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Breast Cancer Risk Assessed by Anthropometry in the NHANES I Epidemiological Follow-up Study

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ABSTRACT

We examined the relation of anthropometric variables and breast cancer risk in the Epidemiological Follow-up Study of the first National Health and Nutrition Examination Survey, a cohort study based on a sample of the United States population. A total of 7149 women, 25 to 74 years of age, who were examined during the period 1971 through 1975 were included in the analysis. Stature, sitting height, elbow width, weight, and subscapular and triceps skinfold measurements were collected during the baseline interview and examination. Breast cancer cases ($N = 121$) were identified through hospital records or death certificates. The median follow-up period for this cohort was 10 years. Women who developed breast cancer were taller and had greater frame size (elbow width) than women who remained free of breast cancer during the follow-up period. After controlling for the effect of potential confounders, the relative risk of breast cancer was 1.9 (95% confidence interval, 1.1 to 3.1) and 2.2 (95% confidence interval, 1.3 to 3.8) among women in the fourth quartiles of stature and elbow width, respectively. Body size defined by weight, relative weight, or skinfold measurements was not associated with increased risk of breast cancer. The positive association of stature and frame size to risk of breast cancer suggests a potential role of early nutrition in cancer etiology.

INTRODUCTION

Animal and human studies suggest a plausible role for dietary factors in the etiology of breast cancer (1, 2). In epidemiological studies, the effect of diet is difficult to evaluate because of methodological problems associated with diet assessment (3, 4). Anthropometric indices such as stature (standing height) and weight can be measured accurately and partially reflect dietary practices. Additionally, specific anthropometric variables may reflect distinct exposure periods. Adult stature, for example, is determined during childhood and adolescence while relative weight (weight adjusted for height) may be more pertinent to exposures during adult life.

Body weight is the anthropometric variable most frequently reported in epidemiological studies of breast cancer, and several investigators observed a direct relationship between weight and risk of the disease (5–9). In some investigations, body weight was corrected for stature. The resulting relative weight was associated with increased risk of disease in some (6, 7, 10) but not all studies (11, 12).

Breast cancer risk may be associated with body size as defined by skeletal dimensions rather than weight. Increased stature was associated with increased risk in some (7, 8, 10, 13), but not all studies (5, 11, 12, 14). Brinkley *et al.* (15) reported that women with breast cancer had larger frame size (*i.e.*, biiliac width and biacromial-biiliac ratio) compared to women without the disease.

Few studies of breast cancer have included anthropometric measurements other than weight and stature. Elbow width, for example, provides an index of frame size (16) but has not been studied as a risk factor for breast cancer. Relative sitting height (sitting height relative to total stature) is greater in women who have early menarche (17), a breast cancer risk factor in most studies (18). To our knowledge, there is only one study in which relative sitting height was examined as a breast cancer risk factor. Brinkley *et al.* (15) reported that relative sitting height was reduced in breast cancer patients as compared to controls. Although relative weight is frequently used as an index of obesity (19, 20), skinfold measurements provide an alternative estimate of adiposity (21). In a study by Kolonel *et al.* (22), breast cancer risk was not associated with adiposity as assessed by skinfold measurements.

Recent data from the NCHS[3] provided an opportunity to examine prospectively in a large cohort of American women the association between breast cancer incidence and a variety of anthropometric variables described above.

MATERIALS AND METHODS

Study Design. The NHEFS is a prospective cohort study generated from the original National Health and Nutrition Examination Survey (23). NHANES I was conducted by NCHS from 1971 to 1975 in a sample of the civilian noninstitutionalized population of the United States (24, 25). Individuals estimated to be at increased risk of malnutrition (children, women of childbearing age, the elderly, and the poor) were oversampled to improve estimates of nutritional status for these groups. NHANES I included a sociodemographic and medical history, a standardized medical examination, dietary questionnaire, hematological and biochemical tests, and anthropometry. Subjects were traced and interviewed again for the NHEFS between 1982 and 1984. A total of 14,407 adults 25 to 74 years of age who were examined during the period 1971 through 1975 were eligible for inclusion in the NHEFS. Of the 8596 women in this cohort, 83% were white and 16% were black.

Analytical Cohort. A total of 131 breast cancer cases were identified through hospital records or death certificates or both. For the 111 cases identified through hospital records, the date of the first admission for which breast cancer was listed as the discharge diagnosis was considered the incidence date. The date of death was regarded as the incidence date in the 20 cases for which only death certificate data were available.

Thirteen women with a history of breast cancer on the first hospital record represented prevalent cases of breast cancer and were excluded from the analysis. We also removed 87 women of races other than black or white because women of all other races combined comprised only 1% of the cohort. We did not include 281 women who were pregnant or lactating within the 3 months prior to the initial interview because several of their anthropometry measures were unique to a temporary physiological state. We eliminated two women with missing values for stature and weight. A few women were represented in more than one of these exclusion categories and the potential cohort for prospective study included 8220 women. From that group, 609 women could not be traced and 462 women were traced as living but did not have a follow-up interview. The response rate then was 87%. After all exclusions, the final analytical cohort consisted of 7149 women, including 121 women with breast cancer. The median follow-up period for the cohort was 10 years.

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[3] The abbreviations used are: NCHS, National Center for Health Statistics; NHEFS, NHANES I Epidemiological Follow-up Study; RR, relative risk.

Data Collection. This study was based on baseline measurements of stature, sitting height, elbow width, weight, and subscapular and triceps skinfold thickness. Measurements were made by trained technicians using standardized techniques (16, 26, 27). Weight was measured to the nearest quarter pound. Stature, sitting height, and elbow width were recorded to the nearest tenth of a centimeter. Skinfolds were measured to the nearest half of a millimeter. We selected the relative weight index (weight/height$^{1.5}$) recommended by NCHS for women of this cohort (28).

Information about suggested breast cancer risk factors was obtained at baseline (*i.e.*, age, race, education, income, alcohol use, parity, age at menarche, menopausal status) or at the follow-up interview (*i.e.*, age at first birth and family history of breast cancer). Information regarding benign breast disease was not available.

Statistical Analysis. Group mean values of anthropometric variables, adjusted for age, were computed in general linear regression. Since some of the anthropometric variables were right skewed, analyses were repeated using log transformed values. Similar results were obtained with transformed and untransformed values. Therefore, results of the untransformed data only are presented.

A variety of known or suspected breast cancer risk factors were evaluated for potential confounding effects (Appendix 1). In order for a risk factor to confound an association it must be related both to the disease and the anthropometric variable of interest. We identified as potential confounders the following: age, age at first birth, baseline menopausal status, education and alcohol use. Family history of breast cancer was associated with increased risk of the disease but was not associated with any of the anthropometric variables. Women who experienced early menarche (≤age 12) were shorter, heavier, more obese (assessed by relative weight and skinfold measurements), and had greater relative sitting height than women who had menarche later. Early menarche, however, was not clearly associated with increased risk of breast cancer in this cohort of women. Race, parity, and income were associated with several anthropometric variables, but these variables were not associated with breast cancer risk in this cohort (29).

Anthropometric variables were divided into quartiles based on their distribution in the entire analytical cohort and RR[4] were calculated. We used Cox's proportional hazards regression technique to examine the independent effects of each anthropometric variable with simultaneous adjustment for age (modeled as a continuous variable) and potential confounders (30). Quartiles of each anthropometric variable were converted to a continuous variable with four values, and the latter was included in regression analysis to assess trend (31). The analyses were performed with the PROC PHGLM procedure available in the SAS statistical package (32).

RESULTS

The age-adjusted mean values of the anthropometric measures of cases and noncases are shown in Table 1. Women who developed breast cancer were taller and had greater elbow width than women who remained free of cancer during the follow-up period. Differences between groups were not statistically significant for comparisons of relative sitting height, weight, relative weight, or skinfold thickness at either a central or a peripheral site.

Relative risks of breast cancer across quartiles of anthropometry variables are shown in Table 2. Risk of breast cancer again was associated only with stature and elbow width. Increased stature was associated with several breast cancer risk factors (*i.e.*, late age at first birth, premenopausal status, greater than high school education, and alcohol use). Controlling for the effect of potential confounders did not remove the association between stature and the risk of breast cancer. Women in the top category of stature had about a 1.9-fold risk of the disease as compared to the shortest women. The test for trend across quartiles of stature was statistically significant (P = 0.03). Increased elbow width was associated with several factors protective against breast cancer (*i.e.*, early age at first birth, postmenopausal status, high school education or less, and nondrinking). Adjustment for confounding variables increased the risk estimates for each quartile of elbow width, and the test for trend was statistically significant (P = 0.01). Women in the highest quartile of elbow width had about a 2.2-fold risk of breast cancer as compared to women in the lowest quartile.

Table 1 *Age-adjusted mean values of anthropometry variables of women without breast cancer (noncase) versus women who developed the disease (case)*

	Noncase (N = 7028)[a]	Case (N = 121)	P
Stature (cm)	161.2	162.3	0.04
Relative sitting ht[b]	0.528	0.527	0.48
Elbow width (cm)	6.3	6.4	0.03
Wt (kg)	66.6	67.4	0.61
Relative wt[c]	32.6	32.6	0.97
Skinfold thickness (mm)			
Subscapular	20.0	20.1	0.92
Triceps	24.0	24.6	0.46

[a] Sample size varied slightly among analyses due to missing values.
[b] Sitting height/stature.
[c] Weight (kg)/stature (meter)$^{1.5}$.

Relative sitting height was not associated with breast cancer risk. Adjustment for potential confounders did not substantially change the risk estimates associated with relative sitting height.

None of the weight or obesity indices was related in consistent fashion to risk of the disease. Similar to elbow width, increased weight, relative weight, and skinfold thickness were associated with factors protective against breast cancer. Adjustment for potential confounders increased the fourth quartile risk estimates about 15 to 20%, but the adjusted risk estimates were not significantly different from unity. There was no evidence of dose-response before or after controlling for potential confounders. Women in the lowest quartile of triceps skinfold thickness were at decreased risk of breast cancer as compared to women in the other three quartiles. However, none of the risk estimates associated with triceps skinfold was significantly different from unity and there was no evidence of trend across quartiles. When subscapular skinfold thickness was used as the measure of adiposity, there was no evidence of association between fatness and risk of breast cancer.

Additional Analyses. We assessed the independent effects of stature and elbow width by including both variables simultaneously in the proportional hazards model[5] (data not shown). The risk estimates for stature and elbow width were reduced when the two variables were assessed concurrently. When we controlled for potential confounders, the risk estimate for the fourth quartile of stature (RR = 1.6) included unity and the fourth quartile estimate for elbow width (RR = 2.0) was significantly different from unity. The test for trend across quartiles of stature was not statistically significant (P = 0.15) and the test for trend across quartiles of elbow width was only marginally significant (P = 0.05).

In another analysis (Table 3), we evaluated the combined effect of largest frame size and tallest stature. Women in the fourth quartile of stature were classified as tall, and individuals in the other three quartiles were described as "short." Similarly,

[4] Relative risk is a measure of association used for evaluating effects of an exposure(s) variable. The relative risk is a measure of the risk of disease among those having a particular exposure compared to those not exposed. A relative risk of 1.0 would indicate no difference in risk between those exposed and those unexposed. A relative risk of 2.0 would indicate that exposed individuals had a risk of the disease twice that of those not exposed. For anthropometric variables with several categories of exposure (*i.e.*, quartiles) risk was compared to a baseline of the first exposure level.

[5] Elbow width and stature were significantly correlated in this data set (Spearman correlation coefficient, 0.2).

Table 2 *Relative risk of breast cancer across quartiles of anthropometry variables*

Variable	Quartile 1	2	3	4	Trend test (*P*)
Stature (cm)					
Mean	153	159	163	169	
Cases	27	31	27	36	
Total	1803	1758	1808	1780	
RR[a]	1.0	1.4	1.3	2.0	0.01
RR*	1.0	1.4	1.3	1.9	0.03
CI		(0.8–2.4)	(0.7–2.2)	(1.1–3.2)	
Elbow width (cm)					
Mean	5.8	6.1	6.4	7.0	
Cases	19	23	35	44	
Total	1890	1360	2304	1594	
RR	1.00	1.5	1.2	2.0	0.03
RR*	1.00	1.6	1.3	2.2	0.01
CI		(0.9–3.0)	(0.8–2.3)	(1.3–3.8)	
Relative sitting ht					
Mean	0.508	0.524	0.533	0.546	
Cases	40	32	22	27	
Total	1785	1787	1786	1785	
RR	1.0	0.9	0.7	0.9	0.43
RR*	1.0	0.8	0.6	0.9	0.38
CI		(0.5–1.3)	(0.4–1.1)	(0.5–1.4)	
Wt (kg)					
Mean	51	60	68	87	
Cases	30	26	29	36	
Total	1796	1789	1781	1783	
RR	1.0	0.8	0.8	1.0	0.86
RR*	1.0	0.8	0.9	1.2	0.45
CI		(0.5–1.4)	(0.5–1.4)	(0.7–1.9)	
Relative wt (wt/stature$^{1.5}$)					
Mean	25	29	33	42	
Cases	27	32	24	38	
Total	1787	1788	1787	1787	
RR	1.0	1.0	0.7	1.0	0.89
RR*	1.0	1.1	0.7	1.3	0.54
CI		(0.6–1.8)	(0.4–1.3)	(0.8–2.1)	
Skinfold (mm)					
Triceps					
Mean	14	21	26	35	
Cases	20	36	33	32	
Total	1692	1882	1746	1823	
RR	1.0	1.5	1.4	1.4	0.45
RR*	1.0	1.6	1.4	1.6	0.19
CI		(0.9–2.7)	(0.8–2.5)	(0.9–2.8)	
Subscapular					
Mean	8.2	14.6	22.4	34.6	
Cases	30	31	26	34	
Total	1755	1890	1658	1829	
RR	1.0	0.8	0.7	0.9	0.71
RR*	1.0	0.9	0.8	1.1	0.79
CI		(0.5–1.4)	(0.5–1.4)	(0.7–1.8)	

[a] RR includes only age in the proportional hazards model; RR* includes age, age at first birth (<20, ≥20, nulliparous), baseline menopausal status (pre, post), education (≤high school, >high school), and alcohol use (no, yes); CI, confidence interval.

the fourth quartile of elbow width was used to identify wide and "narrow" frame size. Relative risk of breast cancer increased among women described either as tall but narrow (RR = 1.7) or wide framed but short (RR = 1.8). The relative risk estimate for the combined effect of largest frame and tallest stature was 2.0 (95% confidence interval, 1.1 to 3.6). The test for interaction between stature and frame size was not statistically significant ($P = 0.27$).

In some studies, relative weight has been reported to be directly associated with breast cancer risk in women diagnosed

Table 3 *Relative risk of breast cancer by cross-classification of stature and elbow width*

Category[a] Stature	Frame	Case	Total	RR[b] (95% CI)	RR* (95% CI)
Short	Narrow	55	4312	1.0	1.0
Short	Wide	30	1057	1.7 (1.1–2.7)	1.8 (1.2–2.9)
Tall	Narrow	22	1242	1.9 (1.1–3.1)	1.7 (1.0–2.8)
Tall	Wide	14	537	2.0 (1.1–3.6)	2.0 (1.1–3.6)

[a] Individuals were classified as short or tall, narrow or wide based on the fourth quartile cuts of stature and elbow width, respectively.
[b] RR includes age in the proportional hazards model; RR* includes age, age at first birth (<20, ≥20, nulliparous), baseline menopausal statue (pre, post), education (≤high school, >high school), and alcohol use (no, yes); CI, confidence interval.

postmenopausally and inversely related to risk in women with premenopausal disease (8, 14, 33, 34). We were not able to define with certainty the menopausal status at diagnosis except in women who were postmenopausal at baseline ($N = 78$). Risk estimates for relative weight and thickness did not increase when the analysis was restricted to that subset of the analytic cohort (data not shown).

Because of the possibility of joint confounding, we performed additional analyses which included family history, age at menarche, parity, income, and race as potential confounders. The risk estimates generated from these analyses were not different from those presented in Tables 2 and 3.

DISCUSSION

In this cohort of women, stature was associated with risk of breast cancer. As a group, women who developed the disease were about 1 cm taller than women who were free of cancer during the follow-up period. The small but statistically significant difference of mean values may appear trivial, but we observed an increasing trend across quartiles of exposure which more convincingly suggested an association between stature and risk of disease.

Our observation of an association between stature and breast cancer risk was unlikely to be due to confounding or other sources of bias. We considered the possibility of selection bias, but it is unlikely that elimination criteria were associated with stature such that shorter women with breast cancer were preferentially removed from the analysis. Our results were not due to measurement bias given that the anthropometry determinations were made prospectively. In a large retrospective cohort study of 900,000 women in Norway, Waaler and Lund (35) observed that women who developed breast cancer were about 0.5 cm taller than women without the disease. They concluded that stature was not a risk factor for breast cancer because the difference in height was probably explained by social class, a recognized breast cancer risk factor. In our study, stature was associated with socioeconomic status, but adjustment for socioeconomic status (*i.e.*, education and income) and other factors did not remove the association between stature and risk of the disease. When stature and elbow width were assessed concurrently, the effect of each variable was less pronounced. The two variables may reflect the same phenomenon, and controlling for one then could diminish the relative effect of the other.

Elbow width provided another index of skeletal size. As with stature, the difference in mean values of cases and noncases was small but statistically significant. When the women were classified into quartiles of elbow width, we again observed a dose-response relation. The effect of elbow width was not explained by confounding by other risk factors. In fact, large frame size was associated with a number of risk categories protective against breast cancer and adjustment for these factors elevated the risk estimates for elbow width. The effect of elbow width was not explained by its correlation with stature. When both variables were included simultaneously in the proportional hazards analysis, the effect of elbow width was only slightly reduced. When stature and frame size were converted to dichotomous variables, both were associated with increased risk of breast cancer, but the combined effect of the two factors did not increase risk further. Perhaps the two anthropometric variables describe the same underlying process which can be identified by either factor. Our results are in general agreement with those of Brinkley *et al.* (15) who identified skeletal size as a potential breast cancer risk factor. More recently, Kolonel *et al.* (22) reported that both stature and shoe size were associated with an increased risk of breast cancer among Japanese women. Shoe size may provide another index of frame size.

Early menarche is generally recognized as a breast cancer risk factor (18). We attempted to identify a specific anthropometric variable (*i.e.*, relative sitting height) which would illustrate the association. Women who reported early menarche had greater relative sitting height, consistent with the observations of Eveleth and Tanner (17), but this body proportion was not associated with risk of disease. Perhaps relative sitting height did not serve as a proxy for age at menarche since it is but one of many variables related to the onset of sexual maturity.

A relatively extensive literature indicates that body weight is a breast cancer risk factor (5–9). Those findings are in opposition to results of the NHEFS study reported here. The prospective nature of the NHEFS minimized the possibility of selection bias and measurement bias was unlikely. Since increased weight was associated with categories of risk factors protective against breast cancer, it was possible that an association could have been masked. Adjustment for potential confounding variables did not, however, significantly change the risk estimates. Body weight was assessed approximately 10 years prior to the diagnosis of breast cancer. It is possible that excess weight is most relevant to late stage tumor promotion, and we did not assess weight near the end of the follow-up period.

Body weight is highly correlated with stature and must be adjusted for the latter to have relevance as an index of obesity. In contrast to other studies (6–7, 10), relative weight (weight adjusted for height) was not associated with risk of breast cancer in the NHEFS cohort. Divergent results regarding relative weight and risk of breast cancer are not remarkable given that this anthropometry variable serves as a composite measure of several factors. Relative weight reflects both fat and lean compartments of the body and is related to body build and body proportions (36, 37). In studies in which relative weight was associated with breast cancer, perhaps the associations were due to frame size, body proportions, and/or amount of lean tissue rather than adiposity. It is also possible that relative weight describes different components of body size in different population groups.

The majority of adipose tissue is deposited s.c. and skinfold measurements provide a more direct measure of adiposity than weight or relative weight. Kolonel *et al.* (22) measured triceps skinfold thickness of postmenopausal women in Hawaii. In that study, skinfold thickness was not associated with breast cancer risk and the investigators expressed concern regarding measurement error associated with skinfold determinations. Among women of the NHEFS cohort, skinfold thickness did not emerge as a breast cancer risk factor. Skinfold determinations of very obese women are subject to error, and it is possible that adiposity was underestimated in obese women. However, it is unlikely that these women were misclassified into lower quartiles of skinfold thickness. If adiposity is in fact a risk factor for breast cancer, either we failed to identify the appropriate index and/or did not identify the relevant exposure period.

In summary, body size defined by either stature or frame size (elbow width) was associated with breast cancer risk. Stature and frame size *per se* are not causal factors. They serve as surrogates of other exposures. Undoubtedly, nutrition acts as one important determinant of skeletal growth, but we cannot define the nature of dietary exposures which influenced stature or frame size. Given that skeletal growth is nearly complete before adulthood, adolescence and even childhood may be critical periods related to future risk of breast cancer. Body size defined by weight and adiposity indices were not associated with breast cancer risk in this cohort of women. If weight and/or body composition are related to breast cancer, perhaps critical exposure periods also must be identified.

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APPENDIX

Mean values of anthropometric variables in relation to known or suspected breast cancer risk factors

Variables were age adjusted by general linear regression. Several reproductive and socioeconomic status variables were race dependent. For ease of interpretation, risk factors were adjusted both for age and race.

		Anthropometry variable					Skinfold (mm)	
Risk factor	N	Stature (cm)	Elbow width (cm)	Relative sitting ht	Wt (kg)	Relative wt	Subscapular	Triceps
Age (yr)								
24–34	1670	162.9[a]	6.2[a]	0.531[a]	63.5[a]	30.5[a]	17.6[a]	22.2[a]
35–44	1689	163.0	6.3	0.530	67.4	32.4	20.0	24.3
45–54	1082	161.7	6.4	0.531	68.3	33.2	21.4	25.6
55–65	879	159.7	6.5	0.528	68.9	34.1	22.2	25.9
≥65	1831	158.3	6.5	0.522	66.7	33.5	20.1	23.7
Race								
Black	1117	161.4	6.5[a]	0.516[a]	72.7[a]	35.5[a]	24.9[a]	25.0[a]
White	6034	161.2	6.3	0.530	65.5	32.0	19.0	23.9
Family history								
No	6499	161.2	6.3	0.528	66.7	32.6	20.0	24.0
Yes	408	161.5	6.3	0.528	66.2	32.2	19.5	24.0
Age (yr) at menarche								
≤12	2675	160.5[a]	6.4[a]	0.530[a]	67.9[a]	33.4[a]	21.2[a]	24.8[a]
≥13	4348	161.6	6.3	0.527	65.9	32.7	19.2	23.5

Appendix—continued

		Anthropometry variable						
							Skinfold (mm)	
Risk factor	N	Stature (cm)	Elbow width (cm)	Relative sitting ht	Wt (kg)	Relative wt	Subscapular	Triceps
Menopausal status[b]								
Pre	3447	161.3	6.3	0.527[a]	66.4	32.4	19.6	23.6[a]
Post	3694	161.0	6.3	0.529	66.9	32.7	20.3	24.4
Age (yr) first birth								
≤19	1962	160.6[a]	6.4[a]	0.529	67.8[a]	33.3[a]	20.9[a]	24.7[a]
20–24	2698	161.3	6.3	0.528	66.5	32.4	19.8	24.2
≥25	1244	161.5	6.3	0.528	65.4	31.9	19.4	23.9
Nulliparous	865	162.0	6.3	0.527	66.4	32.2	19.0	22.8
Parity								
0	1186	161.9[a]	6.3[a]	0.527	66.1[a]	32.1[a]	18.9[a]	22.6[a]
1	1027	161.4	6.3	0.527	64.4	31.4	18.6	22.9
2–3	2862	161.1	6.3	0.528	65.9	32.2	19.7	24.1
≥4	2058	160.8	6.4	0.528	69.1	33.9	21.7	25.2
Education (yr)								
<12	2998	160.3[a]	6.4[a]	0.528	68.3[a]	33.6[a]	21.0[a]	24.5[a]
12	2649	161.5	6.3	0.528	66.1	32.2	19.8	24.1
≥13	1467	162.5	6.3	0.527	64.4	31.1	17.9	23.1
Income (thousands)								
<6	2448	160.4[a]	6.4[a]	0.527[a]	67.7[a]	33.3[a]	20.6[a]	23.9
6–9	1691	161.2	6.4	0.529	67.6	33.0	20.3	24.5
10–19	2138	161.7	6.3	0.529	65.8	32.0	19.5	24.2
≥20	614	162.4	6.3	0.529	64.1	31.0	17.9	23.6
Alcohol use								
No	3612	160.8[a]	6.4[a]	0.528	68.0[a]	33.3[a]	21.0[a]	24.9[a]
Yes	3521	161.6	6.3	0.528	65.3	31.8	18.9	23.1

[a] Mean values significantly different ($P < 0.01$).
[b] Menopausal status at baseline.

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