



**Women's Health Initiative  
2022 Annual Progress Report**

**Data as of: February 19, 2022**

**The data, if any, contained in this report/deliverable are preliminary and may contain unvalidated findings. These data are not intended for public use. Public use of these data could create erroneous conclusions which, if acted upon, could threaten public health or safety.**



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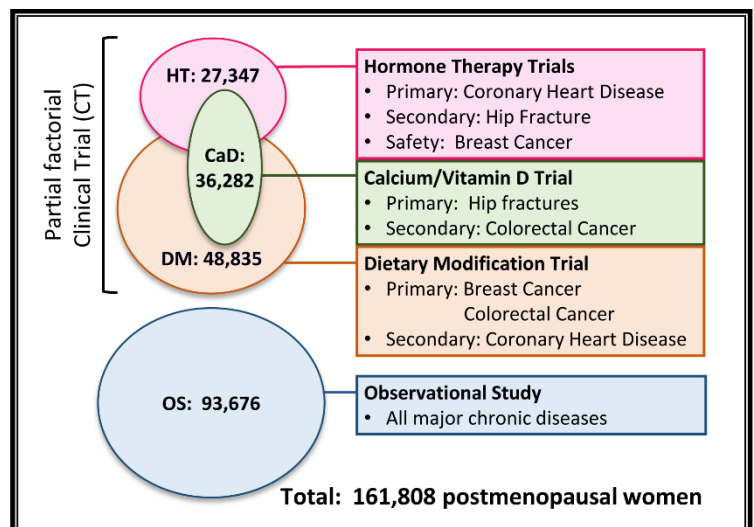
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## 1. Overview

### 1.0 Background

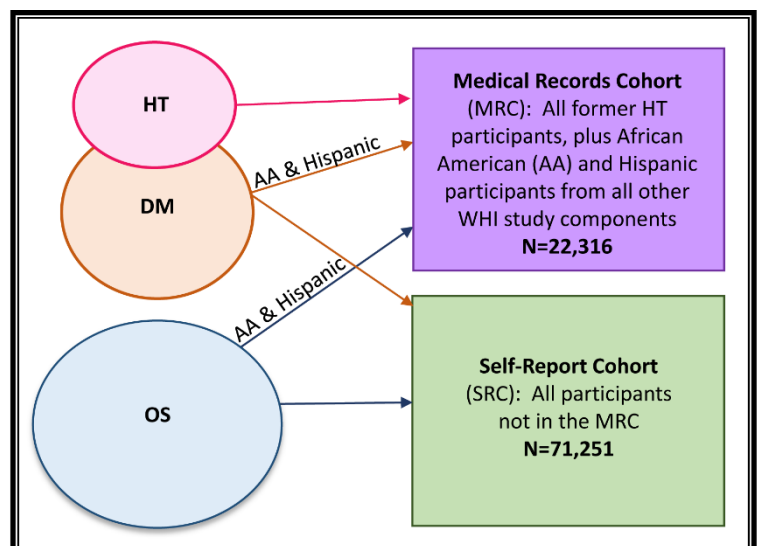
In the mid-1990s, WHI investigators at 40 Clinical Centers recruited 161,808 women into the program. 68,132 women were randomized into the clinical trial component (CT) and 93,676 were enrolled into the observational study (OS) (Figure 1). During 2004-2005, the original close-out period, 115,407 women consented to five additional years of follow-up, representing 76.9% of the 150,076 participants who were alive in active follow-up at that time (Tables 1.2, 1.3). In 2010, participants were offered the opportunity to continue, and 87% of the 107,706 eligible women agreed (n=93,567). Active follow-up, and passive follow-up through administrative data sources, continues unless participants withdraw consent.



**Figure 1.** Original design of the WHI clinical trials and observational study, its components and outcomes.

### 1.1 The 2010-2025 Extension Study

Since 2010, the WHI protocol calls for participants to be contacted annually, by mail, telephone or email (forms via RedCAP), to obtain health and selected exposure updates. WHI seeks medical records to document reports of designated health events (cardiovascular disease and hip fractures) among women in the Medical Records Cohort (MRC), comprised of all former hormone trial (HT) participants and all non-Hispanic Black/African American and Hispanic/Latina participants (Figure 2). Outcome data collection for the remaining participants, referred to as the Self-Report Cohort (SRC) is primarily based on self-report, supplemented with linkage to Medicare data, wherever possible, and the National Death Index (NDI). The two exceptions are incident primary cancers and stroke, where additional documentation and coding of cases are supported by NCI and NINDS, respectively. Ancillary studies augment the outcomes documentation for specific conditions in defined subsets. We continue to work with the North American Association of Central Cancer Registries to develop an efficient linkage strategy with the national Virtual Pooled Registry for cancer cases.



**Figure 2.** 2010–2020 Extension Study design reflecting differing levels of outcomes ascertainment: MRC and SRC.

The Clinical Coordinating Center (CCC) conducts annual mailings of follow-up questionnaires to all eligible participants. The Regional Centers (RC) and their collaborating centers contact non-responders, collect and submit medical records for all of the designated outcomes to the CCC, and participate in a range of scientific endeavors.

As of February 19, 2022, 54,790 women remain in active follow-up (Table 1.4), 23% of whom are 90 years of age or older. Table 1.5 shows how characteristics of currently active participants compare to those originally recruited. As the size of the cohort decreases, the infrastructure has been reconfigured to maximize efficiency. Participants are now being followed by four RCs and one satellite (Boston) as well as the CCC, which conducts RC activities for three former Field Centers (Seattle, LaJolla, and Gainesville).

## 1.2 Progress on Primary Study Objectives

Follow-up rates through February 2022 have declined somewhat in the last few years with response to mailings after two attempts at 75.4% in 2021 (Table 1.6). Participant age and health are both factors in this gradual decline and we assume that the COVID-19 pandemic and many of the restrictions imposed on our participants led to a lesser response in 2020-2021. Telephone follow-up of non-responders and those who select telephone as their primary contact brought the 2021 response rate to 77.2% (Table 1.7), the first time the overall response rate has been less than 80% in the 2010 Extension Study.

To better describe race/ethnicity in this cohort, information from the baseline questionnaire (Form 2, administered in 1993-1998) has been supplemented with more racial/ethnic data (Form 41, administered in 2003) to create an imputed race/ethnicity (Table 1.8). This new coding system supports the current race and ethnicity reporting requirements of NIH and allows for additional granularity in analyses.

Over 35% of women enrolled in the current extension study have died during active follow-up (Table 2.1). Less than 6% have stopped or been lost to follow-up since 2010. Table 2.2 provides the current disposition of each woman as determined through their active follow-up. Additional deaths identified through data linkages are provided in subsequent tables.

Over 5% of participants require proxy follow-up, with a strong age-dependency in these rates (Table 2.3)

Among all WHI components, we have identified 78,264 participants who have died. (Table 2.6). At this point, the majority (n=52,528) were identified through linkage to NDI. Cardiovascular disease accounts for nearly a third of deaths (n=24,695), now well surpassing cancer deaths (n=17,990). Alzheimer's disease and other dementias took nearly 11,000 lives. Only 171 deaths have been directly attributed to COVID-19 so far.

In Section 3, we provide tabulations of the designated WHI outcomes, along with annualized event rates, for adjudicated outcomes by study components—original (CT vs OS) and current (MRC vs SRC)--and by age and race. Because adjudication for many outcomes ended in the SRC in 2010, adjudicated events are provided for the interval from enrollment to September 2010 or February 19, 2022, as applicable in that cohort. For the MRC, these data are current through February 19, 2022. To better estimate age trends in key event rates, Tables 3.3 and 3.7 provide annualized event rates by age at diagnosis.

Self-reported outcomes in WHI capture a wide range of age-related conditions (Section 4). Hypertension, osteoarthritis, intestinal polyps and macular degeneration are most common. There are sufficient numbers of many rarer conditions to support well-powered analyses.

Section 5 provides a current summary of the agreement rates between self-reported events and centrally adjudicated events among MRC participants. In general, 50% to 70% of self-reported cardiovascular outcomes are confirmed as the reported diagnosis (Table 5.1). Often, however, a related diagnosis is found. For example, of the confirmed clinical myocardial infarctions, only 65% of self-reports were confirmed but 18% revealed a different but related outcome. As shown in Table 5.3, 52% of confirmed

clinical MIs were discovered by self-report of an MI, whereas 28% of these cases were found when a participant reported a related event and an additional 20% were discovered from review of medical records for an unrelated condition. In general, self-reported cancers are usually confirmed (Table 5.1) although site is sometimes incorrectly reported.

The WHI Long Life Study (LLS) enrolled 7,875 women in the MRC, and collected a blood sample and physical frailty measures (Table 7.1). The LLS visit will be repeated in 2022-2023 among surviving members of the LLS cohort. There are currently 4671 who continue to be actively followed (Table 6.2). Verified and self-reported outcomes occurring after the LLS visit are presented by age at LLS study visit (Table 6.3) and race (Table 6.4). Since the visit, 1348 LLS participants have had verified cardiovascular outcomes, 760 have had a verified cancer, and 2,710 have died.

### **1.3 Impact of the COVID-19 pandemic on WHI participants**

Using funds from multiple sources, the CCC and the RCs administered a second survey to assess the ongoing impact of the COVID-19 pandemic and the associated prevention measures on the health and well-being. Surviving respondents to the 2020 survey were approached beginning in June 2021. Of the 45,651 participants contacted, 37,280 (81.7%) responded (Table 8.1). Data from all questions are reported by age group in Table 8.2. These data indicate that WHI participants were eager to get vaccinated (96%), mostly with Pfizer and Moderna vaccines. At the time of the survey, 40% reported being tested for COVID-19 and 8.8% (n=1237) of these reported having a positive test. Long COVID, defined here as COVID-19 symptoms lasting for 8 weeks or more, was reported by 34% (n=425) and 40% reported being hospitalized for COVID-19, including 79 ICU admissions. Access to health care appears not to have been a significant problem for these women but there have been anticipated effects on physical and social activity. Analyses of the first survey are continuing and proposals are now being developed for reporting on the second survey.

### **1.4 Engaging Investigators to Continue to Enhance WHI's Contributions to Science**

The WHI program leadership recognizes the importance of drawing in new investigators to use the rich WHI resources, and also providing leadership and growth opportunities. The WHI Scientific Interest Groups (SIGs) are an active opportunity to provide an entryway into understanding WHI resources and proposing ancillary studies and manuscripts. The program has offered a few targeted webinars to help maintain interest while in-person meetings were not possible. An in-person meeting is planned for May 2022.

Section 9 lists manuscripts published in the last year. A full listing and status of all proposed ancillary studies and manuscripts is available on the WHI website ([www.whi.org](http://www.whi.org)). In total, 4,032 manuscript proposals have been approved and 2,171 manuscripts published or in press (Table 9.1), including 82 publications since last year's report. Investigators using WHI data continue to present high-quality science of broad interest, with publications in the last year in many high-impact journals such as *JAMA*, *Hypertension*, *American Journal of Epidemiology*, *Cancer* and *PLoS Medicine*. In addition to manuscripts addressing cardiovascular disease and cancer among WHI participants, a substantial number examine diabetes, genetics, and aging. WHI also participates in a number of consortia, reflecting the collaborative nature of the WHI investigators and the value of WHI data, particularly for rarer exposures and outcomes.

The cohort serves as the backbone for ancillary studies. The COcoa Supplement and Multivitamin Outcomes Study (COSMOS) trial (PIs: JoAnn Manson and Howard Sesso), the WHI Strong and Healthy (WHISH) trial (PIs: Marcia Stefanick, Charles Kooperberg, Andrea LaCroix), and many related ancillary trials exploring cognition, eye health, cardiovascular conditions, and more related to the benefits of the interventions are ongoing. The primary results of the COSMOS trial were published

online in the American Journal of Clinical Nutrition in March of 2022 and were the focus of an investigator webinar later that month. In April, these results will be featured in the WHI participant webinar.

We anticipate supporting the Long Life Study 2 in the coming year. Several ancillary studies, including the WHISH trial, the LILAC cancer survivorship cohort, MsLILAC and OPACH2 will leverage the in-person visits to advance aims of those projects.

Genetic data are available in dbGaP for over 30,000 WHI participants using a number of approaches, including our participation in the TOPMed program that can be linked to CVD biomarker data, providing an opportunity for outside investigators to use these resources independent of the WHI program. WHI data, including cancer survivorship data, has been submitted to the NHLBI's BIOLINCC data repository.



**Table 1.1**  
**WHI Centers and Principal Investigators**

**Clinical Coordinating Center**

<b>Principal Investigator</b>	<b>Institution</b>	<b>Location</b>
Garnet Anderson, PhD	Fred Hutchinson Cancer Research Center	Seattle, WA

**Field Centers**

<b>Principal Investigator</b>	<b>Institution</b>	<b>Location</b>
Rebecca Jackson, MD	Ohio State University	Columbus, OH
Mara Vitolins, DrPH	Wake Forest University	Winston-Salem/Greensboro, NC
Marcia Stefanick, PhD	Stanford University	Palo Alto, CA
Jean Wactawski-Wende, PhD	University at Buffalo	Buffalo, NY

**Associated Centers**

<b>Principal Investigator</b>	<b>Institution</b>	<b>Location</b>
Marian Limacher, MD	University of Florida	Gainesville, FL (FC closed Apr 2019)
JoAnn Manson, MD DrPH	Brigham and Women's Hospital	Boston, MA
Cynthia Thomson, PhD RD	University of Arizona	Tucson, AZ (Satellite closed Oct 2020)
Jennifer Robinson, MD MPH	University of Iowa	Iowa City/ Bettendorf, IA (FC closed Feb 2020)

**Current WHI Committee Chairs**

<b>Investigator</b>	<b>Institution</b>	<b>Committee</b>
Marian Neuhouser, PhD	Fred Hutchinson Cancer Research Center	Ancillary Studies (ASC)
Brian Silver, MD	University of Massachusetts	Outcomes Adjudications (OAC)
Charles Kooperberg, PhD	Fred Hutchinson Cancer Research Center	Performance Monitoring (PMC)
Gretchen Wells, MD PhD	University of Kentucky	Publications and Presentations (P&P)
Linda Van Horn, PhD RD	Northwestern University	Publications and Presentations (P&P)
Rebecca Jackson, MD	Ohio State University	Scientific Resources Working Group (SRWG)
Cynthia Thomson, PhD RD	University of Arizona	Steering Committee (SC)

**Table 1.2**  
**Consent Status by Study Component and Arm**

Data as of: February 19, 2022

	<b>Enrolled in WHI</b>	<b>Eligible for Extension 2005-2010<sup>1</sup></b>	<b>Consented</b>	
			<b>N</b>	<b>%</b>
<b>WHI Enrollment</b>				
Hormone Therapy	27347	25194	20433	81.1
With Uterus	16608	15408	12788	83.0
E+P	8506	7878	6545	83.1
Placebo	8102	7530	6243	82.9
Without Uterus	10739	9786	7645	78.1
E-alone	5310	4851	3778	77.9
Placebo	5429	4935	3867	78.4
Dietary Modification	48835	45560	37858	83.1
Intervention	19541	18207	14769	81.1
Comparison	29294	27353	23089	84.4
Calcium and Vitamin D	36282	34447	29862	86.7
Active	18176	17280	15025	87.0
Placebo	18106	17167	14837	86.4
Clinical Trial Total	68132	63332	52176	82.4
Observational Study	93676	86744	63231	72.9
Total	161808	150076	115407	76.9

	<b>Enrolled in Extension 2005-2010</b>	<b>Eligible for Extension 2010-2025<sup>1</sup></b>	<b>Consented</b>	
			<b>N</b>	<b>%</b>
<b>WHI Enrollment</b>				
Hormone Therapy	20433	18794	15584	82.9
With Uterus	12788	11789	9891	83.9
E+P	6545	6048	5047	83.4
Placebo	6243	5741	4844	84.4
Without Uterus	7645	7005	5693	81.3
E-alone	3778	3479	2834	81.5
Placebo	3867	3526	2859	81.1
Dietary Modification	37858	35594	30690	86.2
Intervention	14769	13922	12014	86.3
Comparison	23089	21672	18676	86.2
Calcium and Vitamin D	29862	27975	24231	86.6
Active	15025	14083	12242	86.9
Placebo	14837	13892	11989	86.3
Clinical Trial Total	52176	48697	41499	85.2
Observational Study	63231	59009	52068	88.2
Total	115407	107706	93567	86.9

<sup>1</sup> Eligibility defined as alive at the beginning of consent and willing to be contacted.

**Table 1.3**  
**Consent Status by Age at Enrollment and Race/Ethnicity<sup>1</sup>**

Data as of: February 19, 2022

	Clinical Trial				Observational Study			
	Enrolled in WHI	Eligible for Extension 2005-2010 <sup>2</sup>	Consented		Enrolled in WHI	Eligible for Extension 2005-2010 <sup>2</sup>	Consented	
			N	%			N	%
<b>WHI Enrollment</b>								
<b>Total</b>	68132	63332	52176	82.4	93676	86744	63231	72.9
Age								
50-54	9188	8754	7237	82.7	12381	11969	8996	76.9
55-59	14661	13940	11724	84.1	17329	16565	12732	74.2
60-69	31389	29290	24528	83.7	41200	38502	28582	65.6
70-79	12894	11348	8687	76.6	22766	19708	12921	72.9
Race/Ethnicity <sup>1</sup>								
American Indian/ Alaska Native	292	260	185	71.2	421	372	217	58.3
Asian/Pacific Islander	1519	1414	1105	78.1	2671	2444	1291	52.8
Non-Hispanic Black/ African American	6983	6423	4769	74.2	7635	6868	3585	52.2
Hispanic/Latina	2875	2686	1791	66.7	3609	3333	1598	47.9
Non-Hispanic White	55525	51682	43680	84.5	78016	72504	55767	76.9
Unknown	938	867	646	74.5	1324	1223	773	63.2

	Clinical Trial				Observational Study			
	Enrolled in Extension 2005-2010	Eligible for Extension 2010-2025 <sup>2</sup>	Consented		Enrolled in Extension 2005-2010	Eligible for Extension 2010-2025 <sup>2</sup>	Consented	
			N	%			N	%
<b>WHI Enrollment</b>								
<b>Total</b>	52176	48697	41499	85.2	63231	59009	52068	88.2
Age								
50-54	7237	7068	6249	88.4	8996	8802	8225	93.4
55-59	11724	11329	10055	88.8	12732	12400	11481	92.6
60-69	24528	22940	19642	85.6	28582	26820	23716	88.4
70-79	8687	7360	5553	75.4	12921	10987	8646	78.7
Race/Ethnicity <sup>1</sup>								
American Indian/ Alaska Native	185	174	147	84.5	217	204	171	83.8
Asian/Pacific Islander	1105	1050	845	80.5	1291	1224	1035	84.6
Non-Hispanic Black/ African American	4769	4459	3420	76.7	3585	3358	2716	80.9
Hispanic/Latina	1791	1701	1226	72.1	1598	1527	1246	81.6
Non-Hispanic White	43680	40704	35363	86.9	55767	51969	46296	89.1
Unknown	646	609	498	81.8	773	727	604	83.1

<sup>1</sup> Race/ethnicity as identified on Form 2 at baseline.<sup>2</sup> Eligibility defined as alive at the beginning of consent and willing to be contacted.

**Table 1.4**  
**Counts of Participants with Active<sup>1</sup> Participation by Current Age<sup>2</sup>, Ethnicity, Race and Cohort**

Data as of: February 19, 2022

	Total (N=54,790)		Clinical Trial (N=24,459)		Observational Study (N=30,331)		MRC Cohort <sup>3</sup> (N=12,616)		SRC Cohort <sup>4</sup> (N=42,174)	
	N	%	N	%	N	%	N	%	N	%
<b>Age on February 19, 2022</b>										
<75	114	0.2	4	<0.1	110	0.4	40	0.3	74	0.2
75-79	8965	16.4	3612	14.8	5353	17.6	2234	17.7	6731	16.0
80-84	17547	32.0	8124	33.2	9423	31.1	4090	32.4	13457	31.9
85-89	15541	28.4	7247	29.6	8294	27.3	3438	27.3	12103	28.7
90-94	9321	17.0	4120	16.8	5201	17.1	2065	16.4	7256	17.2
95+	3302	6.0	1352	5.5	1950	6.4	749	5.9	2553	6.1
<b>Ethnicity<sup>5</sup></b>										
Not Hispanic/Latina	52750	96.3	23467	95.9	29283	96.5	10985	87.1	41765	99.0
Hispanic/Latina	1920	3.5	948	3.9	972	3.2	1622	12.9	298	0.7
Other/Not Reported	120	0.2	44	0.2	76	0.3	9	0.1	111	0.3
<b>Race<sup>5</sup></b>										
American Indian/Alaska Native	122	0.2	52	0.2	70	0.2	34	0.3	88	0.2
Asian	1187	2.2	544	2.2	643	2.1	139	1.1	1048	2.5
Native Hawaiian/Other Pacific Islander	45	0.1	30	0.1	15	<0.1	19	0.2	26	0.1
Black/African American	3581	6.5	1972	8.1	1609	5.3	3533	28.0	48	0.1
White	48642	88.8	21271	87.0	27371	90.2	8240	65.3	40402	95.8
More than one Race	672	1.2	361	1.5	311	1.0	231	1.8	441	1.0
Other/Not Reported	541	1.0	229	0.9	312	1.0	420	3.3	121	0.3

<sup>1</sup> Active participation is defined as current (Form 33 within last 15 months) or recent (Form 33 between 15 and 24 months ago) follow-up.

<sup>2</sup> Age on February 19, 2022.

<sup>3</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>4</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>5</sup> Ethnicity and race are presented using the imputed Form 41 data following the WHI Race/Ethnicity Task Force guidelines.

**Table 1.4 (continued)**  
**Current Age<sup>1</sup> Distribution by Race/Ethnicity for Active<sup>2</sup> WHI Extension Study 2010-2025 Participants**

Data as of: February 19, 2022

	Race/Ethnicity															
	Total (N = 54,790)		American Indian/ Alaska Native (N = 107)		Asian or Native Hawaiian/ Other Pacific Islander <sup>3</sup> (N = 1,207)		Hispanic/Latina (N = 1,920)		Non-Hispanic Black/African American (N = 3,545)		Non-Hispanic White (N = 47,258)		More than one Race (N = 600)		Other/Not Reported (N = 153)	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>Age on February 19, 2022</b>																
<75	114	0.2	2	1.9	3	0.2	24	1.3	16	0.5	66	0.1	1	0.2	2	1.3
75-79	8965	16.4	26	24.3	258	21.4	474	24.7	790	22.3	7249	15.3	137	22.8	31	20.3
80-84	17547	32.0	40	37.4	374	31.0	651	33.9	1198	33.8	15061	31.9	183	30.5	40	26.1
85-89	15541	28.4	23	21.5	299	24.8	461	24.0	914	25.8	13610	28.8	182	30.3	52	34.0
90-94	9321	17.0	14	13.1	216	17.9	239	12.4	478	13.5	8280	17.5	77	12.8	17	11.1
95+	3302	6.0	2	1.9	57	4.7	71	3.7	149	4.2	2992	6.3	20	3.3	11	7.2

<sup>1</sup> Age on February 19, 2022.

<sup>2</sup> Active participation is defined as current (Form 33 within last 15 months) or recent (Form 33 between 15 and 24 months ago) follow-up.

<sup>3</sup> Native Hawaiian/Other Pacific Islander participants (n=47) are combined with Asian participants for reporting purposes due to small numbers.

**Table 1.5**  
**Composition of WHI Cohort Over Time**  
 Data as of: February 19, 2022

	Enrolled in WHI (N=161,808)		Active <sup>1</sup> Participation at End of Extension 1 (9/30/2010) (N=104,888)		Active <sup>1</sup> Participation as of 2/19/2022 (N=54,790)	
	N	%	N	%	N	%
<b>Age<sup>2</sup></b>						
50-54	21569	13.3				
55-59	31990	19.8				
60-64	37210	23.0	1137	1.1		
65-69	35379	21.9	16490	15.7		
70-74	24906	15.4	25587	24.4	1631	3.0
75-79	10754	6.6	25353	24.2	14319	26.1
80-84			21808	20.8	17722	32.3
85-89			11636	11.1	12948	23.6
90-94			2839	2.7	6638	12.1
95+			38	0.0	1532	2.8
<b>Ethnicity</b>						
Not Hispanic/Latina	153117	94.6	100996	96.3	52750	96.3
Hispanic/Latina	7312	4.5	3653	3.5	1920	3.5
Other/Not Reported	1379	0.9	239	0.2	120	0.2
<b>Race</b>						
American Indian/Alaska Native	540	0.3	242	0.2	122	0.2
Asian	4025	2.5	2108	2.0	1187	2.2
Native Hawaiian/Pacific Islander	137	0.1	82	0.1	45	0.1
Black/African American	14327	8.9	7285	6.9	3581	6.5
White	137628	85.1	92810	88.5	48642	88.8
More than one Race	1880	1.2	1305	1.2	672	1.2
Other/Not Reported	3271	2.0	1056	1.0	541	1.0
<b>Education<sup>3</sup></b>						
0-8 years	2665	1.7	869	0.8	274	0.5
Some high school	5979	3.7	2818	2.7	963	1.8
High school diploma/GED	27624	17.2	16760	16.1	7570	13.9
School after high school	60909	37.9	38435	36.9	19097	35.1
College degree or higher	63415	39.5	45297	43.5	26518	48.7
<b>Income<sup>3</sup></b>						
< \$10,000	6937	4.6	2870	2.9	871	1.7
\$10,000 – \$19,999	18499	12.3	9543	9.6	3305	6.3
\$20,000 – \$34,999	36665	24.3	22385	22.6	9755	18.7
\$35,000 – \$49,999	30912	20.5	21008	21.2	10807	20.7
\$50,000 – \$74,999	29948	19.8	21611	21.8	12766	24.5
\$75,000 +	27973	18.5	21564	21.8	14599	28.0
<b>Study Component</b>						
Clinical Trial	68132	42.1	47325	45.1	24459	44.6
Observational Study	93676	57.9	57563	54.9	30331	55.4

<sup>1</sup> Active participation is defined as current (Form 33 within the last 15 months) or recent (Form 33 between 15 and 24 months ago) follow-up.

<sup>2</sup> Age at WHI Enrollment, End of Extension 1 (9/30/2010), and on 02/19/2022.

<sup>3</sup> Education and income reported at baseline.

**Table 1.6**  
**Response Rates to CCC Annual Mailings, Extension Study 2010-2025**  
**Year 2020 by Cohort and Regional Center**

Data as of: February 22, 2022

Cohort	Cumulative Response	1st Mailing Period				2nd Mailing Period				
		Form <sup>1</sup>	Sent Mail 1	Response N	Response %	Past 2 <sup>nd</sup> mailing period	Sent Mail 2	Response N	Response %	
<b>Total</b>	78.3	33	60462	32443	53.7	60462	24924	41.2	14882	59.7
	64.9	151	2275	1467	64.5	2275	60	2.6	10	16.7
	76.5	151B	52438	27423	52.3	52438	21804	41.6	12696	58.2
<b>Medical Record Cohort<sup>2</sup></b>	72	33	13874	7003	50.5	13874	5906	42.6	2993	50.7
	58.4	151	565	327	57.9	565	24	4.2	3	12.5
	70.2	151B	12242	6076	49.6	12242	5130	41.9	2521	49.1
<b>Self-Report Cohort<sup>3</sup></b>	80.1	33	46588	25440	54.6	46588	19018	40.8	11889	62.5
	67.1	151	1710	1140	66.7	1710	36	2.1	7	19.4
	78.4	151B	40196	21347	53.1	40196	16674	41.5	10175	61
<b>Regional Center<sup>4</sup></b>										
<b>Boston</b>	78.1	33	6348	3465	54.6	6348	2570	40.5	1491	58
	66.5	151	328	218	66.5	328	1	0.3	0	0.0
	76.2	151B	5420	2904	53.6	5420	2187	40.4	1227	56.1
<b>Buffalo</b>	77.2	33	9918	5199	52.4	9918	4204	42.4	2461	58.5
	61.8	151	495	301	60.8	495	25	5.1	5	20.0
	75.3	151B	8495	4273	50.3	8495	3653	43	2121	58.1
<b>Columbus</b>	79.6	33	14512	8090	55.7	14512	5737	39.5	3467	60.4
	62.6	151	452	282	62.4	452	12	2.7	1	8.3
	78.4	151B	13007	7078	54.4	13007	5225	40.2	3119	59.7
<b>Iowa</b>	84.6	33	901	553	61.4	901	324	36	209	64.5
	77.4	151	261	202	77.4	261	0	0.0	0	0.0
	77.2	151B	311	212	68.2	311	81	26	28	34.6
<b>Seattle</b>	75.7	33	3655	1836	50.2	3655	1564	42.8	930	59.5
	58.6	151	87	49	56.3	87	6	6.9	2	33.3
	74	151B	3173	1577	49.7	3173	1327	41.8	772	58.2
<b>Stanford</b>	81.5	33	11152	6009	53.9	11152	4637	41.6	3081	66.4
	36	151	75	25	33.3	75	9	12	2	22.2
	79.9	151B	9947	5230	52.6	9947	4198	42.2	2717	64.7
<b>Tucson</b>	77.2	33	3119	1711	54.9	3119	1271	40.8	697	54.8
	60.0	151	10	6	60.0	10	0	0.0	0	0.0
	75.3	151B	2800	1513	54	2800	1150	41.1	595	51.7
<b>Wake Forest</b>	74.8	33	10857	5580	51.4	10857	4617	42.5	2546	55.1
	67.7	151	567	384	67.7	567	7	1.2	0	0.0
	72.7	151B	9285	4636	49.9	9285	3983	42.9	2117	53.2

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

**Table 1.6 (continued)**  
**Response Rates to CCC Annual Mailings, Extension Study 2010-2025**  
**Year 2021 by Cohort and Regional Center**

Data as of: February 22, 2022

Cohort	Cumulative Response	1st Mailing Period				2nd Mailing Period				
		Form <sup>1</sup>	Sent Mail 1	Response N	Response %	Past 2 <sup>nd</sup> mailing period	Sent Mail 2	Response N	Response %	
<b>Total</b>	75.4	33	56066	37538	67.0	41905	13793	24.6	4708	34.1
	72.2	151	37774	25241	66.8	24224	6773	17.9	2049	30.3
	61.8	151B	18919	10180	53.8	18919	2287	12.1	1518	66.4
<b>Medical Record Cohort<sup>2</sup></b>	68.2	33	12828	7721	60.2	9302	3733	29.1	1026	27.5
	65.2	151	8787	5252	59.8	5428	1894	21.6	480	25.3
	59.7	151B	4055	2144	52.9	4055	487	12	277	56.9
<b>Self-Report Cohort<sup>3</sup></b>	77.5	33	43238	29817	69.0	32603	10060	23.3	3682	36.6
	74.4	151	28987	19989	69.0	18796	4879	16.8	1569	32.2
	62.4	151B	14864	8036	54.1	14864	1800	12.1	1241	68.9
<b>Regional Center<sup>4</sup></b>										
<b>Boston</b>	78.3	33	3758	2638	70.2	2920	863	23	306	35.5
	74.9	151	2485	1727	69.5	1688	427	17.2	135	31.6
	63.2	151B	1354	769	56.8	1354	140	10.3	87	62.1
<b>Buffalo</b>	74.6	33	11270	7406	65.7	8772	2963	26.3	1006	34.0
	70.6	151	7326	4778	65.2	4926	1398	19.1	394	28.2
	62.3	151B	4048	2191	54.1	4048	524	12.9	329	62.8
<b>Columbus</b>	76.9	33	14271	9807	68.7	10515	3427	24	1168	34.1
	73.9	151	9276	6356	68.5	5653	1604	17.3	495	30.9
	66.3	151B	5001	2932	58.6	5001	577	11.5	385	66.7
<b>Seattle</b>	71.3	33	7708	4788	62.1	5784	2111	27.4	706	33.4
	67.8	151	4897	3052	62.3	3078	931	19	268	28.8
	59.7	151B	2876	1475	51.3	2876	385	13.4	243	63.1
<b>Stanford</b>	77.6	33	13185	9194	69.7	9707	2853	21.6	1040	36.5
	75.2	151	9819	6827	69.5	6466	1632	16.6	554	33.9
	57.1	151B	3768	1796	47.7	3768	446	11.8	354	79.4
<b>Wake Forest</b>	71.3	33	5874	3705	63.1	4207	1576	26.8	482	30.6
	68.1	151	3971	2501	63.0	2413	781	19.7	203	26.0
	60.7	151B	1872	1017	54.3	1872	215	11.5	120	55.8

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).



**Table 1.7**  
**Response Rates to Regional Center Follow-up and Cumulative Response**  
**Extension Study 2010-2025, Year 2020 by Cohort and Regional Center**

Data as of: February 22, 2022

Cohort	Total Estimated Response Rate %	Eligible for			
		Form <sup>1</sup>	RC Follow-up N	Respondents N	%
<b>Total</b>	84.1	33	16510	9640	58.4
	46.2	151	1568	51	3.3
	68.5	151B	16346	713	4.4
<b>Medical Record Cohort<sup>2</sup></b>	81.6	33	4958	3203	64.6
	39.0	151	482	18	3.7
	61.0	151B	4979	263	5.3
<b>Self Report Cohort<sup>3</sup></b>	84.9	33	11552	6437	55.7
	48.8	151	1086	33	3.0
	70.9	151B	11367	450	4.0
<b>Regional Center<sup>4</sup></b>					
<b>Boston</b>	83.5	33	1765	949	53.8
	48.2	151	204	0	0.0
	68.5	151B	1717	80	4.7
<b>Buffalo</b>	85.4	33	2813	1820	64.7
	47.9	151	371	32	8.6
	71.5	151B	2810	504	17.9
<b>Columbus</b>	82.2	33	3529	1800	51.0
	44.6	151	303	0	0.0
	69.3	151B	3546	8	0.2
<b>Iowa</b>	83.6	33	160	75	46.9
	58.6	151	101	0	0.0
	58.7	151B	92	0	0.0
<b>Seattle</b>	85.4	33	1134	822	72.5
	34.4	151	89	1	1.1
	65.1	151B	1133	59	5.2
<b>Stanford</b>	86.0	33	2751	1581	57.5
	15.3	151	110	0	0.0
	71.0	151B	2772	28	1.0
<b>Tucson</b>	81.4	33	901	426	47.3
	31.6	151	10	0	0.0
	67.0	151B	897	10	1.1
<b>Wake Forest</b>	84.4	33	3457	2167	62.7
	48.7	151	380	18	4.7
	63.9	151B	3379	24	0.7

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

**Table 1.7 (continued)**  
**Response Rates to Regional Center Follow-up and Cumulative Response**  
**Extension Study 2010-2025, Year 2021 by Cohort and Regional Center**

Data as of: February 22, 2022

Cohort	Total Estimated Response Rate %	Eligible for			
		Form <sup>1</sup>	RC Follow-up N	Respondents N	%
<b>Total</b>	77.2	33	12846	6615	51.5
	60.5	151	10372	112	1.1
	53.1	151B	9464	103	1.1
<b>Medical Record Cohort<sup>2</sup></b>	72.0	33	3958	2188	55.3
	52.0	151	3146	46	1.5
	49.0	151B	2278	30	1.3
<b>Self Report Cohort<sup>3</sup></b>	78.9	33	8888	4427	49.8
	63.3	151	7726	66	0.9
	54.3	151B	7186	73	1.0
<b>Regional Center<sup>4</sup></b>					
<b>Boston</b>	80.6	33	786	473	60.2
	62.0	151	704	14	2.0
	53.4	151B	685	5	0.7
<b>Buffalo</b>	77.8	33	2279	1503	54.1
	59.4	151	2242	70	3.1
	55.0	151B	1999	58	2.9
<b>Columbus</b>	77.3	33	2902	1449	49.9
	61.8	151	2187	2	0.1
	57.1	151B	2156	2	0.1
<b>Seattle</b>	77.0	33	2077	1165	56.1
	57.0	151	1571	26	1.7
	51.9	151B	1516	30	2.0
<b>Stanford</b>	77.1	33	2780	1248	44.9
	63.4	151	2421	0	0.0
	48.0	151B	2117	7	0.3
<b>Wake Forest</b>	74.4	33	1522	777	51.1
	56.1	151	1247	0	0.0
	50.7	151B	991	1	0.1

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

**Table 1.8**  
**Form 2 vs. Imputed Form 41 Race/Ethnicity<sup>1</sup>**

Data as of: February 22, 2022

	Imputed Form 41 Race/Ethnicity <sup>1</sup>													
	American Indian/Alaska Native		Asian or Native Hawaiian/Other Pacific Islander <sup>2</sup>		Hispanic/Latina		Non-Hispanic Black/African American		Non-Hispanic White		More than one Race		Other/Not reported	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>Form 2 Race/Ethnicity</b>														
American Indian/Alaska Native	397	81.5	2	<0.1	27	0.4	38	0.3	137	0.1	108	6.5	4	0.5
Asian/Pacific Islander	0	0.0	3901	95.5	60	0.8	3	<0.1	31	<0.1	187	11.2	8	1.1
Non-Hispanic Black/African American	28	5.7	2	<0.1	106	1.4	13958	98.5	167	0.1	296	17.7	61	8.0
Hispanic/Latino	2	0.4	2	<0.1	6230	85.2	18	0.1	208	0.2	5	0.3	19	2.5
Non-Hispanic White	47	9.7	11	0.3	637	8.7	36	0.3	131834	98.9	822	49.3	154	20.2
Other/Unspecified	13	2.7	166	4.1	252	3.4	114	0.8	951	0.7	251	15.0	515	67.7

<sup>1</sup> Race/ethnicity from Form 41 collected in 2002, imputed with race/ethnicity as identified on Form 2 at baseline where Form 41 is missing.

<sup>2</sup> Native Hawaiian/Other Pacific Islander participants (n=119) are combined with Asian participants for reporting purposes due to small numbers.

**Table 2.1**  
**Participation and Vital Status: WHI Participants by Extension Study Participation and Cohort**

Data as of: February 19, 2022

**WHI Extension Study 2010-2025 Participants**

Vital Status/Participation	Total Participants (N = 93,567)		MRC Cohort <sup>1</sup> (N = 22,316)		SRC Cohort <sup>2</sup> (N = 71,251)	
	N	%	N	%	N	%
Deceased	33365	35.7	7997	35.8	25368	35.6
Alive: Current Participation <sup>3</sup>	52870	56.5	11992	53.7	40878	57.4
Alive: Recent Participation <sup>4</sup>	1920	2.1	624	2.8	1296	1.8
Alive: Past/Unknown Participation <sup>5</sup>	13	<0.1	8	<0.1	5	<0.1
Stopped Follow-Up <sup>6</sup>	3045	3.3	872	3.9	2173	3.0
Lost to Follow-Up <sup>7</sup>	2354	2.5	823	3.7	1531	2.1

Data as of: February 19, 2022; Status as of September 30, 2010

**WHI Extension Study 2005-2010 Participants**

Vital Status/Participation	Total Participants (N = 115,407)		MRC Cohort <sup>8</sup> (N = 29,368)		SRC Cohort <sup>9</sup> (N = 86,039)	
	N	%	N	%	N	%
Deceased	8571	7.4	2360	8.0	6211	7.2
Alive: Current Participation <sup>3</sup>	104078	90.2	25884	88.1	78194	90.9
Alive: Recent Participation <sup>4</sup>	810	0.7	321	1.1	489	0.6
Alive: Past/Unknown Participation <sup>5</sup>	71	0.1	32	0.1	39	<0.1
Stopped Follow-Up <sup>6</sup>	1253	1.1	459	1.6	794	0.9
Lost to Follow-Up <sup>7</sup>	624	0.5	312	1.1	312	0.4

Data as of: February 19, 2022; Status as of April 8, 2005

**WHI Participants**

Vital Status/Participation	Total Participants (N = 161,808)		MRC Cohort <sup>8</sup> (N = 44,174)		SRC Cohort <sup>9</sup> (N = 117,634)	
	N	%	N	%	N	%
Deceased	10052	6.2	2820	6.4	7232	6.1
Alive: Current Participation <sup>10</sup>	143750	88.8	38165	86.4	105585	89.8
Alive: Recent Participation <sup>11</sup>	761	0.5	342	0.8	419	0.4
Alive: Past/Unknown Participation <sup>12</sup>	62	<0.1	21	<0.1	41	<0.1
Stopped Follow-Up <sup>6</sup>	4456	2.8	1699	3.8	2757	2.3
Lost to Follow-Up <sup>7</sup>	2727	1.7	1127	2.6	1600	1.4

<sup>1</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>2</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>3</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>4</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>5</sup> Participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

<sup>6</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9.

<sup>7</sup> Participants not in any of the above categories.

<sup>8</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>9</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>10</sup> CT participants who have filled in a Form 33 within the last 9 months; and OS participants who have filled in a Form 33 within the last 15 months.

<sup>11</sup> CT participants who last filled in a Form 33 between 9 and 18 months ago; and OS participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>12</sup> CT participants without a Form 33 within the last 18 months, who have been located (as indicated on Form 23) within the last 6 months; and OS participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

Table 2.2

**Participation and Vital Status: WHI Extension Study 2010-2025 Participation by MRC vs. SRC Super Cohort**

Data as of: February 19, 2022

Vital/Participation Status <sup>3</sup>	Total Participants (N = 161,808)		MRC Super Cohort <sup>1</sup> (N = 44,174)		SRC Super Cohort <sup>2</sup> (N = 117,634)	
	N	%	N	%	N	%
Deceased <sup>4</sup>	51988	32.1	13177	29.8	38811	33.0
Alive: Current Participation <sup>5</sup>	52870	32.7	11992	27.1	40878	34.8
Alive: Recent Participation <sup>6</sup>	1920	1.2	624	1.4	1296	1.1
Alive: Past/Unknown Participation <sup>7</sup>	13	<0.1	8	<0.1	5	<0.1
Stopped Follow-Up <sup>8</sup>	52663	32.5	17550	39.7	35113	29.8
Lost to Follow-Up <sup>9</sup>	2354	1.5	823	1.9	1531	1.3

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>3</sup> This is each participant's last known status within their period of consent and active follow-up.

<sup>4</sup> The Deceased category does not include participants known to have died after their period of consent.

<sup>5</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>6</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>7</sup> Participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

<sup>8</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9, or who did not consent to WHI Extension Study 2010-2025.

<sup>9</sup> Participants not in any of the above categories.

**Table 2.3**  
**Proxy Follow-up Status<sup>1</sup>:**  
**WHI Extension Study 2010-2025 Participants by Cohort, Current Age<sup>2</sup>, and Race/Ethnicity**

Data as of: February 19, 2022

	Total		Current Age <sup>2</sup>							
			69-79		80-84		85-89		≥90	
	N	%	N	%	N	%	N	%	N	%
<b>MRC Cohort<sup>3</sup></b>	(N = 12624)		(N = 2275)		(N = 4093)		(N = 3440)		(N = 2816)	
Proxy follow-up	673	5.3	29	1.3	108	2.6	182	5.3	354	12.6
<b>SRC Cohort<sup>4</sup></b>	(N = 42179)		(N = 6806)		(N = 13459)		(N = 12105)		(N = 9809)	
Proxy follow-up	2180	5.2	66	1.0	248	1.8	648	5.4	1218	12.4
<b>Total</b>	(N = 54803)		(N = 9081)		(N = 17552)		(N = 15545)		(N = 12625)	
Proxy follow-up	2853	5.2	95	1.0	356	2.0	830	5.3	1572	12.5

	Race/Ethnicity													
	American Indian/ Alaska Native		Asian or Native Hawaiian/ Other Pacific Islander <sup>5</sup>		Non-Hispanic Black/African American		Hispanic/ Latina		Non-Hispanic White		More than one Race		Other/Not Reported	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>MRC Cohort<sup>3</sup></b>	(N = 23)		(N = 151)		(N = 3500)		(N = 1624)		(N = 7106)		(N = 177)		(N = 43)	
Proxy follow-up	0	0.0	14	9.3	165	4.7	73	4.5	407	5.7	9	5.1	5	11.6
<b>SRC Cohort<sup>4</sup></b>	(N = 84)		(N = 1056)		(N = 47)		(N = 298)		(N = 40161)		(N = 423)		(N = 110)	
Proxy follow-up	5	6.0	49	4.6	5	10.6	12	4.0	2087	5.2	18	4.3	4	3.6
<b>Total</b>	(N = 107)		(N = 1207)		(N = 3547)		(N = 1922)		(N = 47267)		(N = 600)		(N = 153)	
Proxy follow-up	5	4.7	63	5.2	170	4.8	85	4.4	2494	5.3	27	4.5	9	5.9

<sup>1</sup> For participants alive as of February 19, 2022 and with current, recent or past/unknown participation.

<sup>2</sup> Age on February 19, 2022.

<sup>3</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>4</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>5</sup> Native Hawaiian/Other Pacific Islander participants (n=47) are combined with Asian participants for reporting purposes due to small numbers.

**Table 2.4**  
**Participation and Vital Status: CT and OS Participants**

Data as of: February 19, 2022

**WHI Extension Study 2010-2025 Participants**

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 41,499)		<b>OS Participants</b> (N = 52,068)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	14562	35.1	18803	36.1
Alive: Current Participation <sup>1</sup>	23539	56.7	29331	56.3
Alive: Recent Participation <sup>2</sup>	920	2.2	1000	1.9
Alive: Past/Unknown Participation <sup>3</sup>	9	<0.1	4	<0.1
Stopped Follow-Up <sup>4</sup>	1366	3.3	1679	3.2
Lost to Follow-Up <sup>5</sup>	1103	2.7	1251	2.4

Data as of: February 19, 2022; Status as of September 30, 2010

**WHI Extension Study 2005-2010 Participants**

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 52,176)		<b>OS Participants</b> (N = 63,231)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	3812	7.3	4759	7.5
Alive: Current Participation <sup>1</sup>	46883	89.9	57195	90.5
Alive: Recent Participation <sup>2</sup>	442	0.8	368	0.6
Alive: Past/Unknown Participation <sup>3</sup>	37	0.1	34	0.1
Stopped Follow-Up <sup>4</sup>	649	1.2	604	1.0
Lost to Follow-Up <sup>5</sup>	353	0.7	271	0.4

Data as of: February 19, 2022; Status as of April 8, 2005

**WHI Participants**

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 68,132)		<b>OS Participants</b> (N = 93,676)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	3701	5.4	6351	6.8
Alive: Current Participation <sup>6</sup>	61160	89.8	82590	88.2
Alive: Recent Participation <sup>7</sup>	339	0.5	422	0.5
Alive: Past/Unknown Participation <sup>8</sup>	10	<0.1	52	0.1
Stopped Follow-Up <sup>4</sup>	2194	3.2	2262	2.4
Lost to Follow-Up <sup>5</sup>	728	1.1	1999	2.1

<sup>1</sup> Participants who have filled in a Form 33 within the last 15 months.<sup>2</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.<sup>3</sup> Participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.<sup>4</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9.<sup>5</sup> Participants not in any of the above categories.<sup>6</sup> CT participants who have filled in a Form 33 within the last 9 months; OS participants who have filled in a Form 33 within the last 15 months.<sup>7</sup> CT participants who last filled in a Form 33 between 9 and 18 months ago; OS participants who last filled in a Form 33 between 15 and 24 months ago.<sup>8</sup> CT participants without a Form 33 within the last 18 months, who have been located (as indicated on Form 23) within the last 6 months; OS participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

**Table 2.5**  
**Participation and Vital Status: WHI Extension Study 2010-2025 Participation by CT vs. OS Cohort**

Data as of: February 19, 2022

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 68,132)		<b>OS Participants</b> (N = 93,676)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	22075	32.4	29913	31.9
Alive: Current Participation <sup>1</sup>	23539	34.5	29331	31.3
Alive: Recent Participation <sup>2</sup>	920	1.4	1000	1.1
Alive: Past/Unknown Participation <sup>3</sup>	9	<0.1	4	<0.1
Stopped Follow-Up <sup>4</sup>	20486	30.1	32177	34.3
Lost to Follow-Up <sup>5</sup>	1103	1.6	1251	1.3

<sup>1</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>2</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>3</sup> Participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

<sup>4</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9, or who did not consent to WHI Extension Study 2010-2025.

<sup>5</sup> Participants not in any of the above categories.



**Table 2.6**  
**Cause of Death<sup>1</sup> (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	Total	MRC Super Cohort	SRC Super Cohort
<b>Number of participants</b>	161808	44174	117634
<b>Mean follow-up (months)</b>	247.2	245.9	247.7
<b>Total death</b>	78264 (2.35%)	21236 (2.35%)	57028 (2.35%)
Adjudicated death	75338 (2.26%)	20820 (2.30%)	54518 (2.24%)
Centrally adjudicated death	17393 (0.52%)	9977 (1.10%)	7416 (0.31%)
Locally adjudicated death (final)	5417 (0.16%)	690 (0.08%)	4727 (0.19%)
Identified only by NDI search	52528 (1.58%)	10153 (1.12%)	42375 (1.74%)
Not yet adjudicated	410 (0.01%)	410 (0.05%)	0 (0.00%)
Form 120 death <sup>2</sup>	2516 (0.08%)	6 (<0.01%)	2510 (0.10%)
<b>Cardiovascular</b>			
Atherosclerotic cardiac	9697 (0.29%)	2979 (0.33%)	6718 (0.28%)
Cerebrovascular	5906 (0.18%)	1725 (0.19%)	4181 (0.17%)
Pulmonary embolism	346 (0.01%)	126 (0.01%)	220 (0.01%)
Other cardiovascular	8613 (0.26%)	2261 (0.25%)	6352 (0.26%)
Unknown cardiovascular	133 (<0.01%)	33 (<0.01%)	100 (<0.01%)
<b>Total cardiovascular deaths</b>	24695 (0.74%)	7124 (0.79%)	17571 (0.72%)
<b>Cancer</b>			
Breast cancer	2141 (0.06%)	517 (0.06%)	1624 (0.07%)
Ovarian cancer	1132 (0.03%)	244 (0.03%)	888 (0.04%)
Endometrial cancer	294 (0.01%)	57 (0.01%)	237 (0.01%)
Colorectal cancer	1490 (0.04%)	447 (0.05%)	1043 (0.04%)
Uterus cancer	200 (0.01%)	58 (0.01%)	142 (0.01%)
Lung cancer	3939 (0.12%)	1183 (0.13%)	2756 (0.11%)
Pancreas cancer	1644 (0.05%)	450 (0.05%)	1194 (0.05%)
Lymphoma (NHL only)	887 (0.03%)	204 (0.02%)	683 (0.03%)
Leukemia	819 (0.02%)	195 (0.02%)	624 (0.03%)
Melanoma	219 (0.01%)	53 (0.01%)	166 (0.01%)
Brain cancer	464 (0.01%)	93 (0.01%)	371 (0.02%)
Multiple myeloma	547 (0.02%)	178 (0.02%)	369 (0.02%)
Other cancer	3433 (0.10%)	916 (0.10%)	2517 (0.10%)
Unknown cancer site	781 (0.02%)	190 (0.02%)	591 (0.02%)
<b>Total cancer deaths</b>	17990 (0.54%)	4785 (0.53%)	13205 (0.54%)
<b>Accident/injury</b>			
Homicide	36 (<0.01%)	17 (<0.01%)	19 (<0.01%)
Accident	1872 (0.06%)	458 (0.05%)	1414 (0.06%)
Suicide	81 (<0.01%)	18 (<0.01%)	63 (<0.01%)
Other injury	50 (<0.01%)	17 (<0.01%)	33 (<0.01%)
<b>Total accident/injury deaths</b>	2039 (0.06%)	510 (0.06%)	1529 (0.06%)
<b>Other</b>			
Alzheimer's disease	5527 (0.17%)	1381 (0.15%)	4146 (0.17%)
COPD	3035 (0.09%)	811 (0.09%)	2224 (0.09%)
Pneumonia	1816 (0.05%)	545 (0.06%)	1271 (0.05%)
Pulmonary fibrosis	760 (0.02%)	214 (0.02%)	546 (0.02%)
Renal failure	1289 (0.04%)	484 (0.05%)	805 (0.03%)
Sepsis	1738 (0.05%)	570 (0.06%)	1168 (0.05%)
Dementia, other than Alzheimer's	5461 (0.16%)	1411 (0.16%)	4050 (0.17%)
Amyotrophic lateral sclerosis	302 (0.01%)	51 (0.01%)	251 (0.01%)
Parkinson's	1106 (0.03%)	248 (0.03%)	858 (0.04%)
Hepatic cirrhosis	344 (0.01%)	113 (0.01%)	231 (0.01%)
COVID-19	171 (0.01%)	88 (0.01%)	83 (<0.01%)
Other known cause	9504 (0.29%)	2357 (0.26%)	7147 (0.29%)
Unknown cause	2077 (0.06%)	134 (0.01%)	1943 (0.08%)
<b>Total other cause deaths</b>	33130 (0.99%)	8407 (0.93%)	24723 (1.02%)

<sup>1</sup> Includes deaths for non-Extension Study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

<sup>2</sup> Includes SRC Cohort participants and discovered deaths among non-Extension Study 2010-2025 participants that occurred during Extension Study 2010-2025.

**Table 2.7**  
**Cause of Death<sup>1</sup> (Annualized Percentages): CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	<b>Total</b>	<b>CT</b>	<b>OS</b>
<b>Number of participants</b>	161808	68132	93676
<b>Mean follow-up (months)</b>	247.2	252.5	243.4
<b>Total death</b>	78264 (2.35%)	31871 (2.22%)	46393 (2.44%)
Adjudicated death	75338 (2.26%)	30705 (2.14%)	44633 (2.35%)
Centrally adjudicated death	17393 (0.52%)	12065 (0.84%)	5328 (0.28%)
Locally adjudicated death (final)	5417 (0.16%)	1 (<0.01%)	5416 (0.29%)
Identified only by NDI search	52528 (1.58%)	18639 (1.30%)	33889 (1.78%)
Not yet adjudicated	410 (0.01%)	353 (0.02%)	57 (<0.01%)
Form 120 death <sup>2</sup>	2516 (0.08%)	813 (0.06%)	1703 (0.09%)
<b>Cardiovascular</b>			
Atherosclerotic cardiac	9697 (0.29%)	4061 (0.28%)	5636 (0.30%)
Cerebrovascular	5906 (0.18%)	2416 (0.17%)	3490 (0.18%)
Pulmonary embolism	346 (0.01%)	172 (0.01%)	174 (0.01%)
Other cardiovascular	8613 (0.26%)	3455 (0.24%)	5158 (0.27%)
Unknown cardiovascular	133 (<0.01%)	31 (<0.01%)	102 (0.01%)
<b>Total cardiovascular deaths</b>	24695 (0.74%)	10135 (0.71%)	14560 (0.77%)
<b>Cancer</b>			
Breast cancer	2141 (0.06%)	712 (0.05%)	1429 (0.08%)
Ovarian cancer	1132 (0.03%)	443 (0.03%)	689 (0.04%)
Endometrial cancer	294 (0.01%)	126 (0.01%)	168 (0.01%)
Colorectal cancer	1490 (0.04%)	641 (0.04%)	849 (0.04%)
Uterus cancer	200 (0.01%)	87 (0.01%)	113 (0.01%)
Lung cancer	3939 (0.12%)	1709 (0.12%)	2230 (0.12%)
Pancreas cancer	1644 (0.05%)	709 (0.05%)	935 (0.05%)
Lymphoma (NHL only)	887 (0.03%)	353 (0.02%)	534 (0.03%)
Leukemia	819 (0.02%)	346 (0.02%)	473 (0.02%)
Melanoma	219 (0.01%)	97 (0.01%)	122 (0.01%)
Brain cancer	464 (0.01%)	201 (0.01%)	263 (0.01%)
Multiple myeloma	547 (0.02%)	238 (0.02%)	309 (0.02%)
Other cancer	3433 (0.10%)	1443 (0.10%)	1990 (0.10%)
Unknown cancer site	781 (0.02%)	322 (0.02%)	459 (0.02%)
<b>Total cancer deaths</b>	17990 (0.54%)	7427 (0.52%)	10563 (0.56%)
<b>Accident/injury</b>			
Homicide	36 (<0.01%)	15 (<0.01%)	21 (<0.01%)
Accident	1872 (0.06%)	751 (0.05%)	1121 (0.06%)
Suicide	81 (<0.01%)	27 (<0.01%)	54 (<0.01%)
Other injury	50 (<0.01%)	20 (<0.01%)	30 (<0.01%)
<b>Total accident/injury deaths</b>	2039 (0.06%)	813 (0.06%)	1226 (0.06%)
<b>Other</b>			
Alzheimer's disease	5527 (0.17%)	2162 (0.15%)	3365 (0.18%)
COPD	3035 (0.09%)	1285 (0.09%)	1750 (0.09%)
Pneumonia	1816 (0.05%)	772 (0.05%)	1044 (0.05%)
Pulmonary fibrosis	760 (0.02%)	347 (0.02%)	413 (0.02%)
Renal failure	1289 (0.04%)	542 (0.04%)	747 (0.04%)
Sepsis	1738 (0.05%)	745 (0.05%)	993 (0.05%)
Dementia, other than Alzheimer's	5461 (0.16%)	2181 (0.15%)	3280 (0.17%)
Amyotrophic lateral sclerosis	302 (0.01%)	116 (0.01%)	186 (0.01%)
Parkinson's	1106 (0.03%)	423 (0.03%)	683 (0.04%)
Hepatic cirrhosis	344 (0.01%)	152 (0.01%)	192 (0.01%)
COVID-19	171 (0.01%)	98 (0.01%)	73 (<0.01%)
Other known cause	9504 (0.29%)	3618 (0.25%)	5886 (0.31%)
Unknown cause	2077 (0.06%)	702 (0.05%)	1375 (0.07%)
<b>Total other cause deaths</b>	33130 (0.99%)	13143 (0.92%)	19987 (1.05%)

<sup>1</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

<sup>2</sup> Includes SRC Cohort participants and discovered deaths among non-Extension Study 2010-2025 participants that occurred during Extension Study 2010-2025.

**Table 2.8**  
**Cause of Death Excluding Discovered Deaths Among Non-Extension Study Participants<sup>1</sup> (Annualized Percentages):**  
**CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	<b>Total</b>	<b>CT</b>	<b>OS</b>
<b>Number of participants</b>	161808	68132	93676
<b>Mean follow-up (months)</b>	203.4	212.6	196.7
<b>Death</b>	51988 (1.90%)	22075 (1.83%)	29913 (1.95%)
Adjudicated death	49077 (1.79%)	20915 (1.73%)	28162 (1.83%)
Centrally adjudicated death	17239 (0.63%)	11990 (0.99%)	5249 (0.34%)
Locally adjudicated death (final)	5341 (0.19%)	1 (<0.01%)	5340 (0.35%)
Identified only by NDI search	26497 (0.97%)	8924 (0.74%)	17573 (1.14%)
Not yet adjudicated	410 (0.01%)	353 (0.03%)	57 (<0.01%)
Form 120 death <sup>2</sup>	2501 (0.09%)	807 (0.07%)	1694 (0.11%)
<b>Cardiovascular</b>			
Atherosclerotic cardiac	6376 (0.23%)	2860 (0.24%)	3516 (0.23%)
Cerebrovascular	3928 (0.14%)	1686 (0.14%)	2242 (0.15%)
Pulmonary embolism	284 (0.01%)	142 (0.01%)	142 (0.01%)
Other cardiovascular	5585 (0.20%)	2289 (0.19%)	3296 (0.21%)
Unknown cardiovascular	130 (<0.01%)	29 (<0.01%)	101 (0.01%)
<b>Total cardiovascular deaths</b>	16303 (0.59%)	7006 (0.58%)	9297 (0.61%)
<b>Cancer</b>			
Breast cancer	1625 (0.06%)	531 (0.04%)	1094 (0.07%)
Ovarian cancer	905 (0.03%)	358 (0.03%)	547 (0.04%)
Endometrial cancer	237 (0.01%)	106 (0.01%)	131 (0.01%)
Colorectal cancer	1144 (0.04%)	501 (0.04%)	643 (0.04%)
Uterus cancer	143 (0.01%)	65 (0.01%)	78 (0.01%)
Lung cancer	3049 (0.11%)	1356 (0.11%)	1693 (0.11%)
Pancreas cancer	1267 (0.05%)	573 (0.05%)	694 (0.05%)
Lymphoma (NHL only)	686 (0.03%)	281 (0.02%)	405 (0.03%)
Leukemia	636 (0.02%)	281 (0.02%)	355 (0.02%)
Melanoma	185 (0.01%)	82 (0.01%)	103 (0.01%)
Brain cancer	368 (0.01%)	170 (0.01%)	198 (0.01%)
Multiple myeloma	436 (0.02%)	192 (0.02%)	244 (0.02%)
Other cancer	2675 (0.10%)	1135 (0.09%)	1540 (0.10%)
Unknown cancer site	569 (0.02%)	239 (0.02%)	330 (0.02%)
<b>Total cancer deaths</b>	13925 (0.51%)	5870 (0.49%)	8055 (0.52%)
<b>Accident/injury</b>			
Homicide	33 (<0.01%)	15 (<0.01%)	18 (<0.01%)
Accident	1264 (0.05%)	541 (0.04%)	723 (0.05%)
Suicide	71 (<0.01%)	26 (<0.01%)	45 (<0.01%)
Other injury	48 (<0.01%)	20 (<0.01%)	28 (<0.01%)
<b>Total accident/injury deaths</b>	1416 (0.05%)	602 (0.05%)	814 (0.05%)

<sup>1</sup> Excludes deaths that occurred after a participant's consent period.

<sup>2</sup> Includes SRC Cohort participants.

**Table 2.8 (continued)**  
**Cause of Death Excluding Discovered Deaths Among Non-Extension Study Participants<sup>1</sup> (Annualized Percentages):**  
**CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	<b>Total</b>		<b>CT</b>		<b>OS</b>	
<b>Number of participants</b>	161808		68132		93676	
<b>Mean follow-up (months)</b>	203.4		212.6		196.7	
<b>Other</b>						
Alzheimer's disease	2580	(0.09%)	1093	(0.09%)	1487	(0.10%)
COPD	1994	(0.07%)	882	(0.07%)	1112	(0.07%)
Pneumonia	1245	(0.05%)	585	(0.05%)	660	(0.04%)
Pulmonary fibrosis	575	(0.02%)	269	(0.02%)	306	(0.02%)
Renal failure	829	(0.03%)	373	(0.03%)	456	(0.03%)
Sepsis	1161	(0.04%)	532	(0.04%)	629	(0.04%)
Dementia, other than Alzheimer's	2510	(0.09%)	1099	(0.09%)	1411	(0.09%)
Amyotrophic lateral sclerosis	232	(0.01%)	96	(0.01%)	136	(0.01%)
Parkinson's	618	(0.02%)	243	(0.02%)	375	(0.02%)
Hepatic cirrhosis	248	(0.01%)	117	(0.01%)	131	(0.01%)
COVID-19	171	(0.01%)	98	(0.01%)	73	(<0.01%)
Other known cause	5792	(0.21%)	2183	(0.18%)	3609	(0.23%)
Unknown cause	1979	(0.07%)	674	(0.06%)	1305	(0.08%)
<b>Total other cause deaths</b>	<b>19934</b>	<b>(0.73%)</b>	<b>8244</b>	<b>(0.68%)</b>	<b>11690</b>	<b>(0.76%)</b>

<sup>1</sup> Excludes deaths that occurred after a participant's consent period.

**Table 3.1**  
**Verified Outcomes (Annualized Percentages) by Age at Enrollment for MRC Super Cohort Participants<sup>1</sup>**  
 Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number randomized</b>	44174	6788	9352	19418	8616
<b>Mean follow-up (months)</b>	189.8	206.4	206.5	190.7	156.6
<b>Cardiovascular</b>					
CHD <sup>2</sup>	4008 (0.57%)	287 (0.25%)	518 (0.32%)	1922 (0.62%)	1281 (1.14%)
CHD death <sup>3</sup>	1918 (0.27%)	93 (0.08%)	179 (0.11%)	881 (0.29%)	765 (0.68%)
Clinical MI	2618 (0.37%)	210 (0.18%)	387 (0.24%)	1288 (0.42%)	733 (0.65%)
Angina <sup>4</sup>	1625 (0.47%)	114 (0.20%)	226 (0.30%)	785 (0.52%)	500 (0.76%)
CABG/PTCA	3170 (0.45%)	277 (0.24%)	545 (0.34%)	1621 (0.53%)	727 (0.65%)
Carotid artery disease	537 (0.08%)	29 (0.02%)	88 (0.05%)	288 (0.09%)	132 (0.12%)
Congestive heart failure, WHI <sup>4</sup>	1246 (0.36%)	84 (0.15%)	145 (0.19%)	531 (0.35%)	486 (0.74%)
Heart failure, UNC <sup>5</sup>	3392 (0.65%)	219 (0.27%)	405 (0.34%)	1642 (0.70%)	1126 (1.25%)
Stroke	3334 (0.48%)	234 (0.20%)	427 (0.27%)	1655 (0.54%)	1018 (0.91%)
PAD	722 (0.10%)	51 (0.04%)	122 (0.08%)	369 (0.12%)	180 (0.16%)
DVT	1432 (0.20%)	141 (0.12%)	268 (0.17%)	680 (0.22%)	343 (0.31%)
Pulmonary embolism	1181 (0.17%)	126 (0.11%)	228 (0.14%)	557 (0.18%)	270 (0.24%)
DVT/PE	2100 (0.30%)	209 (0.18%)	397 (0.25%)	1006 (0.33%)	488 (0.43%)
Coronary disease <sup>6</sup>	8149 (1.17%)	637 (0.55%)	1168 (0.73%)	3901 (1.26%)	2443 (2.17%)
Aortic aneurysm <sup>7</sup>	79 (0.04%)	6 (0.02%)	13 (0.03%)	48 (0.05%)	12 (0.06%)
Valvular heart disease <sup>7</sup>	596 (0.30%)	45 (0.12%)	99 (0.19%)	333 (0.38%)	119 (0.55%)
<b>Total cardiovascular disease<sup>8</sup></b>	<b>11541 (1.65%)</b>	<b>868 (0.74%)</b>	<b>1669 (1.04%)</b>	<b>5529 (1.79%)</b>	<b>3475 (3.09%)</b>
<b>Cancer</b>					
Breast cancer	3094 (0.44%)	484 (0.41%)	718 (0.45%)	1392 (0.45%)	500 (0.44%)
Invasive breast cancer	2552 (0.37%)	381 (0.33%)	587 (0.36%)	1143 (0.37%)	441 (0.39%)
In-situ breast cancer	604 (0.09%)	112 (0.10%)	142 (0.09%)	283 (0.09%)	67 (0.06%)
Ovarian cancer	292 (0.04%)	30 (0.03%)	63 (0.04%)	147 (0.05%)	52 (0.05%)
Endometrial cancer <sup>9</sup>	351 (0.09%)	57 (0.09%)	92 (0.09%)	149 (0.08%)	53 (0.08%)
Colorectal cancer	1005 (0.14%)	95 (0.08%)	158 (0.10%)	497 (0.16%)	255 (0.23%)
Other cancer <sup>10</sup>	4561 (0.65%)	470 (0.40%)	862 (0.54%)	2231 (0.72%)	998 (0.89%)
<b>Total cancer</b>	<b>8578 (1.23%)</b>	<b>1052 (0.90%)</b>	<b>1757 (1.09%)</b>	<b>4052 (1.31%)</b>	<b>1717 (1.53%)</b>
<b>Fractures</b>					
Hip fracture	1813 (0.26%)	71 (0.06%)	179 (0.11%)	843 (0.27%)	720 (0.64%)
<b>Deaths</b>					
Cardiovascular deaths	4498 (0.64%)	197 (0.17%)	433 (0.27%)	2068 (0.67%)	1800 (1.60%)
Cancer deaths	3494 (0.50%)	291 (0.25%)	576 (0.36%)	1740 (0.56%)	887 (0.79%)
Other known cause	4668 (0.67%)	238 (0.20%)	539 (0.33%)	2290 (0.74%)	1601 (1.42%)
Unknown cause	107 (0.02%)	11 (0.01%)	14 (0.01%)	52 (0.02%)	30 (0.03%)
Not yet adjudicated	410 (0.06%)	37 (0.03%)	71 (0.04%)	242 (0.08%)	60 (0.05%)
<b>Total death<sup>11</sup></b>	<b>21236 (2.35%)</b>	<b>1242 (0.78%)</b>	<b>2613 (1.24%)</b>	<b>10129 (2.57%)</b>	<b>7252 (5.10%)</b>

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Studies 2005-2025.

<sup>3</sup> "CHD death" includes definite and possible CHD death.

<sup>4</sup> Angina and CHF are not verified outcomes in the WHI Extension Studies 2005-2025. Reported statistics represent experience during the original program.

<sup>5</sup> Definite or possible decompensated heart failure adjudicated by UNC.

<sup>6</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, UNC heart failure, and CABG/PTCA; Q-wave MI, angina, and congestive heart failure are not collected in the WHI Extension Studies 2005-2025.

<sup>7</sup> Aortic aneurysm and valvular heart disease are new adjudicated outcomes during the WHI Extension Study 2010-2025.

<sup>8</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

<sup>9</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>10</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>11</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

**Table 3.2**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for MRC Super Cohort Participants<sup>1</sup>**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported
<b>Number randomized</b>	108	526	6525	14025	22278	550	162
<b>Mean follow-up (months)</b>	171.7	182.7	164.8	172.6	207.8	211.6	167.7
<b>Cardiovascular</b>							
CHD <sup>3</sup>	8 (0.52%)	36 (0.45%)	288 (0.32%)	1095 (0.54%)	2513 (0.65%)	51 (0.53%)	17 (0.75%)
CHD death <sup>4</sup>	5 (0.32%)	13 (0.16%)	117 (0.13%)	612 (0.30%)	1133 (0.29%)	27 (0.28%)	11 (0.49%)
Clinical MI	6 (0.39%)	28 (0.35%)	206 (0.23%)	633 (0.31%)	1703 (0.44%)	33 (0.34%)	9 (0.40%)
Angina <sup>5</sup>	7 (0.85%)	16 (0.39%)	160 (0.33%)	532 (0.49%)	886 (0.49%)	16 (0.35%)	8 (0.67%)
CABG/PTCA	7 (0.45%)	23 (0.29%)	303 (0.34%)	757 (0.38%)	2034 (0.53%)	37 (0.38%)	9 (0.40%)
Carotid artery disease	4 (0.26%)	3 (0.04%)	26 (0.03%)	96 (0.05%)	400 (0.10%)	7 (0.07%)	1 (0.04%)
Congestive heart failure, WHI <sup>5</sup>	2 (0.24%)	9 (0.22%)	93 (0.19%)	466 (0.43%)	658 (0.36%)	15 (0.33%)	3 (0.25%)
Heart failure, UNC <sup>6</sup>	9 (0.81%)	22 (0.28%)	205 (0.23%)	862 (2.08%)	2232 (0.59%)	51 (0.90%)	11 (1.02%)
Stroke	7 (0.45%)	22 (0.27%)	270 (0.30%)	950 (0.47%)	2020 (0.52%)	51 (0.53%)	14 (0.62%)
PAD	1 (0.06%)	8 (0.10%)	41 (0.05%)	251 (0.12%)	408 (0.11%)	10 (0.10%)	3 (0.13%)
DVT	5 (0.32%)	2 (0.02%)	88 (0.10%)	381 (0.19%)	932 (0.24%)	18 (0.19%)	6 (0.26%)
Pulmonary embolism	5 (0.32%)	2 (0.02%)	57 (0.06%)	353 (0.17%)	744 (0.19%)	14 (0.14%)	6 (0.26%)
DVT/PE	8 (0.52%)	3 (0.04%)	122 (0.14%)	603 (0.30%)	1328 (0.34%)	27 (0.28%)	9 (0.40%)
Coronary disease <sup>7</sup>	19 (1.23%)	66 (0.82%)	646 (0.72%)	2287 (1.13%)	4996 (1.30%)	104 (1.07%)	31 (1.37%)
Aortic aneurysm <sup>8</sup>	0 (0.00%)	2 (0.09%)	5 (0.02%)	19 (0.04%)	50 (0.04%)	3 (0.10%)	0 (0.00%)
Valvular heart disease <sup>8</sup>	0 (0.00%)	4 (0.19%)	56 (0.24%)	79 (0.15%)	446 (0.38%)	9 (0.31%)	2 (0.32%)
<b>Total cardiovascular disease<sup>9</sup></b>	24 (1.55%)	94 (1.17%)	923 (1.03%)	3276 (1.62%)	7022 (1.82%)	159 (1.64%)	43 (1.90%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants from the CT and OS (identified from race/ethnicity collected on Form 2 at baseline. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander MRC Super Cohort participants (n=40) are combined with Asian MRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Studies 2005-2025.

<sup>4</sup> "CHD death" includes definite and possible CHD death.

<sup>5</sup> Angina and CHF are not verified outcomes in the WHI Extension Studies 2005-2025. Reported statistics represent experience during the original program.

<sup>6</sup> Definite or possible decompensated heart failure adjudicated by UNC.

<sup>7</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, UNC heart failure, and CABG/PTCA; Q-wave MI, angina and congestive heart failure are not collected in the WHI Extension Studies 2005-2025.

<sup>8</sup> Aortic aneurysm and valvular heart disease are new adjudicated outcomes during the WHI Extension Study 2010-2025.

<sup>9</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

**Table 3.2 (continued)**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for MRC Super Cohort Participants<sup>1</sup>**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported
<b>Number randomized</b>	108	526	6525	14025	22278	550	162
<b>Mean follow-up (months)</b>	171.7	182.7	164.8	172.6	207.8	211.6	167.7
Breast cancer	6 (0.39%)	35 (0.44%)	331 (0.37%)	933 (0.46%)	1741 (0.45%)	40 (0.41%)	8 (0.35%)
Invasive breast cancer	6 (0.39%)	27 (0.34%)	270 (0.30%)	752 (0.37%)	1455 (0.38%)	34 (0.35%)	8 (0.35%)
In situ breast cancer	0 (0.00%)	9 (0.11%)	67 (0.07%)	207 (0.10%)	315 (0.08%)	6 (0.06%)	0 (0.00%)
Ovarian cancer	2 (0.13%)	2 (0.02%)	37 (0.04%)	75 (0.04%)	171 (0.04%)	4 (0.04%)	1 (0.04%)
Endometrial cancer <sup>3</sup>	2 (0.25%)	2 (0.04%)	33 (0.07%)	91 (0.10%)	221 (0.09%)	1 (0.02%)	1 (0.08%)
Colorectal cancer	1 (0.06%)	14 (0.17%)	86 (0.10%)	300 (0.15%)	582 (0.15%)	18 (0.19%)	4 (0.18%)
Other cancer <sup>4</sup>	14 (0.91%)	52 (0.65%)	398 (0.44%)	1120 (0.56%)	2913 (0.76%)	53 (0.55%)	11 (0.49%)
<b>Total cancer</b>	23 (1.49%)	99 (1.24%)	824 (0.92%)	2326 (1.15%)	5174 (1.34%)	108 (1.11%)	24 (1.06%)
<b>Fractures</b>							
Hip fracture	3 (0.19%)	12 (0.15%)	89 (0.10%)	146 (0.07%)	1536 (0.40%)	23 (0.24%)	4 (0.18%)
<b>Deaths</b>							
Cardiovascular deaths	7 (0.45%)	29 (0.36%)	293 (0.33%)	1302 (0.65%)	2797 (0.73%)	52 (0.54%)	18 (0.79%)
Cancer deaths	9 (0.58%)	37 (0.46%)	326 (0.36%)	996 (0.49%)	2072 (0.54%)	41 (0.42%)	13 (0.57%)
Other known cause	15 (0.97%)	35 (0.44%)	361 (0.40%)	1074 (0.53%)	3107 (0.81%)	62 (0.64%)	14 (0.62%)
Unknown cause	0 (0.00%)	2 (0.02%)	16 (0.02%)	28 (0.01%)	60 (0.02%)	0 (0.00%)	1 (0.04%)
Not yet adjudicated	4 (0.26%)	2 (0.02%)	35 (0.04%)	102 (0.05%)	257 (0.07%)	8 (0.08%)	2 (0.09%)
<b>Total death<sup>5</sup></b>	56 (2.60%)	213 (1.94%)	2194 (1.56%)	6514 (2.29%)	11925 (2.63%)	263 (2.24%)	71 (2.21%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants from the CT and OS (identified from race/ethnicity collected on Form 2 at baseline. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander MRC Super Cohort participants (n=40) are combined with Asian MRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>4</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>5</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

Table 3.3

**Verified Outcomes (Annualized Percentages)<sup>1</sup> by Age at Diagnosis for MRC Super Cohort Participants<sup>2</sup> for Events between January 2000 and December 2020**

Data as of: February 19, 2022; Events between January 1, 2000 and December 31, 2020

Outcomes	Age at Diagnosis							
	50-59	60-64	65-69	70-74	75-79	80-84	85-89	90-105
<b>Number of participants<sup>3</sup></b>	8898	18159	24974	29140	29023	22131	12727	5478
<b>Mean follow-up (months)</b>	32.0	39.0	44.4	47.4	47.8	46.0	41.7	40.5
<b>Cancer</b>								
Breast cancer	95 (0.40%)	269 (0.46%)	427 (0.46%)	616 (0.53%)	550 (0.48%)	385 (0.45%)	154 (0.35%)	44 (0.24%)
Invasive breast cancer	73 (0.31%)	211 (0.36%)	315 (0.34%)	516 (0.45%)	465 (0.40%)	337 (0.40%)	144 (0.33%)	44 (0.24%)
In situ breast cancer	22 (0.09%)	62 (0.11%)	114 (0.12%)	115 (0.10%)	102 (0.09%)	61 (0.07%)	14 (0.03%)	2 (0.01%)
Ovarian cancer	5 (0.02%)	15 (0.03%)	43 (0.05%)	52 (0.05%)	55 (0.05%)	50 (0.06%)	18 (0.04%)	9 (0.05%)
Endometrial cancer <sup>4</sup>	3 (0.01%)	33 (0.06%)	69 (0.07%)	76 (0.07%)	53 (0.05%)	41 (0.05%)	18 (0.04%)	7 (0.04%)
Colorectal cancer	10 (0.04%)	57 (0.10%)	117 (0.13%)	159 (0.14%)	175 (0.15%)	127 (0.15%)	95 (0.21%)	53 (0.29%)
Leukemia	1 (<0.01%)	13 (0.02%)	25 (0.03%)	55 (0.05%)	49 (0.04%)	64 (0.08%)	41 (0.09%)	17 (0.09%)
Lung cancer	18 (0.08%)	67 (0.11%)	123 (0.13%)	221 (0.19%)	271 (0.23%)	220 (0.26%)	109 (0.25%)	50 (0.27%)
Non-Hodgkin's lymphoma	3 (0.01%)	14 (0.02%)	43 (0.05%)	79 (0.07%)	82 (0.07%)	84 (0.10%)	50 (0.11%)	21 (0.11%)
Melanoma of the skin	10 (0.04%)	30 (0.05%)	43 (0.05%)	70 (0.06%)	83 (0.07%)	63 (0.07%)	48 (0.11%)	15 (0.08%)
Pancreas cancer	5 (0.02%)	10 (0.02%)	35 (0.04%)	57 (0.05%)	80 (0.07%)	73 (0.09%)	55 (0.12%)	20 (0.11%)
Total cancer	167 (0.70%)	595 (1.01%)	1058 (1.14%)	1563 (1.36%)	1598 (1.38%)	1241 (1.46%)	639 (1.45%)	261 (1.41%)
<b>Cardiovascular</b>								
CHD <sup>5</sup>	35 (0.15%)	132 (0.22%)	330 (0.36%)	523 (0.45%)	710 (0.61%)	756 (0.89%)	567 (1.28%)	432 (2.34%)
Clinical MI	25 (0.11%)	98 (0.17%)	249 (0.27%)	400 (0.35%)	502 (0.43%)	497 (0.59%)	304 (0.69%)	152 (0.82%)
CABG/PTCA	48 (0.20%)	180 (0.31%)	419 (0.45%)	585 (0.51%)	648 (0.56%)	504 (0.59%)	189 (0.43%)	42 (0.23%)
Stroke	26 (0.11%)	101 (0.17%)	214 (0.23%)	421 (0.37%)	615 (0.53%)	709 (0.84%)	516 (1.17%)	337 (1.82%)
Total cardiovascular <sup>6</sup>	157 (0.66%)	497 (0.84%)	1047 (1.13%)	1591 (1.38%)	2026 (1.75%)	1980 (2.33%)	1295 (2.93%)	919 (4.98%)
<b>Deaths</b>								
Total death <sup>7</sup>	88 (0.37%)	372 (0.63%)	907 (0.98%)	1796 (1.56%)	3219 (2.79%)	4365 (5.15%)	4652 (10.53%)	4578 (24.79%)

<sup>1</sup>Annualized percentages calculated as the number with an event in the age interval divided by the total person years of all participants with time in the interval.<sup>2</sup>The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.<sup>3</sup>Number of participants with any follow-up time in the age interval.<sup>4</sup>Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.<sup>5</sup>"CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the OS or in in the WHI Extension Studies 2005-2025.<sup>6</sup>Total cardiovascular disease includes CHD, angina, CABG/PTCA, carotid artery disease, WHI CHF, UNC HF, stroke, PVD and CVD death. Angina and WHI CHF are not verified outcomes in the WHI Extension Studies 2005-2025.<sup>7</sup>Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.



**Table 3.4**  
**Verified Outcomes (Annualized Percentages) by Age at Enrollment for SRC Super Cohort Participants<sup>1</sup>**  
 Data as of: February 19, 2022; Events through September 30, 2010 and February 19, 2022

	Age at Enrollment				
	Total	50-54	55-59	60-69	70-79
<b>Outcomes through Extension Study 2005-2010</b>					
Number randomized	117634	14781	22638	53171	27044
Mean follow-up (months)	142.7	154.9	151.9	142.9	128.1
<b>Cardiovascular<sup>2</sup></b>					
CHD <sup>3</sup>	5434 (0.39%)	201 (0.11%)	489 (0.17%)	2362 (0.37%)	2382 (0.83%)
CHD death <sup>4</sup>	1891 (0.14%)	49 (0.03%)	104 (0.04%)	693 (0.11%)	1045 (0.36%)
Clinical MI	4044 (0.29%)	159 (0.08%)	398 (0.14%)	1834 (0.29%)	1653 (0.57%)
Angina <sup>5</sup>	3623 (0.38%)	139 (0.11%)	423 (0.22%)	1749 (0.41%)	1312 (0.63%)
CABG/PTCA	6113 (0.44%)	241 (0.13%)	711 (0.25%)	3161 (0.50%)	2000 (0.69%)
Carotid artery disease	1111 (0.08%)	48 (0.03%)	117 (0.04%)	520 (0.08%)	426 (0.15%)
Congestive heart failure, WHI <sup>5</sup>	2797 (0.29%)	78 (0.06%)	201 (0.11%)	1096 (0.26%)	1422 (0.68%)
Stroke	4259 (0.30%)	124 (0.06%)	322 (0.11%)	1857 (0.29%)	1956 (0.68%)
PAD	984 (0.07%)	24 (0.01%)	88 (0.03%)	460 (0.07%)	412 (0.14%)
Coronary disease <sup>6</sup>	11771 (0.84%)	455 (0.24%)	1244 (0.43%)	5456 (0.86%)	4616 (1.60%)
<b>Total cardiovascular disease</b>	<b>16777 (1.20%)</b>	<b>626 (0.33%)</b>	<b>1665 (0.58%)</b>	<b>7668 (1.21%)</b>	<b>6818 (2.36%)</b>
<b>Fractures<sup>2</sup></b>					
Hip fracture	2955 (0.21%)	63 (0.03%)	186 (0.06%)	1108 (0.18%)	1598 (0.55%)
<b>Outcomes through Extension Study 2010-2025</b>					
Number randomized	117634	14781	22638	53171	27044
Mean follow-up (months)	208.5	244.9	237.9	210.0	161.2
<b>Cancer</b>					
Breast cancer	11087 (0.54%)	1541 (0.51%)	2420 (0.54%)	5109 (0.55%)	2017 (0.56%)
Invasive breast cancer	9345 (0.46%)	1243 (0.41%)	2038 (0.45%)	4328 (0.47%)	1736 (0.48%)
In situ breast cancer	1935 (0.09%)	329 (0.11%)	425 (0.09%)	875 (0.09%)	306 (0.08%)
Ovarian cancer	1080 (0.05%)	131 (0.04%)	214 (0.05%)	515 (0.06%)	220 (0.06%)
Endometrial cancer <sup>7</sup>	1575 (0.13%)	188 (0.10%)	362 (0.13%)	725 (0.13%)	300 (0.15%)
Colorectal cancer	2600 (0.13%)	161 (0.05%)	367 (0.08%)	1292 (0.14%)	780 (0.21%)
Other cancer <sup>8</sup>	14764 (0.72%)	1519 (0.50%)	2632 (0.59%)	7231 (0.78%)	3382 (0.93%)
<b>Total cancer</b>	<b>28200 (1.38%)</b>	<b>3219 (1.07%)</b>	<b>5436 (1.21%)</b>	<b>13384 (1.44%)</b>	<b>6161 (1.70%)</b>
<b>Deaths</b>					
Cardiovascular deaths	11805 (0.58%)	259 (0.09%)	784 (0.17%)	5179 (0.56%)	5583 (1.54%)
Cancer deaths	10431 (0.51%)	689 (0.23%)	1531 (0.34%)	5200 (0.56%)	3011 (0.83%)
Other known cause	14703 (0.72%)	512 (0.17%)	1360 (0.30%)	7223 (0.78%)	5608 (1.54%)
Unknown cause	1872 (0.09%)	101 (0.03%)	262 (0.06%)	1029 (0.11%)	480 (0.13%)
<b>Total death<sup>9</sup></b>	<b>57028 (2.35%)</b>	<b>2143 (0.60%)</b>	<b>5288 (1.01%)</b>	<b>26488 (2.40%)</b>	<b>23109 (5.19%)</b>

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>2</sup> Cardiovascular diseases and hip fracture are not adjudicated for SRC Super Cohort participants during the WHI Extension Study 2010-2025. Reported statistics represent experience during the original program and the Extension Study 2005-2010.

<sup>3</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Study 2005-2010.

<sup>4</sup> "CHD death" includes definite and possible CHD death.

<sup>5</sup> Angina and CHF are not verified outcomes in the WHI Extension Study 2005-2010. Reported statistics represent experience during the original program.

<sup>6</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, and CABG/PTCA; Q-wave MI, angina, and congestive heart failure were not collected in the WHI Extension Study 2005-2010.

<sup>7</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>8</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>9</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

**Table 3.5**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for SRC Super Cohort Participants<sup>1</sup>**

Data as of: February 19, 2022; Events through September 30, 2010 and February 19, 2022

	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Outcomes through Extension Study 2005-2010</b>							
<b>Number randomized</b>	379	3558	787	142	111050	1119	599
<b>Mean follow-up (months)</b>	115.0	127.6	145.7	137.6	143.4	146.6	106.7
<b>Cardiovascular<sup>3</sup></b>							
CHD <sup>4</sup>	21 (0.58%)	89 (0.24%)	27 (0.28%)	3 (0.18%)	5224 (0.39%)	42 (0.31%)	28 (0.53%)
CHD death <sup>5</sup>	11 (0.30%)	30 (0.08%)	4 (0.04%)	1 (0.06%)	1812 (0.14%)	13 (0.10%)	20 (0.38%)
Clinical MI	13 (0.36%)	68 (0.18%)	23 (0.24%)	2 (0.12%)	3889 (0.29%)	31 (0.23%)	18 (0.34%)
Angina <sup>6</sup>	19 (0.70%)	54 (0.20%)	28 (0.43%)	2 (0.17%)	3470 (0.39%)	35 (0.38%)	15 (0.37%)
CABG/PTCA	19 (0.52%)	80 (0.21%)	39 (0.41%)	2 (0.12%)	5906 (0.44%)	47 (0.34%)	20 (0.38%)
Carotid artery disease	6 (0.17%)	10 (0.03%)	11 (0.12%)	4 (0.25%)	1065 (0.08%)	8 (0.06%)	7 (0.13%)
Congestive heart failure, WHI <sup>6</sup>	19 (0.70%)	33 (0.12%)	12 (0.18%)	2 (0.17%)	2684 (0.30%)	23 (0.25%)	24 (0.59%)
Stroke	19 (0.52%)	98 (0.26%)	19 (0.20%)	6 (0.37%)	4063 (0.31%)	29 (0.21%)	25 (0.47%)
PAD	5 (0.14%)	9 (0.02%)	3 (0.03%)	3 (0.18%)	949 (0.07%)	13 (0.10%)	2 (0.04%)
Coronary disease <sup>7</sup>	52 (1.43%)	177 (0.47%)	71 (0.74%)	7 (0.43%)	11305 (0.85%)	103 (0.75%)	56 (1.05%)
<b>Total cardiovascular disease</b>	<b>68 (1.87%)</b>	<b>288 (0.76%)</b>	<b>99 (1.04%)</b>	<b>20 (1.23%)</b>	<b>16063 (1.21%)</b>	<b>154 (1.13%)</b>	<b>85 (1.60%)</b>
<b>Fractures<sup>3</sup></b>							
Hip fracture	4 (0.11%)	28 (0.07%)	15 (0.16%)	0 (0.00%)	2868 (0.22%)	26 (0.19%)	14 (0.26%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander SRC Super Cohort participants (n=79) are combined with Asian SRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> Cardiovascular diseases and hip fracture are not adjudicated for SRC Super Cohort participants during the WHI Extension Study 2010-2025. Reported statistics represent experience during the original program and the Extension Study 2005-2010.

<sup>4</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Study 2005-2010.

<sup>5</sup> "CHD death" includes definite and possible CHD death.

<sup>6</sup> Angina and CHF are not verified outcomes in the WHI Extension Study 2005-2010. Reported statistics represent experience during the original program.

<sup>7</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, and CABG/PTCA; Q-wave MI, angina and congestive heart failure were not collected in the WHI Extension Study 2005-2010.

**Table 3.5 (continued)**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for SRC Super Cohort Participants<sup>1</sup>**

Data as of: February 19, 2022 Events through September 30, 2010 and February 19, 2022

	Race/Ethnicity						
	American Indian/Alaska Native	Asian or Native Hawaiian/Other Pacific Islander <sup>2</sup>	Hispanic/Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Outcomes through Extension Study 2010-2025</b>							
<b>Number randomized</b>	379	3558	787	142	111050	1119	599
<b>Mean follow-up (months)</b>	154.0	178.1	213.1	192.3	210.0	213.9	138.8
<b>Cancer</b>							
Breast Cancer	20 (0.41%)	248 (0.47%)	69 (0.49%)	10 (0.44%)	10619 (0.55%)	86 (0.43%)	35 (0.51%)
Invasive breast cancer	17 (0.35%)	199 (0.38%)	55 (0.39%)	8 (0.35%)	8963 (0.46%)	75 (0.38%)	28 (0.40%)
In situ breast cancer	4 (0.08%)	52 (0.10%)	15 (0.11%)	2 (0.09%)	1841 (0.09%)	13 (0.07%)	8 (0.12%)
Ovarian cancer	3 (0.06%)	15 (0.03%)	3 (0.02%)	1 (0.04%)	1043 (0.05%)	6 (0.03%)	9 (0.13%)
Endometrial cancer <sup>3</sup>	1 (0.04%)	24 (0.07%)	12 (0.14%)	2 (0.19%)	1523 (0.13%)	10 (0.10%)	3 (0.07%)
Colorectal cancer	8 (0.16%)	48 (0.09%)	18 (0.13%)	3 (0.13%)	2499 (0.13%)	15 (0.08%)	9 (0.13%)
Other cancer <sup>4</sup>	31 (0.64%)	240 (0.45%)	65 (0.47%)	15 (0.66%)	14246 (0.73%)	104 (0.52%)	63 (0.91%)
<b>Total cancer</b>	59 (1.21%)	529 (1.00%)	145 (1.04%)	26 (1.14%)	27123 (1.40%)	207 (1.04%)	111 (1.60%)
<b>Deaths</b>							
Cardiovascular deaths	32 (0.66%)	200 (0.38%)	54 (0.39%)	11 (0.48%)	11361 (0.58%)	87 (0.44%)	60 (0.87%)
Cancer deaths	26 (0.53%)	189 (0.36%)	29 (0.21%)	6 (0.26%)	10062 (0.52%)	62 (0.31%)	57 (0.82%)
Other known cause	53 (1.09%)	200 (0.38%)	93 (0.67%)	7 (0.31%)	14172 (0.73%)	125 (0.63%)	53 (0.77%)
Unknown cause	2 (0.04%)	29 (0.05%)	10 (0.07%)	1 (0.04%)	1806 (0.09%)	23 (0.12%)	1 (0.01%)
<b>Total death<sup>5</sup></b>	195 (2.76%)	1298 (1.70%)	331 (1.94%)	54 (1.79%)	54360 (2.37%)	469 (1.95%)	321 (2.97%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander SRC Super Cohort participants (n=79) are combined with Asian SRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>4</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>5</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

**Table 3.6**  
**Verified Primary and Other Cancers (Annualized Percentages): MRC and SRC Super Cohort Participants**  
 Data as of: February 19, 2022; Events through February 19, 2022

	Total		MRC Super Cohort <sup>1</sup>		SRC Super Cohort <sup>2</sup>	
<b>Number of participants</b>	161808		44174		117634	
<b>Mean follow-up (months)</b>	203.4		189.8		208.5	
<b>Overall cancer</b>	36778	(1.34%)	8578	(1.23%)	28200	(1.38%)
Primary cancer						
Breast cancer	14181	(0.52%)	3094	(0.44%)	11087	(0.54%)
Invasive breast cancer	11897	(0.43%)	2552	(0.37%)	9345	(0.46%)
In situ breast cancer	2539	(0.09%)	604	(0.09%)	1935	(0.09%)
Ovarian cancer	1372	(0.05%)	292	(0.04%)	1080	(0.05%)
Endometrial cancer <sup>3</sup>	1926	(0.12%)	351	(0.09%)	1575	(0.13%)
Colorectal cancer	3605	(0.13%)	1005	(0.14%)	2600	(0.13%)
Other cancer						
Accessory sinus	16	(<0.01%)	3	(<0.01%)	13	(<0.01%)
Adrenal gland	18	(<0.01%)	5	(<0.01%)	13	(<0.01%)
Anus	142	(0.01%)	33	(<0.01%)	109	(0.01%)
Appendix	52	(<0.01%)	14	(<0.01%)	38	(<0.01%)
Base of tongue	38	(<0.01%)	9	(<0.01%)	29	(<0.01%)
Biliary tract, parts of (other/unspecified)	213	(0.01%)	64	(0.01%)	149	(0.01%)
Bladder	1146	(0.04%)	277	(0.04%)	869	(0.04%)
Bones/joints/articular cartilage (limbs)	14	(<0.01%)	2	(<0.01%)	12	(<0.01%)
Bones/joints/articular cartilage (other)	32	(<0.01%)	9	(<0.01%)	23	(<0.01%)
Brain	419	(0.02%)	77	(0.01%)	342	(0.02%)
Cervix	138	(0.01%)	45	(0.01%)	93	(<0.01%)
Central Nervous System (excludes brain)	5	(<0.01%)	1	(<0.01%)	4	(<0.01%)
Connective/subcutaneous/soft tissues	214	(0.01%)	47	(0.01%)	167	(0.01%)
Endocrine glands, related structures	5	(<0.01%)	0	(0.00%)	5	(<0.01%)
Esophagus	206	(0.01%)	52	(0.01%)	154	(0.01%)
Eye and adnexa	83	(<0.01%)	24	(<0.01%)	59	(<0.01%)
Floor of Mouth	20	(<0.01%)	8	(<0.01%)	12	(<0.01%)
Gallbladder	156	(0.01%)	49	(0.01%)	107	(0.01%)
Genital organs <sup>4</sup>	180	(0.01%)	26	(<0.01%)	154	(0.01%)
Gum	52	(<0.01%)	8	(<0.01%)	44	(<0.01%)
Heart	42	(<0.01%)	6	(<0.01%)	36	(<0.01%)
Kidney	825	(0.03%)	223	(0.03%)	602	(0.03%)
Larynx	56	(<0.01%)	21	(<0.01%)	35	(<0.01%)
Leukemia	1277	(0.05%)	294	(0.04%)	983	(0.05%)
Liver	376	(0.01%)	108	(0.02%)	268	(0.01%)
Lung	4535	(0.17%)	1232	(0.18%)	3303	(0.16%)
Lymph nodes	3	(<0.01%)	1	(<0.01%)	2	(<0.01%)
Lymphoma, Hodgkins	84	(<0.01%)	24	(<0.01%)	60	(<0.01%)
Lymphoma, non-Hodgkins	1997	(0.07%)	411	(0.06%)	1586	(0.08%)
Melanoma of the skin	2855	(0.10%)	416	(0.06%)	2439	(0.12%)
Meninges	8	(<0.01%)	2	(<0.01%)	6	(<0.01%)
Multiple myeloma	701	(0.03%)	223	(0.03%)	478	(0.02%)
Mycosis fungoides	30	(<0.01%)	8	(<0.01%)	22	(<0.01%)
Nasal cavity mid ear	22	(<0.01%)	3	(<0.01%)	19	(<0.01%)
Oral (mouth)	46	(<0.01%)	8	(<0.01%)	38	(<0.01%)
Other digestive cancer	67	(<0.01%)	14	(<0.01%)	53	(<0.01%)
Other lip	17	(<0.01%)	7	(<0.01%)	10	(<0.01%)
Palate	36	(<0.01%)	8	(<0.01%)	28	(<0.01%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

<sup>4</sup> Vaginal and vulvar cancers were included with genital organ cancers in prior reports. As of 2022, these cancers are now shown separately.

**Table 3.6 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: February 19, 2022; Events through February 19, 2022;

	<b>Total</b>		<b>MRC Super Cohort<sup>1</sup></b>		<b>SRC Super Cohort<sup>2</sup></b>	
<b>Number of participants</b>	161808		44174		117634	
<b>Mean follow-up (months)</b>	203.4		189.8		208.5	
Pancreas	1445	(0.05%)	376	(0.05%)	1069	(0.05%)
Parotid gland (Stensen's duct)	72	(<0.01%)	16	(<0.01%)	56	(<0.01%)
Peripheral nerves and autonomic nervous	2	(<0.01%)	0	(0.00%)	2	(<0.01%)
Peritoneum	242	(0.01%)	54	(0.01%)	188	(0.01%)
Pharynx	32	(<0.01%)	12	(<0.01%)	20	(<0.01%)
Pyramidal sinus	2	(<0.01%)	0	(0.00%)	2	(<0.01%)
Renal pelvis	146	(0.01%)	39	(0.01%)	107	(0.01%)
Respiratory system, intrathoracic, other	3	(<0.01%)	0	(0.00%)	3	(<0.01%)
Salivary glands, major (other/unspecified)	19	(<0.01%)	4	(<0.01%)	15	(<0.01%)
Small intestine	176	(0.01%)	43	(0.01%)	133	(0.01%)
Stomach	335	(0.01%)	108	(0.02%)	227	(0.01%)
Thymus	15	(<0.01%)	3	(<0.01%)	12	(<0.01%)
Thyroid	529	(0.02%)	112	(0.02%)	417	(0.02%)
Tongue, part of (other/unspecified)	94	(<0.01%)	15	(<0.01%)	79	(<0.01%)
Tonsil	25	(<0.01%)	3	(<0.01%)	22	(<0.01%)
Trachea	1	(<0.01%)	1	(<0.01%)	0	(0.00%)
Ureter	91	(<0.01%)	20	(<0.01%)	71	(<0.01%)
Urinary organs (other/unspecified)	40	(<0.01%)	13	(<0.01%)	27	(<0.01%)
Uterus, not otherwise specified <sup>3</sup>	151	(0.01%)	36	(0.01%)	115	(0.01%)
Vagina <sup>4</sup>	52	(<0.01%)	13	(<0.01%)	39	(<0.01%)
Vulva <sup>4</sup>	193	(0.01%)	49	(0.01%)	144	(0.01%)
Other/unknown site of cancer	595	(0.02%)	144	(0.02%)	451	(0.02%)
Other/unknown cancers reported on death	523	(0.02%)	101	(0.01%)	422	(0.02%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

<sup>4</sup> Vaginal and vulvar cancers were included with genital organ cancers in prior reports. As of 2022, these cancers are now shown separately.

Table 3.7

**Verified Outcomes (Annualized Percentages)<sup>1</sup> by Age at Diagnosis for CT and OS Participants for Events between January 2000 and December 2020**

Data as of: February 19, 2022; Events between January 1, 2000 and December 31, 2020 or January 1, 2000 and September 30, 2010

	Age at Diagnosis							
	50-59	60-64	65-69	70-74	75-79	80-84	85-89	90-105
<b>Cancer and Death Outcomes between 1/1/2000 and 12/31/2020</b>								
<b>Number of participants<sup>2</sup></b>	28496	62321	91040	113168	118515	93608	55537	24345
<b>Mean follow-up (months)</b>	30.9	39.5	45.3	48.3	48.5	46.6	42.0	40.6
Breast cancer	359 (0.49%)	1073 (0.52%)	1908 (0.56%)	2605 (0.57%)	2707 (0.57%)	1798 (0.49%)	769 (0.40%)	229 (0.28%)
Invasive breast cancer	281 (0.38%)	862 (0.42%)	1514 (0.44%)	2159 (0.47%)	2306 (0.48%)	1577 (0.43%)	716 (0.37%)	231 (0.28%)
In situ breast cancer	80 (0.11%)	223 (0.11%)	412 (0.12%)	494 (0.11%)	471 (0.10%)	278 (0.08%)	72 (0.04%)	11 (0.01%)
Ovarian cancer	26 (0.04%)	78 (0.04%)	183 (0.05%)	249 (0.05%)	242 (0.05%)	199 (0.05%)	127 (0.07%)	40 (0.05%)
Endometrial cancer <sup>3</sup>	32 (0.08%)	144 (0.12%)	294 (0.14%)	370 (0.14%)	356 (0.13%)	246 (0.12%)	97 (0.09%)	31 (0.07%)
Colorectal cancer	35 (0.05%)	155 (0.08%)	337 (0.10%)	546 (0.12%)	657 (0.14%)	616 (0.17%)	402 (0.21%)	199 (0.24%)
Leukemia	6 (0.01%)	48 (0.02%)	136 (0.04%)	202 (0.04%)	262 (0.05%)	243 (0.07%)	182 (0.09%)	89 (0.11%)
Lung cancer	33 (0.04%)	177 (0.09%)	402 (0.12%)	778 (0.17%)	1017 (0.21%)	870 (0.24%)	472 (0.24%)	214 (0.26%)
Non-Hodgkin's lymphoma	18 (0.02%)	75 (0.04%)	198 (0.06%)	357 (0.08%)	416 (0.09%)	380 (0.10%)	255 (0.13%)	104 (0.13%)
Melanoma of the skin	49 (0.07%)	164 (0.08%)	320 (0.09%)	516 (0.11%)	647 (0.14%)	454 (0.12%)	275 (0.14%)	94 (0.11%)
Pancreas cancer	10 (0.01%)	44 (0.02%)	103 (0.03%)	194 (0.04%)	300 (0.06%)	332 (0.09%)	234 (0.12%)	102 (0.12%)
Total cancer	644 (0.88%)	2186 (1.07%)	4251 (1.24%)	6410 (1.41%)	7147 (1.49%)	5577 (1.53%)	2989 (1.54%)	1194 (1.45%)
<b>Total death<sup>4</sup></b>	221 (0.30%)	999 (0.49%)	2450 (0.71%)	5465 (1.20%)	10581 (2.21%)	15872 (4.36%)	18787 (9.66%)	18992 (23.07%)
<b>Cardiovascular Outcomes between 1/1/2000 and 9/30/2010</b>								
<b>Number of participants<sup>2</sup></b>	22435	50703	75664	80683	65949	40705	15580	2664
<b>Mean follow-up (months)</b>	31.1	41.6	41.9	40.6	40.8	38.3	31.0	17.6
CHD <sup>5</sup>	35 (0.06%)	131 (0.07%)	307 (0.12%)	396 (0.14%)	458 (0.20%)	379 (0.29%)	166 (0.41%)	28 (0.72%)
Clinical MI	25 (0.04%)	97 (0.06%)	231 (0.09%)	298 (0.11%)	326 (0.15%)	248 (0.19%)	95 (0.24%)	11 (0.28%)
CABG/PTCA	48 (0.08%)	178 (0.10%)	396 (0.15%)	479 (0.18%)	465 (0.21%)	289 (0.22%)	58 (0.14%)	0 (0.00%)
Stroke	26 (0.04%)	100 (0.06%)	191 (0.07%)	303 (0.11%)	364 (0.16%)	315 (0.24%)	124 (0.31%)	22 (0.56%)
Total cardiovascular <sup>6</sup>	157 (0.27%)	493 (0.28%)	981 (0.37%)	1252 (0.46%)	1342 (0.60%)	999 (0.77%)	344 (0.86%)	58 (1.48%)

<sup>1</sup> Annualized percentages calculated as the number with an event in the age interval divided by the total person years of all participants with time in the interval.<sup>2</sup> Number of participants with any follow-up time in the age interval.<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.<sup>4</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.<sup>5</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the OS or in the WHI Extension Study 2005-2010.<sup>6</sup> Total cardiovascular disease includes CHD, angina, CABG/PTCA, carotid artery disease, CHF, stroke, PAD and CVD death. Angina and CHF are not verified outcomes in the WHI Extension Study 2005-2010.

**Table 3.8**  
**Verified Primary and Other Cancers (Annualized Percentages): CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	Total		CT		OS	
<b>Number of participants</b>	161808		68132		93676	
<b>Mean follow-up (months)</b>	203.4		212.6		196.7	
<b>Overall cancer</b>	36778	(1.34%)	15784	(1.31%)	20994	(1.37%)
Primary cancer						
Breast cancer	14181	(0.52%)	5924	(0.49%)	8257	(0.54%)
Invasive breast cancer	11897	(0.43%)	4933	(0.41%)	6964	(0.45%)
In situ breast cancer	2539	(0.09%)	1112	(0.09%)	1427	(0.09%)
Ovarian cancer	1372	(0.05%)	555	(0.05%)	817	(0.05%)
Endometrial cancer <sup>1</sup>	1926	(0.12%)	813	(0.11%)	1113	(0.12%)
Colorectal cancer	3605	(0.13%)	1651	(0.14%)	1954	(0.13%)
Other cancer						
Accessory sinus	16	(<0.01%)	6	(<0.01%)	10	(<0.01%)
Adrenal gland	18	(<0.01%)	7	(<0.01%)	11	(<0.01%)
Anus	142	(0.01%)	61	(0.01%)	81	(0.01%)
Appendix	52	(<0.01%)	26	(<0.01%)	26	(<0.01%)
Base of tongue	38	(<0.01%)	17	(<0.01%)	21	(<0.01%)
Biliary tract, parts of (other/unspecified)	213	(0.01%)	102	(0.01%)	111	(0.01%)
Bladder	1146	(0.04%)	529	(0.04%)	617	(0.04%)
Bones/joints/articular cartilage (limbs)	14	(<0.01%)	7	(<0.01%)	7	(<0.01%)
Bones/joints/articular cartilage (other)	32	(<0.01%)	15	(<0.01%)	17	(<0.01%)
Brain	419	(0.02%)	184	(0.02%)	235	(0.02%)
Cervix	138	(0.01%)	66	(0.01%)	72	(<0.01%)
Central Nervous System (excludes brain)	5	(<0.01%)	1	(<0.01%)	4	(<0.01%)
Connective/subcutaneous/soft tissues	214	(0.01%)	99	(0.01%)	115	(0.01%)
Endocrine glands, related structures	5	(<0.01%)	1	(<0.01%)	4	(<0.01%)
Esophagus	206	(0.01%)	95	(0.01%)	111	(0.01%)
Eye and adnexa	83	(<0.01%)	48	(<0.01%)	35	(<0.01%)
Floor of mouth	20	(<0.01%)	11	(<0.01%)	9	(<0.01%)
Gallbladder	156	(0.01%)	87	(0.01%)	69	(<0.01%)
Genital organs <sup>2</sup>	180	(0.01%)	66	(0.01%)	114	(0.01%)
Gum	52	(<0.01%)	23	(<0.01%)	29	(<0.01%)
Heart	42	(<0.01%)	14	(<0.01%)	28	(<0.01%)
Kidney	825	(0.03%)	395	(0.03%)	430	(0.03%)
Larynx	56	(<0.01%)	29	(<0.01%)	27	(<0.01%)
Leukemia	1277	(0.05%)	557	(0.05%)	720	(0.05%)
Liver	376	(0.01%)	158	(0.01%)	218	(0.01%)
Lung	4535	(0.17%)	1951	(0.16%)	2584	(0.17%)
Lymph nodes	3	(<0.01%)	2	(<0.01%)	1	(<0.01%)
Lymphoma, Hodgkins	84	(<0.01%)	31	(<0.01%)	53	(<0.01%)
Lymphoma, non-Hodgkins	1997	(0.07%)	827	(0.07%)	1170	(0.08%)
Melanoma of the skin	2855	(0.10%)	1222	(0.10%)	1633	(0.11%)
Meninges	8	(<0.01%)	3	(<0.01%)	5	(<0.01%)
Multiple myeloma	701	(0.03%)	315	(0.03%)	386	(0.03%)
Mycosis fungoides	30	(<0.01%)	10	(<0.01%)	20	(<0.01%)
Nasal cavity mid ear	22	(<0.01%)	8	(<0.01%)	14	(<0.01%)
Oral (mouth)	46	(<0.01%)	24	(<0.01%)	22	(<0.01%)
Other digestive cancer	67	(<0.01%)	33	(<0.01%)	34	(<0.01%)
Other lip	17	(<0.01%)	7	(<0.01%)	10	(<0.01%)
Palate	36	(<0.01%)	14	(<0.01%)	22	(<0.01%)

<sup>1</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

<sup>2</sup> Vaginal and vulvar cancers were included with genital organ cancers in prior reports. As of 2022, these cancers are now shown separately.

**Table 3.8 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages): CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	<b>Total</b>		<b>CT</b>		<b>OS</b>	
<b>Number of participants</b>	161808		68132		93676	
<b>Mean follow-up (months)</b>	203.4		212.6		196.7	
Pancreas	1445	(0.05%)	648	(0.05%)	797	(0.05%)
Parotid gland (Stensen's duct)	72	(<0.01%)	30	(<0.01%)	42	(<0.01%)
Peripheral nerves and autonomic nervous	2	(<0.01%)	1	(<0.01%)	1	(<0.01%)
Peritoneum	242	(0.01%)	98	(0.01%)	144	(0.01%)
Pharynx	32	(<0.01%)	14	(<0.01%)	18	(<0.01%)
Pyramidal sinus	2	(<0.01%)	0	(0.00%)	2	(<0.01%)
Renal pelvis	146	(0.01%)	69	(0.01%)	77	(0.01%)
Respiratory system, intrathoracic, other	3	(<0.01%)	1	(<0.01%)	2	(<0.01%)
Salivary glands, major (other/unspecified)	19	(<0.01%)	6	(<0.01%)	13	(<0.01%)
Small intestine	176	(0.01%)	61	(0.01%)	115	(0.01%)
Stomach	335	(0.01%)	139	(0.01%)	196	(0.01%)
Thymus	15	(<0.01%)	8	(<0.01%)	7	(<0.01%)
Thyroid	529	(0.02%)	223	(0.02%)	306	(0.02%)
Tongue, part of (other/unspecified)	94	(<0.01%)	44	(<0.01%)	50	(<0.01%)
Tonsil	25	(<0.01%)	11	(<0.01%)	14	(<0.01%)
Trachea	1	(<0.01%)	0	(0.00%)	1	(<0.01%)
Ureter	91	(<0.01%)	46	(<0.01%)	45	(<0.01%)
Urinary organs (other/unspecified)	40	(<0.01%)	18	(<0.01%)	22	(<0.01%)
Uterus, not otherwise specified <sup>1</sup>	151	(0.01%)	67	(0.01%)	84	(0.01%)
Vagina <sup>2</sup>	52	(<0.01%)	27	(<0.01%)	25	(<0.01%)
Vulva <sup>2</sup>	193	(0.01%)	83	(0.01%)	110	(0.01%)
Other/unknown site of cancer	595	(0.02%)	266	(0.02%)	329	(0.02%)
Other/unknown cancers reported on death	523	(0.02%)	178	(0.01%)	345	(0.02%)

<sup>1</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

<sup>2</sup> Vaginal and vulvar cancers were included with genital organ cancers in prior reports. As of 2022, these cancers are now shown separately.



**Table 3.9**  
**Verified Primary and Other Cancers (Annualized Percentages) by Race/Ethnicity for CT and OS Participants**  
 Data as of: February 19, 2022; Events through February 19, 2022

	Race/Ethnicity													
	American Indian/ Alaska Native		Asian or Native Hawaiian/ Other Pacific Islander <sup>1</sup>		Hispanic/ Latina		Non-Hispanic Black/African American		Non-Hispanic White		More than one Race		Other/ Not Reported	
<b>Number of participants</b>	487		4084		7312		14167		133328		1669		761	
<b>Mean follow-up (months)</b>	157.9		178.7		170.0		172.8		209.6		213.1		145.0	
<b>Overall cancer</b>	82 (1.28%)	628 (1.03%)	969 (0.94%)	2352 (1.15%)	32297 (1.39%)	315 (1.06%)	135 (1.47%)							
<b>Primary cancer</b>														
Breast cancer	26 (0.41%)	283 (0.47%)	400 (0.39%)	943 (0.46%)	12360 (0.53%)	126 (0.43%)	43 (0.47%)							
Invasive breast cancer	23 (0.36%)	226 (0.37%)	325 (0.31%)	760 (0.37%)	10418 (0.45%)	109 (0.37%)	36 (0.39%)							
In situ breast cancer	4 (0.06%)	61 (0.10%)	82 (0.08%)	209 (0.10%)	2156 (0.09%)	19 (0.06%)	8 (0.09%)							
Ovarian cancer	5 (0.08%)	17 (0.03%)	40 (0.04%)	76 (0.04%)	1214 (0.05%)	10 (0.03%)	10 (0.11%)							
Endometrial cancer <sup>2</sup>	3 (0.09%)	26 (0.06%)	45 (0.08%)	93 (0.10%)	1744 (0.12%)	11 (0.07%)	4 (0.07%)							
Colorectal cancer	9 (0.14%)	62 (0.10%)	104 (0.10%)	303 (0.15%)	3081 (0.13%)	33 (0.11%)	13 (0.14%)							
<b>Other cancer</b>														
Accessory sinus	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	15 (<0.01%)	0 (0.00%)	0 (0.00%)							
Adrenal gland	0 (0.00%)	0 (0.00%)	1 (<0.01%)	2 (<0.01%)	15 (<0.01%)	0 (0.00%)	0 (0.00%)							
Anus	0 (0.00%)	2 (<0.01%)	6 (0.01%)	11 (0.01%)	123 (0.01%)	0 (0.00%)	0 (0.00%)							
Appendix	0 (0.00%)	0 (0.00%)	3 (<0.01%)	4 (<0.01%)	44 (<0.01%)	0 (0.00%)	1 (0.01%)							
Base of Tongue	0 (0.00%)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	35 (<0.01%)	0 (0.00%)	1 (0.01%)							
Biliary tract, parts of (other/unspecified)	1 (0.02%)	2 (<0.01%)	15 (0.01%)	15 (0.01%)	177 (0.01%)	2 (0.01%)	1 (0.01%)							
Bladder	1 (0.02%)	11 (0.02%)	19 (0.02%)	66 (0.03%)	1036 (0.04%)	12 (0.04%)	1 (0.01%)							
Bones/joints/articular cartilage (limbs)	1 (0.02%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	12 (<0.01%)	0 (0.00%)	0 (0.00%)							
Bones/joints/articular cartilage (other)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	1 (<0.01%)	28 (<0.01%)	1 (<0.01%)	1 (0.01%)							
Brain	1 (0.02%)	5 (0.01%)	7 (0.01%)	14 (0.01%)	391 (0.02%)	0 (0.00%)	1 (0.01%)							
Cervix	0 (0.00%)	2 (<0.01%)	6 (0.01%)	20 (0.01%)	109 (<0.01%)	1 (<0.01%)	0 (0.00%)							
Central Nervous System (excludes brain)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	5 (<0.01%)	0 (0.00%)	0 (0.00%)							
Connective/subcutaneous/soft tissues	0 (0.00%)	4 (0.01%)	5 (<0.01%)	9 (<0.01%)	192 (0.01%)	3 (0.01%)	1 (0.01%)							
Endocrine glands, related structures	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	5 (<0.01%)	0 (0.00%)	0 (0.00%)							
Esophagus	1 (0.02%)	1 (<0.01%)	3 (<0.01%)	10 (<0.01%)	187 (0.01%)	3 (0.01%)	1 (0.01%)							
Eye and adnexa	0 (0.00%)	0 (0.00%)	4 (<0.01%)	0 (0.00%)	77 (<0.01%)	2 (0.01%)	0 (0.00%)							
Floor of mouth	0 (0.00%)	1 (<0.01%)	1 (<0.01%)	2 (<0.01%)	15 (<0.01%)	0 (0.00%)	1 (0.01%)							
Gallbladder	0 (0.00%)	1 (<0.01%)	9 (0.01%)	11 (0.01%)	134 (0.01%)	1 (<0.01%)	0 (0.00%)							

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT and OS participants (n=119) are combined with Asian CT and OS participants for reporting purposes due to small numbers.

<sup>2</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

**Table 3.9 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages) by Race/Ethnicity: CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	Race/Ethnicity						
	American Indian/Alaska Native	Asian or Native Hawaiian/Other Pacific Islander <sup>1</sup>	Hispanic /Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported
<b>Number of participants</b>	487	4084	7312	14167	133328	1669	761
<b>Mean follow-up (months)</b>	157.9	178.7	170.0	172.8	209.6	213.1	145.0
Genital organs <sup>2</sup>	0 (0.00%)	3 (<0.01%)	5 (<0.01%)	5 (<0.01%)	166 (0.01%)	0 (0.00%)	1 (0.01%)
Gum	0 (0.00%)	1 (<0.01%)	2 (<0.01%)	2 (<0.01%)	47 (<0.01%)	0 (0.00%)	0 (0.00%)
Heart	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	42 (<0.01%)	0 (0.00%)	0 (0.00%)
Kidney	7 (0.11%)	14 (0.02%)	24 (0.02%)	65 (0.03%)	703 (0.03%)	8 (0.03%)	4 (0.04%)
Larynx	0 (0.00%)	0 (0.00%)	0 (0.00%)	6 (<0.01%)	50 (<0.01%)	0 (0.00%)	0 (0.00%)
Leukemia	2 (0.03%)	17 (0.03%)	28 (0.03%)	68 (0.03%)	1143 (0.05%)	13 (0.04%)	6 (0.07%)
Liver	3 (0.05%)	17 (0.03%)	21 (0.02%)	30 (0.01%)	299 (0.01%)	3 (0.01%)	3 (0.03%)
Lung	12 (0.19%)	63 (0.10%)	90 (0.09%)	307 (0.15%)	4004 (0.17%)	38 (0.13%)	21 (0.23%)
Lymph nodes	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	3 (<0.01%)	0 (0.00%)	0 (0.00%)
Lymphoma, Hodgkins	0 (0.00%)	1 (<0.01%)	8 (0.01%)	4 (<0.01%)	69 (<0.01%)	1 (<0.01%)	1 (0.01%)
Lymphoma, non-Hodgkins	1 (0.02%)	39 (0.06%)	64 (0.06%)	72 (0.04%)	1805 (0.08%)	8 (0.03%)	8 (0.09%)
Melanoma of the skin	2 (0.03%)	7 (0.01%)	24 (0.02%)	9 (<0.01%)	2791 (0.12%)	18 (0.06%)	4 (0.04%)
Meninges	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	8 (<0.01%)	0 (0.00%)	0 (0.00%)
Multiple myeloma	3 (0.05%)	3 (<0.01%)	26 (0.03%)	87 (0.04%)	571 (0.02%)	8 (0.03%)	3 (0.03%)
Mycosis fungoides	0 (0.00%)	0 (0.00%)	0 (0.00%)	4 (<0.01%)	26 (<0.01%)	0 (0.00%)	0 (0.00%)
Nasal cavity mid ear	0 (0.00%)	0 (0.00%)	1 (<0.01%)	0 (0.00%)	21 (<0.01%)	0 (0.00%)	0 (0.00%)
Oral (mouth)	0 (0.00%)	0 (0.00%)	2 (<0.01%)	2 (<0.01%)	42 (<0.01%)	0 (0.00%)	0 (0.00%)
Other digestive cancer	0 (0.00%)	0 (0.00%)	1 (<0.01%)	4 (<0.01%)	61 (<0.01%)	0 (0.00%)	1 (0.01%)
Other lip	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	16 (<0.01%)	0 (0.00%)	0 (0.00%)
Palate	0 (0.00%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	35 (<0.01%)	0 (0.00%)	0 (0.00%)
Pancreas	1 (0.02%)	41 (0.07%)	38 (0.04%)	121 (0.06%)	1221 (0.05%)	17 (0.06%)	6 (0.07%)
Parotid gland (Stensen's duct)	0 (0.00%)	2 (<0.01%)	1 (<0.01%)	8 (<0.01%)	61 (<0.01%)	0 (0.00%)	0 (0.00%)
Peripheral nerves and autonomic nervous system	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	0 (0.00%)
Peritoneum	1 (0.02%)	3 (<0.01%)	8 (0.01%)	14 (0.01%)	213 (0.01%)	2 (0.01%)	1 (0.01%)

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT and OS participants (n=119) are combined with Asian CT and OS participants for reporting purposes due to small numbers.

<sup>2</sup> Vaginal and vulvar cancers were included with genital organ cancers in prior reports. As of 2022, these cancers are now shown separately.

**Table 3.9 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages) by Race/Ethnicity: CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	Race/Ethnicity							
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>1</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported	
<b>Number of participants</b>	487	4084	7312	14167	133328	1669	761	
<b>Mean follow-up (months)</b>	157.9	178.7	170.0	172.8	209.6	213.1	145.0	
Pharynx	0 (0.00%)	0 (0.00%)	0 (0.00%)	3 (<0.01%)	29 (<0.01%)	0 (0.00%)	0 (0.00%)	
Pyriiform sinus	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	0 (0.00%)	
Renal Pelvis	0 (0.00%)	2 (<0.01%)	2 (<0.01%)	10 (<0.01%)	130 (0.01%)	1 (<0.01%)	1 (0.01%)	
Respiratory system, intrathoracic, other	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	3 (<0.01%)	0 (0.00%)	0 (0.00%)	
Salivary glands, major (other/unspecified)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	19 (<0.01%)	0 (0.00%)	0 (0.00%)	
Small intestine	0 (0.00%)	3 (<0.01%)	5 (<0.01%)	14 (0.01%)	152 (0.01%)	2 (0.01%)	0 (0.00%)	
Stomach	0 (0.00%)	16 (0.03%)	12 (0.01%)	47 (0.02%)	251 (0.01%)	7 (0.02%)	2 (0.02%)	
Thymus	0 (0.00%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	13 (<0.01%)	1 (<0.01%)	0 (0.00%)	
Thyroid	0 (0.00%)	8 (0.01%)	15 (0.01%)	38 (0.02%)	465 (0.02%)	3 (0.01%)	0 (0.00%)	
Tongue, part of (other/unspecified)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	2 (<0.01%)	87 (<0.01%)	2 (0.01%)	1 (0.01%)	
Tonsil	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	23 (<0.01%)	1 (<0.01%)	0 (0.00%)	
Trachea	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	
Ureter	1 (0.02%)	3 (<0.01%)	2 (<0.01%)	1 (<0.01%)	82 (<0.01%)	2 (0.01%)	0 (0.00%)	
Urinary organs (other/unspecified)	1 (0.02%)	2 (<0.01%)	2 (<0.01%)	4 (<0.01%)	30 (<0.01%)	1 (<0.01%)	0 (0.00%)	
Uterus, not otherwise specified <sup>2</sup>	1 (0.03%)	4 (0.01%)	5 (0.01%)	17 (0.02%)	123 (0.01%)	1 (0.01%)	0 (0.00%)	
Vagina <sup>3</sup>	1 (0.02%)	1 (<0.01%)	1 (<0.01%)	2 (<0.01%)	46 (<0.01%)	1 (<0.01%)	0 (0.00%)	
Vulva <sup>3</sup>	0 (0.00%)	2 (<0.01%)	13 (0.01%)	10 (<0.01%)	166 (0.01%)	2 (0.01%)	0 (0.00%)	
Other/unknown site of cancer	3 (0.05%)	11 (0.02%)	16 (0.02%)	39 (0.02%)	519 (0.02%)	2 (0.01%)	5 (0.05%)	
Other/unknown cancers reported on death form	5 (0.08%)	9 (0.01%)	13 (0.01%)	39 (0.02%)	453 (0.02%)	1 (<0.01%)	3 (0.03%)	

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT and OS participants (n=119) are combined with Asian CT and OS participants for reporting purposes due to small numbers.

<sup>2</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

<sup>3</sup> Vaginal and vulvar cancers were included with genital organ cancers in prior reports. As of 2022, these cancers are now shown separately.

**Table 4.1**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for**  
**MRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number of participants</b>	44174	6788	9352	19418	8616
<b>Mean follow-up (months)</b>	189.5	206.1	206.3	190.4	156.4
Angina (hospitalized) <sup>2</sup>	3636 (0.55%)	460 (0.41%)	694 (0.45%)	1758 (0.60%)	724 (0.70%)
Diabetes (treated)	8354 (1.27%)	1487 (1.33%)	1922 (1.27%)	3784 (1.31%)	1161 (1.10%)
Hysterectomy	1942 (0.48%)	313 (0.50%)	489 (0.51%)	871 (0.49%)	269 (0.42%)
Osteoarthritis <sup>3</sup>	14194 (3.23%)	2502 (2.86%)	3341 (3.01%)	6163 (3.37%)	2188 (3.83%)
Intestinal polyps	10883 (1.68%)	1851 (1.65%)	2597 (1.70%)	4907 (1.72%)	1528 (1.54%)
Lupus <sup>3</sup>	811 (0.12%)	132 (0.12%)	181 (0.12%)	370 (0.13%)	128 (0.12%)
Hypertension treated w/pills	16789 (3.54%)	2781 (3.09%)	3790 (3.27%)	7319 (3.65%)	2899 (4.27%)
COPD <sup>4</sup>	2897 (0.76%)	420 (0.63%)	695 (0.79%)	1432 (0.87%)	350 (0.62%)
Macular degeneration <sup>5</sup>	5602 (1.07%)	522 (0.57%)	1037 (0.84%)	2802 (1.22%)	1241 (1.58%)
Dementia <sup>5</sup>	5837 (1.11%)	403 (0.44%)	862 (0.70%)	3014 (1.31%)	1558 (1.99%)
Parkinson's disease <sup>5</sup>	673 (0.13%)	76 (0.08%)	142 (0.12%)	343 (0.15%)	112 (0.14%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>3</sup> This outcome has not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>4</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>5</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.2**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for**  
**MRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number of participants</b>	108	526	6525	14025	22278	550	162
<b>Mean follow-up (months)</b>	171.6	182.6	164.3	172.1	207.8	211.4	167.5
Angina (hospitalized) <sup>3</sup>	12 (0.82%)	25 (0.33%)	382 (0.45%)	1052 (0.56%)	2092 (0.57%)	62 (0.69%)	11 (0.51%)
Diabetes (treated)	18 (1.43%)	102 (1.35%)	1208 (1.44%)	2901 (1.60%)	3969 (1.07%)	122 (1.39%)	34 (1.58%)
Hysterectomy	4 (0.50%)	14 (0.25%)	295 (0.59%)	439 (0.49%)	1170 (0.47%)	18 (0.39%)	2 (0.16%)
Osteoarthritis <sup>4</sup>	30 (3.56%)	179 (3.15%)	2145 (3.58%)	4020 (3.33%)	7574 (3.09%)	192 (3.50%)	54 (3.71%)
Intestinal polyps	26 (1.80%)	109 (1.50%)	1360 (1.61%)	3459 (1.86%)	5729 (1.60%)	167 (1.86%)	33 (1.53%)
Lupus <sup>4</sup>	1 (0.07%)	4 (0.05%)	132 (0.16%)	280 (0.15%)	378 (0.10%)	15 (0.16%)	1 (0.05%)
Hypertension treated w/pills	49 (4.85%)	199 (3.61%)	2429 (3.59%)	4251 (4.14%)	9572 (3.30%)	241 (3.79%)	48 (3.53%)
COPD <sup>5</sup>	6 (0.67%)	20 (0.43%)	282 (0.48%)	717 (0.59%)	1820 (0.96%)	45 (0.97%)	7 (0.49%)
Macular degeneration <sup>6</sup>	12 (0.91%)	43 (0.74%)	604 (0.78%)	983 (0.60%)	3866 (1.45%)	76 (1.18%)	18 (0.91%)
Dementia <sup>6</sup>	8 (0.61%)	60 (1.03%)	647 (0.84%)	1352 (0.82%)	3662 (1.37%)	89 (1.38%)	19 (0.96%)
Parkinson's disease <sup>6</sup>	2 (0.15%)	8 (0.14%)	81 (0.10%)	155 (0.09%)	416 (0.16%)	9 (0.14%)	2 (0.10%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander MRC Super Cohort participants (n=40) are combined with Asian MRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> This outcome has not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>5</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>6</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.3**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for SRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number of participants</b>	117634	14781	22638	53171	27044
<b>Mean follow-up (months)</b>	208.3	244.7	237.7	209.8	160.9
DVT	4708 (0.24%)	436 (0.15%)	832 (0.19%)	2327 (0.26%)	1113 (0.32%)
Pulmonary embolism <sup>2</sup>	2942 (0.15%)	301 (0.10%)	571 (0.13%)	1463 (0.16%)	607 (0.17%)
Angina (hospitalized) <sup>3</sup>	9677 (0.50%)	900 (0.30%)	1714 (0.39%)	4889 (0.55%)	2174 (0.65%)
Diabetes (treated)	18610 (0.93%)	2690 (0.91%)	4057 (0.92%)	8750 (0.97%)	3113 (0.89%)
Hysterectomy	7115 (0.58%)	1143 (0.61%)	1766 (0.62%)	3209 (0.59%)	997 (0.49%)
Osteoarthritis <sup>4</sup>	39264 (3.21%)	6194 (2.79%)	9012 (3.00%)	17521 (3.33%)	6537 (3.74%)
Intestinal polyps	30878 (1.65%)	4946 (1.71%)	7291 (1.73%)	13873 (1.65%)	4768 (1.51%)
Lupus <sup>4</sup>	1946 (0.10%)	252 (0.09%)	406 (0.10%)	900 (0.10%)	388 (0.11%)
Hypertension treated w/pills	46675 (3.05%)	6175 (2.40%)	9697 (2.68%)	21479 (3.19%)	9324 (3.95%)
COPD <sup>5</sup>	8473 (0.82%)	1059 (0.71%)	1870 (0.85%)	4420 (0.96%)	1124 (0.64%)
Macular degeneration <sup>6</sup>	19580 (1.31%)	1564 (0.71%)	3155 (0.97%)	10129 (1.50%)	4732 (1.85%)
Dementia <sup>6</sup>	16939 (1.13%)	923 (0.42%)	2298 (0.71%)	9029 (1.34%)	4689 (1.83%)
Parkinson's disease <sup>6</sup>	2455 (0.16%)	203 (0.09%)	459 (0.14%)	1359 (0.20%)	434 (0.17%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>2</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>5</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>6</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.4**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for SRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number of participants</b>	379	3558	787	142	111050	1119	599
<b>Mean follow-up (months)</b>	153.4	177.4	212.8	191.9	209.8	213.7	137.9
DVT	5 (0.11%)	42 (0.08%)	30 (0.22%)	11 (0.52%)	4554 (0.24%)	54 (0.28%)	12 (0.18%)
Pulmonary embolism <sup>3</sup>	6 (0.13%)	16 (0.03%)	9 (0.06%)	5 (0.23%)	2876 (0.15%)	21 (0.11%)	9 (0.13%)
Angina (hospitalized) <sup>4</sup>	17 (0.38%)	141 (0.28%)	70 (0.52%)	14 (0.69%)	9279 (0.50%)	132 (0.70%)	24 (0.37%)
Diabetes (treated)	66 (1.56%)	587 (1.17%)	156 (1.17%)	38 (1.78%)	17457 (0.92%)	219 (1.15%)	87 (1.33%)
Hysterectomy	13 (0.53%)	125 (0.36%)	42 (0.47%)	5 (0.46%)	6855 (0.59%)	53 (0.51%)	22 (0.53%)
Osteoarthritis <sup>5</sup>	99 (3.60%)	1180 (3.11%)	302 (3.61%)	44 (3.32%)	37104 (3.21%)	399 (3.29%)	136 (3.16%)
Intestinal polyps	71 (1.58%)	761 (1.60%)	227 (1.79%)	45 (2.16%)	29351 (1.65%)	302 (1.67%)	121 (1.90%)
Lupus <sup>5</sup>	10 (0.22%)	39 (0.08%)	13 (0.10%)	2 (0.09%)	1840 (0.10%)	31 (0.17%)	11 (0.17%)
Hypertension treated w/pills	121 (3.78%)	1185 (3.17%)	345 (3.25%)	56 (4.51%)	44340 (3.04%)	455 (3.25%)	173 (3.57%)
COPD <sup>6</sup>	17 (0.53%)	109 (0.33%)	61 (0.87%)	10 (0.80%)	8161 (0.84%)	102 (1.05%)	13 (0.26%)
Macular degeneration <sup>7</sup>	27 (0.58%)	277 (0.61%)	137 (1.36%)	9 (0.52%)	18904 (1.34%)	182 (1.28%)	44 (0.63%)
Dementia <sup>7</sup>	33 (0.71%)	309 (0.68%)	129 (1.28%)	18 (1.03%)	16223 (1.15%)	182 (1.29%)	45 (0.65%)
Parkinson's disease <sup>7</sup>	2 (0.04%)	48 (0.11%)	18 (0.18%)	1 (0.06%)	2348 (0.17%)	32 (0.23%)	6 (0.09%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander SRC Super Cohort participants (n=79) are combined with Asian SRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>4</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>5</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>6</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>7</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.5**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for**  
**CT Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number randomized</b>	68132	9188	14661	31389	12894
<b>Mean follow-up (months)</b>	212.6	238.9	234.0	212.7	169.2
<b>Hospitalizations</b>					
Ever	52147 (4.32%)	5923 (3.24%)	10379 (3.63%)	25001 (4.49%)	10844 (5.96%)
Two or more	40121 (3.32%)	4097 (2.24%)	7651 (2.68%)	19690 (3.54%)	8683 (4.77%)
<b>Other</b>					
DVT	3169 (0.27%)	285 (0.16%)	625 (0.22%)	1562 (0.29%)	697 (0.40%)
Pulmonary embolism <sup>1</sup>	1903 (0.16%)	195 (0.11%)	386 (0.14%)	963 (0.17%)	359 (0.20%)
Angina (hospitalized) <sup>2</sup>	6229 (0.54%)	651 (0.36%)	1196 (0.43%)	3163 (0.60%)	1219 (0.73%)
Diabetes (treated)	12841 (1.11%)	2017 (1.13%)	2988 (1.08%)	6048 (1.13%)	1788 (1.03%)
Gallbladder disease <sup>3,4</sup>	5248 (1.15%)	746 (1.07%)	1195 (1.15%)	2463 (1.21%)	844 (1.05%)
Hysterectomy	3845 (0.54%)	599 (0.56%)	1006 (0.56%)	1764 (0.55%)	476 (0.46%)
Glaucoma <sup>4</sup>	7565 (1.78%)	744 (1.19%)	1457 (1.53%)	3662 (1.92%)	1702 (2.24%)
Osteoporosis <sup>4</sup>	14697 (3.53%)	1451 (2.32%)	2635 (2.80%)	7142 (3.83%)	3469 (4.72%)
Osteoarthritis <sup>5</sup>	24344 (3.21%)	3990 (2.86%)	5989 (3.00%)	10956 (3.34%)	3409 (3.73%)
Rheumatoid arthritis <sup>4</sup>	4010 (0.76%)	538 (0.70%)	866 (0.74%)	1822 (0.77%)	784 (0.84%)
Intestinal polyps	18772 (1.67%)	3016 (1.70%)	4675 (1.72%)	8653 (1.69%)	2428 (1.51%)
Lupus <sup>5</sup>	1165 (0.10%)	158 (0.09%)	277 (0.10%)	549 (0.10%)	181 (0.10%)
Kidney stones <sup>4,5</sup>	1877 (0.50%)	241 (0.46%)	379 (0.47%)	898 (0.53%)	359 (0.51%)
Cataracts <sup>4,5</sup>	21571 (6.44%)	1468 (2.79%)	3731 (4.62%)	11650 (7.63%)	4722 (9.66%)
Hypertension treated w/pills	28240 (3.24%)	4021 (2.69%)	6487 (2.94%)	13091 (3.38%)	4641 (4.06%)
COPD <sup>6</sup>	5215 (0.87%)	661 (0.72%)	1229 (0.87%)	2732 (1.01%)	593 (0.70%)
Macular degeneration <sup>7</sup>	11052 (1.31%)	894 (0.69%)	1999 (0.99%)	5839 (1.51%)	2320 (1.94%)
Dementia <sup>7</sup>	10232 (1.21%)	615 (0.47%)	1517 (0.75%)	5522 (1.43%)	2578 (2.16%)
Parkinson's disease <sup>7</sup>	1312 (0.16%)	121 (0.09%)	289 (0.14%)	711 (0.18%)	191 (0.16%)

<sup>1</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>2</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>3</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>4</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>5</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>6</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>7</sup> Data only collected during the WHI Extension Studies 2005-2025.



**Table 4.6**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for**  
**CT Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>1</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number randomized</b>	180	1465	3231	6748	55407	821	280
<b>Mean follow-up (months)</b>	171.1	203.0	184.3	191.2	217.3	223.3	161.3
<b>Hospitalizations</b>							
Ever	124 (4.83%)	889 (3.59%)	1954 (3.94%)	4756 (4.42%)	43589 (4.34%)	643 (4.21%)	192 (5.10%)
Two or more	100 (3.90%)	549 (2.21%)	1303 (2.63%)	3420 (3.18%)	34103 (3.40%)	510 (3.34%)	136 (3.61%)
<b>Other</b>							
DVT	7 (0.29%)	20 (0.08%)	86 (0.18%)	321 (0.31%)	2668 (0.27%)	51 (0.34%)	16 (0.44%)
Pulmonary embolism <sup>2</sup>	6 (0.24%)	5 (0.02%)	36 (0.07%)	182 (0.17%)	1644 (0.16%)	23 (0.15%)	7 (0.19%)
Angina (hospitalized) <sup>3</sup>	12 (0.49%)	62 (0.26%)	217 (0.45%)	600 (0.60%)	5203 (0.54%)	120 (0.85%)	15 (0.42%)
Diabetes (treated)	31 (1.36%)	315 (1.34%)	699 (1.50%)	1594 (1.65%)	9963 (1.02%)	187 (1.32%)	52 (1.43%)
Gallbladder disease <sup>4,5</sup>	16 (1.48%)	85 (0.82%)	270 (1.41%)	404 (0.85%)	4388 (1.18%)	73 (1.35%)	12 (0.71%)
Hysterectomy	5 (0.42%)	53 (0.33%)	161 (0.57%)	259 (0.55%)	3320 (0.54%)	38 (0.50%)	9 (0.40%)
Glaucoma <sup>5</sup>	20 (1.86%)	148 (1.69%)	381 (1.92%)	964 (2.37%)	5923 (1.70%)	101 (1.96%)	28 (1.78%)
Osteoporosis <sup>5</sup>	34 (3.18%)	374 (4.32%)	727 (3.78%)	879 (2.08%)	12468 (3.68%)	168 (3.38%)	47 (3.07%)
Osteoarthritis <sup>6</sup>	64 (3.99%)	541 (2.99%)	1187 (3.52%)	2135 (3.25%)	20017 (3.19%)	315 (3.43%)	85 (3.45%)
Rheumatoid arthritis <sup>5</sup>	16 (1.31%)	74 (0.68%)	384 (1.63%)	656 (1.33%)	2791 (0.65%)	63 (1.00%)	26 (1.39%)
Intestinal polyps	43 (1.80%)	370 (1.63%)	758 (1.61%)	1888 (1.88%)	15392 (1.65%)	263 (1.85%)	58 (1.65%)
Lupus <sup>6</sup>	4 (0.17%)	18 (0.08%)	64 (0.14%)	138 (0.14%)	915 (0.10%)	24 (0.17%)	2 (0.06%)
Kidney stones <sup>5,6</sup>	9 (0.99%)	43 (0.55%)	106 (0.61%)	179 (0.48%)	1499 (0.49%)	32 (0.71%)	9 (0.65%)
Cataracts <sup>5,6</sup>	60 (7.03%)	407 (5.84%)	945 (5.68%)	1923 (5.74%)	17860 (6.58%)	300 (7.18%)	76 (6.11%)
Hypertension treated w/pills	70 (4.13%)	557 (3.25%)	1324 (3.58%)	2227 (4.03%)	23607 (3.16%)	370 (3.52%)	85 (3.40%)
COPD <sup>7</sup>	10 (0.64%)	59 (0.43%)	170 (0.58%)	402 (0.68%)	4475 (0.92%)	85 (1.20%)	14 (0.55%)
Macular degeneration <sup>8</sup>	21 (0.95%)	138 (0.76%)	334 (0.89%)	547 (0.70%)	9857 (1.42%)	129 (1.26%)	26 (0.78%)
Dementia <sup>8</sup>	18 (0.81%)	158 (0.87%)	383 (1.03%)	790 (1.01%)	8701 (1.26%)	147 (1.44%)	35 (1.05%)
Parkinson's disease <sup>8</sup>	2 (0.09%)	26 (0.14%)	49 (0.13%)	76 (0.10%)	1136 (0.16%)	19 (0.19%)	4 (0.12%)

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT participants (n=66) are combined with Asian CT participants for reporting purposes due to small numbers.

<sup>2</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>5</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>6</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>7</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>8</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.7**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for OS Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number enrolled</b>	93676	12381	17329	41200	22766
<b>Mean follow-up (months)</b>	196.4	227.8	223.8	198.5	154.4
<b>Hospitalizations</b>					
Ever	67348 (4.39%)	7368 (3.13%)	11553 (3.57%)	30712 (4.51%)	17715 (6.05%)
Two or more	49950 (3.26%)	4995 (2.13%)	8232 (2.55%)	23373 (3.43%)	13350 (4.56%)
<b>Other</b>					
DVT	3395 (0.23%)	342 (0.15%)	576 (0.18%)	1628 (0.25%)	849 (0.30%)
Pulmonary embolism <sup>1</sup>	2125 (0.14%)	240 (0.10%)	411 (0.13%)	1012 (0.15%)	462 (0.16%)
Angina (hospitalized) <sup>2</sup>	7084 (0.49%)	709 (0.31%)	1212 (0.39%)	3484 (0.54%)	1679 (0.62%)
Diabetes (treated)	14123 (0.95%)	2160 (0.94%)	2991 (0.95%)	6486 (0.98%)	2486 (0.88%)
Gallbladder disease <sup>3,4</sup>	5673 (0.95%)	834 (0.96%)	1148 (0.98%)	2543 (0.99%)	1148 (0.85%)
Hysterectomy	5212 (0.34%)	857 (0.36%)	1249 (0.39%)	2316 (0.34%)	790 (0.27%)
Glaucoma <sup>4</sup>	8483 (1.87%)	845 (1.33%)	1372 (1.59%)	3899 (1.99%)	2367 (2.19%)
Osteoporosis <sup>4</sup>	20720 (4.75%)	2100 (3.35%)	3378 (4.00%)	9524 (5.07%)	5718 (5.63%)
Osteoarthritis <sup>5</sup>	29114 (3.21%)	4706 (2.76%)	6364 (2.99%)	12728 (3.32%)	5316 (3.76%)
Rheumatoid arthritis <sup>4</sup>	4588 (0.68%)	636 (0.67%)	883 (0.68%)	1888 (0.65%)	1181 (0.76%)
Intestinal polyps	22989 (1.65%)	3781 (1.69%)	5213 (1.72%)	10127 (1.65%)	3868 (1.53%)
Lupus <sup>5</sup>	1592 (0.11%)	226 (0.10%)	310 (0.10%)	721 (0.11%)	335 (0.12%)
Kidney stones <sup>4,5</sup>	2317 (0.57%)	292 (0.55%)	433 (0.59%)	994 (0.57%)	598 (0.60%)
Cataracts <sup>4,5</sup>	27103 (7.93%)	1726 (3.21%)	4088 (5.63%)	14045 (9.25%)	7244 (11.34%)
Hypertension treated w/pills	35224 (3.11%)	4935 (2.50%)	7000 (2.73%)	15707 (3.22%)	7582 (3.99%)
COPD <sup>6</sup>	6155 (0.76%)	818 (0.66%)	1336 (0.80%)	3120 (0.88%)	881 (0.60%)
Macular degeneration <sup>7</sup>	14130 (1.20%)	1192 (0.65%)	2193 (0.88%)	7092 (1.37%)	3653 (1.70%)
Dementia <sup>7</sup>	12544 (1.06%)	711 (0.39%)	1643 (0.66%)	6521 (1.26%)	3669 (1.71%)
Parkinson's disease <sup>7</sup>	1816 (0.15%)	158 (0.09%)	312 (0.13%)	991 (0.19%)	355 (0.17%)

<sup>1</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010- 2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>2</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>3</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>4</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>5</sup> These outcomes have not been self-reported on all versions of Form 33. The annualized percentages are corrected for the different amounts of follow-up.

<sup>6</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>7</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.8**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for OS Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Race/Ethnicity						
	American Indian/Alaska Native	Asian or Native Hawaiian/Other Pacific Islander <sup>1</sup>	Hispanic/Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number enrolled</b>	307	2619	4081	7419	77921	848	481
<b>Mean follow-up (months)</b>	149.4	164.1	157.9	155.1	203.9	203.0	134.2
<b>Hospitalizations</b>							
Ever	202 (5.28%)	1228 (3.43%)	2151 (4.01%)	4551 (4.75%)	58341 (4.41%)	601 (4.19%)	274 (5.09%)
Two or more	153 (4.00%)	720 (2.01%)	1350 (2.51%)	2984 (3.11%)	44133 (3.33%)	431 (3.00%)	179 (3.33%)
<b>Other</b>							
DVT	7 (0.19%)	27 (0.08%)	78 (0.15%)	239 (0.26%)	3010 (0.24%)	28 (0.21%)	6 (0.12%)
Pulmonary embolism <sup>2</sup>	5 (0.13%)	13 (0.04%)	33 (0.06%)	141 (0.15%)	1916 (0.15%)	12 (0.09%)	5 (0.09%)
Angina (hospitalized) <sup>3</sup>	17 (0.50%)	104 (0.30%)	235 (0.46%)	466 (0.53%)	6168 (0.49%)	74 (0.54%)	20 (0.39%)
Diabetes (treated)	53 (1.65%)	374 (1.09%)	665 (1.31%)	1345 (1.56%)	11463 (0.89%)	154 (1.13%)	69 (1.37%)
Gallbladder disease <sup>4,5</sup>	21 (1.35%)	78 (0.45%)	258 (1.14%)	365 (0.78%)	4871 (0.98%)	47 (0.86%)	33 (1.26%)
Hysterectomy	12 (0.31%)	86 (0.24%)	176 (0.33%)	185 (0.19%)	4705 (0.36%)	33 (0.23%)	15 (0.28%)
Glaucoma <sup>5</sup>	31 (2.24%)	247 (1.84%)	359 (1.83%)	955 (2.71%)	6747 (1.78%)	94 (2.20%)	50 (2.23%)
Osteoporosis <sup>5</sup>	49 (3.48%)	623 (4.87%)	862 (4.53%)	1042 (2.84%)	17848 (4.95%)	189 (4.48%)	107 (5.13%)
Osteoarthritis <sup>6</sup>	65 (3.24%)	818 (3.20%)	1260 (3.64%)	1929 (3.41%)	24661 (3.17%)	276 (3.27%)	105 (3.18%)
Rheumatoid arthritis <sup>5</sup>	21 (1.11%)	94 (0.52%)	422 (1.59%)	643 (1.34%)	3306 (0.58%)	57 (0.92%)	45 (1.54%)
Intestinal polyps	54 (1.52%)	500 (1.56%)	829 (1.66%)	1616 (1.84%)	19688 (1.64%)	206 (1.61%)	96 (1.92%)
Lupus <sup>6</sup>	7 (0.20%)	25 (0.07%)	81 (0.16%)	144 (0.16%)	1303 (0.10%)	22 (0.16%)	10 (0.20%)
Kidney stones <sup>5,6</sup>	13 (1.01%)	39 (0.32%)	138 (0.78%)	254 (0.76%)	1835 (0.55%)	24 (0.62%)	14 (0.70%)
Cataracts <sup>5,6</sup>	67 (6.51%)	680 (6.87%)	1069 (6.57%)	1880 (6.61%)	23005 (8.16%)	281 (8.50%)	121 (7.42%)
Hypertension treated w/pills	100 (3.97%)	827 (3.21%)	1450 (3.51%)	2080 (4.28%)	30305 (3.03%)	326 (3.31%)	136 (3.67%)
COPD <sup>7</sup>	13 (0.51%)	70 (0.29%)	173 (0.47%)	325 (0.50%)	5506 (0.82%)	62 (0.85%)	6 (0.15%)
Macular degeneration <sup>8</sup>	18 (0.48%)	182 (0.55%)	407 (0.80%)	445 (0.50%)	12913 (1.31%)	129 (1.24%)	36 (0.64%)
Dementia <sup>8</sup>	23 (0.62%)	211 (0.64%)	393 (0.77%)	580 (0.65%)	11184 (1.13%)	124 (1.19%)	29 (0.52%)
Parkinson's disease <sup>8</sup>	2 (0.05%)	30 (0.09%)	50 (0.10%)	80 (0.09%)	1628 (0.17%)	22 (0.21%)	4 (0.07%)

<sup>1</sup> Native Hawaiian/Other Pacific Islander OS participants (n=53) are combined with Asian OS participants for reporting purposes due to small numbers.

<sup>2</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>5</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>6</sup> These outcomes have not been self-reported on all versions of Form 33. The annualized percentages are corrected for the different amounts of follow-up.

<sup>7</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>8</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.9**  
**Self-Reported Fractures (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	<b>Total</b>	<b>MRC Super Cohort<sup>1</sup></b>	<b>SRC Super Cohort<sup>2</sup></b>
<b>Number of participants</b>	161808	44174	117634
<b>Mean follow-up (months)</b>	203.4	189.8	208.5
Elbow	3175 (0.12%)	707 (0.10%)	2468 (0.12%)
Foot	9572 (0.35%)	2023 (0.29%)	7549 (0.37%)
Hand	2808 (0.10%)	666 (0.10%)	2142 (0.10%)
Hip	9413 (0.34%)	2018 (0.29%)	7395 (0.36%)
Knee	4599 (0.17%)	1140 (0.16%)	3459 (0.17%)
Lower arm	14466 (0.53%)	3365 (0.48%)	11101 (0.54%)
Lower leg	10493 (0.38%)	2497 (0.36%)	7996 (0.39%)
Pelvis	4871 (0.18%)	917 (0.13%)	3954 (0.19%)
Tailbone	1645 (0.06%)	330 (0.05%)	1315 (0.06%)
Upper arm	8968 (0.33%)	2119 (0.30%)	6849 (0.34%)
Upper leg	4105 (0.15%)	831 (0.12%)	3274 (0.16%)
Spine	11220 (0.41%)	2111 (0.30%)	9109 (0.45%)
Other	32649 (1.19%)	7243 (1.04%)	25406 (1.24%)
Any fracture	69288 (2.53%)	15896 (2.28%)	53392 (2.61%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

**Table 4.10**  
**Self-Reported Fractures (Annualized Percentages): CT and OS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

	<b>Total</b>	<b>CT</b>	<b>OS</b>
<b>Number of participants</b>	161808	68132	93676
<b>Mean follow-up (months)</b>	203.4	212.6	196.7
Elbow	3175 (0.12%)	1358 (0.11%)	1817 (0.12%)
Foot	9572 (0.35%)	4175 (0.35%)	5397 (0.35%)
Hand	2808 (0.10%)	1302 (0.11%)	1506 (0.10%)
Hip	9413 (0.34%)	4009 (0.33%)	5404 (0.35%)
Knee	4599 (0.17%)	1956 (0.16%)	2643 (0.17%)
Lower arm	14466 (0.53%)	6382 (0.53%)	8084 (0.53%)
Lower leg	10493 (0.38%)	4688 (0.39%)	5805 (0.38%)
Pelvis	4871 (0.18%)	1983 (0.16%)	2888 (0.19%)
Tailbone	1645 (0.06%)	675 (0.06%)	970 (0.06%)
Upper arm	8968 (0.33%)	4062 (0.34%)	4906 (0.32%)
Upper leg	4105 (0.15%)	1751 (0.15%)	2354 (0.15%)
Spine	11220 (0.41%)	4668 (0.39%)	6552 (0.43%)
Other	32649 (1.19%)	13839 (1.15%)	18810 (1.22%)
Any fracture	69288 (2.53%)	29779 (2.47%)	39509 (2.57%)

**Table 5.1**  
**Agreement of the Central Adjudications with Self-Reports for Outcomes Reported in Extension Study 2010-2025**

Data as of: February 19, 2022

	Participants with a self-report <sup>1</sup>	Closed		Confirmed		Denied – related outcome found <sup>2</sup>		Denied – unrelated outcome found <sup>3</sup>		Denied – no outcome found <sup>3</sup>	
		N	%	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>
<b>Cardiovascular</b>											
Clinical MI	848	743	88%	480	(65%)	133	(18%)	3	(0%)	127	(17%)
CABG	262	238	91%	159	(67%)	49	(21%)	0	(0%)	30	(13%)
PTCA	854	779	91%	522	(67%)	121	(16%)	3	(0%)	133	(17%)
Carotid artery disease	234	213	91%	114	(54%)	60	(28%)	0	(0%)	39	(18%)
Stroke	1751	1499	86%	1069	(71%)	160	(11%)	0	(0%)	270	(18%)
PAD	412	330	80%	139	(42%)	86	(26%)	2	(1%)	103	(31%)
DVT	913	768	84%	442	(58%)	134	(17%)	6	(1%)	186	(24%)
Pulmonary embolism	491	446	91%	380	(85%)	29	(7%)	3	(1%)	34	(8%)
Valvular heart disease	580	524	90%	373	(71%)	97	(19%)	0	(0%)	54	(10%)
<b>Cancers</b>											
Breast cancer	3963	3763	95%	3680	(98%)	8	(0%)	2	(0%)	73	(2%)
Ovarian cancer	471	422	90%	261	(62%)	110	(26%)	0	(0%)	51	(12%)
Endometrial cancer	623	584	94%	448	(77%)	106	(18%)	1	(0%)	29	(5%)
Cervical cancer	90	80	89%	19	(24%)	25	(31%)	1	(1%)	35	(44%)
Colorectal cancer	1151	1054	92%	893	(85%)	81	(8%)	4	(0%)	76	(7%)
Bladder/urinary tract cancer	530	482	91%	415	(86%)	30	(6%)	0	(0%)	37	(8%)
Brain cancer	223	170	76%	66	(39%)	21	(12%)	3	(2%)	80	(47%)
Esophagus cancer	95	83	87%	53	(64%)	12	(14%)	1	(1%)	17	(20%)
Gallbladder/bile duct cancer	112	99	88%	38	(38%)	44	(44%)	0	(0%)	17	(17%)
Kidney cancer	429	384	90%	232	(60%)	83	(22%)	2	(1%)	67	(17%)
Leukemia	435	388	89%	296	(76%)	29	(7%)	2	(1%)	61	(16%)
Liver cancer	388	305	79%	69	(23%)	60	(20%)	7	(2%)	169	(55%)
Lung cancer	1682	1478	88%	1229	(83%)	70	(5%)	5	(0%)	174	(12%)
Hodgkin's lymphoma	71	61	86%	13	(21%)	35	(57%)	0	(0%)	13	(21%)
Non-Hodgkin's lymphoma	561	513	91%	441	(86%)	44	(9%)	0	(0%)	28	(5%)
Melanoma	2100	1597	76%	1245	(78%)	50	(3%)	1	(0%)	301	(19%)
Multiple myeloma	258	231	90%	198	(86%)	11	(5%)	3	(1%)	19	(8%)
Pancreas cancer	532	466	88%	388	(83%)	32	(7%)	3	(1%)	43	(9%)
Stomach cancer	194	165	85%	65	(39%)	47	(28%)	1	(1%)	52	(32%)

<sup>1</sup> Excludes duplicates and prior conditions.

<sup>2</sup> All cardiovascular outcomes are considered related, all cancers are considered related and all fractures are considered related.

<sup>3</sup> Percentages between parentheses are relative to "closed."

**Table 5.1 (continued)**  
**Agreement of the Central Adjudications with Self-Reports for Outcomes Reported in Extension Study 2010-2025**

Data as of: February 19, 2022

	Participants with a self-report <sup>1</sup>	Closed		Confirmed		Denied – related outcome found <sup>2</sup>		Denied – unrelated outcome found		Denied – no outcome found	
		N	%	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>
Thyroid cancer	199	180	90%	142	(79%)	6	(3%)	0	(0%)	32	(18%)
Other genital organ cancer <sup>4</sup>	170	141	83%	14	(10%)	102	(72%)	0	(0%)	25	(18%)
Other cancer <sup>5</sup>	1411	992	70%	460	(46%)	230	(23%)	8	(1%)	294	(30%)
<b>Fractures</b>											
Hip fracture	1022	852	83%	731	(86%)	0	(0%)	9	(1%)	112	(13%)
Upper leg fracture <sup>6</sup>	510	434	85%	0	(0%)	198	(46%)	22	(5%)	214	(49%)

<sup>1</sup> Excludes duplicates and prior conditions.

<sup>2</sup> All cardiovascular outcomes are considered related, all cancers are considered related and all fractures are considered related.

<sup>3</sup> Percentages between parentheses are relative to “closed.”

<sup>4</sup> Does not include cancer of the ovary, endometrium, or cervix.

<sup>5</sup> Any cancer other than those listed above, excluding non-melanoma skin cancer.

<sup>6</sup> Upper leg fractures are only investigated for possible occurrence of hip fracture.

**Table 5.2**  
**Agreement of the UNC Heart Failure (HF) Adjudications with Self-Reports among MRC Super Cohort Participants<sup>1</sup>**

Data as of: February 19, 2022

	Potential Case <sup>2</sup>	Case Eligible for UNC <sup>3</sup>		Case Processed by UNC <sup>3</sup>		Case Confirmed <sup>4</sup>		Case Denied		Case Unclassifiable	
		N	%	N	(%) <sup>5</sup>	N	(%) <sup>6</sup>	N	(%) <sup>6</sup>	N	(%) <sup>6</sup>
<b>Overall</b>	9207	9114	99%	9049	(99%)	7302	(81%)	1273	(14%)	473	(5%)
<b>By Self Report</b>											
Self-reported HF	4879	4825	99%	4767	(99%)	4041	(85%)	597	(13%)	129	(3%)
No HF self-report	4328	4289	99%	4282	(100%)	3261	(76%)	676	(16%)	344	(8%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> Includes all self-reported or discovered heart failure cases and a portion of self-reported angina or other heart condition cases with 2 or more essential documents among MRC Super Cohort participants.

<sup>3</sup> Cases are eligible if they self-reported HF, or if not, were forwarded by another outcomes committee for possible HF; cases are sent to and processed by UNC when all required records have been received.

<sup>4</sup> Diagnosis was either definite or probable decompensated heart failure, or chronic stable heart failure.

<sup>5</sup> Percentages are relative to "Case Eligible for UNC".

<sup>6</sup> Percentages are relative to "Case Processed by UNC".



Table 5.3

## Source of Outcomes Confirmed by Central Adjudication for Self-Reported Outcomes in Extension Study 2010-2025

Data as of: February 19, 2022

	Centrally confirmed N	Reason for central investigation					
		Self-report same outcome		Self-report related outcome <sup>1</sup>		Self-report unrelated outcome <sup>2</sup>	
		N	%	N	%	N	%
<b>Cardiovascular</b>							
Clinical MI	916	479	52%	257	28%	180	20%
CABG	183	159	87%	20	11%	4	2%
PTCA	609	525	86%	68	11%	16	3%
Carotid artery disease	108	88	81%	13	12%	7	6%
Stroke	1211	1084	90%	23	2%	104	9%
PAD	219	139	63%	67	31%	13	6%
DVT	602	452	75%	74	12%	76	13%
Pulmonary embolism	498	378	76%	57	11%	63	13%
Valvular heart disease	596	371	62%	155	26%	70	12%
<b>Cancers</b>							
Breast cancer	3725	3681	99%	28	1%	16	<1%
Ovarian cancer	289	261	90%	21	7%	7	2%
Endometrial cancer	497	448	90%	43	9%	6	1%
Cervical cancer	27	19	70%	7	26%	1	4%
Colorectal cancer	931	885	95%	33	4%	13	1%
Bladder/urinary tract cancer <sup>3</sup>	533	417	78%	109	20%	7	1%
Brain cancer	66	66	100%	0	0%	0	0%
Esophagus cancer	56	54	96%	1	2%	1	2%
Gallbladder/bile duct cancer	90	38	42%	52	58%	0	0%
Kidney cancer	246	235	96%	6	2%	5	2%
Leukemia	374	295	79%	61	16%	18	5%
Liver cancer	85	71	84%	10	12%	4	5%
Lung cancer	1305	1235	95%	39	3%	31	2%
Hodgkin's lymphoma	20	13	65%	5	25%	2	10%
Non-Hodgkin's lymphoma	623	441	71%	175	28%	7	1%
Melanoma	1272	1253	99%	16	1%	3	<1%
Multiple myeloma	228	198	87%	25	11%	5	2%
Pancreas cancer	411	389	95%	11	3%	11	3%
Stomach cancer	86	65	76%	17	20%	4	5%
Thyroid cancer	148	142	96%	4	3%	2	1%
Other genital organ cancer <sup>4</sup>	182	14	8%	167	92%	1	1%
<b>Fractures</b>							
Hip fracture	928	725	78%	182	20%	21	2%

<sup>1</sup> All cardiovascular outcomes are considered related, all cancers are considered related and all fractures are considered related.<sup>2</sup> Includes self-report of hospitalizations.<sup>3</sup> Cancers of the urinary tract include renal pelvis, ureter and urinary organs (NOS).<sup>4</sup> Does not include cancers of the ovary, endometrium or cervix; includes cancers of the vulva, vagina, uterus (NOS) and genital organs (NOS).

**Table 6.1**  
**Consent Status and Participant Characteristics for Long Life Study Participants<sup>1</sup> by Race/Ethnicity**

Data as of: March 6, 2021

	Total <sup>2</sup>		Hispanic/Latina		Non-Hispanic Black/African American		Non-Hispanic White		More than one Race	
	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %
Number eligible	14081		2211		5148		6482		184	
Phase 1: Age ≥72 on 1/1/12	9930	70.5	1405	63.5	3465	67.3	4880	75.3	137	74.5
Phase 2: Age ≥63 on 1/1/12	2651	18.8	730	33.0	1438	27.9	437	6.7	34	18.5
Phase 3: Age ≥81 on 8/1/12	1500	10.7	76	3.4	245	4.8	1165	18.0	13	7.1
Consented <sup>3</sup>	9246	65.7	1493	67.5	3044	59.1	4539	70.0	136	73.9
Completed visit 2012-2013 <sup>4</sup>	7875	85.2	1277	85.5	2483	81.6	3978	87.6	110	80.9
LLS Participants	7875	100.0	1277	16.2	2483	31.5	3978	50.5	110	1.4
Blood draw	7475	94.9	1238	96.9	2284	92.0	3827	96.2	101	91.8
Age at visit	7875	79.2 (6.8)	1277	75.4 (6.1)	2483	75.9 (6.0)	3978	82.5 (5.8)	110	77.8 (6.3)
63-69	724	9.2	236	18.5	379	15.3	97	2.4	9	8.2
70-79	3050	38.7	717	56.1	1433	57.7	829	20.8	60	54.5
80-89	3689	46.8	305	23.9	620	25.0	2717	68.3	35	31.8
≥90	412	5.2	19	1.5	51	2.1	335	8.4	6	5.5
Education										
0-8 years	112	1.4	71	5.6	24	1.0	17	0.4	0	0.0
Some high school	286	3.7	76	6.0	112	4.6	96	2.4	1	0.9
High school diploma/GED	1288	16.5	199	15.7	280	11.4	794	20.0	10	9.1
School after high school	3041	38.9	543	42.9	915	37.2	1530	38.6	46	41.8
College degree or higher	3099	39.6	377	29.8	1130	45.9	1525	38.5	53	48.2
Body-mass Index (BMI), kg/m <sup>2</sup>	7775	28.2 (5.9)	1265	28.0 (5.6)	2448	29.9 (6.2)	3928	27.3 (5.5)	107	28.3 (6.7)
Underweight (< 18.5)	112	1.4	13	1.0	23	0.9	72	1.8	3	2.8
Normal (18.5 - 24.9)	2378	30.6	415	32.8	513	21.0	1410	35.9	31	29.0
Overweight (25.0 - 29.9)	2799	36.0	467	36.9	868	35.5	1419	36.1	39	36.4
Obesity I (30.0 - 34.9)	1505	19.4	233	18.4	577	23.6	664	16.9	22	20.6
Obesity II (35.0 - 39.9)	633	8.1	88	7.0	300	12.3	240	6.1	4	3.7
Extreme Obesity III (≥ 40)	348	4.5	49	3.9	167	6.8	123	3.1	8	7.5

<sup>1</sup> Long Life Study participants are a subset of the Medical Records Cohort (MRC) which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Separate columns for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers, however these participants are included in the Total column.

<sup>3</sup> Percentage is relative to number eligible.

<sup>4</sup> Percentage is relative to consented.

**Table 6.1 (continued)**  
**Consent Status and Participant Characteristics for Long Life Study Participants<sup>1</sup> by Race/Ethnicity**  
 Data as of: March 6, 2021

	Total <sup>2</sup>		Hispanic/Latina		Non-Hispanic Black/African American		Non-Hispanic White		More than one Race	
	Mean (SD)		Mean (SD)		Mean (SD)		Mean (SD)		Mean (SD)	
	N	or %	N	or %	N	or %	N	or %	N	or %
Systolic blood pressure, mmHg	7864	125.9 (14.6)	1276	123.8 (13.7)	2478	127.1 (14.4)	3973	125.7 (14.8)	110	127.1 (16.8)
<=120	2962	37.7	566	44.4	851	34.3	1499	37.7	36	32.7
120 - 140	3796	48.3	564	44.2	1246	50.3	1918	48.3	56	50.9
>140	1106	14.1	146	11.4	381	15.4	556	14.0	18	16.4
Diastolic blood pressure, mmHg	7862	72.6 (8.9)	1275	72.2 (8.2)	2479	74.0 (8.8)	3971	71.8 (9.1)	110	73.3 (9.4)
<80	6073	77.2	1037	81.3	1807	72.9	3125	78.7	83	75.5
80-89	1535	19.5	209	16.4	567	22.9	730	18.4	24	21.8
≥90	254	3.2	29	2.3	105	4.2	116	2.9	3	2.7
Grip strength, kg	7274	17.8 (7.0)	1154	18.0 (6.3)	2329	20.0 (7.3)	3662	16.4 (6.7)	102	19.0 (7.2)
Repeated chair stands,	6949	0.35 (0.13)	1182	0.37 (0.1)	2178	0.34 (0.1)	3468	0.35 (0.1)	98	0.34 (0.1)
Walking pace, m/sec	6911	0.65 (0.29)	1124	0.73 (0.3)	2164	0.62 (0.3)	3502	0.65 (0.3)	97	0.60 (0.3)
Look AHEAD SPPB <sup>3</sup>	7022	1.3 (0.5)	1147	1.4 (0.5)	2238	1.4 (0.5)	3517	1.2 (0.5)	97	1.2 (0.5)
EPESE SPPB <sup>4</sup>	7102	7.9 (2.7)	1159	8.7 (2.6)	2260	7.8 (2.6)	3560	7.8 (2.8)	99	7.4 (2.7)

<sup>1</sup> Long Life Study participants are a subset of the Medical Records Cohort (MRC) which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Separate columns for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers, however these participants are included in the Total column.

<sup>3</sup> The Look AHEAD Short Physical Performance Battery (SPPB) ranges from 0 to 3, with higher scores indicating better physical performance.

<sup>4</sup> The Established Populations for the Epidemiologic Studies of the Eldery (EPESE) Short Physical Performance Battery (SPPB) ranges from 0 to 12, with higher scores indicating better physical performance.

**Table 6.2**  
**Participation and Vital Status: Long Life Study (LLS) Participants**

Data as of: February 19, 2022

<b>Vital Status/Participation</b>	<b>LLS Participants</b> (N=7875)	
	<b>N</b>	<b>%</b>
Deceased	2710	34.4
Alive: Current Participation <sup>1</sup>	4449	56.5
Alive: Recent Participation <sup>2</sup>	218	2.8
Alive: Past/Unknown participation <sup>3</sup>	4	0.1
Stopped Follow-Up <sup>4</sup>	252	3.2
Lost to Follow-Up <sup>5</sup>	242	3.1

<sup>1</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>2</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>3</sup> Participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

<sup>4</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9.

<sup>5</sup> Participants not in any of the above categories.

**Table 6.3**  
**Verified Outcomes (Annualized Percentages)**  
**After Long Life Study (LLS) Visit by Age at Visit for LLS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Total	Age at Visit			
		63-69	70-79	80-89	≥ 90
<b>Number enrolled</b>	7875	723	3052	3688	412
<b>Mean follow-up (months) after LLS visit</b>	88.8	99.5	96.4	82.9	66.7
<b>Cardiovascular</b>					
CHD <sup>1</sup>	524 (0.90%)	20 (0.33%)	122 (0.50%)	336 (1.32%)	46 (2.01%)
CHD death <sup>2</sup>	349 (0.60%)	10 (0.17%)	59 (0.24%)	235 (0.92%)	45 (1.97%)
Clinical MI	302 (0.52%)	14 (0.23%)	80 (0.33%)	188 (0.74%)	20 (0.87%)
CABG/PTCA	222 (0.38%)	15 (0.25%)	91 (0.37%)	111 (0.44%)	5 (0.22%)
Carotid artery disease	27 (0.05%)	1 (0.02%)	9 (0.04%)	16 (0.06%)	1 (0.04%)
Heart failure, UNC <sup>3</sup>	577 (0.99%)	14 (0.23%)	127 (0.52%)	379 (1.49%)	57 (2.49%)
Stroke	531 (0.91%)	22 (0.37%)	143 (0.58%)	322 (1.26%)	44 (1.92%)
PAD	72 (0.12%)	1 (0.02%)	21 (0.09%)	46 (0.18%)	4 (0.17%)
DVT	207 (0.36%)	13 (0.22%)	72 (0.29%)	112 (0.44%)	10 (0.44%)
Pulmonary embolism	169 (0.29%)	10 (0.17%)	62 (0.25%)	89 (0.35%)	8 (0.35%)
Coronary disease <sup>4</sup>	837 (1.44%)	32 (0.53%)	216 (0.88%)	520 (2.04%)	69 (3.01%)
DVT/PE	300 (0.51%)	19 (0.32%)	111 (0.45%)	157 (0.62%)	13 (0.57%)
Aortic aneurysm	19 (0.03%)	2 (0.03%)	5 (0.02%)	11 (0.04%)	1 (0.04%)
Valvular heart disease	188 (0.32%)	5 (0.08%)	49 (0.20%)	116 (0.46%)	18 (0.79%)
<b>Total cardiovascular disease<sup>5</sup></b>	1348 (2.31%)	51 (0.85%)	355 (1.45%)	813 (3.19%)	129 (5.64%)
<b>Cancer</b>					
Breast cancer	224 (0.38%)	24 (0.40%)	123 (0.50%)	74 (0.29%)	3 (0.13%)
Invasive breast cancer	199 (0.34%)	18 (0.30%)	111 (0.45%)	66 (0.26%)	4 (0.17%)
In situ breast cancer	32 (0.05%)	7 (0.12%)	17 (0.07%)	8 (0.03%)	0 (0.00%)
Ovarian cancer	28 (0.05%)	1 (0.02%)	12 (0.05%)	13 (0.05%)	2 (0.09%)
Endometrial cancer <sup>6</sup>	19 (0.03%)	0 (0.00%)	10 (0.04%)	9 (0.04%)	0 (0.00%)
Colorectal cancer	89 (0.15%)	3 (0.05%)	21 (0.09%)	63 (0.25%)	2 (0.09%)
Other cancer <sup>7</sup>	518 (0.89%)	32 (0.53%)	203 (0.83%)	264 (1.04%)	19 (0.83%)
<b>Total cancer</b>	760 (1.30%)	58 (0.97%)	319 (1.30%)	361 (1.42%)	22 (0.96%)
<b>Fractures</b>					
Hip fracture	347 (0.60%)	6 (0.10%)	46 (0.19%)	256 (1.01%)	39 (1.70%)
<b>Deaths</b>					
Cardiovascular deaths	986 (1.69%)	21 (0.35%)	162 (0.66%)	658 (2.58%)	145 (6.33%)
Cancer deaths	456 (0.78%)	18 (0.30%)	147 (0.60%)	271 (1.06%)	20 (0.87%)
Other known cause	1074 (1.84%)	25 (0.42%)	184 (0.75%)	728 (2.86%)	137 (5.98%)
Unknown cause	27 (0.05%)	2 (0.03%)	1 (<0.01%)	21 (0.08%)	3 (0.13%)
Not yet adjudicated	167 (0.29%)	5 (0.08%)	45 (0.18%)	111 (0.44%)	6 (0.26%)
<b>Total death</b>	2710 (4.65%)	71 (1.18%)	539 (2.20%)	1789 (7.02%)	311 (13.59%)

<sup>1</sup> CHD includes clinical MI and CHD death.

<sup>2</sup> CHD death includes definite and possible CHD death.

<sup>3</sup> Definite or possible decompensated heart failure adjudicated by UNC.

<sup>4</sup> Coronary disease includes clinical MI, CHD death, UNC heart failure and CABG/PTCA.

<sup>5</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

<sup>6</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>7</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

**Table 6.4**  
**Verified Outcomes (Annualized Percentages)**  
**After Long Life Study (LLS) Visit by Race/Ethnicity<sup>1</sup> for LLS Participants**

Data as of: February 19, 2022; Events through February 19, 2022

Outcomes	Race/Ethnicity			
	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race
<b>Number enrolled</b>	1277	2483	3978	110
<b>Mean follow-up (months) after LLS visit</b>	95.7	92.2	84.4	85.7
<b>Cardiovascular</b>				
CHD <sup>2</sup>	54 (0.53%)	122 (0.64%)	340 (1.21%)	7 (0.89%)
CHD death <sup>3</sup>	32 (0.31%)	75 (0.39%)	235 (0.84%)	7 (0.89%)
Clinical MI	34 (0.33%)	67 (0.35%)	197 (0.70%)	3 (0.38%)
CABG/PTCA	27 (0.27%)	54 (0.28%)	139 (0.50%)	2 (0.25%)
Carotid artery disease	1 (0.01%)	8 (0.04%)	18 (0.06%)	0 (0.00%)
Heart failure, UNC <sup>4</sup>	45 (0.44%)	130 (0.68%)	393 (1.40%)	8 (1.02%)
Stroke	64 (0.63%)	137 (0.72%)	317 (1.13%)	10 (1.27%)
PAD	7 (0.07%)	26 (0.14%)	38 (0.14%)	1 (0.13%)
DVT	20 (0.20%)	75 (0.39%)	110 (0.39%)	2 (0.25%)
Pulmonary embolism	15 (0.15%)	65 (0.34%)	84 (0.30%)	5 (0.64%)
Coronary disease <sup>5</sup>	81 (0.80%)	192 (1.01%)	553 (1.98%)	10 (1.27%)
DVT/PE	29 (0.28%)	118 (0.62%)	148 (0.53%)	5 (0.64%)
Aortic aneurysm	2 (0.02%)	7 (0.04%)	10 (0.04%)	0 (0.00%)
Valvular heart disease	24 (0.24%)	22 (0.12%)	139 (0.50%)	3 (0.38%)
<b>Total cardiovascular disease<sup>6</sup></b>	<b>144 (1.41%)</b>	<b>328 (1.72%)</b>	<b>853 (3.05%)</b>	<b>19 (2.42%)</b>
<b>Cancer</b>				
Breast cancer	38 (0.37%)	87 (0.46%)	97 (0.35%)	2 (0.25%)
Invasive breast cancer	34 (0.33%)	75 (0.39%)	88 (0.31%)	2 (0.25%)
In situ breast cancer	5 (0.05%)	17 (0.09%)	10 (0.04%)	0 (0.00%)
Ovarian cancer	3 (0.03%)	7 (0.04%)	18 (0.06%)	0 (0.00%)
Endometrial cancer	3 (0.03%)	5 (0.03%)	11 (0.04%)	0 (0.00%)
Colorectal cancer	7 (0.07%)	21 (0.11%)	60 (0.21%)	1 (0.13%)
Other cancer	63 (0.62%)	152 (0.80%)	287 (1.03%)	13 (1.66%)
<b>Total cancer</b>	<b>104 (1.02%)</b>	<b>240 (1.26%)</b>	<b>402 (1.44%)</b>	<b>11 (1.40%)</b>
<b>Fractures</b>				
Hip Fracture	24 (0.24%)	24 (0.13%)	296 (1.06%)	3 (0.38%)
<b>Deaths</b>				
Cardiovascular deaths	78 (0.77%)	213 (1.12%)	680 (2.43%)	14 (1.78%)
Cancer deaths	51 (0.50%)	135 (0.71%)	260 (0.93%)	9 (1.15%)
Other known cause	97 (0.95%)	196 (1.03%)	762 (2.72%)	17 (2.17%)
Unknown cause	1 (0.01%)	6 (0.03%)	20 (0.07%)	0 (0.00%)
Not yet adjudicated	15 (0.15%)	53 (0.28%)	94 (0.34%)	3 (0.38%)
<b>Total death</b>	<b>242 (2.38%)</b>	<b>603 (3.16%)</b>	<b>1816 (6.49%)</b>	<b>43 (5.48%)</b>

<sup>1</sup> Long Life Study participants were selected from MRC participants which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines. Outcome counts for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers. See Table 6.3 for total counts of adjudicated outcomes.

<sup>2</sup> CHD includes clinical MI and CHD death.

<sup>3</sup> CHD death includes definite and possible CHD death.

<sup>4</sup> Definite or possible decompensated heart failure adjudicated by UNC

<sup>5</sup> Coronary disease includes clinical MI, CHD death, UNC heart failure and CABG/PTCA.

<sup>6</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

**Table 6.5**  
**Self-Reported Outcomes (Annualized Percentages) After Long Life Study (LLS) Visit**  
**by Age at Visit and Race/Ethnicity<sup>1</sup> for LLS Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: February 19, 2022; Events through February 19, 2022

Outcome	Total	Age at Visit			
		63-69	70-79	80-89	≥ 90
Number enrolled	7875	723	3052	3688	412
Mean follow-up (months) after LLS visit	88.8	99.5	96.4	82.9	66.7
Angina (hospitalized)	494 (0.85%)	38 (0.63%)	164 (0.67%)	270 (1.06%)	22 (0.96%)
Diabetes (treated)	774 (1.33%)	70 (1.17%)	344 (1.40%)	334 (1.31%)	26 (1.14%)
Hysterectomy	101 (0.17%)	14 (0.23%)	58 (0.24%)	29 (0.11%)	0 (0.00%)
Osteoarthritis	974 (1.67%)	111 (1.85%)	438 (1.79%)	384 (1.51%)	41 (1.79%)
Intestinal polyps	525 (0.90%)	108 (1.80%)	288 (1.18%)	125 (0.49%)	4 (0.17%)
Lupus	37 (0.06%)	4 (0.07%)	19 (0.08%)	13 (0.05%)	1 (0.04%)
Pills for hypertension	666 (1.14%)	76 (1.27%)	283 (1.15%)	282 (1.11%)	25 (1.09%)
COPD	844 (1.45%)	75 (1.25%)	323 (1.32%)	418 (1.64%)	28 (1.22%)
Macular degeneration	1267 (2.17%)	62 (1.03%)	417 (1.70%)	713 (2.80%)	75 (3.28%)
Dementia	1544 (2.65%)	53 (0.88%)	426 (1.74%)	941 (3.69%)	124 (5.42%)
Parkinson's disease	118 (0.20%)	8 (0.13%)	49 (0.20%)	57 (0.22%)	4 (0.17%)

Outcome	Race/Ethnicity			
	Hispanic/Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race
Number enrolled	1277	2483	3978	110
Mean follow-up (months) after LLS visit	95.7	92.2	84.4	85.7
Angina (hospitalized)	67 (0.66%)	152 (0.80%)	264 (0.94%)	10 (1.27%)
Diabetes (treated)	125 (1.23%)	262 (1.37%)	371 (1.33%)	12 (1.53%)
Hysterectomy	24 (0.24%)	32 (0.17%)	44 (0.16%)	1 (0.13%)
Osteoarthritis	154 (1.51%)	320 (1.68%)	487 (1.74%)	8 (1.02%)
Intestinal polyps	127 (1.25%)	215 (1.13%)	178 (0.64%)	5 (0.64%)
Lupus	8 (0.08%)	12 (0.06%)	17 (0.06%)	0 (0.00%)
Pills for hypertension	146 (1.43%)	145 (0.76%)	362 (1.29%)	10 (1.27%)
COPD	125 (1.23%)	268 (1.40%)	442 (1.58%)	9 (1.15%)
Macular degeneration	192 (1.88%)	298 (1.56%)	757 (2.70%)	14 (1.78%)
Dementia	213 (2.09%)	363 (1.90%)	943 (3.37%)	20 (2.55%)
Parkinson's disease	25 (0.25%)	33 (0.17%)	58 (0.21%)	2 (0.25%)

<sup>1</sup> Long Life Study participants were selected from MRC participants which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines. Outcome counts for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers.

**Table 7.1**  
**Number of Falls per Participant During Extension Study 2010-2025 by Visit Year**

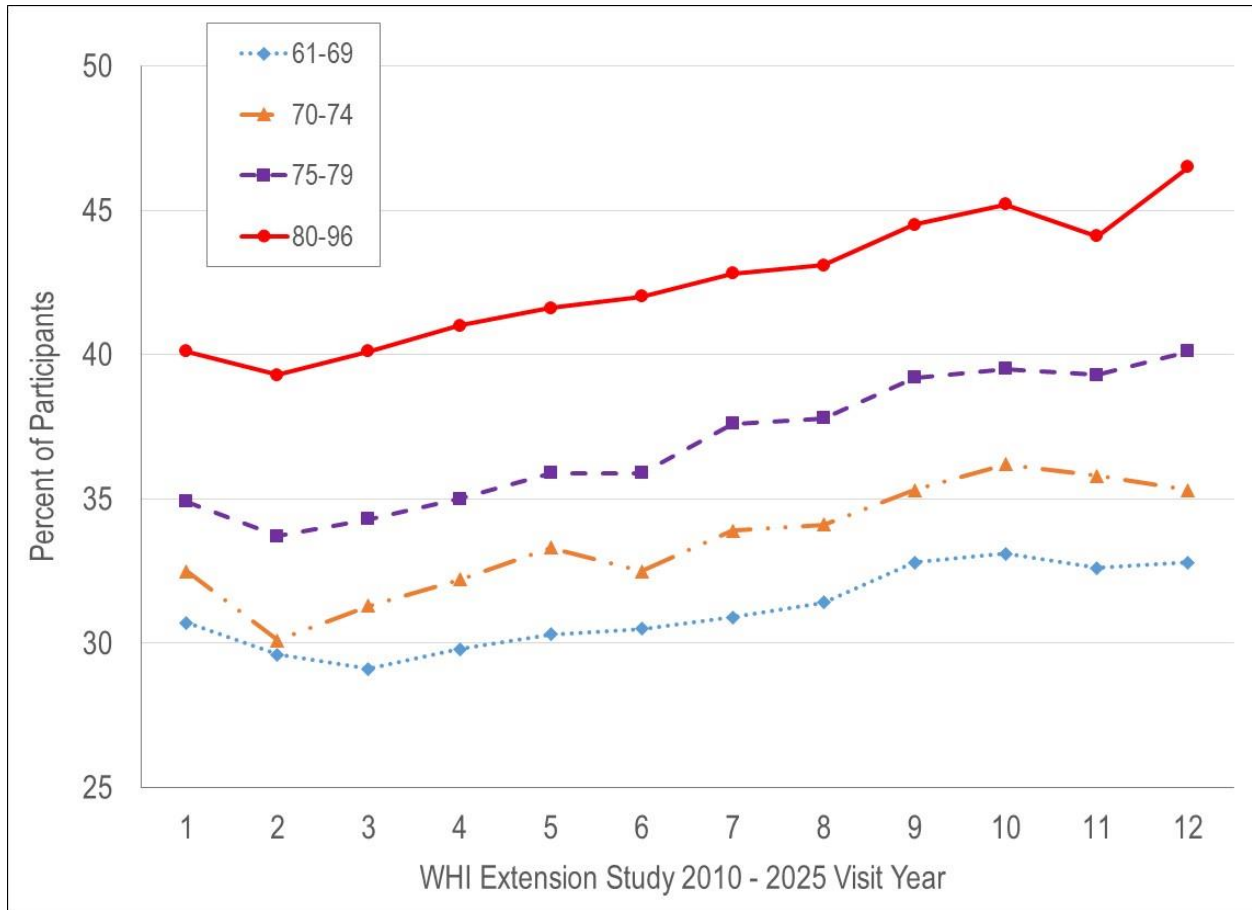
Data as of: February 19, 2022; Events between September 30, 2010 and February 19, 2022

Number of falls	Extension Study 2010-2025 Visit Year											
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
	(N=75,553)	(N=83,161)	(N=80,725)	(N=76,931)	(N=74,443)	(N=68,441)	(N=65,622)	(N=62,148)	(N=59,230)	(N=51,788)	(N=49,922)	(N=18,403)
	%	%	%	%	%	%	%	%	%	%	%	%
None	64.8	66.2	65.7	65.0	64.3	64.5	63.6	63.5	62.3	61.9	62.6	62.2
1	20.9	19.7	19.7	20.2	20.4	20.2	20.6	20.8	21.0	21.4	20.9	21.3
2	9.5	9.0	9.3	9.4	9.5	9.3	9.6	9.5	9.9	9.8	9.3	9.4
≥3	4.9	5.1	5.3	5.4	5.7	6.0	6.2	6.3	6.9	6.9	7.2	7.2



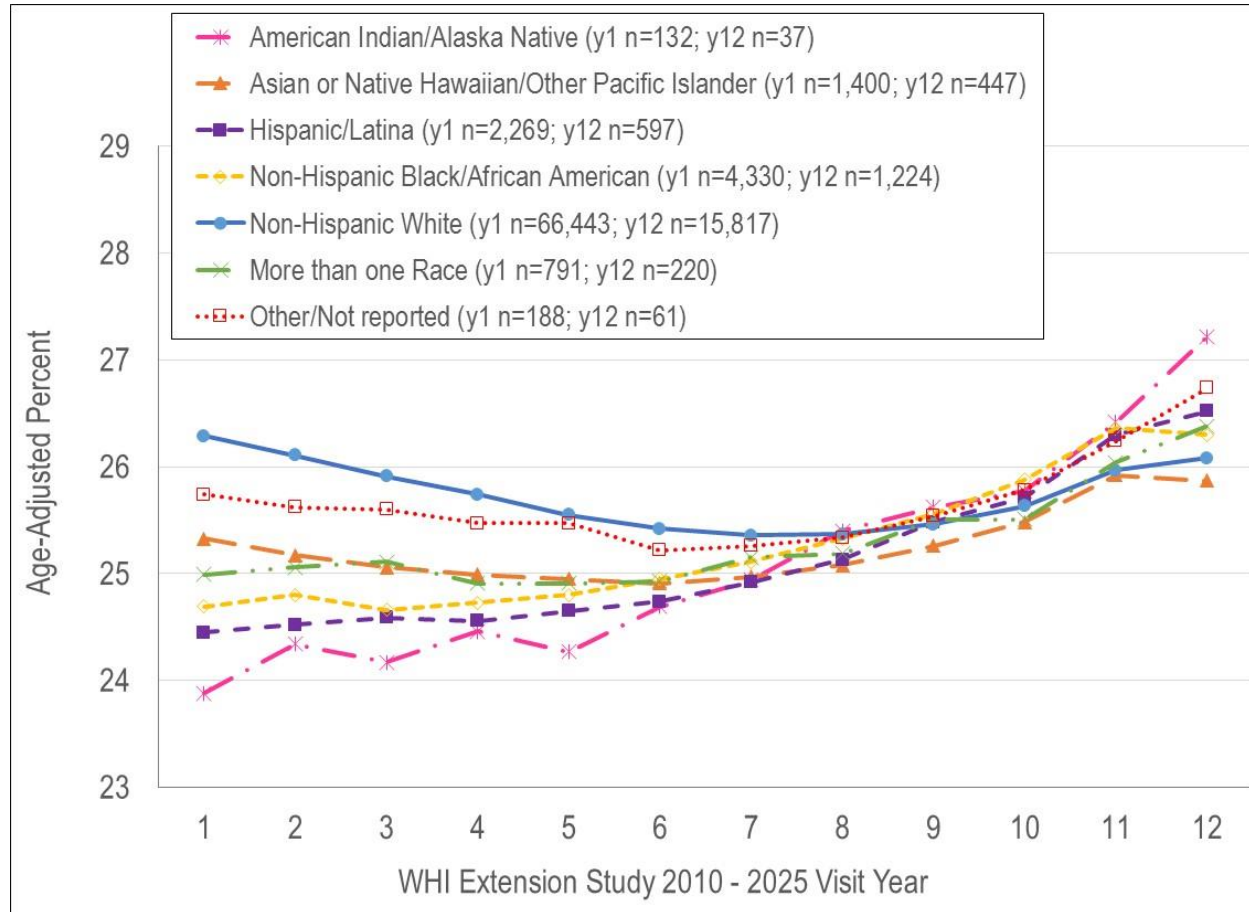
**Figure 7.1**  
**Percent of Participants with Falls During Extension Study 2010-2025**  
**by Visit Year and Age at the Start of Extension Study 2010-2025**

Data as of: February 19, 2022; Events between September 30, 2010 and February 19, 2022



**Figure 7.2**  
**Age-Adjusted<sup>1</sup> Percent of Participants with Falls During Extension Study 2010-2025**  
**by Visit Year and Race/Ethnicity**

Data as of: February 19, 2022; Events between September 30, 2010 and February 19, 2022



<sup>1</sup> Age at the start of Extension Study 2010-2025. Percentages for each race/ethnicity are age-adjusted to the overall age distribution at each time point.

**Table 8.1**  
**Second WHI COVID-19 Survey Response Rates by Collection Mechanism**

	<b>Total Participants Contacted</b>	<b>Forms Received</b>	<b>Percent Received</b>
Form 191 (2 <sup>nd</sup> WHI COVID-19 Survey)			
Paper <sup>1</sup>	35,356	29,528	83.5%
Paper – REDCap non-responders	310	221	71.3%
Phone	52	52	100.0%
REDCap	10,295	7,479	72.6%
<b>Total</b>	<b>45,651</b>	<b>37,280</b>	<b>81.7%</b>

<sup>1</sup> The paper mailing included a small subset of participants who did not respond to the REDCap email or who did not have a valid email address.

**Table 8.2**  
**Responses to Second WHI COVID-19 Survey Overall and by Age at Survey Completion<sup>1</sup>**  
 Data as of: February 19, 2022

	Total (N=37,289)		Age at Second WHI COVID-19 Survey							
			70-79 (N=7,874)		80-84 (N=12,521)		85-89 (N=9,906)		≥90 (N=6,988)	
	N	%	N	%	N	%	N	%	N	%
Current level of well-being										
Excellent	3891	10.6	1147	14.7	1446	11.7	842	8.6	456	6.7
Very Good	14819	40.2	3476	44.5	5252	42.3	3730	38.2	2361	34.5
Good	13372	36.3	2438	31.2	4311	34.8	3851	39.4	2772	40.5
Fair	4124	11.2	681	8.7	1224	9.9	1167	11.9	1052	15.4
Poor	550	1.5	68	0.9	153	1.2	155	1.6	174	2.5
Very Poor	89	0.2	10	0.1	18	0.1	24	0.2	37	0.5
Living arrangement changed since first COVID-19 survey due to pandemic	1487	4.1	245	3.2	447	3.7	421	4.4	374	5.6
If yes, what changed (mark all that apply)										
Moved in with other family or friends	182	14.4	21	9.5	53	13.8	50	14.7	58	18.5
Family or friends moved in	253	20.1	55	25.0	79	20.5	73	21.4	46	14.6
Household members moved away	41	3.3	9	4.1	13	3.4	12	3.5	7	2.2
Moved out of shared housing	24	1.9	6	2.7	7	1.8	6	1.8	5	1.6
Care provider now comes to help	113	9.0	5	2.3	24	6.2	35	10.3	49	15.6
Care provider no longer comes to help	22	1.7	1	0.5	11	2.9	5	1.5	5	1.6
Moved into care facility	202	16.0	9	4.1	44	11.4	69	20.2	80	25.5
Moved out of care facility	37	2.9	2	0.9	12	3.1	13	3.8	10	3.2
Other changes to living arrangement	535	42.5	122	55.5	185	48.1	128	37.5	100	31.8
If live in a private home, number of people living in same household with you (including self) <sup>2</sup>										
1	12892	45.0	2529	36.4	4296	42.2	3694	51.1	2373	55.5
2	12671	44.3	3778	54.4	4928	48.4	2714	37.6	1251	29.3
3	1942	6.8	372	5.4	606	6.0	508	7.0	456	10.7
4	606	2.1	133	1.9	188	1.8	177	2.4	108	2.5
5 or more	511	1.8	137	2.0	156	1.5	133	1.8	85	2.0
Received a COVID-19 vaccine	35337	96.0	7474	95.6	11908	96.2	9409	96.3	6546	95.8
If received a COVID-19 vaccine, which vaccine <sup>2</sup>										
Johnson and Johnson (Janssen)	825	2.4	158	2.1	263	2.2	239	2.6	165	2.6
Pfizer	17373	50.1	3726	50.4	5925	50.5	4578	49.7	3144	49.8
Moderna	15830	45.7	3480	47.0	5441	46.4	4203	45.7	2706	42.8
Astra Zeneca	52	0.2	13	0.2	16	0.1	16	0.2	7	0.1
Other or don't know	575	1.7	22	0.3	88	0.8	169	1.8	296	4.7

<sup>1</sup> Variables that do not add to the column total indicate missing data.

<sup>2</sup> The denominator for these percentages is the number responding 'Yes' to the parent question and providing a response to the current question.

**Table 8.2 (continued)**  
**Responses to Second WHI COVID-19 Survey Overall and by Age at Survey Completion<sup>1</sup>**  
 Data as of: February 19, 2022

	Total (N=37,289)		Age at WHI COVID-19 Survey							
			70-79 (N=7,874)		80-84 (N=12,521)		85-89 (N=9,906)		≥90 (N=6,988)	
	N	%	N	%	N	%	N	%	N	%
If received a COVID-19 vaccine, number of doses <sup>2</sup>										
One shot	278	0.8	35	0.5	77	0.7	84	1.0	82	1.4
Two shots	32018	96.7	6978	97.3	10963	97.0	8436	96.3	5641	95.8
One shot, Johnson and Johnson (Janssen)	825	2.5	158	2.2	263	2.3	239	2.7	165	2.8
Reason for not receiving a COVID-19 vaccine (mark all that apply)										
Waiting for an appointment	36	2.6	3	0.9	11	2.5	12	3.5	10	4.0
Don't know where/how to get it	14	1.0	2	0.6	1	0.2	5	1.5	6	2.4
Unable to get an appointment	5	0.4	1	0.3	1	0.2	2	0.6	1	0.4
Waiting before trying	157	11.5	39	11.8	55	12.4	36	10.6	27	10.7
Medical condition	301	22.0	72	21.8	95	21.4	79	23.2	55	21.7
Afraid of side effects	363	26.6	94	28.4	131	29.6	82	24.1	56	22.1
Don't trust	610	44.6	170	51.4	214	48.3	138	40.6	88	34.8
Not worried about COVID-19	364	26.6	80	24.2	110	24.8	103	30.3	71	28.1
Other	305	22.3	82	24.8	106	23.9	66	19.4	51	20.2
Ever exposed to another person diagnosed or suspected of having COVID-19										
No, not that I know of	31278	85.6	6370	82.0	10475	85.2	8437	87.1	5996	88.6
Yes, someone outside of my home	4297	11.8	1178	15.2	1510	12.3	1005	10.4	604	8.9
Yes, someone living with me	948	2.6	224	2.9	311	2.5	242	2.5	171	2.5
Tested for COVID-19										
No	21019	58.4	4067	52.8	6988	57.6	5823	61.0	4141	62.3
Yes	14419	40.0	3561	46.3	4995	41.2	3555	37.2	2308	34.7
Unsure	579	1.6	68	0.9	145	1.2	167	1.7	199	3.0
If tested, positive result <sup>4</sup>										
No	12723	90.6	3204	91.4	4468	91.5	3082	89.7	1969	88.9
Yes	1237	8.8	286	8.2	396	8.1	334	9.7	221	10.0
Unsure	78	0.6	15	0.4	20	0.4	19	0.6	24	1.1
If tested positive, experienced COVID-19 symptom(s) <sup>3</sup> for 8 or more weeks (long COVID) <sup>4</sup>	425	34.4	114	39.9	132	33.3	114	34.1	65	29.4

<sup>1</sup> Variables that do not add to the column total indicate missing data.

<sup>2</sup> The denominator for these percentages is the number responding 'Yes' to the parent question and providing a response to the current question.

<sup>3</sup> Symptoms include fever, cough, headache, chest pain/tightness, fast-beating heart, heart pounding (palpitations), muscle pain, joint pain, fatigue, shortness of breath/difficulty breathing, loss of smell, loss of taste, sleep disturbance, memory problems, confusion or difficulty thinking or concentrating, brain fog, malaise—general feeling of illness, discomfort or uneasiness.

**Table 8.2 (continued)**  
**Responses to Second WHI COVID-19 Survey Overall and by Age at Survey Completion<sup>1</sup>**

Data as of: February 19, 2022

	Total (N=37,289)		Age at WHI COVID-19 Survey							
			70-79 (N=7,874)		80-84 (N=12,521)		85-89 (N=9,906)		≥90 (N=6,988)	
	N	%	N	%	N	%	N	%	N	%
Ever hospitalized for COVID-19										
No	35746	98.8	7674	99.1	12045	99.0	9442	98.5	6585	98.3
Yes	402	1.1	60	0.8	116	1.0	128	1.3	98	1.5
Unsure	50	0.1	9	0.1	8	0.1	17	0.2	16	0.2
If hospitalized, number of nights <sup>2</sup>										
1 night	24	6.6	3	5.5	6	5.7	11	9.6	4	4.5
2-3 nights	83	22.9	13	23.6	20	19.0	30	26.3	20	22.5
4-6 nights	94	25.9	12	21.8	28	26.7	25	21.9	29	32.6
7-13 nights	87	24.0	17	30.9	21	20.0	29	25.4	20	22.5
14 or more nights	62	17.1	9	16.4	23	21.9	18	15.8	12	13.5
Unsure	13	3.6	1	1.8	7	6.7	1	0.9	4	4.5
If hospitalized, received treatment in ICU <sup>7</sup>	79	21.7	16	28.6	21	19.8	27	23.9	15	16.9
Had health care appointments scheduled since first COVID-19 survey										
No	4858	13.8	741	9.7	1395	11.7	1410	15.2	1312	20.6
Yes	30149	85.6	6894	90.1	10498	87.8	7777	84.1	4980	78.2
Unsure	221	0.6	20	0.3	63	0.5	64	0.7	74	1.2
If had appointments scheduled, how did you get your healthcare (mark all that apply) <sup>7</sup>										
At least one virtual clinic visit by phone or video	12628	43.0	3307	48.7	4422	43.2	3082	40.8	1817	37.8
At least one in-person clinic or office visit	26614	90.6	6278	92.5	9352	91.4	6749	89.4	4235	88.0
Evaluated at an emergency room or hospital	5057	17.2	905	13.3	1709	16.7	1377	18.2	1066	22.2
Hospitalized	3386	11.5	601	8.9	1128	11.0	957	12.7	700	14.5
None of the above, did not seek care	649	2.2	87	1.3	219	2.1	199	2.6	144	3.0
How much difficulty getting routine care since first COVID-19 survey										
None	28746	79.0	5962	76.7	9641	78.6	7743	80.3	5400	80.6
Some	6850	18.8	1644	21.2	2360	19.2	1695	17.6	1151	17.2
Much	591	1.6	133	1.7	203	1.7	147	1.5	108	1.6
Unable or very difficult	186	0.5	34	0.4	57	0.5	56	0.6	39	0.6
How concerned about the COVID-19 pandemic										
Not at all concerned	3416	9.4	561	7.2	1036	8.5	967	10.1	852	12.8
Somewhat very concerned	17383	48.0	3606	46.4	5861	48.0	4694	49.0	3222	48.6
Very concerned	15406	42.6	3609	46.4	5323	43.6	3915	40.9	2559	38.6

<sup>1</sup> Variables that do not add to the column total indicate missing data.

<sup>2</sup> The denominator for these percentages is the number responding 'Yes' to the parent question and providing a response to the current question.

**Table 8.2 (continued)**  
**Responses to Second WHI COVID-19 Survey Overall and by Age at Survey Completion<sup>1</sup>**  
 Data as of: February 19, 2022

	Total (N=37,289)		Age at WHI COVID-19 Survey							
			70-79 (N=7,874)		80-84 (N=12,521)		85-89 (N=9,906)		≥90 (N=6,988)	
	N	%	N	%	N	%	N	%	N	%
Pandemic causing concerns about (mark all that apply)										
Risk of getting COVID-19 infection	16782	46.3	4026	51.7	5887	48.1	4234	44.1	2635	39.8
Family getting COVID-19 infection	21819	60.1	5053	64.8	7578	61.9	5575	58.0	3613	54.5
Getting healthcare	3867	10.7	949	12.2	1344	11.0	928	9.7	646	9.7
Getting adequate food	820	2.3	215	2.8	275	2.2	182	1.9	148	2.2
Getting enough exercise	5993	16.5	1387	17.8	2080	17.0	1547	16.1	979	14.8
Getting enough sleep	2494	6.9	600	7.7	875	7.1	604	6.3	415	6.3
Adequate housing	235	0.6	56	0.7	65	0.5	55	0.6	59	0.9
Having enough money	1596	4.4	405	5.2	519	4.2	388	4.0	284	4.3
Personal safety	5672	15.6	1422	18.2	2025	16.5	1357	14.1	868	13.1
Health/safety of family/friends	20509	56.5	4643	59.6	6987	57.0	5341	55.6	3538	53.4
Financial security	2034	5.6	513	6.6	650	5.3	517	5.4	354	5.3
Financial security of family	2305	6.4	613	7.9	778	6.4	573	6.0	341	5.1
Ability to be with family/friends	17622	48.6	4119	52.9	6185	50.5	4463	46.5	2855	43.1
Nation and economy	21026	58.0	4908	63.0	7193	58.7	5437	56.6	3488	52.6
Steps currently taking to reduce COVID-19 risk (mark all that apply)										
Physical distancing	23203	63.0	5261	67.2	7853	63.3	5936	60.7	4153	60.6
Wearing mask in public	26313	71.4	5525	70.6	8665	69.9	6980	71.4	5143	75.0
Avoiding in-person activities	12673	34.4	2620	33.5	4040	32.6	3327	34.0	2686	39.2
Avoiding or limiting in-person shopping	15622	42.4	3075	39.3	4946	39.9	4251	43.5	3350	48.9
Staying home	12081	32.8	2087	26.7	3547	28.6	3334	34.1	3113	45.4
None of the above	5751	15.6	1335	17.0	2112	17.0	1538	15.7	766	11.2
How often communicate with others outside your home over the past month										
Every day	20367	55.9	4677	60.2	6978	56.9	5302	54.8	3410	50.6
Several times per week	11067	30.4	2235	28.8	3754	30.6	3045	31.4	2033	30.2
1-2 times per week	3173	8.7	571	7.4	1015	8.3	849	8.8	738	11.0
Once per week	1186	3.3	195	2.5	359	2.9	319	3.3	313	4.6
Rarely or never	662	1.8	90	1.2	161	1.3	168	1.7	243	3.6

<sup>1</sup> Variables that do not add to the column total indicate missing data.

**Table 8.2 (continued)**  
**Responses to Second WHI COVID-19 Survey Overall and by Age at Survey Completion<sup>1</sup>**  
 Data as of: February 19, 2022

	Total (N=37,289)		Age at WHI COVID-19 Survey							
			70-79 (N=7,874)		80-84 (N=12,521)		85-89 (N=9,906)		≥90 (N=6,988)	
	N	%	N	%	N	%	N	%	N	%
Over the past month, level of physical activity since COVID-19 pandemic began										
Much less	7104	19.4	1419	18.2	2304	18.6	1915	19.7	1466	21.6
Somewhat less	10037	27.3	2009	25.7	3446	27.9	2708	27.8	1874	27.6
About the same	16813	45.8	3483	44.6	5636	45.6	4520	46.4	3174	46.7
Somewhat more	2069	5.6	690	8.8	730	5.9	438	4.5	211	3.1
Much more	682	1.9	209	2.7	243	2.0	155	1.6	75	1.1

<sup>1</sup> Variables that do not add to the column total indicate missing data.



**Table 9.1**  
**WHI Manuscript Stages**

<b>Stage #</b>	<b>Definition</b>	<b>Number</b>
12*	Published	2163
11	In press / accepted by journal	8
10	Submitted to journal	21
9	Final manuscript approved by P&P Committee	385
8	Final manuscript submitted to P&P Committee	41
7	Draft manuscript	26
6	Analysis completed	45
5	Analysis in progress	58
4	Analysis proposed	6
2 & 3	Approved proposal	1279
<b>Total</b>		<b>4,032</b>

\*Only Stage 12 papers published between March 2021 and February 2022 are included in Table 8.2

**Table 9.2**  
**Publications March 2021 - February 2022**

MS#	Title	Authors	Focus	Reference	Studies
1267	The influence of social support on cognitive health in older women: a Women's Health Initiative Study	Moreno, Ammann, Espeland, Wallace, Robinson, Denburg, Kaseda	Gen	J Women Aging. 2021 Jul 10:1-17. doi: 10.1080/08952841.2021.1945368. Online ahead of print.	AS39, AS103, AS183
1426	Adherence to a MIND-like dietary pattern, long-term exposure to fine particulate matter air pollution, and MRI-based measures of brain volume: The Women's Health Initiative Memory Study-MRI	Chen, Kaufman, Hayden, Espeland, Whitsel, Serre, Vizuete, Orchard, Wang, Chui, D'Alton, Chen, He	CT	Environ Health Perspect. 2021 Dec;129(12):127008. doi: 10.1289/EHP8036. Epub 2021 Dec 23.	AS39, AS183, AS252
1816	Red blood cell fatty acids and age-related macular degeneration in postmenopausal women	Elmore, Harris, Mu, Brady, Hovey, Mares, Espeland, Haan, Millen	WHIMS	Eur J Nutr. 2022 Jan 6. doi: 10.1007/s00394-021-02746-2. Online ahead of print.	BA19
2214	Associations between plasma choline metabolites and genetic polymorphisms in one-carbon metabolism in postmenopausal women: The Women's Health Initiative Observational Study	Cheng, Ilozumba, Balavarca, Neuhausser, Miller, Beresford, Duggan, Toriola, Song, Zheng, Bailey, Green, Caudill, Ulrich	OS	J Nutr. 2020 Nov 19;150(11):2874-2881. doi: 10.1093/jn/nxaa266	AS195
2590	Long-term exposures to air pollution and the risk of atrial fibrillation in the Women's Health Initiative Cohort	Hart, Hohensee, Laden, Whitsel, Wellenius, Winkelmayr, Sarto, Martin, Manson, Greenland, Kaufman, Albert, Perez	Gen	Environ Health Perspect. 2021 Sep;129(9):97007. doi: 10.1289/EHP7683. Epub 2021 Sep 15	
2621	Indices of diet quality and risk of lung cancer in the Women's Health Initiative Observational Study	Myneni, Giovino, Millen, LaMonte, Wactawski-Wende, Neuhausser, Zhao, Shikany, Mu	OS	J Nutr. 2021 May 12:nxab033. doi: 10.1093/jn/nxab033. Online ahead of print.	
2624	DXA versus clinical measures of adiposity as predictors of cardiometabolic diseases and all-cause mortality in postmenopausal women	Laddu-Patel, Qin, Hedlin, Zaslavsky, Stefanick, Manson, Eaton, Martin, Rohan, Assimes	Gen	Mayo Clin Proc. 2021 Aug 31:S0025-6196(21)00471-7. doi: 10.1016/j.mayocp.2021.04.027. Online ahead of print	M5, W58
2670	Physical activity, diet, and incident urinary incontinence in Postmenopausal Women: Women's Health Initiative Observational Study	Bauer, Sorensen, Subak, Phelan, Rogo-Gupta, Chen, Park, Inglesia, Gass, Hohensee, Breyer	OS	J Gerontol A Biol Sci Med Sci. 2021 May 8:glab118. doi: 10.1093/gerona/glab118. Online ahead of print	

<b>2812</b>	Venous thrombosis with oral postmenopausal hormone therapy: roles of activated protein C resistance and tissue factor pathway inhibitor	Khialani, Vasan, Cushman, Dahm, CT Sandset, Rossouw, van Hylekama Vlieg		J Thromb Haemost. 2021 Mar 28. doi: 10.1111/jth.15319. Online ahead of print.	
<b>2825</b>	Predicting incident heart failure in women with machine learning: The Women's Health Initiative Cohort	Tison, Avram, Nah, Klein, Howard, Allison, Casanova, Blair, Breathett, Foraker, Olgin, Parikh	Gen	Can J Cardiol. 2021 Aug 13;S0828-282X(21)00651-6. doi: 10.1016/j.cjca.2021.08.006. Online ahead of print.	
<b>2904</b>	On the joint role of non-Hispanic Black race/ethnicity and weight status in predicting postmenopausal weight gain	Ford, Chang, Frazier-Wood, Manson, Garcia, Laroche, Bird, Mouton, Snetselaar, Vitolins	OS	PLoS One. 2021 Mar 1;16(3):e0247821. doi: 10.1371/journal.pone.0247821. eCollection 2021.	AS100
<b>2918</b>	Sustained weight loss, weight cycling, and weight gain during adulthood and pancreatic cancer incidence in the Women's Health Initiative (US)	Schwalb, Smith-Warner, Hou, Rohan, Snetselaar, Luo, Genkinger	Gen	Am J Epidemiol. 2022 Feb 1;kwac016. doi: 10.1093/aje/kwac016. Online ahead of print	
<b>2974</b>	Estimating 24-hour urinary excretion of sodium and potassium is more reliable from 24-hour urine than spot urine sample in a feeding study of US older postmenopausal women	Tinker, Huang, Johnson, Carbone, Snetselaar, Van Horn, Manson, Lampe, Liu, Mossavar-Rahmani, Neuhouser, Prentice	Gen	Curr Dev Nutr. 2021 Oct 12;5(11):nzab125. doi: 10.1093/cdn/nzab125. eCollection 2021 Nov.	AS498, AS525
<b>2986</b>	Pasta meal intake in relation to risks of type 2 diabetes and atherosclerotic cardiovascular disease in postmenopausal women: findings from the Women's Health Initiative	Huang, Lo, Li, Allison, Wu, Liu	Gen	BMJ Nutr Prev Health. 2021 Apr 30;4(1):195-205. doi: 10.1136/bmjnph-2020-000198. eCollection 2021.	
<b>3043</b>	Social isolation and incident heart failure hospitalization in older women: Women's Health Initiative Study findings	Cene, Leng, Allison, Breathett, Bird, Coday, Corbie-Smith, Foraker, Ijioma, Rosal, Sealy-Jefferson, Shippee, Kroenke	Gen	J Am Heart Assoc. 2022 Mar;11(5):e022907. doi:10.1161/JAHA.120.022907. Epub 2022 Feb 22.	
<b>3134</b>	Urinary phthalate biomarkers and bone mineral density in postmenopausal women	Reeves, Vieyra, Meliker, Jackson, Wactawski-Wende, Wallace, Zoeller, Bigelow, Hankinson, Manson, Cauley, Calafat	Gen	J Clin Endocrinol Metab. 2021 Mar 23;dgab189. doi: 10.1210/clinem/dgab189. Online ahead of print.	AS458

<b>3171</b>	Evaluation of potential metabolomic-based biomarkers of protein, carbohydrate and fat intakes using a controlled feeding study	Zheng, Gowda, Raftery, Neuhouser, Tinker, Prentice, Beresford, Zhang, Djukovic, Gu, Song, Lampe	Gen	Eur J Nutr. 2021 May 15. doi: 10.1007/s00394-021-02577-1. Online ahead of print.	AS417, AS498
<b>3220</b>	The association of walking pace and incident heart failure and subtypes among postmenopausal women	Miremad, Lin, Rasla, Meligy, Roberts, Laddu-Patel, Allison, Martin, Shadyab, Manson, Chlebowski, Panjrath, LaMonte, Liu, Eaton	Gen	J Am Geriatr Soc. 2022 Jan 20. doi: 10.1111/jgs.17657. Online ahead of print.	AS510
<b>3241</b>	Novel application of nutritional biomarkers from a controlled feeding study and observational study toward dietary pattern characterization in postmenopausal women	Neuhouser, Pettinger, Lampe, Tinker, George, Reedy, Song, Thyagarajan, Beresford, Prentice	Gen	Am J Epidemiol. 2021 Jun 18;kwab171. doi:10.1093/aje/kwab171. Online ahead of print.	AS218, AS272, AS498
<b>3346</b>	Impact of lifetime obesity on urinary incontinence in the Women's Health Initiative	Choi, Ziogas, Anton-Culver, Chen, Gass	Gen	J Urol. 2022 May;207(5):1096-1104. doi: 10.1097/JU.0000000000002380. Epub 2021 Dec 30.	
<b>3361</b>	Epigenetically mediated electrocardiographic manifestations of sub-chronic exposures to ambient particulate matter air pollution in the Women's Health Initiative and Atherosclerosis Risk in Communities Study	Gondalia, Baldassari, Holliday, Justice, Bhatti, Stewart, Liao, Yanosky, Engel, Sheps, Jordahl, Horvath, Assimes, Demerath, Guan, Fornage, et al.	CT	Environ Res. 2021 Apr 22;198:111211. doi: 10.1016/j.envres.2021.111211. Online ahead of print.	AS311, AS315, BA23
<b>3371</b>	B vitamin intakes modify the association between particulate air pollutants and incidence of all-cause dementia: Findings from the Women's Health Initiative Memory Study	Chen, Whitsel, Espeland, Snetselaar, Hayden, Lamichhane, Serre, Vizuete, Kaufman, Wang, Chui, Chen, He	WHIMS	Alzheimers Dement. 2022 Feb 1. doi: 10.1002/alz.12515. Online ahead of print.	AS39, AS183, AS252
<b>3382</b>	Effects of menopausal hormone therapy on erythrocyte n-3 and n-6 PUFA concentrations in the Women's Health Initiative randomized trial	Harris, Tintle, Manson, Robinson	WHIMS	Am J Clin Nutr. 2021 Mar 12:nqaa443. doi: 10.1093/ajcn/nqaa443. Online ahead of print.	BA19

<b>3399</b>	After the initial fracture in postmenopausal women, where do subsequent fractures occur?	Crandall, Hunt, LaCroix, Robbins, Gen Wactawski-Wende, Johnson, Sattari, Stone, Weitlauf, Gure, Cauley		EClinicalMedicine. 2021 May 5;35:100826. doi: 10.1016/j.eclinm.2021.100826. eCollection 2021 May.	
<b>3409</b>	Association between Race/Ethnicity and income on the likelihood of coronary revascularization among postmenopausal women with acute myocardial infarction: Women's Health Initiative Study	Tertulien, Breathett, Cene, Corbie-Smith, Nassir, Allison, Roberts, Manson, Eaton	Gen	Am Heart J. 2022 Jan 6;S0002-8703(21)00496-8. doi: 10.1016/j.ahj.2021.12.013. Online ahead of print.	
<b>3429</b>	Low-fat dietary pattern and breast cancer mortality by metabolic syndrome components: A secondary analysis of the Women's Health Initiative (WHI) randomised trial	Pan, Aragaki, Neuhaus, Simon, Luo, Caan, Snetselaar, Mortimer, Manson, Kroenke, Lane, Reding, Rohan, Chlebowski	CT	Br J Cancer. 2021 May 18. doi: 10.1038/s41416-021-01379-w. Online ahead of print.	W35
<b>3431</b>	Cardiovascular disease (CVD) risk scores, age, or years since menopause to predict cardiovascular disease in The Women's Health Initiative	Wild, Hovey, Andrews, Robinson, Kaunitz, Manson, Crandall, Peragallo, Shufelt, Merz	CT	Menopause. 2021 May 3. doi: 10.1097/GME.0000000000001753. Online ahead of print.	
<b>3477</b>	Association between menopausal hormone therapy and incidence of psoriasis: A secondary analysis from the Women's Health Initiative Randomized Clinical Trials	Chan, Noguti, Yang, Feldman, Wallace, Shadyab, Manson, Chlebowski, Lee	Gen	Br J Dermatol. 2021 Apr 29. doi: 10.1111/bjd.20410. Online ahead of print.	W35
<b>3480</b>	Metabolic syndrome risk components and mortality after triple-negative breast cancer diagnosis in postmenopausal women in the Women's Health Initiative	Yuan, Pan, Mortimer, Chlebowski, Luo, Yan, Post, Kroenke, Adams-Campbell, Nassir, Sun, Shadyab, Vitolins, Saquib, Wild, Manson, et al.	Gen	Cancer. 2021 May 15;127(10):1658-1667. doi: 10.1002/cncr.33407. Epub 2021 Jan 21.	W35
<b>3554</b>	Association between baseline insulin resistance and psoriasis incidence: The Women's Health Initiative	Chan, Li, Pan, Chlebowski, Lee	Gen	Arch Dermatol Res. 2021 Nov 24. doi: 10.1007/s00403-021-02298-9. Online ahead of print.	W35

<b>3572</b>	Predictive value of DXA appendicular lean mass for incident fractures, falls, and mortality, independent of prior falls, FRAX and BMD: Findings from the Women's Health Initiative (WHI)	Harvey, Kanis, Liu, Cooper, Lorentzon, Bea, Carbone, Cespedes Feliciano, Laddu-Patel, Schnatz, Shadyab, Stefanick, Wactawski-Wende, Crandall, Johansson, McCloskey, et al.	Gen	J Bone Miner Res. 2021 Apr;36(4):654-661. doi: 10.1002/jbmr.4239. Epub 2021 Jan 28.	W35
<b>3626</b>	Epigenome-wide association study of kidney function identifies trans-ethnic and ethnic-specific loci	Franceschini, Breeze, Batorsky, Raffield, Lange, Kooperberg, Whitsel, Liu, Eaton, Bostom	Gen	Genome Med. 2021 Apr 30;13(1):74. doi: 10.1186/s13073-021-00877-z.	AS315, BA23
<b>3642</b>	Prevalence and predictors of peripheral neuropathy after breast cancer treatment	Kamgar, Assad, Hastert, Reding, Paskett, Bea, Shadyab, Neuhouser, Nassir, Crane, Sreeram, Greenwald, Simon	Gen	Cancer Med. 2021 Aug 14. doi: 10.1002/cam4.4202. Online ahead of print	AS370
<b>3646</b>	Hormone therapy formulation, dose, route of delivery, and risk of hypertension: findings from the Women's Health Initiative Observational Study (WHI-OS)	Wild, Larson, Crandall, Shadyab, Allison, Gass, Shufelt, Manson	OS	Menopause. 2021 Jul 26. doi: 10.1097/GME.0000000000001828. Online ahead of print.	
<b>3678</b>	Combined associations of 25-hydroxivitamin D and parathyroid hormone with diabetes risk and associated comorbidities among U.S. white and black women	Xia, Tu, Manson, Nan, Shadyab, Bea, Gower, Qi, Cheng, Song	OS	Nutr Diabetes. 2021 Sep 16;11(1):29. doi: 10.1038/s41387-021-00171-2.	AS325
<b>3683</b>	Cardiometabolic risk factors, physical activity, and postmenopausal breast cancer mortality: results from the Women's Health Initiative	Dieli-Conwright, Nelson, Simon, Irwin, Neuhouser, Reding, Crane, Manson, Rohan, Nassir, Shadyab, LaMonte, Qi, Thomson, Kroenke, Chlebowski, et al.	Gen	BMC Womens Health. 2022 Feb 5;22(1):32. doi: 10.1186/s12905-022-01614-3.	
<b>3702</b>	Body image, physical activity and psychological health in older female cancer survivors	Zhang, Pennell, Bernardo, Clark, Krok-Schoen, Focht, Crane, Shadyab, Paskett	Gen	Geriatr Oncol. 2021 May 6:S1879-4068(21)00106-5. doi: 10.1016/j.jgo.2021.04.007. Online ahead of print	AS370
<b>3735</b>	Citrus consumption and the risk of non-melanoma skin cancer in the Women's Health Initiative	Sakaki, Melough, Roberts, Eaton, Shadyab, Qureshi, Chun, Cho	OS	Cancers (Basel). 2021 Apr 30;13(9):2173. doi: 10.3390/cancers13092173.	

<b>3809</b>	Adiposity and breast, endometrial, and colorectal cancer risk in postmenopausal women: Quantification of the mediating effects of leptin, C-reactive protein, fasting insulin, and estradiol	Dashti, Simpson, Viallon, Karahalios, Moreno-Betancur, Brasky, Pan, Rohan, Shadyab, Thomson, Wild, Wassertheil-Smoller, Ho, Strickler, English, Gunter, et al.	OS	Cancer Med. 2022 Jan 20. doi: 10.1002/cam4.4434. Online ahead of print.	AS129, BA10
<b>3815</b>	The intersectional role of social stress in fracture risk: results from the Women's Health Initiative	Follis, Klimentidis, Bea, Hu, Garcia, Wactawski-Wende, Kohler, Shadyab, Tindle, Flores, Kelley, Chen	Gen	J Epidemiol Community Health. 2021 May 26;jech-2020-216354. doi: 10.1136/jech-2020-216354. Online ahead of print.	
<b>3816</b>	Eggs, dietary cholesterol, choline, betaine, and diabetes risk in the Women's Health Initiative: a prospective analysis	Greenberg, Jiang, Snetselaar, Saquib, Shadyab, Tinker	Gen	Am J Clin Nutr. 2021 Apr 7;nqab036. doi: 10.1093/ajcn/nqab036. Online ahead of print.	AS236
<b>3849</b>	Dietary advanced glycation end-products (AGEs) and mortality after breast cancer in the Women's Health Initiative (WHI)	Steck, Omofuma, Peterson, Turner, Merchant, Zhang, Thomson, Neuhausser, Snetselaar, Caan, Shadyab, Saquib, Banack, Uribarri	Gen	Cancer Epidemiol Biomarkers Prev. 2021 Sep 28;cebp.0610.2021. doi: 10.1158/1055-9965.EPI-21-0610. Online ahead of print	
<b>3872</b>	Mediterranean diet and fatigue among community-dwelling postmenopausal women	Su, Zaslavsky, Tinker, Cochrane, Reding, Herting	Gen	J Am Geriatr Soc. 2022 Jan 20. doi: 10.1111/jgs.17657. Online ahead of print.	AS286, AS340
<b>3884</b>	Occupations associated with poor cardiovascular health in women: The Women's Health Initiative Observational Study	Nriagu, Ako, Wang, De Roos, Wallace, Allison, Michael, Seguin, Nassir	OS	J Occup Environ Med. 2021 May 1;63(5):387-394. doi: 10.1097/JOM.0000000000002135.	
<b>3885</b>	An approximate quasi-likelihood approach for error-prone failure time outcomes and exposures	Boe, Tinker, Shaw	Gen	Stat Med. 2021 Oct 15;40(23):5006-5024. doi: 10.1002/sim.9108. Epub 2021 Jun 22.	W8
<b>3889</b>	The association between heart failure and incident cancer in women: An analysis of the Women's Health Initiative	Leedy, Reding, Vasbinder, Anderson, Barac, Wactawski-Wende, Shadyab, Eaton, Levy, Qi, Cheng	CT	Eur J Heart Fail. 2021 May 1. doi: 10.1002/ejhf.2207. Online ahead of print.	

<b>3902</b>	Risk of subsequent fractures in postmenopausal women after nontraumatic vs traumatic fractures	Crandall, Larson, LaCroix, Robbins, Wactawski-Wende, Johnson, Sattari, Stone, Weitlauf, Gure, Cauley	Gen	JAMA Intern Med. 2021 Jun 7. doi: 10.1001/jamainternmed.2021.2617. Online ahead of print.	
<b>3939</b>	Performance of the IBIS/Tyrer-Cuzick model of breast cancer risk by race and ethnicity in the Women's Health Initiative	Kurian, Stefanick, Hughes, Tang, Caswell-Jin, Shadyab, Rohan, Manson, Lane, Chlebowski, Bernhisel, Lancaster	Gen	Cancer. 2021 Jul 6. doi: 10.1002/cncr.33767. Online ahead of print.	AS508
<b>3975</b>	Discovery and fine-mapping of kidney function loci in first genome-wide association study in Africans	Fatumo, Franceschini, Kooperberg, Reiner, Eaton, Burgess, Morris	Gen	Hum Mol Genet. 2021 Mar 30;ddab088. doi: 10.1093/hmg/ddab088. Online ahead of print.	AS476, AS516
<b>3985</b>	Physical activity and risk of benign proliferative epithelial disorders of the breast, in the Women's Health Initiative	Peila, Rohan, Wassertheil-Smoller, Shadyab, Saquib, Richey, Chlebowski, Ballinger	CT	Int J Epidemiol. 2021 Jun 17;dyab113. doi: 10.1093/ije/dyab113. Online ahead of print.	AS130
<b>4021</b>	Insulinemic and inflammatory dietary patterns show enhanced predictive potential for type 2 diabetes risk in postmenopausal women	Tabung, Jin, Shi, Joseph, Donneyong, Conwell, Zhang, Clinton, Brasky, Jackson, Tinker, Liu, Phillips, Shadyab, Nassir, Bao, et al.	Gen	Diabetes Care. 2021 Mar;44(3):707-714. doi: 10.2337/dc20-2216. Epub 2021 Jan 8.	
<b>4022</b>	Dietary patterns of insulinemia, inflammation and glycemia and pancreatic cancer risk: Findings from the Women's Health Initiative	Jin, Shi, Joseph, Donneyong, Conwell, Clinton, Brasky, Tinker, Liu, Shadyab, Thomson, Qi, Rohan, Tabung	Gen	Cancer Epidemiol Biomarkers Prev. 2021 Apr 7;cebp.1478.2020. doi: 10.1158/1055-9965.EPI-20-1478. Online ahead of print	
<b>4029</b>	Biomarkers of phthalates and inflammation: Findings from a subgroup of Women's Health Initiative participants	Trim, Hankinson, Liu, Shadyab, Meliker, Bao, Luo, Liu, Manson, Tinker, Bigelow, Reeves	Gen	Int J Hyg Environ Health. 2021 Apr 1;234:113743. doi: 10.1016/j.ijheh.2021.113743. Online ahead of print.	AS458
<b>4058</b>	Associations of dairy intake with circulating biomarkers of inflammation, insulin response, and dyslipidemia among postmenopausal women	Shi, Olivio-Marston, Jin, Aroke, Joseph, Clinton, Manson, Rexrode, Mossavar-Rahmani, Tinker, Shadyab, Arthur, Snetselaar, Van Horn, Tabung	Gen	J Acad Nutr Diet. 2021 Apr 13;S2212-2672(21)00151-9. doi: 10.1016/j.jand.2021.02.029. Online ahead of print.	



<b>4059</b>	No association observed between coffee intake and risk of non-hodgkin lymphoma among postmenopausal women	Wang, Shadyab, Arthur, Saquib, Johnson, Mu, Chen, Snetselaar, Luo	OS	J Acad Nutr Diet. 2021 Nov 2:S2212-2672(21)01434-9. doi: 10.1016/j.jand.2021.10.025. Online ahead of print.	
<b>4064</b>	Adherence to recommended eating patterns is associated with lower risk of peripheral arterial disease: Results From the Women's Health Initiative	Qi, Mossavar-Rahmani, Xue, Haring, Shadyab, Allison, Liu, Tinker, Saquib, Coday, Shikany, Neuhouser, Snetselaar, Van Horn, Rohan, Wassertheil-Smoller, et al.	Gen	Hypertension. 2021 Aug;78(2):447-455. doi: 10.1161/HYPERTENSIONAHA.121.17432. Epub 2021 Jun 28.	
<b>4070</b>	Mediation analysis of racial disparities in triple-negative breast cancer incidence among postmenopausal women	Luo, Kroenke, Hendryx, Shadyab, Liu, Chen, Wang, Thomas, Saquib, Qi, Cheng, Arthur, Wactawski-Wende	Gen	Breast Cancer Res Treat. 2021 Mar 7. doi: 10.1007/s10549-021-06158-y. Online ahead of print.	
<b>4071</b>	Associations between DNA methylation and BMI vary by metabolic health status: a potential link to disparate cardiovascular outcomes	Leet, Nguyen, Yao, Guo, Whitsel, Demerath, Rotter, Rich, Lange, Shadyab, Valencia, Conneely, Narayan	Gen	Clin Epigenetics. 2021 Dec 22;13(1):230. doi: 10.1186/s13148-021-01194-3.	AS311, AS315, AS534, BA23
<b>4075</b>	Metabolically healthy/unhealthy overweight/obesity associations with incident heart failure in postmenopausal women: The Women's Health Initiative	Hsu, Xie, Peterson, LaMonte, Garcia, Eaton, Going, Phillips, Manson, Anton-Culver, Wong	Gen	Circ Heart Fail. 2021 Mar 29:CIRCHEARTFAILURE120007297. doi: 10.1161/CIRCHEARTFAILURE.120.007297. Online ahead of print.	
<b>4079</b>	A randomized trial of calcium plus vitamin D supplementation and risk of ductal carcinoma in situ of the breast	Peila, Cauley, Chlebowski, Manson, Nassir, Saquib, Shadyab, Zhang, Wassertheil-Smoller, Xue, Rohan	CT	JNCI Cancer Spectr. 2021 Aug 31;5(4):pkab072. doi: 10.1093/jncics/pkab072. eCollection 2021 Aug.	
<b>4080</b>	Low-fat dietary modification and risk of ductal carcinoma in situ of the breast in the Women's Health Initiative Dietary Modification trial	Peila, Chlebowski, Manson, Crane, Lane, Saquib, Shadyab, Tabung, Barac, Zhang, Pan, Wassertheil-Smoller, Rohan	CT	Cancer Epidemiol Biomarkers Prev. 2021 Jun 29. doi: 10.1158/1055-9965.EPI-21-0404. Online ahead of print.	
<b>4095</b>	Correlates of physical activity among older breast cancer survivors: Findings from the Women's Health Initiative LILAC study	Krok-Schoen, Pennell, Saquib, Naughton, Zhang, Shadyab, Kroenke, Bea, Peterson, Crane, Wactawski-Wende, Paskett	OS	J Geriatr Oncol. 2021 Dec 7:S1879-4068(21)00258-7. doi: 10.1016/j.jgo.2021.11.012. Online ahead of print.	AS370

<b>4101</b>	Genetic discovery and risk characterization in Type 2 Diabetes across diverse populations	Polfus, Haiman, Kooperberg, Liu, North, Highland, Bien (Rosse), Phillips, Buyske, Darst	Gen	HGG Adv. 2021 Apr 8;2(2):100029. doi: 10.1016/j.xhgg.2021.100029. Epub 2021 Mar 9.	M6
<b>4106</b>	Evaluation of social isolation, loneliness, and cardiovascular disease among older women in the US	Golaszewski, LaCroix, Godino, Allison, Manson, McElfresh, Weitlauf, Bea, Garcia, Kroenke, Saquib, Cannell, Bellettiere	OS	JAMA Netw Open. 2022 Feb 1;5(2):e2146461. doi: 10.1001/jamanetworkopen.2021.46461	W64
<b>4130</b>	What moves you? Physical activity motivation in older women	Oppezzo, Wegner, Gross, Schwartz, Eckley, King, Mackey, Stefanick	Gen	J Health Psychol. 2021 May 18:13591053211014593. doi: 10.1177/13591053211014593. Online ahead of print.	AS380
<b>4146</b>	Association of epigenetic age acceleration with incident mild cognitive impairment and dementia among older women	Shadyab, McEvoy, Horvath, Whitsel, Rapp, Espeland, Resnick, Manson, Chen, Chen, Li, Hayden, Kusters, LaCroix, Bao	CT	J Gerontol A Biol Sci Med Sci. 2021 Aug 21:glab245. doi: 10.1093/gerona/glab245. Online ahead of print.	AS311, AS315, BA23
<b>4166</b>	The association of hypnotics with incident cardiovascular disease and mortality in older women with sleep disturbances	Haines, Shadyab, Saquib, Kamensky, Stone, Smoller	Gen	Sleep Med. 2021 Jul;83:304-310. doi: 10.1016/j.sleep.2021.04.032. Epub 2021 May 7.	
<b>4177</b>	Analgesic use and circulating estrogens, androgens, and their metabolites in the Women's Health Initiative Observational Study	Hurwitz, Shadyab, Tabung, Anderson, Saquib, Wallace, Wild, Pfeiffer, Xu, Trabert	OS	Cancer Prev Res (Phila). 2021 Dec 9:canprevres.CAPR-21-0264-A.2021. doi: 10.1158/1940-6207.CAPR-21-0264. Online ahead of print.	AS297
<b>4183</b>	Ambient air pollution and long-term trajectories of episodic memory decline among older women in the WHIMS-ECHO cohort	Wang, Chen, Younan, Petkus, Beavers, Espeland, Chui, Resnick, Gatz, Kaufman, Wellenius, Whitsel, Manson	Gen	Environ Health Perspect. 2021 Sep;129(9):97009. doi: 10.1289/EHP7668. Epub 2021 Sep 13.	AS252
<b>4212</b>	Biomarker-calibrated macronutrient intake and chronic disease risk among postmenopausal women	Prentice, Pettinger, Neuhaus, Raftery, Zheng, Gowda, Huang, Tinker, Howard, Manson, Wallace, Mossavar-Rahmani, Johnson, Lampe	Gen	J Nutr. 2021 Apr 20:nxab091. doi: 10.1093/jn/nxab091. Online ahead of print.	

<b>4228</b>	Association of sleep disturbance with Parkinson disease: evidence from the Women's Health Initiative	Baydoun, Naughton, Baydoun, Shadyab, Brunner, Chen, Espeland, Shumaker, Zonderman	Gen	Menopause. 2022 Jan 10. doi: 10.1097/GME.0000000000001918. Online ahead of print	
<b>4243</b>	The association of predicted resting energy expenditure with risk of breast cancer among postmenopausal women in the Women's Health Initiative cohort	Arthur, Mossavar-Rahmani, Prentice, Shadyab, Luo, Sattari, Xue, Kamensky, Qi, Anderson, Smoller, Neuhouser, Rohan	Gen	Cancer Prev Res (Phila). 2022 Jan 10;canprevres.0467.2021. doi: 10.1158/1940-6207.CAPR-21-0467. Online ahead of print.	AS218
<b>4247</b>	Nutritional epidemiology and the Women's Health Initiative: a review	Prentice, Howard, Van Horn, Neuhouser, Anderson, Tinker, Lampe, Raftery, Pettinger, Aragaki, Thomson, Mossavar-Rahmani, Stefanick, Cauley, Rossouw, Manson, et al.	Gen	Am J Clin Nutr. 2021 Apr 19:nqab091. doi: 10.1093/ajcn/nqab091. Online ahead of print.	AS498
<b>4257</b>	Ambient air pollution exposure and increasing depressive symptoms in older women: The mediating role of the prefrontal cortex and insula	Petkus, Chen, Younan, Wang, Beavers, Espeland, Gatz, Gruenewald, Kaufman, Chui, Manson, Resnick, Whitsel, Wellenius, Widaman	Gen	Sci Total Environ. 2022 Jun 1;823:153642. doi: 10.1016/j.scitotenv.2022.153642. Epub 2022 Feb 3.	AS252
<b>4258</b>	Smoking methylation marks for prediction of urothelial cancer risk	Yu, Tinker, Bhatti, Dugue, Jordahl, Shadyab, Brasky, Milne, Giles, Hopper, English	Gen	Cancer Epidemiol Biomarkers Prev. 2021 Sep 14:cebp.0313.2021. doi: 10.1158/1055-9965.EPI-21-0313. Online ahead of print.	AS311
<b>4305</b>	The relationship between sleep and weight change among women diagnosed with breast cancer participating in the Women's Health Initiative	Donzella, Lind, Skiba, Farland, Thomson, Werts, Bell, LeBlanc, Weitlauf, Hery, Naughton, Mortimer, Crane	Gen	Breast Cancer Res Treat. 2022 Jan 10. doi: 10.1007/s10549-021-06486-z. Online ahead of print	
<b>4309</b>	Four-day food record macronutrient intake, with and without biomarker calibration, and chronic disease risk in postmenopausal women	Prentice, Raftery, Neuhouser, Lampe, Zheng	Gen	Am J Epidemiol. 2022 Jan 28:kwac017. doi: 10.1093/aje/kwac017. Online ahead of print.	AS272
<b>4344</b>	Serum and macular carotenoids in relation to retinal vessel caliber fifteen years later, in the second carotenoids in age-related eye disease study	Lawler, Mares, Liu, Blodi, Domalpally, Wallace	Gen	Invest Ophthalmol Vis Sci. 2021 Jul 1;62(9):20. doi: 10.1167/iovs.62.9.20.	AS471

<b>4350</b>	Air quality improvement and cognitive decline in community-dwelling older women in the United States: A longitudinal cohort study	Younan, Chen, Wang, Petkus, Beavers, Espeland, Whitsel, Manson, Rapp, Chui	WHIMS	PLoS Med. 2022 Feb 3;19(2):e1003893. doi: 10.1371/journal.pmed.1003893. eCollection 2022 Feb.	AS252
<b>4373</b>	Taking action to advance the study of race and ethnicity: The Women's Health Initiative (WHI)	Garcia, Follis, Thomson, Breathett, Cene, Jimenez, Kooperberg, Masaki, Paskett, Pettinger, Aragaki, Dilworth-Anderson, Stefanick	CT	Womens Midlife Health. 2022 Jan 4;8(1):1. doi: 10.1186/s40695-021-00071-6.	
<b>4376</b>	Supplemental association of clonal hematopoiesis with incident heart failure	Yu, Roberts, Desai, Raffield, Whitsel, Manson, Kooperberg, Reiner, Eaton, Correa	Gen	J Am Coll Cardiol. 2021 Jul 6;78(1):42-52. doi: 10.1016/j.jacc.2021.04.085.	AS564
<b>4395</b>	Associations between changes in loneliness and social connections, and mental health during the COVID-19 Pandemic: The Women's Health Initiative	Goveas, Ray, Woods, Manson, Kroenke, Michael, Shadyab, Meliker, Chen, Johnson, Mouton, Saquib, Weitlauf, Wactawski-Wende, Naughton, Shumaker, et al.	OS	J Gerontol A Biol Sci Med Sci. 2021 Dec 16;glab371. doi: 10.1093/gerona/371. Online ahead of print.	
<b>4419</b>	Cohort profile: The Women's Health Accelerometry Collaboration	Evenson, Cuthbertson, Lee, LaCroix, Bellettiere, Howard, Di, Schumacher, Parada Jr., Dushkes	Gen	BMJ Open. 2021 Nov 29;11(11):e052038. doi: 10.1136/bmjopen-2021-052038.	AS286
<b>4471</b>	Associations of daily steps and step intensity with incident diabetes in a prospective cohort study of older women: The OPACH study	Garduno, Bellettiere, LaCroix, Dunstan, LaMonte, Evenson, Di, Schumacher, Wang	Gen	Diabetes Care. 2022 Feb 1;45(2):339-347. doi: 10.2337/dc21-1202.	AS286
<b>4510</b>	Association of tea-drinking habits with the risk of non-hodgkin lymphoma -- A prospective cohort study among US postmenopausal women	Wang, Arthur, Shadyab, Saquib, Johnson, Snetselaar, Mu, Chen, Luo	OS	Br J Nutr. 2022 Feb 10:1-26. doi: 10.1017/S0007114522000447. Online ahead of print.	
<b>4519</b>	Breast cancer prevention: Time for change	Chlebowski, Aragaki, Pan	Unk	JCO Oncol Pract. 2021 Jul 28:OP2100343. doi: 10.1200/OP.21.00343. Online ahead of print.	