS** or use weight machines?

Yes, at least once a week

No

a) Days per week?

- 1-2       5-7  
 3-4

b) Minutes per day?

- 10-25       45-55  
 30-40       60+

17. In the **past month**, did you do **YOGA**?

Yes, at least once a week

No

a) Days per week?

- 1-2       5-7  
 3-4

b) Minutes per day?

- 10-25       45-55  
 30-40       60+

18. In the **past month**, did you do **MILD** exercise such as golf, slow dancing or bowling?

Yes, at least once a week

No

a) Days per week?

- 1       3-4  
 2       5-7

b) Hours per day?

- Less than 1 hour       1-2 hours  
 1 hour       3+ hours

19. In the **past month**, did you do **MODERATE OR STRENUOUS** exercise such as running, aerobics, folk dancing, swimming, cycling or sports?

Yes, at least once a week

No

a) Days per week?

- 1-2       5-7  
 3-4

b) Minutes per day?

- 10-25       45-55  
 30-40       60+

c) What types of exercise did you do most often? *Mark one or two. If you used an exercise machine, choose the closest activity.*

- Light conditioning exercises  
 Low impact or water aerobics  
 Aerobics class or video  
 Running/jogging  
 Swimming laps  
 Popular or folk dancing  
 Slow cycling or stair machine  
 Fast cycling or stair machine  
 Tennis, racquetball, squash  
 Other

20. At each of the following ages, how many days per week did you usually exercise or play sports for at least 20 minutes?

	Number of days per week?				
	None	1	2-3	4-5	6-7
Age 18	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Age 30	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Age 45	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3

## MULTIVITAMINS

21. In the **past 10 years**, have you taken a **MULTIVITAMIN** at least once a week for a year?

- No
  - Less than once a week
  - Yes, at least once a week for a year
- } Go to Question 27, Page 6

a) Years taken in past 10 years?

- 1-3
- 4-6
- 7-9
- 10+

b) Days per week?

- 1-2
- 3-4
- 5-6
- 7



MULTIVITAMINS contain 10 or more vitamins and/or minerals. An example is Centrum®.

22. Do you take a **MULTIVITAMIN** now?

- No → Go to Question 26, Page 6
- Yes

23. What brand of **MULTIVITAMIN** do you take now? *Mark only one.*

- Centrum®
- Centrum Silver®
- Central Vite
- Central Vite for Mature Adults
- RiteAid® Whole Source Mature Adult
- Kirkland® Multivitamin with minerals
- Kirkland® Mature Adult
- Kirkland® Premium with herbals
- NatureMade® Multivitamin with minerals
- NatureMade® 50+ Multivitamin with minerals
- One-A-Day® Maximum with minerals
- One-A-Day® Essential (no minerals)
- One-A-Day® Women's
- One-A-Day® 50 Plus
- Theragran-M® with minerals
- Theragran® (no minerals)

How long have you taken this brand of **MULTIVITAMIN**?

- 1-3 years
- 4-6 years
- 7-9 years
- 10+ years

Go to Question 25, Page 6

- My brand is not listed above → Go to Question 24, next page

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

If your MULTIVITAMIN was not on the list in Question 23, please answer the following questions.

24. What is in the MULTIVITAMIN you take now? Please look at the label and tell us the amount in a single day's dose. The most common amounts are listed. If your multivitamin contains a different amount, choose the closest.

	<b>Closest amount per day</b>
<b>Total Vitamin A</b>	
<input type="radio"/> Yes →	<input type="radio"/> 5000 IU
<input type="radio"/> No	<input type="radio"/> 7500 IU
	<input type="radio"/> 10,000 IU
	<input type="radio"/> 15,000 IU
	↓
	<b>Is Beta-carotene included?</b>
	<input type="radio"/> Yes <input type="radio"/> No
<b>Vitamin C</b>	
<input type="radio"/> Yes →	<input type="radio"/> 60 mg
<input type="radio"/> No	<input type="radio"/> 100 mg
	<input type="radio"/> 250 mg
	<input type="radio"/> 500 mg
	<input type="radio"/> 1000 mg
<b>Thiamin (B1)</b>	
<input type="radio"/> Yes →	<input type="radio"/> 1.5 mg
<input type="radio"/> No	<input type="radio"/> 50 mg
	<input type="radio"/> 100 mg
<b>Vitamin B6</b>	
<input type="radio"/> Yes →	<input type="radio"/> 2 mg
<input type="radio"/> No	<input type="radio"/> 20 mg
	<input type="radio"/> 50 mg
	<input type="radio"/> 100 mg
<b>Folic acid (folate)</b>	
<input type="radio"/> Yes →	<input type="radio"/> 400 mcg
<input type="radio"/> No	<input type="radio"/> 600 mcg
	<input type="radio"/> 800 mcg
<b>Vitamin B12</b>	
<input type="radio"/> Yes →	<input type="radio"/> 6 mcg
<input type="radio"/> No	<input type="radio"/> 50 mcg
	<input type="radio"/> 100 mcg
	<input type="radio"/> 250 mcg
<b>Vitamin E</b>	
<input type="radio"/> Yes →	<input type="radio"/> 30 IU
<input type="radio"/> No	<input type="radio"/> 100 IU
	<input type="radio"/> 200 IU
	<input type="radio"/> 400 IU
	<input type="radio"/> 600 IU

	<b>Closest amount per day</b>
<b>Calcium</b>	
<input type="radio"/> Yes →	<input type="radio"/> 100 mg
<input type="radio"/> No	<input type="radio"/> 250 mg
	<input type="radio"/> 500 mg
	<input type="radio"/> 800 mg
	<input type="radio"/> 1000 mg
<b>Iron</b>	
<input type="radio"/> Yes →	<input type="radio"/> 10 mg
<input type="radio"/> No	<input type="radio"/> 18 mg
	<input type="radio"/> 27 mg
	<input type="radio"/> 50 mg
<b>Zinc</b>	
<input type="radio"/> Yes →	<input type="radio"/> 15 mg
<input type="radio"/> No	<input type="radio"/> 30 mg
	<input type="radio"/> 60 mg
	<input type="radio"/> 100 mg
<b>Selenium</b>	
<input type="radio"/> Yes →	<input type="radio"/> 25 mcg
<input type="radio"/> No	<input type="radio"/> 50 mcg
	<input type="radio"/> 100 mcg

Does your MULTIVITAMIN contain any of these other vitamins and minerals? Mark all that apply.

- Riboflavin (B2)
- Niacin (B3)
- Vitamin D
- Magnesium
- Chromium

Does your MULTIVITAMIN contain any of these other compounds? Mark all that apply.

- Bioflavonoids
- Black cohosh
- Dong quai
- Garlic
- Ginkgo biloba
- Ginseng
- Lutein
- Lycopene
- Soy or isoflavones

How long have you taken this brand of MULTIVITAMIN?

- 1-3 years
- 4-6 years
- 7-9 years
- 10+ years

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

25. In the past 10 years, did you take a different brand of MULTIVITAMIN than you take now?

- No → Go to Question 27
- Yes

26. In the past 10 years, what brand of MULTIVITAMIN did you take most often? *Mark only one.*

- Centrum®
- Centrum Silver®
- NatureMade® Multivitamin with minerals
- NatureMade® 50+ Multivitamin with minerals
- One-A-Day® Multivitamin with minerals
- One-A-Day® Multivitamin (no minerals)
- Theragran-M® with minerals
- Theragran® (no minerals)
- Unicap® M tablets with minerals
- Unicap® Plus Iron Multivitamin
- Unicap® Senior tablets
- Generic or store brand
- Other brands
- Don't know

**VITAMINS, MINERALS AND OTHER SUPPLEMENTS (not including multivitamins)**



27. In the past 10 years, have you taken any dietary supplements other than a multivitamin for at least a year? *Include vitamins, minerals, herbals, and mixtures. Also include calcium, Tums® and other antacid tablets that contain calcium.*

- No → Go to Question 29, Page 10
- Less than once a week → Go to Question 29, Page 10
- Yes, at least once a week for a year

28. In the past 10 years, which vitamins, minerals, and herbals are (or were) in your supplements? **Do NOT include multivitamins.** *If you have the bottles, please look at the labels. The most common amounts are listed. If your supplement contains a different amount, choose the closest.*

	Years taken in past 10 years?	Days per week?	Closest amount per day?
<b>Vitamin A</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<input type="radio"/> 5000 IU <input type="radio"/> 7500 IU <input type="radio"/> 10,000 IU <input type="radio"/> 15,000 IU <input type="radio"/> 20,000 IU <input type="radio"/> Don't know
<b>Beta-carotene</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<input type="radio"/> 5000 IU <input type="radio"/> 7500 IU <input type="radio"/> 10,000 IU <input type="radio"/> 15,000 IU <input type="radio"/> 20,000 IU <input type="radio"/> Don't know

<b>Vitamin C</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken in past 10 years?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amount per day?</b> <input type="radio"/> 60 mg <input type="radio"/> 100 mg <input type="radio"/> 250 mg <input type="radio"/> 500 mg <input type="radio"/> 1000 mg <input type="radio"/> 1500 mg <input type="radio"/> Don't know
<b>Vitamin D</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 400 IU <input type="radio"/> 600 IU <input type="radio"/> 800 IU <input type="radio"/> Don't know
<b>Vitamin E</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 30 IU <input type="radio"/> 100 IU <input type="radio"/> 200 IU <input type="radio"/> 400 IU <input type="radio"/> 600 IU <input type="radio"/> 800 IU <input type="radio"/> Don't know
<b>Thiamin (B1)</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 1.5 mg <input type="radio"/> 50 mg <input type="radio"/> 100 mg <input type="radio"/> Don't know
<b>Niacin (B3) or nicotinic acid</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 20 mg <input type="radio"/> 50 mg <input type="radio"/> 100 mg <input type="radio"/> 250 mg <input type="radio"/> 1000 mg <input type="radio"/> Don't know
<b>Vitamin B6</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 2 mg <input type="radio"/> 50 mg <input type="radio"/> 100 mg <input type="radio"/> 250 mg <input type="radio"/> Don't know
<b>Folic acid (folate)</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 400 mcg <input type="radio"/> 600 mcg <input type="radio"/> 800 mcg <input type="radio"/> Don't know

<b>Vitamin B12</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken in past 10 years?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amount per day?</b> <input type="radio"/> 6 mcg <input type="radio"/> 50 mcg <input type="radio"/> 100 mcg <input type="radio"/> 250 mcg <input type="radio"/> Don't know
<b>Calcium, Tums®, or antacids with calcium*</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past <small>* Regular strength = 200 mg per tablet Ultra or maximum strength = 400 mg per tablet</small>	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 100 mg <input type="radio"/> 250 mg <input type="radio"/> 500 mg <input type="radio"/> 800 mg <input type="radio"/> 1000 mg <input type="radio"/> 1500 mg <input type="radio"/> Don't know
<b>Iron</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 10 mg <input type="radio"/> 18 mg <input type="radio"/> 27 mg <input type="radio"/> 50 mg <input type="radio"/> Don't know
<b>Magnesium</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 100 mg <input type="radio"/> 250 mg <input type="radio"/> 400 mg <input type="radio"/> Don't know
<b>Zinc</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 15 mg <input type="radio"/> 30 mg <input type="radio"/> 60 mg <input type="radio"/> 100 mg <input type="radio"/> Don't know
<b>Selenium</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 25 mcg <input type="radio"/> 50 mcg <input type="radio"/> 100 mcg <input type="radio"/> 200 mcg <input type="radio"/> Don't know
<b>Chromium</b> <input type="radio"/> Yes, take now <input type="radio"/> Only took in the past	<b>Years taken?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7-9 <input type="radio"/> 10+	<b>Days per week?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-4 <input type="radio"/> 5-6 <input type="radio"/> 7	<b>Closest amt. per day?</b> <input type="radio"/> 25 mcg <input type="radio"/> 100 mcg <input type="radio"/> 200 mcg <input type="radio"/> Don't know

PLEASE DO NOT WRITE IN THIS AREA

**SERIAL #**

8

For these HERBALS and OTHER COMPOUNDS, include pills, powders, tinctures, and teas taken regularly in the past 10 years. Regularly means at least once a week for a year. Mark all that apply.

<b>Acidophilus pills</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years taken in past 10?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days per week?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>Grapeseed, pycnogenol or proanthocyanidin</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years taken in past 10?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days per week?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Black cohosh</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>Glucosamine</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Co-enzyme Q10 (CoQ10)</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>Chondroitin</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Cranberry pills</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>Lutein</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Dong quai</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>Lycopene</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Fish oil, EPA, omega-3 or cod liver oil</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>Melatonin</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Garlic pills</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>MSM</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Ginkgo biloba</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>Soy supplements (not milk) or isoflavones</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7
<b>Ginseng</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7	<b>St. John's wort</b> <input type="radio"/> Yes, take now → <input type="radio"/> Only took in the past →	<b>Years?</b> <input type="radio"/> 1-2 <input type="radio"/> 3-5 <input type="radio"/> 6+	<b>Days/wk?</b> <input type="radio"/> 1-3 <input type="radio"/> 4-6 <input type="radio"/> 7

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SERIAL #

## LIFETIME USE OF SOME COMMON SUPPLEMENTS

29. Since you were 21, have you ever taken any of these supplements at least once a week for a year?

	At least once a week for a year?	Total years taken since age 21?				
		1-4	5-9	10-14	15-24	25+
Multivitamins	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vitamin C (not in multivitamin)	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vitamin E (not in multivitamin)	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calcium (not in multivitamin)	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## FAMILY HISTORY

The next questions are about your birth mother and father (not adoptive or step).



30. Is your birth mother still alive?

- Yes  
 No  
 Don't know

31. How old is she (or how old was she when she died)?

- 59 or younger  60-69  70-79  80-89  90 or older  Don't know

32. Is your birth father still alive?

- Yes  
 No  
 Don't know

33. How old is he (or how old was he when he died)?

- 59 or younger  60-69  70-79  80-89  90 or older  Don't know

34. Did any of your natural parents, brothers or sisters (not adopted, step or half) have any of the following conditions? Mark all that apply.

	Yes	No	Don't know	Which relative(s)?		
				Mother	Father	Sister(s) / Brother(s)
Breast cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> One sister	<input type="radio"/> 2 or more sisters
Ovarian cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> One sister	<input type="radio"/> 2 or more sisters
Uterus cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> One sister	<input type="radio"/> 2 or more sisters
Lung cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> Father	<input type="radio"/> Sister(s) <input type="radio"/> Brother(s)
Colon or rectal cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> Father	<input type="radio"/> Sister(s) <input type="radio"/> Brother(s)
Bladder cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> Father	<input type="radio"/> Sister(s) <input type="radio"/> Brother(s)
Pancreas cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> Father	<input type="radio"/> Sister(s) <input type="radio"/> Brother(s)
Melanoma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> Father	<input type="radio"/> Sister(s) <input type="radio"/> Brother(s)
Leukemia or lymphoma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> Father	<input type="radio"/> Sister(s) <input type="radio"/> Brother(s)
Heart attack	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> Mother	<input type="radio"/> Father	<input type="radio"/> Sister(s) <input type="radio"/> Brother(s)

## MEDICATIONS

35. In the past month, did you take any of the following medications at least once a week?

Mark all that apply.

Acetaminophen (such as Tylenol® or Aspirin-free Excedrin®)

Yes  No

Days per week?  
1-3 4-6 7

Aspirin (such as Anacin®, Bufferin®, Alka-Seltzer®, Bayer® or Excedrin®)

Baby or low-dose aspirin (81 mg)

Yes  No

Days per week?  
1-3 4-6 7

Regular or extra-strength aspirin

Yes  No

Days per week?  
1-3 4-6 7

Ibuprofen (such as Advil®, Motrin®, Nuprin® or Mediprin®)

Yes  No

Days per week?  
1-3 4-6 7

Naproxen (such as Aleve®, Naprosyn®, Anaprox® or Naprelan®)

Yes  No

Days per week?  
1-3 4-6 7

Celebrex™ (celecoxib) or Vioxx® (rofecoxib)

Yes  No

Days per week?  
1-3 4-6 7

Other pain relievers (such as piroxicam or indomethacin)

Yes  No

Days per week?  
1-3 4-6 7

Fiber products (such as Metamucil®, Citrucel®, FiberCon® or Fiberall®)

Yes  No

Days per week?  
1-3 4-6 7

36. Over the past 10 years, about how many times have you taken non-fiber laxatives (such as Ex-lax®, Correctol® or milk of magnesia)?

- Never or less than once per year     1-4 times per year     5-11 times per year     1-3 times per month     1 time per week or more

37. Over the last year, about how many days did you take antibiotics?

- None     1-14 days     15-59 days     60-179 days     180+ days (6 months or more)



43. Has a doctor ever told you that you had any of the following conditions? *Mark all that apply.*
- Rheumatoid arthritis
  - Arthritis (not rheumatoid arthritis)
  - Heart attack
  - Heart failure/congestive heart failure
  - Stroke
  - Blood clot in your lungs (pulmonary embolus or PE)
  - Blood clot in your leg (deep vein thrombosis)
  - Angina (chest pain due to heart disease)
  - Emphysema, chronic bronchitis or COPD
  - Asthma
  - Acid reflux disease (GERD)
  - Ulcer (stomach or duodenal)
  - Ulcerative colitis or Crohn's disease
  - Intestinal polyposis
  - Pancreatitis (inflamed pancreas)
  - Cirrhosis of the liver
  - Viral hepatitis (A, B, C, D or E)
  - Other chronic liver disease
  - Kidney stones
  - Kidney disease (not kidney stones)
  - Multiple bladder infections (5 or more)
  - Multiple yeast infections (3 or more)
  - Parkinson's disease
  - Alzheimer's disease
  - Glaucoma
  - Macular degeneration (loss of central vision)
  - Migraine headaches
  - Gingivitis
  - None of the above

44. Since you were 50 years old, have you had a broken bone?

- Yes → **Which bone(s)?**
- No ↓
- Hip
  - Wrist
  - Forearm (between wrist and elbow)
  - Other

45. Over the past 10 years, how often did you feel constipated enough to take something, such as a laxative, enema or prunes?
- Never or less than once per year
  - 1-4 times per year
  - 5-11 times per year
  - 1-3 times per month
  - 1 time per week or more

46. How often do you usually have a bowel movement?
- 1 time per week or less
  - 2-4 times per week
  - 5-6 times per week
  - 1 time per day
  - 2 times per day
  - 3 or more times per day

47. Over the last year, have you had any of the following conditions? *Include conditions that you are treating, even if you don't have symptoms. Mark all that apply.*

- Chronic neck, back or joint pain (at least half the days of the year)
- Frequent indigestion or heartburn (at least half the days of the year)
- Lactose intolerance (intestinal problems after drinking milk)
- Fatigue or lack of energy (at least half the days of the year)
- Feeling depressed or anxious (at least half the days of the year)
- Frequent headaches (2 or more per week in last year)
- Numbness in fingers or feet
- Skin problems such as psoriasis or eczema (not acne)
- Anemia
- None of the above

48. Do you currently have allergies to any of the following? *Mark all that apply.*

- Plants, grasses or trees
- Mold or dust
- Cats, dogs or other animals
- Insect bites or stings
- Foods
- Medications
- Other
- None of the above

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SERIAL #

## WOMEN'S HEALTH

49. How old were you when you had your first menstrual period?

- 11 or younger       14  
 12                       15  
 13                       16 or older  
 Never had a period

50. Have you ever given birth to a child?  
*Do not include miscarriages in the first 5 months of pregnancy.*

- Yes →      a) How old were you when your first child was born?  
 No ↓
- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| <input type="radio"/> 19 or younger | <input type="radio"/> 30-34       |
| <input type="radio"/> 20-24         | <input type="radio"/> 35-39       |
| <input type="radio"/> 25-29         | <input type="radio"/> 40 or older |
- b) How many times have you given birth?
- |                         |                                 |
|-------------------------|---------------------------------|
| <input type="radio"/> 1 | <input type="radio"/> 4         |
| <input type="radio"/> 2 | <input type="radio"/> 5 or more |
| <input type="radio"/> 3 |                                 |

51. Have you had periods in the last year?  
*Mark only one.*

- Yes  
 Yes, but not regularly  
 Yes, because I take hormones  
 No ↓
- a) How old were you when your periods permanently stopped?
- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| <input type="radio"/> 39 or younger | <input type="radio"/> 50-54       |
| <input type="radio"/> 40-44         | <input type="radio"/> 55 or older |
| <input type="radio"/> 45-49         |                                   |
- b) Why did your periods stop?
- Natural menopause  
 Surgery  
 Other

52. Have you had any of the following medical procedures? *Mark all that apply.*

- Hysterectomy (removal of womb)  
 Both ovaries removed  
 One ovary removed  
 Tubal ligation (tubes tied)  
 None of the above

53. Have you ever taken birth control pills (for any reason)?

- Yes →      How many years (total) did you take birth control pills?  
 No ↓
- Less than 1 year  
 1-4 years  
 5-9 years  
 10-14 years  
 15 years or more

54. Have you ever used estrogen (female hormone) pills or patches? *Only include pills or patches that require a doctor's prescription. Do not include birth control pills.*

- Yes →      a) How old were you when you first used estrogen?  
 No ↓
- |                                     |
|-------------------------------------|
| <input type="radio"/> 39 or younger |
| <input type="radio"/> 40-44         |
| <input type="radio"/> 45-49         |
| <input type="radio"/> 50-54         |
| <input type="radio"/> 55 or older   |
- b) How many years (total) have you used (or did you use) estrogen?
- Less than 1 year  
 1-4 years  
 5-9 years  
 10-14 years  
 15 years or more
- c) Do you take estrogen now?
- Yes  
 No

55. Have you ever used progesterone?

- Progesterone can be a separate pill (such as Provera®) or combined with estrogen in one pill or patch (such as Prempro® or Premphase®).*
- Yes →      How many years (total) have you used (or did you use) progesterone?  
 No ↓
- Less than 1 year  
 1-4 years  
 5-9 years  
 10 years or more

## FOOD HABITS



These questions are about the types of foods you ate during the past month.

56. Did you eat chicken or turkey?

- Yes →  
 No  
 ↓

When you ate chicken or turkey, how often did you eat the skin?

- Almost always  
 Often  
 Sometimes  
 Rarely  
 Never

57. Did you eat beef, pork, ham or lamb?

- Yes →  
 No  
 ↓

When you ate beef, pork, ham or lamb, how often did you eat the fat?

- Almost always  
 Often  
 Sometimes  
 Rarely  
 Never

58. Did you eat hamburger or other ground meat?

- Yes →  
 No  
 ↓

When you ate hamburger or other ground meat, was it usually...  
 Mark one or two.

- Regular  
 Lean  
 Extra lean  
 Ground chicken or turkey  
 Don't know

59. Did you put milk, cream or creamer on cereal?

- Yes →  
 No  
 ↓

When you put milk, cream or creamer on cereal, what type did you usually use?  
 Mark one or two.

- Cream or half and half  
 Whole milk  
 2% milk  
 1% milk or buttermilk  
 Nonfat or skim milk  
 Acidophilus milk  
 Soy milk  
 Non-dairy creamer  
 Don't know

60. Did you drink milk? Also include beverages made with milk such as lattes or hot chocolate.

- Yes →  
 No  
 ↓

When you drank milk or beverages made with milk, was it usually...  
 Mark one or two.

- Whole milk  
 2% milk  
 1% milk or buttermilk  
 Nonfat or skim milk  
 Acidophilus milk  
 Soy milk  
 Don't know

During the past month...

61. Did you eat cold cereal?

- Yes →
- No ↓

When you ate cold cereal, what type did you usually eat? Mark one or two.

- Highly fortified cereals (100% of daily values) such as Total®, Smart Start® and Product 19®
- High fiber or bran cereals such as Raisin Bran® and All Bran®
- Regular granola (not lowfat)
- All other cereals such as lowfat granola, Cheerios® and Corn Flakes®

62. In your household, what kinds of fat were usually used for cooking, for example to flavor vegetables or fry meat? Mark one or two.

- Butter
- Stick margarine
- Tub or liquid margarine
- Lowfat margarine
- Olive oil
- Canola oil
- Other oils such as corn, soybean, safflower or peanut
- Lard, bacon fat or meat drippings
- Didn't use fat or used non-stick spray (Pam®)

63. What kinds of fat did you use at the table, for example on breads, vegetables or potatoes? Mark one or two.

- Butter
- Stick margarine
- Tub or liquid margarine
- Lowfat margarine
- Olive oil
- Sour cream
- Didn't use fat

64. What type of salad dressing did you usually use? Mark one or two.

- Regular, including oil and vinegar
- Low or reduced fat
- Fat free or nonfat
- Didn't use salad dressing

65. What type of mayonnaise did you usually use?

- Regular
- Low or reduced fat
- Fat free or nonfat
- Didn't use mayonnaise

66. Did you eat cookies or cakes?

- Yes →
- No ↓

When you ate cookies or cakes, how often were they fig bars, SnackWell's®, angel food cakes, or other types of low or nonfat cookies or cakes?

- Almost always
- Often
- Sometimes
- Rarely
- Never

67. Did you drink orange, grapefruit or other fruit juices?

- Yes →
- No ↓

Were any of these vitamins or minerals added (specially fortified) to the juices you drank? Mark all that apply.

- Extra vitamin C
- Vitamin E
- Calcium
- None
- Don't know

68. On average, how many times a day did you eat (meals plus snacks)? Snacks include food, milk and milk beverages such as lattes. Coffee, tea and soft drinks alone do not count as snacks.

- 1 time per day
- 2 times per day
- 3 times per day
- 4 times per day
- 5 times per day
- 6 times per day
- 7 or more

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

## FOODS YOU EAT

69. Mark the column to show how often you usually ate each food over the past month. Mark your usual serving size as small, medium or large.

- A small serving is about one-half ( $\frac{1}{2}$ ) the medium serving size or less.
- A large serving is about one-and-a-half ( $1\frac{1}{2}$ ) times the medium serving size or more.
- Some pages have pictures to help you estimate the amount of food you usually eat.

	HOW OFTEN DID YOU EAT THE FOOD LAST MONTH?										Medium serving size	AMOUNT?		
	NEVER or less than once per month	1 per month	2-3 per month	1 per week	2 per week	3-4 per week	5-6 per week	1 per day	2+ per day	S		M	L	
<b>CEREALS, BREADS, SNACKS</b>														
Cold cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooked cereals and grits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milk on cereal (cold and cooked)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	$\frac{1}{2}$ cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pancakes, French toast and waffles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 pieces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muffins, scones, croissants and biscuits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
White breads, including bagels, rolls and English muffins	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 slices or 1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dark breads, including dark bagels and rolls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 slices or 1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter or margarine on breads, hot cereals, pancakes, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 pats or 2 teaspoons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jam, jelly, honey and syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 Tbsp.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Granola bars and cereal bars such as Nutri-Grain Bars®	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports or meal replacement bars such as Power Bars® and Clif Bars®	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low or nonfat potato and tortilla chips, pretzels, and plain or lowfat microwave popcorn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 handfuls or 1 small bag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular potato and tortilla chips, puffs and microwave or buttered popcorn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 handfuls or 1 small bag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low or nonfat crackers, such as saltines and SnackWell's®	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular crackers, such as Ritz® and Wheat Thins®	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peanut butter, peanuts and other nuts and seeds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 Tbsp. (spreads) or $\frac{1}{4}$ cup (nuts)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

**MEAT, FISH, EGGS**



Small



Medium (3-4 ounces)



Large

	HOW OFTEN DID YOU EAT THE FOOD LAST MONTH?										Medium serving size	AMOUNT?		
	NEVER or less than once per month	1 per month	2-3 per month	1 per week	2 per week	3-4 per week	5-6 per week	1 per day	2+ per day	S		M	L	
Eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bacon and breakfast sausage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3 strips or 2 links	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low or reduced fat hot dogs and sausage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 hot dog or 2 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular hot dogs and sausage such as bratwurst and chorizo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 hot dog or 2 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lunch meats such as ham, turkey and lowfat bologna	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 slices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All other lunch meat such as bologna, salami and Spam®	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 slices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Canned tuna, tuna salad and tuna casserole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	½ cup tuna or 1 cup casserole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef, pork, ham and lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ground meat, including hamburgers and meatloaf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium or 3 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liver, chicken liver and organ meats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fried chicken, including chicken nuggets and tenders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 large piece or 6 nuggets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken and turkey (roasted, stewed or broiled)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 large or 2 small pieces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fried fish, fish sandwich and fried shellfish (shrimp, oysters)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3 ounces or 1 sandwich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shellfish, not fried (shrimp, lobster, crab and oysters)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3 ounces or ½ cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
White fish (broiled or baked) such as sole, halibut and cod	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dark fish (broiled or baked) such as salmon and fresh tuna	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4 ounces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SAUCES and CONDIMENTS</b>														
Meat gravies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	¼ cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ketchup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 Tbsp.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salsa (as dip or on foods)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	¼ cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mayonnaise and mayonnaise-type spreads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 Tbsp.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**SPAGHETTI, MIXED DISHES, SOUPS**



**Small**



**Medium (1 cup)**



**Large**

	HOW OFTEN DID YOU EAT THE FOOD LAST MONTH?										→	AMOUNT?		
	NEVER or less than once per month	1 per month	2-3 per month	1 per week	2 per week	3-4 per week	5-6 per week	1 per day	2+ per day	Medium serving size		S	M	L
Stew, pot pie and casseroles with meat or chicken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chili with meat and beans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spaghetti, lasagna and other pasta with meat sauce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spaghetti and other pasta with tomato sauce (no meat)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spaghetti and other pasta with oil, cheese or cream sauce, including macaroni and cheese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asian-style (stir-fried) noodles and rice, such as chow mein, fried rice and pad Thai	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tofu, tempeh and products such as tofu hot dogs, soy burgers and tofu cheese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3 ounces, 1 hot dog or 1 burger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pizza	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	¼ of a 12" pizza	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tacos, burritos and enchiladas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 medium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetable, minestrone and tomato soup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cream soups such as potato, cheese and chowders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bean soups such as pea, lentil and black bean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Miso soup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ramen noodle soup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>DAIRY PRODUCTS</b>														
Cottage cheese and ricotta cheese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	½ cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low or reduced fat cheese, including cheese used in cooking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 slice or ¼ cup shredded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All other cheese, such as American, cheddar or cream cheese, including cheese used in cooking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 slice, ¼ cup shredded or 2 Tbsp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yogurt, all types except frozen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**VEGETABLES and GRAINS**



Small



Medium (1/2 cup)



Large

HOW OFTEN DID YOU EAT THE FOOD LAST MONTH?

→ AMOUNT?

NEVER or less than once per month	1 per month	2-3 per month	1 per week	2 per week	3-4 per week	5-6 per week	1 per day	2+ per day	Medium serving size	AMOUNT?		
										S	M	L

*Mark all vegetables you ate, including in salads, mixed dishes, sandwiches and stir-fries.*

Green salad (lettuce or spinach)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salad dressing (all types)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 Tbsp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fresh tomatoes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 medium or 4 slices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carrots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green and red peppers and chilies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/4 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broccoli	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cauliflower, cabbage and Brussels sprouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green or string beans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green peas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Summer squash, zucchini and okra	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Winter squash such as acorn and butternut, sweet potatoes and yams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooked greens such as spinach, mustard greens and collards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Onions and leeks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/4 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fresh garlic, including in cooking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 clove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avocado and guacamole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/4 medium or 1/4 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
French fries, fried potatoes and hash browns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3/4 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potatoes (boiled, baked or mashed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 medium or 3/4 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beans such as baked, refried and chili without meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coleslaw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potato, macaroni and pasta salads made with mayonnaise or oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rice, noodles and other grains (as a side dish)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3/4 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Butter, margarine, sour cream and other fat added to vegetables, potatoes and rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 pat or 1 teaspoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

	HOW OFTEN DID YOU EAT THE FOOD LAST MONTH?									Medium serving size	AMOUNT?		
	NEVER or less than once per month	1 per month	2-3 per month	1 per week	2 per week	3-4 per week	5-6 per week	1 per day	2+ per day		S	M	L
<b>FRUITS</b>													
Apples, applesauce and pears	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium or 1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bananas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peaches, nectarines and plums (in season)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 medium or 1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apricots (fresh, canned or dried)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 medium or 4 halves	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dried fruit (other than apricots) such as raisins and prunes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/4 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oranges, grapefruit and tangerines (not juice)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 orange or 1/2 grapefruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries such as strawberries and blueberries (in season)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cantaloupe, other melons and mango (in season)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 melon or 1/2 mango	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any other fruit such as grapes, fruit cocktail, pineapple and cherries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/2 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SWEETS</b>													
Low or nonfat frozen desserts such as lowfat ice cream, frozen yogurt and sherbet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 scoop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ice cream and milkshakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 scoop or 1 shake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pudding, custard and flan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3/4 cup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doughnuts, pies and pastries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 piece	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cookies and cakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 medium cookies or 1 piece of cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chocolate, candy bars and toffee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 bar or 2 pieces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Please answer these three important questions.**

	NEVER or less than once per week	1-2 per week	3-4 per week	5-6 per week	1 per day	2 per day	3 per day	4 per day	5+ per day
How often did you use fat to pan-fry, sauté or deep-fry foods? <i>Count all fat such as margarine, butter, oil or lard.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often did you eat a serving of vegetables? <i>Do not count potatoes, salad or beans.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often did you eat a serving of fruit? <i>Do not count juices.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

## BEVERAGES and ALCOHOL

70. How often did you drink these beverages last month?

	NEVER or less than once per month	1-3 per month	1 per week	2-4 per week	5-6 per week	1 per day	2-3 per day	4-5 per day	6+ per day	Medium serving size	AMOUNT?		
											S	M	L
<i>Note that the frequency headings are different.</i>													
Milk as a beverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Latte, mocha or hot chocolate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee (not lattes or mochas)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tea (all types)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Milk, cream or creamer added to coffee and tea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 Tbsp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tomato juice, V-8® and other vegetable juice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	¾ cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orange juice and grapefruit juice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	¾ cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cranberry juice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	¾ cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other 100% fruit juice, such as apple and grape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	¾ cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fruit drinks fortified with vitamin C, such as Hi-C®	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	¾ cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meal replacement drinks such as Slim-Fast®, Ensure® and Carnation Instant Breakfast®	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diet soft drinks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12 ounces or 1 can	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regular soft drinks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12 ounces or 1 can	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water (tap or bottled)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beer (all types)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12-ounce can or bottle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Red wine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 medium glass (4 oz)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
White or rosé wine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 medium glass (4 oz)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liquor and mixed drinks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 shot (1½ oz) or 1 mixed drink	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

71. On average, how many drinks of alcohol did you have at each of the following ages?

*One drink is a 12-ounce bottle or can of beer, a 4-ounce glass of wine, a shot of liquor or a mixed drink.*

	Number of drinks?					
	None	Less than 1 per week	1-6 per week	1 per day (7-13 per week)	2-3 per day (14-27 per week)	4+ per day (28+ per week)
Age 18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Age 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Age 45	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## PERSONAL CHARACTERISTICS

72. What was your height when you were the **tallest**?

\_\_\_\_\_ ft \_\_\_\_\_ inches

73. How old were you when you **first** reached that height?

\_\_\_\_\_ years old

74. What was your weight at each of the following ages?

Now \_\_\_\_\_ pounds

Age 18 \_\_\_\_\_ pounds

Age 30 \_\_\_\_\_ pounds

Age 45 \_\_\_\_\_ pounds

75. If your skin was exposed to strong sunlight for the first time in summer for one hour (without sunscreen), would you...  
*Mark only one.*

- Get a severe sunburn with blistering
- Have a painful sunburn for a few days followed by peeling
- Get mildly burned followed by some degree of tanning
- Tan without any sunburn
- None of the above/don't know

76. **Between the ages of 10 and 20:**

a) Did you have natural blond or red hair?

- Yes
- No

b) Did you have a lot of freckles on your arms?

- Yes
- No

c) Did you have 3 or more severe sunburns with blisters or pain lasting 3 or more days?

- Yes
- No

## YOUR BACKGROUND

77. When were you born?

\_\_\_\_ / \_\_\_\_ / 19 \_\_\_\_  
M M D D Y Y

78. Where were you born?

\_\_\_\_\_  
City State or Country (if not US)

79. What is your current marital status?

- Married
- Living with a partner
- Never married
- Separated or divorced
- Widowed

80. What is the highest level of school that you have completed? *Mark only one.*

- Grade school or some high school
- High school graduate or G.E.D.
- Some college/technical school
- College graduate (4-year degree)
- Advanced degree (such as MS, JD, PhD)

81. Which of the following best describes your racial or ethnic background?  
*Mark all that apply.*

- White
- Hispanic
- Black or African American
- American Indian or Alaska Native
- Asian or Pacific Islander
- Other

82. What was your household income last year? *(Optional)*

- Less than \$20,000
- \$20,000 - \$39,999
- \$40,000 - \$59,999
- \$60,000 - \$79,999
- \$80,000 or more



## **Appendix C: Longitudinal Study of Women's Health (LSWH) Questionnaire**



<b>BASELINE SURVEY</b>	
Participant _____	Date: ___/___/2010

**Welcome to the Longitudinal Study of Women's Health!**

Thank you for participating in our survey. This research study is hoping to answer some important questions about the health of women thirty to fifty years of age. We are interested in the health and risk of obesity in women in different economic situations. We hope that by understanding these relationships better programs, services, and interventions can be developed to help women stay healthier as they age.

This survey includes questions about your eating habits, exercise habits, general health and level of stress in your life, as well as questions about your family, income level, and neighborhood. Do you have any questions before you begin?

If you have any questions about your rights as a participant in this study, please call the Humans Subjects Division at the University of Washington at (206) 543-0098.

Please direct any study-related questions to Denise Albano, Project Coordinator, at (206) 616-5153.

Thank you again for your participation!

*Shirley A.A. Beresford, Ph.D. & Deborah J. Bowen, Ph.D., Principal Investigators*

**General Instructions**

Please answer all the questions by marking the appropriate box or writing in the space provided. If you don't know the answer to a question, give your best guess.



**Example**

For the following statements, mark an X in the box that indicates how much you agree or disagree.	Strongly agree	Agree	Disagree	Strongly Disagree
X. I would like to learn about easy ways to prepare vegetables and fruits.	<input type="checkbox"/> <sup>1</sup>	<input checked="" type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>

**FIRST WE WOULD LIKE TO KNOW ABOUT YOUR GENERAL HEALTH**

1. In general, would you say your health is? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> 1 Excellent	<input type="checkbox"/> 2 Very good	<input type="checkbox"/> 3 Good	<input type="checkbox"/> 4 Fair	<input type="checkbox"/> 5 Poor
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2. Compared to one year ago, how would you rate your health in general now? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> 1 Much better now than one year ago	<input type="checkbox"/> 2 Somewhat better now than one year ago	<input type="checkbox"/> 3 About the same as one year ago	<input type="checkbox"/> 4 Somewhat worse now than one year ago	<input type="checkbox"/> 5 Much worse now than one year ago
---	---	--	--	--

**NOW, WE'D LIKE TO KNOW ABOUT YOUR EATING CHOICES**

When answering the following questions, think of your typical eating choices. Think about how often you eat at home or eat out. Also, think about which meals you usually skip, if you skip any.

**Sample Serving Size**



A serving is ¼ cup dried fruit



A serving is one medium piece of fruit



A serving is ½ cup of cooked vegetables



A serving is 6 ounces of 100% fruit juice



A serving is 1 cup of salad

- Note:**
- Please include vegetables in soups, stir-fry, and other mixed dishes.
  - "100% juice from concentrate" is considered juice.
  - Other fruit drinks such as "fruit juice cocktail," "juice beverage," or "10%" juice are not counted as fruit juice.

3. How many servings of fruits and vegetables do you eat each day? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10	<input type="checkbox"/> 11 OR MORE
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4. Thinking about how often you eat out, how many times in a week or month do you eat breakfast, lunch or dinner in a place such as McDonald's®, Burger King®, Wendy's®, Arby's®, Pizza Hut®, or Kentucky Fried Chicken®? (Give your best guess. Write one answer.)

_____ times per week	OR	_____ times per month	OR	_____ times per year
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5. How often do you drink soft drinks or soda pop (regular or diet)?  
(Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never
<input type="checkbox"/> <sup>1</sup> Less than once a week
<input type="checkbox"/> <sup>2</sup> About once a week
<input type="checkbox"/> <sup>3</sup> 2-5 times per week
<input type="checkbox"/> <sup>4</sup> About once a day
<input type="checkbox"/> <sup>5</sup> 2 or more times per day

6. How often do you eat food (meals or snacks) while doing another activity, for example, watching TV, working at a computer, reading, driving, playing video games? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never
<input type="checkbox"/> <sup>1</sup> Seldom
<input type="checkbox"/> <sup>2</sup> Sometimes
<input type="checkbox"/> <sup>3</sup> Most of the time
<input type="checkbox"/> <sup>4</sup> Always

**Next are some questions about what you have had to eat and drink in the last month.**

7. In the past month, how often did you drink 100% orange or grapefruit juice? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>5</sup> 1 time a day
<input type="checkbox"/> <sup>1</sup> 1-3 times a month	<input type="checkbox"/> <sup>6</sup> 2 times a day
<input type="checkbox"/> <sup>2</sup> 1-2 times a week	<input type="checkbox"/> <sup>7</sup> 3 times a day
<input type="checkbox"/> <sup>3</sup> 3-4 times a week	<input type="checkbox"/> <sup>8</sup> 4 times a day
<input type="checkbox"/> <sup>4</sup> 5-6 times a week	<input type="checkbox"/> <sup>9</sup> 5 times a day

8. In the past month, how often did you drink other 100% fruit juices, NOT COUNTING fruit drinks like Hi-C®, Kool-Aid®, or Tang®? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>5</sup> 1 time a day
<input type="checkbox"/> <sup>1</sup> 1-3 times a month	<input type="checkbox"/> <sup>6</sup> 2 times a day
<input type="checkbox"/> <sup>2</sup> 1-2 times a week	<input type="checkbox"/> <sup>7</sup> 3 times a day
<input type="checkbox"/> <sup>3</sup> 3-4 times a week	<input type="checkbox"/> <sup>8</sup> 4 times a day
<input type="checkbox"/> <sup>4</sup> 5-6 times a week	<input type="checkbox"/> <sup>9</sup> 5 times a day

9. In the past month, how often did you eat green salad (with or without other vegetables)? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>5</sup> 1 time a day
<input type="checkbox"/> <sup>1</sup> 1-3 times a month	<input type="checkbox"/> <sup>6</sup> 2 times a day
<input type="checkbox"/> <sup>2</sup> 1-2 times a week	<input type="checkbox"/> <sup>7</sup> 3 times a day
<input type="checkbox"/> <sup>3</sup> 3-4 times a week	<input type="checkbox"/> <sup>8</sup> 4 times a day
<input type="checkbox"/> <sup>4</sup> 5-6 times a week	<input type="checkbox"/> <sup>9</sup> 5 times a day

10. In the past month, how often did you eat French fries or fried potatoes? (Give your best guess. Mark one answer)

<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>5</sup> 1 time a day
<input type="checkbox"/> <sup>1</sup> 1-3 times a month	<input type="checkbox"/> <sup>6</sup> 2 times a day
<input type="checkbox"/> <sup>2</sup> 1-2 times a week	<input type="checkbox"/> <sup>7</sup> 3 times a day
<input type="checkbox"/> <sup>3</sup> 3-4 times a week	<input type="checkbox"/> <sup>8</sup> 4 times a day
<input type="checkbox"/> <sup>4</sup> 5-6 times a week	<input type="checkbox"/> <sup>9</sup> 5 times a day

11. In the past month, how often did you eat baked, boiled, or mashed potatoes? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>5</sup> 1 time a day
<input type="checkbox"/> <sup>1</sup> 1-3 times a month	<input type="checkbox"/> <sup>6</sup> 2 times a day
<input type="checkbox"/> <sup>2</sup> 1-2 times a week	<input type="checkbox"/> <sup>7</sup> 3 times a day
<input type="checkbox"/> <sup>3</sup> 3-4 times a week	<input type="checkbox"/> <sup>8</sup> 4 times a day
<input type="checkbox"/> <sup>4</sup> 5-6 times a week	<input type="checkbox"/> <sup>9</sup> 5 times a day

12. In the past month, about how many servings of vegetables did you eat per week or per day (not counting potatoes or salad)? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>5</sup> 1 per day
<input type="checkbox"/> <sup>1</sup> 1-3 per month	<input type="checkbox"/> <sup>6</sup> 2 per day
<input type="checkbox"/> <sup>2</sup> 1-2 per week	<input type="checkbox"/> <sup>7</sup> 3 per day
<input type="checkbox"/> <sup>3</sup> 3-4 per week	<input type="checkbox"/> <sup>8</sup> 4 per day
<input type="checkbox"/> <sup>4</sup> 5-6 per week	<input type="checkbox"/> <sup>9</sup> 5 or more per day

13. In the past month, about how often did you eat fruit, NOT COUNTING juices? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>5</sup> 1 time a day
<input type="checkbox"/> <sup>1</sup> 1-3 times a month	<input type="checkbox"/> <sup>6</sup> 2 times a day
<input type="checkbox"/> <sup>2</sup> 1-2 times a week	<input type="checkbox"/> <sup>7</sup> 3 times a day
<input type="checkbox"/> <sup>3</sup> 3-4 times a week	<input type="checkbox"/> <sup>8</sup> 4 times a day
<input type="checkbox"/> <sup>4</sup> 5-6 times a week	<input type="checkbox"/> <sup>9</sup> 5 times a day

The next question is whether you are making healthy eating choices. Our definition of "Healthy eating" or a "Healthy diet" is eating plenty of fruits, vegetables and limiting foods with too much sugar or fat.

14. On a scale from 1 to 5, how much are you eating a healthy diet? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>1</sup> Not at all	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup> All the time
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15. How long have you been following a healthy diet? Would you say... (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>1</sup> Less than 1 month	} → Go to
<input type="checkbox"/> <sup>2</sup> 1 to 5 month	
<input type="checkbox"/> <sup>3</sup> 6 to 11 months	
<input type="checkbox"/> <sup>4</sup> 1 year or more	
	Question 21

16. In the *past 6 months*, have you tried to eat a healthier diet? (Mark one answer)

<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
--	---

17. How successful were you? Would you say...

<input type="checkbox"/> <sup>1</sup> Very successful	} → Go to
<input type="checkbox"/> <sup>2</sup> Somewhat successful	
<input type="checkbox"/> <sup>3</sup> Not successful	Question 21

18. In the *past month*, have you seriously thought about the changes you could make to eat a healthier diet? (Mark one answer.)

<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
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19. Do you plan on continuing trying to eat a healthier diet over the next 6 months?

<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
--	---

20. How confident are you that you can change your diet to eat a healthy diet? Would you say... (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>1</sup> Not very confident	<input type="checkbox"/> <sup>2</sup> Somewhat confident	<input type="checkbox"/> <sup>3</sup> Very confident	<input type="checkbox"/> <sup>4</sup> Don't know
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21. On a scale of 1 to 4, to what extent do you believe that obesity is caused by not eating a healthy diet? (Give your best guess. Mark one answer.)

<input type="checkbox"/> 1 Don't believe at all	<input type="checkbox"/> 2 Believe a little	<input type="checkbox"/> 3 Believe quite a bit	<input type="checkbox"/> 4 Believe a lot
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22. On a scale of 0 to 10, how sure are you that you will eat less sugar and fat during the next year? (Give your best guess. Mark one answer.)

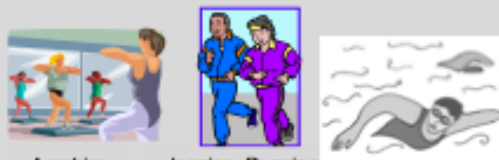


<input type="checkbox"/> 0 Not sure	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 Very sure
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23. On a scale of 0 to 10, do you believe that eating too much sugar and fat is harmful to your health? (Give your best guess. Mark one answer.)

<input type="checkbox"/> 0 Not at all harmful	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 Very harmful
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**THE NEXT QUESTIONS ARE ABOUT YOUR PHYSICAL ACTIVITY**

24. Considering a 7-day period (1 week), how many times on average do you complete strenuous, moderate, or mild physical activity for more than 10 minutes during your free time? (Write the appropriate number on the line provided.)

<p>a. <b>Strenuous Activities</b></p> <p>- your heart rate increases a lot. - you can't talk or your talking is broken up by large breaths.</p>	<p>____ times per week (Write your answer in the space.)</p>	<p>Some examples of strenuous activity:</p>  <p>Aerobics Classes      Jogging, Running, or Power Walking      Fast swimming</p>
<p>b. <b>Moderate activities</b></p> <p>- your heart beats faster than normal. - you can talk but not sing.</p>	<p>____ times per week (Write your answer in the space.)</p>	<p>Some examples of moderate activity:</p>  <p>Fast walking      Moderate Gardening      Fast Dancing      Medium Pace Wheeling</p>
<p>c. <b>Mild activities</b></p> <p>- your heart beats slightly faster than normal. - you can talk and sing.</p>	<p>____ times per week (Write your answer in the space.)</p>	<p>Some examples of mild activities:</p>  <p>Light Swimming      Light Vacuuming      Light yard work (without much bending and stooping)</p>

25. Considering a 7 day period (1 week), during your free-time, how often do you engage in any regular activity long enough to make you sweat? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>1</sup> Often	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Never/Rarely
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26. a. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time? This includes walking at work and at home, walking to travel from place to place, and any other walking that you did solely for recreation, sport, exercise or leisure (Give your best guess. Write your answer below.)

_____ days per week    OR <input type="checkbox"/> None    →    GO TO QUESTION 27
b. How much time in total did you usually spend walking on one of those days? (Give your best guess. Write your answer below.)  _____ hours _____ minutes

Think about the time you spend sitting while at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading or sitting or lying down to watch television.

27. During the **last 7 days**, how much time did you usually spend sitting on a weekday (for example Monday or Tuesday)? (Give your best guess. Write your answer in the box below.)

_____ : _____ per day hours            minutes
---

28. During the **last 7 days**, how much time did you usually spend sitting on a weekend day (on Saturday or Sunday)? (Give your best guess. Write your answer in the box below.)

_____ : _____ per day hours            minutes
---

The next question is whether you do regular exercise. Our definition of "Regular Exercise" is any *planned physical activity* (e.g. brisk walking, aerobics, jogging, bicycling, swimming, etc.) performed to increase physical fitness, 3 to 5 times per week for at least 20 minutes.

29. Do you exercise regularly? (Mark one answer.)

<input type="checkbox"/> No	<input type="checkbox"/> Yes → Go to Question 31
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30. IF "No" to Q 29, In the future, do you intend to exercise regularly? (Give your best guess. Mark one answer.)

<input type="checkbox"/> No, I have <b>no plans</b> to exercise regularly	} → Go to Question 32
<input type="checkbox"/> I intend to exercise regularly in the next <b>30 days</b>	
<input type="checkbox"/> I intend to exercise regularly in the next <b>6 months</b>	

31. **IF "Yes" to Q 29, how long have you been exercising regularly? (Give your best guess. Mark one answer.)**

<sup>1</sup> I have been exercising regularly for **less than 6 months**

<sup>2</sup> I have been exercising regularly for **more than 6 months**

32. On a scale of 1 to 4, to what extent do you believe that obesity is caused by **not** exercising regularly? (Give your best guess. Mark one answer.)

<input type="checkbox"/> 1 Don't believe at all	<input type="checkbox"/> 2 Believe a little	<input type="checkbox"/> 3 Believe quite a bit	<input type="checkbox"/> 4 Believe a lot
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33. On a scale of 0 to 10, how sure are you that you will exercise regularly during the next year? (Give your best guess. Mark one answer.)

<input type="checkbox"/> 0 Not sure	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 Very sure
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34. On a scale of 0 to 10, do you believe that not exercising regularly (at least 3 times a week) is harmful to your health? (Mark one number.)

<input type="checkbox"/> 0 Not at all harmful	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 Very harmful
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**THESE NEXT QUESTIONS ARE ABOUT YOUR WEIGHT**

35. From the nine pictures below please select the image that you feel best represents you. (Give your best guess. Mark one answer below.)



<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>	<input type="checkbox"/> <sup>7</sup>	<input type="checkbox"/> <sup>8</sup>	<input type="checkbox"/> <sup>9</sup>
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36. These next questions are about the health behaviors of your family and friends. Think about your 5 closest friends and 5 closest family members and their eating, exercise behaviors and their body weight.

Of your <i>five</i> closest friends...							
a.	How many are overweight?	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
b.	How many eat a healthy diet?	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
c.	How many are physically active?	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Of your <i>five</i> closest family members...							
d.	How many are overweight?	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
e.	How many eat a healthy diet?	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
f.	How many are physically active?	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

37. On a scale of 1 to 4, to what extent do you believe that obesity is inherited? (Give your best guess. Mark one answer.)

<input type="checkbox"/> 1 Don't believe at all	<input type="checkbox"/> 2 Believe a little	<input type="checkbox"/> 3 Believe quite a bit	<input type="checkbox"/> 4 Believe a lot
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38. Below is a list of statements about your quality of life in relation to your weight. For each of the following statements, please mark an X in the one box that best describes your feelings.

<i>(Mark one answer per row.)</i>		Not at all	Hardly	Somewhat	Moderately	A good deal	A great deal
a.	Because of my weight, I try to wear clothes that hide my shape.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
b.	I feel frustrated that I have less energy because of my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
c.	I feel guilty when I eat because of my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
d.	I am bothered by what other people say about my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
e.	Because of my weight, I try to avoid having my photograph taken.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
f.	Because of my weight, I have to pay close attention to personal hygiene.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
g.	My weight prevents me from doing what I want to do.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
h.	I worry about the physical stress that my weight puts on my body.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
i.	I feel frustrated that I am not able to eat what others do (eat) because of my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
j.	I feel depressed because of my weight	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
k.	I feel ugly because of my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
l.	I worry about the future because of my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
m.	I envy people who are thin.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
n.	I feel that people stare at me because of my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
o.	I have difficulty accepting my body because of my weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
p.	I am afraid that I will gain back any weight that I lose.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
q.	I get discouraged when I try to lose weight.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>

39. On a scale of 0 to 10, how sure are you that you will control your weight next year? (Give your best guess. Mark one answer.)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	2	3	4	5	6	7	8	9
Not sure									Very Sure

40. On a scale of 0 to 10, do you believe being overweight (20 or more pounds) is harmful for your health? (Give your best guess. Mark one answer.)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	2	3	4	5	6	7	8	9
Not at all harmful									Very Harmful

The next statements are about your eating habits and your weight.

<i>(Give your best guess. Mark one answer per row.)</i>		<b>Definitely False</b>	<b>Mostly False</b>	<b>Mostly True</b>	<b>Definitely True</b>
41.	I deliberately (choose) take small helpings (portions) to control my weight	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
42.	I start to eat when I feel anxious.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
43.	Sometimes when I start eating, I just can't seem to stop.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
44.	When I feel sad, I often eat too much.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
45.	I don't eat some foods because they make me fat.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
46.	Being with someone who is eating often makes me want to also eat.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
47.	When I feel tense or "wound up", I often feel I need to eat.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
48.	I often get so hungry that my stomach feels like a bottomless pit.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
49.	I'm always so hungry that it's hard for me to stop eating before finishing all of the food on my plate.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
50.	When I feel lonely, I console myself by eating.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
51.	I consciously hold back on how much I eat at meals to keep from gaining weight.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

<i>(Give your best guess. Mark one answer per row.)</i>		<b>Definitely False</b>	<b>Mostly False</b>	<b>Mostly True</b>	<b>Definitely True</b>
52.	When I smell a sizzling steak or see a juicy piece of meat, I find it very difficult to keep from eating—even if I've just finished a meal.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
53.	I'm always hungry enough to eat at any time.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
54.	If I feel nervous, I try to calm down by eating.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
55.	When I see something that looks very delicious, I often get so hungry that I have to eat right away.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
56.	When I feel depressed, I want to eat.	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

**For the next two questions please give your best guess. Mark one answer per row.**

57.	Do you go on eating binges (overeating) even though you're not hungry?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Rarely	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> At least once a week
58.	How often do you feel hungry?	<input type="checkbox"/> <sup>0</sup> Only at meal times	<input type="checkbox"/> <sup>1</sup> Sometimes between meals	<input type="checkbox"/> <sup>2</sup> Often between meals	<input type="checkbox"/> <sup>3</sup> Almost always

**THESE NEXT QUESTIONS ARE ABOUT YOUR GENERAL HEALTH**

**59. Do you have any of the following health conditions...?**

a. AIDS	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
b. Cerebrovascular disease	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
c. Chronic pulmonary disease	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
d. Congestive heart failure	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
e. Connective tissue disease	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
f. Dementia	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
g. Hemiplegia	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
h. Leukemia	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes

i. Malignant lymphoma	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
j. Myocardial infarction	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
k. Peripheral vascular disease	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
l. Ulcer disease	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes

m. Liver disease	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Mild	<input type="checkbox"/> <sup>2</sup> Moderate	<input type="checkbox"/> <sup>3</sup> Severe
n. Renal disease	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Mild	<input type="checkbox"/> <sup>2</sup> Moderate	<input type="checkbox"/> <sup>3</sup> Severe

o. Diabetes mellitus	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes, without end organ damage	<input type="checkbox"/> <sup>2</sup> Yes, with end organ damage
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p. Malignant solid tumor	<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes, non-metastatic	<input type="checkbox"/> <sup>2</sup> Yes, Metastatic
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60. The following questions are about activities you might do during a typical day. Does *your health now limit you* in these activities? If so, how much?

<i>(Give your best guess. Mark one answer per row.)</i>	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. <b>Vigorous activities</b> , such as running, lifting heavy objects, participating in strenuous sports?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
b. <b>Moderate activities</b> , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
c. Lifting or carrying groceries?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
d. Climbing <b>several</b> flights of stairs?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
e. Climbing <b>one</b> flight of stairs?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
f. Bending, kneeling, or stooping?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
g. Walking <b>more than a mile</b> ?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
h. Walking <b>several hundred yards</b> ?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
i. Walking <b>one hundred yards</b> ?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
j. Bathing or dressing yourself?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

61. During the <u>past 4 weeks</u> , have you had any of the following problems with your work or other regular daily activities as a result of your physical health?					
<i>(Give your best guess. Mark one answer per row.)</i>	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Cut down the amount of time you spent on work or other activities.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Accomplished less than you would like.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. Were limited in the kind of work or other activities.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
d. Had difficulty performing the work or other activities (for example, it took extra effort)	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

62. During the <u>past 4 weeks</u> , have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?					
<i>During the past 4 weeks have you...</i>	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Cut down the amount of time you spent on work or other activities.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Accomplished less than you would like.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. Didn't do work or other activities less carefully than usual.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

63. During the <u>past 4 weeks</u> , to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors or groups?				
<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
Not at all	Slightly	Moderately	Quite a bit	Extremely

64. How much bodily pain have you had during the <u>past 4 weeks</u> ?					
<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	<input type="checkbox"/> <sup>6</sup>
None	Very mild	Mild	Moderate	Severe	Very Severe

65. During the <u>past 4 weeks</u> , how much did <u>pain</u> interfere with your normal work (including both work outside the home and house work)?				
<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
Not at all	Slightly	Moderately	Quite a bit	Extremely

66. The next questions are about how you have felt during the past 4 weeks. For each question, please give the answer that comes closest to the way you have been feeling.					
<i>How much of the time during the past 4 weeks...</i>	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Did you feel full of life?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Have you been very nervous?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. Have you felt so down in the dumps that nothing could cheer you up?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
d. Have you felt calm and peaceful?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
e. Did you have a lot of energy?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
f. Have you felt downhearted and blue?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
g. Did you feel worn out?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
h. Have you been happy?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
i. Did you feel tired?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

67. During the past 4 weeks how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?					
<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>	
All of the time	Most of the time	Some of the time	A little of the time	None of the time	

68. How TRUE or FALSE is each of the following statements is for you.					
<i>(Give your best guess. Mark one answer per row.)</i>	Definitely true	Mostly true	Not sure	Mostly false	Definitely false
a. I seem to get sick a little easier than other people.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. I am as healthy as anybody I know.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. I expect my health to get worse.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
d. My health is excellent.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

The following questions are about smoking. Give your best guess. Mark one answer per row.

69.	Have you smoked at least 100 cigarettes in your entire life? (100 cigarettes is approximately 5 packs)	<input type="checkbox"/> <sub>0</sub> No (Skip to Q72)	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
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70.	Do you now smoke cigarettes every day, some days, or not at all?	<input type="checkbox"/> <sub>3</sub> Every day (Skip to Q72)	<input type="checkbox"/> <sub>2</sub> Some days	<input type="checkbox"/> <sub>1</sub> Not at all	<input type="checkbox"/> <sub>4</sub> Don't know
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71.	Have you EVER smoked cigarettes EVERY DAY for at least 6 months?	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
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These next questions are about your sleep habits. Please mark one of the answers for each of the following questions. Pick the answer that best describes how often you experienced the situation in the past 4 weeks.

72.	<i>(Give your best guess. Mark one answer per row.)</i>	No, not in past 4 weeks.	Yes, less than once a week.	Yes, 1 or 2 times a week.	Yes, 3 or 4 times a week.	Yes, 5 or more times a week.
a.	Did you have trouble falling asleep?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>
b.	Did you wake up several times at night?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>
c.	Did you wake up earlier than you planned to?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>
e.	Did you have trouble getting back to sleep after you woke up too early?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>

73.	<i>(Give your best guess. Mark one answer.)</i>	Very sound or restful	Sound or restful	Average quality	Restless	Very Restless
	Overall, how was your typical night's sleep during the past 4 weeks?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>

Please answer each item by marking one box per row. Give your best guess.

74.	In the past 7 days...	Never	Rarely	Sometimes	Often	Always
a.	I felt fearful....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
b.	I felt anxious....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
c.	I felt worried....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
d.	I found it hard to focus on anything other than my anxiety....	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

	In the past 7 days...	Never	Rarely	Sometimes	Often	Always
e.	I felt nervous....	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
f.	I felt uneasy....	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
g.	I felt tense....	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

These questions ask you about your feelings and thoughts during the last month. In each case, please indicate **how often** you felt or thought a certain way by checking the corresponding box. (Give your best guess. Mark one answer per row.)

75.	In the last month, how often have you been upset because of something that happened unexpectedly?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
76.	In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
77.	In the last month, how often have you felt nervous and "stressed"?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
78.	In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
79.	In the last month, how often have you felt that things were going your way?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
80.	In the last month, how often have you found that you could not cope with all the things that you had to do?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
81.	In the last month, how often have you been able to control irritations in your life?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
82.	In the last month, how often have you felt that you were on top of things?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
83.	In the last month, how often have you been angered because of things that were outside of your control?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often
84.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	<input type="checkbox"/> <sup>0</sup> Never	<input type="checkbox"/> <sup>1</sup> Almost Never	<input type="checkbox"/> <sup>2</sup> Sometimes	<input type="checkbox"/> <sup>3</sup> Fairly Often	<input type="checkbox"/> <sup>4</sup> Very Often

Below is a list of words that describe feelings that people have. Please read each word carefully. Then mark one answer that best describes HOW YOU HAVE BEEN FEELING IN THE LAST WEEK, INCLUDING TODAY. Please answer every item.

How have you been feeling in the last week, including today?	<i>(Give your best guess. Mark one answer per row.)</i>				
	Not at All	A Little	Moderately	Quite a Bit	Extremely
85. Tense	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
86. Angry	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
87. Worn out	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
88. Lively	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
89. Confused	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
90. Shaky	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
91. Sad	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
92. Active	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
93. Grouchy	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
94. Energetic	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
95. Unworthy	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
96. Uneasy	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
97. Fatigued	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
98. Annoyed	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
99. Discouraged	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
100. Nervous	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
101. Lonely	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
102. Muddled	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
103. Exhausted	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
104. Anxious	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
105. Gloomy	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
106. Sluggish	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
107. Weary	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
108. Bewildered	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
109. Furious	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
110. Efficient	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
111. Full of Pep	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
112. Bad-Tempered	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
113. Forgetful	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
114. Vigorous	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week. (Give your best guess. Mark one answer per row.)

During the past week... (Give your best guess. Mark one answer per row.)		Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	All of the time (5-7 days)
115.	I was bothered by things that usually don't bother me....	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
116.	I had trouble keeping my mind on what I was doing...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
117.	I felt depressed...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
118.	I felt that everything I did was an effort...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
119.	I felt hopeful about the future...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
120.	My sleep was restless...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
121.	I was happy...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
122.	I felt lonely...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
123.	I could not "get going"...	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

**THESE NEXT QUESTIONS CONCERN YOUR ACCESS TO FOOD**

The following questions are about the ways you plan and fix foods for your family. As you read each question, think about the recent past. If you do not have children answer the questions for yourself.

<i>(Give your best guess. Mark one answer per row.)</i>		Do not do	Seldom	Sometimes	Most of the time	Almost always
124.	How often do you plan meals ahead of time?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
125.	How often do you compare prices before you buy food?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
126.	How often do you run out of food before the end of the month?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
127.	How often do you shop with a grocery list?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
128.	When deciding what to feed your family, how often do you think about healthy food choices?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
129.	How often do your children eat something in the morning within 2 hours of waking up?	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

130. A number of programs are listed below that help supply food to individuals and households. Please **mark all the programs** that you and **others in your household** have used at some time **in the last year**. (Mark all that apply.)

<input type="checkbox"/> <sup>1</sup>	None
<input type="checkbox"/> <sup>2</sup>	Meals on Wheels
<input type="checkbox"/> <sup>3</sup>	Free or reduced cost meals for the elderly
<input type="checkbox"/> <sup>4</sup>	USDA or government commodity foods (requires you to fill out an eligibility form that you meet income, residence requirements )
<input type="checkbox"/> <sup>5</sup>	Food stamps, free or reduced cost school lunches, WIC (Women, Infant, and Children Feeding Program), or free or reduced-cost meals at day care or Head Start.
<input type="checkbox"/> <sup>6</sup>	Community Food Bank or Pantry or other free food or food vouchers
<input type="checkbox"/> <sup>7</sup>	Community meal program (soup kitchens, shelters, churches)

**These next questions are about the food eaten in your household in the last 12 months and whether you were able to afford the food you need.**

131. Which of these statements best describes the food eaten in your household in the last 12 months?

<input type="checkbox"/> <sub>0</sub> Don't know	<input type="checkbox"/> <sub>1</sub> Enough of the kinds of food we wanted to eat	<input type="checkbox"/> <sub>2</sub> Enough but not always the <u>kind</u> of food we want	<input type="checkbox"/> <sub>3</sub> Sometimes <u>not enough</u> to eat	<input type="checkbox"/> <sub>4</sub> <u>Often</u> not enough to eat
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Go to Question 134

132. Here are some reasons why people don't always have the quality or variety of food they want. For each one, please tell us the reasons why YOU don't always have the kind of food you want to eat. (Mark one answer per row.)

Not enough money for food	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
Kinds of food (I/we) want not available	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
Not enough time for shopping or cooking	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
Too hard to get to the store	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
On a special diet	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know

133. Here are some reasons why people don't always enough to eat. For each one, please tell us the reasons why YOU don't always enough to eat. (Mark one answer per row.)

Not enough money for food	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
Not enough time for shopping or cooking	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
Too hard to get to the store	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
On a diet	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
No working stove available	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know
Not able to cook or eat because of health problems	<input type="checkbox"/> <sub>0</sub> No	<input type="checkbox"/> <sub>1</sub> Yes	<input type="checkbox"/> <sub>2</sub> Don't know

These questions are in reference to food in your household. Mark if each statement was **often** true, **sometimes** true, or **never** true for your household in the last 12 months.

**PART A: Questions 134-136**

134. In the last 12 months, "We worried whether our food would run out before we got money to buy more." *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> <sub>2</sub> Often true	<input type="checkbox"/> <sub>1</sub> Sometimes true	<input type="checkbox"/> <sub>0</sub> Never true
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135. In the last 12 months, "The food that we bought just didn't last, and we didn't have money to get more." *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> <sub>2</sub> Often true	<input type="checkbox"/> <sub>1</sub> Sometimes true	<input type="checkbox"/> <sub>0</sub> Never true
---	---	---

136. In the last 12 months, "We couldn't afford to eat balanced meals." *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> <sub>2</sub> Often true	<input type="checkbox"/> <sub>1</sub> Sometimes true	<input type="checkbox"/> <sub>0</sub> Never true
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If **Often true** or **Sometimes true** to any question on **PART A**, answer **PART B**

If **Never True** to all questions on **PART A**, go to question 142

**PART B: Questions 137-140**

137. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? *(Mark one answer.)*

<input type="checkbox"/> No	<input type="checkbox"/> Yes
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If yes, how often did this happen? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> Almost every month
<input type="checkbox"/> Some months but not every month
<input type="checkbox"/> Only 1 or 2 months

138. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money to buy food? *(Mark one answer.)*

<input type="checkbox"/> No	<input type="checkbox"/> Yes
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139. In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food? *(Mark one answer.)*

<input type="checkbox"/> No	<input type="checkbox"/> Yes
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140. In the last 12 months, did you lose weight because you didn't have enough money for food? *(Mark one answer.)*

<input type="checkbox"/> No	<input type="checkbox"/> Yes
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If **NO** to all questions on **PART B**, go to question 142

If **YES** to any question on **PART B**, answer **PART C**

**PART C: Question 141**

141. In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? *(Mark one answer.)*

<input type="checkbox"/> No	<input type="checkbox"/> Yes
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If yes, how often did this happen? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> Almost every month
<input type="checkbox"/> Some months but not every month
<input type="checkbox"/> Only 1 or 2 months

These next questions are about your food buying habits.

	<i>(Give your best guess. Mark one answer.)</i>	Strongly agree	Agree	Disagree	Strongly Disagree
142.	I think vegetables are affordable to me in the store where I buy most of my food.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
143.	Buying vegetables is difficult on my budget.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
144.	I think fruit is affordable to me in the store where I buy most of my food	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
145.	Buying fruit is difficult on my budget	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
146.	Buying fast food is difficult on my budget	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
147.	Lack of money prevents me from eating healthfully	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>

**THESE NEXT QUESTIONS ARE ABOUT YOUR COMMUNITY**

148. How many years have you lived in your community? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	Less than one year
<input type="checkbox"/> <sup>2</sup>	One to five years
<input type="checkbox"/> <sup>3</sup>	Six to ten years
<input type="checkbox"/> <sup>4</sup>	Eleven to twenty years
<input type="checkbox"/> <sup>5</sup>	More than twenty years
<input type="checkbox"/> <sup>6</sup>	All my life
<input type="checkbox"/> <sup>7</sup>	Don't know

149. Do you expect to be living in your community five years from now? *(Mark one answer.)*

<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>2</sup> Don't Know
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150. Overall, how would you rate your community as a place to live? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	Excellent
<input type="checkbox"/> <sup>2</sup>	Good
<input type="checkbox"/> <sup>3</sup>	Only fair
<input type="checkbox"/> <sup>4</sup>	Poor

These questions are about what is available in your neighborhood.

	<i>(Give your best guess. Mark one answer.)</i>	Strongly agree	Agree	Disagree	Strongly Disagree
151.	There are many places to go (e.g. stores, businesses, churches, parks) within easy walking distance (i.e. within 20 minutes) of my home.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
152.	There are sidewalks on most of the streets in my neighborhood.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
153.	There is a high crime rate in my neighborhood.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
154.	The sidewalks in my neighborhood are well maintained (paved, even, and not a lot of cracks).	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
155.	The majority of food available in my neighborhood is fast-food.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
156.	There are many grocery stores and supermarkets in my neighborhood.	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
157.	There are many places to exercise in my neighborhood (e.g. gyms, parks, fitness trails).	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>

158. Think about the time you spend walking in your neighborhood. This includes walking for any purpose, such as recreation, exercise, or walking from place to place.

a) During the **last 7 days**, on how many days did you walk for at least 10 minutes at a time in your neighborhood? *(Give your best guess. Write your answer in the box below.)*

<sup>0</sup> No walking for more than 10 minutes at a time in my neighborhood. → Go to question 159

\_\_\_\_\_ days per week and \_\_\_\_\_ minutes per day

*(example 3 days per week and 20 minutes per day)*

b) On a **typical day** how many minutes do you walk in your neighborhood? *(Give your best guess. Write your answer in the box below.)*

\_\_\_\_\_ minutes per day

The following is a list of problems that could arise in any neighborhood. Please rate the extent to which each is a problem in your neighborhood by placing an X in the box corresponding to your answer.

<i>(Give your best guess. Mark one answer.)</i>		Not a problem	Some problem	Serious problem
159.	Litter in the streets	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
160.	Smells and fumes	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
161.	Walking around after dark,	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
162.	Problems with dogs	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
163.	Noise from traffic or other homes	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
164.	Lack of entertainment (cafes, theaters)	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
165.	Traffic and road safety	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
166.	Places to shop	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
167.	Vandalism	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
168.	Disturbance by neighbors or youngsters	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

**THESE QUESTIONS CONCERN YOUR FAMILY AND RESOURCES**

169. How many times in the past 12 months have you volunteered (in your community, neighborhood, etc.)? *(Give your best guess. Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	Never
<input type="checkbox"/> <sup>2</sup>	Once
<input type="checkbox"/> <sup>3</sup>	A few times
<input type="checkbox"/> <sup>4</sup>	2-4 times
<input type="checkbox"/> <sup>5</sup>	5-9 times
<input type="checkbox"/> <sup>6</sup>	About once a month
<input type="checkbox"/> <sup>7</sup>	Twice a month
<input type="checkbox"/> <sup>8</sup>	About once a week
<input type="checkbox"/> <sup>9</sup>	More than once a week
<input type="checkbox"/> <sup>10</sup>	Don't know

170. Are you now helping at least one sick, limited, or frail family member or friend on a regular basis? *(Mark one answer.)*

<input type="checkbox"/> No	<input type="checkbox"/> Yes
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If yes, In the past 4 weeks, how often have you helped this friend or family member? *(Give your best guess. Mark one answer.)*

Less than once a week <input type="checkbox"/>	1-2 times a week <input type="checkbox"/>	3-4 times a week <input type="checkbox"/>	5 or more times a week <input type="checkbox"/>
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The next questions are about your living and social activities.

171. Who lives with you? *(Mark all that apply.)*

<input type="checkbox"/>	I live alone
<input type="checkbox"/>	I live with my husband or partner
<input type="checkbox"/>	I live with my children
<input type="checkbox"/>	I live with my brother and/or sister
<input type="checkbox"/>	I live with other relatives
<input type="checkbox"/>	I live with friends
<input type="checkbox"/>	Other (please describe): _____

172. What is your current marital status? *(Mark one answer that best describes you.)*

<input type="checkbox"/>	Never married
<input type="checkbox"/>	Divorced or separated
<input type="checkbox"/>	Widowed
<input type="checkbox"/>	Presently married
<input type="checkbox"/>	Living in a marriage-like relationship

173. **IF NOT MARRIED OR LIVING IN A MARRIAGE-LIKE RELATIONSHIP, SKIP TO QUESTION 176**

Which category below best describes the highest level of school your **husband or partner** completed? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	Didn't go to school
<input type="checkbox"/> <sup>2</sup>	Grade school (1-4 years)
<input type="checkbox"/> <sup>3</sup>	Grade school (5-8 years)
<input type="checkbox"/> <sup>4</sup>	Some high school (9-11 years)
<input type="checkbox"/> <sup>5</sup>	High school diploma or G.E.D.
<input type="checkbox"/> <sup>6</sup>	Vocational or training school <i>after</i> high school graduation
<input type="checkbox"/> <sup>7</sup>	Some college or Associate Degree
<input type="checkbox"/> <sup>8</sup>	College graduate or Baccalaureate Degree
<input type="checkbox"/> <sup>9</sup>	College or professional school <i>after</i> college graduation
<input type="checkbox"/> <sup>10</sup>	Master's Degree
<input type="checkbox"/> <sup>11</sup>	Doctoral Degree (Ph.D., M.D., J.D., etc)

174. What is your husband's or partner's current job status? *(Mark all that apply.)*

<input type="checkbox"/> <sup>1</sup>	Not working
<input type="checkbox"/> <sup>2</sup>	Retired
<input type="checkbox"/> <sup>3</sup>	Homemaker, raising children, care of others
<input type="checkbox"/> <sup>4</sup>	Employed (full-time or part-time)
<input type="checkbox"/> <sup>5</sup>	Disabled, unable to work
<input type="checkbox"/> <sup>6</sup>	Other (Specify) _____

175. Which statement below best describes your **husband's or partner's** job? If not working now, which one best describes your partner's last job? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	<b>HOMEMAKER, RAISING CHILDREN, CARE OF OTHERS</b>	
<input type="checkbox"/> <sup>2</sup>	<b>MACHINE OPERATOR</b>	For example: meter reader, installer, truck driver, etc
<input type="checkbox"/> <sup>3</sup>	<b>MANUAL LABOR</b>	For example: maintenance worker, construction work, warehouse worker, utility worker, material handler, etc.
<input type="checkbox"/> <sup>4</sup>	<b>SKILL OR CRAFT</b>	For example: building trades, hourly paid supervisor, line worker, technician, mechanic, repairer, etc.
<input type="checkbox"/> <sup>5</sup>	<b>SCIENTIFIC TECHNICAL WORK</b>	For example: computer programmer, dental assistant, vocational/practical nurse, computer operator, engineering aide, lab technician, etc.
<input type="checkbox"/> <sup>6</sup>	<b>SERVICE WORK</b>	For example: firefighter, security worker, custodian/maid, cook, waitress/waiter, seamstress/tailor, farmer, forestry or fishing occupations, cafeteria worker, store clerk, gas attention attendant, etc.
<input type="checkbox"/> <sup>7</sup>	<b>CLERICAL, OFFICE OR SALES WORK</b>	For example: billing, customer service, receptionist, cashier, telephone operator, administrative support, typist, travel agent, bank teller, etc.
<input type="checkbox"/> <sup>8</sup>	<b>PROFESSIONAL, MANAGERIAL OR ADMINISTRATIVE WORK</b>	For example: engineer, teacher, registered nurse, lawyer, accountant, salaried manager, personnel worker, etc.
<input type="checkbox"/> <sup>9</sup>	<b>OTHER (SPECIFY)</b>	_____

176. What was the total family income (before taxes) from all sources within your household (including paychecks, social security, retirement income, and public assistance) **in the last year?** *(Mark the one that is your best guess.)*

<input type="checkbox"/> <sup>1</sup>	Less than \$7,000	<input type="checkbox"/> <sup>8</sup>	\$30,000 to \$34,999
<input type="checkbox"/> <sup>2</sup>	\$7,000 to \$9,999	<input type="checkbox"/> <sup>9</sup>	\$35,000 to \$49,999
<input type="checkbox"/> <sup>3</sup>	\$10,000 to \$11,999	<input type="checkbox"/> <sup>10</sup>	\$50,000 to \$74,999
<input type="checkbox"/> <sup>4</sup>	\$12,000 to \$15,999	<input type="checkbox"/> <sup>11</sup>	\$75,000 to \$99,999
<input type="checkbox"/> <sup>5</sup>	\$16,000 to \$19,999	<input type="checkbox"/> <sup>12</sup>	\$100,000 to \$149,999
<input type="checkbox"/> <sup>6</sup>	\$20,000 to \$24,999	<input type="checkbox"/> <sup>13</sup>	\$150,000 or more
<input type="checkbox"/> <sup>7</sup>	\$25,000 to \$29,999	<input type="checkbox"/> <sup>14</sup>	Don't Know

177. All together, what is your current total family savings, assets, retirement and pensions plans, and property from all sources within your household? (Include the total value of your home and car(s) minus the amounts still owed.) (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>1</sup>	Less than \$500	<input type="checkbox"/> <sup>6</sup>	\$50,000 to \$99,999
<input type="checkbox"/> <sup>2</sup>	\$500 to \$4,999	<input type="checkbox"/> <sup>7</sup>	\$100,000 to \$199,999
<input type="checkbox"/> <sup>3</sup>	\$5,000 to \$9,999	<input type="checkbox"/> <sup>8</sup>	\$200,000 to \$499,999
<input type="checkbox"/> <sup>4</sup>	\$10,000 to \$24,999	<input type="checkbox"/> <sup>9</sup>	\$500,000 or more
<input type="checkbox"/> <sup>5</sup>	\$25,000 to \$49,999	<input type="checkbox"/> <sup>10</sup>	Don't know

178. What is the total family debt within your household from such things as credit card charges, medical or legal bills, and loans from banks or relatives? (Do not include mortgage or car loans) (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>1</sup>	Less than \$2,000	<input type="checkbox"/> <sup>5</sup>	\$20,000 to \$49,999
<input type="checkbox"/> <sup>2</sup>	\$2,000 to \$4,999	<input type="checkbox"/> <sup>6</sup>	\$50,000 to \$99,999
<input type="checkbox"/> <sup>3</sup>	\$5,000 to \$9,999	<input type="checkbox"/> <sup>7</sup>	\$100,000 or greater
<input type="checkbox"/> <sup>4</sup>	\$10,000 to \$19,999	<input type="checkbox"/> <sup>8</sup>	Don't know

179. Do you currently have health insurance? This includes pre-paid private insurance such as Health Maintenance Organization (HMO), other private insurance, Medicare, Medicaid, (including State Medical Assistance or Medi-Cal), or Military or Veterans Administration health care coverage? (Mark one answer.)

<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
--	---

If yes, which of the following best describes the doctors and hospitals covered by your current health insurance? (Give your best guess. Mark one answer.)

<input type="checkbox"/> <sup>1</sup>	Benefits are the same for any doctor or hospital I choose
<input type="checkbox"/> <sup>2</sup>	I can use any doctor or hospital, but I must pay more for those not on a list (or identified with my plan)
<input type="checkbox"/> <sup>3</sup>	For my bills to be covered, I must use only the doctors and hospitals on a list (or identified with the plan)

180. How many people, including yourself, live in your household as members of your family (whom you support or who contribute to supporting your family)? (Mark one answer.)

None <input type="checkbox"/> <sup>0</sup>	One <input type="checkbox"/> <sup>1</sup>	Two <input type="checkbox"/> <sup>2</sup>	Three <input type="checkbox"/> <sup>3</sup>	Four <input type="checkbox"/> <sup>4</sup>	Five or more <input type="checkbox"/> <sup>5</sup>
---	--	--	--	---	---

- a How many of these people are under 18 years old? (Give your best guess. Mark one answer.)

None <input type="checkbox"/> <sup>0</sup>	One <input type="checkbox"/> <sup>1</sup>	Two <input type="checkbox"/> <sup>2</sup>	Three <input type="checkbox"/> <sup>3</sup>	Four <input type="checkbox"/> <sup>4</sup>	Five or more <input type="checkbox"/> <sup>5</sup>
---	--	--	--	---	---

- b How many are between 18 and 64 years old (including yourself)? (Give your best guess. Mark one answer.)

None <input type="checkbox"/> <sup>0</sup>	One <input type="checkbox"/> <sup>1</sup>	Two <input type="checkbox"/> <sup>2</sup>	Three <input type="checkbox"/> <sup>3</sup>	Four <input type="checkbox"/> <sup>4</sup>	Five or more <input type="checkbox"/> <sup>5</sup>
---	--	--	--	---	---

- c How many are 65 years or older? (Give your best guess. Mark one answer.)

None <input type="checkbox"/> <sup>0</sup>	One <input type="checkbox"/> <sup>1</sup>	Two <input type="checkbox"/> <sup>2</sup>	Three <input type="checkbox"/> <sup>3</sup>	Four <input type="checkbox"/> <sup>4</sup>	Five or more <input type="checkbox"/> <sup>5</sup>
---	--	--	--	---	---

181. What is the highest degree or level of school you have completed? Mark one box. If currently enrolled, mark the previous grade or highest degree received.

<input type="checkbox"/> <sup>1</sup>	NO SCHOOLING COMPLETED	<input type="checkbox"/> <sup>9</sup>	HIGH SCHOOL GRADUATE – HIGH SCHOOL DIPLOMA OR THE EQUIVALENT (FOR EXAMPLE GED)
<input type="checkbox"/> <sup>2</sup>	NURSERY SCHOOL OR 4 <sup>TH</sup> GRADE	<input type="checkbox"/> <sup>10</sup>	SOME COLLEGE CREDIT, BUT LESS THAN 1 YEAR
<input type="checkbox"/> <sup>3</sup>	5 <sup>TH</sup> GRADE OR 6 <sup>TH</sup> GRADE	<input type="checkbox"/> <sup>11</sup>	1 OR MORE YEARS OF COLLEGE, NO DEGREE
<input type="checkbox"/> <sup>4</sup>	7 <sup>TH</sup> GRADE OR 8 <sup>TH</sup> GRADE	<input type="checkbox"/> <sup>12</sup>	ASSOCIATES DEGREE (FOR EXAMPLE: AA, AS)
<input type="checkbox"/> <sup>5</sup>	9 <sup>TH</sup> GRADE	<input type="checkbox"/> <sup>13</sup>	BACHELOR'S DEGREE (FOR EXAMPLE: BA, AB, BS)
<input type="checkbox"/> <sup>6</sup>	10 <sup>TH</sup> GRADE	<input type="checkbox"/> <sup>14</sup>	MASTER'S DEGREE (FOR EXAMPLE: MA, MS, MENG, MED, MSW, MBA)
<input type="checkbox"/> <sup>7</sup>	11 <sup>TH</sup> GRADE	<input type="checkbox"/> <sup>15</sup>	PROFESSIONAL DEGREE (FOR EXAMPLE: MD, DDS, DVM, LLB, JD)
<input type="checkbox"/> <sup>8</sup>	12 <sup>TH</sup> GRADE, NO DIPLOMA	<input type="checkbox"/> <sup>16</sup>	DOCTORATE DEGREE (FOR EXAMPLE: PHD, EDD)

182. What is **your** current job status? (Mark the one that *best* describes you. If more than one describes you, mark both.)

<input type="checkbox"/> <sup>1</sup>	<b>NOT WORKING</b>
<input type="checkbox"/> <sup>2</sup>	<b>RETIRED</b>
<input type="checkbox"/> <sup>3</sup>	<b>HOMEMAKER, RAISING CHILDREN, CARE OF OTHERS</b>
<input type="checkbox"/> <sup>4</sup>	<b>EMPLOYED (FULL-TIME OR PART-TIME)</b>
<input type="checkbox"/> <sup>5</sup>	<b>DISABLED, UNABLE TO WORK</b>
<input type="checkbox"/> <sup>6</sup>	<b>OTHER (SPECIFY) _____</b>

183. Which of the statements below best describe **your** job? If you are not working now, which statement best describes the job you held the longest? (If you are a homemaker, but work part-time, you should mark both.)

<input type="checkbox"/> <sup>1</sup>	<b>HOMEMAKER, RAISING CHILDREN, CARE OF OTHERS</b>	
<input type="checkbox"/> <sup>2</sup>	<b>MACHINE OPERATOR</b>	For example: meter reader, installer, truck driver, etc
<input type="checkbox"/> <sup>3</sup>	<b>MANUAL LABOR</b>	For example: maintenance worker, construction work, warehouse worker, utility worker, material handler, gardener, etc.
<input type="checkbox"/> <sup>4</sup>	<b>SKILL OR CRAFT</b>	For example: building trades, hourly paid supervisor, line worker, technician, mechanic, repairer, etc.
<input type="checkbox"/> <sup>5</sup>	<b>SCIENTIFIC TECHNICAL WORK</b>	For example: computer programmer, dental assistant, vocational/practical nurse, computer operator, engineering aide, lab technician, etc.
<input type="checkbox"/> <sup>6</sup>	<b>SERVICE WORK</b>	For example: firefighter, security worker, custodian, maid, cook, waitress, seamstress, farmer, forestry or fishing occupations, cafeteria worker, etc.
<input type="checkbox"/> <sup>7</sup>	<b>CLERICAL, OFFICE OR SALES WORK</b>	For example: billing, customer service, receptionist, cashier, telephone operator, administrative support, typist, etc.
<input type="checkbox"/> <sup>8</sup>	<b>PROFESSIONAL, MANAGERIAL OR ADMINISTRATIVE WORK</b>	For example: engineer, teacher, registered nurse, lawyer, accountant, salaried manager, personnel worker, etc.
<input type="checkbox"/> <sup>9</sup>	<b>OTHER (SPECIFY)</b>	_____

Now we are going to ask you about your father's (or the male head of the household's) education while you were growing up.

184. Which category below best describes the highest level of school your father (or the male head of the household) completed? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	Didn't go to school
<input type="checkbox"/> <sup>2</sup>	Grade school (1-4 years)
<input type="checkbox"/> <sup>3</sup>	Grade school (5-8 years)
<input type="checkbox"/> <sup>4</sup>	Some high school (9-11 years)
<input type="checkbox"/> <sup>5</sup>	High school diploma or G.E.D.
<input type="checkbox"/> <sup>6</sup>	Vocational or training school <u>after</u> high school graduation
<input type="checkbox"/> <sup>7</sup>	Some college or Associate Degree
<input type="checkbox"/> <sup>8</sup>	College graduate or Baccalaureate Degree
<input type="checkbox"/> <sup>9</sup>	College or professional school <u>after</u> college graduation
<input type="checkbox"/> <sup>10</sup>	Master's Degree
<input type="checkbox"/> <sup>11</sup>	Doctoral Degree (Ph.D., M.D., J.D., etc)
<input type="checkbox"/> <sup>12</sup>	Do not know

185. What was your father's (or male head of the household's) job status while you were growing up? *(If more than one applies, mark both.)*

<input type="checkbox"/> <sup>1</sup>	Did not work
<input type="checkbox"/> <sup>2</sup>	Retired
<input type="checkbox"/> <sup>3</sup>	Homemaker, raising children, care of others
<input type="checkbox"/> <sup>4</sup>	Employed (Full-time or part-time)
<input type="checkbox"/> <sup>5</sup>	Disabled, unable to work
<input type="checkbox"/> <sup>6</sup>	Other (specify) _____
<input type="checkbox"/> <sup>7</sup>	Do not know

186. Which statement below best describes your **father's** (or male head of the household's) job while growing up? Choose the **one single category** that represents the job he held the longest.

<input type="checkbox"/>	<b>HOMEMAKER, RAISING CHILDREN, CARE OF OTHERS</b>	
<input type="checkbox"/>	<b>MACHINE OPERATOR:</b>	For example: meter reader, installer, truck driver, etc.
<input type="checkbox"/>	<b>MANUAL LABOR:</b>	For example: maintenance worker, construction work, warehouse worker, utility worker, material handler, etc.
<input type="checkbox"/>	<b>SKILL OR CRAFT:</b>	For example: building trades, hourly paid supervisor, line worker, technician, mechanic, repairer, etc.
<input type="checkbox"/>	<b>SCIENTIFIC TECHNICAL WORK:</b>	For example: computer programmer, dental assistant, vocational/practical nurse, computer operator, engineering aide, lab technician, etc.
<input type="checkbox"/>	<b>SERVICE WORK:</b>	For example: firefighter, security worker, custodian, cook, waiter, tailor, farmer, forestry or fishing occupations, cafeteria worker, etc.
<input type="checkbox"/>	<b>CLERICAL, OFFICE OR SALES WORK:</b>	For example: billing, customer service, receptionist, cashier, telephone operator, administrative support, typist, etc.
<input type="checkbox"/>	<b>PROFESSIONAL MANAGERIAL OR ADMINISTRATIVE WORK:</b>	For example: engineer, teacher, registered nurse, lawyer, accountant, salaried manager, personnel worker, etc.
<input type="checkbox"/>	<b>OTHER (SPECIFY)</b>	_____
<input type="checkbox"/>	<b>DO NOT KNOW</b>	

Now we are going to ask you about your mother's education while you were growing up.

187. Which category below best describes the highest level of school your **mother** (or the female head of the household) completed? (Mark one answer.)

<input type="checkbox"/>	Didn't go to school
<input type="checkbox"/>	Grade school (1-4 years)
<input type="checkbox"/>	Grade school (5-8 years)
<input type="checkbox"/>	Some high school (9-11 years)
<input type="checkbox"/>	High school diploma or G.E.D.
<input type="checkbox"/>	Vocational or training school <u>after</u> high school graduation
<input type="checkbox"/>	Some college or Associate Degree
<input type="checkbox"/>	College graduate or Baccalaureate Degree
<input type="checkbox"/>	College or professional school <u>after</u> college graduation
<input type="checkbox"/>	Master's Degree
<input type="checkbox"/>	Doctoral Degree (Ph.D., M.D., J.D., etc)
<input type="checkbox"/>	Do not know

188. What was your **mother's** (or female head of the household's) job status while you were growing up? (If more than one applies, mark both.)

<input type="checkbox"/> <sup>1</sup>	Did not work
<input type="checkbox"/> <sup>2</sup>	Retired
<input type="checkbox"/> <sup>3</sup>	Homemaker, raising children, care of others
<input type="checkbox"/> <sup>4</sup>	Employed (Full-time or part-time)
<input type="checkbox"/> <sup>5</sup>	Disabled, unable to work
<input type="checkbox"/> <sup>6</sup>	Other (specify) _____
<input type="checkbox"/> <sup>7</sup>	Do not know

189. Which statement below best describes your **mother's** (or female head of the household) job while growing up? Choose the **one single category** that represents the job he held the longest.

<input type="checkbox"/> <sup>1</sup>	<b>HOMEMAKER, RAISING CHILDREN, CARE OF OTHERS</b>	
<input type="checkbox"/> <sup>2</sup>	<b>MACHINE OPERATOR:</b>	For example: meter reader, installer, truck driver, etc.
<input type="checkbox"/> <sup>3</sup>	<b>MANUAL LABOR:</b>	For example: maintenance worker, construction work, warehouse worker, utility worker, material handler, etc.
<input type="checkbox"/> <sup>3</sup>	<b>SKILL OR CRAFT:</b>	For example: building trades, hourly paid supervisor, line worker, technician, mechanic, repairer, etc.
<input type="checkbox"/> <sup>4</sup>	<b>SCIENTIFIC TECHNICAL WORK:</b>	For example: computer programmer, dental assistant, vocational/practical nurse, computer operator, engineering aide, lab technician, etc.
<input type="checkbox"/> <sup>5</sup>	<b>SERVICE WORK:</b>	For example: firefighter, security worker, custodian, maid, cook, waitress, seamstress, farmer, forestry or fishing occupations, cafeteria worker, etc.
<input type="checkbox"/> <sup>6</sup>	<b>CLERICAL, OFFICE OR SALES WORK:</b>	For example: billing, customer service, receptionist, cashier, telephone operator, administrative support, typist, etc.
<input type="checkbox"/> <sup>7</sup>	<b>PROFESSIONAL, MANAGERIAL OR ADMINISTRATIVE WORK:</b>	For example: engineer, teacher, registered nurse, lawyer, accountant, salaried manager, personnel worker, etc.
<input type="checkbox"/> <sup>8</sup>	<b>OTHER (SPECIFY)</b>	_____
<input type="checkbox"/> <sup>9</sup>	<b>DO NOT KNOW</b>	

190.

**Think of this ladder as representing where people stand in the United States.**

At the **top** of the ladder are the people who are the best off – those who have the most money, the most education and the most respected jobs. At the **bottom** are the people who are the worst off – who have the least money, least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

**Where would you place yourself on this ladder?**

Please place a large "X" on the rung where you think you stand at this time in your life, relative to other people in the United States.



191. Suppose you (and your spouse or partner) sell everything you own (cars, houses, land, retirement/pension funds, etc.) and you use the money to pay all your debts (credit cards, mortgage, etc.) Would you still have any money left over after paying your debts? (Mark one answer.)

Would still have money left over <input type="checkbox"/> <sup>1</sup>	Would still owe money <input type="checkbox"/> <sup>2</sup>	Debts would just about equal assets <input type="checkbox"/> <sup>3</sup>	Don't owe/own anything <input type="checkbox"/> <sup>4</sup>
---	--	--	---

192. How much money would you have left over? (Give best guess. Write your answer.)

\$ \_\_\_\_\_

193. In general, would you say (you have, your family living here has) more money than you need, just enough for your needs, or not enough to meet your needs? (Give best guess. Mark one answer.)

Not enough <input type="checkbox"/> <sup>1</sup>	Just enough <input type="checkbox"/> <sup>2</sup>	More than enough <input type="checkbox"/> <sup>3</sup>
---	--	---

**THE FOLLOWING QUESTIONS WILL HELP US UNDERSTAND MORE ABOUT OUR PARTICIPANTS**

194. What is your date of birth? (Write your answer.)

____ / ____ / 1 9 ____
Month /Day/Year

195. How tall are you? (Write your answer below.)

____ Feet ____ Inches
OR
____ Meters

196. How much do you weigh? (Write your answer below.)

____ Pounds
OR
____ Kilograms

197. a. What is the most you have ever weighed, not counting pregnancies? *(Write your answer below.)*

\_\_\_ \_\_\_ \_\_\_ Pounds OR \_\_\_ \_\_\_ Kilograms

- b. How old were you when you weighed that much? *(Write your answer below.)*

\_\_\_ \_\_\_ Years old

198. How many times in your life would you guess you have lost the amount of weight shown below, not counting pregnancies? *(Write your answers below.)*

5-9 pounds (2 - <5 kg)	10-19 pounds (5 - <9 kg)	20-49 pounds (9 - <22 kg)	50-79 pounds (22 - <36 kg)	80-99 pounds (36 - 45 kg)	>100 pounds (>45 kg)
___ times	___ times	___ times	___ times	___ times	___ times

The following questions are about your reproductive history.

199. Have you ever been pregnant? *(Mark one answer.)*

<sup>0</sup> No      <sup>1</sup> Yes      <sup>2</sup> Not Sure

↓  
If NO, skip to Q.203

200. Are you currently pregnant? *(Mark one answer.)*

<sup>0</sup> No      <sup>1</sup> Yes      <sup>2</sup> Not Sure

201. Altogether, how many times have you been pregnant in the past (including live births, still births, miscarriages and abortions) *(Write your answer below.)*

\_\_\_ pregnancies

202. Please tell us about each of your pregnancies, beginning with your first.

	1 <sup>st</sup> Pregnancy	2 <sup>nd</sup> Pregnancy	3 <sup>rd</sup> Pregnancy	4 <sup>th</sup> Pregnancy	5 <sup>th</sup> Pregnancy
a. How many weeks pregnant were you when the pregnancy ended? (Write your answers for each pregnancy in spaces to left.)	____ weeks	____ weeks	____ weeks	____ weeks	____ weeks
b. Did this pregnancy result in a live-born baby? (Mark one answer for each pregnancy.)	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes
c. Did you breast feed? (Mark one answer for each pregnancy.)	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes	<input type="checkbox"/> <sup>0</sup> No <input type="checkbox"/> <sup>1</sup> Yes

The next questions are about menstruation.

203. At what age did you have your first menstrual period? (Please give your best guess.):

204. Have you gone through menopause or the change of life? (Mark one answer.) <sup>0</sup> No <sup>1</sup> Yes <sup>2</sup> Not sure

Skip to  
Q.207

205. If yes, how did your periods stop? (Mark one answer.) <sup>1</sup> Naturally <sup>2</sup> By surgery <sup>3</sup> Other (please specify): \_\_\_\_\_

206. How old were you when this occurred? (Write your answer.)

The next questions are about your ethnicity and race.

207. Are you of Hispanic origin such as Mexican American, Latin American, Puerto Rican or Cuban? *(Mark one answer.)*

<input type="checkbox"/> <sup>0</sup> No	<input type="checkbox"/> <sup>1</sup> Yes
--	---

208. What is your race? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	White
<input type="checkbox"/> <sup>2</sup>	Black or African American
<input type="checkbox"/> <sup>3</sup>	Asian
<input type="checkbox"/> <sup>4</sup>	Hawaiian or Pacific Islander
<input type="checkbox"/> <sup>5</sup>	American Indian, Native American, or Alaskan Native
<input type="checkbox"/> <sup>6</sup>	Other <i>(specify)</i> _____

209. What language would you say you speak most of the time? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	English
<input type="checkbox"/> <sup>2</sup>	Spanish
<input type="checkbox"/> <sup>3</sup>	Other <i>(Specify)</i> _____
<input type="checkbox"/> <sup>4</sup>	Don't know

210. What language do you mostly think in? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	English
<input type="checkbox"/> <sup>2</sup>	Spanish
<input type="checkbox"/> <sup>3</sup>	About the same in Spanish and English
<input type="checkbox"/> <sup>4</sup>	Mostly in another language
<input type="checkbox"/> <sup>5</sup>	About the same in English and another language
<input type="checkbox"/> <sup>6</sup>	Don't know

211. Of the following, how do you most identify yourself? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	American
<input type="checkbox"/> <sup>2</sup>	Anglo American
<input type="checkbox"/> <sup>3</sup>	Chicano
<input type="checkbox"/> <sup>4</sup>	Mexican
<input type="checkbox"/> <sup>5</sup>	Mexican American
<input type="checkbox"/> <sup>6</sup>	Spanish American
<input type="checkbox"/> <sup>7</sup>	Other <i>(Specify):</i> _____
<input type="checkbox"/> <sup>8</sup>	Don't know

212. Where were you born? *(Mark one answer.)*

<input type="checkbox"/> <sup>1</sup>	U. S.
<input type="checkbox"/> <sup>2</sup>	Mexico
<input type="checkbox"/> <sup>3</sup>	Other <i>(Please specify):</i> _____

We will need to contact you in the near future in case we have some questions about your survey or to invite you to contribute additional information.

213. Are you OK with giving us phone numbers where so can reach you?

NO       YES ↓

If yes, please provide your phone number and the best time to call.

1. HOME PHONE (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_
2. WORK PHONE (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ hours \_\_\_ to \_\_\_
3. CELL PHONE (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_
4. BEST 2 TIMES TO CALL: \_\_\_\_\_ and \_\_\_\_\_
5. Best number to call \_\_\_\_\_
6. *Address: Please print legibly:*
7. Street \_\_\_\_\_
8. PO Box \_\_\_\_\_
9. City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

THANK YOU FOR YOUR TIME TODAY!



SCHOOL OF PUBLIC HEALTH  
UNIVERSITY of WASHINGTON

## VITA

Stephanie Whisnant Cash was born in Virginia. In 2007, she graduated from Emory University in Atlanta, Georgia with a Bachelor of Arts in Psychology. In 2009, she earned her Master in Public Health from the Department of Epidemiology at the University of Washington in Seattle. Stephanie has diverse experience in public health and epidemiology, from developing a toolkit on integrated child health campaign implementation, to pandemic flu preparedness in Thailand, to academic research in obesity, physical activity, cancer prevention, and quality of life. She conducted her dissertation research at the University of Washington (Seattle, WA), the Fred Hutchinson Cancer Research Center (Seattle, WA), and the City of Hope Beckman Research Institute (Southern California). Stephanie earned her Doctor of Philosophy in Epidemiology from the University of Washington in 2012.