



The Women's Health Initiative Recruitment Methods and Results

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INTRODUCTION

One of the most challenging aspects of the Women's Health Initiative (WHI) was the recruitment of more than 161,000 women for this long-term prevention trial and observational study. The WHI had many enrollment goals that made recruitment efforts formidable (1). These included the recruitment of postmenopausal women, a group seldom targeted for clinical trials; enrolling minority groups in at least the same proportion as they existed in the general population; and enrolling women willing to participate in a long-term (8–12 year) study. The success of the WHI in meeting these goals can be attributed to several factors: the experience gained from prior studies, such as the National Cancer Institute (NCI)-sponsored Women's Health Trial (2), the subsequent Women's Health Trial Feasibility Study in Minority Populations (3), and the Postmenopausal Estrogen/Progestin Interventions Trial (4); detailed planning by the WHI investigators; the dedication of recruiters, staff, and investigators at the clinical centers; and, a social and political climate that enhanced women's interest in health research.

Prior to the WHI, few large-scale prevention or clinical trials focused on postmenopausal women. Indeed, until recently, relatively little emphasis was placed on the recruitment of women of any age into such studies (5). However, during the last decade, a number of forces have come together to change this situation. The stance that women

should be "protected" from biomedical research (6,7) has given way to the requirement that they be included so that more can be learned about their health care needs (8).

Likewise, there have been increased efforts to recruit members of racial/ethnic minorities into clinical and prevention trials. The barriers that have limited the participation of minorities in biomedical research have been reviewed in detail elsewhere (9–11). To ensure that the WHI findings would be as generalizable as possible to U.S. postmenopausal women, the study had to find ways to overcome these barriers and recruit a representative sample of minority women in this age group.

This article reviews the WHI study population and screening process, recruitment methods, and the results of the recruitment efforts. We describe the common and unique strategies developed by individual clinics to enroll women in their local communities and the national framework that supported these efforts. The implications of the success of these methods for future studies are also discussed.

STUDY POPULATION

Eligibility was defined generally for all WHI components with component-specific exclusion criteria. All women enrolled in the WHI were between 50 and 79 years old and were postmenopausal at the time of enrollment. Inclusion criteria were liberal in order to facilitate recruitment and enhance generalizability. In addition to age and menopausal status, eligibility criteria for the clinical trial (CT) and observational study (OS) included ability and willingness to provide written informed consent and an agreement to reside in the area for at least 3 years after enrollment.

A partial factorial design enhanced the efficiency of recruitment by allowing women to enroll in the postmenopausal therapy (PHT) component, the dietary modification (DM) component, or both. The observational study cohort was comprised primarily of women screened for the clinical trial who were found to be ineligible or unwilling to be randomized to either the PHT or DM component, but

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were still interested in participating in a long-term research study. Women enrolled in one of the clinical trial components were screened for eligibility and invited to join the calcium and vitamin D (CaD) component at their first or second annual clinic visits.

Table 1 presents the specific exclusion criteria for the three trial components and the OS. Eligibility was ascertained using a stepped approach. Most women were evaluated early in the process to minimize the screening effort and time spent by ineligible women and clinic staff. Clinical centers were allowed to organize and schedule the required data collection procedures to fit their own logistical constraints to improve efficiency. Thus, the order of data collection varied between clinics and the proportions excluded by each reason has limited interpretation.

CLINICAL CENTERS

Participants were recruited from areas surrounding forty clinical centers established primarily at major academic health centers in 24 states and the District of Columbia. (See, the appendix in Rossouw's article for a list of clinical center locations.) Recruitment areas included urban, suburban, and rural populations. The original plan anticipated 45 clinical centers, each of which was to enroll 1,267 trial participants and 2,222 OS participants (total clinical trial = 57,000; OS = 100,000). Only 40 clinical centers were ultimately funded, resulting in a need to enhance recruitment through some of these existing sites. This additional activity was supported contractually by giving centers the option to supplement their recruitment goals in increments of 25%. Sixteen clinical centers were formally approved for enhanced recruitment. Others participated informally with more modest increases in recruitment activities.

Though not a probability sample, enrollment of racial/ethnic minority groups proportionate to the total minority population of women between 50 and 79 years of age (18.2% according to the 1990 U.S. Census) was a high priority of the program. To achieve this representation of minorities, 10 (out of 40) clinical centers with expertise and access to specific minority groups (American Indian, Black, Asian American/Pacific Islander, Hispanic) were selected to serve as minority recruitment sites. These identified minority sites were expected to have a 60% minority enrollment, while other clinical centers were to enroll minorities in proportion to local demographics.

OVERVIEW OF THE RECRUITMENT AND SCREENING PROTOCOL

For most clinics, initial contact with potential participants was through a mass mailing of the recruitment brochure,

which provided basic information on the WHI and contained a postage-paid return postcard to indicate interest in study participation. Trained telephone interviewers conducted additional eligibility screening with age-eligible women who returned cards or called the clinical center. A total of three clinic visits were conducted to enroll women in the clinical trial and at least one visit to enroll in the OS. Prior to the first screening visit, interested women were sent materials that included a cover letter, directions to the clinic, a study logo bag for their current medications and dietary supplements, several self-administered questionnaires, and instructions to prepare for a fasting blood draw.

At the beginning of the first screening visit, each woman was given general information about the WHI components and viewed an introductory video providing an overview of the study. An informed consent form was signed to cover initial screening activities, including processing of questionnaire data, drawing blood, and obtaining medical records. Questionnaires were briefly reviewed (including dietary intake, behavioral measures, and medical, reproductive, and family histories) and brief physical examinations were conducted (anthropometric data). As the screening process continued, women received written materials and viewed videos about the components they were interested in joining and were asked to sign a consent form specific to each of these components. For those women progressing toward enrollment in the clinical trial, additional examinations and procedures were conducted as needed (including breast exams, food records for the DM, and a pelvic exam with endometrial aspiration and a placebo run-in for the PHT). At the final screening visit, eligible women were randomized by computer to intervention or control groups for each trial component they were joining.

Women could be found to be ineligible or unwilling for clinical trial enrollment at any point in the screening process. These women were offered the opportunity to participate in the OS and, if willing to join, completed OS enrollment activities at that time. In addition to those unable to join the clinical trial, several clinics recruited specifically for the OS toward the end of the recruitment period. Throughout the screening process, women had the opportunity to discuss the study and the specific components with clinic staff and to ask related questions. A more thorough description of the flow of screening activities used to recruit participants has been published (12).

RECRUITMENT METHODS

Local Clinical Center Activities

The responsibility for recruitment rested in the hands of the individual clinical centers. Each was given the latitude to

TABLE 1. WHI inclusion and exclusion criteria

Component	Inclusion criteria	Exclusion criteria
Clinical trial and observational study	50–79 years of age Postmenopausal If age ≥ 55 , no menstrual period for at least 6 months If age 50–54, no menstrual period for at least 12 months Ability and willingness to provide written informed consent (component specific) Intention to reside in area for at least 3 years	
Clinical trial and observational study		Competing risk: Any medical condition with predicted survival of < 3 y Adherence or retention reasons: Alcohol or drug dependency Mental illness, including severe depression Dementia Active participation in other randomized intervention trial
Clinical trial		Competing risk: Any invasive cancer in previous 10 y Breast cancer at any time Mammogram or CBE findings suspicious of breast cancer MI in previous 6 months Stroke or TIA in past 6 months Chronic hepatitis or severe cirrhosis Safety reasons: Severe hypertension (systolic BP > 200 mm Hg or diastolic BP > 105 mm Hg) Severely underweight (BMI < 18 kg/m ²) Hematocrit $< 32\%$ Platelets $< 75,000$ cells/ml Current use of oral daily corticosteroids Adherence or retention reasons: Unwilling to participate in baseline or follow-up examination components
Dietary modification (DM)		Adherence or retention reasons: Special dietary requirements incompatible with the intervention (e.g., celiac sprue) On a diabetic or low salt diet Gastrointestinal conditions contraindicating a high fiber diet Type 1 diabetes Colorectal cancer at any time Routinely eat ≥ 10 meals per week prepared out of the home Unable to keep a 4-day food record FFQ percent calories from fat $< 32\%$ FFQ energy intakes < 600 or > 5000 kcal Previous bilateral prophylactic mastectomy Safety reasons: Endometrial cancer at any time Endometrial hyperplasia Malignant melanoma at any time History of pulmonary embolism or deep vein thrombosis Previous osteoporosis-related fracture being treated with hormones History of bleeding disorder requiring transfusion History of hypertriglyceridemia Currently on anticoagulants Currently on tamoxifen Abnormalities in baseline pap smear, pelvic exam, or pelvic ultrasound Adherence or retention reasons: Severe menopausal symptoms that would make placebo treatment intolerable Inadequate adherence to placebo run-in Unable or unwilling to discontinue use of PHT or testosterone Refusal to have baseline endometrial aspiration
Postmenopausal hormone therapy (PHT)		Safety reasons: Endometrial cancer at any time Endometrial hyperplasia Malignant melanoma at any time History of pulmonary embolism or deep vein thrombosis Previous osteoporosis-related fracture being treated with hormones History of bleeding disorder requiring transfusion History of hypertriglyceridemia Currently on anticoagulants Currently on tamoxifen Abnormalities in baseline pap smear, pelvic exam, or pelvic ultrasound Adherence or retention reasons: Severe menopausal symptoms that would make placebo treatment intolerable Inadequate adherence to placebo run-in Unable or unwilling to discontinue use of PHT or testosterone Refusal to have baseline endometrial aspiration
Calcium and vitamin D (CaD)		Safety reasons: History of renal calculi or hypercalcemia Current use of oral corticosteroids or calcitriol Intention to continue taking ≥ 600 IUs of vitamin D per day

BMI, body mass index; BP, blood pressure; CBE, clinical breast exam; FFQ, food frequency questionnaire; PHT, postmenopausal hormone therapy; TIA, transient ischemic attack.

determine their own recruitment strategies, staffing patterns, clinic configuration, and visit flow. This level of flexibility was intended to allow each clinic to adapt the protocol to local strengths and constraints.

Staffing. Each center had a designated recruitment coordinator who served as the primary contact person within the study on recruitment-related issues. In most clinics, this person was responsible for local recruitment efforts, including mass mailings, community presentations, and media placement, but the training, scope, and level of responsibility varied between sites. At some centers, this person served as a supervisor to telephone interviewers, managing some aspects of data collection. Leadership of the recruitment team was clinic-dependent. At some sites, the principal investigator actively participated in all recruitment efforts. At others, the clinic manager provided oversight and direction, while the recruitment coordinator sometimes had overall decision-making authority.

Recruitment staff were trained to offer a friendly, caring, and nonjudgmental dialogue with potential participants. Designated minority recruitment centers made efforts to assure that the staff, especially those involved in recruitment, were configured to reflect the population of interest. For those centers recruiting heavily in Hispanic communities, access to bilingual recruitment staff was essential.

Local recruitment strategies. Most clinical centers in the WHI used multiple recruitment strategies, with mass mailings being the primary method of identifying interested potential participants for initial screening. The importance of multiple methods and the effectiveness of mass mailings have been documented in other studies that have recruited older adults to dietary and hormone therapy trials (13–16). Mass mailing represented the backbone of the WHI recruitment strategies because of its ability to reach the general population and its predictable load characteristics. Addresses for mass mailings were obtained from a variety of sources, including department of motor vehicle registration lists, voter's registration lists, driver's license lists, HMO enrollee lists, Health Care and Financing Administration (currently known as the Centers for Medicare and Medicaid Services) lists, and commercial mailing lists of age-eligible women. Many clinics also used enriched sources of potential participants, such as those participating in or found to be ineligible for previous clinical trials at their institutions. Most clinics (90%) used a professional mailing service to label, sort, and mail their brochures. Some used the brochure as a stand-alone mailer, while others added a cover letter, prescreening form, or interest survey.

Each clinic mailed an average of 1,000 to 5,000 brochures per month over a 3- to 5-year period, with some mailing up to 50,000 brochures in each of the final months. Individual clinics determined the frequency and quantity of mailings,

which varied from weekly to quarterly, to maintain a steady flow of screening visits. Response rates (i.e., the number of women making contact for initial screening) varied across clinics and sources of mailing lists from less than 2% to approximately 20% for initial mailings, with somewhat lower rates for repeat mailings. Most centers repeated mailings to the same area several times (2–7 mailings to the same population) over the period of recruitment.

Mailings were supplemented by the following public awareness and recruitment strategies:

- Community presentations
- Local newspaper articles
- Newspaper ads
- Public service announcements (television and radio)
- Name-a-friend programs, soliciting referrals from enrolled participants
- Incentives (small gifts)
- Health fairs
- National and local press releases
- Physician/health care provider referrals
- Brochure placement in community (e.g., pharmacies, supermarkets, beauty salons, churches)
- Alliance building (meeting with women's groups such as sororities)
- Establishing community advisory boards for recruitment, brainstorming, contacts
- Mailings to physicians to request referrals

The strategies employed varied from site to site. Some of the more unusual strategies included providing transportation to screening visits, enlisting the support of local celebrities, and flying an airplane pulling a WHI recruitment advertisement over a college football game. Not all strategies were equally effective, and no formal evaluations of these efforts were conducted on a study-wide basis. Nevertheless, anecdotal information may be illuminating. For example, most recruitment coordinators reported that asking physicians to make referrals yielded few or no referrals. However, many investigators believed that it was important to contact primary care physicians in the community to enlist their support of their patients' participation in the study. Most clinical centers felt it was important to increase the women's awareness of the study. They did this through the media (e.g., paid advertisements, public service announcements, feature stories, and interviews) and by speaking at local women's events. Women were not paid to participate in the study, but a few clinics provided small incentives (e.g., refrigerator magnet photo frames with the WHI logo) at enrollment and follow-up visits. Women who were enrolled were encouraged to "enroll a friend" to help spread the message in hard-to-reach populations.

Strategies used to recruit members of minority groups included presenting information at churches, social gatherings, and organizations frequented by members of these

groups, or meeting with tribal leaders to gain access to American Indian women. Emphasis was also placed on contacting organizations for seniors and placing ads and brochures in places most visible to the target age group. Accommodations were made to ensure that materials and visits were appropriate for the target populations, such as allowing extra time at screening visits, providing extra assistance for women with physical limitations, and using large-size print for all written materials. Many clinics created local advisory boards to generate support from the local community and provide a ready source of feedback for nationally and locally created recruitment materials.

The WHI did not mandate adherence to one recruitment technique, but rather allowed each clinic to determine the best ways to maximize results in their own communities with their own resources and ideas. Clinics also made independent decisions about clinic hours and locations. Some clinics were open on Saturdays, while others were open during at least one evening per week to accommodate women who worked during weekday hours.

Clinics made efforts to help women overcome obstacles to participation, including helping to create carpools and providing bus passes, providing child care for women with primary responsibility for grandchildren, and reimbursing women for all or part of their parking fees. To make participation easier for relatives, women living in the same household, or those living close to one another, clinical centers were allowed to randomize groups of two or more participants together to a study arm. This was to help overcome transportation difficulties and to make sure that women living in the same household were not randomized to different arms in the DM. Overall, 456 groups of two or more women were formed (the maximum number of women randomized together was four), resulting in a total of 941 DM participants selecting this option.

Clinics routinely called to remind participants of scheduled appointments, and follow-up calls were made if appointments were missed. Logs were maintained of all contacts and outcomes. Regular strategy meetings were held to review outcomes from previous activities and make adjustments or take new directions. Although much effort was placed on meeting recruitment goals, the long-term nature of the WHI and the expectation for active study participation made it very important to recruit women who would be likely to stay with the study through the end of the intervention and follow-up period. The ambitious recruitment goals and the need to enroll women without substantial barriers to long-term adherence created a natural tension within the clinics. This was addressed with varying levels of success across clinics, but was most effectively managed in clinics where there was active leadership in place from someone with broad responsibility for the success of the overall program.

Activities at the National Level

Numerous activities at the national level supported and monitored local clinic efforts and enhanced visibility and bonding study-wide. These efforts, provided by the National Institutes of Health (NIH), the Clinical Coordinating Center (CCC), the Clinical Facilitation Center (CFC, subcontractor to the CCC for many aspects of performance monitoring), and various study-wide committees, included centrally produced recruitment and screening materials, central training workshops and support for local recruitment staff, a national public awareness campaign, a toll-free recruitment telephone line, and input from advisory groups with expertise in select areas.

Central development of materials. Recruitment materials were developed and produced centrally for study-wide use at the local level. These materials included a recruitment brochure with a postage-paid postcard customized for each clinic; a consent video providing an overview of study requirements shown at initial screening visits; a recruitment video featuring interviews with study participants; screening, eligibility, and consent forms; and recruitment posters, flyers, and postcards. All study-wide recruitment materials included the WHI logo (a stylized depiction of the profiles of three women's faces and the study title), the study colors (dark blue and bright purple), the toll-free telephone number, and the catch phrase ("Be part of the answer") to enhance visibility and identification of the study. Most of the printed materials could be customized and supplemented with local information.

Spanish versions of all recruitment materials, including the videos and study logo, were available. Women of various ethnic backgrounds were included in videos, posters, and brochures. Special materials were developed to address specific study needs as they arose. For example, when recruitment goals for the younger age groups and the DM trial were met, special recruitment materials were developed specifically for the PHT and CaD trials targeting women over age 65. These included component-specific brochures and a letter from the director of the NIH.

Central training and support of local staff. Standard screening, consent, and eligibility procedures were developed at the national level and used across all clinics. Study-wide workshops were held annually for lead clinic recruitment staff during the recruitment period. These sessions provided the staff with an opportunity to share recruitment procedures and strategies and ensure that eligibility and screening procedures were consistent across clinics.

A full-time clinic recruitment staff liaison at the CCC provided general support for clinic recruitment activities by preparing recruitment progress reports, distributing materials and media placement information, assisting with obtaining mailing lists from the Health Care and Financing

Administration, and serving as a daily resource. Clinics had access to study-wide networking and support via monthly regional and national conference calls with recruitment staff from other clinics and the CCC recruitment liaison. The purpose of these calls was to disseminate information, share successful recruitment strategies, review recruitment progress reports, and provide moral support and encouragement. The WHI wide-area network provided a forum for ongoing e-mail communication and the dissemination of recruitment tips, strategies, and study updates in the form of a biweekly recruitment staff newsletter.

National public awareness campaign. During the second year of recruitment, a national public relations firm (Porter-Novelli) was enlisted to enhance study visibility and aid with national media placement and materials development. Over the course of 3 years, the firm developed English and Spanish print, radio, and television public service announcements (PSAs); distributed PSAs to national media outlets, resulting in placements in several widely circulated national magazines; assisted in the development of recruitment brochures, posters, and “invite a friend” postcards; produced consent and recruitment videos; distributed press kits and instructions to clinics for local media placement; and enlisted well-known celebrities (e.g., Angela Lansbury, Geraldine Ferraro) to serve as spokespersons and appear in recruitment materials. They also conducted focus groups and surveys of older women, incorporating these findings into materials and strategies. Altruism and the genuine desire to help other women seemed to be a theme that women identified with, since they understood that while study participation might not benefit them directly, the results would be helpful to future generations. This need to help other women and develop answers to women’s health questions was reinforced in recruitment materials. The catch phrase “Be part of the answer” emphasized the idea that participants would be an important part of a group of women working together to find the answers to health questions facing all women.

Recruitment telephone line. A national toll-free telephone recruitment line (1-800-54-WOMEN) was established and maintained throughout the recruitment period. Women calling the number were automatically linked to the clinic nearest them. The CCC support person maintained the telephone line by collecting area code routing information from clinics. Women living outside of clinical center catchment areas were routed to the CCC and received a letter thanking them for their interest and a brochure listing the clinics and their locations.

Advisory groups. Early in the recruitment period, several committees comprised of WHI Investigators and staff members with specific expertise in areas such as special populations, clinic operations, and recruitment were formed. These committees were charged with identifying potential

national recruitment efforts, reviewing all strategies and study materials, providing input on local recruitment strategies, managing the related clinical and operational aspects of recruitment, and providing recommendations toward increasing minority enrollment, including issues of cultural sensitivity.

Recruitment Monitoring

Recruitment progress was monitored centrally and locally throughout the recruitment period. To monitor overall recruitment progress and individual clinic performance, the CCC generated and distributed monthly reports depicting the expected and actual cumulative enrollment by study component in a graphical format (Figure 1). The CCC also provided graphical reports showing enrollment by age, and by uterus status (for PHT trial), as well as detailed tabular data of monthly and cumulative enrollment by age and race/ethnicity for each of the study components, for each clinic, and for all clinics combined. These reports identified recruitment deficits as they arose, so that special efforts could be made to achieve goals for all components, age, and racial/ethnic groups.

A Performance Monitoring Committee (PMC), consisting of representatives from the CCC, the CFC, the NIH, and the clinical centers, monitored recruitment progress throughout the enrollment period. The PMC reviewed each clinic several times per year to assess the clinic’s progress in reaching their overall goals, as well as those for the age categories, study components, and minority groups.

Clinical centers that did not meet their goal after a reasonable interval were provided with varying levels of guidance and intervention to assist the center in achieving goals. A recruitment spreadsheet and associated catch-up plan was developed and provided to each clinic. This tool allowed them to estimate the level of mailings required to achieve their goals based on the clinic-specific recruitment record to date and other local level parameters such as stage-specific yields. For centers experiencing continuing difficulties in meeting recruitment goals, the PMC conducted conference calls and, in some cases, team visits to assess the local efforts and provide guidance. These were followed up with written reports that included specific action plans. A consistent theme in these interactions was the need to establish a mass-mailing program with adequate tracking to estimate yields, and to feed this information back into the mailing program.

Recruitment Data Collection

Most clinics used a tracking system to calculate the yields from their mailings and other recruitment efforts, but the types of system and information tracked varied widely across sites. No study-wide system was implemented because of

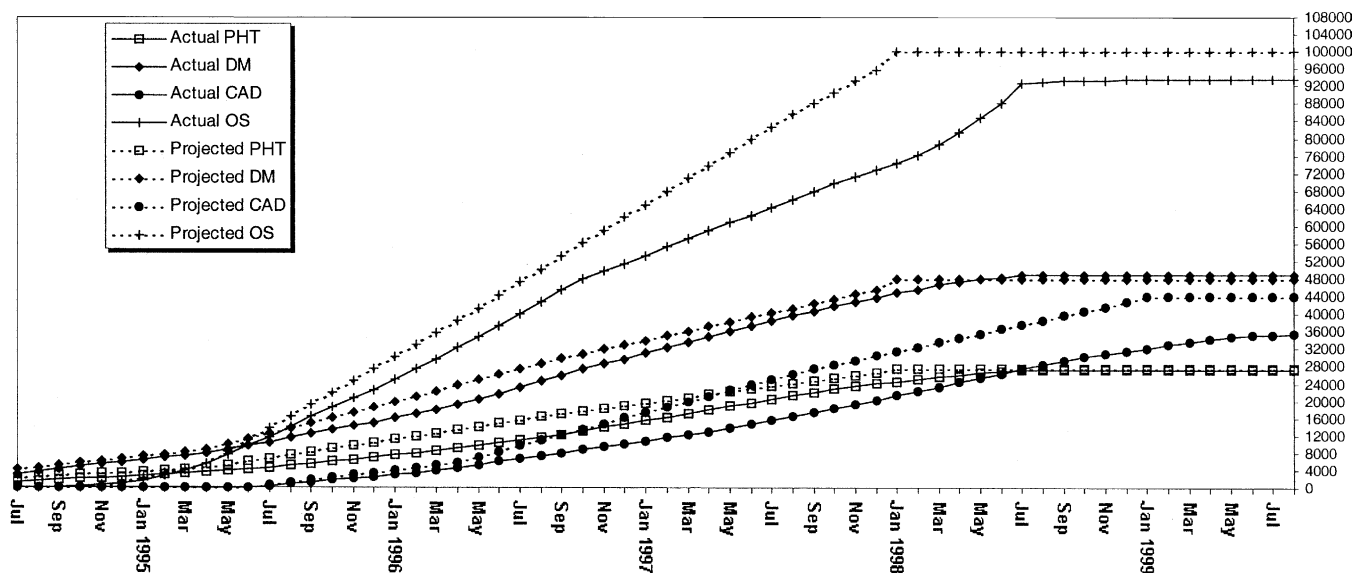


FIGURE 1. Projected and actual recruitment into WHI.

the clinic interests in maintaining as much local flexibility as possible. Therefore, total mailing numbers and response rates from mailings are not available across clinics. In addition, because each site could organize the screening process around their own strengths and constraints, the interpretation of step-by-step yields is not meaningful across sites. However, estimates of the yields from initial mailings and screening visits could be made for each center individually, based on their own mailing and enrollment numbers during the early months of recruitment. Using this information, clinics projected the number of mailings and screening visits needed per month to meet their specific goals by the end of

the recruitment period. Based on overall estimates provided by clinics, approximately 3.2% of the recruitment mailings resulted in a contact with a potential participant to conduct initial screening activities.

In the context of initial screening, either by telephone or a self-administered questionnaire, potential participants were asked how they heard about the study and asked to select from one of the following: mailed letter/brochure, TV, radio, newspaper/magazine, meeting, friend/relative, other. These data were collected for all women screened, but clinics were not required to enter information for women who were determined to be clearly ineligible. Therefore, the total

TABLE 2. Study component recruitment by age and ethnicity

	Completed screening form (N = 373,092)	Randomized to clinical trial (N = 68,133)	Percentage of screened	Enrolled in observational study (N = 93,676)	Percentage of screened
Age at screening					
<50	961				
50-54	52,539	9,190	17.5	12,386	23.6
55-59	71,347	14,663	20.6	17,319	24.3
60-69	159,321	31,390	19.7	41,197	25.9
70-79	88,280	12,890	14.6	22,774	25.8
>79	100				
Missing	544				
Race/ethnicity					
American Indian	1,909	293	15.4	422	22.1
Asian	8,954	1,521	17.0	2,671	29.8
Black	34,578	6,988	20.2	7,639	22.1
Hispanic	15,116	2,889	19.1	3,623	24.0
White	300,445	55,521	18.5	78,013	26.0
Unknown	12,090	921	7.6	1,308	10.8

number of women screened for the WHI is not known, and total yields of each method based on the number screened are overestimated; however, because most women aged 50 to 79 were eligible for the OS, most clinics routinely entered these data.

RESULTS

The number of women with WHI screening data and the proportion of those randomized or enrolled in the clinical trial and OS by age and ethnic group are provided in Table 2. A total of 373,092 women completed the initial screening form. Of those, 68,133 (18%) went through the subsequent screening visits to be randomized into the clinical trial, and 93,676 (25%) were enrolled in the OS. Women in the oldest age group (70–79 years of age) had the lowest proportion of women randomized to the clinical trial after completing initial screening. There was little variability across age groups in the proportion of those screened that enrolled in OS. There was little racial variability in the proportion of women who were randomized to the clinical trial after completing an initial screening form, with 20% of Black, 19% of Hispanic, and 18% of Caucasian women completing the randomization process. Asian women (30%) were the most likely to be enrolled in the OS after entering the screening process.

Source of Information about WHI

Table 3 shows the reasons for initial contact with the WHI by enrollment status, and the age, race, and regional breakdowns for women who were enrolled or randomized in one of the study components. The majority of women (66.7% overall) indicated that they heard about the WHI through a mailed letter or brochure. Reading about the WHI in a paper or magazine was the next most common source of information about WHI (14.0% overall), followed by hearing about the study from a friend or relative (8.3%). There were no major differences between women who enrolled in the clinical trial versus the OS versus those who were not enrolled in either component.

There were several variations in sources of information about WHI by age group, race, and region. While a mailed letter or brochure was the most frequent response for all age groups, a higher percentage of women in the 70–79 age category (70.3%) selected this source of information compared with women in the younger age groups (65.3% for those 60–69 and 55.1% for those 50–59). Women in the youngest age group were more likely to mention a TV or radio advertisement than were women in the two older age groups.

The media selected most often by women of all racial backgrounds was a mailed letter/brochure, while the second

TABLE 3. Type of initial contact with WHI by enrollment status, age, race, and region among enrolled/randomized respondents

	Mailed letter/brochure		TV		Radio		Newspaper or magazine		Meeting		Friend/relative		Other	
	Row %	Column %	Row %	Column %	Row %	Column %	Row %	Column %	Row %	Column %	Row %	Column %	Row %	Column %
All	66.7	—	3.3	—	1.1	—	14.0	—	0.9	—	8.3	—	5.7	—
All Responders (N = 364,720) ^a	69.5	58.6	3.3	56.1	1.1	55.1	12.8	51.5	0.7	43.7	7.2	49.1	5.3	51.9
Not enrolled (56.6%)	62.1	23.6	3.0	22.9	1.1	24.2	15.8	28.7	1.3	35.3	10.2	31.1	6.6	29.0
OS enrolled (25.1%)	64.2	17.8	3.7	21.0	1.3	20.6	15.0	19.8	1.0	21.0	8.9	19.8	5.9	19.1
CT randomized (18.3%)	55.1	28.9	4.6	46.2	1.7	49.1	18.6	39.8	1.2	33.6	11.0	37.9	7.8	40.9
Age	65.3	46.5	2.9	39.6	1.0	38.5	14.4	41.9	1.1	43.2	9.5	44.2	5.8	41.5
60–69 (42.8%)	70.3	24.6	2.1	14.2	0.7	12.4	12.8	18.3	1.2	23.2	7.8	17.9	5.0	17.6
70–79 (23.6%)	56.1	0.4	4.2	0.6	1.3	0.5	13.8	0.4	4.7	1.8	10.5	0.5	9.5	0.7
Race	74.7	3.1	1.2	1.0	0.3	0.6	10.7	1.8	0.9	2.0	6.8	1.8	5.5	2.3
American Indian (0.5%)	60.4	8.6	3.9	10.6	0.8	6.4	8.1	4.7	1.6	12.8	10.6	9.9	14.5	20.6
Asian/Pacific Islander (2.5%)	52.9	3.4	7.1	8.8	3.3	11.3	12.6	3.3	1.3	4.7	17.2	7.2	5.6	3.6
Black (9.3%)	63.4	83.4	3.1	78.0	1.1	80.2	16.6	88.9	1.1	77.8	9.3	79.8	5.4	71.1
Hispanic (4.1%)	65.2	1.2	3.2	1.1	1.1	1.0	13.0	0.9	1.1	1.0	7.2	0.8	9.3	1.7
White (82.2%)	68.7	25.0	1.5	10.5	1.2	24.2	16.2	24.1	1.3	25.4	7.2	17.1	3.9	14.2
Unknown (1.3%)	51.3	20.9	5.7	44.4	1.2	27.1	14.8	26.2	1.4	31.2	12.6	33.5	12.0	49.1
Region in U.S.	65.4	23.0	3.5	23.4	1.6	30.4	15.4	22.0	0.9	17.5	8.9	20.5	4.3	15.2
Northeast (21.1%)	67.0	31.1	2.4	21.7	0.7	18.3	14.6	27.7	1.0	25.8	9.5	29.0	4.6	21.5
South (23.5%)														
Midwest (21.8%)														
West (33.7%)														

CT, clinical trial; OS, observational study.
^aOverall, initial screening information was data entered for 373,092 women. Of those, 364,720 (97.8%) answered a question asking what prompted them to contact WHI.
^bPercent of all who had responded to the question.

TABLE 4. Reasons for exclusion from WHI study components^a

Component	Criterion for exclusion	Percentage of total ineligible ^b
PHT	No consent/not interested in PHT	81.2
	Clinic impression of ineligibility	4.8
	Stratum full or closed	4.6
	History of breast cancer	4.5
DM	No consent/not interested in DM	50.3
	FFQ percent calories from fat/energy intakes	41.9
	Stratum full or closed	11.0
	10+ meals away from home per week	5.3
CaD	History of breast cancer	4.8
	Not willing to limit use of vitamin D	73.0
	No consent/not interested in CaD	44.3
	History of kidney stones	13.1
OS	Clinic impression of ineligibility	5.8
	No consent/not interested in OS	76.6
	Stratum full or closed	9.9

CaD, calcium and vitamin D; DM, dietary modification; FFQ, food frequency questionnaire; OS, observational study; PHT, postmenopausal hormone therapy.

^aOnly includes reasons with >4% of total ineligible.

^bA participant may be ineligible for more than one reason.

most frequent category varied. There were also slight regional variations in the source of information cited. Because each site determined their own mix of recruitment efforts based on their judgment of the potential effectiveness of the methods in the local population, this variation is a function of both the choice of approaches used in these populations as well as their effectiveness.

The age, race, and regional variations in reasons for contacting the WHI for the sample of women who ultimately enrolled in the clinical trial or OS were similar to women who were screened for, but did not join, the WHI (data not shown).

Reasons for Exclusion from Study Components

Table 4 presents the most common reasons for exclusion from each of the study components for women with screening data. For all components, lack of interest and/or signed consent was the primary reason women did not join that particular part of the study (50.3% for DM, 81.2% for PHT, and 76.6% for OS). For DM, almost 42% were ineligible based on initial dietary assessment; about 10% of women screened were ineligible for DM due to competing risk and fewer than 3% were ineligible for safety reasons. For PHT, ineligibility due to competing risk factors overall was around 10%; exclusion for safety reasons overall was also about 10%.

There are limitations to these data, including the fact that screening data were not entered for all women determined to be ineligible during initial screening. For those

that were entered, further eligibility data were not collected once a woman was determined to be ineligible for a particular component; criteria screened late in the process are therefore lower than they might have been had they been screened at an earlier stage. Because there were variations across clinics in the timing of screening activities, these rates are an approximation.

Characteristics of the Recruited Population

Table 5 presents the demographic and personal characteristics of women who enrolled in each component of the WHI. The final clinical trial enrollment was 27,347 for PHT (99% of the goal), 48,836 for DM (102% of the goal), and 36,282 for CaD (81% of the goal); final enrollment in the OS was 93,676 (94% of the goal). Randomization goals were met or exceeded for each of the age categories in both the PHT and DM arms of the clinical trial with the exception of the 70–79 age group, which proved to be the most challenging recruitment task.

Minority women were recruited into the clinical trial in the same proportion (18.5%) as is found in the U.S. population (18.2%) for a total of 12,612 minority women. The OS fell short of the 18.2% goal by less than two percentage points (16.7%, n = 15,663). Except for Hispanics, proportional representation of minority groups (Black, American Indian, Asian/Pacific Islander) was close to the national distribution. On average, designated minority clinics enrolled 40% minorities, while nonminority clinics enrolled an average of 10%. Extensive descriptions of all CT and OS cohorts by race/ethnicity are provided in the appendix at the end of this article.

Approximately one third of women in the WHI have at least a college degree, with an additional 36–40% having some education after high school. Minority women were least likely to hold a college degree and most likely to have attended only 0–8 years of school (data shown in appendix at the end of this article). Income was lowest for the PHT sample and highest for women in the OS. A majority of women in all components were married or living as married at the time of enrollment, while nearly one third were divorced/separated or widowed.

Women in the WHI were more likely to be overweight or obese than normal or underweight at the time of enrollment. Based on a body mass index of 25 or greater, three quarters of the women in the clinical trial were overweight or obese, as were nearly 60% of women in the OS. More than 90% of women in each component, however, rated their current health as good or better.

Recruitment efforts were enhanced through the use of a partial factorial design allowing women to enroll in more than one of the clinical trial components. Overall, 53.3% of women in the clinical trial were enrolled in CaD,

TABLE 5. Baseline characteristics of WHI final enrollment participants

	PHT N = 27,347		DM N = 48,836		CaD N = 36,282		OS N = 93,676	
	N	%	N	%	N	%	N	%
Age at screening (y)								
50–54	3425	12.5	6958	14.2	5157	14.2	12,386	13.2
55–59	5402	19.8	11,041	22.6	8264	22.8	17,319	18.5
60–69	12,364	45.2	22,714	46.5	16,521	45.5	41,197	44.0
70–79	6156	22.5	8123	16.6	6340	17.5	22,774	24.3
Race/ethnicity								
American Indian	131	0.5	203	0.4	149	0.4	422	0.5
Asian/Pacific Islander	527	1.9	1107	2.3	722	2.0	2671	2.9
Black	2741	10.0	5266	10.8	3317	9.1	7639	8.2
Hispanic	1543	5.6	1854	3.8	1507	4.2	3623	3.9
White	22,027	80.5	39,760	81.4	30,153	83.1	78,013	83.3
Unknown	378	1.4	646	1.3	434	1.2	1308	1.4
Education								
0–8 years	708	2.6	576	1.2	527	1.5	1560	1.7
Some high school	1459	5.4	1639	3.4	1375	3.8	3288	3.5
High school diploma/GED	5643	20.8	8518	17.6	6673	18.5	15,121	16.3
School after high school	11,036	40.7	19,308	39.8	14,372	39.9	33,933	36.5
College degree or higher	8296	30.6	18,488	38.1	13,098	36.3	39,002	42.0
Family income								
<\$10,000	1721	6.7	1783	3.9	1465	4.3	3916	4.5
\$10,000–\$19,999	4337	16.8	5294	11.5	4353	12.6	10,100	11.7
\$20,000–\$34,999	7315	28.3	11,315	24.6	8911	25.9	20,226	23.3
\$35,000–\$49,999	5276	20.4	9822	21.3	7302	21.2	17,429	20.1
\$50,000–\$74,999	4220	16.3	9549	20.8	6849	19.9	17,486	20.2
\$75,000+	2941	11.4	8242	17.9	5546	16.1	17,608	20.3
Marital status								
Never married	1023	3.8	1970	4.1	1437	4.0	4390	4.7
Divorced/Separated	4812	17.7	7704	15.8	5724	15.8	14,727	15.8
Widowed	5453	20.0	7646	15.7	6012	16.6	16,290	17.5
Presently married/Living as married	15,929	58.5	31,293	64.4	22,962	63.5	57,805	62.0
Body mass index (BMI), kg/m ²								
Underweight (<18.5)	157	0.6	154	0.3	148	0.4	1107	1.2
Normal (18.5–24.9)	7107	26.1	12,503	25.7	9430	26.1	36,687	39.6
Overweight (25.0–29.9)	9533	35.1	17,387	35.8	12,955	35.9	31,463	34.0
Obesity I (30.0–34.9)	6183	22.7	11,198	23.0	8203	22.7	14,578	15.8
Obesity II (35.0–39.9)	2807	10.3	5048	10.4	3644	10.1	5451	5.9
Obesity III (≥40)	1405	5.2	2322	4.8	1715	4.8	3282	3.6
Perceived health status								
Excellent	4314	15.9	7616	15.7	6274	17.4	16,577	17.8
Very good	11,197	41.2	19,968	41.1	15,482	42.9	37,686	40.5
Good	9234	34.0	17,081	35.2	11,942	33.1	29,670	31.9
Fair	2259	8.3	3675	7.6	2271	63.3	8210	8.8
Poor	155	0.6	240	0.5	125	0.3	882	1.0

CaD, calcium and vitamin D; DM, dietary modification; OS, observational study; PHT, postmenopausal hormone therapy.

11.8% were enrolled in both DM and PHT, and 7.4% of clinical trial participants were enrolled in all three trials (data not shown). Table 6 displays the percent overlap across the three clinical trials. Nearly 30% of PHT participants were also in the DM and close to 59% were in CaD. In the DM trial, 16.5% were also in PHT and just over 50% were in CaD.

DISCUSSION

The WHI met recruitment goals, including reaching a diverse population of postmenopausal women. The recruitment experience of the WHI may provide several useful lessons for investigators undertaking randomized clinical trials with older women.

At the clinic level, several factors may have contributed to successful recruitment. First, making the clinic as accessible as possible to older women was crucial. For many clinics, this involved staffing a satellite clinic part- or full-time and providing parking and/or reimbursement for transportation costs. Having convenient clinic hours was also perceived to be important, as was making sure that the clinic was well-managed and staffed by competent and friendly staff members. Second, weekly monitoring of clinic recruitment goals was necessary, including close review of reports distributed from the CCC and yields from mailings and other recruitment activities. Third, while multiple recruitment methods were employed, the use of mass mailings was critical to reach the large numbers of women needed for WHI. Although most clinics tried other strategies, in the long run, all clinics relied on mass mailings as their primary recruitment method.

In addition to frequent internal and external monitoring, sharing recruitment strategies among and between clinics was also helpful. Although clinics often differed in the characteristics and responses of potential participants in their areas, many strategies were useful across regions and clinics. A recruitment brochure that targeted the PHT arm of the trial, for example, proved to elicit a good response rate in one clinic, and was shared on the monthly calls and frequent e-mails between recruitment coordinators in the local clinics and with liaison staff at the CCC. In addition, the second group of clinical centers was able to learn from the experience of the vanguard group, which had started recruiting 18 months earlier. When the second round of clinical centers was funded, they were assigned a vanguard center to provide advice and assistance to help them “ramp up” quickly to the recruitment task.

One of the potentially overlooked reasons for the WHI’s successful recruitment was the women’s awareness of the need for this research and their eagerness to participate. Participants repeatedly mentioned that they did not feel enough was known about women’s health. Many of them experienced a need for answers to their own health questions (e.g., whether or not to take hormones), and they wanted their daughters and granddaughters to be better informed in the future.

All WHI materials were printed with the WHI logo using the WHI colors. Marketing experts commonly refer to this as *branding*, the development of an easily identifiable image associated with a product or service. The consistent use of visual images and verbal messages helped to create a WHI brand that was easily recognizable. The use of multiple and varied channels to communicate the WHI recruitment message helped participants identify with the idea that they were “part of the answer” to questions about women’s health.

TABLE 6. WHI clinical trials: percent overlap between components

Component	N	PHT	DM	CaD	In all three components
PHT	27,347	100%	29.4%	58.8%	18.4%
DM	48,836	16.5%	100%	51.6%	10.3%
CaD	36,282	44.3%	69.5%	100%	13.8%
Total CT	68,133				

The partial factorial design allowed a large cost saving since there was overlap in many of the study procedures for the three trials. Women who were unwilling or ineligible for the clinical trial were invited to participate in the OS, which allowed this additional resource to be developed at very modest additional cost. In addition, the packaging of these components into one large program brought attention to the effort.

Not all efforts and clinics achieved equal success. Because the focus of study was not on the comparison of various recruitment strategies, it is not known whether the differences in recruitment success among the 40 clinics is due to clinic characteristics, their various recruitment strategies, or the unique characteristics of the clinic’s community and region. Clinics varied on a multitude of categories, including sociodemographic characteristics of participants; urban, rural, or suburban settings; ethnic and minority makeup of participants; and the experience of the clinic in conducting large trials. Women differed by clinic and region on rates of exclusion. For example, women were more likely to already be on hormones in some regions, making them less likely to be interested in that arm of the study (which involved a 3-month wash-out, with only a 50% chance of being put on active hormones again). Women of some ethnic groups were less likely to be interested in the DM because of their own cultural dietary practices, while others were already following low-fat diets and were therefore ineligible.

The WHI encountered several challenges during the recruitment process, many of which were addressed on both the study-wide and local level. Early on, it became apparent that OS enrollment was exceeding that for the clinical trial, prompting a temporary hold on OS enrollment. Projections of end numbers for each trial component by age stratum necessitated early closure of younger age cells that were likely to become overrepresented and focused clinic efforts on the older age groups and the PHT trial component. For example, toward the end of recruitment, clinics used enriched mailing lists (such as Medicare lists) and placed stories in magazines with an older audience to target older women. To help compensate for lower accrual rates in the PHT trials, PHT-only mailings were used, especially

in areas with low current hormone use, and clinic staff members were encouraged to spend more time briefing potential PHT participants before asking them to make a decision.

Minority recruitment was somewhat more difficult and costly than anticipated for several reasons. Because minority women often have lower income levels, they may face more obstacles to participation than middle-class majority women. For example, minority women may have transportation difficulties, be caregivers for grandchildren or other family members, move more frequently, or have interrupted telephone service. If they are living at or below the poverty level, they may experience additional stresses and be less inclined to give their time and efforts for research purposes. Minority women may be less familiar with the medical establishment and the idea of research volunteerism, or they may be suspicious of the research process.

To meet the special challenges in recruiting women from minority populations, designated minority clinics were selected in geographic areas with large minority populations. Clinics that enrolled large proportions of minority participants required an average of 2.5 more staff members than the remaining clinics. The average staffing level across the study was approximately 15 full-time equivalents for a clinic enrolling 1,700 clinical trial participants and 2,200 OS participants. Overall, WHI clinics used about 0.5 additional staff/100 participants for every 10% minority participants enrolled. In addition, mailing volumes and costs were higher in minority clinics. Incentives were offered to clinics to compensate for additional effort needed to succeed in minority enrollment, and enrollment of minorities was extended by 6 months for the OS.

All clinics found it to be more difficult to recruit women in the 70–79 year age group than those in the younger age groups. Many of the issues facing minority participants also affected women in the older age groups because women tend to have less income and more obstacles to participating in research studies as they age. Women in the oldest age category were more likely to have health problems that limited either their eligibility or their ability to participate, to have transportation or other mobility problems, or to feel that they were too old to be of value to the study. Successful efforts to recruit older women included obtaining mailing lists of older women, contacting retirement and other groups with a high proportion of older members, and asking older women to recommend a friend. In addition, a campaign specifically targeting older women, including a special invitational letter to join the WHI from the director of the NIH, was conducted toward the latter part of the recruitment period.

Finally, recruitment for the CaD trial, into which participants were enrolled at their 1- or 2-year annual visit, proved more difficult than originally envisioned. Reasons for this included a feeling they were doing enough for WHI already; a reluctance to take an additional pill (for those in the PHT); an unwillingness to take pills (mostly DM participants) and/or reluctance to taking additional supplements (for those already taking supplements); and the perception that the CaD trial was not as exciting as the other two trials. To address these difficulties, additional emphasis was made to clinic staff regarding the importance of this component, a special CaD recruitment brochure was developed, and participants were given a second opportunity to join at the second annual clinic visit, resulting in an improvement in recruitment rates.

SUMMARY

The recruitment of women into the WHI stands as an important accomplishment in clinical research history. This study demonstrated that postmenopausal women of varied ethnic groups could be recruited in large numbers across the U.S. More than 161,000 enrolled in one or more components of the study. The complex study design included three nested clinical trials and an observational study, and allowed each woman to choose how she participated, from taking study pills to enrolling in a dietary modification program to participating at an observational level only. Study participation required at least a 3-year commitment of all participants, and participants are urged to stay with the study for the full follow-up period of 8–10 years. Multiple, intense, and overlapping recruitment strategies at the national and local levels were essential for achieving the recruitment goals of the study. Recruitment also required significant commitments of financial and personnel resources. Several strategies proved indispensable, especially mass and repeated mailings to potential participants. Other strategies were used to recruit older women and women from a variety of racial and ethnic groups. Many of the strategies developed and used in this study are applicable for future prevention trials.

APPENDIX: COMPREHENSIVE DISPLAY OF INFORMATION BY RACE AND ETHNICITY FOR THE CLINICAL TRIAL AND OBSERVATIONAL STUDY

Tables 1–20

APPENDIX TABLE 1. Baseline demographic and general health characteristics of WHI Estrogen + Progestin participants by race/ethnicity

Characteristic	Race/Ethnicity												Total ^a (N = 16,608)					
	American Indian (N = 56)			Asian/Pacific Islander (N = 363)			Black (N = 1124)			Hispanic (N = 888)					White (N = 13,945)			
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD
Age at screening (y)	56		60.5 ± 6.8	363		63.2 ± 7.4	1124		60.9 ± 6.9	888		59.6 ± 6.4	13,945		63.7 ± 7.1	16,608		63.3 ± 7.1
50-59	27	48.2		132	36.4		535	47.6		491	55.3		4254	30.5		5522	33.2	
60-69	21	37.5		153	42.1		445	39.6		320	36.0		6471	46.4		7510	45.2	
70-79	8	14.3		78	21.5		144	12.8		77	8.7		3220	23.1		3576	21.5	
Education																		
0-8 years	*	*	*	*	*		33	3.0		218	25.2		107	0.8		379	2.3	
Some high school	*	*	*	14	3.9		119	10.7		101	11.7		482	3.5		735	4.5	
High school diploma/GED	*	*	*	63	17.4		176	15.8		148	17.1		2778	20.0		3222	19.5	
School after high school	26	46.4		155	42.8		446	40.0		270	31.2		5434	39.2		6415	38.9	
College degree or higher	16	28.6		123	34.0		342	30.6		129	14.9		5073	36.6		5753	34.9	
Family income																		
<\$10,000	*	*	*	14	4.1		131	12.4		219	28.2		470	3.5		857	5.5	
\$10,000-\$19,999	13	24.1		47	13.6		205	19.4		191	24.6		1851	14.0		2348	15.0	
\$20,000-\$34,999	16	29.6		67	19.4		265	25.0		171	22.0		3735	28.2		4316	27.5	
\$35,000-\$49,999	10	18.5		74	21.4		197	18.6		88	11.3		2924	22.1		3329	21.2	
\$50,000-\$74,999	*	*	*	81	23.5		163	15.4		68	8.8		2421	18.3		2773	17.7	
\$75,000+	*	*	*	62	18.0		97	9.2		40	5.1		1848	13.9		2075	13.2	
Occupation																		
Managerial/Professional	17	32.7		115	33.8		385	39.6		154	20.3		4790	38.8		5524	37.6	
Technical/Sales/Administrative	13	25.0		130	38.2		221	22.7		153	20.2		3871	31.3		4454	30.3	
Service/Labor	16	30.8		70	20.6		285	29.3		271	35.8		2413	19.5		3108	21.2	
Homemaker only	6	11.5		25	7.4		81	8.3		179	23.6		1279	10.4		1600	10.9	
Body mass index (BMI), kg/m ²	56		29.8 ± 6.3	363		25.2 ± 4.5	1118		31.0 ± 6.7	882		29.5 ± 5.7	13,870		28.3 ± 5.8	16,520		28.5 ± 5.9
Underweight (<18.5)	0	0.0		7	1.9		*	*		5	0.6		102	0.7		118	0.7	
Normal (18.5-24.9)	12	21.4		198	54.5		191	17.1		178	20.2		4295	31.0		4940	29.9	
Overweight (25.0-29.9)	22	39.3		111	30.6		349	31.2		338	38.3		4925	35.5		5826	35.3	
Obesity I (30.0-34.9)	12	21.4		35	9.6		305	27.3		229	26.0		2825	20.4		3467	21.0	
Obesity II (35.0-39.9)	7	12.5		10	2.8		164	14.7		89	10.1		1190	8.6		1475	8.9	
Obesity III (≥40)	*	*	*	*	*		105	9.4		43	4.9		533	3.8		694	4.2	
Marital status																		
Never married	*	*	*	17	4.7		66	5.9		40	4.6		552	4.0		686	4.1	
Divorced/Separated	23	41.1		47	13.0		366	32.9		223	25.7		2077	14.9		2774	16.8	
Widowed	6	10.7		53	14.7		237	21.3		136	15.7		2656	19.1		3137	19.0	
Presently married/ Living as married	26	46.4		244	67.6		445	39.9		470	54.1		8625	62.0		9945	60.1	
Height (cm)	56		160.6 ± 6.2	363		154.7 ± 6.6	1120		162.5 ± 6.7	886		156.8 ± 6.5	13,902		162.1 ± 6.3	16,558		161.6 ± 6.6
Weight (kg)	56		76.7 ± 15.9	363		60.4 ± 12.2	1124		82.3 ± 18.9	886		72.7 ± 15.2	13,924		74.5 ± 16.3	16,585		74.7 ± 16.6
Waist/hip ratio (WHR)	55		0.84 ± 0.1	360		0.82 ± 0.1	1120		0.83 ± 0.1	884		0.82 ± 0.1	13,881		0.82 ± 0.1	16,532		0.82 ± 0.1
Waist (cm)	55		90.3 ± 14.9	361		79.5 ± 10.8	1121		92.1 ± 13.7	885		88.1 ± 12.6	13,903		87.8 ± 13.7	16,557		88.0 ± 13.8
Living alone																		
No	45	81.8		306	84.8		802	73.1		729	83.9		10,300	74.3		12,359	75.0	
Yes	10	18.2		55	15.2		295	26.9		140	16.1		3561	25.7		4115	25.0	
U.S. region																		
Northeast	6	10.7		19	5.2		224	19.9		105	11.8		3431	24.6		3834	23.1	
South	19	33.9		32	8.8		531	47.2		446	50.2		2936	21.1		4011	24.2	
Midwest	8	14.3		17	4.7		252	22.4		22	2.5		3868	27.7		4195	25.3	
West	23	41.1		295	81.3		117	10.4		315	35.5		3710	26.6		4568	27.5	

APPENDIX TABLE 2. Baseline demographic and general health characteristics of WHI Estrogen-Alone participants by race/ethnicity

Characteristic	Race/Ethnicity												Total ^a (N = 10,739)					
	American Indian (N = 75)			Asian/Pacific Islander (N = 164)			Black (N = 1617)			Hispanic (N = 655)					White (N = 8082)			
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD
Age at screening (yr)	75		62.3 ± 6.7	164		63.2 ± 7.7	1617		61.6 ± 7.1	655		59.7 ± 6.5	8082		64.3 ± 7.2	10,739		63.6 ± 7.3
50-59	28	37.3		52	31.7		665	41.1		338	51.6		2179	27.0		3310	30.8	
60-69	35	46.7		73	44.5		699	43.2		263	40.2		3722	46.1		4852	45.2	
70-79	12	16.0		39	23.8		253	15.6		54	8.2		2181	27.0		2577	24.0	
Education																		
0-8 y	*	*	*	*	*	*	60	3.8		162	25.1		95	1.2		329	3.1	
Some high school	*	*	*	*	*	*	181	11.4		79	12.2		438	5.5		724	6.8	
High school diploma/GED	13	17.6		40	24.5		254	16.0		113	17.5		1970	24.5		2421	22.8	
School after high school	40	54.1		62	38.0		692	43.6		212	32.9		3551	44.2		4621	43.4	
College degree or higher	13	17.6		51	31.3		400	25.2		79	12.2		1971	24.6		2543	23.9	
Family income																		
<\$10,000	11	15.5		10	6.3		253	16.8		143	25.0		439	5.7		864	8.5	
\$10,000-\$19,999	14	19.7		20	12.6		332	22.0		157	27.4		1431	18.7		1989	19.7	
\$20,000-\$34,999	16	22.5		37	23.3		421	27.9		129	22.5		2360	30.8		2999	29.7	
\$35,000-\$49,999	17	23.9		29	18.2		238	15.8		78	13.6		1564	20.4		1947	19.3	
\$50,000-\$74,999	*	*	*	35	22.0		174	11.5		48	8.4		1158	15.1		1447	14.3	
\$75,000+	*	*	*	28	17.6		89	5.9		18	3.1		717	9.3		866	8.6	
Occupation																		
Managerial/Professional	18	27.3		54	35.1		452	32.7		103	18.4		2339	33.3		3006	32.2	
Technical/Sales/Administrative	17	25.8		59	38.3		369	26.7		133	23.8		2329	33.1		2947	31.6	
Service/Labor	27	40.9		36	23.4		433	31.3		176	31.5		1632	23.2		2346	25.1	
Homemaker only	*	*	*	5	3.2		130	9.4		147	26.3		734	10.4		1035	11.1	
Body mass index (BMI), kg/m ²	73		31.2 ± 5.1	163		26.8 ± 5.5	1604		32.2 ± 6.8	647		30.5 ± 5.7	8040		29.7 ± 6.0	10,672		30.1 ± 6.2
Underweight (<18.5)	0	0.0		*	*		8	0.5		*	*		26	0.3		39	0.4	
Normal (18.5-24.9)	7	9.6		67	41.1		176	11.0		103	15.9		1784	22.2		2167	20.3	
Overweight (25.0-29.9)	26	35.6		49	30.1		502	31.3		235	36.3		2832	35.2		3707	34.7	
Obesity I (30.0-34.9)	23	31.5		30	18.4		450	28.1		186	28.7		2001	24.9		2716	25.4	
Obesity II (35.0-39.9)	12	16.4		11	6.7		263	16.4		79	12.2		951	11.8		1332	12.5	
Obesity III (≥40)	5	6.8		*	*		205	12.8		43	6.6		446	5.5		711	6.7	
Marital status																		
Never married	*	*	*	12	7.4		92	5.8		11	1.7		211	2.6		337	3.2	
Divorced/Separated	13	17.6		25	15.4		499	31.3		154	23.9		1316	16.3		2038	19.1	
Widowed	18	24.3		29	17.9		425	26.6		105	16.3		1712	21.3		2316	21.7	
Presently married/ Living as married	40	54.1		96	59.3		580	36.3		375	58.1		4816	59.8		5984	56.1	
Height (cm)	74		161.2 ± 6.5	163		154.7 ± 6.0	1606		162.4 ± 6.2	650		156.7 ± 6.5	8055		161.6 ± 6.3	10,693		161.3 ± 6.5
Weight (kg)	74		81.2 ± 15.2	164		64.8 ± 15.7	1615		85.1 ± 18.7	655		75.7 ± 16.2	8073		77.8 ± 16.8	10,727		78.6 ± 17.3
Waist/hip ratio (WHR)	74		0.85 ± 0.1	163		0.84 ± 0.1	1608		0.83 ± 0.1	652		0.83 ± 0.1	8058		0.83 ± 0.1	10,700		0.83 ± 0.1
Waist (cm)	74		95.7 ± 17.4	163		84.0 ± 12.7	1612		94.0 ± 13.4	653		90.8 ± 12.5	8063		91.3 ± 13.9	10,711		91.6 ± 13.8
Living alone																		
No	61	82.4		129	80.1		1108	69.8		537	83.8		5849	73.0		7794	73.4	
Yes	13	17.6		32	19.9		479	30.2		104	16.2		2166	27.0		2829	26.6	
U.S. region																		
Northeast	12	16.0		7	4.3		210	13.0		51	7.8		1815	22.5		2118	19.7	
South	22	29.3		8	4.9		876	54.2		338	51.6		1910	23.6		3175	29.6	
Midwest	12	16.0		11	6.7		396	24.5		32	4.9		2059	25.5		2526	23.5	
West	29	38.7		138	84.1		135	8.3		234	35.7		2298	28.4		2920	27.2	

APPENDIX TABLE 3. Baseline demographic and general health characteristics of WHI Dietary Modification participants by race/ethnicity

Characteristic	Race/Ethnicity												Total ^a (N = 48,836)					
	American Indian (N = 203)			Asian/Pacific Islander (N = 1107)			Black (N = 5266)			Hispanic (N = 1854)				White (N = 39,760)				
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD		N	%	Mean ± SD	N	%
Age at screening (y)	203		61.0 ± 6.6	1107		61.0 ± 7.1	5266		60.8 ± 6.8	1854		59.7 ± 6.3	39,760		62.6 ± 6.8	48,836		62.3 ± 6.9
50-59	89	43.8		496	44.8		2386	45.3		972	52.4		13,806	34.7		18,003	36.9	
60-69	91	44.8		461	41.6		2267	43.0		739	39.9		18,877	47.5		22,713	46.5	
70-79	23	11.3		150	13.6		613	11.6		143	7.7		7077	17.8		8120	16.6	
Education																		
0-8 y	*	*		*	*		100	1.9		258	14.2		200	0.5		576	1.2	
Some high school	13	6.5		24	2.2		367	7.0		163	8.9		1039	2.6		1639	3.4	
High school diploma/GED	35	17.6		165	15.1		699	13.4		311	17.1		7186	18.2		8518	17.6	
School after high school	105	52.8		381	34.8		2146	41.2		683	37.5		15,719	39.7		19,308	39.8	
College degree or higher	44	22.1		520	47.4		1901	36.5		407	22.3		15,412	39.0		18,488	38.1	
Family income																		
<\$10,000	19	9.7		25	2.4		499	10.1		263	15.5		951	2.5		1783	3.9	
\$10,000-\$19,999	35	17.9		68	6.4		808	16.4		308	18.2		3982	10.6		5294	11.5	
\$20,000-\$34,999	47	24.1		160	15.2		1224	24.9		435	25.7		9298	24.8		11,315	24.6	
\$35,000-\$49,999	43	22.1		197	18.7		944	19.2		295	17.4		8220	21.9		9822	21.3	
\$50,000-\$74,999	37	19.0		308	29.2		892	18.1		251	14.8		7959	21.2		9549	20.8	
\$75,000+	14	7.2		297	28.2		558	11.3		140	8.3		7133	19.0		8242	17.9	
Occupation																		
Managerial/Professional	66	36.9		488	46.0		2013	43.7		450	28.4		14,570	42.6		17,790	42.1	
Technical/Sales/																		
Administrative	50	27.9		373	35.2		1178	25.5		452	28.5		11,152	32.6		13,404	31.8	
Service/Labor	51	28.5		146	13.8		1106	24.0		394	24.8		5248	15.4		7079	16.8	
Homemaker only	12	6.7		53	5.0		314	6.8		290	18.3		3211	9.4		3934	9.3	
Body mass index (BMI), kg/m ²																		
Underweight (<18.5)	0	0.0		19	1.7		12	0.2		*	*		39,587	29.8 ± 5.7		48,612	29.1 ± 5.9	
Normal (18.5-24.9)	41	20.3		500	45.3		600	11.5		353	19.2		10,872	27.5		12,503	25.7	
Overweight (25.0-29.9)	59	29.2		399	36.2		1579	30.2		681	37.0		14,456	36.5		17,387	35.8	
Obesity I (30.0-34.9)	58	28.7		131	11.9		1545	29.5		489	26.5		8794	22.2		11,198	23.0	
Obesity II (35.0-39.9)	28	13.9		40	3.6		911	17.4		219	11.9		3781	9.6		5048	10.4	
Obesity III (≥40)	16	7.9		14	1.3		587	11.2		96	5.2		1566	4.0		2322	4.8	
Marital status																		
Never married	6	3.0		58	5.3		289	5.6		76	4.2		1512	3.8		1970	4.1	
Divorced/Separated	49	24.5		124	11.3		1581	30.4		399	21.9		5433	13.7		7704	15.8	
Widowed	29	14.5		127	11.5		1072	20.6		232	12.7		6093	15.4		7646	15.7	
Presently married/																		
Living as married	116	58.0		793	72.0		2264	43.5		1115	61.2		26,601	67.1		31,293	64.4	
Height (cm)	39,647		161.8 ± 6.0	5241		155.5 ± 5.8	1846		162.7 ± 6.5	203		157.4 ± 6.2	1103		162.5 ± 6.4	48,685		162.1 ± 6.5
Weight (kg)	39,724		79.5 ± 15.9	5263		63.4 ± 13.9	1853		85.2 ± 18.4	202		74.3 ± 15.6	1107		76.1 ± 16.0	48,795		76.7 ± 16.5
Waist/hip ratio (WHR)	39,659		0.85 ± 0.1	5249		0.82 ± 0.1	1844		0.82 ± 0.1	202		0.82 ± 0.1	1104		0.82 ± 0.1	48,682		0.82 ± 0.1
Waist (cm)	39,659		93.7 ± 15.8	5255		81.2 ± 11.1	1845		93.6 ± 13.7	202		88.7 ± 13.4	1104		88.6 ± 13.7	48,711		89.0 ± 13.8
Living alone																		
No	153	76.1		965	87.6		3776	72.8		1542	84.9		30,719	77.7		37,676	77.7	
Yes	48	23.9		137	12.4		1411	27.2		275	15.1		8817	22.3		10,809	22.3	
U.S. region																		
Northeast	34	16.7		45	4.1		917	17.4		177	9.5		10,108	25.4		11,417	23.4	
South	50	24.6		53	4.8		2533	48.1		905	48.8		9104	22.9		12,745	26.1	
Midwest	19	9.4		28	2.5		1228	23.3		70	3.8		8539	21.5		9962	20.4	
West	100	49.3		981	88.6		588	11.2		702	37.9		12,009	30.2		14,712	30.1	

APPENDIX TABLE 4. Baseline demographic and general health characteristics of WHI Calcium and Vitamin D participants by race/ethnicity

Characteristic	Race/Ethnicity												Total ^a (N = 36,282)					
	American Indian (N = 149)			Asian/Pacific Islander (N = 722)			Black (N = 3317)			Hispanic (N = 1507)					White (N = 30,153)			
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD
Age at screening (y)	149		61.5 ± 6.7	722		61.4 ± 7.1	3317		60.6 ± 6.8	1507		59.3 ± 6.4	30,153		62.7 ± 6.9	36,282		62.4 ± 7.0
50-59	61	40.9		309	42.8		1572	47.4		844	56.0		10,469	34.7		13,422	37.0	
60-69	68	45.6		301	41.7		1354	40.8		546	36.2		14,057	46.6		16,520	45.5	
70-79	20	13.4		112	15.5		391	11.8		117	7.8		5627	18.7		6340	17.5	
Education																		
0-8 y	*	*	*	*	*		67	2.0		259	17.4		175	0.6		527	1.5	
Some high school	10	6.8		23	3.2		280	8.5		143	9.6		895	3.0		1375	3.8	
High school diploma/GED	26	17.6		105	14.7		476	14.5		273	18.4		5713	19.1		6673	18.5	
School after high school	72	48.6		267	37.3		1389	42.4		538	36.2		11,921	39.8		14,372	39.9	
College degree or higher	37	25.0		315	44.1		1064	32.5		272	18.3		11,285	37.6		13,098	36.3	
Family income																		
<\$10,000	11	7.6		24	3.5		330	10.6		281	20.5		790	2.8		1465	4.3	
\$10,000-\$19,999	30	20.7		63	9.1		553	17.7		273	19.9		3365	11.7		4353	12.6	
\$20,000-\$34,999	33	22.8		120	17.4		798	25.6		320	23.3		7544	26.3		8911	25.9	
\$35,000-\$49,999	29	20.0		133	19.2		586	18.8		215	15.7		6250	21.8		7302	21.2	
\$50,000-\$74,999	30	20.7		178	25.8		526	16.9		180	13.1		5866	20.4		6849	19.9	
\$75,000+	12	8.3		173	25.0		326	10.5		102	7.4		4876	17.0		5546	16.1	
Occupation																		
Managerial/Professional	52	38.8		300	43.4		1162	40.4		327	24.9		10,837	41.1		12,813	40.3	
Technical/Sales/																		
Administrative	35	26.1		234	33.9		770	26.8		367	27.9		8573	32.5		10,102	31.8	
Service/Labor	40	29.9		118	17.1		723	25.1		356	27.1		4485	17.0		5815	18.3	
Homemaker only	7	5.2		39	5.6		220	7.7		265	20.2		2495	9.5		3069	9.7	
Body mass index (BMI), kg/m ²	149		30.8 ± 6.0	720		26.0 ± 4.8	3296		31.9 ± 6.7	1495		29.8 ± 5.6	30,002		28.7 ± 5.8	36,095		29.0 ± 5.9
Underweight (<18.5)	0	0.0		11	1.5		7	0.2		*	*		126	0.4		148	0.4	
Normal (18.5-24.9)	25	16.8		335	46.5		415	12.6		279	18.7		8278	27.6		9430	26.1	
Overweight (25.0-29.9)	47	31.5		248	34.4		1030	31.3		580	38.8		10,907	36.4		12,955	35.9	
Obesity I (30.0-34.9)	42	28.2		89	12.4		926	28.1		392	26.2		6639	22.1		8203	22.7	
Obesity II (35.0-39.9)	22	14.8		32	4.4		543	16.5		161	10.8		2834	9.4		3644	10.1	
Obesity III (≥40)	13	8.7		5	0.7		375	11.4		79	5.3		1218	4.1		1715	4.8	
Marital status																		
Never married	*	*		39	5.4		194	5.9		62	4.2		1120	3.7		1437	4.0	
Divorced/Separated	40	26.8		102	14.2		1014	30.9		327	22.0		4158	13.8		5724	15.8	
Widowed	22	14.8		92	12.8		684	20.9		203	13.6		4939	16.4		6012	16.6	
Presently married/ Living as married	85	57.0		484	67.5		1387	42.3		896	60.2		19,853	66.0		22,962	63.5	
Height (cm)	149		161.7 ± 6.1	720		155.2 ± 5.8	3301		162.6 ± 6.4	1498		157.3 ± 6.3	30,062		162.4 ± 6.3	36,163		162.0 ± 6.5
Weight (kg)	149		80.6 ± 16.2	722		63.0 ± 13.5	3314		84.5 ± 18.4	1507		74.2 ± 15.9	30,112		76.0 ± 16.1	36,238		76.4 ± 16.6
Waist/hip ratio (WHR)	147		0.83 ± 0.1	720		0.82 ± 0.1	3301		0.83 ± 0.1	1500		0.82 ± 0.1	30,048		0.82 ± 0.1	36,149		0.82 ± 0.1
Waist (cm)	147		92.8 ± 13.8	720		81.1 ± 11.0	3307		93.2 ± 13.6	1501		88.7 ± 13.2	30,070		88.5 ± 13.7	36,179		88.9 ± 13.7
Living alone																		
No	121	82.9		613	85.1		2391	73.1		1249	84.6		23,226	77.4		27,952	77.6	
Yes	25	17.1		107	14.9		881	26.9		227	15.4		6766	22.6		8085	22.4	
U.S. region																		
Northeast	27	18.1		30	4.2		537	16.2		161	10.7		7189	23.8		8019	22.1	
South	39	26.2		42	5.8		1545	46.6		720	47.8		6219	20.6		8631	23.8	
Midwest	16	10.7		30	4.2		921	27.8		58	3.8		7750	25.7		8828	24.3	
West	67	45.0		620	85.9		314	9.5		568	37.7		8995	29.8		10,804	29.8	

APPENDIX TABLE 5. Baseline demographic and general health characteristics of WHI Observational Study participants by race/ethnicity

Characteristic	Race/Ethnicity												Total ^a (N = 93,676)					
	American Indian (N = 422)			Asian/Pacific Islander (N = 2671)			Black (N = 7639)			Hispanic (N = 3623)					White (N = 78,013)			
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD
Age at screening (y)	422		61.7 ± 7.9	2671		63.8 ± 7.6	7639		62.1 ± 7.3	3623		60.6 ± 7.1	78,013		63.9 ± 7.3	93,676		63.6 ± 7.4
50-59	178	42.2		861	32.2		2978	39.0		1761	48.6		23,565	30.2		29,705	31.7	
60-69	161	38.2		1102	41.3		3256	42.6		1399	38.6		34,677	44.5		41,197	44.0	
70-79	83	19.7		708	26.5		1405	18.4		463	12.8		19,771	25.3		22,774	24.3	
Education																		
0-8 y	46	11.0		65	2.5		277	3.7		630	17.7		518	0.7		1560	1.7	
Some high school	46	11.0		95	3.6		726	9.6		318	8.9		2032	2.6		3288	3.5	
High school diploma/GED	69	16.5		416	15.7		1047	13.9		564	15.9		12,784	16.5		15,121	16.3	
School after high school	166	39.7		891	33.6		2789	37.0		1249	35.1		28,332	36.6		33,933	36.5	
College degree or higher	91	21.8		1185	44.7		2692	35.7		796	22.4		33,781	43.6		39,002	42.0	
Family income																		
<\$10,000	67	17.6		84	3.4		967	13.9		544	17.1		2175	3.0		3916	4.5	
\$10,000-\$19,999	78	20.5		241	9.7		1252	18.0		639	20.1		7704	10.6		10,100	11.6	
\$20,000-\$34,999	96	25.2		498	20.1		1635	23.5		745	23.4		16,953	23.4		20,226	23.3	
\$35,000-\$49,999	55	14.4		464	18.7		1228	17.6		531	16.7		14,932	20.6		17,429	20.1	
\$50,000-\$74,999	51	13.4		555	22.4		1149	16.5		409	12.9		15,092	20.8		17,486	20.2	
\$75,000+	34	8.9		637	25.7		732	10.5		311	9.8		15,713	21.7		17,608	20.3	
Occupation																		
Managerial/Professional	119	30.2		1094	42.1		2908	41.4		863	25.9		33,176	44.5		38,622	43.3	
Technical/Sales/																		
Administrative	98	24.9		835	32.1		1729	24.6		858	25.7		21,583	28.9		25,480	28.6	
Service/Labor	119	30.2		480	18.5		1809	25.8		906	27.2		11,847	15.9		15,470	17.3	
Homemaker only	58	14.7		191	7.3		575	8.2		706	21.2		8030	10.8		9658	10.8	
Body mass index (BMI), kg/m ²	409		29.7 ± 6.8	2654		24.2 ± 4.3	7539		30.7 ± 6.8	3570		28.6 ± 5.9	77,107		27.0 ± 5.7	92,568		27.3 ± 5.9
Underweight (<18.5)	5	1.2		119	4.5		52	0.7		15	0.4		903	1.2		1107	1.2	
Normal (18.5-24.9)	112	27.4		1565	59.0		1394	18.5		1012	28.3		32,134	41.7		36,687	39.6	
Overweight (25.0-29.9)	116	28.4		758	28.6		2551	33.8		1366	38.3		26,202	34.0		31,463	34.0	
Obesity I (30.0-34.9)	100	24.4		154	5.8		1899	25.2		751	21.0		11,466	14.9		14,578	15.7	
Obesity II (35.0-39.9)	44	10.8		36	1.4		928	12.3		283	7.9		4080	5.3		5451	5.9	
Obesity III (≥40)	32	7.8		22	0.8		715	9.5		143	4.0		2322	3.0		3282	3.5	
Height (cm)	412		160.4 ± 7.3	2657		154.8 ± 6.0	7575		162.3 ± 6.8	3576		157.2 ± 6.2	77,406		162.1 ± 6.6	92,920		161.7 ± 6.8
Weight (kg)	420		78.0 ± 20.8	2666		58.3 ± 12.2	7603		81.4 ± 19.3	3610		71.2 ± 16.6	77,605		71.2 ± 16.3	93,204		71.7 ± 16.9
Waist/hip ratio (WHR)	421		0.84 ± 0.1	2662		0.81 ± 0.1	7607		0.82 ± 0.1	3610		0.82 ± 0.1	77,568		0.80 ± 0.1	93,167		0.81 ± 0.1
Waist (cm)	421		91.8 ± 15.7	2666		77.4 ± 10.3	7618		90.8 ± 14.4	3613		85.9 ± 12.7	77,659		84.4 ± 13.5	93,279		84.8 ± 13.7
Marital status																		
Never married	19	4.6		157	5.9		493	6.5		180	5.0		3473	4.5		4390	4.7	
Divorced/Separated	86	20.7		302	11.4		2279	30.1		799	22.4		11,024	14.2		14,727	15.8	
Widowed	87	20.9		422	15.9		1803	23.8		541	15.1		13,174	17.0		16,290	17.5	
Presently married/ Living as married	224	53.8		1776	66.8		2990	39.5		2051	57.4		50,034	64.4		57,805	62.0	
Living alone																		
No	310	74.0		2192	82.6		5012	66.7		2800	79.6		57,086	73.6		68,310	73.5	
Yes	109	26.0		461	17.4		2499	33.3		717	20.4		20,436	26.4		24,603	26.5	
U.S. region																		
Northeast	49	11.6		138	5.2		1292	16.9		460	12.7		19,067	24.4		21,273	22.7	
South	94	22.3		172	6.4		3543	46.4		1360	37.5		19,028	24.4		24,459	26.1	
Midwest	39	9.2		112	4.2		1897	24.8		138	3.8		18,219	23.4		20,607	22.0	
West	240	56.9		2249	84.2		907	11.9		1665	46.0		21,699	27.8		27,337	29.2	

Years lived in current state												
<5	20	4.8	58	2.2	240	3.2	156	4.4	2804	3.6	3322	3.6
5-9	19	4.6	76	2.9	231	3.1	170	4.8	3035	3.9	3584	3.9
10-19	33	8.0	242	9.1	455	6.0	360	10.3	6219	8.0	7440	8.0
20+	343	82.7	2283	85.9	6612	87.7	2825	80.5	65,550	84.5	78,680	84.6
Born in the U.S.												
No	14	3.4	723	27.2	243	3.2	1313	37.3	4234	5.5	6802	7.3
Yes	401	96.6	1938	72.8	7267	96.8	2205	62.7	73,450	94.5	86,281	92.7
U.S. region of birth												
Not born in U.S.	14	3.4	723	27.2	243	3.3	1313	40.9	4234	5.5	6802	7.4
Northeast	59	14.4	33	1.2	864	11.6	158	4.9	24,326	31.4	25,763	27.9
South	137	33.3	22	0.8	5135	68.8	861	26.8	13,994	18.1	20,318	22.0
Midwest	62	15.1	43	1.6	1060	14.2	84	2.6	25,598	33.1	27,077	29.3
West	139	33.8	1834	69.1	160	2.1	798	24.8	9273	12.0	12,498	13.5
Smoking												
Never smoked	210	51.0	1963	74.0	3735	50.0	2236	63.4	38,169	49.6	47,023	50.9
Past smoker	157	38.1	599	22.6	2902	38.9	1055	29.9	34,305	44.6	39,514	42.8
Current smoker	45	10.9	92	3.5	828	11.1	237	6.7	4513	5.9	5791	6.3
Years as a child lived with smoker												
Never lived with a smoker	126	31.4	1008	39.4	3153	43.0	1437	42.3	26,892	35.2	33,137	36.2
<1	8	2.0	34	1.3	141	1.9	62	1.8	555	0.7	819	0.9
1-4	13	3.2	76	3.0	273	3.7	108	3.2	2093	2.7	2602	2.8
5-9	33	8.2	178	7.0	510	7.0	227	6.7	4217	5.5	5246	5.7
10-18	221	55.1	1263	49.4	3249	44.3	1566	46.1	42,729	55.9	49,636	54.3
Years as adult lived with smoker												
Never lived with a smoker	98	23.9	964	36.3	1745	23.3	1270	36.4	19,903	25.8	24,362	26.3
<1	10	2.4	71	2.7	227	3.0	99	2.8	1566	2.0	2012	2.2
1-4	34	8.3	276	10.4	704	9.4	281	8.1	7751	10.0	9155	9.9
5-9	29	7.1	268	10.1	797	10.7	288	8.3	7094	9.2	8573	9.3
10-19	68	16.6	368	13.8	1329	17.8	506	14.5	12,164	15.8	14,650	15.8
20-29	68	16.6	318	12.0	1097	14.7	447	12.8	11,781	15.3	13,888	15.0
30-39	59	14.4	228	8.6	793	10.6	324	9.3	9221	11.9	10,768	11.6
40+	44	10.7	165	6.2	784	10.5	274	7.9	7741	10.0	9133	9.9
Years worked with smoker												
Never worked with a smoker	129	31.2	792	29.9	1490	20.0	1266	36.2	19,350	25.1	23,343	25.3
<1	15	3.6	101	3.8	242	3.2	183	5.2	2792	3.6	3377	3.7
1-4	57	13.8	400	15.1	806	10.8	522	14.9	12,542	16.3	14,517	15.7
5-9	55	13.3	339	12.8	973	13.0	493	14.1	12,254	15.9	14,304	15.5
10-19	71	17.2	435	16.4	1591	21.3	529	15.1	14,554	18.9	17,408	18.8
20-29	52	12.6	357	13.5	1451	19.5	321	9.2	9365	12.1	11,722	12.7
30-39	21	5.1	157	5.9	659	8.8	122	3.5	4186	5.4	5241	5.7
40+	13	3.1	72	2.7	245	3.3	59	1.7	2094	2.7	2526	2.7
Alcohol intake												
Never drinker	80	19.2	1081	40.6	1419	18.9	725	20.4	6969	9.0	10,477	11.3
Past drinker	120	28.8	528	19.8	2557	34.0	856	24.1	13,202	17.0	17,555	18.9
<1 drink per mo	42	10.1	353	13.3	938	12.5	440	12.4	8799	11.3	10,733	11.5
<1 drink per wk	72	17.3	373	14.0	1275	17.0	721	20.3	16,023	20.6	18,728	20.1
1-7 drinks per wk	74	17.7	244	9.2	987	13.1	629	17.7	21,654	27.9	23,842	25.6
7+ drinks per wk	29	7.0	82	3.1	340	4.5	177	5.0	10,962	14.1	11,709	12.6
Physical activity												
No activity	80	19.2	351	13.2	1614	21.3	695	19.9	9709	12.6	12,637	13.6
Some activity	188	45.1	1170	44.1	3309	43.7	1563	44.8	28,879	37.4	35,648	38.5
2-<4 episodes per wk of moderate + activity	52	12.5	448	16.9	1183	15.6	498	14.3	14,685	19.0	17,093	18.5
4+ episodes per wk of moderate + activity	97	23.3	684	25.8	1460	19.3	732	21.0	23,936	31.0	27,251	29.4

(continued)

APPENDIX TABLE 5. Continued

Characteristic	Race/Ethnicity												Total ^a (N = 93,676)					
	American Indian (N = 422)			Asian/Pacific Islander (N = 2671)			Black (N = 7639)			Hispanic (N = 3623)					White (N = 78,013)			
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD
Total expenditure/wk from physical activity (METs)																		
0-1.5	121	29.0		506	19.1		2202	29.1		939	26.9		13,853	17.9		17,888	19.3	
>1.5-8	107	25.7		670	25.3		2164	28.6		1017	29.2		19,027	24.6		23,330	25.2	
>8-19	89	21.3		764	28.8		1825	24.1		831	23.8		23,335	30.2		27,205	29.4	
>19	100	24.0		713	26.9		1375	18.2		701	20.1		20,994	27.2		24,206	26.1	
Total calcium intake (mg)																		
0-<400	52	13.6		410	16.4		1732	25.7		459	14.1		4630	6.1		7423	8.3	
400-<800	113	29.6		678	27.2		2515	37.3		987	30.3		18,425	24.3		23,076	25.7	
800-<1000	58	15.2		316	12.7		766	11.3		456	14.0		9531	12.6		11,267	12.5	
1000-<1200	35	9.2		271	10.9		551	8.2		327	10.0		9194	12.1		10,505	11.7	
1200+	124	32.5		822	32.9		1185	17.6		1025	31.5		34,024	44.9		37,645	41.9	
Any supplement use																		
No	183	43.4		650	24.3		3522	46.1		1452	40.1		19,373	24.8		25,567	27.3	
Yes	239	56.6		2021	75.7		4117	53.9		2171	59.9		58,640	75.2		68,109	72.7	
Multivitamin use (with or without minerals)																		
No	304	72.0		1684	63.0		5593	73.2		2594	71.6		43,842	56.2		54,840	58.5	
Yes	118	28.0		987	37.0		2046	26.8		1029	28.4		34,171	43.8		38,836	41.5	
Vitamin C as single supplement																		
No	337	79.9		1814	67.9		6283	82.2		2923	80.7		54,312	69.6		66,594	71.1	
Yes	85	20.1		857	32.1		1356	17.8		700	19.3		23,701	30.4		27,082	28.9	
Vitamin E as single supplement																		
No	316	74.9		1700	63.6		6141	80.4		2828	78.1		50,453	64.7		62,332	66.5	
Yes	106	25.1		971	36.4		1498	19.6		795	21.9		27,560	35.3		31,344	33.5	
Calcium as single supplement (including antacids)																		
No	339	80.3		1869	70.0		6591	86.3		2828	78.1		54,391	69.7		66,990	71.5	
Yes	83	19.7		802	30.0		1048	13.7		795	21.9		23,622	30.3		26,686	28.5	
Single supplement (not Vitamin C, E, or calcium)																		
No	286	67.8		1470	55.0		5607	73.4		2468	68.1		44,110	56.5		54,698	58.4	
Yes	136	32.2		1201	45.0		2032	26.6		1155	31.9		33,903	43.5		38,978	41.6	
Any supplement (excluding single supplement calcium)																		
No	198	46.9		773	28.9		3731	48.8		1613	44.5		22,100	28.3		28,844	30.8	
Yes	224	53.1		1898	71.1		3908	51.2		2010	55.5		55,913	71.7		64,832	69.2	

^aTotal includes those of unknown ethnicity.
^{*}Data withheld from cells where N < 5 (<10 where data are sensitive).

APPENDIX TABLE 6. Baseline medical history of WHI Estrogen + Progestin participants by race/ethnicity

Medical History	Race/Ethnicity														Total ^a	
	American Indian (N = 56)		Asian/Pacific Islander (N = 363)		Black (N = 1124)		Hispanic (N = 888)		White (N = 13,945)		Total ^a (N = 16,608)					
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	
Age at menopause (y)																
<40	*	*		6	1.7	47	4.6	26	3.4	297	2.3	384	2.5			
40–49	16	33.3	117	33.3	371	36.3	331	43.2	4356	33.8	5271	34.5				
50+	31	64.6	228	65.0	604	59.1	410	53.5	8216	63.8	9617	63.0				
Bilateral oophorectomy																
No	55	98.2	361	100.0	1108	99.6	872	99.7	13,849	99.7	16,474	99.7				
Yes	*	*	0	0.0	*	*	*	*	43	0.3	53	0.3				
Ever pregnant																
No	*	*	36	9.9	62	5.6	58	6.6	1110	8.0	1288	7.8				
Yes	53	94.6	327	90.1	1054	94.4	825	93.4	12,819	92.0	15,291	92.2				
Age at first birth (y) ^b																
Never had term pregnancy	0	0.0	5	1.8	60	6.9	19	3.1	312	2.7	400	2.9				
<20	18	39.1	16	5.8	280	32.1	173	28.3	1708	14.6	2236	16.4				
20–29	23	50.0	209	76.0	462	53.0	355	58.0	8513	72.9	9670	70.8				
30+	5	10.9	45	16.4	69	7.9	65	10.6	1142	9.8	1344	9.8				
Number of live births																
Never pregnant	*	*	36	9.9	62	5.6	58	6.6	1110	8.0	1288	7.8				
None	0	0.0	*	*	65	5.8	21	2.4	327	2.4	422	2.6				
1	*	*	38	10.5	164	14.7	79	9.0	1078	7.8	1389	8.4				
2–4	27	48.2	235	64.9	599	53.9	507	57.8	8994	64.7	10,503	63.5				
5+	19	33.9	48	13.3	222	20.0	212	24.2	2383	17.2	2928	17.7				
Number of pregnancies																
Never pregnant	*	*	36	9.9	62	5.6	58	6.6	1110	8.0	1288	7.8				
1	*	*	26	7.2	91	8.2	48	5.4	882	6.3	1070	6.5				
2–4	26	46.4	76	20.9	396	35.7	346	39.3	3859	27.8	4781	28.9				
5+	23	41.1	225	62.0	559	50.5	429	48.7	8052	57.9	9403	56.8				
Any induced abortions ^b																
Pregnant, never had abortion	44	91.7	273	88.1	746	78.9	608	85.6	11,030	92.5	12,879	91.1				
One or more abortions	*	*	37	11.9	200	21.1	102	14.4	894	7.5	1258	8.9				
Number of months breastfed																
Never breastfed	27	48.2	116	32.4	535	48.6	355	40.9	6354	46.0	7482	45.6				
1–6	14	25.0	104	29.1	324	29.4	236	27.2	3492	25.3	4239	25.8				
7–12	5	8.9	64	17.9	125	11.4	107	12.3	1552	11.2	1882	11.5				
13–23	*	*	41	11.5	59	5.4	81	9.3	1422	10.3	1627	9.9				
24+	8	14.3	33	9.2	58	5.3	89	10.3	982	7.1	1185	7.2				
Age at tubal ligation (y)																
Never had tubal ligation	34	63.0	267	74.2	778	70.5	635	72.2	11,311	81.4	13,207	80.0				
<30	*	*	11	3.1	43	3.9	38	4.3	326	2.3	426	2.6				
30–34	*	*	25	6.9	88	8.0	59	6.7	650	4.7	843	5.1				
35–39	*	*	43	11.9	127	11.5	90	10.2	908	6.5	1190	7.2				
40–44	*	*	11	3.1	58	5.3	51	5.8	561	4.0	694	4.2				
45+	0	0.0	*	*	10	0.9	*	*	133	1.0	157	1.0				

(continued)

History of E + P use ^e												
Never	49	87.5	278	76.6	977	86.9	730	82.2	11,402	81.8	13,620	82.0
Past	6	10.7	41	11.3	99	8.8	98	11.0	1560	11.2	1833	11.0
Current	*	*	44	12.1	48	4.3	60	6.8	979	7.0	1151	6.9
Total E + P duration (y) ^c												
Nonuser	49	87.5	278	76.6	977	86.9	730	82.2	11,402	81.8	13,620	82.0
<5	6	10.7	57	15.7	121	10.8	111	12.5	1804	12.9	2133	12.8
5-<10	0	0.0	21	5.8	17	1.5	34	3.8	487	3.5	568	3.4
10-<15	*	*	*	*	8	0.7	9	1.0	182	1.3	207	1.2
15+	0	0.0	*	*	*	*	*	*	70	0.5	80	0.5
Family history of MI												
No	24	47.1	207	61.1	587	58.1	484	58.4	6283	47.3	7687	48.9
Yes	27	52.9	132	38.9	424	41.9	345	41.6	6992	52.7	8032	51.1
Family history of breast cancer												
No	37	78.7	307	89.2	920	88.0	766	90.4	11,043	83.5	13,256	84.3
Yes	10	21.3	37	10.8	126	12.0	81	9.6	2176	16.5	2461	15.7
Family history of colorectal cancer												
No	36	83.7	293	87.2	826	85.1	722	89.9	10,757	84.0	12,814	84.5
Yes	7	16.3	43	12.8	145	14.9	81	10.1	2046	16.0	2348	15.5
Family history of stroke												
No	28	58.3	194	56.2	600	57.4	565	69.1	8120	61.5	9620	61.4
Yes	20	41.7	151	43.8	446	42.6	253	30.9	5081	38.5	6047	38.6
Family history of adult diabetes												
No	28	54.9	209	61.3	485	48.6	475	57.3	9159	68.6	10,488	66.5
Yes	23	45.1	132	38.7	513	51.4	354	42.7	4190	31.4	5286	33.5
Parent broke bone after age 40												
No	32	74.4	235	69.7	758	79.8	566	69.7	7415	57.1	9139	59.6
Yes	11	25.6	102	30.3	192	20.2	246	30.3	5575	42.9	6194	40.4
Systolic blood pressure (mm Hg)												
≤120	56	125.5 ± 16.9	363	129.0 ± 19.4	1124	131.8 ± 17.4	888	126.0 ± 16.9	13,945	127.4 ± 17.5	16,608	127.7 ± 17.6
>120-140	25	44.6	124	34.2	324	28.8	375	42.2	5340	38.3	6270	37.8
>140	21	37.5	152	41.9	495	44.0	360	40.5	5751	41.2	6873	41.4
Diastolic blood pressure (mm Hg)	10	17.9	87	24.0	305	27.1	153	17.2	2854	20.5	3465	20.9
<90	56	75.0 ± 9.4	363	77.5 ± 9.4	1124	78.4 ± 9.2	888	76.0 ± 8.8	13,945	75.4 ± 9.1	16,608	75.7 ± 9.1
≥90	52	92.9	324	89.3	982	87.4	828	93.2	12,997	93.2	15,385	92.6
History of hypertension	*	*	39	10.7	142	12.6	60	6.8	948	6.8	1223	7.4
History of hypertension												
Never hypertensive	45	84.9	235	66.4	516	49.8	584	72.8	9097	71.7	10,609	70.0
Untreated hypertensive	*	*	40	11.3	111	10.7	78	9.7	1015	8.0	1266	8.4
Treated hypertensive	6	11.3	79	22.3	409	39.5	140	17.5	2571	20.3	3271	21.6
Treated diabetes (pills or shots)												
No	50	90.9	332	91.5	990	88.1	826	93.0	13,451	96.5	15,864	95.6
Yes	5	9.1	31	8.5	134	11.9	62	7.0	487	3.5	734	4.4
Treated hypercholesterolemia (pills)												
No	46	90.2	280	80.0	865	84.8	673	85.7	11,061	87.8	13,107	87.3
Yes	5	9.8	70	20.0	155	15.2	112	14.3	1530	12.2	1906	12.7
Depression (shortened CES-D/DIS ≥ 0.06)												
No	44	83.0	331	92.2	923	88.0	616	79.6	12,412	91.1	14,518	90.3
Yes	*	*	28	7.8	126	12.0	158	20.4	1210	8.9	1563	9.7

(continued)

APPENDIX TABLE 6. *Continued*

Benign breast disease												
No	43	82.7	311	88.1	880	83.9	708	88.7	10,493	82.8	12,618	83.3
Yes, 1 biopsy	8	15.4	32	9.1	132	12.6	71	8.9	1,679	13.2	1,948	12.9
Yes, 2+ biopsies	*	*	10	2.8	37	3.5	19	2.4	500	3.9	578	3.8
History of cardiovascular disease ^d												
No	50	89.3	348	96.7	1,002	91.2	832	95.0	12,940	93.7	15,386	93.7
Yes	6	10.7	12	3.3	97	8.8	44	5.0	868	6.3	1,040	6.3
History of MI												
No	53	94.6	362	99.7	1,094	97.3	882	99.3	13,694	98.2	16,312	98.2
Yes	*	*	*	*	30	2.7	6	0.7	251	1.8	296	1.8
History of CABG/PTCA												
No	55	100.0	357	99.2	1,081	98.5	871	99.5	13,605	98.6	16,191	98.7
Yes	0	0.0	*	*	17	1.5	*	*	189	1.4	215	1.3
History of CHF												
No	56	100.0	361	99.4	1,112	98.9	881	99.2	13,886	99.6	16,528	99.5
Yes	0	0.0	*	*	12	1.1	7	0.8	59	0.4	80	0.5
History of angina												
No	53	94.6	354	97.8	1,070	96.1	866	98.1	13,512	97.2	16,080	97.1
Yes	*	*	8	2.2	44	3.9	17	1.9	394	2.8	472	2.9
History of carotid endarterectomy/angioplasty												
No	55	100.0	361	100.0	1,095	99.7	875	100.0	13,764	99.8	16,374	99.8
Yes	0	0.0	0	0.0	*	*	0	0.0	31	0.2	34	0.2
History of DVT												
No	56	100.0	363	100.0	1,122	99.8	884	99.5	13,834	99.2	16,490	99.3
Yes	0	0.0	0	0.0	*	*	*	*	111	0.8	118	0.7
History of PE												
No	56	100.0	362	99.7	1,122	99.8	888	100.0	13,920	99.8	16,579	99.8
Yes	0	0.0	*	*	*	*	0	0.0	25	0.2	29	0.2
History of PAD												
No	55	98.2	362	99.7	1,103	98.5	871	98.5	13,815	99.3	16,437	99.2
Yes	*	*	*	*	17	1.5	13	1.5	103	0.7	135	0.8
History of stroke												
No	54	96.4	361	99.4	1,106	98.4	880	99.1	13,839	99.2	16,470	99.2
Yes	*	*	*	*	18	1.6	8	0.9	106	0.8	138	0.8
History of polyp removal												
No	51	96.2	324	92.6	963	93.9	760	96.3	11,615	92.6	13,911	92.9
Yes	*	*	26	7.4	63	6.1	29	3.7	928	7.4	1,068	7.1
History of fracture at age 55+ ^e												
No	39	88.6	272	89.8	786	93.0	562	92.0	9,492	83.4	11,317	84.6
Yes	5	11.4	31	10.2	59	7.0	49	8.0	1,889	16.6	2,057	15.4
History of hip fracture at age 55+ ^e												
No	44	100.0	302	99.7	844	99.9	609	99.7	11,301	99.3	13,289	99.4
Yes	*	*	1	0.3	1	0.1	2	0.3	80	0.7	85	0.6

Number of falls in last 12 mo												
None	38	70.4	272	76.6	716	67.6	572	70.0	8586	66.2	10,340	66.8
1	9	16.7	57	16.1	226	21.3	158	19.3	2704	20.8	3188	20.6
2	*	*	19	5.4	89	8.4	49	6.0	1117	8.6	1296	8.4
3+	*	*	7	2.0	28	2.6	38	4.7	565	4.4	652	4.2
History of cancer ^f												
No	55	98.2	357	98.3	1089	98.0	865	98.2	13,567	98.0	16,156	98.0
Yes	*	*	6	1.7	22	2.0	16	1.8	274	2.0	325	2.0
History of colorectal cancer												
No	55	98.2	362	99.7	1121	99.7	888	100.0	13,898	99.7	16,556	99.7
Yes	*	*	*	*	*	*	0	0.0	47	0.3	52	0.3
History of melanoma cancer												
No	56	100.0	363	100.0	1124	100.0	888	100.0	13,944	100.0	16,607	100.0
Yes	0	0.0	0	0.0	0	0.0	0	0.0	*	*	*	*
History of cervical cancer												
No	56	100.0	363	100.0	1110	99.7	881	99.9	13,799	99.8	16,438	99.8
Yes	0	0.0	0	0.0	*	*	*	*	33	0.2	37	0.2
History of ovarian cancer												
No	56	100.0	361	99.7	1112	100.0	881	100.0	13,823	99.9	16,462	100.0
Yes	0	0.0	*	*	0	0.0	0	0.0	7	0.1	8	0.0
History of lung cancer												
No	56	100.0	362	100.0	1112	100.0	882	100.0	13,826	100.0	16,467	100.0
Yes	0	0.0	0	0.0	0	0.0	0	0.0	5	0.0	5	0.0
History of osteoporosis												
No	53	98.1	342	95.3	1052	96.8	809	94.4	13,059	95.0	15,532	95.1
Yes	*	*	17	4.7	35	3.2	48	5.6	687	5.0	799	4.9
History of arthritis												
No arthritis	32	59.3	243	67.9	596	55.5	558	67.1	7963	59.7	9525	60.0
Rheumatoid arthritis	6	11.1	16	4.5	81	7.5	33	4.0	514	3.9	667	4.2
Other arthritis	16	29.6	99	27.7	396	36.9	241	29.0	4855	36.4	5682	35.8
Total hip BMD (WHO criteria)												
Normal					69	70.4	28	45.9	414	49.1	511	51.0
Osteopenic					28	28.6	31	50.8	377	44.7	436	43.5
Osteoporotic					*	*	*	*	52	6.2	55	5.5
Hip scan (g/cm ²)	12	0.89 ± 0.08	*	*	98	0.97 ± 0.15	61	0.84 ± 0.13	843	0.82 ± 0.12	1024	0.84 ± 0.13
Spine scan (g/cm ²)	12	0.93 ± 0.11	*	*	99	1.08 ± 0.19	61	0.92 ± 0.14	822	0.93 ± 0.15	1004	0.95 ± 0.16
Whole body scan (g/cm ²)	12	1.00 ± 0.09	*	*	99	1.08 ± 0.11	61	1.02 ± 0.11	843	0.98 ± 0.09	1025	0.99 ± 0.10
Lean body mass + BMC (kg)	12	39.8 ± 4.0	*	*	99	44.8 ± 6.5	61	39.0 ± 5.6	834	39.5 ± 5.1	1016	40.0 ± 5.5
Fat body mass (kg)	12	39.3 ± 11.1	*	*	99	39.0 ± 13.4	61	33.3 ± 8.9	834	31.7 ± 10.7	1016	32.5 ± 11.1

CABG, coronary bypass surgery; PTCA, angioplasty; WHO, World Health Organization; E + P, estrogen + progestin; E-alone, estrogen alone; BMC, bone mineral content; PHT, postmenopausal hormone therapy; BMD, bone mineral density; MI, myocardial infarction; CHF, congestive heart failure; DVT, deep vein thrombosis; PE, pulmonary embolism; PAD, peripheral arterial disease.

^aTotal includes those of unknown ethnicity.

^bApplies only to participants who have ever been pregnant.

^cBased on estrogen and progesterone pills and patches only (creams and shots excluded). Episodes less than 3 months are excluded.

^dIncludes MI, stroke, CHF, angina, carotid endarterectomy/angioplasty, DVT, PE, PAD, and CABG/PTCA.

^eApplies only to participants age 55 and older.

^fExcluding nonmelanoma skin cancer.

*Data withheld from cells where N < 5 (<10 where data are sensitive).

APPENDIX TABLE 7. Baseline medical history status of WHI Estrogen-Alone participants by race/ethnicity

Medical History	Race/Ethnicity														Total ^a (N = 10,739)				
	American Indian (N = 75)		Asian/Pacific Islander (N = 164)		Black (N = 1617)		Hispanic (N = 655)		White (N = 8082)		N	%	Mean ± SD	N			%	Mean ± SD	
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N					%	Mean ± SD			N
Age at hysterectomy (y)																			
Not hysterectomized																			
<40	36	48.0	53	32.3	783	48.8	278	42.8	3045	37.9	4249	39.8							
40–49	32	42.7	78	47.6	655	40.8	285	43.8	3435	42.7	4556	42.7							
50+	7	9.3	33	20.1	167	10.4	87	13.4	1559	19.4	1872	17.5							
Age at menopause (y)																			
<40	24	39.3	26	19.3	403	29.5	104	19.8	1550	22.3	2139	23.3							
40–49	11	18.0	45	33.3	350	25.6	171	32.6	2146	30.8	2752	30.0							
50+	26	42.6	64	47.4	614	44.9	250	47.6	3269	46.9	4281	46.7							
Bilateral oophorectomy																			
No	34	53.1	80	55.2	838	59.8	395	66.1	4469	58.8	5890	59.3							
Yes	30	46.9	65	44.8	564	40.2	203	33.9	3131	41.2	4049	40.7							
Ever pregnant																			
No	*	*	23	14.0	148	9.2	34	5.2	498	6.2	713	6.7							
Yes	74	98.7	141	86.0	1459	90.8	618	94.8	7567	93.8	9995	93.3							
Age at first birth (y) ^b																			
Never had term pregnancy																			
<20	*	*	5	4.0	94	7.8	13	2.8	120	1.7	237	2.7							
20–29	29	45.3	22	17.5	527	43.7	151	32.6	1660	24.1	2417	27.3							
30+	33	51.6	82	65.1	530	43.9	270	58.3	4740	68.9	5737	64.8							
Number of live births																			
Never pregnant	*	*	23	14.1	148	9.3	34	5.3	498	6.2	713	6.7							
None	*	*	*	*	104	6.5	14	2.2	134	1.7	262	2.5							
1	*	*	10	6.1	229	14.3	51	7.9	550	6.8	862	8.1							
2–4	39	52.0	85	52.1	797	49.8	369	57.0	5212	64.9	6589	61.8							
5+	29	38.7	40	24.5	321	20.1	179	27.7	1641	20.4	2237	21.0							
Number of pregnancies																			
Never pregnant	*	*	23	14.0	148	9.3	34	5.2	498	6.2	713	6.7							
1	*	*	*	*	159	10.0	28	4.3	404	5.0	621	5.8							
2–4	39	52.0	59	36.0	531	33.3	273	42.1	2667	33.1	3615	33.9							
5+	31	41.3	73	44.5	755	47.4	313	48.3	4477	55.6	5722	53.6							
Any induced abortions ^b																			
Pregnant, never had abortion	62	91.2	113	89.0	1134	86.2	456	89.4	6591	94.8	8473	93.1							
One or more abortions	*	*	14	11.0	182	13.8	54	10.6	359	5.2	624	6.9							
Number of months breastfed																			
Never breastfed	33	44.6	67	41.1	760	48.8	268	41.8	3761	47.2	4959	47.0							
1–6	19	25.7	51	31.3	426	27.3	189	29.5	2243	28.2	2964	28.1							
7–12	9	12.2	25	15.3	192	12.3	81	12.6	865	10.9	1190	11.3							
13–23	*	*	8	4.9	91	5.8	53	8.3	643	8.1	811	7.7							
24+	9	12.2	12	7.4	89	5.7	50	7.8	449	5.6	617	5.9							

Age at tubal ligation (y)													
Never had tubal ligation													
<30	55	75.3	132	81.5	1294	81.3	524	81.0	6964	86.6	9090	85.3	
30-34	*	*	*	*	84	5.3	34	5.3	318	4.0	457	4.3	
35-39	*	*		*	121	7.6	26	4.0	360	4.5	530	5.0	
40-44	*	*	14	8.6	68	4.3	48	7.4	286	3.6	426	4.0	
45+	*	*	*	*	21	1.3	13	2.0	97	1.2	135	1.3	
Age last had any menstrual bleeding (y)	0	0.0	0	0.0	*	*	*	*	14	0.2	19	0.2	
<40	28	46.7	38	26.4	551	42.7	203	39.2	2318	34.9	3179	36.2	
40-44	17	28.3	49	34.0	355	27.5	145	28.0	1694	25.5	2297	26.2	
45-49	8	13.3	35	24.3	244	18.9	108	20.8	1476	22.2	1901	21.7	
50-54	6	10.0	18	12.5	106	8.2	50	9.7	902	13.6	1096	12.5	
55-59	*	*	*	*	25	1.9	11	2.1	202	3.0	244	2.8	
60+	0	0.0	*	*	10	0.8	*	*	49	0.7	63	0.7	
Current health care provider													
No	7	9.6	10	6.2	173	11.0	175	27.2	794	9.9	1175	11.1	
Yes	66	90.4	152	93.8	1406	89.0	469	72.8	7207	90.1	9425	88.9	
Mammogram in last 2 y													
No	26	37.7	54	34.6	406	27.6	245	40.0	2260	28.9	3035	29.6	
Yes	43	62.3	102	65.4	1063	72.4	367	60.0	5547	71.1	7220	70.4	
Total oral contraceptive duration (y)													
Nonuser	47	62.7	110	67.1	1072	66.3	385	58.8	4917	60.8	6634	61.8	
<5	23	30.7	32	19.5	286	17.7	167	25.5	1876	23.2	2409	22.4	
5-<10	*	*	*	*	133	8.2	58	8.9	699	8.6	914	8.5	
10+	*	*	13	7.9	126	7.8	45	6.9	590	7.3	782	7.3	
History of PHT use ^c													
Never	40	53.3	74	45.1	978	60.7	394	60.2	3892	48.2	5447	50.8	
Past	27	36.0	60	36.6	450	27.9	155	23.7	2918	36.1	3669	34.2	
Current	8	10.7	30	18.3	184	11.4	106	16.2	1262	15.6	1608	15.0	
Total PHT duration (y)													
Nonuser	40	53.3	74	45.1	978	60.5	394	60.2	3892	48.2	5447	50.7	
<5	18	24.0	48	29.3	397	24.6	157	24.0	2196	27.2	2853	26.6	
5-<10	8	10.7	18	11.0	96	5.9	52	7.9	808	10.0	995	9.3	
10-<15	*	*	10	6.1	78	4.8	21	3.2	534	6.6	660	6.1	
15+	6	8.0	14	8.5	68	4.2	31	4.7	652	8.1	784	7.3	
History of E-alone use ^c													
Never	40	53.3	80	48.8	1005	62.3	410	62.6	4056	50.2	5664	52.8	
Past	27	36.0	55	33.5	430	26.7	143	21.8	2802	34.7	3513	32.8	
Current	8	10.7	29	17.7	177	11.0	102	15.6	1215	15.1	1548	14.4	
Total E-alone duration (y) ^c													
Nonuser	40	53.3	80	48.8	1005	62.2	410	62.6	4056	50.2	5664	52.7	
<5	18	24.0	45	27.4	386	23.9	149	22.7	2152	26.6	2787	26.0	
5-<10	8	10.7	15	9.1	89	5.5	47	7.2	776	9.6	947	8.8	
10-<15	*	*	10	6.1	75	4.6	21	3.2	491	6.1	612	5.7	
15+	6	8.0	14	8.5	62	3.8	28	4.3	607	7.5	729	6.8	
History of E + P use ^e													
Never	75	100.0	155	94.5	1564	96.7	628	95.9	7700	95.3	10,261	95.6	
Past	0	0.0	7	4.3	43	2.7	23	3.5	329	4.1	408	3.8	
Current	0	0.0	*	*	10	0.6	*	*	52	0.6	69	0.6	

(continued)

APPENDIX TABLE 7. Continued

Total E + P duration (y) ^c	75	100.0	155	94.5	1564	96.7	628	95.9	7700	95.3	10,261	95.5
Nonuser	0	0.0	6	3.7	35	2.2	18	2.7	249	3.1	312	2.9
<5	0	0.0	*	*	11	0.7	5	0.8	78	1.0	97	0.9
5-<10	0	0.0	0	0.0	*	*	*	*	30	0.4	40	0.4
10-<15	0	0.0	0	0.0	*	*	*	*	25	0.3	29	0.3
15+	0	0.0	0	0.0	*	*	*	*	25	0.3	29	0.3
Family history of MI												
No	26	36.1	74	50.3	779	54.4	337	55.3	3333	43.6	4616	46.0
Yes	46	63.9	73	49.7	653	45.6	272	44.7	4303	56.4	5414	54.0
Family history of breast cancer												
No	50	72.5	135	87.7	1239	83.9	541	87.8	6233	81.8	8309	82.5
Yes	19	27.5	19	12.3	238	16.1	75	12.2	1390	18.2	1763	17.5
Family history of colorectal cancer												
No	59	89.4	123	83.1	1110	83.0	505	86.2	6014	82.1	7921	82.6
Yes	7	10.6	25	16.9	228	17.0	81	13.8	1313	17.9	1673	17.4
Family history of stroke												
No	39	55.7	95	64.2	855	58.0	402	66.3	4553	60.1	6033	60.3
Yes	31	44.3	53	35.8	620	42.0	204	33.7	3017	39.9	3970	39.7
Family history of adult diabetes												
No	33	45.8	88	59.9	636	44.6	315	52.4	4919	64.5	6065	60.6
Yes	39	54.2	59	40.1	789	55.4	286	47.6	2709	35.5	3941	39.4
Parent broke bone after age 40												
No	51	70.8	104	69.8	1106	81.0	395	67.9	4378	58.9	6119	63.0
Yes	21	29.2	45	30.2	259	19.0	187	32.1	3055	41.1	3600	37.0
Systolic blood pressure (mm Hg)												
≤120	17	22.7	41	25.0	385	23.8	232	35.4	2676	33.1	3394	31.6
>120-140	35	46.7	65	39.6	709	43.8	279	42.6	3505	43.4	4641	43.2
>140	23	30.7	58	35.4	523	32.3	144	22.0	1901	23.5	2704	25.2
Diastolic blood pressure (mm Hg)												
<90	75	77.8 ± 9.1	164	79.8 ± 10.4	1616	84.9	655	75.9 ± 9.4	8081	75.9 ± 9.1	10,737	76.5 ± 9.3
≥90	67	89.3	135	82.3	1372	84.9	605	92.4	7499	92.8	9799	91.3
History of hypertension												
Never hypertensive	8	10.7	29	17.7	244	15.1	50	7.6	582	7.2	938	8.7
Untreated hypertensive	35	50.0	85	53.5	597	40.3	397	66.9	4569	63.3	5762	59.7
Treated hypertensive	11	15.7	16	10.1	177	12.0	73	12.3	700	9.7	993	10.3
Treated diabetes (pills or shots)	24	34.3	58	36.5	707	47.7	123	20.7	1948	27.0	2903	30.1
History of hypercholesterolemia (pills)												
No	62	82.7	146	89.0	1397	86.7	590	90.1	7580	93.9	9907	92.3
Yes	13	17.3	18	11.0	215	13.3	65	9.9	496	6.1	821	7.7
Depression (shortened CES-D/DIS ≥ 0.06)												
No	60	88.2	117	74.1	1223	83.9	485	84.3	6152	85.3	8147	84.8
Yes	8	11.8	41	25.9	234	16.1	90	15.7	1058	14.7	1460	15.2
Depression (shortened CES-D/DIS ≥ 0.06)												
No	60	82.2	138	86.8	1253	82.8	454	78.4	6930	88.0	8959	86.7
Yes	13	17.8	21	13.2	261	17.2	125	21.6	941	12.0	1375	13.3

Benign breast disease												
No	60	85.7	130	81.8	1212	81.7	489	83.4	5683	78.6	7681	79.5
Yes, 1 biopsy	9	12.9	13	8.2	215	14.5	62	10.6	1116	15.4	1439	14.9
Yes, 2+ biopsies	*	*	16	10.1	57	3.8	35	6.0	427	5.9	545	5.6
History of cardiovascular disease ^d												
No	61	82.4	154	93.9	1352	85.2	588	91.6	7150	89.3	9433	88.8
Yes	13	17.6	10	6.1	234	14.8	54	8.4	858	10.7	1184	11.2
History of MI												
No	72	96.0	163	99.4	1549	95.8	648	98.9	7828	96.9	10,402	96.9
Yes	*	*	*	*	68	4.2	7	1.1	254	3.1	337	3.1
History of CABG/PTCA												
No	72	97.3	161	98.2	1543	97.8	630	98.6	7799	97.7	10,345	97.8
Yes	*	*	*	*	35	2.2	9	1.4	182	2.3	234	2.2
History of CHF												
No	75	100.0	164	100.0	1588	98.2	651	99.4	8018	99.2	10,640	99.1
Yes	0	0.0	0	0.0	29	1.8	*	*	64	0.8	99	0.9
History of angina												
No	69	92.0	154	93.9	1498	93.3	625	95.6	7595	94.3	10,079	94.3
Yes	6	8.0	10	6.1	108	6.7	29	4.4	455	5.7	614	5.7
History of carotid endarterectomy/angioplasty												
No	74	100.0	164	100.0	1572	99.6	639	99.8	7951	99.6	10,543	99.6
Yes	0	0.0	0	0.0	6	0.4	*	*	31	0.4	38	0.4
History of DVT												
No	74	98.7	164	100.0	1604	99.2	649	99.1	7954	98.4	10,590	98.6
Yes	*	*	0	0.0	13	0.8	6	0.9	128	1.6	149	1.4
History of PE												
No	75	100.0	164	100.0	1612	99.7	655	100.0	8055	99.7	10,707	99.7
Yes	0	0.0	0	0.0	5	0.3	0	0.0	27	0.3	32	0.3
History of PAD												
No	74	98.7	164	100.0	1567	97.6	640	98.2	7943	98.6	10,531	98.5
Yes	*	*	0	0.0	38	2.4	12	1.8	110	1.4	162	1.5
History of stroke												
No	70	93.3	163	99.4	1573	97.3	645	98.5	7979	98.7	10,571	98.4
Yes	5	6.7	*	*	44	2.7	10	1.5	103	1.3	168	1.6
History of polyp removal												
No	62	88.6	138	87.3	1330	90.8	547	93.3	6456	90.0	8659	90.3
Yes	8	11.4	20	12.7	134	9.2	39	6.7	714	10.0	926	9.7
History of fracture at age 55+ ^e												
No	48	73.8	116	90.6	1106	90.9	403	90.0	5390	82.8	7168	84.5
Yes	17	26.2	12	9.4	111	9.1	45	10.0	1116	17.2	1319	15.5
History of hip fracture at age 55+ ^e												
No	65	100.0	127	99.2	1212	99.6	444	99.1	6,463	99.3	8,433	99.4
Yes	*	*	1	0.8	5	0.4	4	0.9	43	0.7	54	0.6
Number of falls in last 12 mo												
None	47	65.3	118	73.8	1054	69.4	397	65.8	4815	64.9	6530	65.9
1	13	18.1	28	17.5	272	17.9	101	16.7	1562	21.1	1999	20.2
2	5	6.9	9	5.6	129	8.5	63	10.4	682	9.2	900	9.1
3+	7	9.7	5	3.1	64	4.2	42	7.0	361	4.9	486	4.9
History of cancer ^f												
No	74	98.7	149	92.5	1530	96.0	623	96.3	7566	94.5	10,078	94.8
Yes	*	*	12	7.5	63	4.0	24	3.7	441	5.5	549	5.2

(continued)

APPENDIX TABLE 7. Continued

History of colorectal cancer												
No	75	100.0	162	98.8	1615	99.9	655	100.0	8052	99.6	10,704	99.7
Yes	0	0.0	*	*	*	*	0	0.0	30	0.4	35	0.3
History of endometrial cancer												
No	75	100.0	164	100.0	1617	100.0	654	99.8	8081	100.0	10,737	100.0
Yes	0	0.0	0	0.0	0	0.0	*	*	*	*	*	*
History of cervical cancer												
No	75	100.0	159	99.4	1578	98.8	637	98.5	7802	97.7	10,392	97.9
Yes	0	0.0	*	*	19	1.2	10	1.5	186	2.3	219	2.1
History of ovarian cancer												
No	75	100.0	159	98.8	1584	99.2	645	99.7	7947	99.4	10,554	99.4
Yes	0	0.0	*	*	12	0.8	*	*	47	0.6	63	0.6
History of lung cancer												
No	75	100.0	159	99.4	1593	99.8	646	99.8	7984	99.9	10,601	99.9
Yes	0	0.0	*	*	*	*	*	*	*	*	9	0.1
History of osteoporosis												
No	66	93.0	157	96.9	1494	95.8	569	90.9	7458	93.5	9880	93.8
Yes	5	7.0	5	3.1	65	4.2	57	9.1	519	6.5	658	6.2
History of arthritis												
No arthritis	36	50.7	101	63.5	709	46.5	342	56.9	3821	50.3	5090	50.4
Rheumatoid arthritis	7	9.9	8	5.0	162	10.6	48	8.0	400	5.3	631	6.3
Other arthritis	28	39.4	50	31.4	655	42.9	211	35.1	3377	44.4	4373	43.3
Total hip BMD (WHO criteria)												
Normal					112	64.4	41	63.1	345	50.5	498	54.0
Osteopenic					61	35.1	20	30.8	286	41.9	367	39.8
Osteoporotic					*	*	*	*	52	7.6	57	6.2
Hip scan (g/cm^2)	7	0.99 ± 0.19	*	*	174	0.96 ± 0.13	65	0.87 ± 0.11	683	0.83 ± 0.13	934	0.86 ± 0.14
Spine scan (g/cm^2)	7	1.04 ± 0.22	*	*	171	1.04 ± 0.15	65	0.96 ± 0.13	663	0.95 ± 0.16	911	0.97 ± 0.16
Whole body scan (g/cm^2)	7	1.06 ± 0.13	*	*	174	1.06 ± 0.10	66	1.03 ± 0.10	685	0.99 ± 0.10	937	1.01 ± 0.11
Lean body mass + BMC (kg)	7	42.0 ± 6.6	*	*	174	44.5 ± 5.9	66	39.4 ± 4.8	676	39.9 ± 5.6	928	40.7 ± 5.9
Fat body mass (kg)	7	44.6 ± 13.6	*	*	174	40.4 ± 12.6	66	35.9 ± 9.5	676	34.6 ± 10.9	928	35.8 ± 11.4

CABG, coronary bypass surgery; PTCA, angioplasty; WHO, World Health Organization; E + P, estrogen + progestin; E-alone, estrogen alone; BMC, bone mineral content; PHT, postmenopausal hormone therapy; BMD, bone mineral density; MI, myocardial infarction; CHF, congestive heart failure; DVT, deep vein thrombosis; PE, pulmonary embolism; PAD, peripheral arterial disease.
^aTotal includes those of unknown ethnicity.
^bApplies only to participants who have ever been pregnant.
^cBased on estrogen and progesterone pills and patches only (creams and shots excluded). Episodes less than 3 months are excluded.
^dIncludes MI, stroke, CHF, angina, carotid endarterectomy/angioplasty, DVT, PE, peripheral arterial disease, and CABG/PTCA.
^eApplies only to participants age 55 and older.
^fExcluding nonmelanoma skin cancer.
^{*}Data withheld from cells where $N < 5$ (< 10 where data are sensitive).

APPENDIX TABLE 8. Baseline medical history status of WHI Dietary Modification participants by race/ethnicity

Medical History	Race/Ethnicity														Total ^a		
	American Indian (N = 203)		Asian/Pacific Islander (N = 1107)		Black (N = 5266)		Hispanic (N = 1854)		White (N = 39,760)		Total ^a (N = 48,836)						
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD		
Hysterectomy^b																	
No	95	46.8		701	63.3		2354	44.7		989	53.3		23,136	58.2		27,634	56.6
Yes	108	53.2		406	36.7		2912	55.3		865	46.7		16,624	41.8		21,202	43.4
Age at hysterectomy (y)																	
Not hysterectomized	95	47.3		701	63.4		2354	44.9		989	53.5		23,136	58.3		27,634	56.7
<40	47	23.4		100	9.0		1318	25.1		346	18.7		5327	13.4		7245	14.9
40-49	44	21.9		214	19.4		1233	23.5		362	19.6		7373	18.6		9350	19.2
50+	15	7.5		90	8.1		338	6.4		151	8.2		3853	9.7		4502	9.2
Age at menopause (y)																	
<40	34	18.4		68	6.4		732	15.6		185	11.2		3456	9.3		4542	10.0
40-49	78	42.2		574	54.2		2042	43.4		780	47.3		19,165	51.4		22,914	50.4
50+	73	39.5		418	39.4		1933	41.1		684	41.5		14,648	39.3		18,008	39.6
Bilateral oophorectomy																	
No	149	76.4		852	78.3		3835	77.5		1427	80.0		31,104	79.6		37,855	79.3
Yes	46	23.6		236	21.7		1115	22.5		357	20.0		7990	20.4		9881	20.7
Ever pregnant																	
No	*	*		134	12.1		373	7.1		128	6.9		3404	8.6		4100	8.4
Yes	197	97.0		973	87.9		4873	92.9		1715	93.1		36,304	91.4		44,650	91.6
Age at first birth (y)^c																	
Never had term pregnancy	5	2.8		34	3.9		278	6.9		53	4.0		840	2.5		1228	3.0
<20	55	31.1		55	6.3		1404	34.6		321	24.2		4938	14.8		6892	17.1
20-29	105	59.3		651	74.5		2078	51.2		835	63.0		24,792	74.3		28,798	71.5
30+	12	6.8		134	15.3		298	7.3		116	8.8		2779	8.3		3380	8.4
Number of live births																	
Never pregnant	*	*		134	12.1		373	7.1		128	7.0		3404	8.6		4100	8.4
None	*	*		37	3.3		291	5.6		57	3.1		881	2.2		1290	2.7
1	25	12.3		108	9.8		819	15.7		176	9.6		3101	7.8		4291	8.8
2-4	128	63.1		731	66.2		2877	55.1		1092	59.7		26,447	66.8		31,669	65.2
5+	39	19.2		95	8.6		864	16.5		377	20.6		5760	14.5		7242	14.9
Number of pregnancies																	
Never pregnant	*	*		134	12.1		373	7.1		128	7.0		3404	8.6		4100	8.4
1	17	8.4		86	7.8		515	9.9		122	6.6		2510	6.3		3293	6.8
2-4	70	34.5		174	15.7		1614	30.9		647	35.3		10,049	25.3		12,747	26.2
5+	110	54.2		712	64.4		2720	52.1		938	51.1		23,697	59.8		28,529	58.6
Any induced abortions^c																	
Pregnant, never had abortion	156	89.1		845	90.1		3686	82.6		1294	86.3		31,587	92.9		38,044	91.5
One or more abortions	19	10.9		93	9.9		778	17.4		206	13.7		2401	7.1		3556	8.5
Number of months breastfed																	
Never breastfed	79	39.5		456	41.4		2731	52.9		829	45.6		19,181	48.7		23,569	48.8
1-6	64	32.0		323	29.3		1393	27.0		519	28.5		10,039	25.5		12,510	25.9
7-12	19	9.5		163	14.8		530	10.3		203	11.2		4367	11.1		5353	11.1
13-23	16	8.0		88	8.0		292	5.7		153	8.4		3585	9.1		4191	8.7
24+	22	11.0		71	6.4		213	4.1		115	6.3		2186	5.6		2653	5.5

(continued)

History of E-alone use ^d													
Never	123	60.6	725	65.6	3527	67.1	1221	66.0	24,318	61.2	30,319	62.2	
Past	29	14.3	92	8.3	632	12.0	172	9.3	4600	11.6	5606	11.5	
Current	51	25.1	289	26.1	1097	20.9	456	24.7	10,800	27.2	12,853	26.3	
Total E-alone duration (y) ^d													
Nonuser	123	60.6	725	65.5	3527	67.0	1221	65.9	24,318	61.2	30,319	62.1	
<5	29	14.3	136	12.3	903	17.1	293	15.8	5638	14.2	7099	14.5	
5-<10	18	8.9	84	7.6	335	6.4	132	7.1	2993	7.5	3609	7.4	
10-<15	14	6.9	63	5.7	219	4.2	80	4.3	2461	6.2	2872	5.9	
15+	19	9.4	99	8.9	282	5.4	128	6.9	4350	10.9	4937	10.1	
History of E + P use ^d													
Never	161	79.3	723	65.3	4654	88.4	1453	78.4	27,774	69.9	35,232	72.2	
Past	15	7.4	89	8.0	261	5.0	130	7.0	3458	8.7	4006	8.2	
Current	27	13.3	295	26.6	350	6.6	271	14.6	8498	21.4	9567	19.6	
Total E + P duration (y) ^d													
Nonuser	161	79.3	723	65.3	4654	88.4	1453	78.4	27,774	69.9	35,232	72.1	
<5	21	10.3	201	18.2	399	7.6	254	13.7	6264	15.8	7238	14.8	
5-<10	11	5.4	108	9.8	131	2.5	81	4.4	3306	8.3	3679	7.5	
10-<15	8	3.9	53	4.8	51	1.0	46	2.5	1663	4.2	1846	3.8	
15+	*	*	22	2.0	30	0.6	20	1.1	753	1.9	840	1.7	
Family history of MI													
No	92	48.7	682	65.8	2658	55.5	968	55.9	17,475	46.1	22,162	47.9	
Yes	97	51.3	354	34.2	2128	44.5	763	44.1	20,421	53.9	24,065	52.1	
Family history of breast cancer													
No	153	80.5	908	85.0	4163	85.4	1536	87.6	30,719	81.3	37,963	82.0	
Yes	37	19.5	160	15.0	714	14.6	217	12.4	7081	18.7	8325	18.0	
Family history of colorectal cancer													
No	146	82.0	857	83.0	3819	84.4	1482	88.6	30,645	83.4	37,427	83.7	
Yes	32	18.0	175	17.0	707	15.6	190	11.4	6085	16.6	7285	16.3	
Family history of stroke													
No	109	58.6	585	55.3	2911	59.5	1116	65.3	23,471	62.3	28,578	62.0	
Yes	77	41.4	472	44.7	1978	40.5	593	34.7	14,200	37.7	17,525	38.0	
Family history of adult diabetes													
No	94	50.8	594	57.6	2273	48.1	927	53.4	25,784	67.9	30,027	64.9	
Yes	91	49.2	437	42.4	2454	51.9	808	46.6	12,209	32.1	16,226	35.1	
Parent broke bone after age 40													
No	108	63.2	688	67.3	3536	78.4	1160	69.7	21,196	57.2	27,077	60.2	
Yes	63	36.8	335	32.7	972	21.6	504	30.3	15,854	42.8	17,907	39.8	
Systolic blood pressure (mm Hg)													
≥120	203		127.4 ± 16.2	1107	130.2 ± 17.8	5266.0	132.1 ± 17.0	1854	126.2 ± 16.8	39,758	127.1 ± 17.2	48,834	127.7 ± 17.2
>120-140	73	36.0	343	31.0	1440	27.3	783	42.2	15,232	38.3	18,098	37.1	
>140	89	43.8	487	44.0	2375	45.1	740	39.9	16,578	41.7	20,530	42.0	
	41	20.2	277	25.0	1451	27.6	331	17.9	7948	20.0	10,206	20.9	
Diastolic blood pressure (mm Hg)													
<90	203		76.6 ± 9.1	1107	79.3 ± 9.4	5266.0	78.6 ± 9.3	1854	75.6 ± 8.9	39,747	75.5 ± 9.0	48,823	75.9 ± 9.1
≥90	188	92.6	941	85.0	4573	86.8	1726	93.1	37,191	93.6	45,193	92.6	
	15	7.4	166	15.0	693	13.2	128	6.9	2556	6.4	3630	7.4	

(continued)

APPENDIX TABLE 8. Continued

History of hypertension																					
Never hypertensive	112	60.9	676	62.7	2158	44.7	1146	69.0	23,530	67.2	27,981	64.5									
Untreated hypertensive	13	7.1	69	6.4	467	9.7	151	9.1	2749	7.9	3503	8.1									
Treated hypertensive	59	32.1	333	30.9	2204	45.6	364	21.9	8739	25.0	11,883	27.4									
Treated diabetes (pills or shots)																					
No	188	92.6	1041	94.0	4654	88.4	1738	93.8	38,400	96.6	46,629	95.5									
Yes	15	7.4	66	6.0	612	11.6	115	6.2	1356	3.4	2202	4.5									
Treated hypercholesterolemia (pills)																					
No	166	89.7	883	82.3	4135	86.4	1439	88.3	30,857	88.4	37,993	88.0									
Yes	19	10.3	190	17.7	653	13.6	191	11.7	4040	11.6	5172	12.0									
Depression (shortened CES-D/DIS \geq 0.06)																					
No	158	81.9	1018	93.4	4359	87.1	1388	82.1	35,099	90.1	42,573	89.5									
Yes	35	18.1	72	6.6	646	12.9	302	17.9	3846	9.9	4985	10.5									
Benign breast disease																					
No	145	78.8	886	82.2	3935	80.7	1362	82.4	27,588	78.7	34,372	79.1									
Yes, 1 biopsy	28	15.2	143	13.3	690	14.1	196	11.9	5349	15.3	6505	15.0									
Yes, 2+ biopsies	11	6.0	49	4.5	252	5.2	94	5.7	2109	6.0	2561	5.9									
History of cardiovascular disease ^e																					
No	171	84.7	1046	94.9	4484	86.7	1667	91.2	35,364	90.0	43,303	89.7									
Yes	31	15.3	56	5.1	689	13.3	160	8.8	3950	10.0	4950	10.3									
History of MI																					
No	198	97.5	1096	99.0	5115	97.1	1833	98.9	39,051	98.2	47,925	98.1									
Yes	5	2.5	11	1.0	151	2.9	21	1.1	709	1.8	911	1.9									
History of CABG/PTCA																					
No	200	98.5	1095	99.4	5071	98.5	1805	99.0	38,818	98.9	47,617	98.8									
Yes	*	*	7	0.6	79	1.5	18	1.0	447	1.1	562	1.2									
History of CHF																					
No	197	97.0	1103	99.6	5181	98.4	1840	99.2	39,540	99.4	48,502	99.3									
Yes	6	3.0	*	*	85	1.6	14	0.8	219	0.6	333	0.7									
History of angina																					
No	191	94.1	1076	97.4	4965	94.9	1790	96.9	38,224	96.5	46,860	96.3									
Yes	12	5.9	29	2.6	268	5.1	57	3.1	1397	3.5	1791	3.7									
History of carotid endarterectomy/angioplasty																					
No	203	100.0	1102	100.0	5139	99.7	1823	99.9	39,195	99.8	48,097	99.8									
Yes	0	0.0	0	0.0	13	0.3	*	*	80	0.2	94	0.2									

History of DVT												
No	194	95.6	1098	99.2	5090	96.7	1808	97.5	38,275	96.3	47,087	96.5
Yes	9	4.4	9	0.8	173	3.3	46	2.5	1469	3.7	1729	3.5
History of PE												
No	200	98.5	1103	99.7	5202	98.8	1846	99.6	39,408	99.1	48,401	99.1
Yes	*	*	*	*	63	1.2	7	0.4	341	0.9	421	0.9
History of PAD												
No	197	97.5	1102	99.6	5133	98.1	1815	98.2	39,223	98.9	48,105	98.8
Yes	5	2.5	*	*	97	1.9	34	1.8	423	1.1	568	1.2
History of stroke												
No	199	98.0	1097	99.1	5163	98.0	1827	98.5	39,375	99.0	48,303	98.9
Yes	*	*	10	0.9	103	2.0	27	1.5	385	1.0	533	1.1
History of polyp removal												
No	167	91.3	980	91.4	4424	92.3	1548	94.5	31,638	91.3	39,294	91.6
Yes	16	8.7	92	8.6	367	7.7	90	5.5	3001	8.7	3621	8.4
History of fracture at age 55+f												
No	142	91.0	751	90.6	3572	91.9	1173	91.1	26,435	85.2	32,506	86.3
Yes	14	9.0	78	9.4	314	8.1	115	8.9	4591	14.8	5176	13.7
History of hip fracture at age 55+f												
No	156	100.0	829	100.0	3877	99.8	1281	99.5	30,855	99.4	37,490	99.5
Yes	*	*	*	*	9	0.2	7	0.5	171	0.6	192	0.5
Number of falls in last 12 mo												
None	117	61.9	838	77.4	3500	70.7	1147	68.1	23,984	66.5	30,011	67.3
1	46	24.3	171	15.8	879	17.8	319	18.9	7522	20.9	9039	20.3
2	15	7.9	58	5.4	411	8.3	140	8.3	3091	8.6	3771	8.5
3+	11	5.8	16	1.5	157	3.2	78	4.6	1467	4.1	1755	3.9
History of cancer ^e												
No	185	92.0	1062	96.7	5001	96.3	1769	96.6	37,581	95.4	46,201	95.6
Yes	16	8.0	36	3.3	191	3.7	63	3.4	1799	4.6	2139	4.4
History of endometrial cancer												
No	199	98.0	1103	99.6	5212	99.0	1839	99.2	39,334	98.9	48,324	99.0
Yes	*	*	*	*	54	1.0	15	0.8	426	1.1	512	1.0
History of melanoma cancer												
No	201	99.0	1107	100.0	5264	100.0	1844	99.5	39,440	99.2	48,502	99.3
Yes	*	*	0	0.0	*	*	10	0.5	319	0.8	333	0.7
History of cervical cancer												
No	197	99.0	1092	99.7	5119	98.6	1818	99.0	38,830	98.7	47,683	98.8
Yes	*	*	*	*	73	1.4	18	1.0	498	1.3	603	1.2
History of ovarian cancer												
No	198	99.5	1090	99.5	5168	99.5	1834	99.9	39,183	99.6	48,106	99.6
Yes	*	*	6	0.5	26	0.5	*	*	158	0.4	195	0.4
History of lung cancer												
No	199	100.0	1093	99.8	5193	100.0	1835	100.0	39,303	99.9	48,258	99.9
Yes	0	0.0	*	*	*	*	*	*	23	0.1	28	0.1

(continued)

APPENDIX TABLE 8. Continued

History of osteoporosis												
No	190	95.0	1036	94.4	4925	96.1	1665	92.7	36,820	93.8	45,220	94.0
Yes	10	5.0	62	5.6	201	3.9	131	7.3	2427	6.2	2878	6.0
History of arthritis												
No arthritis	86	45.3	749	68.7	2586	51.7	1068	61.7	21,379	57.1	26,210	56.9
Rheumatoid arthritis	19	10.0	45	4.1	367	7.3	91	5.3	1414	3.8	1974	4.3
Other arthritis	85	44.7	297	27.2	2045	40.9	573	33.1	14,643	39.1	17,883	38.8
Total hip BMD (WHO criteria)												
Normal					413	70.7	119	61.0	1614	58.0	2146	60.2
Osteopenic					160	27.4	65	33.3	1051	37.8	1276	35.8
Osteoporotic					11	1.9	11	5.6	119	4.3	141	4.0
Hip scan (g/cm ²)	29	0.89 ± 0.14	6	0.84 ± 0.12	584	0.97 ± 0.15	195	0.88 ± 0.14	2784	0.85 ± 0.13	3620	0.87 ± 0.14
Spine scan (g/cm ²)	29	0.96 ± 0.15	6	0.97 ± 0.23	581	1.07 ± 0.18	190	0.98 ± 0.16	2723	0.98 ± 0.16	3551	0.99 ± 0.17
Whole body scan (g/cm ²)	29	1.03 ± 0.11	6	1.01 ± 0.12	582	1.07 ± 0.11	195	1.05 ± 0.11	2786	1.01 ± 0.11	3620	1.03 ± 0.11
Lean body mass + BMC (kg)	27	39.4 ± 4.9	6	34.1 ± 4.0	581	44.3 ± 6.5	193	39.3 ± 5.2	2751	39.7 ± 5.2	3580	40.5 ± 5.7
Fat body mass (kg)	27	35.8 ± 11.6	6	22.8 ± 9.7	581	41.0 ± 13.1	193	34.6 ± 9.8	2751	33.4 ± 10.6	3580	34.7 ± 11.4

CABG, coronary bypass surgery; PTCA, angioplasty; WHO, World Health Organization; E+P, estrogen + progestin; E-alone, estrogen alone; BMC, bone mineral content; PHT, postmenopausal hormone therapy; BMD, bone mineral density; MI, myocardial infarction; CHF, congestive heart failure; DVT, deep vein thrombosis; PE, pulmonary embolism; PAD, peripheral arterial disease.

^aTotal includes those of unknown ethnicity.

^bHysterectomy at randomization.

^cApplies only to participants who have ever been pregnant.

^dBased on estrogen and progesterone pills and patches only (creams and shots excluded). Episodes less than 3 months are excluded.

^eIncludes MI, stroke, CHF, angina, carotid endarterectomy/angioplasty, DVT, PE, PAD, and CABG/PTCA.

^fApplies only to participants age 55 and older.

^gExcluding nonmelanoma skin cancer.

^hData withheld from cells where $N < 5$ (< 10 where data are sensitive).

APPENDIX TABLE 9. Baseline medical history status of WHI Calcium and Vitamin D participants by race/ethnicity

Medical History	Race/Ethnicity												Total ^a (N = 36,282)					
	American Indian (N = 149)			Asian/Pacific Islander (N = 722)			Black (N = 3317)			Hispanic (N = 1507)					White (N = 30,153)			
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD
Hysterectomy^b																		
No	65	43.6		469	65.0		1432	43.2		827	54.9		18,120	60.1		21,162	58.3	
Yes	84	56.4		253	35.0		1885	56.8		680	45.1		12,032	39.9		15,120	41.7	
Age at hysterectomy (y)																		
Not hysterectomized	65	43.9		469	65.1		1432	43.3		827	55.0		18,120	60.2		21,161	58.5	
<40	32	21.6		75	10.4		859	26.0		282	18.8		4081	13.6		5404	14.9	
40-49	41	27.7		117	16.3		811	24.5		299	19.9		5239	17.4		6588	18.2	
50+	10	6.8		59	8.2		202	6.1		95	6.3		2655	8.8		3050	8.4	
Age at menopause (y)																		
<40	29	22.7		49	7.1		493	16.8		144	10.8		2512	9.0		3276	9.8	
40-49	51	39.8		265	38.5		1192	40.7		550	41.2		10,883	38.8		13,107	39.1	
50+	48	37.5		375	54.4		1244	42.5		640	48.0		14,650	52.2		17,126	51.1	
Bilateral oophorectomy																		
No	107	73.8		571	80.3		2404	77.6		1224	84.5		24,070	81.4		28,705	81.1	
Yes	38	26.2		140	19.7		692	22.4		225	15.5		5514	18.6		6696	18.9	
Ever pregnant																		
No	*	*		87	12.0		238	7.2		109	7.3		2418	8.0		2894	8.0	
Yes	146	98.0		635	88.0		3061	92.8		1391	92.7		27,697	92.0		33,323	92.0	
Age at first birth (y)^c																		
Never had term pregnancy	*	*		16	2.9		187	7.3		34	3.1		599	2.3		846	2.8	
<20	45	34.9		47	8.5		911	35.6		282	26.0		4111	16.1		5483	18.1	
20-29	72	55.8		400	72.3		1282	50.2		674	62.2		18,777	73.5		21,421	70.9	
30+	10	7.8		90	16.3		176	6.9		93	8.6		2064	8.1		2466	8.2	
Number of live births																		
Never pregnant	*	*		87	12.0		238	7.2		109	7.3		2418	8.1		2894	8.0	
None	*	*		18	2.5		200	6.1		37	2.5		636	2.1		901	2.5	
1	14	9.4		68	9.4		494	15.0		133	8.9		2269	7.6		3028	8.4	
2-4	91	61.1		465	64.4		1770	53.8		884	59.3		19,768	65.8		23,233	64.3	
5+	39	26.2		84	11.6		585	17.8		328	22.0		4937	16.4		6051	16.8	
Number of pregnancies																		
Never pregnant	*	*		87	12.1		238	7.3		109	7.3		2418	8.0		2894	8.0	
1	*	*		47	6.5		315	9.6		93	6.2		1862	6.2		2360	6.5	
2-4	79	53.0		442	61.3		1679	51.2		745	49.9		17,473	58.1		20,627	57.1	
5+	60	40.3		145	20.1		1050	32.0		545	36.5		8318	27.7		10,265	28.4	
Any induced abortions^c																		
Pregnant, never had abortion	118	90.1		543	90.0		2291	82.3		1048	87.0		24,043	93.2		28,365	91.8	
One or more abortions	13	9.9		60	10.0		494	17.7		157	13.0		1759	6.8		2520	8.2	
Number of months breastfed																		
Never breastfed	62	42.2		278	38.7		1645	50.7		643	43.3		13,857	46.5		16,671	46.5	
1-6	46	31.3		212	29.5		881	27.2		413	27.8		7619	25.5		9293	25.9	
7-12	14	9.5		114	15.9		370	11.4		188	12.7		3438	11.5		4183	11.7	
13-23	11	7.5		66	9.2		198	6.1		132	8.9		2929	9.8		3372	9.4	
24+	14	9.5		49	6.8		150	4.6		109	7.3		1979	6.6		2328	6.5	

(continued)

History of E + P use ^d												
Never	124	83.2	518	71.7	2962	89.3	1229	81.6	22,441	74.5	27,606	76.1
Past	10	6.7	60	8.3	165	5.0	110	7.3	2624	8.7	3003	8.3
Current	15	10.1	144	19.9	190	5.7	168	11.1	5066	16.8	5651	15.6
Total E + P duration (y) ^d												
Nonuser	124	83.2	518	71.7	2962	89.3	1229	81.6	22,441	74.4	27,606	76.1
<5	13	8.7	115	15.9	221	6.7	192	12.7	4249	14.1	4851	13.4
5-<10	7	4.7	58	8.0	81	2.4	50	3.3	2075	6.9	2295	6.3
10-<15	*	*	24	3.3	35	1.1	24	1.6	972	3.2	1072	3.0
15+	*	*	7	1.0	18	0.5	12	0.8	416	1.4	458	1.3
Family history of MI												
No	63	45.7	426	62.6	1700	56.5	811	57.6	13,384	46.5	16,585	48.2
Yes	75	54.3	254	37.4	1311	43.5	597	42.4	15,413	53.5	17,850	51.8
Family history of breast cancer												
No	107	77.5	607	87.3	2591	84.5	1263	88.3	23,424	81.8	28,326	82.4
Yes	31	22.5	88	12.7	476	15.5	168	11.7	5208	18.2	6043	17.6
Family history of colorectal cancer												
No	108	80.0	564	83.7	2392	83.9	1214	89.5	23,196	83.5	27,806	83.8
Yes	27	20.0	110	16.3	458	16.1	142	10.5	4598	16.5	5388	16.2
Family history of stroke												
No	80	58.0	392	57.3	1843	59.8	927	66.5	17,867	62.5	21,367	62.4
Yes	58	42.0	292	42.7	1237	40.2	466	33.5	10,703	37.5	12,893	37.6
Family history of adult diabetes												
No	66	48.2	401	59.4	1424	47.9	727	51.5	19,629	68.1	22,506	65.4
Yes	71	51.8	274	40.6	1550	52.1	684	48.5	9211	31.9	11,923	34.6
Parent broke bone after age 40												
No	87	66.9	460	67.7	2257	79.9	937	68.5	15,951	56.8	19,955	59.6
Yes	43	33.1	219	32.3	568	20.1	430	31.5	12,155	43.2	13,527	40.4
Systolic blood pressure (mm Hg)												
≤120	45	30.2	236	32.7	917	27.6	644	42.7	11,611	38.5	13,592	37.5
>120-140	72	48.3	313	43.4	1481	44.6	615	40.8	12,621	41.9	15,270	42.1
>140	32	21.5	173	24.0	919	27.7	248	16.5	5921	19.6	7420	20.5
Diastolic blood pressure (mm Hg)												
<90	136	91.3	627	86.8	2850	85.9	1410	93.6	28,182	93.5	33,585	92.6
≥90	13	8.7	95	13.2	467	14.1	97	6.4	1965	6.5	2691	7.4
History of hypertension												
Never hypertensive	81	60.0	455	64.4	1422	46.6	992	72.5	18,598	68.8	21,773	66.6
Untreated hypertensive	11	8.1	49	6.9	318	10.4	123	9.0	2107	7.8	2644	8.1
Treated hypertensive	43	31.9	203	28.7	1313	43.0	253	18.5	6331	23.4	8279	25.3
Treated diabetes (pills or shots)												
No	136	91.9	679	94.0	2943	88.8	1411	93.7	29,112	96.6	34,685	95.6
Yes	12	8.1	43	6.0	371	11.2	95	6.3	1031	3.4	1581	4.4
Treated hypercholesterolemia (pills)												
No	119	88.8	569	81.1	2589	85.7	1186	88.6	23,750	88.2	28,549	87.8
Yes	15	11.2	133	18.9	432	14.3	153	11.4	3178	11.8	3972	12.2
Depression (shortened CES-D/DIS ≥ 0.06)												
No	120	82.8	661	92.7	2723	87.1	1111	81.3	26,713	90.4	31,701	89.7
Yes	25	17.2	52	7.3	403	12.9	256	18.7	2841	9.6	3629	10.3

(continued)

APPENDIX TABLE 9. Continued

Benign breast disease												
No	107	78.7	605	85.5	2474	80.5	1142	84.1	21,627	80.0	26,262	80.2
Yes, 1 biopsy	24	17.6	65	9.2	442	14.4	151	11.1	3954	14.6	4700	14.4
Yes, 2+ biopsies	5	3.7	38	5.4	159	5.2	65	4.8	1466	5.4	1764	5.4
History of cardiovascular disease ^e												
No	128	86.5	691	96.0	2835	87.0	1390	93.4	27,331	91.5	32,764	91.3
Yes	20	13.5	29	4.0	423	13.0	98	6.6	2524	8.5	3132	8.7
History of MI												
No	143	96.0	718	99.4	3217	97.0	1494	99.1	29,627	98.3	35,628	98.2
Yes	6	4.0	*	*	100	3.0	13	0.9	526	1.7	654	1.8
History of CABG/PTCA												
No	148	99.3	717	99.6	3192	98.4	1478	99.3	29,470	98.8	35,429	98.8
Yes	*	*	*	*	53	1.6	10	0.7	347	1.2	417	1.2
History of CHF												
No	145	97.3	720	99.7	3274	98.7	1496	99.3	30,020	99.6	36,087	99.5
Yes	*	*	*	*	43	1.3	11	0.7	132	0.4	194	0.5
History of angina												
No	139	93.3	706	98.1	3128	94.9	1464	97.5	29,112	96.8	34,963	96.7
Yes	10	6.7	14	1.9	167	5.1	37	2.5	948	3.2	1192	3.3
History of carotid endarterectomy/angioplasty												
No	149	100.0	721	100.0	3233	99.6	1489	100.0	29,766	99.8	35,784	99.8
Yes	0	0.0	0	0.0	13	0.4	0	0.0	55	0.2	68	0.2
History of DVT												
No	145	97.3	719	99.6	3228	97.3	1481	98.3	29,301	97.2	35,300	97.3
Yes	*	*	*	*	89	2.7	26	1.7	843	2.8	973	2.7
History of PE												
No	148	99.3	717	99.4	3285	99.0	1504	99.8	29,952	99.4	36,037	99.3
Yes	*	*	*	*	32	1.0	*	*	194	0.6	237	0.7
History of PAD												
No	146	98.6	720	99.9	3224	97.9	1483	98.7	29,831	99.2	35,829	99.0
Yes	*	*	*	*	70	2.1	20	1.3	254	0.8	350	1.0
History of stroke												
No	147	98.7	716	99.2	3247	97.9	1490	98.9	29,906	99.2	35,934	99.0
Yes	*	*	6	0.8	70	2.1	17	1.1	247	0.8	348	1.0
History of polyp removal												
No	124	91.2	650	92.2	2792	92.5	1289	95.2	24,644	92.0	29,858	92.2
Yes	12	8.8	55	7.8	225	7.5	65	4.8	2148	8.0	2543	7.8
History of fracture at age 55+ ^f												
No	110	89.4	509	90.6	2243	92.3	1922	92.0	20,331	85.1	24,418	86.2
Yes	13	10.6	53	9.4	186	7.7	80	8.0	3549	14.9	3916	13.8
History of hip fracture at age 55+ ^f												
No	123	100.0	562	100.0	2426	99.9	999	99.7	23,763	99.5	28,208	99.6
Yes	*	*	*	*	3	0.1	3	0.3	117	0.5	126	0.4
Number of falls in last 12 mo												
None	94	67.1	547	77.2	2167	69.5	963	69.2	18,344	66.1	22,393	66.8
1	28	20.0	118	16.6	564	18.1	260	18.7	5757	20.7	6807	20.3
2	11	7.9	34	4.8	271	8.7	105	7.5	2434	8.8	2888	8.6
3+	7	5.0	10	1.4	116	3.7	64	4.6	1218	4.4	1433	4.3

History of cancer ^a													
No	144	96.6	694	96.8	3156	96.5	1452	97.4	28,659	95.8	34,512	96.0	
Yes	5	3.4	23	3.2	116	3.5	39	2.6	1241	4.2	1443	4.0	
History of colorectal cancer													
No	148	99.3	720	99.7	3316	100.0	1507	100.0	30,112	99.9	36,237	99.9	
Yes	*	*	*	*	*	*	0	0.0	41	0.1	45	0.1	
History of endometrial cancer													
No	149	100.0	718	99.4	3291	99.2	1499	99.5	29,923	99.2	36,009	99.2	
Yes	0	0.0	*	*	26	0.8	8	0.5	230	0.8	273	0.8	
History of melanoma cancer													
No	148	99.3	722	100.0	3315	99.9	1504	99.8	29,985	99.4	36,108	99.5	
Yes	*	*	0	0.0	*	*	*	*	167	0.6	273	0.5	
History of cervical cancer													
No	149	100.0	714	99.6	3235	98.7	1481	99.1	29,522	98.8	35,522	98.9	
Yes	0	0.0	*	*	42	1.3	13	0.9	348	1.2	411	1.1	
History of ovarian cancer													
No	149	100.0	713	99.4	3260	99.5	1492	99.9	29,768	99.6	35,808	99.6	
Yes	0	0.0	*	*	17	0.5	*	*	107	0.4	129	0.4	
History of lung cancer													
No	149	100.0	717	100.0	3275	99.9	1493	100.0	29,858	100.0	35,917	100.0	
Yes	0	0.0	0	0.0	*	*	0	0.0	13	0.0	16	0.0	
History of osteoporosis													
No	137	95.1	690	96.5	3098	96.1	1363	93.5	28,265	94.9	33,949	95.0	
Yes	7	4.9	25	3.5	125	3.9	95	6.5	1504	5.1	1785	5.0	
History of arthritis													
No arthritis	69	50.4	493	69.1	1625	51.5	904	63.5	16,587	57.9	19,916	57.8	
Rheumatoid arthritis	15	10.9	31	4.3	256	8.1	71	5.0	1071	3.7	1475	4.3	
Other arthritis	53	38.7	189	26.5	1272	40.3	448	31.5	10,966	38.3	13,074	37.9	
Total hip BMD (WHO criteria)													
Normal					190	67.4	86	58.9	1164	56.6	1440	57.9	
Osteopenic					91	32.3	56	38.4	802	39.0	949	38.2	
Osteoporotic					*	*	*	*	92	4.5	97	3.9	
Hip scan (g/cm ²)	19		0.92 ± 0.18	*	282		0.97 ± 0.14	146	0.88 ± 0.14	2058	0.85 ± 0.13	2526	0.86 ± 0.14
Spine scan (g/cm ²)	19		0.98 ± 0.19	*	278		1.06 ± 0.18	144	0.97 ± 0.16	2008	0.97 ± 0.16	2470	0.98 ± 0.16
Whole body scan (g/cm ²)	19		1.02 ± 0.11	*	279		1.07 ± 0.11	146	1.04 ± 0.12	2064	1.01 ± 0.10	2529	1.02 ± 0.11
Lean body mass + BMC (kg)	18		39.7 ± 5.5	*	279		44.5 ± 6.5	145	39.0 ± 5.4	2034	39.9 ± 5.2	2497	40.3 ± 5.6
Fat body mass (kg)	18		38.4 ± 13.8	*	279		40.2 ± 13.2	145	34.6 ± 9.8	2034	33.1 ± 10.5	2497	34.0 ± 11.1

CABG, coronary bypass surgery; PTCA, angioplasty; WHO, World Health Organization; E+P, estrogen+progesterin; E-alone, estrogen alone; BMC, bone mineral content; PHT, postmenopausal hormone therapy; BMD, bone mineral density; E + P, estrogen + progesterin; MI, myocardial infarction; CHF, congestive heart failure; DVT, deep vein thrombosis; PE, pulmonary embolism; PAD, peripheral arterial disease.

^aTotal includes those of unknown ethnicity.

^bHysterectomy at randomization.

^cApplies only to participants who have ever been pregnant.

^dBased on estrogen and progesterone pills and patches only (creams and shots excluded). Episodes less than 3 months are excluded.

^eIncludes MI, stroke, CHF, angina, carotid endarterectomy/angioplasty, DVT, PE, PAD, and CABG/PTCA.

^fApplies only to participants age 55 and older.

^gExcluding nonmelanoma skin cancer.

^hData withheld from cells where N < 5 (<10 where data are sensitive).

APPENDIX TABLE 10. Baseline medical history status of WHI Observational Study participants by race/ethnicity

Medical History	Race/Ethnicity														Total ^a							
	American Indian (N = 422)				Asian/Pacific Islander (N = 2671)				Black (N = 7639)				Hispanic (N = 3623)				White (N = 78,013)				Total ^a (N = 93,676)	
	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	N	%	Mean ± SD	
Hysterectomy ^b																						
No	211	50.0		1745	65.4		3447	45.2		1984	54.8		46,303	59.4		54,443	58.2		39,147	41.8		
Yes	211	50.0		923	34.6		4187	54.8		1634	45.2		31,651	40.6		39,147	41.8					
Age at hysterectomy (y)																						
Not hysterectomized	211	50.0		1745	65.5		3447	45.3		1984	55.0		46,303	59.5		54,443	58.3					
<40	107	25.4		248	9.3		1888	24.8		651	18.0		9392	12.1		12,459	13.3					
40-49	72	17.1		427	16.0		1733	22.8		702	19.5		13,617	17.5		16,792	18.0					
50+	32	7.6		246	9.2		547	7.2		270	7.5		8532	11.0		9750	10.4					
Age at menopause (y)																						
<40	59	15.6		165	6.4		1175	16.8		373	11.4		6477	8.6		8370	9.3					
40-49	191	50.7		934	36.2		2869	41.0		1421	43.4		29,123	38.7		35,040	39.0					
50+	127	33.7		1480	57.4		2958	42.2		1482	45.2		39,712	52.7		46,373	51.7					
Bilateral oophorectomy																						
No	307	78.3		2091	80.0		5489	76.4		2873	81.9		60,962	79.5		72,717	79.4					
Yes	85	21.7		524	20.0		1692	23.6		637	18.1		15,682	20.5		18,891	20.6					
Ever pregnant																						
No	29	6.9		321	12.0		620	8.2		330	9.2		7940	10.2		9357	10.0					
Yes	389	93.1		2347	88.0		6977	91.8		3258	90.8		69,848	89.8		84,004	90.0					
Age at first birth (y) ^c																						
Never had term pregnancy	11	3.6		86	4.2		462	8.0		106	4.3		1830	2.9		2537	3.4					
<20	92	30.4		127	6.3		1935	33.5		562	22.7		7638	12.1		10,517	14.1					
20-29	171	56.4		1469	72.5		2936	50.8		1536	61.9		47,718	75.5		54,513	72.9					
30+	29	9.6		343	16.9		450	7.8		276	11.1		5998	9.5		7205	9.6					
Number of pregnancies																						
Never pregnant	29	7.0		321	12.1		620	8.2		330	9.2		7940	10.2		9357	10.0					
1	30	7.2		210	7.9		796	10.5		235	6.6		5404	7.0		6780	7.3					
2-4	225	54.1		1715	64.5		3872	51.3		1810	50.6		47,394	61.0		55,779	59.9					
5+	132	31.7		414	15.6		2260	29.9		1200	33.6		16,932	21.8		21,251	22.8					
Number of live births																						
Never pregnant	29	7.0		321	12.1		620	8.2		330	9.3		7940	10.2		9357	10.1					
None	11	2.7		90	3.4		507	6.7		117	3.3		1928	2.5		2697	2.9					
1	47	11.3		254	9.6		1195	15.8		314	8.8		6820	8.8		8779	9.4					
2-4	247	59.5		1765	66.5		3963	52.4		2074	58.4		51,803	66.8		60,674	65.2					
5+	81	19.5		226	8.5		1271	16.8		719	20.2		9042	11.7		11,500	12.4					
Any induced abortions ^d																						
Pregnant, never had abortion	316	91.6		1981	89.2		5257	83.6		2473	87.8		60,466	92.1		71,467	91.1					
One or more abortions	29	8.4		239	10.8		1035	16.4		344	12.2		5203	7.9		6965	8.9					
Number of months breastfed																						
Never breastfed	179	43.7		997	37.8		3873	52.3		1563	44.4		38,218	49.7		45,443	49.3					
1-6	121	29.5		854	32.4		1946	26.3		982	27.9		19,613	25.5		23,868	25.9					
7-12	44	10.7		360	13.7		791	10.7		406	11.5		8521	11.1		10,248	11.1					
13-23	30	7.3		227	8.6		440	5.9		248	7.0		6706	8.7		7762	8.4					
24+	36	8.8		199	7.5		353	4.8		325	9.2		3908	5.1		4900	5.3					

Age at tubal ligation (y)	333	80.4	2188	82.3	5898	78.4	2716	76.4	65,069	84.0	77,290	83.2
Never had tubal ligation	17	4.1	59	2.2	331	4.4	176	4.9	1703	2.2	2322	2.5
<30	19	4.6	157	5.9	506	6.7	234	6.6	3445	4.4	4417	4.8
30-34	31	7.5	158	5.9	572	7.6	309	8.7	4203	5.4	5335	5.7
35-39	11	2.7	77	2.9	186	2.5	95	2.7	2471	3.2	2878	3.1
40-44	*	*	19	0.7	32	0.4	26	0.7	609	0.8	704	0.8
45+												
Age last had any menstrual bleeding (y)	74	21.0	221	8.8	1546	22.8	558	18.2	8293	11.5	10,836	12.6
<40	69	19.6	313	12.4	1238	18.3	468	15.2	9385	13.1	11,644	13.6
40-44	78	22.2	552	21.9	1440	21.2	720	23.5	15,348	21.4	18,416	21.5
45-49	99	28.1	1017	40.4	1762	26.0	947	30.8	25,894	36.0	30,134	35.1
50-54	19	5.4	311	12.4	606	8.9	275	9.0	9370	13.0	10,709	12.5
55-59	13	3.7	102	4.1	190	2.8	102	3.3	3563	5.0	4023	4.7
60+												
Current health care provider	41	9.9	122	4.6	554	7.4	550	15.5	3434	4.4	4794	5.2
No	374	90.1	2536	95.4	6911	92.6	2994	84.5	73,943	95.6	87,957	94.8
Yes												
Mammogram in last 2 y	84	21.2	403	15.3	1230	17.2	790	23.4	10,004	13.2	12,710	14.0
No	312	78.8	2225	84.7	5929	82.8	2589	76.6	66,061	86.8	78,162	86.0
Yes												
Pap smear in last 3 y	29	15.8	185	11.2	358	12.2	282	16.1	3644	8.5	4590	9.2
No	155	84.2	1473	88.8	2588	87.8	1473	83.9	39,112	91.5	45,392	90.8
Yes												
Total oral contraceptive duration (y)	271	64.2	1757	65.8	4953	64.8	2207	60.9	46,176	59.2	56,232	60.0
Nonuser	86	20.4	554	20.7	1346	17.6	831	22.9	17,815	22.8	20,900	22.3
<5	37	8.8	190	7.1	699	9.2	321	8.9	7056	9.0	8391	9.0
5-<10	28	6.6	170	6.4	641	8.4	264	7.3	6966	8.9	8153	8.7
10+												
History of PHT use ^d	204	48.3	929	34.8	4399	57.7	1714	47.5	29,979	38.5	37,817	40.4
Never	50	11.8	349	13.1	1006	13.2	392	10.9	11,137	14.3	13,132	14.0
Past	168	39.8	1391	52.1	2220	29.1	1506	41.7	36,779	47.2	42,579	45.5
Current												
Total PHT duration (y) ^d	204	48.3	929	34.8	4399	57.6	1714	47.3	29,979	38.4	37,817	40.4
Nonuser	77	18.2	665	24.9	1582	20.7	879	24.3	17,337	22.2	20,831	22.2
<5	49	11.6	437	16.4	640	8.4	379	10.5	11,003	14.1	12,644	13.5
5-<10	30	7.1	284	10.6	414	5.4	284	7.8	8163	10.5	9287	9.9
10-<15	62	14.7	356	13.3	604	7.9	367	10.1	11,529	14.8	13,095	14.0
15+												
History of E-alone use ^d	252	59.7	1747	65.4	5111	67.0	2344	64.9	48,051	61.7	58,344	62.4
Never	50	11.8	270	10.1	839	11.0	316	8.7	9440	12.1	11,085	11.8
Past	120	28.4	653	24.5	1677	22.0	954	26.4	20,421	26.2	24,122	25.8
Current												
Total E-alone duration (y) ^d	252	59.7	1747	65.4	5111	66.9	2344	64.7	48,051	61.6	58,344	62.3
Nonuser	61	14.5	338	12.7	1180	15.4	541	14.9	10,362	13.3	12,664	13.5
<5	35	8.3	184	6.9	483	6.3	255	7.0	5954	7.6	6989	7.5
5-<10	21	5.0	131	4.9	330	4.3	186	5.1	4610	5.9	5346	5.7
10-<15	53	12.6	271	10.1	535	7.0	297	8.2	9035	11.6	10,332	11.0
15+												
History of E + P use ^d	356	84.4	1712	64.1	6728	88.1	2867	79.2	54,439	69.8	67,090	71.7
Never	18	4.3	209	7.8	350	4.6	188	5.2	6772	8.7	7632	8.2
Past	48	11.4	749	28.1	558	7.3	566	15.6	16,762	21.5	18,907	20.2
Current												

(continued)

History of cardiovascular disease ^e												
No	322	79.3	2478	93.8	6210	83.2	3123	88.8	67,816	88.1	81,030	87.8
Yes	84	20.7	164	6.2	1250	16.8	395	11.2	9197	11.9	11,279	12.2
History of MI												
No	397	94.1	2631	98.6	7303	95.8	3562	98.3	76,141	97.7	91,283	97.5
Yes	25	5.9	37	1.4	321	4.2	60	1.7	1816	2.3	2306	2.5
History of CABG/PTCA												
No	392	97.3	2598	98.3	7264	97.8	3458	98.7	75,434	98.1	90,393	98.1
Yes	11	2.7	46	1.7	164	2.2	46	1.3	1481	1.9	1773	1.9
History of CHF												
No	413	97.9	2658	99.5	7481	97.9	3576	98.7	77,360	99.2	92,778	99.0
Yes	9	2.1	13	0.5	157	2.1	47	1.3	652	0.8	892	1.0
History of angina												
No	382	92.0	2594	97.3	7047	93.0	3434	95.8	74,172	95.5	88,863	95.3
Yes	33	8.0	73	2.7	529	7.0	150	4.2	3523	4.5	4372	4.7
History of carotid endarterectomy/angioplasty												
No	402	99.8	2643	100.0	7399	99.6	3491	99.6	76,627	99.6	91,826	99.6
Yes	*	*	*	*	29	0.4	13	0.4	292	0.4	344	0.4
History of DVT												
No	395	94.0	2645	99.1	7355	96.4	3529	97.5	74,862	96.0	90,021	96.2
Yes	25	6.0	23	0.9	274	3.6	90	2.5	3096	4.0	3572	3.8
History of PE												
No	414	98.3	2664	99.9	7537	98.8	3592	99.3	77,169	99.0	92,660	99.0
Yes	7	1.7	*	*	95	1.2	26	0.7	810	1.0	959	1.0
History of PAD												
No	401	97.6	2652	99.4	7365	97.2	3514	98.2	76,549	98.5	91,740	98.4
Yes	10	2.4	16	0.6	211	2.8	64	1.8	1131	1.5	1467	1.6
History of stroke												
No	407	96.7	2630	98.5	7392	96.8	3551	98.1	76,966	98.7	92,206	98.5
Yes	14	3.3	39	1.5	243	3.2	70	1.9	1015	1.3	1415	1.5
History of polyp removal												
No	371	90.9	2332	89.0	6721	91.1	3164	92.8	68,005	89.8	81,726	90.0
Yes	37	9.1	287	11.0	653	8.9	244	7.2	7757	10.2	9110	10.0
History of fracture at age 55+f												
No	265	86.3	2025	88.7	5672	91.8	2333	89.0	56,150	83.3	67,426	84.3
Yes	42	13.7	257	11.3	506	8.2	289	11.0	11,291	16.7	12,541	15.7
History of hip fracture at age 55+f												
No	307	100.0	2276	99.7	6160	99.7	2606	99.4	66,950	99.3	79,429	99.3
Yes	*	*	6	0.3	18	0.3	16	0.6	491	0.7	538	0.7
Number of falls in last 12 mo												
None	252	60.4	2019	76.1	5322	70.6	2363	67.7	51,754	67.1	62,610	67.7
1	90	21.6	430	16.2	1334	17.7	661	18.9	15,658	20.3	18,394	19.9
2	41	9.8	151	5.7	567	7.5	290	8.3	6418	8.3	7579	8.2
3+	34	8.2	53	2.0	312	4.1	175	5.0	3282	4.3	3911	4.2
History of cancer ^g												
No	358	86.5	2453	92.1	6643	87.8	3225	90.7	67,030	86.6	80,853	87.0
Yes	56	13.5	210	7.9	919	12.2	332	9.3	10,413	13.4	12,075	13.0
History of breast cancer												
No	401	95.7	2596	97.3	7171	94.1	3493	96.7	73,630	94.5	88,532	94.6
Yes	18	4.3	73	2.7	449	5.9	119	3.3	4301	5.5	5021	5.4
History of colorectal cancer												
No	416	99.3	2655	99.6	7488	98.7	3579	99.2	77,144	99.1	92,562	99.1
Yes	*	*	11	0.4	98	1.3	29	0.8	701	0.9	860	0.9
History of endometrial cancer												
No	415	98.6	2642	99.0	7506	98.5	3551	98.1	76,443	98.1	91,830	98.2
Yes	6	1.4	26	1.0	111	1.5	69	1.9	1486	1.9	1721	1.8

(continued)

APPENDIX TABLE 10. Continued

History of melanoma cancer												
No	415	98.8	2662	99.8	7595	99.8	3583	99.3	76,200	98.0	91,706	98.2
Yes	5	1.2	5	0.2	16	0.2	25	0.7	1588	2.0	1659	1.8
History of cervical cancer												
No	405	98.5	2629	98.8	7427	98.5	3506	98.6	76,318	98.7	91,559	98.7
Yes	6	1.5	31	1.2	113	1.5	49	1.4	990	1.3	1205	1.3
History of ovarian cancer												
No	404	98.1	2645	99.4	7479	99.2	3526	99.1	76,785	99.3	92,119	99.3
Yes	8	1.9	15	0.6	58	0.8	31	0.9	522	0.7	644	0.7
History of lung cancer												
No	409	99.3	2657	99.9	7525	99.7	3550	99.9	77,110	99.8	92,541	99.8
Yes	*	*	*	*	19	0.3	5	0.1	188	0.2	219	0.2
History of osteoporosis												
No	379	91.5	2398	90.8	7097	94.9	3194	91.4	69,924	90.7	84,158	91.0
Yes	35	8.5	243	9.2	384	5.1	302	8.6	7203	9.3	8282	9.0
History of arthritis												
No arthritis	187	45.5	1718	65.2	3486	46.9	1962	56.6	39,671	51.6	47,687	51.8
Rheumatoid arthritis	38	9.2	123	4.7	696	9.4	263	7.6	3763	4.9	4975	5.4
Other arthritis	186	45.3	795	30.2	3243	43.7	1241	35.8	33,428	43.5	39,413	42.8
Total hip BMD (WHO criteria)												
Normal					490	59.2	227	48.9	2519	50.9	3236	51.9
Osteopenic					295	35.6	187	40.3	2090	42.2	2572	41.2
Osteoporotic					43	5.2	50	10.8	338	6.8	431	6.9
Hip scan (g/cm^2)	108	0.87 ± 0.15	25	0.82 ± 0.14	828	0.93 ± 0.15	464	0.83 ± 0.13	4947	0.83 ± 0.13	6418	0.84 ± 0.14
Spine scan (g/cm^2)	108	0.99 ± 0.17	25	0.95 ± 0.19	826	1.04 ± 0.18	458	0.95 ± 0.16	4849	0.97 ± 0.17	6312	0.98 ± 0.17
Whole body scan (g/cm^2)	107	1.01 ± 0.12	25	1.02 ± 0.12	828	1.05 ± 0.11	464	1.01 ± 0.11	4947	1.01 ± 0.10	6417	1.01 ± 0.11
Lean body mass + BMC (kg)	107	39.4 ± 5.3	24	35.5 ± 5.9	827	43.0 ± 6.2	463	37.9 ± 5.3	4905	39.0 ± 5.3	6371	39.4 ± 5.6
Fat body mass (kg)	107	36.5 ± 11.6	24	19.2 ± 10.2	827	36.7 ± 12.4	463	31.5 ± 10.8	4905	30.5 ± 11.2	6371	31.4 ± 11.6

CABG, coronary bypass surgery; PTCA, angioplasty; WHO, World Health Organization; E + P, estrogen + progestin; E-alone, estrogen alone; BMC, bone mineral content; PHT, postmenopausal hormone therapy; BMD, bone mineral density; MI, myocardial infarction; CHF, congestive heart failure; DVT, deep vein thrombosis; PE, pulmonary embolism; PAD, peripheral arterial disease.

*Total includes those of unknown ethnicity.

[†]Hysterectomy at randomization.

[‡]Applies only to participants who have ever been pregnant.

[§]Based on estrogen and progesterone pills and patches only (creams and shots excluded). Episodes less than 3 months are excluded.

^{||}Includes MI, stroke, CHF, angina, carotid endarterectomy/angioplasty, DVT, PE, PAD, and CABG/PTCA.

^{**}Applies only to participants age 55 and older.

^{††}Excluding nonmelanoma skin cancer.

*Data withheld from cells where $N < 5$ (< 10 where data are sensitive).

APPENDIX TABLE 11. Baseline dietary intake of WHI Estrogen + Progestin participants by race/ethnicity

Nutrient ^b	Race/Ethnicity											
	American Indian (N = 53)		Asian/Pacific Islander (N = 342)		Black (N = 1045)		Hispanic (N = 808)		White (N = 13,581)		Total ^a (N = 16,049)	
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Energy (kcal)	53	1498 ± 680	342	1360 ± 547	1045	1499 ± 676	808	1515 ± 671	13,581	1562 ± 579	16,049	1550 ± 593
Total fat (gm)	53	62 ± 34	342	48 ± 26	1045	58 ± 33	808	58 ± 32	13,581	57 ± 29	16,049	57 ± 29
Energy from fat (%)	53	37 ± 9	342	32 ± 8	1045	35 ± 9	808	34 ± 8	13,581	33 ± 9	16,049	33 ± 9
Total carbohydrate (gm)	53	171 ± 81	342	172 ± 68	1045	180 ± 81	808	182 ± 81	13,581	185 ± 71	16,049	184 ± 73
Energy from carbohydrates (%)	53	46 ± 10	342	51 ± 9	1045	48 ± 9	808	48 ± 9	13,581	47 ± 9	16,049	48 ± 9
Protein (gm)	53	57 ± 28	342	55 ± 23	1045	57 ± 28	808	61 ± 30	13,581	65 ± 26	16,049	64 ± 26
Energy from protein (%)	53	15 ± 3	342	16 ± 3	1045	15 ± 3	808	16 ± 3	13,581	17 ± 3	16,049	16 ± 3
Alcohol (gm)	53	0.9 ± 0.8	342	0.5 ± 0.5	1045	0.8 ± 0.7	808	0.8 ± 0.7	13,581	2.1 ± 2.6	16,049	1.9 ± 2.2
Energy from alcohol (%)	53	0.5 ± 0.3	342	0.4 ± 0.2	1045	0.5 ± 0.3	808	0.5 ± 0.3	13,581	1.2 ± 1.1	16,049	1.1 ± 1
Total PFA (gm)	53	13 ± 7	342	11 ± 6	1045	13 ± 7	808	12 ± 7	13,581	12 ± 6	16,049	12 ± 6
Total MFA (gm)	53	23 ± 12	342	18 ± 9	1045	22 ± 12	808	21 ± 12	13,581	21 ± 11	16,049	21 ± 11
Total SFA (gm)	53	21 ± 13	342	15 ± 8	1045	19 ± 11	808	19 ± 11	13,581	20 ± 10	16,049	20 ± 10
Energy from SFA (%)	53	13 ± 4	342	10 ± 3	1045	11 ± 3	808	11 ± 3	13,581	11 ± 3	16,049	11 ± 3
Total trans fatty acid (gm)	53	3.8 ± 2.1	342	2.6 ± 1.1	1045	4 ± 2.1	808	3.1 ± 1.5	13,581	3.5 ± 1.7	16,049	3.5 ± 1.7
Animal protein (gm)	53	38 ± 23	342	34 ± 17	1045	39 ± 22	808	42 ± 23	13,581	45 ± 21	16,049	44 ± 21
Vegetable protein (gm)	53	17 ± 8	342	19 ± 8	1045	16 ± 8	808	17 ± 8	13,581	18 ± 7	16,049	18 ± 7
Dietary fiber (gm)	53	13 ± 6	342	13 ± 5	1045	13 ± 6	808	14 ± 6	13,581	15 ± 6	16,049	15 ± 6
Water soluble fiber (gm)	53	4.5 ± 1.7	342	4.8 ± 1.7	1045	4.7 ± 1.8	808	4.7 ± 1.8	13,581	5.3 ± 1.8	16,049	5.2 ± 1.8
Insoluble dietary fiber (gm)	53	9 ± 4	342	8 ± 3	1045	9 ± 4	808	9 ± 4	13,581	10 ± 4	16,049	10 ± 4
Cholesterol (mg)	53	210 ± 145	342	177 ± 100	1045	203 ± 131	808	205 ± 132	13,581	193 ± 107	16,049	194 ± 110
Total vitamin A (mcg Re)	53	6140 ± 3774	342	7777 ± 4390	1045	7617 ± 4834	808	5926 ± 3836	13,581	7856 ± 4149	16,049	7721 ± 4227
Vitamin D (mcg)	53	4.1 ± 2	342	3.5 ± 1.6	1045	3.9 ± 1.9	808	3.6 ± 1.9	13,581	4.6 ± 2.2	16,049	4.5 ± 2.1
Total alpha-toc eq (mg)	53	7.4 ± 3	342	7.2 ± 3	1045	7.8 ± 3.4	808	7.2 ± 3.2	13,581	7.9 ± 3.2	16,049	7.8 ± 3.2
Vitamin K (NDS value) (mg)	53	81 ± 42	342	94 ± 49	1045	94 ± 52	808	68 ± 36	13,581	79 ± 38	16,049	80 ± 39
Vitamin C (mg)	53	67 ± 43	342	84 ± 50	1045	89 ± 54	808	78 ± 50	13,581	91 ± 51	16,049	90 ± 51
Thiamin (mg)	53	1.2 ± 0.3	342	1.2 ± 0.3	1045	1.2 ± 0.3	808	1.2 ± 0.3	13,581	1.3 ± 0.3	16,049	1.3 ± 0.3
Riboflavin (mg)	53	1.5 ± 0.4	342	1.2 ± 0.3	1045	1.4 ± 0.4	808	1.5 ± 0.4	13,581	1.7 ± 0.4	16,049	1.6 ± 0.4
Niacin (mg)	53	15 ± 6	342	15 ± 6	1045	15 ± 7	808	15 ± 7	13,581	17 ± 6	16,049	17 ± 6
Vitamin B ₆ (mg)	53	1.4 ± 0.4	342	1.4 ± 0.3	1045	1.4 ± 0.4	808	1.4 ± 0.4	13,581	1.6 ± 0.4	16,049	1.6 ± 0.4
Folate (mcg)	53	192 ± 83	342	192 ± 82	1045	204 ± 97	808	186 ± 90	13,581	231 ± 94	16,049	225 ± 95
Vitamin B ₁₂ (mcg)	53	4.2 ± 2.2	342	4.6 ± 2.4	1045	5.5 ± 3.4	808	4.5 ± 2.5	13,581	4.9 ± 2.2	16,049	4.9 ± 2.3
Calcium (mg)	53	567 ± 340	342	455 ± 241	1045	511 ± 304	808	629 ± 362	13,581	706 ± 363	16,049	679 ± 363
Total calcium (mg)	53	687 ± 448	342	728 ± 490	1045	623 ± 412	808	771 ± 498	13,581	962 ± 558	16,049	917 ± 555
Magnesium (mg)	53	212 ± 95	342	210 ± 82	1045	211 ± 95	808	216 ± 96	13,581	252 ± 93	16,049	246 ± 94
Iron (mg)	53	11 ± 5	342	11 ± 4	1045	11 ± 5	808	11 ± 5	13,581	13 ± 5	16,049	12 ± 5
Zinc (mg)	53	9 ± 4	342	8 ± 3	1045	9 ± 4	808	9 ± 4	13,581	10 ± 4	16,049	10 ± 4
Sodium (mg)	53	2417 ± 1114	342	2294 ± 1001	1045	2379 ± 1175	808	2372 ± 1184	13,581	2564 ± 1020	16,049	2535 ± 1047
Potassium (mg)	53	2087 ± 893	342	2032 ± 802	1045	2065 ± 937	808	2127 ± 957	13,581	2535 ± 922	16,049	2464 ± 943
Phosphorus (mg)	53	905 ± 463	342	829 ± 351	1045	877 ± 435	808	978 ± 475	13,581	1066 ± 441	16,049	1041 ± 447
Copper (mg)	53	1 ± 0.2	342	1 ± 0.2	1045	1 ± 0.2	808	1 ± 0.2	13,581	1.1 ± 0.2	16,049	1.1 ± 0.2
Total carotenoids (mcg)	53	11,628 ± 6738	342	11,612 ± 6286	1045	10,646 ± 6526	808	9998 ± 6544	13,581	12,416 ± 6514	16,049	12,133 ± 6577
Alpha-carotene (mcg)	53	503 ± 498	342	795 ± 585	1045	518 ± 492	808	490 ± 464	13,581	756 ± 591	16,049	721 ± 586
Beta-carotene (mcg)	53	2392 ± 1702	342	3460 ± 2194	1045	3040 ± 2184	808	2235 ± 1713	13,581	3089 ± 1938	16,049	3041 ± 1965
Lycopene (mcg)	53	6758 ± 4333	342	4946 ± 3482	1045	4600 ± 3771	808	5324 ± 4526	13,581	6448 ± 4151	16,049	6209 ± 4200
Lutein + zeaxanthin (mcg)	53	1303 ± 778	342	1460 ± 823	1045	1540 ± 944	808	1143 ± 671	13,581	1348 ± 711	16,049	1350 ± 729
Fruits and vegetables (servings/day)	53	2.6 ± 1.2	342	3.2 ± 1.3	1045	3.2 ± 1.5	808	2.6 ± 1.3	13,581	3.6 ± 1.5	16,049	3.5 ± 1.5
Fruits and vegetables (servings/day/1000 kcal)	53	1.8 ± 0.8	342	2.4 ± 0.9	1045	2.2 ± 0.9	808	1.8 ± 0.8	13,581	2.3 ± 0.9	16,049	2.3 ± 0.9
Grains (servings/day)	53	4 ± 1.9	342	4.2 ± 1.7	1045	3.7 ± 1.8	808	4.4 ± 2.2	13,579	4.1 ± 1.7	16,047	4.1 ± 1.7
Grains (servings/day/1000 kcal)	53	2.6 ± 0.7	342	3 ± 0.8	1045	2.4 ± 0.7	808	2.9 ± 0.9	13,579	2.6 ± 0.7	16,047	2.6 ± 0.7

^aTotal includes those of unknown ethnicity.
^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 12. Baseline dietary intake of WHI Estrogen-Alone participants by race/ethnicity

Nutrient ^b	Race/Ethnicity											
	American Indian (N = 67)		Asian/Pacific Islander (N = 152)		Black (N = 1488)		Hispanic (N = 611)		White (N = 7796)		Total ^a (N = 10,250)	
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Energy (kcal)	67	1577 ± 687	152	1341 ± 607	1488	1463 ± 671	611	1577 ± 730	7796	1529 ± 589	10,250	1517 ± 614
Total fat (gm)	67	59 ± 31	152	48 ± 29	1488	57 ± 32	611	61 ± 35	7796	58 ± 29	10,250	58 ± 30
Energy from fat (%)	67	34 ± 7	152	32 ± 9	1488	35 ± 9	611	35 ± 8	7796	34 ± 9	10,250	34 ± 9
Total carbohydrate (gm)	67	192 ± 77	152	166 ± 72	1488	176 ± 81	611	187 ± 88	7796	179 ± 72	10,250	179 ± 74
Energy from carbohydrates (%)	67	49 ± 9	152	49 ± 10	1488	48 ± 10	611	47 ± 9	7796	47 ± 9	10,250	47 ± 9
Protein (gm)	67	64 ± 33	152	56 ± 27	1488	57 ± 28	611	63 ± 31	7796	63 ± 26	10,250	62 ± 27
Energy from protein (%)	67	16 ± 4	152	17 ± 3	1488	16 ± 3	611	16 ± 3	7796	17 ± 3	10,250	16 ± 3
Alcohol (gm)	67	1 ± 1.1	152	0.4 ± 0.3	1488	0.6 ± 0.6	611	0.6 ± 0.6	7796	1.5 ± 1.7	10,250	1.2 ± 1.4
Energy from alcohol (%)	67	0.5 ± 0.4	152	0.2 ± 0.1	1488	0.4 ± 0.3	611	0.4 ± 0.2	7796	0.9 ± 0.8	10,250	0.8 ± 0.6
Total PFA (gm)	67	12 ± 6	152	11 ± 6	1488	12 ± 7	611	13 ± 7	7796	12 ± 6	10,250	12 ± 6
Total MFA (gm)	67	22 ± 12	152	18 ± 11	1488	21 ± 12	611	23 ± 13	7796	21 ± 11	10,250	21 ± 11
Total SFA (gm)	67	20 ± 11	152	15 ± 9	1488	18 ± 11	611	20 ± 12	7796	20 ± 11	10,250	20 ± 11
Energy from SFA (%)	67	11 ± 3	152	10 ± 3	1488	11 ± 3	611	12 ± 3	7796	12 ± 3	10,250	12 ± 3
Total trans fatty acid (gm)	67	3.5 ± 1.7	152	2.6 ± 1.3	1488	3.9 ± 2.1	611	3.4 ± 1.7	7796	3.7 ± 1.7	10,250	3.6 ± 1.8
Animal protein (gm)	67	44 ± 27	152	36 ± 22	1488	40 ± 23	611	43 ± 25	7796	44 ± 21	10,250	43 ± 22
Vegetable protein (gm)	67	18 ± 8	152	18 ± 8	1488	16 ± 8	611	18 ± 9	7796	18 ± 7	10,250	17 ± 7
Dietary fiber (gm)	67	16 ± 7	152	12 ± 5	1488	13 ± 6	611	14 ± 7	7796	15 ± 6	10,250	14 ± 6
Water soluble fiber (gm)	67	5.5 ± 2.1	152	4.5 ± 1.7	1488	4.5 ± 1.8	611	4.8 ± 1.9	7796	5.1 ± 1.8	10,250	5 ± 1.8
Insoluble dietary fiber (gm)	67	10 ± 4	152	8 ± 3	1488	8 ± 4	611	9 ± 4	7796	10 ± 4	10,250	9 ± 4
Cholesterol (mg)	67	218 ± 136	152	176 ± 117	1488	204 ± 131	611	217 ± 138	7796	197 ± 111	10,250	199 ± 116
Total vitamin A (mcg Re)	67	7745 ± 5162	152	7506 ± 4804	1488	7441 ± 4682	611	6009 ± 3810	7796	7549 ± 4094	10,250	7422 ± 4208
Vitamin D (mcg)	67	4.5 ± 2.4	152	3.7 ± 1.9	1488	3.8 ± 1.9	611	3.7 ± 1.9	7796	4.5 ± 2.2	10,250	4.3 ± 2.1
Total alpha-toc eq (mg)	67	7.7 ± 3.1	152	7.1 ± 3	1488	7.4 ± 3.4	611	7.4 ± 3.3	7796	7.7 ± 3.2	10,250	7.6 ± 3.2
Vitamin K (NDS value) (mg)	67	84 ± 44	152	96 ± 54	1488	90 ± 50	611	70 ± 37	7796	77 ± 37	10,250	79 ± 40
Vitamin C (mg)	67	95 ± 59	152	76 ± 52	1488	85 ± 55	611	78 ± 52	7796	85 ± 49	10,250	85 ± 51
Thiamin (mg)	67	1.3 ± 0.3	152	1.2 ± 0.3	1488	1.2 ± 0.3	611	1.3 ± 0.3	7796	1.3 ± 0.3	10,250	1.3 ± 0.3
Riboflavin (mg)	67	1.7 ± 0.5	152	1.2 ± 0.3	1488	1.4 ± 0.4	611	1.5 ± 0.5	7796	1.6 ± 0.4	10,250	1.6 ± 0.4
Niacin (mg)	67	17 ± 7	152	15 ± 6	1488	15 ± 7	611	15 ± 7	7796	17 ± 6	10,250	16 ± 7
Vitamin B ₆ (mg)	67	1.6 ± 0.4	152	1.3 ± 0.4	1488	1.4 ± 0.4	611	1.5 ± 0.4	7796	1.6 ± 0.4	10,250	1.5 ± 0.4
Folate (mcg)	67	231 ± 94	152	186 ± 87	1488	199 ± 98	611	188 ± 92	7796	221 ± 93	10,250	214 ± 95
Vitamin B ₁₂ (mcg)	67	5.3 ± 3.2	152	4.6 ± 2.6	1488	5.6 ± 3.4	611	4.6 ± 2.5	7796	4.8 ± 2.2	10,250	4.9 ± 2.4
Calcium (mg)	67	668 ± 384	152	461 ± 281	1488	491 ± 290	611	632 ± 389	7796	664 ± 356	10,250	628 ± 353
Total calcium (mg)	67	809 ± 531	152	687 ± 473	1488	587 ± 384	611	774 ± 510	7796	879 ± 529	10,250	816 ± 516
Magnesium (mg)	67	249 ± 104	152	207 ± 89	1488	205 ± 93	611	223 ± 100	7796	240 ± 93	10,250	233 ± 95
Iron (mg)	67	12 ± 5	152	10 ± 4	1488	11 ± 5	611	11 ± 5	7796	12 ± 5	10,250	12 ± 5
Zinc (mg)	67	10 ± 5	152	8 ± 4	1488	8 ± 4	611	9 ± 4	7796	10 ± 4	10,250	9 ± 4
Sodium (mg)	67	2586 ± 1247	152	2317 ± 1027	1488	2374 ± 1168	611	2468 ± 1229	7796	2527 ± 1031	10,250	2494 ± 1071
Potassium (mg)	67	2530 ± 1085	152	2000 ± 908	1488	1998 ± 916	611	2186 ± 981	7796	2416 ± 923	10,250	2326 ± 946
Phosphorous (mg)	67	1042 ± 535	152	837 ± 412	1488	863 ± 430	611	1007 ± 509	7796	1025 ± 443	10,250	993 ± 450
Copper (mg)	67	1.1 ± 0.3	152	1 ± 0.2	1488	1 ± 0.2	611	1 ± 0.2	7796	1 ± 0.2	10,250	1 ± 0.2
Total carotenoids (mcg)	67	12,410 ± 7676	152	11,042 ± 6084	1488	10,180 ± 6147	611	10,231 ± 6459	7796	11,919 ± 6447	10,250	11,526 ± 6460
Alpha-carotene (mcg)	67	633 ± 540	152	782 ± 614	1488	495 ± 464	611	490 ± 479	7796	707 ± 572	10,250	657 ± 559
Beta-carotene (mcg)	67	3056 ± 2285	152	3319 ± 2333	1488	2962 ± 2100	611	2262 ± 1704	7796	2941 ± 1891	10,250	2902 ± 1930
Lycopene (mcg)	67	6504 ± 4419	152	4575 ± 3140	1488	4311 ± 3544	611	5478 ± 4294	7796	6227 ± 4120	10,250	5828 ± 4124
Lutein + zeaxanthin (mcg)	67	1492 ± 881	152	1480 ± 929	1488	1507 ± 924	611	1199 ± 688	7796	1296 ± 688	10,250	1322 ± 730
Fruits and vegetables (servings/day)	67	3.7 ± 1.7	152	2.9 ± 1.4	1488	3.1 ± 1.4	611	2.6 ± 1.3	7796	3.4 ± 1.5	10,250	3.3 ± 1.5
Fruits and vegetables (servings/day/1000 kcal)	67	2.4 ± 1	152	2.2 ± 1	1488	2.1 ± 0.9	611	1.7 ± 0.8	7796	2.3 ± 0.9	10,250	2.2 ± 0.9
Grains (servings/day)	67	4.1 ± 1.7	152	4.1 ± 1.5	1488	3.7 ± 1.7	611	4.7 ± 2.4	7796	4 ± 1.7	10,250	4 ± 1.7
Grains (servings/day/1000 kcal)	67	2.6 ± 0.7	152	3 ± 0.7	1486	2.5 ± 0.7	611	2.9 ± 0.9	7795	2.6 ± 0.7	10,247	2.6 ± 0.7

^aTotal includes those of unknown ethnicity.
^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 13. Baseline dietary intake of WHI Dietary Modification participants by race/ethnicity

Nutrient ^b	Race/Ethnicity												Total ^a (N = 48,614)
	American Indian (N = 203)		Asian/Pacific Islander (N = 1103)		Black (N = 5245)		Hispanic (N = 1844)		White (N = 39,575)		Total ^a (N = 48,614)		
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	
Energy (kcal)	203	1594 ± 679	1103	1545 ± 614	5245	1570 ± 703	1844	1670 ± 732	39,575	1680 ± 618	48,614	1663 ± 636	
Total fat (gm)	203	70 ± 32	1103	65 ± 28	5245	69 ± 33	1844	72 ± 33	39,575	72 ± 29	48,614	71 ± 29	
Energy from fat (%)	203	39 ± 5	1103	38 ± 4	5245	40 ± 5	1844	39 ± 5	39,575	39 ± 5	48,614	39 ± 5	
Total carbohydrate (gm)	203	175 ± 77	1103	177 ± 70	5245	175 ± 81	1844	187 ± 84	39,575	185 ± 72	48,614	184 ± 73	
Energy from carbohydrates (%)	203	44 ± 7	1103	46 ± 6	5245	44 ± 7	1844	45 ± 6	39,575	44 ± 6	48,614	44 ± 6	
Protein (gm)	203	63 ± 29	1103	63 ± 27	5245	61 ± 29	1844	67 ± 31	39,575	68 ± 27	48,614	67 ± 27	
Energy from protein (%)	203	16 ± 3	1103	16 ± 3	5245	16 ± 3	1844	16 ± 3	39,575	16 ± 3	48,614	16 ± 3	
Alcohol (gm)	203	1.3 ± 1.4	1103	0.4 ± 0.3	5245	0.7 ± 0.6	1844	0.9 ± 0.8	39,575	1.9 ± 2.1	48,614	1.6 ± 1.8	
Energy from alcohol (%)	203	0.8 ± 0.6	1103	0.3 ± 0.1	5245	0.4 ± 0.2	1844	0.5 ± 0.3	39,575	1 ± 0.8	48,614	0.9 ± 0.7	
Total PFA (gm)	203	14 ± 7	1103	15 ± 6	5245	15 ± 7	1844	15 ± 7	39,575	15 ± 6	48,614	15 ± 6	
Total MFA (gm)	203	26 ± 12	1103	25 ± 10	5245	26 ± 12	1844	27 ± 13	39,575	27 ± 10	48,614	26 ± 11	
Total SFA (gm)	203	24 ± 11	1103	20 ± 9	5245	22 ± 11	1844	24 ± 12	39,575	25 ± 11	48,614	24 ± 11	
Energy from SFA (%)	203	13 ± 3	1103	12 ± 2	5245	13 ± 2	1844	13 ± 2	39,575	13 ± 2	48,614	13 ± 2	
Total trans fatty acid (gm)	203	4.4 ± 2	1103	3.4 ± 1.4	5245	4.7 ± 2.3	1844	3.9 ± 1.8	39,575	4.4 ± 1.9	48,614	4.4 ± 1.9	
Animal protein (gm)	203	43 ± 23	1103	41 ± 21	5245	43 ± 23	1844	47 ± 24	39,575	48 ± 21	48,614	47 ± 22	
Vegetable protein (gm)	203	18 ± 8	1103	20 ± 8	5245	17 ± 8	1844	19 ± 9	39,575	19 ± 7	48,614	19 ± 8	
Dietary fiber (gm)	203	14 ± 6	1103	13 ± 5	5245	13 ± 6	1844	14 ± 6	39,575	15 ± 6	48,614	15 ± 6	
Water soluble fiber (gm)	203	4.9 ± 1.7	1103	4.8 ± 1.7	5245	4.5 ± 1.7	1844	4.8 ± 1.8	39,575	5.2 ± 1.7	48,614	5.1 ± 1.7	
Insoluble dietary fiber (gm)	203	9 ± 4	1103	9 ± 3	5245	8 ± 4	1844	9 ± 4	39,575	10 ± 4	48,614	10 ± 4	
Cholesterol (mg)	203	229 ± 132	1103	214 ± 114	5245	231 ± 132	1844	242 ± 129	39,575	228 ± 111	48,614	229 ± 114	
Total vitamin A (mcg Re)	203	6899 ± 3834	1103	7864 ± 4467	5245	7302 ± 4307	1844	6062 ± 3549	39,575	7686 ± 3785	48,614	7572 ± 3881	
Vitamin D (mcg)	203	4.4 ± 2	1103	3.9 ± 1.8	5245	4.1 ± 2	1844	4 ± 1.9	39,575	4.8 ± 2.1	48,614	4.7 ± 2.1	
Total alpha-toc eq (mg)	203	8.2 ± 3.5	1103	8.7 ± 3.4	5245	8.4 ± 3.6	1844	8.4 ± 3.5	39,575	8.9 ± 3.5	48,614	8.8 ± 3.5	
Vitamin K (NDS value) (mg)	203	84 ± 46	1103	108 ± 55	5245	95 ± 49	1844	74 ± 37	39,575	83 ± 38	48,614	85 ± 40	
Vitamin C (mg)	203	74 ± 41	1103	78 ± 45	5245	81 ± 48	1844	76 ± 46	39,575	86 ± 45	48,614	85 ± 46	
Thiamin (mg)	203	1.2 ± 0.3	1103	1.3 ± 0.3	5245	1.2 ± 0.3	1844	1.3 ± 0.3	39,575	1.4 ± 0.3	48,614	1.3 ± 0.3	
Riboflavin (mg)	203	1.6 ± 0.4	1103	1.3 ± 0.3	5245	1.5 ± 0.4	1844	1.6 ± 0.5	39,575	1.7 ± 0.4	48,614	1.7 ± 0.4	
Niacin (mg)	203	16 ± 7	1103	16 ± 7	5245	16 ± 7	1844	17 ± 7	39,575	18 ± 7	48,614	17 ± 7	
Vitamin B ₆ (mg)	203	1.5 ± 0.4	1103	1.5 ± 0.4	5245	1.4 ± 0.4	1844	1.5 ± 0.4	39,575	1.6 ± 0.4	48,614	1.6 ± 0.4	
Folate (mcg)	203	209 ± 87	1103	197 ± 85	5245	198 ± 93	1844	194 ± 88	39,575	226 ± 89	48,614	221 ± 91	
Vitamin B ₁₂ (mcg)	203	5.1 ± 2.7	1103	5.1 ± 2.6	5245	5.9 ± 3.4	1844	5 ± 2.4	39,575	5.2 ± 2.2	48,614	5.2 ± 2.4	
Calcium (mg)	203	621 ± 341	1103	482 ± 253	5245	513 ± 294	1844	660 ± 378	39,575	704 ± 351	48,614	671 ± 351	
Total calcium (mg)	203	816 ± 503	1103	797 ± 513	5245	621 ± 394	1844	841 ± 529	39,575	976 ± 555	48,614	918 ± 550	
Magnesium (mg)	203	231 ± 92	1103	219 ± 86	5245	209 ± 93	1844	229 ± 99	39,575	250 ± 91	48,614	243 ± 93	
Iron (mg)	203	12 ± 5	1103	11 ± 5	5245	11 ± 5	1844	12 ± 5	39,575	13 ± 5	48,614	12 ± 5	
Zinc (mg)	203	9 ± 4	1103	9 ± 4	5245	9 ± 4	1844	10 ± 4	39,575	11 ± 4	48,614	10 ± 4	
Sodium (mg)	203	2567 ± 1164	1103	2569 ± 1074	5245	2533 ± 1182	1844	2640 ± 1242	39,575	2738 ± 1066	48,614	2705 ± 1094	
Potassium (mg)	203	2252 ± 892	1103	2108 ± 858	5245	2066 ± 881	1844	2220 ± 961	39,575	2479 ± 882	48,614	2400 ± 907	
Phosphorus (mg)	203	997 ± 460	1103	908 ± 397	5245	907 ± 435	1844	1054 ± 500	39,575	1095 ± 447	48,614	1065 ± 453	
Copper (mg)	203	1 ± 0.2	1103	1.1 ± 0.2	5245	1 ± 0.2	1844	1 ± 0.2	39,575	1.1 ± 0.2	48,614	1.1 ± 0.2	
Total carotenoids (mcg)	203	11,685 ± 6396	1103	11,745 ± 6267	5245	10,159 ± 5888	1844	10,545 ± 6356	39,575	12,352 ± 6072	48,614	11,998 ± 6147	
Alpha-carotene (mcg)	203	568 ± 447	1103	836 ± 613	5245	491 ± 429	1844	501 ± 440	39,575	720 ± 525	48,614	682 ± 523	
Beta-carotene (mcg)	203	2641 ± 1706	1103	3467 ± 2181	5245	2863 ± 1909	1844	2282 ± 1589	39,575	2969 ± 1723	48,614	2936 ± 1761	
Lycopene (mcg)	203	6386 ± 4334	1103	5077 ± 3657	5245	4492 ± 3489	1844	5882 ± 4338	39,575	6661 ± 4024	48,614	6307 ± 4079	
Lutein + zeaxanthin (mcg)	203	1321 ± 741	1103	1479 ± 824	5245	1469 ± 849	1844	1176 ± 638	39,575	1310 ± 638	48,614	1324 ± 668	
Fruits and vegetables (servings/day)	203	2.9 ± 1.2	1103	3 ± 1.2	5245	2.9 ± 1.2	1844	2.6 ± 1.1	39,575	3.4 ± 1.3	48,614	3.3 ± 1.3	
Fruits and vegetables (servings/day/1000 kcal)	203	1.8 ± 0.6	1103	2 ± 0.7	5245	1.9 ± 0.7	1844	1.6 ± 0.6	39,575	2 ± 0.6	48,614	2 ± 0.7	
Grains (servings/day)	203	4 ± 1.8	1103	4.5 ± 1.7	5244	3.9 ± 1.8	1844	4.9 ± 2.4	39,572	4.3 ± 1.7	48,610	4.3 ± 1.8	
Grains (servings/day/1000 kcal)	203	2.5 ± 0.7	1103	2.9 ± 0.6	5244	2.4 ± 0.6	1844	2.9 ± 0.8	39,572	2.5 ± 0.6	48,610	2.5 ± 0.6	

^aTotal includes those of unknown ethnicity.

^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 14. Baseline dietary intake of WHI Calcium and Vitamin D participants by race/ethnicity

Nutrient ^b	Race/Ethnicity										Total ^a (N = 35,583)	
	American Indian (N = 143)		Asian/Pacific Islander (N = 704)		Black (N = 3190)		Hispanic (N = 1436)		White (N = 29,693)			
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD		
Energy (kcal)	143	1569 ± 653	704	1470 ± 614	3190	1543 ± 698	1436	1600 ± 724	29,693	1629 ± 604	35,583	1616 ± 622
Total fat (gm)	143	64 ± 32	704	58 ± 29	3190	64 ± 34	1436	64 ± 34	29,693	66 ± 30	35,583	65 ± 31
Energy from fat (%)	143	37 ± 8	704	35 ± 7	3190	37 ± 7	1436	36 ± 7	29,693	36 ± 7	35,583	36 ± 7
Total carbohydrate (gm)	143	178 ± 76	704	175 ± 72	3190	177 ± 82	1436	187 ± 85	29,693	185 ± 71	35,583	184 ± 73
Energy from carbohydrates (%)	143	45 ± 9	704	48 ± 7	3190	46 ± 8	1436	47 ± 8	29,693	45 ± 8	35,583	46 ± 8
Protein (gm)	143	62 ± 29	704	60 ± 27	3190	60 ± 29	1436	64 ± 31	29,693	67 ± 26	35,583	66 ± 27
Energy from protein (%)	143	16 ± 3	704	16 ± 3	3190	16 ± 3	1436	16 ± 3	29,693	16 ± 3	35,583	16 ± 3
Alcohol (gm)	143	1.3 ± 1.4	704	0.5 ± 0.4	3190	0.7 ± 0.6	1436	0.9 ± 0.8	29,693	2 ± 2.3	35,583	1.7 ± 1.9
Energy from alcohol (%)	143	0.7 ± 0.6	704	0.3 ± 0.2	3190	0.4 ± 0.3	1436	0.5 ± 0.3	29,693	1.1 ± 0.9	35,583	1 ± 0.8
Total PFA (gm)	143	13 ± 6	704	13 ± 7	3190	14 ± 7	1436	13 ± 7	29,693	13 ± 6	35,583	13 ± 6
Total MFA (gm)	143	24 ± 11	704	22 ± 11	3190	24 ± 13	1436	24 ± 13	29,693	24 ± 11	35,583	24 ± 11
Total SFA (gm)	143	22 ± 11	704	18 ± 9	3190	21 ± 11	1436	21 ± 12	29,693	23 ± 11	35,583	22 ± 11
Energy from SFA (%)	143	13 ± 3	704	11 ± 3	3190	12 ± 3	1436	12 ± 3	29,693	13 ± 3	35,583	12 ± 3
Total trans fatty acid (gm)	143	4 ± 1.9	704	3.1 ± 1.4	3190	4.4 ± 2.2	1436	3.6 ± 1.8	29,693	4 ± 1.8	35,583	4 ± 1.8
Animal protein (gm)	143	42 ± 23	704	39 ± 21	3190	42 ± 23	1436	44 ± 24	29,693	47 ± 21	35,583	46 ± 22
Vegetable protein (gm)	143	18 ± 8	704	20 ± 8	3190	17 ± 8	1436	18 ± 9	29,693	19 ± 7	35,583	18 ± 8
Dietary fiber (gm)	143	14 ± 6	704	13 ± 5	3190	13 ± 6	1436	14 ± 7	29,693	15 ± 6	35,583	15 ± 6
Water soluble fiber (gm)	143	5 ± 1.8	704	4.8 ± 1.7	3190	4.6 ± 1.7	1436	4.8 ± 1.9	29,693	5.3 ± 1.7	35,583	5.2 ± 1.7
Insoluble dietary fiber (gm)	143	9 ± 4	704	8 ± 3	3190	8 ± 4	1436	9 ± 4	29,693	10 ± 4	35,583	10 ± 4
Cholesterol (mg)	143	214 ± 132	704	197 ± 113	3190	220 ± 132	1436	221 ± 133	29,693	214 ± 110	35,583	214 ± 114
Total vitamin A (mcg Re)	143	6863 ± 4093	704	7869 ± 4521	3190	7419 ± 4450	1436	6086 ± 3745	29,693	7753 ± 3921	35,583	7641 ± 4009
Vitamin D (mcg)	143	4.3 ± 2.1	704	3.8 ± 1.8	3190	4 ± 1.9	1436	3.8 ± 1.9	29,693	4.7 ± 2.2	35,583	4.6 ± 2.1
Total alpha-toc eq (mg)	143	7.8 ± 3.2	704	8 ± 3.4	3190	8.1 ± 3.6	1436	7.8 ± 3.5	29,693	8.4 ± 3.4	35,583	8.3 ± 3.4
Vitamin K (NDS value) (mg)	143	86 ± 46	704	102 ± 54	3190	94 ± 49	1436	71 ± 37	29,693	82 ± 38	35,583	83 ± 39
Vitamin C (mg)	143	77 ± 45	704	80 ± 49	3190	83 ± 50	1436	77 ± 49	29,693	88 ± 47	35,583	87 ± 48
Thiamin (mg)	143	1.3 ± 0.3	704	1.3 ± 0.3	3190	1.2 ± 0.3	1436	1.3 ± 0.3	29,693	1.3 ± 0.3	35,583	1.3 ± 0.3
Riboflavin (mg)	143	1.6 ± 0.4	704	1.3 ± 0.3	3190	1.5 ± 0.4	1436	1.6 ± 0.5	29,693	1.7 ± 0.4	35,583	1.6 ± 0.4
Niacin (mg)	143	16 ± 7	704	16 ± 7	3190	16 ± 7	1436	16 ± 7	29,693	17 ± 7	35,583	17 ± 7
Vitamin B ₆ (mg)	143	1.5 ± 0.4	704	1.4 ± 0.4	3190	1.4 ± 0.4	1436	1.5 ± 0.4	29,693	1.6 ± 0.4	35,583	1.6 ± 0.4
Folacin (mcg)	143	213 ± 88	704	196 ± 87	3190	200 ± 95	1436	193 ± 91	29,693	228 ± 91	35,583	223 ± 92
Vitamin B ₁₂ (mcg)	143	4.9 ± 2.6	704	4.9 ± 2.7	3190	5.8 ± 3.4	1436	4.7 ± 2.5	29,693	5.1 ± 2.2	35,583	5.1 ± 2.4
Calcium (mg)	143	635 ± 339	704	482 ± 265	3190	515 ± 300	1436	650 ± 377	29,693	707 ± 356	35,583	678 ± 357
Total calcium (mg)	143	817 ± 492	704	772 ± 498	3190	635 ± 411	1436	823 ± 524	29,693	970 ± 550	35,583	920 ± 547
Magnesium (mg)	143	232 ± 95	704	217 ± 89	3190	211 ± 95	1436	227 ± 99	29,693	251 ± 92	35,583	245 ± 94
Iron (mg)	143	12 ± 5	704	11 ± 5	3190	11 ± 5	1436	12 ± 5	29,693	13 ± 5	35,583	12 ± 5
Zinc (mg)	143	9 ± 4	704	9 ± 4	3190	9 ± 4	1436	9 ± 4	29,693	10 ± 4	35,583	10 ± 4
Sodium (mg)	143	2541 ± 1108	704	2466 ± 1096	3190	2489 ± 1190	1436	2518 ± 1243	29,693	2672 ± 1049	35,583	2642 ± 1079
Potassium (mg)	143	2283 ± 931	704	2094 ± 889	3190	2034 ± 909	1436	2199 ± 969	29,693	2506 ± 898	35,583	2434 ± 923
Phosphorus (mg)	143	988 ± 464	704	886 ± 405	3190	904 ± 441	1436	1024 ± 497	29,693	1086 ± 445	35,583	1059 ± 452
Copper (mg)	143	1 ± 0.2	704	1 ± 0.2	3190	1 ± 0.2	1436	1 ± 0.2	29,693	1.1 ± 0.2	35,583	1.1 ± 0.2
Total carotenoids (mcg)	143	11,692 ± 6859	704	11,717 ± 6262	3190	10,358 ± 6020	1436	10,519 ± 6498	29,693	12,443 ± 6245	35,583	12,130 ± 6305
Alpha-carotene (mcg)	143	568 ± 496	704	821 ± 595	3190	503 ± 446	1436	506 ± 460	29,693	737 ± 553	35,583	702 ± 549
Beta-carotene (mcg)	143	2660 ± 1860	704	3471 ± 2205	3190	2948 ± 1986	1436	2287 ± 1664	29,693	3014 ± 1803	35,583	2981 ± 1835
Lycopene (mcg)	143	6287 ± 4360	704	5059 ± 3451	3190	4543 ± 3612	1436	5797 ± 4333	29,693	6649 ± 4062	35,583	6347 ± 4114
Lutein + zeaxanthin (mcg)	143	1392 ± 836	704	1488 ± 841	3190	1494 ± 879	1436	1184 ± 666	29,693	1328 ± 665	35,583	1338 ± 691
Fruits and vegetables (servings/day)	143	3.1 ± 1.4	704	3.1 ± 1.3	3190	3 ± 1.3	1436	2.6 ± 1.2	29,693	3.5 ± 1.4	35,583	3.4 ± 1.4
Fruits and vegetables (servings/day/1000 kcal)	143	2 ± 0.8	704	2.1 ± 0.8	3190	2 ± 0.8	1436	1.7 ± 0.7	29,693	2.2 ± 0.8	35,583	2.1 ± 0.8
Grains (servings/day)	143	4 ± 1.8	704	4.3 ± 1.7	3189	3.8 ± 1.8	1436	4.8 ± 2.4	29,692	4.2 ± 1.7	35,581	4.2 ± 1.8
Grains (servings/day/1000 kcal)	143	2.5 ± 0.7	704	2.9 ± 0.7	3189	2.4 ± 0.7	1436	2.9 ± 0.9	29,692	2.6 ± 0.6	35,581	2.6 ± 0.6

^aTotal includes those of unknown ethnicity.
^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 15. Baseline dietary intake of WHI Observational Study participants by race/ethnicity

Nutrient ^b	Race/Ethnicity																	
	American Indian (N = 382)			Asian/Pacific Islander (N = 2497)			Black (N = 6749)			Hispanic (N = 3254)			White (N = 75,804)			Total ^a (N = 89,916)		
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD		
Energy (kcal)	382	1448 ± 613	2497	1326 ± 510	6749	1383 ± 597	3254	1416 ± 620	75,804	1475 ± 525	89,916	1460 ± 537						
Total fat (gm)	382	52 ± 29	2497	43 ± 22	6749	49 ± 28	3254	49 ± 28	75,804	49 ± 24	89,916	49 ± 25						
Energy from fat (%)	382	32 ± 9	2497	29 ± 8	6749	32 ± 9	3254	31 ± 9	75,804	30 ± 8	89,916	30 ± 8						
Total carbohydrate (gm)	382	178 ± 76	2497	178 ± 67	6749	176 ± 76	3254	179 ± 82	75,804	186 ± 69	89,916	184 ± 70						
Energy from carbohydrates (%)	382	49 ± 10	2497	54 ± 9	6749	51 ± 10	3254	50 ± 11	75,804	50 ± 10	89,916	50 ± 10						
Protein (gm)	382	60 ± 28	2497	54 ± 24	6749	54 ± 26	3254	58 ± 28	75,804	62 ± 24	89,916	61 ± 25						
Energy from protein (%)	382	16 ± 3	2497	16 ± 3	6749	16 ± 4	3254	16 ± 3	75,804	17 ± 3	89,916	17 ± 3						
Alcohol (gm)	382	1 ± 1	2497	0.4 ± 0.3	6749	0.7 ± 0.6	3254	0.9 ± 0.9	75,804	2.2 ± 2.6	89,916	1.9 ± 2.3						
Energy from alcohol (%)	382	0.6 ± 0.5	2497	0.3 ± 0.2	6749	0.5 ± 0.3	3254	0.6 ± 0.4	75,804	1.3 ± 1.2	89,916	1.1 ± 1.1						
Total PFA (gm)	382	11 ± 6	2497	10 ± 5	6749	11 ± 6	3254	10 ± 6	75,804	10 ± 5	89,916	10 ± 5						
Total MFA (gm)	382	20 ± 10	2497	16 ± 8	6749	19 ± 10	3254	18 ± 10	75,804	18 ± 9	89,916	18 ± 9						
Total SFA (gm)	382	18 ± 10	2497	13 ± 7	6749	16 ± 9	3254	16 ± 9	75,804	17 ± 9	89,916	16 ± 9						
Energy from SFA (%)	382	11 ± 3	2497	9 ± 3	6749	10 ± 3	3254	10 ± 3	75,804	10 ± 3	89,916	10 ± 3						
Total trans fatty Acid (gm)	382	3.1 ± 1.4	2497	2.2 ± 1.1	6749	3.3 ± 1.7	3254	2.7 ± 1.3	75,804	2.9 ± 1.3	89,916	2.9 ± 1.4						
Animal protein (gm)	382	41 ± 21	2497	32 ± 18	6749	36 ± 21	3254	38 ± 22	75,804	42 ± 20	89,916	41 ± 20						
Vegetable protein (gm)	382	17 ± 8	2497	20 ± 8	6749	16 ± 7	3254	18 ± 8	75,804	18 ± 7	89,916	18 ± 7						
Dietary fiber (gm)	382	14 ± 6	2497	14 ± 6	6749	13 ± 6	3254	15 ± 7	75,804	16 ± 6	89,916	16 ± 6						
Water soluble fiber (gm)	382	5 ± 1.8	2497	5.2 ± 1.9	6749	4.7 ± 1.8	3254	4.9 ± 1.9	75,804	5.6 ± 1.9	89,916	5.5 ± 1.9						
Insoluble dietary fiber (gm)	382	9 ± 4	2497	9 ± 4	6749	9 ± 4	3254	10 ± 4	75,804	11 ± 4	89,916	10 ± 4						
Cholesterol (mg)	382	191 ± 121	2497	156 ± 93	6749	174 ± 115	3254	178 ± 112	75,804	168 ± 95	89,916	168 ± 98						
Total vitamin A (mcg Re)	382	7257 ± 4337	2497	8722 ± 3239	6749	7958 ± 4691	3254	6308 ± 3971	75,804	8389 ± 4448	89,916	8239 ± 4510						
Vitamin D (mcg)	382	3.9 ± 2	2497	3.3 ± 1.7	6749	3.6 ± 1.8	3254	3.5 ± 1.8	75,804	4.4 ± 2.1	89,916	4.3 ± 2.1						
Total alpha-toc eq (mg)	382	7 ± 3	2497	7.1 ± 2.8	6749	7 ± 3.1	3254	6.8 ± 3	75,804	7.5 ± 3	89,916	7.5 ± 3						
Vitamin K (NDS value) (mg)	382	75 ± 41	2497	103 ± 59	6749	90 ± 51	3254	67 ± 37	75,804	80 ± 39	89,916	80 ± 41						
Vitamin C (mg)	382	87 ± 51	2497	95 ± 56	6749	91 ± 57	3254	86 ± 54	75,804	100 ± 54	89,916	99 ± 54						
Thiamin (mg)	382	1.2 ± 0.3	2497	1.2 ± 0.3	6749	1.2 ± 0.3	3254	1.2 ± 0.3	75,804	1.3 ± 0.3	89,916	1.3 ± 0.3						
Riboflavin (mg)	382	1.5 ± 0.4	2497	1.2 ± 0.3	6749	1.4 ± 0.4	3254	1.5 ± 0.4	75,804	1.6 ± 0.4	89,916	1.6 ± 0.4						
Niacin (mg)	382	15 ± 6	2497	15 ± 6	6749	15 ± 6	3254	15 ± 7	75,804	17 ± 6	89,916	16 ± 6						
Vitamin B ₆ (mg)	382	1.5 ± 0.4	2497	1.4 ± 0.3	6749	1.4 ± 0.4	3254	1.5 ± 0.4	75,804	1.6 ± 0.4	89,916	1.6 ± 0.4						
Folacin (mcg)	382	210 ± 91	2497	207 ± 90	6749	203 ± 97	3254	196 ± 94	75,804	240 ± 97	89,916	234 ± 98						
Vitamin B ₁₂ (mcg)	382	4.5 ± 2.4	2497	4.1 ± 2.2	6749	4.8 ± 2.9	3254	4.2 ± 2.2	75,804	4.6 ± 2.2	89,916	4.6 ± 2.1						
Calcium (mg)	382	626 ± 384	2497	475 ± 267	6749	497 ± 290	3254	619 ± 369	75,804	705 ± 366	89,916	675 ± 366						
Total calcium (mg)	382	857 ± 568	2497	835 ± 571	6749	633 ± 419	3254	842 ± 560	75,804	1056 ± 618	89,916	999 ± 614						
Magnesium (mg)	382	225 ± 95	2497	220 ± 86	6749	207 ± 91	3254	221 ± 98	75,804	254 ± 92	89,916	247 ± 94						
Iron (mg)	382	11 ± 5	2497	11 ± 5	6749	11 ± 5	3254	11 ± 5	75,804	13 ± 5	89,916	12 ± 5						
Zinc (mg)	382	9 ± 4	2497	8 ± 3	6749	8 ± 4	3254	9 ± 4	75,804	10 ± 4	89,916	10 ± 4						
Sodium (mg)	382	2401 ± 1157	2497	2270 ± 964	6749	2213 ± 1044	3254	2257 ± 1112	75,804	2460 ± 957	89,916	2425 ± 979						
Potassium (mg)	382	2268 ± 938	2497	2113 ± 876	6749	2031 ± 898	3254	2179 ± 978	75,804	2558 ± 919	89,916	2483 ± 941						
Phosphorus (mg)	382	961 ± 471	2497	835 ± 373	6749	837 ± 405	3254	951 ± 468	75,804	1045 ± 430	89,916	1016 ± 435						
Copper (mg)	382	1 ± 0.2	2497	1 ± 0.2	6749	1 ± 0.2	3254	1 ± 0.2	75,804	1.1 ± 0.2	89,916	1 ± 0.2						
Total carotenoids (mcg)	382	11,993 ± 7103	2497	12,376 ± 6959	6749	10,481 ± 6340	3254	10,824 ± 6764	75,804	13,129 ± 6858	89,916	12,782 ± 6898						
Alpha-carotene (mcg)	382	627 ± 567	2497	896 ± 697	6749	524 ± 496	3254	547 ± 503	75,804	827 ± 647	89,916	786 ± 641						
Beta-carotene (mcg)	382	2863 ± 2001	2497	3993 ± 2662	6749	3139 ± 2194	3254	2494 ± 1848	75,804	3421 ± 2147	89,916	3371 ± 2169						
Lycopene (mcg)	382	6278 ± 4536	2497	4738 ± 3531	6749	4244 ± 3476	3254	5685 ± 4369	75,804	6554 ± 4315	89,916	6243 ± 4319						
Lutein + zeaxanthin (mcg)	382	1326 ± 754	2497	1702 ± 1054	6749	1574 ± 994	3254	1260 ± 750	75,804	1451 ± 781	89,916	1458 ± 806						
Fruits and vegetables (servings/day)	382	3.2 ± 1.4	2497	3.7 ± 1.6	6749	3.4 ± 1.6	3254	3.1 ± 1.5	75,804	4 ± 1.7	89,916	3.9 ± 1.7						
Fruits and vegetables (servings/day/1000 kcal)	382	2.3 ± 1	2497	2.8 ± 1.1	6749	2.5 ± 1.1	3254	2.2 ± 1	75,804	2.8 ± 1	89,916	2.7 ± 1.1						
Grains (servings/day)	382	4.1 ± 2	2497	4.3 ± 1.7	6745	3.6 ± 1.7	3253	4.4 ± 2.2	75,795	4 ± 1.7	89,901	4 ± 1.7						
Grains (servings/day/1000 kcal)	382	2.8 ± 0.8	2497	3.2 ± 0.8	6745	2.5 ± 0.8	3253	3.1 ± 0.9	75,795	2.7 ± 0.7	89,901	2.7 ± 0.8						

^aTotal includes those of unknown ethnicity.

^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 16. Baseline blood analytes from a random sample of WHI Estrogen + Progestin participants by race/ethnicity

Blood Analyte ^b	Race/Ethnicity											
	American Indian (N = 25)		Asian/Pacific Islander (N = 113)		Black (N = 255)		Hispanic (N = 185)		White (N = 714)		Total ^a (N = 1319)	
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Total cholesterol (mg/dl)	25	208.3 ± 40	113	220.5 ± 33	255	217.6 ± 41.5	185	223.3 ± 37.9	713	222.7 ± 36.3	1318	222 ± 37.1
LDL-C (mg/dl)	25	122.5 ± 39.1	112	129.2 ± 30.1	253	134.6 ± 41.1	181	135 ± 37	699	135 ± 32.1	1297	134.7 ± 32.9
HDL-C (mg/dl)	25	51.5 ± 13.8	113	57.9 ± 14.9	254	55.2 ± 12.7	185	51.9 ± 12.1	709	55.5 ± 13.9	1313	55.3 ± 13.6
HDL-2 (mg/dl)	25	15.4 ± 5.8	112	17.3 ± 7.7	248	15.9 ± 6.7	182	14.3 ± 6.8	683	16.6 ± 7.2	1276	16.4 ± 7
HDL-3 (mg/dl)	25	35.9 ± 8.7	112	39.8 ± 8.1	248	38.7 ± 7.1	182	36.7 ± 7.1	683	38.2 ± 8.1	1276	38.2 ± 7.9
Triglyceride (mg/dl)	25	133.1 ± 68.2	113	133.4 ± 61.2	255	108.6 ± 47.6	185	150.3 ± 66.9	713	132.5 ± 61	1318	130.9 ± 59.4
LP(a) (mg/dl)	25	8.1 ± 10	112	13.1 ± 13.1	249	28.4 ± 25.8	185	11.9 ± 14.2	701	15.4 ± 16.9	1299	16 ± 17.2
Retinol (µg/ml)	25	0.5 ± 0.12	113	0.59 ± 0.14	255	0.54 ± 0.15	185	0.55 ± 0.14	714	0.59 ± 0.14	1318	0.59 ± 0.14
Alpha-carotene (µg/ml)	25	0.04 ± 0.03	113	0.1 ± 0.06	255	0.04 ± 0.04	185	0.07 ± 0.06	714	0.07 ± 0.05	1318	0.06 ± 0.05
Beta-carotene (µg/ml)	25	0.19 ± 0.16	113	0.44 ± 0.29	255	0.23 ± 0.19	185	0.24 ± 0.18	714	0.26 ± 0.2	1318	0.26 ± 0.2
Beta-cryptoxanthine (µg/ml)	25	0.05 ± 0.03	113	0.17 ± 0.14	255	0.07 ± 0.05	185	0.1 ± 0.07	714	0.07 ± 0.05	1318	0.07 ± 0.05
Lycopene (µg/ml)	25	0.35 ± 0.15	113	0.34 ± 0.23	255	0.34 ± 0.21	185	0.4 ± 0.22	714	0.36 ± 0.2	1318	0.36 ± 0.19
Lutein and zeaxanthin (µg/ml)	25	0.16 ± 0.08	113	0.26 ± 0.11	255	0.2 ± 0.1	185	0.2 ± 0.09	714	0.19 ± 0.08	1318	0.19 ± 0.08
Alpha-tocopherol (µg/ml)	25	12.1 ± 4.2	113	17.1 ± 7.3	255	13.4 ± 5.3	185	14.7 ± 5.3	714	15.1 ± 6.2	1318	15 ± 6
Gamma-tocopherol (µg/ml)	25	2.7 ± 1.3	113	1.1 ± 1	255	2 ± 1.4	185	1.8 ± 1.2	714	1.7 ± 1.4	1318	1.7 ± 1.3
Factor VII activity, antigen (%)	22	118 ± 31.5	111	120.6 ± 26.2	243	110.4 ± 28.6	174	120.4 ± 30	694	121.9 ± 28.3	1271	120.7 ± 28.4
Factor VIIIC (%)	22	116.2 ± 30.4	111	122.7 ± 24.3	237	113.5 ± 29.1	167	120.3 ± 28	688	123.4 ± 25.9	1252	122.2 ± 26.3
Fibrinogen (mg/dl)	22	313.1 ± 69.6	111	295.3 ± 56.4	243	312.8 ± 66.1	174	313.2 ± 64.7	692	299.7 ± 54.4	1269	301.5 ± 56.2
Glucose (mg/dl)	25	107.1 ± 31.6	113	100.1 ± 18.8	255	104.2 ± 28.2	185	102.4 ± 23.7	710	97.5 ± 17.6	1315	98.4 ± 19
Insulin (µIU/ml)	25	10.5 ± 6.1	108	8.9 ± 4.8	252	11.7 ± 5.8	184	11.9 ± 6	684	9.8 ± 4.8	1280	10 ± 4.9

HDL, high-density lipoprotein; HDL-C, high-density lipoprotein cholesterol; LDL, low-density lipoprotein.
^aTotal includes those of unknown ethnicity. Means and standard deviations are weighted by ethnicity.
^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 17. Baseline blood analytes from a random sample of WHI Estrogen-Alone participants by race/ethnicity

Blood Analyte ^b	Race/Ethnicity												Total ^a (N = 992)
	American Indian (N = 27)		Asian/Pacific Islander (N = 44)		Black (N = 332)		Hispanic (N = 143)		White (N = 423)		N	Mean ± SD	
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD			
Total cholesterol (mg/dl)	26	233.8 ± 40.2	44	232.8 ± 32.6	332	221.6 ± 41.4	143	215.3 ± 39.1	423	227.2 ± 40.3	991	226.5 ± 41.3	
LDL-C (mg/dl)	24	141.2 ± 30.6	42	135.6 ± 34.2	331	139.2 ± 39.7	141	127.5 ± 33.7	410	137.4 ± 37.9	970	137.3 ± 37.8	
HDL-C (mg/dl)	26	53.5 ± 12.8	44	57.8 ± 16	331	55.6 ± 12.8	142	52.9 ± 12.5	421	54 ± 14	987	54.2 ± 13.8	
HDL-2 (mg/dl)	26	16.1 ± 5.5	43	16.4 ± 8.4	329	16.6 ± 6.6	142	15.2 ± 6.4	400	15.8 ± 6.8	963	15.9 ± 6.7	
HDL-3 (mg/dl)	27	37 ± 7.6	43	40.2 ± 8.7	329	38.4 ± 7.9	142	37.1 ± 7.6	400	37.7 ± 8.4	964	37.8 ± 8.3	
Triglyceride (mg/dl)	26	155 ± 79	44	158.8 ± 77.8	332	108.6 ± 43.7	143	147.3 ± 59.5	423	148 ± 70.4	991	144.1 ± 67.3	
LP(a) (mg/dl)	26	16.4 ± 21.5	44	17 ± 12.1	326	28 ± 26.4	141	10.3 ± 11.1	414	15.5 ± 16.8	974	16.1 ± 17.2	
Retinol (µg/ml)	27	0.58 ± 0.17	44	0.6 ± 0.13	332	0.54 ± 0.14	143	0.5 ± 0.14	423	0.6 ± 0.14	992	0.59 ± 0.14	
Alpha-carotene (µg/ml)	27	0.05 ± 0.04	44	0.09 ± 0.08	332	0.05 ± 0.04	143	0.07 ± 0.06	423	0.05 ± 0.04	992	0.05 ± 0.04	
Beta-carotene (µg/ml)	27	0.22 ± 0.21	44	0.4 ± 0.3	331	0.26 ± 0.2	143	0.21 ± 0.2	423	0.21 ± 0.15	991	0.22 ± 0.16	
Beta-cryptoxanthine (µg/ml)	27	0.07 ± 0.05	44	0.12 ± 0.09	332	0.07 ± 0.04	143	0.09 ± 0.08	423	0.06 ± 0.04	992	0.06 ± 0.04	
Lycopene (µg/ml)	27	0.32 ± 0.16	44	0.36 ± 0.21	332	0.32 ± 0.22	143	0.35 ± 0.19	423	0.35 ± 0.19	992	0.35 ± 0.19	
Lutein and zeaxanthin (µg/ml)	27	0.19 ± 0.1	44	0.27 ± 0.13	332	0.22 ± 0.1	143	0.18 ± 0.08	423	0.18 ± 0.08	992	0.18 ± 0.08	
Alpha-tocopherol (µg/ml)	27	16.2 ± 7.3	44	18.9 ± 7.9	332	13.3 ± 5	143	14.1 ± 6.1	423	15 ± 6.2	992	14.9 ± 6	
Gamma-tocopherol (µg/ml)	27	2 ± 1.7	44	1.2 ± 0.9	332	2.1 ± 1.4	143	1.8 ± 1.3	423	2 ± 1.5	992	1.9 ± 1.5	
Factor VII activity, antigen (%)	25	135.3 ± 32.4	42	125.7 ± 23.7	324	111 ± 23.4	136	118.8 ± 25.7	412	128.6 ± 28.4	962	126.5 ± 28.4	
Factor VIIIC (%)	25	133 ± 26.6	42	125.6 ± 23.1	314	114.8 ± 26	131	121 ± 27.4	409	128.9 ± 26.5	943	127.1 ± 27	
Fibrinogen (mg/dl)	25	326.9 ± 57.3	42	290.2 ± 55.6	324	319.9 ± 62.7	136	310.3 ± 71.5	410	303.9 ± 60.3	960	305.6 ± 62	
Glucose (mg/dl)	27	110 ± 33.5	44	103.4 ± 21.7	331	105.8 ± 29.4	141	100.3 ± 23.2	423	101.5 ± 23.3	989	101.9 ± 23.9	
Insulin (µIU/ml)	27	12 ± 6.8	43	10.3 ± 6.1	324	12.6 ± 6.6	140	11.8 ± 6.2	414	10.8 ± 5.5	971	11 ± 5.5	

HDL, high-density lipoprotein; HDL-C, high-density lipoprotein cholesterol; LDL, low-density lipoprotein.

^aTotal includes those of unknown ethnicity. Means and standard deviations are weighted by ethnicity.

^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 18. Baseline blood analytes from a random sample of WHI Dietary Modification participants by race/ethnicity

Blood Analyte ^b	Race/Ethnicity											
	American Indian (N = 58)		Asian/Pacific Islander (N = 173)		Black (N = 622)		Hispanic (N = 260)		White (N = 1201)		Total ^a (N = 2398)	
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Total cholesterol (mg/dl)	57	216.7 ± 37.1	172	217.9 ± 35.8	662	216.3 ± 40.8	260	213.4 ± 36.2	1201	222.2 ± 36.9	2395	221.2 ± 37.1
LDL-C (mg/dl)	56	124.2 ± 35.7	166	123.5 ± 35.7	662	132.1 ± 39.4	256	125.3 ± 34.8	1171	128.9 ± 35.2	2352	128.8 ± 35
HDL-C (mg/dl)	57	54 ± 15.9	172	56.7 ± 13.4	662	57.1 ± 14	260	52.9 ± 12	1195	58 ± 15.4	2389	57.6 ± 14.9
HDL-2 (mg/dl)	55	16.3 ± 7.4	168	16.9 ± 7.3	653	17.2 ± 7.2	257	14.9 ± 6.3	1159	17.2 ± 7.7	2335	17 ± 7.4
HDL-3 (mg/dl)	56	38 ± 8.2	168	39.4 ± 7.9	653	39.3 ± 8.2	257	37.2 ± 7.5	1160	40.3 ± 9.2	2337	40 ± 8.9
Triglyceride (mg/dl)	57	155.9 ± 68.3	172	153.9 ± 72.3	662	108 ± 43.2	260	148.4 ± 62.6	1201	142.2 ± 66.7	2395	139.3 ± 64
LP(a) (mg/dl)	56	10.5 ± 13.4	169	13.2 ± 11.1	652	27.9 ± 24.3	260	11 ± 13.1	1183	14.3 ± 16.1	2364	15 ± 16.5
Retinol (µg/ml)	58	0.59 ± 0.15	173	0.59 ± 0.14	662	0.53 ± 0.14	260	0.53 ± 0.14	1199	0.61 ± 0.14	2396	0.6 ± 0.14
Alpha-carotene (µg/ml)	58	0.04 ± 0.04	173	0.08 ± 0.06	662	0.04 ± 0.04	260	0.07 ± 0.05	1199	0.06 ± 0.05	2396	0.06 ± 0.05
Beta-carotene (µg/ml)	58	0.2 ± 0.16	173	0.32 ± 0.24	662	0.24 ± 0.17	260	0.21 ± 0.17	1199	0.22 ± 0.17	2396	0.22 ± 0.17
Beta-cryptoxanthine (µg/ml)	58	0.06 ± 0.03	173	0.13 ± 0.1	662	0.07 ± 0.05	260	0.08 ± 0.06	1199	0.07 ± 0.04	2396	0.07 ± 0.05
Lycopene (µg/ml)	58	0.32 ± 0.16	173	0.33 ± 0.19	662	0.34 ± 0.21	260	0.37 ± 0.2	1199	0.38 ± 0.18	2396	0.37 ± 0.18
Lutein and zeaxanthin (µg/ml)	58	0.18 ± 0.08	173	0.25 ± 0.1	662	0.22 ± 0.1	260	0.18 ± 0.08	1199	0.19 ± 0.09	2396	0.19 ± 0.09
Alpha-tocopherol (µg/ml)	58	15.7 ± 6.5	173	17.4 ± 7.4	662	13 ± 4.8	260	14.6 ± 5.8	1199	15.2 ± 5.7	2396	15 ± 5.5
Gamma-tocopherol (µg/ml)	58	1.8 ± 1.3	173	1.3 ± 1	662	2.1 ± 1.4	260	1.7 ± 1.2	1199	1.7 ± 1.3	2396	1.7 ± 1.3
Factor VII activity, antigen (%)	56	132.9 ± 33.3	168	128.4 ± 28.6	641	111.3 ± 27.7	252	118.9 ± 28.5	1162	129.2 ± 32.9	2323	127 ± 32.2
Factor VIIIC (%)	56	125.2 ± 29.1	168	124.2 ± 24.6	623	114.3 ± 28.9	245	117.8 ± 28.5	1144	127.8 ± 31.8	2280	125.9 ± 31.1
Fibrinogen (mg/dl)	56	300.4 ± 64.4	169	286.9 ± 56.2	641	316 ± 65.8	252	301.4 ± 62.9	1155	291.4 ± 56.4	2317	294 ± 57.4
Glucose (mg/dl)	58	102.7 ± 20.4	173	99.2 ± 15.5	662	102.2 ± 25.9	259	99.3 ± 23.4	1200	97.2 ± 18.1	2396	97.9 ± 19
Insulin (µIU/ml)	55	11.5 ± 5.9	169	9.1 ± 4.4	654	12.1 ± 6.1	254	11.7 ± 6.3	1168	9.7 ± 4.9	2344	10 ± 5

HDL, high-density lipoprotein; HDL-C, high-density lipoprotein cholesterol; LDL, low-density lipoprotein.
^aTotal includes those of unknown ethnicity. Means and standard deviations are weighted by ethnicity.
^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 19. Baseline blood analytes from a random sample of WHI Calcium and Vitamin D participants by race/ethnicity

Blood Analyte ^b	Race/Ethnicity											
	American Indian (N = 53)		Asian/Pacific Islander (N = 161)		Black (N = 538)		Hispanic (N = 287)		White (N = 1125)		Total ^a (N = 2202)	
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Total cholesterol (mg/dl)	52	215.6 ± 36.2	161	223.5 ± 35.6	538	215.6 ± 41.6	287	218 ± 36.4	1125	223.4 ± 36.1	2201	222.3 ± 36.6
LDL-C (mg/dl)	52	124.6 ± 35.5	156	130 ± 36.2	536	131.6 ± 41.1	283	128.9 ± 34.5	1099	131.7 ± 35	2163	131.4 ± 35
HDL-C (mg/dl)	52	52.7 ± 16.4	161	57 ± 13.8	537	56.7 ± 14.3	286	53.3 ± 12.4	1121	56.9 ± 15.1	2195	56.7 ± 14.7
HDL-2 (mg/dl)	50	16.4 ± 6.6	158	17 ± 7.4	528	16.7 ± 7.3	282	14.7 ± 6.9	1080	16.9 ± 7.7	2135	16.8 ± 7.5
HDL-3 (mg/dl)	51	36.9 ± 9.3	158	39.4 ± 7.9	528	39.4 ± 8.3	282	37.7 ± 7.4	1081	39.5 ± 8.9	2137	39.3 ± 8.6
Triglyceride (mg/dl)	52	153.6 ± 70.4	161	149 ± 67.1	538	106.9 ± 44.6	287	149.9 ± 61.4	1125	139.7 ± 66	2201	137 ± 63.4
LP(a) (mg/dl)	51	8.5 ± 11.1	159	14.1 ± 12	528	26.6 ± 24.5	286	10.8 ± 12.3	1109	14.3 ± 16.1	2171	14.9 ± 16.4
Retinol (µg/ml)	53	0.57 ± 0.14	161	0.6 ± 0.14	538	0.53 ± 0.14	287	0.53 ± 0.14	1125	0.6 ± 0.14	2201	0.59 ± 0.14
Alpha-carotene (µg/ml)	53	0.04 ± 0.03	161	0.09 ± 0.06	538	0.04 ± 0.04	287	0.07 ± 0.05	1125	0.06 ± 0.05	2201	0.06 ± 0.05
Beta-carotene (µg/ml)	53	0.21 ± 0.19	161	0.38 ± 0.28	538	0.23 ± 0.18	287	0.21 ± 0.18	1125	0.23 ± 0.17	2201	0.23 ± 0.17
Beta-cryptoxanthine (µg/ml)	53	0.05 ± 0.03	161	0.14 ± 0.11	538	0.07 ± 0.04	287	0.09 ± 0.07	1125	0.07 ± 0.05	2201	0.07 ± 0.05
Lycopene (µg/ml)	53	0.34 ± 0.15	161	0.35 ± 0.22	538	0.32 ± 0.22	287	0.37 ± 0.21	1125	0.37 ± 0.19	2201	0.37 ± 0.19
Lutein and Zeaxanthin (µg/ml)	53	0.18 ± 0.09	161	0.26 ± 0.11	538	0.21 ± 0.1	287	0.19 ± 0.09	1125	0.19 ± 0.08	2201	0.19 ± 0.08
Alpha-tocopherol (µg/ml)	53	15.9 ± 6.8	161	18 ± 8	538	13.2 ± 5.2	287	14.7 ± 5.6	1125	15.2 ± 5.9	2201	15 ± 5.7
Gamma-tocopherol (µg/ml)	53	1.9 ± 1.3	161	1.2 ± 1	538	2 ± 1.4	287	1.8 ± 1.2	1125	1.8 ± 1.3	2201	1.8 ± 1.3
Factor VII activity, antigen (%)	48	130.1 ± 32.9	158	124.6 ± 26.6	522	110.1 ± 27.1	272	120.4 ± 29.6	1093	128.4 ± 32	2131	126.1 ± 31.4
Factor VIIIC (%)	48	123.8 ± 31.4	158	123.5 ± 24.4	502	114.3 ± 29.1	263	119.1 ± 27.8	1081	126.7 ± 30	2089	125.1 ± 29.6
Fibrinogen (mg/dl)	48	303.3 ± 65.5	159	287.5 ± 55.1	522	319.2 ± 64.3	272	304 ± 65.6	1092	294.9 ± 56.4	2131	297.3 ± 57.4
Glucose (mg/dl)	53	104.5 ± 26.4	161	100.5 ± 18.1	537	100.9 ± 25.3	285	99.4 ± 23.4	1124	98.2 ± 19.4	2198	98.6 ± 20
Insulin (µIU/ml)	51	10.7 ± 6	158	9.3 ± 4.9	532	12.2 ± 6.5	283	11.2 ± 5.8	1093	9.9 ± 4.9	2155	10.1 ± 5

HDL, high-density lipoprotein; HDL-C, high-density lipoprotein cholesterol; LDL, low-density lipoprotein.

^aTotal includes those of unknown ethnicity. Means and standard deviations are weighted by ethnicity.

^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

APPENDIX TABLE 20. Baseline blood analytes from a random sample of WHI Observational Study participants by race/ethnicity

Blood Analyte ^b	Race/Ethnicity																
	American Indian (N = 13)			Asian/Pacific Islander (N = 74)			Black (N = 133)			Hispanic (N = 145)			White (N = 697)			Total ^a (N = 1062)	
	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	
Total cholesterol (mg/dl)	13	218.3 ± 45.4	74	209.1 ± 36.6	133	215.3 ± 37.2	145	214.8 ± 38.4	697	215.7 ± 35.4	1062	215.4 ± 36.7					
LDL-C (mg/dl)	12	123.7 ± 52.9	73	112.6 ± 34.2	131	127.4 ± 37.1	142	121.3 ± 35.3	684	119.9 ± 33.6	1042	120.4 ± 33.8					
HDL-C (mg/dl)	13	54.5 ± 12.4	74	62.6 ± 14.6	133	60.3 ± 16.3	145	56.6 ± 15.2	696	61.8 ± 16.7	1061	61.4 ± 16.5					
HDL-2 (mg/dl)	13	15.4 ± 8.5	72	20.4 ± 7.2	133	19.2 ± 8.5	141	17.5 ± 7.9	674	19.9 ± 9.3	1033	19.7 ± 9					
HDL-3 (mg/dl)	13	37.7 ± 7.7	72	41.6 ± 9.2	133	40.3 ± 9.2	141	38.4 ± 8.8	674	41 ± 9	1033	40.8 ± 9					
Triglyceride (mg/dl)	13	136 ± 58.2	74	141.5 ± 63.2	133	107.7 ± 47.3	145	149.1 ± 70.1	697	133.8 ± 62.2	1062	132.1 ± 60.8					
LP(a) (mg/dl)	13	22.4 ± 21	74	14.2 ± 13.5	133	33.4 ± 30.4	145	18.3 ± 18.2	694	15.4 ± 17	1059	16.6 ± 17.9					
Retinol (µg/ml)	13	0.6 ± 0.2	74	0.59 ± 0.14	133	0.54 ± 0.14	145	0.59 ± 0.15	696	0.62 ± 0.14	1061	0.61 ± 0.14					
Alpha-carotene (µg/ml)	13	0.06 ± 0.04	74	0.12 ± 0.07	133	0.05 ± 0.04	145	0.08 ± 0.06	696	0.08 ± 0.06	1061	0.08 ± 0.06					
Beta-carotene (µg/ml)	13	0.23 ± 0.14	74	0.41 ± 0.35	133	0.27 ± 0.19	145	0.23 ± 0.2	696	0.25 ± 0.22	1061	0.26 ± 0.21					
Beta-cryptoxanthine (µg/ml)	13	0.07 ± 0.05	74	0.17 ± 0.15	133	0.08 ± 0.05	145	0.09 ± 0.07	696	0.08 ± 0.05	1061	0.08 ± 0.05					
Lycopene (µg/ml)	13	0.41 ± 0.26	74	0.35 ± 0.18	133	0.32 ± 0.21	145	0.36 ± 0.18	696	0.37 ± 0.21	1061	0.36 ± 0.21					
Lutein and zeaxanthin (µg/ml)	13	0.2 ± 0.06	74	0.25 ± 0.1	133	0.22 ± 0.11	145	0.21 ± 0.09	696	0.2 ± 0.1	1061	0.21 ± 0.1					
Alpha-tocopherol (µg/ml)	13	17.6 ± 6.9	74	17.8 ± 6.1	133	13.8 ± 4.7	145	16.8 ± 6.3	696	17.2 ± 6.9	1061	16.9 ± 6.6					
Gamma-tocopherol (µg/ml)	13	1.4 ± 1.5	74	0.9 ± 0.7	133	1.7 ± 1.2	145	1.3 ± 1.1	696	1.2 ± 1	1061	1.3 ± 1					
Factor VII activity, antigen (%)	13	130.4 ± 37.2	71	122.4 ± 25.8	128	110.2 ± 27.2	136	125.3 ± 29.7	681	125.2 ± 30.4	1029	123.7 ± 30.3					
Factor VIII (%)	13	123.6 ± 29.3	70	116.9 ± 25.4	125	113.9 ± 27.1	130	125 ± 28.5	663	123.7 ± 30.2	1001	122.6 ± 29.9					
Fibrinogen (mg/dl)	13	304.5 ± 69.9	71	283.7 ± 57	129	304.4 ± 63.9	136	297.5 ± 68	679	290.8 ± 55.1	1028	292.1 ± 57.6					
Glucose (mg/dl)	13	106.4 ± 46.2	74	95.5 ± 13.6	130	102.1 ± 25.9	144	96.8 ± 22	694	93.2 ± 15.2	1055	94.3 ± 17.1					
Insulin (µIU/ml)	13	10.2 ± 4.6	73	9 ± 4.3	128	11.5 ± 6.2	139	10.3 ± 5.7	654	8.5 ± 4	1007	8.8 ± 4.3					

HDL, high-density lipoprotein; HDL-C, high-density lipoprotein cholesterol; LDL, low-density lipoprotein.
^aTotal includes those of unknown ethnicity. Means and standard deviations are weighted by ethnicity.
^bMeans and standard deviations were computed on the log scale and back-transformed values are reported.

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