# Association of urinary phytoestrogens with hormone-related cancers and cancer biomarkers: NHANES 1999–2010

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#### Abstract

Phytoestrogens may have potential effects on hormone-related cancers (HRC) and cancer biomarkers, but the findings have been inconsistent so far. Participants from the National Health and Nutrition Examination Survey 1999–2010 with information on the levels of urinary phytoestrogens, serum cancer biomarkers and cancer history were included. Sampling-weighted logistic regression models examined the association between urinary phytoestrogens concentrations (creatinine-standardised and log-transformed) and HRC, followed by stratified analyses by race/ethnic-ity, age and menopausal status for different gender. Correlation analyses between phytoestrogens and cancer biomarkers were performed. Of the total 8844 participants, there were 373 with HRC. We observed total isoflavone and enterodiol excretion were positively associated with HRC, especially in non-Hispanic white female subpopulations ( $P_{trend} < 0.05$ ). Similar association also existed in the total isoflavones and enterodiol levels with breast cancer. Whereas the highest concentration of total isoflavones was significantly linked to a reduced prevalence of HRC (OR = 0.40, 95 % CI: 0.19, 0.84) in white males and of prostate cancer (OR = 0.40, 95 % CI: 0.18, 0.86). Among twenty-four participants with HRC, urinary equol concentration was positively correlated with CA15.3. Also, an inverse correlation of total prostate-specific antigens (PSA) and positive correlation of total isoflavones and enterodiol were positively associated with HRC. Urinary certain phytoestrogen excretion may affect serum cancer biomarker levels in cancer patients. But further prospective studies are needed to provide stronger evidence.

#### Key words: Phytoestrogens: Hormone-related cancers: Cancer biomarkers: Urinary biomarkers: NHANES

Hormone-related cancers (HRC) are greatly influenced by hormone levels and generally respond to hormone regulation, which plays an indispensable role in tumour growth<sup>(1)</sup>. Six cancer types, including breast, ovarian, endometrial, thyroid, prostate and testicular cancer, are usually referred to as HRC since they share the same carcinogenic mechanism<sup>(2)</sup>. Worldwide, there were estimated 5 million newly diagnosed cases of HRC in 2020, accounting for more than a quarter of new cancer cases<sup>(3)</sup>. As the most frequently diagnosed cancer in the great majority of countries, HRC have become the leading cause of cancer death in over 100 countries<sup>(3)</sup>.

Considering the side effects of traditional hormone therapy for HRC, the use of phytochemicals with chemoprophylaxis is of great concern<sup>(4)</sup>. Phytoestrogens (mainly isoflavones and lignans), abundant in several edible and/or medicinal plants belonging mostly to the *Leguminosae* family, seem to have hormone-like and anti-hormone effects due to their structural similarity to the natural estrogen estradiol (e.g.  $17\beta$ -estradiol) as well as other steroid hormones and steroid hormone antagonists<sup>(5)</sup> and are known to modulate multiple molecular targets in cancer cells<sup>(6,7)</sup>. Several existing meta-analyses summed up the evidence for the relationship between dietary soy isoflavones and lignans intake and risk of the aforementioned specific HRC among observational studies<sup>(8–12)</sup>. Specifically, the present results supported an association of isoflavone intake with a reduced risk of breast cancer in Asians but not in Westerners



Abbreviations: HRC, hormone-related cancer; NHANES, National Health and Nutrition Examination Survey; O-DMA, O-desmethylangolensin; PSA, prostrate-specific antigen.

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as well as a more likely link of lignan intake with breast cancer in post-menopausal women but not with prostate cancer<sup>(8,11,12)</sup>. Soy foods are regularly consumed as part of a normal diet in Asian countries, whereas soy protein is used as a functional ingredient (e.g. to promote water retention or as a bleaching agent) in many Western foods<sup>(13)</sup>. Higher intake (over 35-63 mg/d) of isoflavones in Asians tends to be more than ten times of the higher intake (over 0.03-4 mg/d) in Westerners<sup>(14)</sup>, leading to the extreme difficulty in accurately quantifying isoflavone intake when exposure is so low particularly in the West. Meanwhile, some metabolites from isoflavones, such as O-desmethylangolensin (O-DMA) and equol, vary more markedly in urine excretion and exert more biological activity than the parent compound of soy isoflavones<sup>(15)</sup>. Of note, Americans have been found to be less capable of producing equal from isoflavone than Asians<sup>(16)</sup>. However, most studies assessed phytoestrogens intake based on dietary questionnaires, and it is far from sufficient to assess the phytoestrogens intake given the metabolic and absorption levels of these compounds. Urinary phytoestrogens excretion is also correlated to their dietary intake estimated by the  $FFQ^{(17-19)}$ . Therefore, the excretion of phytoestrogens in urine is considered a better measure of bioavailable phytoestrogens than an assessment of dietary soy intake<sup>(17)</sup>. To our knowledge, studies assessing the associations of urinary phytoestrogens with the risk of breast and prostate cancer have yielded inconsistent findings<sup>(20-28)</sup>. However, there are still no studies that systematically and comprehensively investigate the relationship between urinary phytoestrogens (total isoflavones and total lignans) and HRC.

Studies manifested the role of phytoestrogens on cancer biomarkers were ambiguous. Although individual randomised controlled trials might advocate for the efficacy of phytoestrogens (diets rich in soy and linseed or soy/isoflavones supplements) in reducing prostate-specific antigens (PSA) concentrations, a meta-analysis of randomised controlled trials indicated that the consumption of soy products or isoflavones did not affect the PSA concentrations among men with prostate cancer diagnosis or a clinically identified risk of prostate cancer<sup>(29)</sup>. Further, only a few case reports showed the therapy with over-the-counter phytoestrogens or fermented soy influenced subsequent levels of cancer biomarkers<sup>(30,31)</sup>.

Therefore, we aimed to collect cross-sectional data from National Health and Nutrition Examination Survey (NHANES) to estimate the association between urinary phytoestrogens and HRC and concentrations of serum cancer biomarkers among Americans.

#### Materials and methods

#### Study design and data source

We selected adult participants ( $\geq$  20 years) from the NHANES, the design and content of which can be obtained from https:// wwwn.cdc.gov/nchs/nhanes/default.aspx<sup>(32,33)</sup>. Each survey participant completed a household interview followed by a standardised physical examination in a mobile examination centre. The NHANES has been approved by the NCHS Ethics Review Board and written informed consent has been obtained from all participants.

In this secondary analysis, data and information on phytoestrogens and history of cancer were both available during 1999– 2010 in continuous NHANES<sup>(34)</sup>. From 1999 to 2010, 62 160 participants completed the household interview, of which 59 367 participated in the mobile examination centre. We examined the integrity of variables interested and included 9755 participants aged  $\geq$  20 years with accessible urinary phytoestrogens and creatinine and history of cancer. After the further exclusion of participants who were pregnant (*n* 411) and who had cancers other than HRC (*n* 500), 8844 participants were included finally as investigative samples.

#### Ascertainment of hormone-related cancers

Participants were questioned, 'have you ever been told by a doctor or other health professional that you had cancer or a malignancy of any kind?' in the household interview. If they answered 'yes', they would be asked to offer the type of cancer. Up to three types of cancer were registered. When they offer more than 3, enter 'more than 3 kinds (code 66)' as the fourth response. HRC were defined as cancers of breast (code 14), ovary (code 28), prostate (code 30), testis (code 36), thyroid (code 37) and corpus uteri (code 38) according to any of the three responses. If they had more than one of these cancers, they were regarded as subjects with multiple HRC.

#### Measurement of urinary phytoestrogen and creatinine

A minimum of 5 ml of urine specimens were collected from subjects in standard urine collection cups on the morning after a recommended fast at the mobile examination centre, transferred to specimen vials within 4 h of collection and stored frozen in borosilicate glass or polypropylene vials or specimen cups. Tefloncoated stoppers were used to plug vials, and the vials were sealed with an aluminum seal. The specimens were then labelled and frozen immediately to -20°C and stored on dry ice for shipping. Subsequently, spot urine specimens were processed, stored and shipped to the Division of Environmental Health Laboratory Sciences, National Center for Environmental Health, Centers for Disease Control and Prevention for analysis. The test principle utilises HPLC-atmospheric pressure chemical ionisation-tandem MS (HPLC-APCI-MS/MS) in NHANES 1999-2002<sup>(35)</sup>, HPLC-electrospry ionisation-tandem MS (HPLC-ESI-MS/MS) in NHANES 2003-2004<sup>(36)</sup> and HPLC-atmospheric pressure photoionisation-tandem MS (HPLC-APPI-MS/MS) in NHANES 2005-2010<sup>(37)</sup> for the quantitative detection of six phytoestrogens, including four isoflavones (genistein, daidzein, equol and O-DMA), as well as two lignans (enterodiol and enterolactone). The comparison of three laboratory methods for testing urinary phytoestrogens was shown in Supplementary Table S1. The detection limits were constant for all of the analytes in the data set (0.2 ng/ml for genistein, 0.4 ng/ml for daidzein, 0.06 ng/ ml for equol, 0.2 ng/ml for O-DMA, 0.04 ng/ml for enterodiol and 0.1 ng/ml for enterolactone). Cross-over studies comparing samples analysed by different methods demonstrated highcorrelation coefficients (r > 0.99) and regression slopes approximately equal to 1 and intercepts close to 0.

There was a change in the instrumentation and method for urine creatinine from 2006 to 2007. Prior to 2007, the urine creatinine was performed on the Beckman CX3 using a Jaffe reaction, while from 2007 forward, the urine creatinine was performed on the Roche ModP using an enzymatic (creatinase) method<sup>(38)</sup>. Therefore, urine creatinine data from 2007 to 2006 need to be adjusted for comparison with data from 2007 forward. The following equations are recommended:

For urine creatinine < 75:

Adjusted creatinine = 
$$\left[ \left( 1 \cdot 02 \times \sqrt{\text{unadjusted creatinine}} \right) - 0 \cdot 36 \right]^2$$
 (1)

For urine creatinine 75 to < 250:

Adjusted creatinne = 
$$\left[ \left( 1 \cdot 05 \times \sqrt{unadjusted creatinine} \right) - 0 \cdot 74 \right]^2$$
 (2)

For urine creatinine  $\geq 250$ :

Adjusted creatinine = 
$$\left[\left(1 \cdot 01 \times \sqrt{unadjusted creatinine}\right) - 0 \cdot 10\right]^2$$
 (3)

#### Measurement of cancer biomarkers

Considering that cancer biomarker levels are closely related to the onset and progression of cancer, we attempt to explore the relationship between urinary phytoestrogen excretion and cancer biomarkers. Out of 4412 women samples, only 678 serum from women aged over 20 years from NHANES 2001 to 2002 were tested for cancer antigen 125 (CA125, considered as biomarkers for ovarian cancer), cancer antigen 15.3 (CA15.3, considered as biomarkers for breast cancer) and human epididymal secretory protein E4 (HE4, considered as biomarkers for ovarian cancer)<sup>(39)</sup>. Among 4432 men samples, total and free PSA (, considered as biomarkers for prostate cancer) were measured by the Access Hybritech Assay (Beckman Access, Fullerton CA) in 2159 men aged 40 years and older from NHANES 2001-2010<sup>(40)</sup>. PSA ratio is calculated by rounding the percentage of free PSA divided by total PSA. We have used preset cut-off values for the definition of abnormal biomarkers:  $CA125 \ge 35 \text{ kU/l}$ ,  $CA15.3 \ge 25 000 \text{ mU/ml}$ ,  $HE4 \ge 70 \text{ pM}$ , total PSA > 4 ng/mL and PSA ratio < 15%. Due to free PSA tending to have no specific diagnosis value, the median value (0.27 ng/ml) was utilised. Ultimately, the associations of biomarkers for males and females with urinary phytoestrogens were analysed.

#### Covariates

Age, gender, race, education, marital status, poverty income ratio, physical activity intensity and smoking status were selfreported by participants in a household interview. Poverty income ratio was calculated by dividing family income by the poverty guidelines specific to family size, as well as the appropriate year and state<sup>(41)</sup> and was categorised into poorer (0·00– 1·30), average (> 1·30–3·50) and richer (> 3·50 and above) based on Supplemental Nutrition Assistance Program eligibility<sup>(34)</sup>. Different types of physical activity in a typical week were asked before the physical examination, in the home, by trained interviewers using the Computer Assisted Personal Interviewing system. According to the increase in physical exertion, breathing and heart rate, physical activity intensity was categorised as vigorous, moderate and inactive. Based on the participants' responses to the question of whether they smoked at least 100 cigarettes during their lifetime and whether they were currently smoking, they were categorised as non-smoker, former smokers and current smokers. During the mobile examination centre interview, 24-hour dietary recall was administered to calculate alcohol intake, total energy intake and fat intake. Alcohol intake was defined as no drinking (0 g/d), moderate drinking (0-14 g/d for females and 0–28 g/d for males) and heavy drinking ( $\geq$  14 g/d for females and  $\geq 28$  g/d for males)<sup>(42)</sup>. Measurements of height, weight and blood pressure were performed following a standardised protocol. BMI was calculated as weight in kilograms divided by height in meters squared (kg/m<sup>2</sup>, <25, 25 to  $29.9, \geq 30$ <sup>(32,33)</sup>. Hypertension was described as having a diagnosis by a doctor or other health professional with high blood pressure, taking antihypertensive medicines or having systolic blood pressure level of  $\geq$  130 mm Hg or diastolic blood pressure level of  $\geq 80$  mm Hg as per the 2017 ACC/AHA Hypertension Guideline<sup>(43)</sup>. Indicators such as HbA1c, fasting plasma glucose, 2-hour glucose (oral glucose tolerance test), HDL-cholesterol, LDL-cholesterol and TAG were measured in NHANES laboratory<sup>(34)</sup>. Diabetes was described as any participant recognised with diabetes, taking insulin, taking diabetes pills, having a HbA1c level of  $\geq 6.5$  %, a fasting plasma glucose level of  $\geq 126$ mg/dl or an oral glucose tolerance test level of  $\geq 200$  mg/ dl<sup>(44)</sup>. Dyslipidaemia was characterised as having a physician's diagnosis, or currently taking lipid-lowering prescribed medicine, or having an abnormal lipid profile that includes an HDL-cholesterol level of < 40 mg/dl, an LDL-cholesterol level of  $\geq$  110 mg/dl or a TAG level of  $\geq$ 150 mg/dl based on guidelines from the third report of the National Cholesterol Education

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#### Statistical analyses

Program Adult Treatment Panel III<sup>(45)</sup>.

All statistical analyses accounting for the complex, multistage, stratified and cluster-sampling design (including oversampling of certain subgroups) of NHANES were conducted using survey modules of SAS software version 9.4 (SAS Institute). Sample weights were allowed to combine to obtain national estimates that reflect the true relative proportions of particular subgroups in the USA population as a whole.

Urinary phytoestrogens were classified into four isoflavones and two lignans. The isoflavone concentration was the sum of daidzein, genistein, O-DMA and equol concentration. The lignan concentration was the sum of enterodiol and enterolactone concentrations. Six standardised phytoestrogen concentrations ( $\mu$ g/ g creatinine) were calculated by dividing each original phytoestrogen concentration by the adjusted creatinine level. The distribution of all urinary phytoestrogens was severely right-skewed with a kurtosis coefficient from 13.9 to 29.1 using Kurtosis test method. Hence, standardised phytoestrogens were logtransformed to accommodate subsequent analyses treating phytoestrogens as continuous variables. Finally, log-transformed data were utilised as categorical variables or continuous variables for subsequent statistical analysis.

Weighted means or geometric means (for urinary phytoestrogens) and proportions of baseline characteristics among participants with and without HRC were compared by using samplingweighted ANOVA for continuous variables and Rao-Scott chisquare tests for categorical variables. For HRC analysis, sampling-weighted multivariate logistic regression models were performed to calculate the OR and 95% CI for the overall and gender-stratified association between urinary phytoestrogens in quartile categories and HRC with the adjustment for covariates. P value for linear trend was calculated after treating classified urinary phytoestrogens as a continuous variable. Stratified analyses were further performed by race/ethnicity (White and non-White) and age ( $\leq 60$  years and > 60 years) among females and males, respectively, as well as menopausal status (premenopausal and postmenopausal) only in females. Specifically, we also explored the association of urinary phytoestrogens with major cancer types, primarily female breast and prostate cancer. We calculated the duration of HRC by subtracting the age at HRC diagnosis from age at baseline and performed association analyses of urinary phytoestrogens with HRC based on the duration of HRC (within 5 years or over 5 years). Restricted cubic splines were conducted to assess the non-linear relationship of urinary phytoestrogens to HRC. For biomarker analysis, the weighted geometric means of female cancer biomarkers, CA125, CA15.3 and HE4, and male cancer biomarkers, total PSA, free PSA and PSA ratio were calculated to carry out partial correlation analyses with urinary phytoestrogens. A level of < 0.05 for adjusted two-sided P values was considered statistically significant.

#### Results

#### Characteristics of study population

A flow chart of dataset selection and subject screening process is outlined in Supplementary Fig. S1. Among 8844 participants aged 20 years and older in this study, the prevalence rate of HRC was 4.2 %. One hundred and forty-seven had breast cancer and 145 had prostate cancer. The number of subjects with uterine corpus cancer, ovarian cancer, thyroid cancer and testicular cancer was 43, 29, 13, and 5, respectively. Participants with HRC were more likely to be elder, female, non-Hispanic white, divorced/separated/widowed, physically inactive, former smokers, with hypertension, diabetes and dyslipidaemia and with lower total energy intake and lower fat intake, when compared with those without HRC (P < 0.05), as shown in Table 1. But neither female or male cancer biomarkers differed between those with and without HRC (P > 0.05). Compared with subjects with the lowest concentration of total urinary phytoestrogens, subjects with the highest concentration were more likely to be elder, female, non-Hispanic white, well-educated, married/living with partner, high-earning, non-smokers, free of obesity and dyslipidaemia, and with lower total energy intake and lower fat intake (P < 0.05; online Supplementary Table S2).

#### Distribution of urinary phytoestrogens

The median (P25, P75) of total urinary phytoestrogens was 711·2 (314·6, 1520·1)  $\mu$ g/g creatinine in all participants. Among which the excretion of lignan (mainly enterolactone) was approximately four times higher than that of isoflavone. As for isoflavone metabolites, the excretion of O-DMA (median (P25, P75): 3·3 (0·7, 19·4)  $\mu$ g/g creatinine) and equol (median (P25, P75): 7·0 (3·3, 14·5)  $\mu$ g/g creatinine) was much lower than that of maternal compound such as daidzein (median (P25, P75): 50·8 (18·3, 176·9)  $\mu$ g/g creatinine). For urinary phytoestrogens, participants with HRC had higher concentrations of total phytoestrogens, isoflavones (daidzein, genistein, O-DMA, equol) and lignans (enterodiol and enterolactone) than those without HRC (All *P* < 0·001; Table 2).

### Overall association between urinary phytoestrogens and hormone-related cancers

The multivariable-adjusted OR for HRC by urinary phytoestrogens are shown in Fig. 1. Participants with higher concentration of urinary daidzein and enterodiol had HRC (*P* for trend < 0.05). Simultaneously, total isoflavones were associated with the augmented prevalence of HRC at Q3 levels (OR = 1.81, 95 % CI: 1.20, 2.73) but showed insignificant effects at Q4 levels. As shown in Supplementary Fig. S2, there was a significantly non-linear trend for the dose–response relationship between urinary lignans (mainly enterodiol) and HRC (*P*<sub>non-linear</sub> = 0.033). When the concentration of lignans was above the first quartile (P25, a certain level (ln(Concentration of lignans) = 7.5, i.e., concentration of lignans is approximately 1800 µg/g creatinine)), the higher the concentration, the higher the prevalence of HRC.

## Association between urinary phytoestrogens and hormone-related cancers by gender

We further conducted analyses on the association between urinary phytoestrogens and HRC among females and males. Higher concentrations of total isoflavone (P for trend = 0.010), daidzein (P for trend = 0.006), equal (P for trend = 0.027) and enterodial (*P* for trend = 0.001) were positively associated with HRC among female participants (Fig. 2(a)). Compared with the lowest quartile (Q1) level, Q3 level of equol was positively associated with HRC among female participants, whereas only the highest concentration of equol had an association with a lower prevalence of HRC among males (Fig. 2(b)). For the purpose of focusing on specific subpopulations to investigate further associations, we carried out race/ethnicity- and age-stratified analyses among female and male participants, respectively (Fig. 3 and Fig. 4). We observed a higher prevalence of HRC conferred by a higher concentration of total isoflavone and enterodiol in urine among the White women (P for trend < 0.05) but not among the non-White women (Fig. 3(a)). As for the younger women, the highest concentration of total urinary phytoestrogens was linked with a higher prevalence of HRC (OR = 3.30, 95% CI: 1.39, 7.81) (Fig. 3(b)). Compared with postmenopausal women, total phytoestrogens, isoflavones and lignans were more positively associated with HRC in premenopausal women (online Supplementary Table S3).

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#### Table 1. Baseline characteristics of 8844 participants with and without hormone-related cancers from NHANES 1999-2010

	All participants (n 8844)		With HRC ( <i>n</i> 373)		Normal ( <i>n</i> 8471)			
	n	%	n	%	n	%	P-value	
Age, years								
Mean	46.0		64·5		45.3		< 0.001	
SD	0.3		1.3		0.3			
Gender, %							< 0.001	
Male	4432	49.2	152	28.7	4280	50.0		
Female	4412	50.8	221	71.3	4191	50.0	. 0.001	
Race/ethnicity, %	4177	60.4	004	80.0	2042	60.0	< 0.001	
	4177	09·4 11.7	234	00-9 10.8	3943 1761	11.8		
Mexican American	1865	8.4	33	2.7	1832	8.6		
Other	961	10.5	26	5.7	935	10.6		
Education, %				• ·			0.474	
Below high school	2710	18.8	106	21.5	2604	18.7		
High school	2094	25.4	94	27.0	2000	25.3		
College or above	4028	55.8	173	51.5	3855	56.0		
Marital status, %							< 0.001	
Married or living with partner	5296	64.3	223	65.9	5073	64.2		
Divorced, separated or widowed	1965	18.5	129	30.0	1836	18.0		
Never married	1447	17-3	15	4.1	4132	17.7	0 500	
PIR, %	0410	20.4	04	17 /	0004	00 F	0.530	
0-1.30	2410	20:4	04 120	17:4	2004	20.5		
3.51_	2591	43.3	123	45.3	2468	43.2		
BML %	2001	40.0	120	40.0	2400	40 2	0.665	
< 25	2658	33.2	118	33.2	2540	33.2	0.000	
25–30	2975	32.3	123	30.0	2852	32.4		
> 30	3069	34.6	123	36.9	2946	34.5		
Physical activity, %							0.004	
Vigorous	2316	30.1	52	18.1	2264	30.5		
Moderate	2173	27.4	101	30.8	2072	27.3		
Inactive	4182	42.5	206	51.1	3976	42.2		
Smoking status, %	4004	50.0	170	50.0	4405	50.0	0.001	
Non-smoker	4664	52.2	179	52.2	4485	52.3		
Formor smokers	2020	24.2	54 130	14.3	1974	24.0		
Alcohol intake %	2140	20.0	100	00.0	2007	20.2	0.132	
No drinking	6223	70.0	263	75.2	5960	69.8	0 102	
Moderate drinking	945	10.8	48	10.4	897	10.8		
Heavy drinking	1308	19.2	46	14.4	1262	19.4		
	Mean	SD	Mean	SD	Mean	SD		
Hypertension, %	4253	44·5	250	65.4	4003	43.7	< 0.001	
DBP, mm Hg	71·0	0.3	69.0	0.7	71.1	0.3	0.001	
SBP, mm Hg	122-2	0.3	129.3	1.2	122.0	0.3	< 0.001	
Diabetes, %	1000		00		1070		. 0.001	
П 9/	1362		86		1276		< 0.001	
/ο HbΔ1c %	5.5	0.0	22·4 5.8	0.1	5.5	0.0	< 0.001	
Fasting glucose mg/dl	103.6	0.7	114.3	3.4	103.2	0.6	< 0.001	
OGTT. mg/dl	116-1	2.1	148.6	8.6	115-1	2.0	< 0.001	
Dyslipidaemia, %								
n	4668		221		4447		0.020	
%	53.5		61.5		53·2			
HDL-c, mg/dl	52.9	0.3	56.0	1.3	52.8	0.3	< 0.001	
LDL-c, mg/dl	115.6	0.8	110.9	4.7	115.8	0.8	0.019	
TAG, mg/dl	139.7	2.4	160.2	22.3	139.0	2.4	0.006	
I EI, kcal/d	2205.5	15.4	1//1./	56.9	2221.5	16.0	< 0.001	
Fat make, g/d	83.1	0.7	00.0	2.1	83.7	0.8	< 0.001	
Female cancer biomarkers (n 678)		/0		/0		/0		
CA125 > 35 U/ml. %	42	6.5	1	8.4	41	6.5	0.814	
CA15·3 ≥ 25 000 mU/ml. %	10	1.0	/	<b>.</b> .	10	1.0	/	
$HE4 \ge 70 \text{ pM}, \%$	12	1.6	1	2.6	11	1.5	0.727	
Male cancer biomarkers (n 2159)								
Total PSA > 4 ng/ml, %	185	5.9	1	4.1	184	6.0	0.685	
Free PSA < median, %	986	49.0	11	44.7	975	49.3	0.794	
PSA ratio < 15 %, %	167	7.0	3	19.0	164	6.9	0.289	

Abbreviations: CA125, cancer antigen 125; CA15.3, cancer antigen 15.3; HRC, hormone-related cancer; NHANES, National Health and Nutrition Examination Survey; NH, non-Hispanic; DBP, diastolic blood pressure; SBP, systolic blood pressure; OGTT, oral glucose tolerance test; ; TEI, total energy intake; HDL-c, HDL-cholesterol; HE4, human epididymal secretory protein E4; LDL-c, LDL-cholesterol; NHANES, National Health and Nutrition Examination Survey; PIR, poverty income ratio; PSA, prostate-specific antigen; sD, standard deviation.

Data were expressed as the weighted mean ± sp or number of participants (weighted proportion). Sampling-weighted Rao-Scott chi-square tests were performed for categorical variables and sampling-weighted ANOVA methods were performed for continuous variables. A level of < 0.05 for two-sided *P* values was considered statistically significant.



Table 2.	Distribution of urinary	phytoestrogens ir	n participants with	and without hormone-relat	ed cancers fror	n NHANES	1999-2010
		p,					

Urinary phytoestrogens, µg/g creatinine	All participants (n 8844)		With HRC ( <i>n</i> 373)		Norn	P-value	
	Median	P <sub>25</sub> , P <sub>75</sub>	Median	P <sub>25</sub> , P <sub>75</sub>	Median	P <sub>25</sub> , P <sub>75</sub>	
Total phytoestrogen	711·2	314.6, 1520.1	1115.5	495.0, 2199.4	703.6	306.7, 1492.8	< 0.001
Isoflavone	103.3	43·9, 334·2	171.8	69·6, 444·2	99.8	43.2, 329.8	< 0.001
Daidzein	50.8	18·3, 176·9	78.3	34.3, 257.8	49.9	17.9, 175.1	< 0.001
Genistein	23.3	9.0, 79.6	36.2	13.3, 117.6	23.1	8.8, 78.3	< 0.001
O-DMA	3.3	0.7, 19.4	6.5	1.2, 37.2	3.3	0.7, 18.9	< 0.001
Equol	7.0	3.3, 14.5	9.7	4.7, 16.8	6.9	3.3, 14.3	< 0.001
Lignan	436.1	153·1, 1001·7	739.0	286.8, 1538.3	429.6	151.2, 984.3	< 0.001
Enterodiol	43.2	16.4, 106.7	82·5	34.9, 158.5	42.2	16.0, 103.8	< 0.001
Enterolactone	351.4	94·1, 883·1	572·5	177.1, 1344.4	347.7	92.7, 867.6	< 0.001

Abbreviations: HRC, hormone-related cancers; NHANES, National Health and Nutrition Examination Survey; O-DMA, O-desmethylangolensin.

Data were expressed as the weighted median (P25, P75). Sampling-weighted ANOVA methods was tested for the distribution difference of urinary phytoestrogens between participants with and without HRC. A level of < 0.05 for two-sided P values was considered statistically significant.

In the analysis limited to male subjects, the excretion of total isoflavones (mainly equol) at Q4 level was negatively associated with HRC among those who were White (Fig. 4(a)). Notably, the highest level of enterodiol (OR = 2.78, 95% CI: 1.29, 5.98) seemed to be associated with the higher prevalence of HRC in elder males (Fig. 4(b)).

With respect to the main specific cancer type, we observed a similarly positive correlation between daidzein and enterodiol in female breast cancer (online Supplementary Fig. S3). However, the highest concentration of total isoflavones (OR = 0.40, 95%CI: 0.21, 0.80), mainly equal (OR = 0.38, 95% CI: 0.16, 0.93), was significantly linked to a reduced prevalence of prostate cancer compared to the lowest concentration (online Supplementary Fig. 54). Also, for HRC with different years of diagnosis, we found that the daidzein and total lignans were more positively associated with HRC over 5 years than HRC within 5 years. The positive association of urinary enterodiol was more pronounced in HRC within 5 years.

#### Urinary phytoestrogens and cancer biomarkers

For female's cancer biomarker analysis, firstly, we observed participants with HRC had higher serum HE4 concentrations than those without HRC. The concentration of HE4 was more likely to be correlated with the well-known cancer risk factors (online Supplementary Table 55). Further, we explored the correlation of three female cancer biomarkers with urinary phytoestrogens. Notably, the positive correlation between serum CA15.3 and urinary equol was found among females with HRC in the partial correlation analysis (r = 0.448, P = 0.032) (Table 3).

Similarly, 2159 male participants with information on PSA were included in our study. The PSA ratio was correlated with race/ethnicity and marital status and was lower in participants with HRC (online Supplementary Table S6). Generally, no significant correlations between urinary phytoestrogens and serum total/free PSA and PSA ratio were observed in partial correlation analyses (Table 4). However, among patients with prostate cancer, higher concentration of urinary enterolactone was forcefully correlated with decreased total PSA (r = -0.979, P = 0.021) and elevated PSA ratio (r = 0.636, P = 0.036).

#### Discussion

Although estimates of total phytoestrogens among different studies were not the same (such as isoflavones mainly calculated from the sum of daidzein and genistein or the sum of daidzein, genistein and equol), the study herein firstly comprehensively evaluated the role of total phytoestrogens excretion (the sum of isoflavones including daidzein, genistein, O-DMA and equol and lignans including enterodiol and enterolactone) in HRC. In this study of 8844 participants from the continuous NHANES, we firstly observed higher concentrations of isoflavones (mainly daidzein) and enterodiol were positively associated with female HRC, which appeared even more pronounced in non-Hispanic white and breast cancer. Whereas, the highest concentration of total isoflavones was significantly linked to a reduced prevalence of HRC in white males and of prostate cancer. Among participants with HRC, urinary equol concentration was strikingly positively correlated with serum CA15.3. Inverse correlation of total PSA and positive correlation of the PSA ratio with urinary enterolactone were detected in prostate cancer patients.

To the best of our knowledge, the findings of previous studies in western populations on the relationship between urinary phytoestrogens and risk of breast cancer were conflicting<sup>(20,22,23,46)</sup>. A nested case-control study within Multiethnic Cohort Study established in America prospectively identified invasive postmenopausal breast cancer cases through linkage to the cancer registries and showed no effects of urinary phytoestrogens excretion on breast cancer risk but the risk varies slightly among different races<sup>(23)</sup>, suggesting the existence of a regional and ethnic disparity between different studies was necessitated for consideration. An earlier small-scale case-control study in Australia reported a substantial reduction in breast cancer risk among women with a high excretion of phytoestrogens, particularly the equol and the enterolactone<sup>(46)</sup>. However, two other nested case-control studies from European Prospective into Cancer-Norfolk (EPIC-Norfolk) study implied that higher concentrations of urinary isoflavones were associated with a marginally increased risk of female breast cancer, but total lignans were not<sup>(20,22)</sup>, which is consistent with our results, even though the dietary source of isoflavones might be quite different in these

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Total phytoestrogen			
Q1	1.03-314.58	55/2214	+
Q2	314.59-711.17	89/2221	- <b>-</b>
Q3	711.18-1520.08	108/2155	
Q4	1520.09-142862.61	121/1881	
Total isoflavone			
Q1	0.77-43.89	74/2327	+
Q2	43.90-103.27	80/2043	
Q3	103·28-334·21	111/2097	
Q4	334.22-111751.63	108/2004	
Daidzein			
Q1	0.08-18.28	66/2306	+
Q2	18.29-50.83	90/2030	
Q3	50.84-176.94	109/2091	
Q4	176.95-67500.00	108/2044	
Genistein			
Q1	0.06-8.98	67/2206	+
Q2	8.99-23.30	89/2088	
Q3	23.31-79.61	98/2101	• =
Q4	79.62-37687.50	119/2076	
O-DMA			
Q1	0.02-0.73	76/2371	+
Q2	0.74-3.33	98/2164	
Q3	3.34-19.35	89/1995	
Q4	19.36-34166.67	110/1941	- <b>-</b>
Equol			
Q1	0.01-3.34	88/2417	+
Q2	3.35-6.98	87/2233	Hard I
Q3	6.99-14.47	110/1939	
Q4	14.48-19392.16	88/1882	
Total lignan			
Q1	0.12-153.06	69/2167	+
Q2	153.07-436.13	70/2205	
Q3	436.14-1001.71	101/2161	H H H
Q4	1001.72-142797.70	133/1938	
Enterodiol			
Q1	0.01-16.40	67/2393	+
Q2	16.41-43.15	75/2234	H <b>B</b> 1

43.16-106.67

0.08-94.14

94.15-351.43

351.44-883.05

883.06-130888.95

106.68-40909.09

Range, µg/g creatinine

Fig. 1. Forest plot for the association between urinary phytoestrogens and HRC from NHANES 1999-2010. Adjusted for age (continuous), gender (female or male), race/ethnicity (non-Hispanic White, non-Hispanic Black, Mexican American or other), education level (below high school, high school or college or above), marital status (married/living with partner, divorced/separated/widowed or never married), poverty income ratio (0-1·30, 1·31-3·50 or 3·51-), BMI (< 25, 25-30 or > 30 kg/m<sup>2</sup>), physical activity (vigorous, moderate or inactive), smoking status (non-smoker, current smoking or former smokers), alcohol intake (no drinking, moderate drinking or heavy drinking), hypertension (yes or no), diabetes (yes or no), dyslipidaemia (yes or no), total energy intake (continuous) and fat intake (continuous). HRC, hormone-related cancer; NHANES, National Health and Nutrition Examination Survey; O-DMA, O-desmethylangolensin.

106/2086

125/1758

75/2079

69/2235

95/2193

134/1964

Q3

Q4

Q2

Q3

Q4

Enterolactone Q1



Urinary phytoestrogens

N (HRCs/non-HRCs)

OR (95% CI)

1.00 (Ref) 1.16(0.69 - 1.94)1.02 (0.59-1.77) 1.25 (0.77-2.04)

1.00 (Ref) 1.23 (0.69-2.18) 1.81 (1.20-2.73) 1.43 (0.87-2.35)

1.00 (Ref) 1.76 (1.10-2.81) 2.20 (1.47-3.30) 1.82 (1.12-2.98)

1.00 (Ref)

1.00 (Ref) 1.06 (0.65-1.75) 1.06(0.61 - 1.85)1.26 (0.75-2.11)

1.00 (Ref) 0.78 (0.48-1.27) 1.40 (0.85-2.31) 1.03 (0.62-1.71)

1.00 (Ref) 1.10 (0.64-1.87) 0.94(0.57 - 1.56)1.22 (0.71-2.11)

1.00 (Ref) 0.83 (0.47-1.48)

1.00 (Ref)

0.511.522.533.5

1.44(0.83 - 2.51)

2.01 (1.22-3.31)

1.26 (0.72-2.20)

0.84 (0.49-1.46)

1.23 (0.71-2.12)

1.59 (0.93-2.73) 1.50 (0.87-2.61) 1.53 (0.87-2.70)

P for trend 0.466

0.065

0.001

0.242

0.358

0.388

0.487

<0.001

0.682



#### Phytoestrogens with HRC and cancer biomarkers

(h)

757

(a)						(b)					
Urinary phytoestrogens	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend	Urinary phytoestrogens	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend
Female (n=4,412)	0.100					Male (n=4,432)					
Total phytoestrogen					0.044	Total phytoestrogen					0.465
Q1	2.93-393.97	41/1147	÷	1-00 (Ref)		Q1	1.03-253.66	19/1056	+	1.00 (Ref)	
Q2	393-98-853-41	54/1098		1.42 (0.76-2.63)		Q2	253-67-599-80	30/1123	-	0.74 (0.28-1.93)	
Q3	853-42-1829-33	61/1058		1-34 (0-68-2-61)		Q3	599.81-1225.72	42/1072	1 mm + 1	0.51 (0.21-1.24)	
Q4	1829-34-142862-61	65/888		1.94 (1.05-3.58)		Q4	1225-73-54004-41	61/1029	-	0.70 (0.32-1.54)	
Total isoflavone					0.010	Total isoflavone		00000000	0.000		0.116
Q1	2-17-49-84	38/1183		1.00 (Ref)		Q1	0.77-37.96	35/1124	<b>.</b>	1.00 (Ref)	
02	49-85-119-23	53/1013		2.07 (0.95-4.49)		02	37.97-88.63	30/1031	-	0.45 (0.17-1.16)	
Q3	119-24-411-29	68/1042		3.42 (1.84-6.35)		Q3	88-64-368-55	55/1286		0.75 (0.36-1.58)	
04	411-30-111751-63	62/953		2.26 (1.10-4.66)		04	368:56-33908:97	32/839	-	0.40 (0.19-0.84)	
Daidzein					0.006	Daidzein					0.227
01	0-14-20-26	32/1151	1	1.00 (Ref)		01	0:08-16:44	37/1149		1.00 (Ref)	
02	20.27-59.64	66/1019	-	3.90 (1.97-7.72)		02	16:45-44:74	33/996	-	0.63 (0.26-1.55)	
03	59:65-214:24	59/1044	-	2.84 (1.67-4.81)		03	44.75-146.10	41/1061	Hard Contractor	0.62 (0.30-1.28)	
04	214-25-67500-00	64/977		3.20 (1.74-5.92)		04	146-11-23200-00	41/1074	-	0.58 (0.25-1.34)	
Genistein		04011	3055 23	010(114 002)	0.246	Genistein	HO IT EDECCO	401014	1912 191	000(020 104)	0.419
01	0-07-9-91	38/1116	1	1-00 (Ref)	0 240	01	0.06-8.12	29/1077	4	1-00 (Ref)	0410
02	9-92-26-06	57/1047		2.10 (1.19-3.71)		02	8-13-20-72	35/1048		1.32 (0.50-3.50)	
03	26:07-95:16	58/1033		1-94 (0-95-3-95)		03	20.73-66.50	39/1081		0.96 (0.45-2.04)	
04	95-17-37687-50	68/995		1-81 (0-86-3-81)		04	66-51-11514-39	49/1074		0.85 (0.41-1.76)	
O-DMA	0011 01001 00	00/000	1	101(000 001)	0.251	O-DMA	00 01 11014 00	40/10/4		0 00 (0 41 110)	0.859
01	0.03=0.00	58/1208	1	1-00 (Ref)	0201	01	0.02=0.59	27/1177	1	1.00 (Rof)	0 000
02	0.91-4.10	53/1074	I.	1-31 (0.71-2.42)		02	0.60-2.68	36/1022	-	0.60 (0.26-1.39)	
03	4-11=28-60	52/1004		1.24 (0.64=2.40)		03	2.69=13.98	38/1057	-	0.54 (0.23=1.32)	
04	911-2000	52/1004		1.46 (0.91-2.65)		01	12.00-0557.52	50/1007		0.97 (0.20-1.02)	
Equal	2001 3410001	30/303	E.	140 (001 200)	0.027	Equal	10 00 0001 02	51/1024	10	0 07 (0 33 1 33)	0.062
01	0.01-2.02	55/1229	1	1.00 (Rof)	0.021	01	0.05-2.97	41/1102	1	1.00 /Roft	0.002
02	3.04-9.17	50/1116	1	0.72 (0.27-1.44)		03	2.99-6.10	29/1060	_I	0.20 (0.12-1.12)	
02	9.19-16.43	61/006	- T	2.12 (1.12-2.08)		02	6.20-12:40	49/1060		0.50 (0.21-1.22)	
03	16.44-10202.16	61/500		2.12 (1.12-3.98)		01	12.41-11626.77	36/070		0.33 (0.14-0.93)	
Totol lignon	10.44-19392-10	00/931		1.51 (0.79-2.69)	0.222	Total lisson	12.41-11035-77	33/9/9		0.33 (0.14-0.03)	0.229
ot	0.12-107.06	E1/1122	1	1.00 /Ba0	0.222	Ot	0.16-116.42	22/1020	1	1.00 /Ba0	0.320
02	107.07-520.74	45/11132	L	1.52 (0.92 - 2.92)			0.10-110.42	22/1030	I	0.01 (0.24-2.40)	
02	197-97-559-74 E20-7E 119E 11	43/1110		1-34 (0.65 - 2.76)		02	254.00.000.00	20/1120		0.45 (0.34-2.40)	
03	53975-110541 4495-40-440707-70	57/1039		1.02 (0.02-2.76)		03	334.22-020.20	37/1094		0.45 (0.21-0.93)	
Q4	1105.42-142/97.70	66/910		1.03 (0.03-3.20)	0.001	C4	950.58-25985.22	67/1028	2 m P	0.69 (0.32-1.52)	0.505
C1	0.01-20.65	26/1001	1	1.00 /Pof	0.001	C1	0.02-12.01	25/1204	1	1.00 /Bob	0.365
	0.01-20.05	36/1001	1	1.00 (Ref)			0.02-13.81	25/1204		1.00 (Ref)	
02	20.00-04.00	36/1028	T	0.84 (0.38-1.86)		42	13.82-33.78	36/1083		0.79 (0.28-2.20)	
Q3	54-59-128-75	00/1082		1.82 (0.95-3.50)		03	33.19-82.47	41/10/7		1.11 (0.38-3.20)	
Q4	128.76-40909.09	83/1080		2.46 (1.28-4.73)	0.004	Q4	82.48-11089.01	50/916	_	1.16 (0.39-3.42)	0.054
Enterolactone	0.00 440.00	55/4004		1.00 (5.0	0.691	Enterolactone	0.00 75 50	00//000	1	1 00 (D. 0	0.351
01	0.09-119.32	55/1061	L	1-00 (Ref)		Q1	0.00-15.53	20/10/20	I.	1-00 (Ref)	
02	119-33-440-08	40/1133	1	1.54 (0.81-2.93)		02	75.54-291.16	29/1125		1.05 (0.40-2.73)	
03	440.09-1030.84	53/1055	T	1.00 (0.52-1.91)		03	291-17-723-26	39/10/5		0.58 (0.28-1.21)	
Q4	1030-85-130888-95	05/942	(Tritter)	1.34 (0.66-2.73)		Q4	/23-27-43386-86	04/1060		0.75 (0.35-1.62)	
			010045070						0 1 0 0		

Fig. 2. Gender-stratified association between urinary phytoestrogens and HRC from NHANES 1999–2010. Adjusted for age (continuous), race/ethnicity (non-Hispanic White, non-Hispanic Black, Mexican American or other), education level (below high school, high school or college or above), marital status (married/living with partner, divorced/separated/widowed or never married), poverty income ratio (0-1.30, 1.31-3.50 or 3.51-), BMI (< 25, 25-30 or > 30 kg/m<sup>2</sup>), physical activity (vigorous, moderate or inactive), smoking status (non-smoker, current smoking or former smokers), alcohol intake (no drinking, moderate drinking or heavy drinking), hypertension (yes or no), diabetes (yes or no), dyslipidaemia (yes or no), total energy intake (continuous) and fat intake (continuous). HRC, hormone-related cancer; NHANES, National Health and Nutrition Examination Survey; O-DMA, O-desmethylangolensin.

two studies. For the EPIC-Norfolk study, approximately 3 % subjects were classified as sova consumers with 38.5% of their isoflavone intake deriving from vegetable dishes and milks, whereas among non-soya subjects, bread and bread rolls were the main food sources of isoflavones, accounting for 81%<sup>(47)</sup>. A study on dietary assessment and food sources from NHANES found that 44.8% of isoflavones were derived from legumes<sup>(48)</sup>. Meanwhile, after unit conversion, urinary phytoestrogen concentrations were slightly lower in our data from NHANES than those in the EPIC-Norfolk study (e.g. median for genistein:  $2.64 \,\mu\text{g/mmol}$  creatinine v.  $5.71 \,\mu\text{g/mmol}$  creatinine). Phytoestrogens have been suggested to promote carcinogenesis on account of their estrogenic effects and the role in potentially modulating enzymes known to regulate estrogen levels<sup>(49,50)</sup>, which may explain the results we observed, but it remains to be seen whether this effect will emerge due to such low exposure levels of phytoestrogens in Western women. On the contrary, there were two Chinese studies leading to the suggestion that urinary isoflavones might be linked to a decreased risk of breast cancer<sup>(21,24)</sup>. The lower incidence of breast cancer that has been observed in Asian populations may be attributed to a higher intake of phytoestrogen-rich food, higher concentrations of phytoestrogen biomarkers and more production of equol relative to western populations<sup>(20)</sup>. It is difficult to assess phytoestrogens in western countries, and the limited evidence of an association between urinary isoflavones and breast cancer warrants further study in subsequent examinations of breast cancer risk and phytoestrogen biomarkers. Regarding prostate cancer, a protective effect of urinary daidzein excretion was found in American populations<sup>(28)</sup>. As a metabolite of daidzein formed by intestinal microbiota, equol is considered to be the most bioactive phytoestrogens among soybean isoflavones. The findings of a Jamaican study showed that when compared with males who have no detectable concentrations of equol, equol producers were at a reduced risk of prostate cancer<sup>(27)</sup>. Consistently, equol seems to possess the potential to reduce the risk of prostate cancer in our study, as well as the total isoflavones. Studies have also observed that equol exerts its inhibitory effect on prostate cancer cells through androgen receptor signaling, Akt/FOXO3a pathway and so on<sup>(51,52)</sup>. Thus, phytoestrogenic metabolites may be more valuable than parent compounds in prostate cancer prevention and treatment. In the future, a more comprehensive evaluation of phytoestrogens and its metabolites is warranted.

Furthermore, it has been suggested that some phytoestrogens like genistein may not be antiestrogens but agonists under the circumstance of relatively lower circulating levels of mammalian estrogen<sup>(20)</sup>, which may have been the state of the

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(a)					12000000000				2		
Urinary phytoestrogens NH white (n=2.045)	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend	Urinary phytoestrogens Non-NH white (n=2,367	Range, µg/g creatinin 7)	e N (HRC/non-HRC	:)	OR (95% CI)	P for trend
Total phytoestrogen			1	00000	0.051	Total phytoestrogen		1000000			0.475
Q1 Q2	2.93-432.12	27/486	1	1.00 (Ref)		02	5-36-324-62	14/586		1.00 (Ref) 2.17 (0.69-6.96)	
Q3	930-29-1963-08	38/488	<b>1</b>	1.50 (0.72-3.11)		Q3	713-66-1509-15	26/589	-	1.53 (0.46-5.15)	
Q4	1963-09-112595-38	48/436	-	1.95 (0.93-4.08)		Q4	1509-16-142862-61	16/520		1.77 (0.63-4.98)	
Total isoflavone	0.47 50.00	10/102	1	1.00 (0-0	0.015	Total isoflavone	0.00 10.00	10/200		1.00 (D-0	0.261
02	2·17=53·92 53·93=124·80	36/480	-	2-40 (0-99-5-83)		02	40.93-104-18	19/600	_ I.	1.07 (0.49-2.35)	
Q3	124-81-426-41	46/479	-	3.61 (1.75-7.44)		Q3	104-19-375-02	23/582	-	1.54 (0.53-4.48)	
Q4	426-42-111751-63	44/448	-	2.50 (1.16-5.36)		Q4	375.03-63415.10	18/527		1.43 (0.69-2.97)	
Daidzein		10/517		1 00 /2 0	0.011	Daidzein	0.45.47.00	11005		1.00.00	0-477
02	0-14-21-83	16/517		1.00 (Ref) 5.13 (2.23-11.79)		02	0-15-17-88	14/605	- L.	1.00 (Ref) 1.43 (0.64-3.17)	
Q3	62-58-219-14	36/482	-	2.99 (1.47-6.08)		Q3	51.22-197.10	22/576		1.54 (0.51-4.67)	
Q4	219-15-67500-00	48/445		3.91 (1.84-8.29)		Q4	197.11-50790.53	16/553	+	1.35 (0.62-2.95)	
Genistein	0.07 40.44	00//05	1	1.00 (D-0	0.267	Genistein	0.07.0.40	17/000		1.00 (D-0	0.077
02	10.12-27.21	40/476	T_	2.48 (1.19-5.16)		02	9-17-23-52	15/560	1	0.76 (0.28-2.05)	
Q3	27.22-98.82	37/472		2.12 (0.89-5.06)		Q3	23.53-85.26	22/576		1.78 (0.62-5.11)	
Q4	98.83-37687.50	48/467		2.03 (0.81-5.09)	920223	Q4	85.27-11895.09	22/552	-	1.77 (0.77-4.09)	20222
O-DMA	0.04-1.09	20/500	1	1.00 (Bet)	0.131	O-DMA	0.02-0.66	20/649		1.00 (B=0	0.265
02	1.09-4.91	37/473	<b>1</b>	1.73 (0.85-3.51)		02	0.67-2.72	21/537	1	0.62 (0.19-2.01)	
Q3	4-92-33-81	35/474	-	1.57 (0.78-3.19)		Q3	2.73-20.49	15/317	+	0.92 (0.26-3.26)	
Q4	33.82-11634.62	41/430	-	1.76 (0.89-3.48)	1212101	Q4	20.50-34166.67	20/519	-	1.52 (0.58-3.97)	
Equol	0.05-4.69	29/461		1-00 (Ref)	0.011	Equol	0-01-2-66	21/581		1-00 (Ref)	0.154
Q2	4.70-9.59	34/492	<b>.</b>	1.02 (0.47-2.21)		Q2	2.67-5.55	19/581	÷	1.32 (0.50-3.48)	
Q3	9.60-18.59	40/454	-	2.51 (1.22-5.17)		Q3	5.56-10.91	23/562		1.36 (0.45-4.10)	
Q4	18-59-12000-00	42/493	-	1.82 (0.92-3.61)	0.445	Q4	10.92-19392.16	13/567		2.11 (0.76-5.86)	0.000
Iotal lignan	0-12-228-51	32/494		1.00 (Ref)	0.115	Iotal lignan	0-39-161-53	18/577		1.00 (Ref)	0.326
Q2	228-52-599-99	32/485	-	1.66 (0.84-3.28)		Q2	161-54-433-32	11/576	<b>-</b>	0.82 (0.26-2.56)	
Q3	600.00-1325.76	34/472	-	1.64 (0.76-3.54)		Q3	433-33-966-06	30/592		1.70 (0.55-5.27)	
Q4 Enterodial	1325.77-47080-00	47/449		1.91 (0.89-4.13)	0.002	Q4 Enterodial	966-07-142797-70	17/546	-	1.32 (0.51-3.47)	0.112
Q1	0.01-24.82	27/520		1.00 (Ref)	0.002	Q1	0.02-15.53	17/614		1.00 (Ref)	0.112
Q2	24-83-61-85	28/494		1.17 (0.51-2.69)		Q2	15.54-41.12	17/591		2.29 (0.74-7.06)	
Q3	61.86-137.47	40/462	<b></b>	1.89 (0.87-4.13)		Q3	41.13-107.56	23/578	-	2.55 (0.81-8.10)	
Q4 Enterolactone	137-48-17400-00	50/424		2.92 (1.40-6.08)	0.731	Q4 Enterolactone	107.57-40909.09	19/508		1.99 (0.88-4.47)	0.395
Q1	0.09-130.69	35/474		1.00 (Ref)	0701	Q1	0-18-98-67	22/544		1.00 (Ref)	0 000
Q2	130.70-492.41	33/486	-	1.40 (0.71-2.78)		Q2	98.68-340.72	7/585	+	0.40 (0.14-1.18)	
Q3	492-42-1165-30	32/481	Ť.	1.24 (0.60-2.54)		Q3	340.73-821.96	28/601	1	1.28 (0.50-3.28)	
Q4	1105-31-43075-75	40/409	dimm	1.21 (0.55-2.67)		Q4	621.97-130666.95	19/301	dimm	1.10 (0.49-2.50)	
			0246810						012246670		
									012343070		
(b)									012343070		
(b) Urinary phytoestrogens	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend	Urinary phytoestrogens	Range, µg/g creatinine	N (HRC/non-HRC)	012340070	OR (95% CI)	P for trend
(b) Urinary phytoestrogens <=60 y (n=3,020)	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend	Urinary phytoestrogens >60 y (n=1,392)	Range, µg/g creatinine	N (HRC/non-HRC)	012343070	OR (95% CI)	P for trend
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend 0.018	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen	Range, µg/g creatinine	N (HRC/non-HRC)	12343070	OR (95% CI)	P for trend 0.799
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2	Range, µg/g creatinine 3-67-351-74 351-75-774-45	N (HRC/non-HRC) 19/830 17/759	t.	OR (95% CI) 1.00 (Ref) 1.69 (0.65-4.34)	P for trend	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2	Range, µg/g creatinine 2.93–559.37 559-38–1089-75	N (HRC/non-HRC) 36/373 38/324		OR (95% CI) 1.00 (Ref) 1.08 (0.47-2.48)	P for trend 0.799
(b) <u>Urinary phytoestrogens</u> <	Range, µg/g creatinine 3-67-351-74 351-75-774-45 774-46-1742-85	N (HRC/non-HRC) 19/830 17/759 19/754	ŧ	OR (95% CI) 1.00 (Ref) 1.69 (0.65-4.34) 1.27 (0.39-4.09)	P for trend	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2 Q3	Range, µg/g creatinine 2·93-559·37 559·38-1089·75 1089·76-2140·55	N (HRC/non-HRC) 36/373 38/324 32/282	012343010	OR (95% CI) 1·00 (Ref) 1·08 (0·47-2·48) 1·23 (0·54-2·80)	P for trend
(b) <u>Urinary phyloestrogens</u> <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4	Range, µg/g creatinine 3:67-351:74 351:75-774:45 774:46-1742:85 1742:86-142862:61	N (HRC/non-HRC) 19/830 17/759 19/754 20/602		OR (95% CI) 1.00 (Ref) 1.69 (0.65-4.34) 1.27 (0.39-4.09) 3.30 (1.39-7.81)	<i>P</i> for trend 0-018	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2 Q3 Q4	Range, μg/g creatinine 2-93-559-37 559-38-1089-75 1089-76-2140-55 2140-56-65885-47	N (HRC/non-HRC) 36/373 38/324 32/282 40/267	****	OR (95% CI) 1.00 (Ref) 1.08 (0.47-2.48) 1.23 (0.54-2.80) 1.07 (0.46-2.49)	<i>P</i> for trend 0.799
(b) Urinary phytoestrogens <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone	Range, µg/g creatinine 3:67-351:74 351:75-774:45 774:46-1742:85 1742:86-142826:61 2:174:261-142826:1	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829		OR (95% CI) 1.00 (Ref) 1.69 (0.65-4:34) 1.27 (0.39-4.09) 3.30 (1:39-7.81) 1.00 (Ref)	<i>P</i> for trend 0-018 0-053	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen 01 02 03 04 Total isoflavone 01	Range, µg/g creatinine 2·93-559·37 559·38-1089·75 1089·76-2140·55 2140·56-65885·47 2·48-57.78	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372		OR (95% CI) 1.00 (Ref) 1.08 (0.47-2.48) 1.23 (0.54-2.80) 1.07 (0.46-2.49) 1.00 (Ref)	<i>P</i> for trend 0-799 0-219
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2	Range, µg/g creatinine 367-351:74 351:75-774:45 774:46-1742:85 1742:86-142862:61 2:17-47:73 47:74-115.84	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710		OR (95% CI) 1-00 (Ref) 1-27 (0-39-4-34) 1-27 (0-39-4-09) 3-30 (1-39-7-81) 1-00 (Ref) 4-49 (1-52-13-24)	<i>P</i> for trend 0-018 0-053	Urinary phytoestrogens >60 y (n=1.392) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2	Range, µg/g creatinine 2.93-559.37 559.38-1089.75 1089.76-2140.55 2140.56-65885.47 2.48-57.78 57.79-140.75	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 33/372 34/299		OR (95% CI) 1·00 (Ref) 1·03 (0.47-2:48) 1·23 (0.54-2:48) 1·07 (0.46-2:49) 1·00 (Ref) 1·40 (0.67-2:93)	<i>P</i> for trend 0-799 0-219
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isofiavone Q1 Q2 Q3 Q4 20 20 20 20 20 20 20 20 20 20	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-1742.85 1742.86-142862.61 2:17-47.73 47.74-115.84 115.85-379.89	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729		OR (95% CI) 1.00 (Ref) 1.69 (0.65-4.34) 1.27 (0.39-4.09) 3.30 (1.39-7.81) 1.00 (Ref) 4.49 (1.52-13.24) 4.97 (2.06-11.85)	<i>P</i> for trend 0-018 0-053	Urinary phytoestrogens >60 y (n=1.392) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 D22 Q3 Q4 Q2 Q3 Q3 Q4 Q2 Q3 Q3 Q3 Q4 Q2 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3	Range, µg/g creatinine 2.93-559-37 559-38-1089-75 1089-76-2140-55 2140-56-55885-47 2.48-57-78 57-79-140-75 140-75-140-75	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301		OR (95% CI) 1.00 (Ref) 1.08 (0.47-2.48) 1.23 (0.54-2.80) 1.07 (0.46-2.49) 1.00 (Ref) 1.40 (0.67-2.93) 1.91 (0.81-4.49)	P for trend 0.799 0.219
(b) Urinary phytoestrogens <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Data isoflavone Q1 Q2 Q3 Q4 Data isoflavone Q4 Data isoflavone Data isoflavone D	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-1742.85 1742.86-142862.61 2.17-47.73 47.74-115.84 1745.99.99 379.90-111751.63	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677		OR (95% Cl) 1-00 (Ref) 1-68 (0-65-4-34) 1-27 (0-39-4-09) 3-30 (1-39-7-81) 1-00 (Ref) 4-49 (1-52-13-24) 4-97 (2-08-11-85) 3-58 (1-31-9-81)	P for trend 0-018 0-053	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen 01 02 03 04 Total isoflavone 01 02 03 04 04 04 04 04 04 04 04 04 04	Range, µg/g creatinine 2.93-559.37 559.33-1089.75 1089.76-2140.55 2140.56-56885.47 2.48-57.78 57.79-140.75 140.76-66.52 466.53-64712.84	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274		OR (95% Cl) 1-00 (Ref) 1-08 (0:47-2:48) 1-23 (0:54-2:80) 1-07 (0:46-2:49) 1-00 (Ref) 1-40 (067-2:93) 1-91 (0:81-4:49) 1-62 (0:67-3:95)	P for trend 0.799 0.219
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Dialdzein Q1	Range, µg/g creatinine 3.67-351.74 351.75-774.45 774.46-1742.85 1742.85-1742.85 1742.86-142862.61 2.17-47.73 47.74-115.84 115.85-379.89 379-90-111751.63 0.14-19.45	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813		OR (95% CI) 1-00 (Ref) 1-69 (065-4-34) 1-27 (0.39-4.09) 3-30 (1.39-7.81) 1-00 (Ref) 4-49 (1.52-13.24) 4-97 (2.08-11.85) 3-58 (1.31-9.81) 1-00 (Ref)	P for trend 0-018 0-053 0-055	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1	Range, µg/g creatinine 2.93–559.37 559-38–1089.75 1008:75–2140.55 2140:56–55885.47 2.48–57.78 57.79–140.75 140.75–466.52 466.53–6471.284 0.27–24.05	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360		OR (95% CI) 1.00 (Ref) 1.08 (0.47-2.48) 1.23 (0.54-2.80) 1.07 (0.46-2.49) 1.00 (Ref) 1.40 (0.67-2.93) 1.91 (0.81-6.49) 1.62 (0.67-3.95) 1.00 (Ref)	P for trend 0-799 0-219 0-133
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q2	Range, µg/g creatinine 3.67-351.74 351.75-774.45 774.46-1742.85 1742.86-142.862.61 2.17-47.73 47.74-115.84 115.85-379.99 379.90-111751.63 0.14-19.45 19.46-55.57	N (HRC/non-HRC) 19/830 17/759 19/754 20/754 20/710 25/729 18/677 12/813 20/709		OR (95% Cl) 1-00 (Ref) 1-69 (0-65-4-34) 1-27 (0-39-4-09) 3-30 (1-39-7-81) 1-00 (Ref) 4-49 (1-52-13-24) 4-97 (2-08-11-85) 3-58 (1-31-9-81) 1-00 (Ref) 3-99 (1-37-11-65)	P for trend 0-018 0-053 0-055	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1	Range, µg/g creatinine 2.93–559.37 559.38–1089.75 1089.76–2140.55 2140.56–65885.47 2.48–57.78 57.79–140.75 140.76–466.52 466-53–64712.84 0.27–24.05 24.06–86.62	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/300		OR (95% CI) 1 00 (Ref) 1 08 (0.47-2.48) 1 23 (0.54-2.80) 1 07 (0.46-2.49) 1 00 (Ref) 1 40 (0.67-2.93) 1 91 (0.81-4.49) 1 62 (0.67-3.95) 1 00 (Ref) 2 40 (102-6.64)	<i>P</i> for trend 0-799 0-219 0-133
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 3 67-351:74 351:75-774:45 1742:85 1742:85 1742:86 1742:86 1742:86 1742:86 1742:86 1742:86 1742:86 1742:86 1742:86 115:85 115:85 115:85 115:85 19:90 19:46 10:46 1	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722	II. II. II.	OR (95% CI) 1-00 (Ref) 1-69 (065-4-34) 1-27 (0.39-4.69) 3-30 (1-39-7.61) 1-00 (Ref) 4-49 (1-52-13-24) 4-97 (2-08-11-48) 3-58 (1-31-9-81) 1-00 (Ref) 3-99 (1-37-11-65) 4-16 (1-84-9-41)	P for trend 0.018 0.053 0.055	Urinary phytoestrogens           >60 y (n=1.392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4	Range, µg/g creatinine 2.93-559-37 559-38-1089-75 1089-76-2140-55 2140-56-55885-47 2.48-57-78 57-79-140-75 140-76-466-52 466-53-64712.84 0.27-24-05 24-06-88-62 66-3-241-13	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 23/300 35/306		OR (95% CI) 1 00 (Ref) 1 08 (0.47-2.48) 1 23 (0.54-2.80) 1 07 (0.46-2.49) 1 00 (Ref) 1 40 (0.67-2.93) 1 91 (0.81-4.49) 1 62 (0.67-3.95) 1 00 (Ref) 2 40 (1:02-5.64) 1 42 (0.76-2.66)	P for trend 0.799 0.219 0.133
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Daidzein Daid	Range, µg/g creatinine 3 67-351.74 361.75-774.45 774.46-1742.85 1742.86-142862.61 2.17-47.73 47.74-115.84 1742.86-142862.61 2.17-47.73 47.74-115.84 0.14-19.45 19.46-55.57 55.58-199.09 199.10-67500.00	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701		OR (95% CI) 1 00 (Ref) 1 69 (065-4 34) 1 27 (039-4 05) 3 30 (1 39-7 81) 1 00 (Ref) 4 49 (1 52-13 24) 4 97 (2 08-13 24) 3 58 (1 31-9 81) 1 00 (Ref) 3 99 (1 37-11 -65) 1 69 (1 43-9 50)	P for trend 0.018 0.053 0.055	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen 01 02 03 04 Total isoflavone 01 02 03 04 Daidzein 01 02 03 04 Daidzein 01 02 03 04 Daidzein 01 02 03 04 Daidzein 01 02 03 04 Daidzein 01 02 03 04 Daidzein 01 02 03 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 Daidzein 04 04 Daidzein 04 04 Daidzein 04 04 04 Daidzein 04 04 04 Daidzein 04 04 04 04 04 Daidzein 04 04 04 04 04 04 04 04 04 04	Range, μg/g creatinine           2.93-559.37           559.33-1089.75           1089.75           1089.76-2140.55           2140.56-65885.47           2.48-57.78           57.79-140.75           140.76-6652           466.53-64712.84           0.27-24.05           24.06-86.82           68.63-241.13           24.11.4-56947.37	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/300 35/306 42/280		OR (95% CI) 1.00 (Ref) 1.02 (047-2.48) 1.23 (054-2.49) 1.07 (046-2.49) 1.00 (Ref) 1.40 (067-2.93) 1.91 (081-4.49) 1.92 (0.67-3.95) 1.00 (Ref) 2.40 (102-5.64) 1.42 (0.76-2.66) 2.24 (0.99-5.05)	P for trend 0.799 0.219 0.133
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Dialdzein Q1 Q2 Q3 Q4 Dialdzein Q1 Q2 Q3 Q4 Genistein Q1	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-1742.85 1742.86-142862.61 2.17-47.73 47.74-115.84 116.85-370.99 379.90-111.751.63 0.14-19.45 19.46-55.57 55.58-199.00 19.910-67500.00 0.07-9.40	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783		OR (95% CI) 1-00 (Ref) 1-69 (0-65-4-34) 1-27 (0-39-4-09) 3-30 (1-39-7-81) 1-00 (Ref) 4-97 (2-08-11-85) 3-58 (1-37-11-65) 4-16 (1-84-9-41) 3-98 (1-43-9-50) 1-00 (Ref) 1-00 (Ref)	P for trend 0 018 0 053 0 055 0 674	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Genistein           Q1	Range, µg/g creatinine 2:93-559:37 559:38-1089:75 1008:76-2:140:55 2:140:56-6588:547 2:48-57.78 57.79-140.75 1:40:76-466:52 4:466:53-6471:244 0:27-24:05 2:4:06-86:42 2:4:11:45-29847:37 0:12-11:82	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 33/274 27/360 42/280 25/306 42/280 29/347		OR (95% Cl) 1:00 (Ref) 1:08 (0:47-2:48) 1:23 (0:54-2:80) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 2:40 (1:02-5:64) 1:42 (0:76-2:65) 1:00 (Ref) 1:00 (Ref)	<i>P</i> for trend 0-799 0-219 0-133 0-152
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2	Range, µg/g creatinine 3.67-351.74 351.75-774.45 774.46-1742.85 1742.85 1742.85 1742.85 1742.85 1742.85 1742.85 1742.85 379-90-111751.83 0.14-19.45 19.46-55.57 55.58-199.09 199.10-67500.00 0.07-9.40 9.41-24.38	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721		OR (95% CI) 1-00 (Ref) 1-69 (0-65-4-34) 1-27 (0-39-4-09) 3-30 (1-39-7-81) 1-00 (Ref) 4-49 (1-52-13-24) 4-97 (2-08-11-85) 3-78 (1-31-9-81) 1-00 (Ref) 3-99 (1-37-11-65) 4-16 (1-84-9-41) 3-69 (1-43-9-50) 1-00 (Ref) 2-45 (1-00-5-97)	P for trend 0-018 0-055 0-055	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzeini Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Caller (n) Q2 Q3 Q4 Caller (n) Q2 Q3 Q4 Caller (n) Q2 Q3 Q4 Caller (n) Q2 Q3 Q4 Caller (n) Caller (n) Cal	Range, µg/g creatinine 2.93–559.37 559-38–1069-75 1008-75–2140-55 2140-56–65885.47 2.48–57.78 140-76–65885.47 140-76–466.52 466-53–64712.84 0.27–24.05 24.06–68.62 68.63–241.13 241-14–56947.37 0.12–11.82 11.83–33.27	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 34/299 41/301 38/274 27/360 42/300 35/306 42/280 29/347 42/321		OR (95% CI) 1.00 (Ref) 1.08 (0.47-2.48) 1.23 (0.54-2.80) 1.07 (0.46-2.49) 1.40 (0.67-2.93) 1.91 (0.81-4.49) 1.62 (0.67-3.95) 1.40 (1.02-5.64) 1.42 (0.76-2.66) 2.24 (0.99-5.05) 1.00 (Ref) 1.40 (0.62-3.20)	P for trend 0.799 0.219 0.133 0.152
(b) Urinary phytoestrogens <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 3 67-351.74 351.75-774.45 1742.85 1742.85 1742.86 1742.86 1742.86 1742.86 1742.86 118.85-379.99 379.90-111751.63 0.14-19.45 19.46=557 55.58-199.00 199.10-67500.00 0.07-9.40 9.41-24.38 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 24.33=65.46 9.45 9.	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710 25/729 18/677  12/813 20/708 24/722 19/701 14/783 19/721 18/738 19/721 18/738		OR (95% Cl) 1-00 (Ref) 1-69 (0-65-4-34) 1-27 (0-39-4-09) 3-30 (1-39-7-81) 1-00 (Ref) 4-49 (1-52-13-24) 4-97 (2-08-11-85) 3-58 (1-31-9-81) 1-00 (Ref) 3-99 (1-37-11-65) 4-16 (1-84-9-41) 3-69 (1-43-9-50) 1-00 (Ref) 2-45 (1-00-5-57) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-04 (0-29-3-85) 1-05 (0-29-3-85) 1-	P for trend 0-018 0-053 0-055 0-674	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q3 Q4 Daidzein Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 2 93–559 37 559-38–1089-75 1089-76–2140-55 2140-56-65885-47 2 48–57-78 57-79–140-75 140-76–466-52 466-53–64712-84 0 27–24-05 24.06–68.62 68-63–241-13 241-14–58947-37 0 12–11.82 11:83–33.27 33:28–122-12	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 33/372 33/299 41/301 38/279 41/301 38/274 42/300 35/306 42/280 29/347 42/321 36/298 20/290		OR (95% CI) 1 00 (Ref) 1 08 (0.47-2.48) 1 23 (0.54-2.80) 1 07 (0.46-2.49) 1 00 (Ref) 1 40 (0.67-2.93) 1 91 (0.81-4.49) 1 62 (0.67-3.95) 1 00 (Ref) 1 42 (0.76-2.66) 1 22 4(0.99-5.05) 1 00 (Ref) 1 40 (0.62-3.20) 2 22 (0.98-5.05) 1 00 (Ref)	P for trend 0-799 0-219 0-133 0-152
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 3 67-351.74 351.75-774.45 1742.65 1742.85 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 175.85 379.99 379.90 11175163 0 14-19.45 19.46-55.57 55.58 19.90.90 199.10-67500.00 0 07-9.40 9.41-24.38 24.39-85.46 85.47 37.887.50	N (HRC/non-HRC) 19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 18/739 24/702		OR (95% CI) 1 00 (Ref) 1 69 (065-4 34) 1 27 (039-4 065-4 34) 1 27 (039-4 065-4 34) 1 00 (Ref) 4 49 (152-13 24) 4 97 (208-1137-11-65) 3 58 (131-9-81) 1 00 (Ref) 3 99 (137-11-65) 1 00 (Ref) 2 45 (100-5 97) 1 04 (029-368) 1 80 (061-5 29)	P for trend 0 018 0 053 0 055 0 674	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen 01 02 03 04 Total isoflavone 01 02 03 04 Daidzein 01 02 03 04 Genistein 01 02 03 04 Genistein 01 02 03 04 Genistein 01 02 03 04 Genistein 01 02 03 04 C2 C3 04 C2 C3 C3 C4 C2 C3 C4 C2 C3 C4 C4 C4 C4 C4 C4 C4 C4 C4 C4	Range, µg/g creatinine 2:93-559:37 559:33-1089:75 1089:76-2140:55 2:48-57.78 57.79-140.75 140:76-486:52 466:53-64712:84 0:27-24.05 2:40:66.862 66:63-241:13 2:41:14-58947:37 0:12-11:82 11:83-33:27 3:28-122:12 1:22:13-11183:44	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/321 36/298 36/298 39/280		OR (95% CI) 1.00 (Ref) 1.02 (0.47-2.48) 1.23 (0.54-2.80) 1.00 (Ref) 1.40 (0.67-2.93) 1.40 (0.67-2.93) 1.40 (0.67-2.93) 1.40 (0.67-3.95) 1.00 (Ref) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.62-3.20) 2.22 (0.98-5.05) 1.63 (0.69-3.87)	P for trend 0.799 0.219 0.133 0.152 0.569
(b) Urinary phytoestrogens <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Q4 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Dialczein Q1 Q2 Q3 Q4 Q4 Dialczein Q1 Q3 Q4 Q4 Dialczein Q1 Q1 Q4 Dialczein Q1 Q3 Q4 Q4 Dialczein Q1 Q4 Q4 Dialczein Q4 Dialczein Q4 Dialczein Q4 Dialczein Dialczein Q4 Dialczein Dialcz	Range, µg/g creatinine 3 67-351.74 351.75-774.45 1742.85 1742.85 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 175.96 9 379.90 111.751.63 0.14-19.45 19.40-55.57 55.58 199.00 199.10-67500.00 0.07-9.40 9.41-24.38 24.33-85.46 85.47 -37.687.50 0.03-0.82	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710  25/729  18/677  12/813 20/709 24/722 19/701  14/783 19/721  18/739 24/702 20/837		OR (95% CI) 100 (Ref) 168 (065-4.34) 1.27 (0.39-4.09) 3.30 (1.39-7.61) 1.00 (Ref) 4.49 (1.52-13.24) 4.97 (2.08-11.65) 3.58 (1.31-9.61) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 2.45 (1.00-5.57) 1.04 (0.29-3.68) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref)	P for trend           0-018           0-053           0-055           0-674           0-057	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Gaistein           Q1           Q2           Q3           Q4           Gaistein           Q1	Range, µg/g creatinine 2:93-559:37 559:38-1089:75 1008:76-2:140:55 2:140:56-6588:547 2:48-57.78 57.79-140.75 1:40:76-466:52 4:466:53-6471:244 0:27-24:05 2:4:10-68:622 4:24:10-68:623 4:24:11:4-539:47:37 0:12-11:82 11:83-33:27 33:28-122:12 11:83:44 0:05-1:06	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 33/274 27/360 42/280 26/347 42/280 29/347 42/281 36/298 39/280 28/251		OR (95% Cl) 1:00 (Ref) 1:08 (0:47-2:48) 1:23 (0:54-2:80) 1:00 (Ref) 1:00 (Ref)	P for trend           0.799           0.219           0.133           0.152           0.569
(b) Urinary phytoestrogens <=60 y (n=3.020) Total phytoestrogen 01 02 03 04 04 04 04 04 04 04 04 04 04	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-1742.85 1742.86-1742.85 1742.86-142862.61 2.17-47.73 47.74-115.84 115.86-379.89 378:90-111751.63 0.14-19.45 19.46-55.57 55.56.199.09 19.91-0-67500.00 0.07-9.40 9.41-24.38 24.39-85.46 85.47-37687.50 0.03-0.82 0.83-3.78	N (HRC/non-HRC)  19/830  17/759 19/754 20/602  12/829 20/710 25/729 18/677  12/813 20/709 24/722 19/701  14/783 19/721 18/739 24/702 20/837 17/746		OR (95% CI) 100 (Ref) 169 (0.65-4.34) 127 (0.39-4.09) 330 (1.39-7.81) 1-00 (Ref) 4.49 (1.52-13.24) 4.97 (2.08-11.85) 358 (1.31-9.81) 1-00 (Ref) 3.99 (1.37-11.65) 4.16 (1.84-9.41) 3.69 (1.43-9.50) 1-00 (Ref) 2.45 (1.10-5.97) 1-04 (0.29-3.68) 1.80 (0.61-5.29) 1.70 (0.62-4.668)	P for trend           0.018           0.053           0.055           0.674           0.057	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2	Range, µg/g creatinine 2.93–559.37 559-38–1069.75 1008-75–2140.55 2140-56–65885.47 2.48–57.78 140.76–456.52 466-53–64712.84 0.27–24.05 24.06–68.62 68.63–241.13 241.14–56947.37 0.12–11.82 11.83–33.27 33.28–122.12 122.13–11183.44 0.05–1.06 1.07–54.9	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/200 35/306 42/280 29/347 42/321 36/298 39/280 28/251 35/302		OR (95% CI) 1 00 (Ref) 1 08 (0 47-2 48) 1 23 (0 54-2 80) 1 07 (0 46-2 49) 1 40 (0 67-2 93) 1 91 (0 81-4 49) 1 62 (0 67-3 95) 1 40 (1 62-3 66) 2 24 (0 99-5 05) 1 40 (0 62-3 20) 2 22 (0 99-5 05) 1 63 (0 69-3 87) 1 63	P for trend           0.799           0.219           0.133           0.152           0.569
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 3 67-351:74 351:75-774:45 1742:85 1742:85 1742:86-142862:61 2:17-47:73 47:74-115.84 115:85-379:99 379:90-111751:63 0:14-19:45 19:46-55:77 55:88-199:09 199:10-67500:00 0:079-40 9:41-24:38 2:4:39-85:46 8:547-37687:50 0:03-0-82 0:83-378 3:79-82:64 3:79-26:64	N (HRC/non-HRC)  19/830 17/759 19/754 20/602  12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/721 18/739 24/702 20/837 17/746 15/720 20/837		OR (95% CI) 1-00 (Ref) 1-69 (065-4-34) 1-27 (0-39-40) 3-30 (1-39-7-81) 1-00 (Ref) 4-49 (1-52-1-3-24) 4-79 (2-08-1-14-8) 3-58 (1-31-9-81) 1-00 (Ref) 2-45 (1-00-5-97) 1-04 (0-29-3-88) 1-80 (0-61-5-29) 1-00 (Ref) 1-70 (0-62-4-68) 1-92 (0-59-6-21) 1-70 (0-62-4-68) 1-92 (0-59-6-21) 1-92	P for trend 0.018 0.053 0.055 0.674 0.057	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Galaristein Q1 Q2 Q3 Q4 Galaristein Q1 Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q1 Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Galaristein Q2 Q3 Q4 Q4 Galaristein Q2 Q3 Q4 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3	Range, µg/g creatinine 2 93-559 37 559 38-1089-75 1089-76-2140-55 2140-56-65885-47 2 48-57-78 57-79-140-75 140-76-466-52 466-53-64712-84 0 27-24-05 24.06-68-62 68-63-241-13 241-14-58947-37 0 12-11-82 11-83-33-27 33-28-122-12 122:13-11183-44 0 05-1-06 107-5-49 550-31-67 107-5-19 10-07-54 10-07-	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/300 35/506 42/280 29/347 42/321 36/298 36/298 39/280 28/251 35/502 28/501 28/50		OR (95% CI) 1.00 (Ref) 1.08 (0.47-2.48) 1.23 (0.54-2.49) 1.23 (0.54-2.49) 1.40 (0.67-2.93) 1.40 (0.67-2.93) 1.91 (0.81-44) 1.42 (0.67-3.95) 1.00 (Ref) 1.42 (0.62-3.20) 2.22 (0.98-6.05) 1.63 (0.68-3.87) 1.00 (Ref) 1.81 (0.51-2.72) 0.87 (0.39-1.82) 0.97 (0.39-1.82) 0	P for trend 0.799 0.219 0.133 0.152 0.569
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Foruol Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Geniste	Range, µg/g creatinine 3 67-351.74 361.75-774.45 774.46-1742.85 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 175.85 379.90 111751.63 0 14-19.45 19.46-55.57 55.58-199.00 199.10-67500.00 0 07-9.40 9.41-24.38 24.33-85.46 85.47-37687.50 0 03-0.82 0 83-378 3.79-26.64 26.65-12338.27	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710  25/729  18/677  12/813 20/709 24/722 19/701  14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642		OR (95% Cl) 1 00 (Ref) 1 69 (065-434) 1 27 (039-439) 3 30 (139-781) 1 00 (Ref) 4 49 (152-1324) 4 79 (208-134) 3 58 (131-981) 1 00 (Ref) 3 99 (137-11-65) 1 00 (Ref) 2 45 (100-597) 1 04 (029-597) 1 04 (029-597) 1 04 (029-597) 1 04 (029-597) 1 00 (Ref) 1 70 (062-468) 1 82 (059-621) 2 75 (107-706)	P for trend 0.018 0.053 0.055 0.674 0.057	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           01           02           03           04           Total isoflavone           01           02           03           04           Daidzein           01           02           03           04           Daidzein           01           02           03           04           Genistein           01           02           03           04           Genistein           01           02           03           04           O-DMA           01           02           03           04           Enuel	Range, µg/g creatinine 2.93-559.37 559.33-1089.75 1089.76-2140.55 2140.56-5688.47 2.48-57.78 57.79-140.75 140.75-466.52 466.53-64712.84 0.27-24.05 24.06-66.52 466.63-241.13 241.14-58947.37 0.12-11.82 11.83-33.27 32.21 12.21.3-11183.44 0.05-1.06 1.07-5.49 550-31.67 31.68-34166.67	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/301 35/206 42/280 29/347 42/321 36/298 39/280 28/251 35/306 40/364 40/364 43/329		OR (95% CI) 1 00 (Ref) 1 02 (047-248) 1 23 (054-280) 1 40 (067-293) 1 40 (067-293) 1 40 (067-395) 1 40 (067-395) 1 40 (067-395) 1 40 (062-320) 2 42 (099-505) 1 00 (Ref) 1 40 (062-320) 2 22 (099-505) 1 63 (069-387) 1 00 (Ref) 1 18 (051-272) 0 94 (043-203) 0 94 (043-203)	P for trend           0.799           0.219           0.133           0.152           0.569           0.285
(b) Urinary phytoestrogens <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Dialczein Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1	Range, µg/g creatinine 3 67-351.74 351.75-774.45 1742.85 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 175.56 199.00 199.10-67500 00 00.79.40 9.41-24.38 24.33-85.46 85.47-37687.50 0.03-0.82 0.83-378 3.79-26.64 26.65-12338.27 0.01-3.73	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710  25/729  18/677  12/813 20/709 24/722  19/701  14/783 19/721  14/783 19/721  14/783 24/702  20/837 17/746 15/720 23/642  14/879		OR (95% CI) 100 (Ref) 168 (065-434) 127 (039-409) 330 (139-761) 100 (Ref) 449 (152-1324) 497 (208-1185) 358 (137-1165) 416 (184-941) 369 (143-941) 369 (143-941) 100 (Ref) 100 (Ref)	P for trend         0-018         0-053         0-055         0-674         0-057         0-012	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Gaistein           Q1           Q2           Q3           Q4           Gaistein           Q1           Q2           Q3           Q4           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Equel           Q1           Q2	Range, µg/g creatinine 2:93-559:37 559:38-1089:75 1089:76-2:140:55 2:140:56-6588:547 2:48-57:78 57.79-140.75 1:40:76-466:52 4:466:53-6471:264 0:27-24:05 2:406-68:62 4:66:36-241:13 2:41:14-59847:37 0:12-11:82 11:83-33:27 33:28-122:12 11:83-43 0:05-1:06 1:07-5:49 5:50-31:67 3:168-341:66:67 0:14-4:64	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 33/372 24/299 41/301 33/274 27/360 42/280 29/347 42/280 29/347 42/281 36/298 39/280 28/251 35/302 40/364 43/329 47/368		OR (95% CI) 1:00 (Ref) 1:08 (0:47-2:48) 1:23 (0:54-2:80) 1:00 (Ref) 1:00 (Ref)	P for trend           0.799           0.219           0.133           0.152           0.569           0.285
(b) Urinary phytoestrogens <=60 y (n=3.020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Q2 Q3 Q4 Combinent Com	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-1742.85 1742.861-142.862.61 2-17-47.73 47.74-115.84 115.85-379.99 379.90-111751.63 0.14-19.45 19.46-55.57 55.58-199.00 19.910-67500.00 0.07-9.40 9.41-24.38 24.39-85.46 85.47-37687.50 0.03-0.82 0.63-3.78 3.79-26.64 26.65-12338.27 0.01-3.73 3.74-7.87	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 14/879 22/784		OR (95% CI) 1-00 (Ref) 1-69 (065-4-34) 1-27 (039-409) 3-30 (139-7-81) 1-00 (Ref) 4-49 (1-62-13-24) 4-97 (208-11-65) 3-98 (1-37-11-65) 3-99 (1-37-11-65) 3-99 (1-37-11-65) 4-16 (1-84-9-41) 3-69 (1-43-9-50) 1-00 (Ref) 1-00 (Ref) 1-70 (Ref) 1-90	P for trend         0.018         0.053         0.055         0.674         0.057         0.012	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2	Range, µg/g creatinine 2.93–559 37 559-38–1069-75 1008-75–2140-55 2140-56–65885-47 2.440–57-85 2.440–57-84 466–53–64712-84 0.27–24-05 2.406–68.62 68.63–241-13 2.41-14–58947.37 0.12–11-82 11-83–33.27 33.28–122-12 122-13–11183-44 0.05–10.6 1.07–54 5.50–31.47 31.68–324 1.66–67 0.14–4.64 4.65–9.32	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 33/374 27/360 42/300 35/306 42/280 29/347 42/321 36/298 39/280 28/251 36/302 40/364 43/329 47/368 28/340		OR (95% Cl) 1 00 (Ref) 1 08 (0 47-2 48) 1 23 (0 54-2 80) 1 07 (0 46-2 49) 1 00 (Ref) 1 40 (0 67-2 93) 1 91 (0 81-4 49) 1 62 (0 67-3 95) 1 62 (0 67-3 95) 1 42 (0 78-2 66) 2 24 (0 99-5 05) 1 63 (0 69-3 87) 1 63 (0 69-3 87) 1 63 (0 69-3 87) 1 00 (Ref) 1 10 (0 (Ref) 1 10 (0 (8-1) 1 10 (0 (8-1) 1 00 (8-1) 1 0 0 (8-	P for trend           0.799           0.219           0.133           0.152           0.569           0.285
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Q4 Genistein Q4 Q4 Q4 Genistein Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 3 67-351:74 351:75-774:45 1742:65-774:45 1742:85 1742:86-142862:61 2:17-47:73 47:74-115.84 115:85-379:99 379:90-111751:63 0:14-19:45 19:46-55:7 55:86-199:09 199:10-67500:00 0:079-40 9:41-24:38 2:439-85:46 8:547-37887:50 0:03-042 0:083-378 3:79-26:64 2:656-12338:27 0:01-3:73 3:74-787 7:88-15:94 1:566-1020:25	N (HRC/non-HRC)  19/830 17/759 19/754 20/602  12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/721 18/739 24/702 20/837 17/746 15/720 23/842 14/879 22/784 23/635 5		OR (95% CI) 1 00 (Ref) 1 69 (065-4 34) 1 27 (0 39-4 065-4 34) 1 27 (0 39-4 065-4 34) 1 27 (0 39-4 065-4 34) 1 00 (Ref) 3 30 (1 39-7 81) 1 00 (Ref) 3 39 (1 37-11-65) 3 58 (1 31-9-81) 1 00 (Ref) 2 45 (1 00-5 97) 1 04 (0 29-3 68) 1 80 (0 61-5 29) 1 00 (Ref) 1 70 (0 62-4 68) 1 92 (0 59-6 21) 2 75 (1 07-7 06) 1 00 (Ref) 1 58 (0 41-6 08) 5 79 (1 67-20 08)	P for trend         0.018         0.053         0.055         0.674         0.057         0.012	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2	Range, μg/g creatinine           2.93-559.37           559.33-1089-75           108.76-2140.55           2140.56-65885.47           2.48-57.78           57.79-140.75           140.76-6652           466:53-64712.84           0.27-24.05           24.06-68.62           68:63-241.13           24.11.4-56947.37           0 12-11.82           11.83-33.27           33.28-122.12           122.13-11183.44           0.07-549           50-31.67           31.68-34166.67           0.14-464           465-9.32           9.33-18.14           9.45-111.275	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/321 35/206 35/206 39/280 28/251 35/292 40/364 43/329 47/368 28/340 35/264 26/674		OR (95% CI) 1.00 (Ref) 1.02 (047-2.48) 1.23 (054-2.49) 1.23 (054-2.49) 1.07 (046-2.49) 1.00 (Ref) 1.40 (067-2.93) 1.91 (081-4.49) 1.42 (076-2.64) 1.42 (076-2.66) 2.42 (0.99-5.05) 1.00 (Ref) 1.40 (062-3.20) 2.22 (0.98-5.05) 1.63 (0.68-3.87) 1.00 (Ref) 1.80 (05-2.16) 0.54 (0.43-2.03) 1.00 (Ref) 0.56 (0.26-1.18) 1.12 (0.65-2.16) 1.12	P for trend           0.799           0.219           0.133           0.152           0.569           0.285
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 CoDMA Q1 Q2 Q3 Q4 CoDMA Q1 Q2 Q3 Q4 CodMA	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-7142.85 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 1742.86 15.85-37.96 9.379.90 11175163 0.14-19.45 19.46-55.57 55.58 19.90 0.91-0-67500.00 0.07-9.40 9.41-24.38 24.33-85.46 85.47-37687.50 0.03-0.82 0.83-378 3.79-26.44 26.65-12338.27 0.01-3.73 3.74-7.87 7.88-15.94 15.95-19392.16	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710  25/729  18/677  12/813 20/709 24/722 19/701  14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 14/879 22/754 22/635 16/647		OR (95% CI) 1 00 (Ref) 1 69 (065-4 34) 1 27 (039-4 065-4 34) 1 27 (039-4 065-4 34) 1 27 (039-4 065-4 34) 1 449 (152-13 24) 4 49 (1 208-13 24) 3 58 (1 31-9 81) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 70 (062-4 68) 1 82 (054-6 29) 1 00 (Ref) 1 59 (041-6 06) 5 79 (1 67-20 08) 3 06 (0.85-11.01) 3 06 (0.85-11.01)	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           01           02           03           04           Total isoflavone           01           02           03           04           Daidzein           01           02           03           04           Daidzein           01           02           03           04           Genistein           01           02           03           04           Genistein           01           02           03           04           0-DMA           01           02           03           04           Equol           01           02           03           04           Equol           01           02           03           04           101           02           03	Range, µg/g creatinine 2.93-559.37 559.33-1089.75 1089.76-2140.55 2140.56-6588.47 2.48-57.78 57.79-140.75 140.75-466.52 4466.53-64571.284 0.27-24.05 2.406-68.62 466.63-241.13 241.14-58947.37 0.12-11.82 11.83-33.27 32.41.14 241.14-58947.37 0.12-11.82 11.83-33.27 32.11.183 4.10.550-31.67 31.68-34166.67 0.14-4.64 4.65-9.32 9.33-18.14 18.15-11117.65	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/300 35/306 42/280 29/347 42/321 36/298 39/280 28/251 35/302 40/364 43/329 47/368 28/244 35/264 35/264 35/264		OR (95% CI) 1 00 (Ref) 1 08 (047-248) 1 23 (054-280) 1 40 (067-243) 1 40 (067-243) 1 40 (067-345) 1 40 (067-345) 1 40 (067-345) 1 40 (062-320) 2 40 (102-564) 1 42 (076-264) 1 42 (076-264) 1 42 (076-264) 1 42 (076-264) 1 42 (076-272) 0 (Ref) 1 18 (065-1272) 0 94 (043-203) 1 00 (Ref) 1 19 (065-216) 1 19 (065-216) 1 17 (061-224)	P for trend           0.799           0.219           0.133           0.152           0.569           0.285           0.405
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Comistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Comistein Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-1742.85 1742.86-142862.61 2.17-47.73 47.74-115.84 1742.86-142862.61 2.17-47.73 47.74-115.84 2.17-47.73 47.74-115.84 2.17-42.82 47.74-115.84 2.17-42.82 47.74-115.84 0.14-19.45 19.96-10.55 55.58-199.00 19.90-10.6750.00 0.07-9.40 9.41-24.38 24.39-85.46 85.47-37687.750 0.03-0.82 0.83-3.78 3.79-26.44 26.65-12338.27 0.01-3.73 3.74-787 7.88-15.94 15.95-19392.16 0.12-181.84	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710  25/729  18/677  12/813 20/709 24/722  19/701  14/783 19/721  14/783 19/721  14/783 24/702  20/837 17/746 15/720 23/642  14/879 22/784 23/635 16/647  24/827		OR (95% Cl) 100 (Ref) 168 (065-434) 127 (039-409) 330 (139-781) 100 (Ref) 449 (152-1324) 497 (208-1452-1324) 497 (208-1452-1324) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 150 (041-608) 570 (167-206) 100 (Ref) 150 (041-618) 306 (0.85-11.01) 100 (Ref)	P for trend         0-018         0-053         0-055         0-674         0-057         0-012         0-017	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Gaistein           Q1           Q2           Q3           Q4           Guistein           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1 <t< td=""><td>Range, µg/g creatinine 2:93-559:37 559:38-1089-75 1089:76-2:140:55 2:140:56-6588:647 2:48-57-78 57.79-140.75 1:40:76-466:52 4:466:53-6471:264 0:27-24:05 2:406-68:62 4:86:43-241:13 2:41:14-559847:37 0:12-11:82 11:83-33:27 33:28-122:12 12:13-11183:44 0:05-1:06 1:07-5:49 5:03-31:67 31:68-341:66:67 0:14-4:64 4:65-9:32 9:33-18:14 18:15-11117:65 0:39-308:15</td><td>N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 33/274 27/360 42/200 35/306 42/280 29/347 42/281 36/298 39/280 28/251 35/302 40/364 43/329 47/368 28/274 35/264 35/264 35/264 35/264 35/264</td><td></td><td>OR (95% CI) 1:00 (Ref) 1:08 (0:47-2:48) 1:23 (0:54-2:80) 1:00 (Ref) 1:00 (Ref)</td><td>P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405</td></t<>	Range, µg/g creatinine 2:93-559:37 559:38-1089-75 1089:76-2:140:55 2:140:56-6588:647 2:48-57-78 57.79-140.75 1:40:76-466:52 4:466:53-6471:264 0:27-24:05 2:406-68:62 4:86:43-241:13 2:41:14-559847:37 0:12-11:82 11:83-33:27 33:28-122:12 12:13-11183:44 0:05-1:06 1:07-5:49 5:03-31:67 31:68-341:66:67 0:14-4:64 4:65-9:32 9:33-18:14 18:15-11117:65 0:39-308:15	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 33/274 27/360 42/200 35/306 42/280 29/347 42/281 36/298 39/280 28/251 35/302 40/364 43/329 47/368 28/274 35/264 35/264 35/264 35/264 35/264		OR (95% CI) 1:00 (Ref) 1:08 (0:47-2:48) 1:23 (0:54-2:80) 1:00 (Ref) 1:00 (Ref)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405
(b) Urinary phytoestrogens <pre></pre> <pre></pre> <	Range, µg/g creatinine 3 67-351.74 351.75-774.45 774.46-1742.85 1742.86-142862.61 2.17.47,73 47.74-115.84 115.85-379.99 379.90-111751.63 0.14-19.45 19.46-55.57 55.58-199.09 19.910-67500.00 0.07-9.40 9.41-24.38 24.39-85.46 85.47-37687.50 0.03-0.82 0.633-378 3.79-26.64 26.65-12338.27 0.01-3.73 3.74-7.87 7.88-15.94 15.95-1392.16 0.12-181.84 18.15-472.69	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 20/710 225/729 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 14/879 22/784 23/635 16/647 12/749		OR (95% CI) 100 (Ref) 169 (065-434) 127 (039-409) 330 (139-761) 100 (Ref) 449 (152-1324) 497 (208-1185) 358 (131-961) 100 (Ref) 399 (137-1165) 416 (184-941) 369 (143-961) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 170 (062-468) 192 (059-621) 275 (107-706) 100 (Ref) 159 (041-608) 579 (167-2008) 306 (085-1101) 100 (Ref) 151 (057-397)	P for trend         0-018         0-053         0-055         0-674         0-057         0-012         0-012	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2	Range, µg/g creatinine 2.93–559 37 559-38–1069-75 1008-75–2140-55 2140-56–65885-47 2.48–57.78 57.79–140.75 140.76–466.52 4.06–63-64712-84 0.27–24.05 2.406–68.62 68-63–241-13 2.41.14–58947.37 0.12–11.82 11.83–33.27 33.28–122-12 12.21.3–11.183.44 0.05–1.06 1.07–5.49 5.50–31.67 31.68–34.166.67 0.14–4.64 4.65–9.32 9.33–18.14 18.15–11.117.65 0.39–308.15 308.16–77.1.5	N (HRC/non-HRC) 38/373 38/324 32/82 40/267 33/372 34/299 41/301 38/274 27/360 42/300 35/306 42/300 35/306 42/301 35/306 42/321 36/298 39/280 28/251 35/302 40/364 43/329 47/368 28/340 35/274 36/247 43/643 36/247		OR (95% CI) 1:00 (Ref) 1:08 (0 47-2 48) 1:23 (054-280) 1:07 (0 46-249) 1:00 (Ref) 1:40 (0 67-2 93) 1:91 (0 81-4 49) 1:62 (0 67-3 95) 1:00 (Ref) 1:40 (0 78-2 66) 2:24 (0 99-5 05) 1:00 (Ref) 1:40 (0 62-3 20) 2:22 (0 98-5 05) 1:63 (0 68-3 87) 1:00 (Ref) 1:18 (0 51-2:72) 0:87 (0 38-1:92) 0:94 (0 43-2:03) 1:00 (Ref) 1:19 (0 65-2:16) 1:19 (0 65-2:16) 1:17 (0 61-2:24) 1:00 (Ref) 1:10 (0 (Ref) 1:10 (Ref)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405
(b) Urinary phytoestrogens <pre><c=60 (n="3,020)&lt;br" y="">Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 CoDMA Q1 Q2 Q3 Q4 Cod Cod Cod Cod Cod Cod Cod Cod</c=60></pre>	Range, µg/g creatinine 3 67-351:74 351:75-774:45-774:45 1742:85 1742:861-142:85 1742:861-142:85 1742:861-142:85 1742:861-142:862:61 2:17-47:73 47:74-115.84 115:85-379:99 379:90-111751:63 0:14-19:45 19:46-55:7 55:86-199:09 199:10-67500:00 0:07-94:0 9:41-24:38 24:39-85:46 85:47-37687:50 0:03-082 0:083-378 3:79-26:64 26:65-12338:27 0:01-3:73 3:74-7:87 7:88-15:94 15:95-13939:21:61 0:12-181:84 15:95-13939:21:61 0:12-181:84 15:95-13939:21:61 0:12-181:84 15:95-13939:21:61	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/635 16/647 23/635 16/647 24/827 12/749 18/737 3		OR (95% CI) 1 00 (Ref) 1 69 (065-4 34) 1 27 (0 39-4 065-4 34) 1 27 (0 39-4 065-4 34) 1 27 (0 39-4 065-4 34) 1 00 (Ref) 4 49 (1 52-1 3 24) 4 97 (2 08-1 145) 3 58 (1 31-9-81) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 70 (0 62-4 68) 1 80 (0 61-5 29) 1 00 (Ref) 1 70 (0 62-4 68) 1 92 (6 59-6 21) 2 75 (1 07-7 06) 1 00 (Ref) 1 59 (0 41-6 08) 5 79 (1 67-20 08) 3 06 (0 85-1101) 1 00 (Ref) 1 51 (0 57-3 97) 1 00 (44-2 68) 2 94 (1 02-9 78) 2 95 (1 07-2 78) 2 95 (1 07	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077	Urinary phytoestrogens >60 y (n=1,392) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Didizelin Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 C-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 2.93-559.37 559.33-1089-75 1089-76-2140-55 2140-56-65885.47 2.48-57.78 57.79-140.75 140-76-466.52 466.53-64712.84 0.27-24.05 24.06-68.62 66.63-241.13 241.14-58947.37 0.12-11.82 11.83-33.27 33.28-122.12 122.13-11183.44 0.05-1.06 1.07-5.49 5.50-31.67 31.88-34166.67 0.14-4.64 4.65-9.32 9.33-18.14 18.15-11117.65 0.39-308.15 30.90-16.771.15 771.16-1432.13 11.92-4.472.15 11.93-4.47	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/321 36/298 39/280 28/251 35/302 28/251 35/302 28/251 35/302 28/251 35/302 28/240 35/284 33/229 47/368 28/340 35/284 36/274 36/347 43/323 29/273 29/273 29/274 20/267 20/27 20/267 20/267 20/267 20/267 20/267 20/267 20/27 20/267 20/267 20/267 20/267 20/267 20/267 20/267 20/267 20/267 20/267 20/267 20/27 20/		OR (95% CI) 1 00 (Ref) 1 08 (047-2.48) 1 23 (054-249) 1 07 (046-2.49) 1 00 (Ref) 1 40 (067-2.93) 1 91 (081-449) 1 62 (067-3.95) 1 00 (Ref) 1 40 (062-3.20) 2 22 (0.98-6.05) 1 43 (0.62-3.20) 2 22 (0.98-6.05) 1 63 (0.68-3.87) 1 00 (Ref) 1 18 (0.51-2.72) 0 94 (0.43-2.03) 1 00 (Ref) 1 19 (0.65-2.16) 1 17 (0.61-2.24) 1 10 (Ref) 1 19 (0.65-2.16) 1 17 (0.61-2.24) 1 00 (Ref) 1 14 (0.57-2.30) 0 92 (0.35-1.81) 1 00 (Ref) 1 14 (0.57-2.30) 0 22 (0.35-1.81) 1 00 (Ref)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q4	Range, µg/g creatinine 3 67-351.74 361.75-774.45 774.46-1742.85 1742.96-142862.61 2.17-47.73 47.74-115.84 1742.96-142862.61 2.17-47.73 47.74-115.84 15.85-379.99 379.90-111751.63 0.14-19.45 19.94.655.57 55.58-199.09 19.910-67500.00 0.07-9.40 9.41-24.38 24.33-85.46 85.47-37687.750 0.03-0.82 0.83-378 3.79-26.64 26.65-12338.27 0.01-3.73 3.74-7.87 7.88-15.94 15.95-13392.16 0.12-181.84 18.186-472.69 4.72.70-1087.40 1087.41-142.2797.70	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710  25/729  18/677  12/813 20/709 24/722 19/701  14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 14/879 22/754 22/635 16/647 24/827 12/749 18/737 21/632		OR (95% Cl) 1 00 (Ref) 1 69 (065-434) 1 27 (039-439) 3 30 (139-781) 1 00 (Ref) 4 49 (152-1324) 4 79 (208-1145) 3 58 (131-981) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 70 (062-468) 1 59 (041-608) 5 78 (167-2008) 3 06 (085-1101) 1 00 (Ref) 1 59 (041-608) 5 78 (167-2008) 3 06 (085-1101) 1 00 (Ref) 1 50 (067-397) 1 00 (Ref) 1 50 (057-397) 1 00 (086) 1 50 (057-397) 1 00 (086) 1 50 (057-397) 1 00 (086) 2 64 (103-678) 2 64 (103-678)	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077         0.098	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           01           02           03           04           Total isoflavone           01           02           03           04           Daidzein           01           02           03           04           Daidzein           01           02           03           04           Genistein           01           02           03           04           Genistein           01           02           03           04           Call           02           03           04           Equol           01           02           03           04           Total lignan           01           02           03           04           Enterodiol	Range, µg/g creatinine 2.93-559.37 559.33-1089.75 1089.76-2140.55 2140.56-5688.47 2.48-57.78 57.79-140.75 140.76-466.52 4466.33-6471.284 0.27-24.05 24.06-86.22 4466.33-6471.284 0.27-24.05 24.06-86.22 4465.3-6471.284 0.27-24.05 24.06-86.22 466.32-241.13 24.114-58947.37 0.12-11.82 11.83-33.27 33.28-122.12 122.13-11183.44 0.05-1.06 1.07-549 550-31.67 31.68-34166.67 0.14-4.64 4.65-93.2 9.33-18.14 18.15-11117.65 0.39-308.15 308-16-771.15 771.16-743.213 14.32.14-47545.45	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/300 35/306 42/280 29/347 42/321 36/298 39/280 28/251 35/302 40/364 43/329 47/368 28/274 35/264 35/264 36/274 36/347 43/343 29/283 38/273		OR (95% CI) 1 00 (Ref) 1 02 (047-2.48) 1 23 (054-2.80) 1 00 (Ref) 1 40 (067-2.93) 1 01 (087-2.93) 1 01 (087-49) 1 02 (067-3.95) 1 00 (Ref) 1 40 (062-3.20) 2 22 (0.99-5.05) 1 40 (062-3.20) 2 22 (0.99-5.05) 1 40 (062-3.20) 1 40 (062-3.20) 1 40 (062-3.20) 1 40 (062-3.20) 1 00 (Ref) 1 1.8 (065-2.712) 0 94 (0.43-2.03) 1 00 (Ref) 1 1.9 (065-2.16) 1 1.7 (0.61-2.24) 1 00 (Ref) 1 1.4 (057-2.30) 0 42 (0.35-1.91) 0 76 (0.32-1.80)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Comparing (Comparing (Co	Range, µg/g creatinine           3 67-351.74           351.75-774.45           351.75-774.45           367-351.74           351.75-774.45           1742.85           1742.86-142862.61           2.17-47.73           47.74-115.84           115.85-379.99           379.90-111751.63           0.14-19.45           19.46-55.57           55.58-199.00           199.10-67500.00           0.07-9.40           9.41-24.38           24.39-85.46           8547-37687.50           0.03-0.82           0.83-3.78           3.79-26.64           26.65-12338.27           0.01-3.73           3.74-7.87           7.788-15.94           15.95-19392.16           0.12-181.84           181.85-472.69           472.70-1087.40           1087.41-142787.70	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829  20/710  25/729  18/677  12/813  20/709  24/722  19/701  14/783  19/721  14/783  19/721  14/783  24/702  20/837  17/746  15/720  23/642  14/879  22/784  23/635  16/647  24/827  12/749  18/737  21/632  24/842		OR (95% CI) 100 (Ref) 168 (065-434) 127 (039-409) 330 (139-761) 100 (Ref) 449 (152-1324) 497 (208-1185) 358 (131-161) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 152 (052-488) 1520 (052-488) 1520 (052-488) 1520 (052-481) 1520 (052-481) 1520 (052-481) 1520 (052-371) 100 (Ref) 156 (041-608) 306 (085-1101) 100 (Ref) 150 (041-638) 306 (085-1101) 100 (Ref) 100 (Ref)	P for trend         0-018         0-053         0-055         0-674         0-057         0-012         0-077         0-098	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Gailgan           Q2           Q3           Q4           Equel           Q1           Q2           Q3 <td>Range, µg/g creatinine 2.93–559.37 559.38–1089.75 1008:76–2140.55 2140.56–6588.547 2.48–57.78 57.79–140.75 140.76–466.52 4466.53–6471.264 0.27–24.05 24.10–68.62 24.11.45 24.11.45-59847.37 0.12–11.82 11.83–33.27 33.28–122.12 12.21.3–1118.344 0.05–1.06 1.07–5.49 5.50–31.67 31.68–34.166.67 0.14–4.64 4.65–9.32 9.33–18.14 18.15–11117.65 0.39–308.15 308–16–771.15 7.116–731.51 31.42.21.3 14.32:14–47545.45</td> <td>N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 33/372 24/290 41/301 33/274 27/360 42/280 29/347 42/281 36/298 33/280 28/251 35/302 40/364 43/329 47/368 28/240 35/264 35/264 35/264 36/274 36/347 43/343 29/283 38/273</td> <td></td> <td>OR (95% CI) 1 00 (Ref) 1 08 (0 47-2.48) 1 23 (054-2.80) 1 00 (Ref) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 42 (0 76-266) 1 40 (0 62-3.20) 2 22 (0 98-505) 1 00 (Ref) 1 40 (0 51-2.72) 0 87 (0 39-136) 1 19 (0 65-2.43) 1 10 (Ref) 1 17 (0 61-2.24) 1 00 (Ref) 1 14 (0 57-2.30) 2 (2 0 35-131) 0 76 (0 32-180) 1 00 (Ref)</td> <td>P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002</td>	Range, µg/g creatinine 2.93–559.37 559.38–1089.75 1008:76–2140.55 2140.56–6588.547 2.48–57.78 57.79–140.75 140.76–466.52 4466.53–6471.264 0.27–24.05 24.10–68.62 24.11.45 24.11.45-59847.37 0.12–11.82 11.83–33.27 33.28–122.12 12.21.3–1118.344 0.05–1.06 1.07–5.49 5.50–31.67 31.68–34.166.67 0.14–4.64 4.65–9.32 9.33–18.14 18.15–11117.65 0.39–308.15 308–16–771.15 7.116–731.51 31.42.21.3 14.32:14–47545.45	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 33/372 24/290 41/301 33/274 27/360 42/280 29/347 42/281 36/298 33/280 28/251 35/302 40/364 43/329 47/368 28/240 35/264 35/264 35/264 36/274 36/347 43/343 29/283 38/273		OR (95% CI) 1 00 (Ref) 1 08 (0 47-2.48) 1 23 (054-2.80) 1 00 (Ref) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 42 (0 76-266) 1 40 (0 62-3.20) 2 22 (0 98-505) 1 00 (Ref) 1 40 (0 51-2.72) 0 87 (0 39-136) 1 19 (0 65-2.43) 1 10 (Ref) 1 17 (0 61-2.24) 1 00 (Ref) 1 14 (0 57-2.30) 2 (2 0 35-131) 0 76 (0 32-180) 1 00 (Ref)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002
(b) Urinary phytoestrogens <pre></pre> <pre></pre> <	Range, µg/g creatinine 3 67-351.74 351.75-774.45 1742.85 1742.85 1742.85 1742.86 1742.86 1742.86 115.85-379.99 379.90-111751.83 0.14-19.45 19.46-55.57 55.85-199.09 19.910-67500.00 0.07-9.40 9.41-24.38 24.33-85.46 85.47-37687.50 0.03-0.82 0.63-3.78 3.79-26.64 26.65-1238.27 0.01-3.73 3.74-7.87 7.88-15.94 15.95-19392.16 0.12-181.84 181.85-472.69 472.70-1087.40 1087.41-142.797.70	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/708 24/722 19/701 14/783 19/721 18/738 24/702 20/837 17/746 15/720 23/642 14/879 22/784 23/635 16/647 24/827 12/749 18/737 21/632		OR (95% CI) 100 (Ref) 169 (065-434) 127 (039-40) 330 (139-761) 100 (Ref) 449 (152-1324) 477 (208-1148) 358 (131-981) 100 (Ref) 146 (184-941) 369 (143-950) 100 (Ref) 150 (061-529) 100 (Ref) 170 (062-468) 192 (059-621) 275 (107-706) 100 (Ref) 159 (041-608) 579 (167-2008) 306 (085-1110) 100 (Ref) 159 (041-678) 579 (167-2008) 306 (085-1110) 100 (Ref) 151 (057-377) 109 (044-268) 264 (103-678) 100 (Ref) 153 (041-68) 578 (167-2018) 100 (Ref) 151 (057-377) 109 (044-268) 264 (103-678) 100 (Ref) 153 (041-68) 578 (167-2018) 100 (Ref) 100 (Ref) 10	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077         0.098	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2<	Range, µg/g creatinine 2.93–559 37 559-38–1069-75 1008-75–2140-55 2140-56–65885-47 2.449–57-78 57.79–140-75 140-76–466-52 4406-63-64712-84 0.27–24-05 24.06–68.62 68-63–241-13 24.11-458947-37 0.12–11-82 11.83–33.27 33.28–122-12 12.21-3–1118-344 0.05–1-06 1.07–549 5.50–31.67 31.68–34166-67 0.14–4-64 4.65–9.32 9.33–181-44 18.15–11117-65 0.93–308-15 308-16–771.15 771.16–1432-13 14.32:14–4754545 0.02–26.89 2.69–05.79	N (HRC/non-HRC) 38/373 38/324 32/82 40/267 33/372 34/299 41/301 33/374 27/360 42/300 35/306 42/300 35/306 42/300 35/306 42/301 35/302 40/364 43/329 47/368 28/340 35/264 35/264 35/274 36/247 43/343 29/283 38/273 25/382		OR (95% CI) 1 00 (Ref) 1 08 (0 47-2 48) 1 23 (054-280) 1 00 (Ref) 1 40 (0 67-2 93) 1 91 (0 81-4 49) 1 62 (0 67-3 95) 1 00 (Ref) 2 40 (1 02-5 64) 1 42 (0 78-2 66) 2 24 (0 99-5 05) 1 00 (Ref) 1 40 (0 62-3 20) 2 22 (0 98-5 05) 1 63 (0 68-3 87) 1 00 (Ref) 1 18 (0 51-2 72) 0 87 (0 38-1 92) 0 94 (0 43-2 03) 1 00 (Ref) 1 17 (0 65-2 16) 1 17 (0 65-2 16) 1 17 (0 65-2 37) 1 00 (Ref) 1 40 (0 57-2 30) 0 62 (0 35-1 91) 0 76 (0 32-1 80) 1 00 (Ref) 1 10 (0 Ref)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002
(b) Urinary phytoestrogens <pre>&lt;=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Cenistein Cenistein Q1 Q2 Q3 Q4 Cenistein</pre>	Range, µg/g creatinine 3 67-351:74 351:75-774:45-774:45 1742:65-174:285 1742:66-142862:61 2:17-47:73 47:74-115.84 115:85-379:99 379:90-111751:63 0:14-19:45 19:46-55:77 55:58-199:09 199:10-67500:00 0:07-9:40 9:41-24:38 24:39-85:46 85:47-37687:50 0:03-082 0:03-378 379-26:64 26:65-12338:27 0:01-373 374-787 788-15:94 15:95-18392:16 0:12-181:84 15:195-29 472:70-1087:40 10:87-1925 19:26-51:93 51:94-122:49 10:26-11:270:00	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 24/722 20/837 14/879 22/784 23/635 16/647 24/827 12/749 18/737 21/632 24/842 13/799 18/696 30/60		OR (95% CI) 1 00 (Ref) 1 69 (065-4 34) 1 27 (039-4 065-4 34) 1 27 (039-4 065-4 34) 1 27 (039-4 065-4 34) 1 00 (Ref) 3 30 (1 39-7 81) 1 00 (Ref) 3 39 (1 37-11-65) 3 58 (1 31-9-81) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 70 (0 62-4 68) 1 92 (0 59-2 11) 2 75 (1 07-7 06) 1 00 (Ref) 5 79 (1 67-20 08) 3 06 (0 85-11-01) 1 00 (Ref) 1 51 (0 57-3 87) 1 09 (0 44-2 68) 2 64 (1 03-8 78) 1 00 (Ref) 1 53 (0 52-4 54) 1 53 (0 52-4 54) 1 53 (0 52-4 54) 1 32 (0 64-5 19) 1 00 (Ref) 1 53 (0 52-4 54) 1 32 (0 64-5 19) 1 00 (Ref) 1 53 (0 52-4 54) 1 32 (0 64-5 19) 1 02 (Ref) 1 53 (0 52-4 54) 1 32 (0 64-5 19) 1 32 (0 54-5 19) 1 32 (0 64-5 19)	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077         0.098	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           01           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Enterodiol           Q1	Range, µg/g creatinine 2.93-559 37 559 33-1089-75 1089-76-2140-55 1018-07-55 2.48-57-78 57.79-140-75 140-76-466-52 466-53-64712-84 0.27-24-05 24.06-68-62 66:83-241-13 24.11-4-58947-37 0.12-11.82 11.83-33.27 33.28-122.12 122-13-11183-44 0.05-1.06 1.07-549 55-03-187 31.68-34166-67 0.14-4-64 4.65-9.32 9.33-18-14 18-5-1117-65 0.39-308-15 308-16-771-15 771.16-1432-13 1432-14-47545-45 0.02-26.89 29.00-65.79 65-80-147-51 14.55-79 0.	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/321 35/306 42/280 29/347 42/321 35/302 40/364 43/329 47/368 28/340 35/264 35/264 36/274 36/347 36/327 36/347 36/347 36/264 36/27		OR (95% CI) 1 00 (Ref) 1 02 (047-248) 1 23 (054-249) 1 07 (046-249) 1 00 (Ref) 1 40 (067-293) 1 91 (081-449) 1 62 (067-395) 1 00 (Ref) 1 40 (062-320) 2 22 (098-505) 1 00 (Ref) 1 40 (062-320) 2 22 (098-505) 1 63 (069-387) 1 00 (Ref) 1 18 (051-272) 0 94 (043-203) 1 00 (Ref) 1 19 (065-216) 1 17 (061-224) 1 00 (Ref) 1 14 (057-230) 0 22 (035-191) 0 76 (032-180) 1 00 (Ref) 1 00 (Ref) 1 14 (057-230) 0 22 (035-191) 0 76 (032-180) 2 20 (98-545) 1 00 (Ref) 1 00 (Ref) 1 14 (057-230) 0 22 (035-191) 0 76 (032-180) 2 20 (98-545) 1 00 (88-545) 2 20 (98-545) 2 2 (98-54	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002
(b) Urinary phytoestrogens <=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Diadzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 CoDMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Enterodactone Enterodactone	Range, µg/g creatinine 3 67-351.74 361.75-774.45 774.46-7142.85 1742.96-142862.61 2.17-47.73 47.74-115.84 1742.96-142862.61 2.17-47.73 47.74-115.84 15.85-379.99 379.90-111751.63 0.14-19.45 19.94-65.57 55.58-199.09 19.910-67500.00 0.07-9.40 9.41-24.38 24.33-85.46 85.47-37687.750 0.03-0.82 0.83-378 3.79-26.64 26.65-12338.27 0.01-3.73 3.74-7.87 7.88-15.94 15.95-19332.16 0.12-181.84 18.185-472.69 472.70-1087.40 1087.41-142797.70 0.01-19.25 19.26-51.93 51.94-122.48 12.250-17400.00	N (HRC/non-HRC)  19/830  17/759  19/754  20/602  12/829 20/710  25/729  18/677  12/813 20/709 24/722 19/701  14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 14/879 22/754 22/635 16/647 24/827 12/749 18/737 21/632 24/827 12/749 13/799 24/827 24/827 13/799 13/799 13/799 13/799 13/799 13/799 13/799 13/799 13/799 13/799 13/799 20/608		OR (95% Cl) 1 00 (Ref) 1 69 (065-434) 1 27 (039-40) 3 30 (139-781) 1 00 (Ref) 4 49 (152-1324) 4 79 (208-1145) 3 58 (131-981) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 70 (062-468) 1 59 (041-608) 5 78 (167-2008) 3 06 (085-1101) 1 00 (Ref) 1 59 (057-397) 1 00 (Ref) 1 50 (057-397) 1 00 (Ref) 1 50 (057-397) 1 00 (Ref) 1 53 (057-397) 1 00 (Ref) 1 53 (052-454) 1 52 (083-586)	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077         0.098         0.107	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daldzein           Q1           Q2           Q3           Q4           Daldzein           Q1           Q2           Q3           Q4           Daldzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Equal           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Enterodal           Q1           Q2           Q3           Q4           Enterodalone	Range, µg/g creatinine 2.93-559.37 559.33-1089-75 1089-76-2140-55 2140-56-5688-47 2.48-57-78 57.79-140.75 140.76-466.52 4466-53-6471/2.84 0.27-24.05 24.06-86.22 4466-53-6471/2.84 0.27-24.05 24.06-86.22 4465-33-27 33.28-122.12 122.13-11183.44 0.05-1.06 1.07-549 550-31.67 31.68-34166.67 0.14-4.64 4.65-932 9.33-18.14 18.15-11117.65 0.99-308.15 308-16-771.15 771.16-132.13 1432.14-4754.54 0.02-26.89 26.90-65.79 65.80-147.51 147.52-40909.00	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 411301 33/372 27/360 42/200 28/274 27/360 42/280 29/347 42/321 35/302 40/364 42/302 28/251 35/302 40/364 43/329 47/368 28/274 36/347 43/343 38/274 36/347 43/343 28/284 38/27		OR (95% CI) 1 00 (Ref) 1 08 (047-2.48) 1 23 (054-2.80) 1 00 (Ref) 1 40 (067-2.93) 1 01 (087-2.93) 1 01 (087-48) 2 40 (102-5.64) 1 42 (076-2.65) 1 42 (076-2.65) 1 42 (076-2.65) 1 42 (076-2.65) 1 43 (062-3.20) 2 22 (0.98-5.05) 1 43 (0651-2.72) 0 94 (0.43-2.03) 1 00 (Ref) 1 18 (065-2.72) 0 94 (0.43-2.03) 1 00 (Ref) 1 19 (065-2.16) 1 17 (0.61-2.24) 1 00 (Ref) 1 14 (057-2.30) 0 62 (0.35-1.91) 0 76 (0.32-1.80) 1 00 (Ref) 1 00 (Ref) 1 00 (Ref) 1 14 (057-2.30) 0 62 (0.35-1.91) 0 76 (0.32-1.80) 1 00 (Ref) 2 20 (0.88-5.45) 2 20 (0.88-5.45) 2 79 (1.26-6.20)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002         0.234
(b) Urinary phytoestrogen <pre></pre> <pre></pre> <p< td=""><td>Range, µg/g creatinine           3 67-351.74           351.75-774.45           367-351.74           351.75-774.45           1742.85           1742.86           1742.86           1742.86           1742.86           1742.86           1742.86           1742.86           1742.86           115.85           379.90           115.85           55.58           19.90           19.910           65.58           19.90           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.912           9.912           9.914           9.914           9.914           9.914           9.92           9.93           9.93           9.93           9.93           9.93           9.93</td><td>N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 14/783 19/721 14/783 24/702 20/837 17/746 15/720 23/642 14/879 22/784 23/635 16/647 24/827 12/749 18/737 21/632 24/842 13/799 18/737 21/632</td><td></td><td>OR (95% CI) 100 (Ref) 169 (065-434) 127 (039-409) 330 (139-781) 100 (Ref) 449 (152-1324) 497 (208-1165) 358 (131-161) 100 (Ref) 100 (Ref) 100 (Ref) 146 (184-941) 368 (143-950) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 150 (062-468) 152 (057-387) 100 (Ref) 153 (041-608) 577 (167-206) 100 (Ref) 156 (041-608) 306 (085-1101) 100 (Ref) 151 (057-387) 100 (Ref) 153 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (063-586) 100 (Ref)</td><td>P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077         0.098         0.107</td><td>Urinary phytoestrogens           &gt;50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Enterodiol           Q1           Q2</td><td>Range, µg/g creatinine 2.93–559.37 559.38–1089.75 1008:76–2140.55 2140:56–6588.547 2.48–57.78 57.79–140.75 140.76–466.52 4466.53–6471.264 0.27–24.05 24.06–68.62 68.63–241.13 24.114–59847.37 0.12–11.82 11.83–33.27 33.28–122.12 12.213–1118.344 0.05–1.06 1.07–5.49 5.50–31.67 31.68–34.166.67 0.14–4.64 4.65–9.32 9.33–18.14 18.15–11117.65 0.39–308.15 308–16.777.15 7.171.16–14.32.13 14.32:14–47.54.54.55 0.02–26.89 28.90–65.79 65.60–147.51 147.52–4090.909 0.33–202.15</td><td>N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 33/372 24/290 41/301 33/274 27/360 42/280 29/347 42/281 36/298 33/280 28/251 36/306 28/251 36/302 40/364 43/329 47/368 28/274 35/302 40/364 43/329 47/368 28/274 35/362 43/329 47/368 28/274 35/362 43/329 43/32</td><td></td><td>OR (95% CI) 1 00 (Ref) 1 08 (0 47-2.48) 1 23 (054-2.80) 1 00 (Ref) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 42 (0 76-266) 1 42 (0 76-266) 1 42 (0 76-266) 1 42 (0 76-266) 1 40 (0 62-3.20) 2 22 (0 98-5.05) 1 00 (Ref) 1 40 (0 651-2.72) 0 87 (0 39-1.87) 1 90 (62-1.18) 1 19 (0 65-2.418) 1 19 (0 65-1.91) 0 56 (0 28-1.18) 1 19 (0 65-1.91) 0 57 (0 32-1.80) 1 00 (Ref) 1 70 (Ref) 1 70 (Ref) 1 70 (Ref) 1 70 (Ref) 1 00 (Ref)</td><td>P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002         0.234</td></p<>	Range, µg/g creatinine           3 67-351.74           351.75-774.45           367-351.74           351.75-774.45           1742.85           1742.86           1742.86           1742.86           1742.86           1742.86           1742.86           1742.86           1742.86           115.85           379.90           115.85           55.58           19.90           19.910           65.58           19.90           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.910           9.912           9.912           9.914           9.914           9.914           9.914           9.92           9.93           9.93           9.93           9.93           9.93           9.93	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 14/783 19/721 14/783 24/702 20/837 17/746 15/720 23/642 14/879 22/784 23/635 16/647 24/827 12/749 18/737 21/632 24/842 13/799 18/737 21/632		OR (95% CI) 100 (Ref) 169 (065-434) 127 (039-409) 330 (139-781) 100 (Ref) 449 (152-1324) 497 (208-1165) 358 (131-161) 100 (Ref) 100 (Ref) 100 (Ref) 146 (184-941) 368 (143-950) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 150 (062-468) 152 (057-387) 100 (Ref) 153 (041-608) 577 (167-206) 100 (Ref) 156 (041-608) 306 (085-1101) 100 (Ref) 151 (057-387) 100 (Ref) 153 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (052-454) 152 (063-586) 100 (Ref)	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077         0.098         0.107	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Daidzelin           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Enterodiol           Q1           Q2	Range, µg/g creatinine 2.93–559.37 559.38–1089.75 1008:76–2140.55 2140:56–6588.547 2.48–57.78 57.79–140.75 140.76–466.52 4466.53–6471.264 0.27–24.05 24.06–68.62 68.63–241.13 24.114–59847.37 0.12–11.82 11.83–33.27 33.28–122.12 12.213–1118.344 0.05–1.06 1.07–5.49 5.50–31.67 31.68–34.166.67 0.14–4.64 4.65–9.32 9.33–18.14 18.15–11117.65 0.39–308.15 308–16.777.15 7.171.16–14.32.13 14.32:14–47.54.54.55 0.02–26.89 28.90–65.79 65.60–147.51 147.52–4090.909 0.33–202.15	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 33/372 24/290 41/301 33/274 27/360 42/280 29/347 42/281 36/298 33/280 28/251 36/306 28/251 36/302 40/364 43/329 47/368 28/274 35/302 40/364 43/329 47/368 28/274 35/362 43/329 47/368 28/274 35/362 43/329 43/32		OR (95% CI) 1 00 (Ref) 1 08 (0 47-2.48) 1 23 (054-2.80) 1 00 (Ref) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 40 (0 67-2.93) 1 91 (081-4.49) 1 42 (0 76-266) 1 42 (0 76-266) 1 42 (0 76-266) 1 42 (0 76-266) 1 40 (0 62-3.20) 2 22 (0 98-5.05) 1 00 (Ref) 1 40 (0 651-2.72) 0 87 (0 39-1.87) 1 90 (62-1.18) 1 19 (0 65-2.418) 1 19 (0 65-1.91) 0 56 (0 28-1.18) 1 19 (0 65-1.91) 0 57 (0 32-1.80) 1 00 (Ref) 1 70 (Ref) 1 70 (Ref) 1 70 (Ref) 1 70 (Ref) 1 00 (Ref)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002         0.234
(b) Urinary phytoestrogens <pre></pre> <pre></pre> <	Range, µg/g creatinine           3 67-351.74           351.75-774.45           3774.46-1742.85           1742.86-142862.61           2.17-47.33           47.74-115.84           111.85           111.85           990-111751.63           0.14-19.45           19.46-555           55.58-199.09           199.10-67500.00           0.07-940           94.1-24.38           24.33-85.46           85.47-37687.50           0.03-0.82           0.03-0.82           0.03-0.82           0.03-78           3.74-7.87           7.88-15.94           15.95-19392:16           0.12-181.84           181.85-472:69           472.70-1087.40           10.87-40           10.87-40           10.87-412.49           21.25-51.433           51.94-1122.49           21.25-51.93           51.94-112.49           19.26-51.93           51.94-122.49           21.25-51.430           51.94-124.90           22.50-17.000.00	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/708 24/722 19/701 14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 14/879 22/784 23/635 16/647 12/749 18/737 21/632 24/842 13/799 18/696 25/776 14/783		OR (95% CI) 100 (Ref) 169 (065-434) 127 (039-40) 330 (139-761) 100 (Ref) 449 (152-1324) 477 (208-1148) 358 (131-981) 100 (Ref) 100 (Ref) 100 (Ref) 104 (029-368) 180 (061-529) 104 (029-368) 180 (061-529) 104 (029-368) 180 (061-529) 104 (029-368) 180 (061-529) 104 (029-368) 192 (059-621) 275 (167-2008) 306 (085-11-01) 100 (Ref) 153 (052-454) 182 (064-519) 100 (Ref) 153 (052-454) 182 (064-519) 221 (033-588) 100 (Ref) 163 (064-519) 222 (1033-588) 100 (Ref) 163 (064-519) 222 (1033-588) 100 (Ref) 125 (052-454) 182 (064-519) 220 (073-580) 100 (Ref)	P for trend           0-018           0-053           0-055           0-674           0-057           0-012           0-077           0-098           0-107	Urinary phytoestrogens           >50 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Denterstein           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2 </td <td>Range, µg/g creatinine 2.93–559 37 559-38–1089-75 1008-75–2140-55 2140-56–55885-47 2.48–57-78 57.79–140.75 140-76-466-52 4406-63-64712-84 0.27–24-05 24:06–68.62 24:06–68.62 24:04–58.947-37 0.12–11-82 21:143–33.27 33:28–122-12 12:21.3–11183-44 0.05–1:06 1:07–54.9 5:05–31.67 31:68–34:166-67 0.14–4:64 4:65–9:32 9:33–18.14 18:15–11117-65 0:39–308-15 308-16-771.15 3771.16–1432-13 308-147.51 308-167.751 308-2009.090 033-2021.5 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.5 2021.652.84 2021.5 2021.652.84 2021.5</td> <td>N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 33/374 27/360 42/300 35/306 42/300 35/306 42/300 35/306 42/280 28/251 35/302 40/364 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/274 35/320 47/368 28/340 35/274 35/320 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 41/250 35/336 41/251 41/251</td> <td></td> <td>OR (95% CI) 100 (Ref) 108 (0 47-2 48) 123 (054-2 40) 100 (Ref) 140 (0 67-2 93) 141 (0 81-4 49) 142 (0 67-2 93) 141 (0 81-4 49) 142 (0 78-2 66) 240 (1 92-5 64) 142 (0 78-2 66) 244 (0 99-5 05) 100 (Ref) 140 (0 62-3 20) 222 (0 99-5 05) 100 (Ref) 140 (0 51-2 72) 087 (0 38-1 92) 094 (0 43-2 03) 100 (Ref) 151 (0 57-2 30) 062 (0 35-1 91) 076 (0 32-1 80) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref) 100 (Ref)</td> <td>P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002         0.234</td>	Range, µg/g creatinine 2.93–559 37 559-38–1089-75 1008-75–2140-55 2140-56–55885-47 2.48–57-78 57.79–140.75 140-76-466-52 4406-63-64712-84 0.27–24-05 24:06–68.62 24:06–68.62 24:04–58.947-37 0.12–11-82 21:143–33.27 33:28–122-12 12:21.3–11183-44 0.05–1:06 1:07–54.9 5:05–31.67 31:68–34:166-67 0.14–4:64 4:65–9:32 9:33–18.14 18:15–11117-65 0:39–308-15 308-16-771.15 3771.16–1432-13 308-147.51 308-167.751 308-2009.090 033-2021.5 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.652.84 2021.5 2021.652.84 2021.5 2021.652.84 2021.5	N (HRC/non-HRC) 38/373 38/324 32/282 40/267 33/372 34/299 41/301 33/374 27/360 42/300 35/306 42/300 35/306 42/300 35/306 42/280 28/251 35/302 40/364 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/274 35/320 47/368 28/340 35/274 35/320 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 43/329 47/368 28/340 35/264 41/250 35/336 41/251 41/251		OR (95% CI) 100 (Ref) 108 (0 47-2 48) 123 (054-2 40) 100 (Ref) 140 (0 67-2 93) 141 (0 81-4 49) 142 (0 67-2 93) 141 (0 81-4 49) 142 (0 78-2 66) 240 (1 92-5 64) 142 (0 78-2 66) 244 (0 99-5 05) 100 (Ref) 140 (0 62-3 20) 222 (0 99-5 05) 100 (Ref) 140 (0 51-2 72) 087 (0 38-1 92) 094 (0 43-2 03) 100 (Ref) 151 (0 57-2 30) 062 (0 35-1 91) 076 (0 32-1 80) 100 (Ref)	P for trend         0.799         0.219         0.133         0.152         0.569         0.285         0.405         0.002         0.234
(b) Urinary phytoestrogens <pre>&lt;=60 y (n=3,020) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Enterodiol Q2 Q3 Q4 Enterodiol Q2 Q3 Q4 Enterodiol Q2 Q3 Q4 Enterodiol Q2 Q3 Q4 Enterodiol Q2 Q3 Q4 Enterodiol Q2 Q3 Q4 Enterodiol Q2 Q3 Q4 Enterodiol</pre>	Range, µg/g creatinine           3 67-351:74           351:75-774.45           3774:46-1742.85           1742:861-142.85           1742:861-142.85           1742:861-142.85           1742:861-142.85           1742:861-142.85           1742:861-142.85           1742:861-115.84           115:85-379:89           379:90-111751:63           0:14-19:45           19:46-55:7           55:58-199:09           19:91:0-67500:00           0:07:9-40           9:41-24:38           24:39:85:46           85:47-37687:50           0:03:0-82           0:03:0-82           0:04:37:3           3:79-26:64           26:65-12338:27           0:01-3:73           3:74-7:87           7:88-15:94           15:95-1939:21:16           0:12-181:84           18:18:5-472:69           47:70-1087:40           10:87-41:142787.70           0:01-19:25           19:26-51:83           51:94-122:49           12:25:0-1740:00           0:09-109:37           10:9:38-386:22           3:86:22	N (HRC/non-HRC)  19/830 17/759 19/754 20/602 12/829 20/710 25/729 18/677 12/813 20/709 24/722 19/701 14/783 19/721 18/739 24/702 20/837 17/746 15/720 23/642 14/879 22/784 23/635 16/647 24/827 12/749 18/737 24/827 12/749 18/737 24/842 13/799 18/696 20/608 25/776 14/783 14/738 14/7 14/788 14/738 14/78 14/78 14/78 14/78 14/78 14/78 14/78 14/78 14/78 14/78 14/7		OR (95% CI) 1 00 (Ref) 1 69 (065-4.34) 1 27 (0.39-4.05) 3 30 (1.39-7.81) 1 00 (Ref) 4 49 (152-13.24) 4 72 (0.31-4.13) 3 58 (1.31-9.81) 1 00 (Ref) 3 99 (1.37-11.65) 4 16 (1.43-9.41) 3 69 (1.43-9.50) 1 00 (Ref) 2 45 (1.00-5.97) 1 0.40 (29-3.68) 1 80 (0.61-5.29) 1 00 (Ref) 1 70 (0.62-4.68) 1 92 (0.59-6.21) 2 75 (1.07-7.06) 1 00 (Ref) 1 59 (0.41-6.08) 5 79 (1.67-20.08) 3 06 (0.85-11.01) 1 00 (Ref) 1 53 (0.52-4.54) 1 82 (0.64-5.19) 2 24 (1.03-5.56) 1 00 (Ref) 1 53 (0.52-4.54) 1 82 (0.64-5.19) 2 24 (0.83-5.56) 1 00 (Ref) 1 00 (Ref) 2 2 (0.03-5.56) 0 63 (0.20-2.00) 1 0 0 (22-2.00) 1 0 0 (22-2.00)	P for trend         0.018         0.053         0.055         0.674         0.057         0.012         0.077         0.098         0.107	Urinary phytoestrogens           >60 y (n=1,392)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Dialdzein           Q1           Q2           Q3           Q4           Dialdzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Equel           Q1           Q2           Q3           Q4           Enterolici           Q1           Q2 <td>Range, µg/g creatinine 2.93-559 37 559 33-1089-75 1089-76-2140-55 2140-56-5888-47 2.48-57-78 57.79-140-75 140-76-466-52 466-53-64712-84 0.27-24-05 24.06-68-62 66:83-241-13 24.11-4-58947-37 0.12-11.82 11.83-33.27 33.28-122.12 122.13-11183-44 0.05-1.06 1.07-549 55-03-167 31.68-34166-67 0.14-464 4.65-9.32 9.33-18-14 18.15-11117-65 0.39-308-15 308-16-771-15 771.16-1432-13 14.32-14-47545-45 0.02-26.89 26:90-65.79 65:80-147.51 14.47545-45 0.02-26.89 26:90-65.79 65:80-147.51 14.752-40009.09 0.33-202.15 202.16-652.94 652.84-1293.46 652.84-1293.45 202.16-652.94 652.84-1293.45 203.65-2644-123</td> <td>N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/321 35/306 42/280 28/241 35/302 40/364 43/329 47/368 28/340 35/264 36/274 36/347 43/329 47/368 28/340 35/264 36/274 36/347 36/377 25/382 32/250 32/250 36/264 41/250 35/336 41/251 34/283 36/276</td> <td></td> <td>OR (95% CI) 1.00 (Ref) 1.02 (0.47-2.48) 1.23 (0.54-2.80) 1.00 (Ref) 1.40 (0.67-2.93) 1.40 (0.67-2.93) 1.91 (0.81-44) 1.42 (0.67-2.93) 1.91 (0.81-44) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.40 (0.62-3.20) 2.22 (0.98-5.05) 1.63 (0.69-3.87) 1.00 (Ref) 1.18 (0.51-2.72) 0.94 (0.43-2.03) 1.00 (Ref) 1.19 (0.56-2.16) 1.17 (0.61-2.24) 1.00 (Ref) 1.14 (0.57-2.30) 0.62 (0.35-1.18) 1.00 (Ref) 1.10 (0.32-1.80) 2.20 (0.88-5.46) 2.79 (1.26-5.20) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 0.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 1.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 1.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 0.78 (0.3</td> <td>P for trend           0.799           0.219           0.133           0.152           0.569           0.285           0.405           0.002           0.234</td>	Range, µg/g creatinine 2.93-559 37 559 33-1089-75 1089-76-2140-55 2140-56-5888-47 2.48-57-78 57.79-140-75 140-76-466-52 466-53-64712-84 0.27-24-05 24.06-68-62 66:83-241-13 24.11-4-58947-37 0.12-11.82 11.83-33.27 33.28-122.12 122.13-11183-44 0.05-1.06 1.07-549 55-03-167 31.68-34166-67 0.14-464 4.65-9.32 9.33-18-14 18.15-11117-65 0.39-308-15 308-16-771-15 771.16-1432-13 14.32-14-47545-45 0.02-26.89 26:90-65.79 65:80-147.51 14.47545-45 0.02-26.89 26:90-65.79 65:80-147.51 14.752-40009.09 0.33-202.15 202.16-652.94 652.84-1293.46 652.84-1293.45 202.16-652.94 652.84-1293.45 203.65-2644-123	N (HRC/non-HRC) 36/373 38/324 32/282 40/267 33/372 34/299 41/301 38/274 27/360 42/280 29/347 42/321 35/306 42/280 28/241 35/302 40/364 43/329 47/368 28/340 35/264 36/274 36/347 43/329 47/368 28/340 35/264 36/274 36/347 36/377 25/382 32/250 32/250 36/264 41/250 35/336 41/251 34/283 36/276		OR (95% CI) 1.00 (Ref) 1.02 (0.47-2.48) 1.23 (0.54-2.80) 1.00 (Ref) 1.40 (0.67-2.93) 1.40 (0.67-2.93) 1.91 (0.81-44) 1.42 (0.67-2.93) 1.91 (0.81-44) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.42 (0.76-2.64) 1.40 (0.62-3.20) 2.22 (0.98-5.05) 1.63 (0.69-3.87) 1.00 (Ref) 1.18 (0.51-2.72) 0.94 (0.43-2.03) 1.00 (Ref) 1.19 (0.56-2.16) 1.17 (0.61-2.24) 1.00 (Ref) 1.14 (0.57-2.30) 0.62 (0.35-1.18) 1.00 (Ref) 1.10 (0.32-1.80) 2.20 (0.88-5.46) 2.79 (1.26-5.20) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 0.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 1.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 1.00 (Ref) 0.95 (0.46-1.95) 0.78 (0.35-1.74) 0.78 (0.3	P for trend           0.799           0.219           0.133           0.152           0.569           0.285           0.405           0.002           0.234

Fig. 3. The stratified analysis between urinary phytoestrogens and HRC among females from NHANES 1999–2010. The analysis was stratified by (a) race/ethnicity (White and non-White) and (b) age group ( $\leq$  60 years and > 60 years). Adjusted for age (continuous, not for age-stratified analysis), race/ethnicity (non-Hispanic White, non-Hispanic Black, Mexican American or other, not for race/ethnicity-stratified analysis), education level (below high school, high school or college or above), marital status (married/living with partner, divorced/separated/widowed or never married), poverty income ratio (0–1:30, 1:31–3:50, or 3:51–), BMI (<25, 25–30 or > 30 kg/m<sup>2</sup>), physical activity (vigorous, moderate or inactive), smoking status (non-smoker, current smoking or former smokers), alcohol intake (no drinking, moderate drinking or heavy drinking), hypertension (yes or no), diabetes (yes or no), dyslipidaemia (yes or no), total energy intake (continuous) and fat intake (continuous). HRC, hormone-related cancer; NHANES, National Health and Nutrition Examination Survey; NH, non-Hispanic; O-DMA, O-desmethylangolensin.

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#### Phytoestrogens with HRC and cancer biomarkers

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(a)											
Urinary phytoestrogens	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend	Urinary phytoestrogens	Range, µg/g creatinin	e N (HRC/non-HRC	;)	OR (95% CI)	P for trend
NH white (n=2,132)					10111210	Non-NH white (n=2,300	0)				
Total phytoestrogen	5 40 007 00	0//07	1	1 00 (0-0	0-469	Total phytoestrogen	4 00, 000,00	10/550	1	1 00 (0-0	0.655
02	267-83-627-00	8/467	1	1-00 (Ref) 0-70 (0-24-2-03)		02	229.24-517.16	10/558		1-00 (Ref) 1-01 (0-26-3-97)	
Q3	627-01-1302-01	26/533	-	0.39 (0.13-1.20)		Q3	517-17-1084-74	19/579	-	1.55 (0.41-5.90)	
Q4	1302-02-54004-41	40/528	1 <b>0</b> -1	0.65 (0.26-1.55)		Q4	1084.75-31443.60	21/543		1.22 (0.36-4.08)	
Total isoflavone					0-189	Total isoflavone					0.807
Q1	1.66-41.98	18/480	1	1-00 (Ref)		Q1	0.77-32.15	15/601	t.,	1.00 (Ref)	
03	90-87-271-01	34/526		0.98 (0.46-2.08)		03	81-75-262-58	8/572		0.37 (0.11-1.30)	
Q4	271-02-33908-97	24/531	-	0.36 (0.16-0.78)		Q4	262-59-31399-00	21/522	-	1.09 (0.35-3.46)	
Daidzein					0-425	Daidzein					0.469
Q1	0.23-16.88	18/501	+	1-00 (Ref)		Q1	0.08-14.66	17/606	- +	1.00 (Ref)	
Q2	16-89-44-74	19/486	H	0.63 (0.21-1.91)		Q2	14.67-44.56	16/548	<b>*</b>	0.92 (0.32-2.63)	
04	44-75-142-70	20/522	1	0.66 (0.29-1.39)		04	44.57-155.11	13/501	1	0.66 (0.19-2.24)	
Genistein	HETT LEGGT LG	24/004	1	000 (020 112)	0-499	Genistein	TOO TE EDEOD OO	THOLE	1	0 00 (0 10 2 00)	0.766
Q1	0.09-8.30	12/479	+	1-00 (Ref)		Q1	0.06-7.72	16/577		1.00 (Ref)	
Q2	8.31-21.39	22/504	+	1-67 (0-54-5-16)		Q2	7.73-19.75	15/549	•	0.77 (0.25-2.38)	
Q3	21-40-65-99	28/512	-	1.22 (0.48-3.09)		Q3	19.76-68.67	12/591	1	0.37 (0.13-1.06)	
Q4 O-DMA	66-00-7059-03	27/548	1	0-88 (0-38-2-02)	0-862	Q4 O-DMA	68·68-11514·39	20/520		0.89 (0.28-2.83)	0.151
Q1	0.03-0.66	15/513	+	1-00 (Ref)	0 002	Q1	0.02-0.44	9/604		1.00 (Ref)	0151
Q2	0.67-2.92	18/512	-	0.56 (0.21-1.51)		Q2	0.45-2.09	16/537	→ ■ →	2.50 (0.55-11.30)	
Q3	2.93-14.81	24/250	-	0.60 (0.21-1.65)		Q3	2.10-12.66	18/556		2.96 (0.63-13.79)	
Q4	14-82-3939-53	32/498	-	0.84 (0.33-2.15)		Q4	12.67-9557.52	20/540		3.14 (0.68-14.64)	
Equol	0.05-2.52	17/467		1.00 (Pof)	0-037	Equol	0.06-1.09	20/550		1.00 (Pof)	0.936
Q2	3.53-6.97	20/509	-	0.54 (0.16-1.84)		Q2	1.99-4.06	12/535	1	0.77 (0.26-2.23)	
Q3	6.98-13.88	31/505		0.50 (0.17-1.49)		Q3	4.07-8.09	15/564	-	1.67 (0.57-4.92)	
Q4	13-89-11635-77	21/562	-	0.30 (0.10-0.87)		Q4	8.10-7660.55	16/579		0.79 (0.25-2.52)	
Total lignan	111 III - 111				0-354	Total lignan					0.665
Q1	0.25-124.10	11/465	1	1-00 (Ref)		Q1	0.15-100.12	12/533	1. I.	1.00 (Ref)	
03	391-75-893-67	20/525		0.29 (0.13-0.66)		03	279.21-674.08	19/579	T	1.65 (0.47-5.84)	
Q4	893-68-52892-53	45/529	-	0.55 (0.22-1.39)		Q4	674.09-22473.21	25/578	-	0.84 (0.24-3.01)	
Enterodiol					0-627	Enterodiol					0.932
Q1	0.02-15.95	11/522	+	1-00 (Ref)		Q1	0.02-10.36	12/593		1.00 (Ref)	
Q2	15-96-38-41	19/525	•	0.51 (0.16-1.69)		Q2	10.37-26.78	19/554	-	1.96 (0.58-6.58)	
Q3	38-42-89-85	26/523	1	1.12 (0.34-3.65)		Q3	26-79-64-63	12/5/8	1	0.92(0.27-3.08) 1.37(0.42=4.44)	
Enterolactone	0300 1100301	551475	. T	100 (000 010)	0-366	Enterolactone	0404 4570 50	20/312		107 (042 444)	0.707
Q1	0.08-80.47	9/473	+	1-00 (Ref)		Q1	0.09-68.72	11/526		1.00 (Ref)	
Q2	80.48-316.62	16/506	-	0.99 (0.32-3.08)		Q2	68.73-233.32	10/547		1.74 (0.53-5.74)	
Q3	316-63-797-99	21/519	-	0.38 (0.16-0.89)		Q3	233-33-593-40	17/576	-	1.53 (0.44-5.37)	
Q4	798-00-43386-86	43/545	n Innnn	0.70 (0.29-1.70)		Q4	593-41-20267-86	25/588	rinnn	1.49 (0.40-5.52)	
			0 1 2 3 4 5						01234567		
(h)											
(b)											
(b) Urinary phytoestrogens	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend	Urinary phytoestrogens	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend
(b) Urinary phytoestrogens <=60 y (n=3,106) Total phytoestrogen	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend
(b) Urinary phytoestrogens <=60 y (n=3,106) Total phytoestrogen Q1	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend 0-132	Urinary phyloestrogens >60 y (n=1,326) Total phytoestrogen Q1	Range, µg/g creatinine	N (HRC/non-HRC)		OR (95% CI)	P for trend 0-254
(b) Urinary phytoestrogens <=60 y (n=3,106) Total phytoestrogen Q1 Q2	Range, µg/g creatinine 1·03-228·86 228·87-535·53	N (HRC/non-HRC) 4/800 2/803	_‡	OR (95% CI) 1·00 (Ref) 0·34 (0·10-1·16)	P for trend	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2	Range, µg/g creatinine 1-27-314-58 461-73-711-17	N (HRC/non-HRC) 34/353 29/284	+	OR (95% CI) 1.00 (Ref) 0.83 (0.38-1.80)	P for trend
(b) Urinary phytoestrogens <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12	N (HRC/non-HRC) 4/800 2/803 2/777	4	OR (95% Cl) 1.00 (Ref) 0.34 (0.10-1.16) 0.03 (0.00-0.85)	P for trend 0-132	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2 Q3	Range, µg/g creatinine 1-27-314-58 461-73-711-17 853-82-1520-08	N (HRC/non-HRC) 34/353 29/284 40/293	<b>.</b>	OR (95% CI) 1.00 (Ref) 0.83 (0.38-1.80) 1.36 (0.69-2.68)	P for trend
(b) Urinary phytoestrogens <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41	N (HRC/non-HRC) 4/800 2/803 2/777 5/713	■ ■ ■	OR (95% Cl) 1.00 (Ref) 0.34 (0.10-1.16) 0.03 (0.00-0.85) 0.44 (0.07-2.88)	<i>P</i> for trend 0-132	Urinary phyloestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2 Q3 Q4	Range, µg/g creatinine 1:27-314-58 461-73-711-17 853-82-1520-08 1696-72-27355-07	N (HRC/non-HRC) 34/353 29/284 40/293 36/257	*	OR (95% CI) 1.00 (Ref) 0.83 (0.38-1.80) 1.36 (0.69-2.68) 1.28 (0.65-2.53)	<i>P</i> for trend 0-254
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0.77-36-45	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841		OR (95% CI) 1-00 (Ref) 0-34 (0-10-1-16) 0-03 (0-00-0-85) 0-44 (0-07-2-88) 1-00 (Ref)	<i>P</i> for trend 0-132 0-777	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1	Range, µg/g creatinine 1.27-314.58 461.73-711.17 853.82-1520.08 1896.72-27355.07 0.04-43.89	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 30/225		OR (95% Cl) 1.00 (Ref) 0.83 (0.38-1.80) 1.36 (0.69-2.68) 1.28 (0.65-2.53) 1.00 (Ref)	P for trend 0.254 0.529
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q4 Total isoflavone Q1 Q2	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0-77-36-45 36-45-83-95	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737		OR (95% CI) 1-00 (Ref) 0-34 (0.10-1-16) 0-03 (0.00-0-85) 0-44 (0.07-2-88) 1-00 (Ref) 0-78 (0.06-9-60)	P for trend 0-132 0-777	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2	Range, µg/g creatinine 1.27-314.58 461.73-711.17 853.82-1520.08 1696.72-27355.07 0.94-43.89 64.99-103.27	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280		OR (95% Cl) 1.00 (Ref) 0.83 (0.38-1.80) 1.26 (0.69-2.68) 1.28 (0.65-2.53) 1.00 (Ref) 0.49 (0.19-1.25)	P for trend 0:254 0:529
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q3 Q4 Q2 Q3 Q4 Q3 Q3 Q2 Q3 Q4 Q2 Q3 Q3 Q4 Q2 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3 Q3	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0-77-36-45 36-45-83-95 36-39-56 33-96-259-16	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767		OR (95% CI) 1-00 (Ref) 0-34 (0-10-1-16) 0-03 (0-00-0-85) 0-44 (0-07-2-88) 1-00 (Ref) 0-78 (0-06-9-60) 1-36 (0-19-9-51)	<i>P</i> for trend 0-132 0-777	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total softworne           Q1           Q2           Q3           Q4           Q2           Q3           Q4           Q3           Q4	Range, µg/g creatinine 1.27-314-58 461:73-711-17 853:82-1520:08 1696-72-27355:07 0.94-43-89 46-49-103:27 112:00-334:21	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298		OR (95% Cl) 1.00 (Ref) 0.83 (0.38-1.80) 1.26 (0.69-2.68) 1.28 (0.65-2.53) 1.00 (Ref) 0.49 (0.19-1.25) 0.93 (0.41-2.09)	P for trend 0.254 0.529
(b) <u>Urinary phyloestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0.77-36-45 36-45-83-95 83-96-259-16 259-17-33908-97	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748		OR (95% Cl) 1-00 (Ref) 0-34 (0-10-1-16) 0-03 (0-00-0-85) 0-44 (0-07-2-88) 1-00 (Ref) 0-78 (0-06-9-60) 1-36 (0-19-9-51) 0-89 (0-08-9-76)	P for trend 0-132 0-777	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Q4	Range, µg/g creatinine 1-27-314-58 461-73-711-7 653-82-152-008 1896-72-27355-07 0-94-43-89 46-49-103-27 112-00-334-21 305-28-24420-12	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284		OR (95% Cl) 1-00 (Ref) 0-83 (0-38-1-80) 1-36 (0-69-2-68) 1-28 (0-65-2-53) 1-00 (Ref) 0-49 (0-19-1-25) 0-93 (0-41-2-09) 0-66 (0-35-1-27)	P for trend 0.254 0.529
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein	Range, µg/g creatinine	N (HRC/non-HRC) 4/800 2/777 5/713 2/841 4/737 5/767 2/748		OR (95% C1) 1.00 (Ref) 0.34 (0.10–1.16) 0.03 (0.00–0.82) 0.44 (0.07–2.88) 1.00 (Ref) 0.78 (0.06–9.60) 1.38 (0.19–9.51) 0.89 (0.09–8.76)	P for trend 0-132 0-777 0-409	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein	Range, μg/g creatinine 1:27-314.58 461.73-711.17 853.82-1520.08 1896.72-27355.07 0.94-43.89 46.49-103.27 112.00-334.21 305.28-24420.12 0.94.0.90	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 35/298 35/298		OR (95% CI) 1.00 (Ref) 0.83 (0.38-1.80) 1.36 (0.69-2.63) 1.28 (0.65-2.63) 1.00 (Ref) 0.49 (0.19-1.25) 0.93 (0.41-2.09) 0.66 (0.35-1.27)	P for trend 0.254 0.529 0.387
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Data Data	Range, µg/g creatinine 1.03-228.86 228.87-535.53 535.54-1139.12 1139.13-54004.41 0.77-364.5 36.45-83.95 83.96-259.16 259.17-33008.97 0.09-16.03 16.04-63.41	N (HRC/non-HRC) 4/800 2/803 2/871 5/713 2/841 4/737 5/767 2/748 2/856 4/728		OR (95% Cl) 1.00 (Ref) 0.34 (0:10-1:16) 0.03 (0:00-0:85) 0.44 (0:07-2:88) 1.00 (Ref) 0.76 (0:06-960) 1.36 (0:19-9:51) 0.88 (0:09-8:76) 1.00 (Ref) 0.57 (0:06-6:81)	P for trend 0-132 0-777 0-409	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           O1           Q2           Q3           Q4           Daldzein           Q1           Q2	Range, µg/g creatinine 1.27-314-58 461:73-711-17 853:82-152:008 1696:72-27355:07 0.94-43:89 46-49-103:27 112:00-334:21 305:28-24420:12 0.08-18:28 18:90-50.83	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 33/298 37/284 38/313 28/281		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:53) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:35-1:27) 1:00 (Ref) 0:65 (0:26-1:63)	P for trend 0·254 0·529 0·387
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q4 Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Q3 Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Daid	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0-77-36-45 36-45-83-95 36-36-95-16 259-17-33906-97 0-09-16-03 16-04-43-41 43-42-142-67	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745		OR (95% Cl) 1.00 (Ref) 0.34 (010-1.16) 0.03 (000-985) 0.44 (007-2.88) 1.00 (Ref) 0.78 (006-9.60) 1.38 (019-9.61) 0.89 (0.09-8.76) 1.00 (Ref) 0.57 (006-5.81) 0.36 (022-6.81)	<i>P</i> for trend 0-132 0-777 0-409	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total softworne           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3	Range, µg/g creatinine 1.27-314-58 461.73-711-7 853.82-1520.08 1696-72-27355.07 0.94-43-89 46.49-103.27 112.00-334.21 305.28-24420.12 0.08-18-28 18.90-50.63 55.00-176.94	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1-80) 1:36 (0:69-2:68) 1:28 (0:65-2:53) 1:00 (Ref) 0:93 (0:41-2:09) 0:66 (0:35-1:27) 1:00 (Ref) 0:65 (0:26-1:63) 0:96 (0:46-2:163)	<i>P</i> for trend 0-254 0-529 0-387
(b) <u>Urinary phyloestrogens</u> <a href="https://www.strogen"> <a href="https://www.strogen"> <a href="https://www.strogen"> <a href="https://www.strogen"> <a href="https://www.strogen"> <a href="https://www.strogen"> <a href="https://www.strogen"> </a> </a> </a> </a> </a> </a> </a> <td>Range, µg/g creatinine 1.03-228.86 228.87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 33-64-58-35 83-96-259-16 259-17-33008-97 0.09-16-03 16-04-43-41 43-42-142-67 142-68-23200-00</td> <td>N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764</td> <td></td> <td>OR (95% C1) 1.00 (Ref) 0.34 (0 10–1-16) 0.03 (0 00–63 0.03 (0 00–640) 1.36 (0 19–9.51) 1.00 (Ref) 0.57 (0 06–640) 1.57 (0 06–541) 0.57 (0 06–541) 0.36 (0 02–618) 2.23 (0 46–10.71)</td> <td>P for trend 0-132 0-777 0-409</td> <td>Urinary phytoestrogens           &gt;60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q3           Q4           Daidzein           Q1           Q3           Q4           Q3           Q4</td> <td>Range, μg/g creatinine 1:27-314:58 461:73-711:17 853:32-152:008 1696:72-27355:07 0:94-43:89 46:49-103:27 112:00-334:21 305:28-24420:12 0:08-18:28 18:90-50:83 55:00-176:94 17:364-18:35:294</td> <td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289</td> <td></td> <td>OR (95% CI) 1.00 (Ref) 0.83 (0.38-1.80) 1.36 (0.69-2.68) 1.28 (0.65-2.53) 1.00 (Ref) 0.48 (0.19-1.25) 0.93 (0.41-2.09) 0.66 (0.35-1.27) 1.00 (Ref) 0.65 (0.26-1.63) 0.96 (0.46-2.02) 0.64 (0.33-1.28)</td> <td><i>P</i> for trend 0-254 0-529 0-387</td>	Range, µg/g creatinine 1.03-228.86 228.87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 33-64-58-35 83-96-259-16 259-17-33008-97 0.09-16-03 16-04-43-41 43-42-142-67 142-68-23200-00	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764		OR (95% C1) 1.00 (Ref) 0.34 (0 10–1-16) 0.03 (0 00–63 0.03 (0 00–640) 1.36 (0 19–9.51) 1.00 (Ref) 0.57 (0 06–640) 1.57 (0 06–541) 0.57 (0 06–541) 0.36 (0 02–618) 2.23 (0 46–10.71)	P for trend 0-132 0-777 0-409	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q3           Q4           Daidzein           Q1           Q3           Q4           Q3           Q4	Range, μg/g creatinine 1:27-314:58 461:73-711:17 853:32-152:008 1696:72-27355:07 0:94-43:89 46:49-103:27 112:00-334:21 305:28-24420:12 0:08-18:28 18:90-50:83 55:00-176:94 17:364-18:35:294	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289		OR (95% CI) 1.00 (Ref) 0.83 (0.38-1.80) 1.36 (0.69-2.68) 1.28 (0.65-2.53) 1.00 (Ref) 0.48 (0.19-1.25) 0.93 (0.41-2.09) 0.66 (0.35-1.27) 1.00 (Ref) 0.65 (0.26-1.63) 0.96 (0.46-2.02) 0.64 (0.33-1.28)	<i>P</i> for trend 0-254 0-529 0-387
(b) <u>Urinary Phytoestrogens</u> <a (n="3,106)&lt;br" box="">Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Daidzein Q4 Q4 Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4</a>	Range, µg/g creatinine 1:03-228:86 228:87-535:53 538:54-1139:12 1139:13-54004:41 0:77-56:45 36:45-83:95 83:96-259:16 259:17-33908:97 0:09-16:03 16:04-43:41 43:42-142:67 142:68-23200:00	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/745 3/764		OR (95% Cl) 1.00 (Ref) 0.34 (0.10-1.16) 0.03 (0.00-0.85) 0.44 (0.07-2.88) 1.00 (Ref) 0.78 (0.06-9-60) 1.36 (0.19-9-51) 0.68 (0.09-8-76) 1.00 (Ref) 0.57 (0.06-5-81) 0.36 (0.02-6-18) 2.23 (0.46-10-71)	P for trend 0-132 0-777 0-409 0-964	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isofiavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Casser           Q3           Q4           Casser           Q4           Casser           Q3           Q4           Q3           Q4           Q5           Q6           Q7           Q8           Q9           Q1           Q2           Q3           Q4           Cenistein	Range, µg/g creatinine 1.27-314.58 451.73-711.17 853.82-152.008 1696.72-27355.07 0.94-43.89 46.49-103.27 112.00-334.21 305.28-24420.12 0.08-18.28 18.90-50.83 55.00-176.94 173.64-18352.94	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:28 (0:65-2:63) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:35-1:27) 1:00 (Ref) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:33-1:26)	P for trend 0:254 0:529 0:387 0:774
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytostrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1	Range, µg/g creatinine 1.03-228.86 228.87-535.53 535.54-1139.12 1139.13-54004.41 0.77-36.45 36.45-83.95 83.96-259.16 259.17-3308.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-77.1 370.407.4	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/764		OR (95% CI) 1.00 (Ref) 0.34 (0:10-1:16) 0.03 (0:00-985) 0.44 (0:07-2:88) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 0.57 (0:06-5:81) 0.36 (0:02-6:18) 2.23 (0:46-10:71) 1.00 (Ref)	P for trend           0-132           0.777           0.409           0.964	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q3           Q4	Range, µg/g creatinine 1.27-314-58 461.73-711-7 853.82-1520.08 1696-72-27355-07 0.94-43-89 46-49-103.27 112.00-334.21 305.28-24420-12 0.09-18-28 18-90-50.63 55:00-176-94 173.64-18352.94 0.07-8.98 10.10-20 20.00	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 29/297		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:80) 1:36 (0:65-2:63) 1:28 (0:65-2:53) 1:28 (0:65-2:53) 1:00 (Ref) 0:93 (0:41-2:09) 0:66 (0:35-1:27) 1:00 (Ref) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:33-1:26) 1:00 (Ref) 0:05 (0:41-20) 0:05 (0:41-20)	P for trend 0-254 0-529 0-387 0-774
(b) <u>Urinary phyloestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0-77-36-45 36-45-83-95 36-36-95-16 259-17-33908-97 0-09-16-03 16-04-43-41 43-42-142-67 142-68-23200-00 0-06-7.71 7-72-19-71 16-32-00	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/785 3/782 4/781		OR (95% Cl) 1.00 (Ref) 0.34 (010-1.16) 0.03 (000-985) 0.44 (007-2.88) 1.00 (Ref) 0.78 (008-960) 1.36 (019-9651) 0.89 (0.09-8.76) 1.00 (Ref) 0.57 (006-5.81) 0.56 (002-6.81) 0.23 (046-10.71) 1.00 (Ref) 1.23 (0.46-10.71) 1.00 (Ref)	P for trend 0 132 0 777 0 409 0 964	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total softworne           Q1           Q2           Q3           Q4           Datdzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4	Range, µg/g creatinine 1:27-314-58 461:73-711-7 85:32-152:008 1896-72-27355:07 0:94-43-89 46:49-103:27 112:00-334:21 305:28-24420:12 0:08-18:28 18:90-50:083 55:00-176:94 173:64-18:352:94 0:07-8:98 10:19-23:30 2:74-70.64 10:57-23:30 2:74-70.64 10:57-23:30 2:74-70.64 10:57-24 2:74-70.64 10:57-24	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/284 38/313 28/281 36/289 35/306 30/287 36/204		OR (95% CI) 1.00 (Ref) 0.83 (0.38-1.80) 1.36 (0.69-2.68) 1.28 (0.65-2.53) 1.00 (Ref) 0.49 (0.19-1.25) 0.93 (0.41-2.09) 0.66 (0.35-1.27) 1.00 (Ref) 0.66 (0.26-1.63) 0.96 (0.46-1.88) 1.00 (Ref) 0.96 (0.46-1.98) 0.96	P for trend 0·254 0·529 0·387 0·774
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Genist	Range, µg/g creatinine 103-228 86 228 87-535 53 535 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33908-97 0.09-16.03 16-04-43-41 43-42-142.67 142:68-23200 00 0.06-7.71 1.722-19.71 1.972-62.90 62:91-11514.39	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/785 3/785 3/785 3/785		OR (95% Cl) 1.00 (Ref) 0.34 (0.10-1.16) 0.03 (0.00-0.85) 0.44 (0.10-2.88) 1.00 (Ref) 0.76 (0.06-960) 1.36 (0.19-9.51) 0.89 (0.09-9.76) 1.00 (Ref) 0.57 (0.06-5.81) 0.36 (0.02-6.18) 2.23 (0.46-10.71) 1.00 (Ref) 1.49 (0.21-10.44) 0.95 (0.08-11.75) 1.28 (0.15-10.76)	P for trend 0-132 0-777 0-409 0-964	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           01           02           03           Q4           Total isoftavone           01           02           03           Q4           Daidzein           01           02           03           Q4           Genistein           01           02           03           Q4           Genistein           01           02           03           Q4	Range, μg/g creatinine 1:27-314:58 461:73-711-17 853:82-1520:08 1696:72-27355:07 0:94-43:89 46:49-103:27 112:00-334:21 305:28-2420:12 0:08-18:28 18:90-50:83 55:00-176:94 173:64-18352:94 0:07-8:98 10:19-23:30 25:71-79:61 80:54-10020:65	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/306 30/287 35/306 30/287 35/304	· · · · · · · · · · · · · · · · · · ·	OR (95% CI) 1-00 (Ref) 0-83 (0-36-1-80) 1-36 (0-69-2-68) 1-28 (0-65-2-63) 1-28 (0-65-2-63) 1-00 (Ref) 0-49 (0-19-1-25) 0-93 (0-41-2-09) 0-65 (0-26-1-63) 0-96 (0-46-2-02) 0-64 (0-33-1-26) 1-00 (Ref) 0-96 (0-46-1-98) 0-93 (0-46-1-87) 0-91 (0-46-1-87) 0-91 (0-46-1-87) 0-91 (0-46-1-73) 0-91 (0-46-1-73)	P for trend 0-254 0-529 0-387 0-774
(b) <u>Urinary Phytoestrogens</u> <pre>&lt;=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Daidzein Q4 Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Q4 Daidzein Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4</pre>	Range, µg/g creatinine 1.03-228.86 228.87-535.53 535.54-1139.12 1139.13-54004.41 0.77-38.45 36.45-83.95 83.96-259.16 259.17-33008.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-77.1 7.72-19.71 19.72-62.90 62.91-11514.39	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/765 3/785 3/765		OR (95% CI) 1.00 (Ref) 0.34 (0:10-1.16) 0.03 (0:00-0.85) 0.44 (0:07-2.88) 1.00 (Ref) 0.76 (0:06-960) 1.36 (0:19-9.51) 0.88 (0:09-8.76) 1.00 (Ref) 0.57 (0:06-5.81) 0.36 (0:02-6.18) 2.23 (0:46-10.71) 1.00 (Ref) 1.49 (0:21-10.44) 0.45 (0:08-11.75) 1.28 (0:15-10.76)	P for trend 0-132 0-777 0-409 0-964 0-957	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Q2           Q3           Q4           Q2           Q3           Q4           Q2           Q3           Q4           Q4           Q2           Q3           Q4           Q2           Q3           Q4	Range, µg/g creatinine 1.27-314-58 461:73-711-17 853:82-152:008 1696-72-27355:07 0.94-43-88 46-49-103:27 112:00-334:21 305:28-24420-12 0.08-18:28 18:90-50:83 55:00-176:94 173:64-18352:94 0.07-89:8 10:19-23:30 25:71-79:61 80:54-10020:65	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/304 38/290	·●↓↓↓ ┃ ┃	OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:53) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:66 (0:35-1:27) 1:00 (Ref) 0:96 (0:46-2:02) 0:96 (0:46-1:63) 0:95 (0:46-1:73) 0:91 (0:48-1:73) 0:91 (0:48-1:73)	P for trend 0.254 0.529 0.387 0.774
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Combistein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 1.03-228.86 228.87-535.53 535.54-1139.12 1139.13-54004.41 0.77-38.45 36.45-63.95 83.96-259.16 259.17-33908.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-7.71 7.72-19.71 19.72-62.90 62.91-11514.39 0.02-0.55	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/745 3/764 3/785 3/785 3/785 3/785 3/785 3/765 3/856		OR (95% Cl) 1.00 (Ref) 0.34 (0:10-1:16) 0.03 (0:00-985) 0.44 (0:07-2:88) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.49 (0:21-10.44) 0.55 (0:06-11.044) 0.55 (0:06-11	P for trend           0-132           0.777           0.409           0.964           0.957	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total softworne           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q3           Q4           O-DMA           Q1	Range, µg/g creatinine 1:27-314:58 461:73-711-7 853:82-152:008 1696:72-27355:07 0:94-43:89 46:49-103:27 112:00-334:21 305:28-24420:12 0:08-18:28 18:90-50:083 55:00-176:94 173:64-18352:94 0:07-8:98 10:19-23:30 25:71-79:61 80:54-10020:65 0:03-0:73	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/290 28/343		OR (95% CI) 1 00 (Ref) 0 83 (0 38-1-80) 1 36 (0 69-2 68) 1 -28 (0 65-2 -53) 1 -00 (Ref) 0 49 (0 19-1-125) 0 93 (0 41-2 -09) 0 66 (0 -35-1-27) 1 -00 (Ref) 0 66 (0 -35-1-27) 1 -00 (Ref) 0 96 (0 46-1-83) 0 -93 (0 46-1-87) 0 -93 (0 46-1-73) 1 -00 (Ref) 1 -00 (Ref)	P for trend 0-254 0-529 0-387 0-774
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q3 Q4 Daidzein Q2 Q4 Daidzein Q2 Q4 Daidzein Q4 Da	Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0.77-36-45 36-45-83-95 83-96-259-16 259-17-33908-97 0.09-16-03 16-04-43-41 43-42-142-67 142-68-23200-00 0.06-7.71 19-72-62-90 62-91-11514-39 0.02-0.55 0.56-2.49 0.56-2.49	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/765 3/782 3/765 3/761 3/765 3/765 3/765 3/765 3/761 3/765 3/765 3/763		OR (95% Cl) 1.00 (Ref) 0.34 (0 100-16) 0.03 (0 00-0.85) 0.44 (0 100-2.88) 1.00 (Ref) 0.78 (0 00-9.670) 1.38 (0 10-9.51) 0.89 (0 00-9.76) 1.00 (Ref) 0.36 (0 02-6.18) 2.23 (0 46-10.71) 1.49 (0 21-0.44) 0.95 (0 08-11.75) 1.28 (0 15-10.76) 1.20 (Ref) 0.00 (R	P for trend           0.132           0.777           0.409           0.964           0.957	Urinary phytoestrogens >60 y (n=1,326) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Q1 Q2 Q3 Q4 Cenistein Cenistein Q2 Q3 Q4 Cenistein Ce	Range, μg/g creatinine           1:27-314-58           461:73-711-7           583:82-152:008           1896-72-27355:07           0:94-43:89           46:49-103:27           11:20-0342:11           305:28-24420:12           0:08-18:28           18:90-50:083           55:00-176:94           173:64-183:294           0:07-8:98           10:19-23:30           25:71-79:61           80:54-10020:65           0:03-0-73           0:85-333	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 30/287 35/306 35/306 35/306 35/290 35/290 35/29		OR (95% CI) 1-00 (Ref) 0-83 (0:38-1-80) 1-36 (0:69-2-68) 1-28 (0:65-2-53) 1-00 (Ref) 0-49 (0:19-1-25) 0-93 (0:41-2-09) 0-65 (0:26-1-63) 0-96 (0:46-2-02) 0-65 (0:26-1-63) 0-96 (0:46-1-98) 0-96 (0:46-	P for trend 0-254 0-529 0-387 0-774 0-515
(b) <u>Urinary Phytoestrogens</u> <a (n="3,106)&lt;br" box="">Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4</a>	Range, µg/g creatinine 1 03-228 86 228 87-535 53 538 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33008-97 0.09-16.03 16:04-43.41 43:42-142.67 142:68-23200 00 0.06-7.71 7.72-19.71 19:72-62.90 62:91-11514.39 0.02-0.55 0.56-2.49 2:50-13.51 142:67, 25 142:67, 25 145:77, 25	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/745 3/764 3/785 3/785 3/785 3/765 3/856 1/743 3/759 \$/759		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:16) 0:33 (0:00-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:76 (0:06-6:0) 1:36 (0:19-9:51) 0:89 (0:09-8:76) 1:00 (Ref) 0:57 (0:06-5:81) 0:36 (0:02-6:18) 2:23 (0:48-10:71) 1:00 (Ref) 1:28 (0:19-10:76) 1:28 (0:19-10:76) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 1:00 (2:000-0:28) 0:04 (0:00-0:73) 1:38 (0:19-33) 1:38 (0:19-33)	P for trend           0.132           0.777           0.409           0.964           0.957	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           Q2           Q3           Q4           Q3           Q4	Range, µg/g creatinine 1.27–314-58 461:73–711-17 853:82–152:008 1696-72–27355-07 0.94–438.99 46-49–103.27 112:00–334.21 305:28–24420-12 0.08–18.28 18:90–50-63 5:00–176-94 173:64–18352:94 0.07–8.98 10:19–23.30 25:71–79-61 80:54–10020:65 0.03–0.73 0.65–3.33 3:66–19.35 1:68–9.209.62	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 33/284 37/304 38/313 28/281 37/304 36/289 35/306 30/287 35/304 39/289 30/271 4	┍┿┿╺ <b>╶┶┿┿╺╶┶┿┰╸╶┶┿┰╸</b>	OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:28 (0:65-2:63) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:33-1:26) 1:00 (Ref) 0:96 (0:46-1:86) 0:95 (0:46-1:87) 0:96 (0:46-1:87)	P for trend 0-254 0-529 0-387 0-774 0-515
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 CDMA Q1 Q2 Q3 Q4 Equal	Range, µg/g creatinine 1.03-228.86 228.87-535.53 535.54-1139.12 1139.13-54004.41 0.77-364.5 364.5-83.95 83.96-259.16 259.17-33008.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-7.11 7.72-19.71 19.72-62.90 62.91-11514.39 0.02-0.55 0.56-24.99 2.50-13.51 13.52-9557.52	N (HRC/non-HRC) 4/800 2/803 2/877 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/765 3/785 3/785 3/785 3/785 3/785 3/785 3/759 6/735		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:16) 0:03 (0:00-985) 0:44 (0:07-2:88) 1:00 (Ref) 1:00 (Ref) 1:36 (0:19-951) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:56 (0:06-5:81) 2:23 (0:46-10:71) 1:00 (Ref) 1:49 (0:21-10:44) 0:56 (0:06-11:75) 1:28 (0:15-10:76) 1:00 (Ref) 1:00 (Ref) 0:02 (0:00-0:29) 0:04 (0:00-0:73) 1:36 (0:47-3:93)	P for trend           0-132           0.777           0.409           0.964           0.957           0.051	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoffavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Esuol	Range, µg/g creatinine 1:27-314-58 461:73-711-17 853:82-152:008 1696-72-27355:07 0:94-43-89 46:49-103:27 112:00-334:21 305:28-24420:12 0:08-18:28 18:90-50:63 55:00-176:94 173:64-18352:94 0:07-8:98 10:19-23:30 25:71-79:61 80:54-10020:65 0:33-0:73 0:85-333 3:66-19:35 15:68-3939:53	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/287 35/304 39/290 28/343 38/299 30/271 43/284		OR (95% CI) 1 00 (Ref) 0 83 (0 38-1.80) 1 36 (0 65-2.63) 1 28 (0 65-2.63) 1 28 (0 65-2.63) 1 00 (Ref) 0 49 (0 19-1.25) 0 93 (0 41-2.09) 0 66 (0 35-1.27) 1 00 (Ref) 0 96 (0 46-1.98) 0 93 (0 46-1.98) 0 93 (0 46-1.47) 0 91 (0 48-1.47) 0 91 (0 48-1.47) 1 00 (Ref) 1 72 (0 76-3.89) 1 72 (0 76-3.30) 1 44 (0 69-2.97)	P for trend 0-254 0-529 0-387 0-774 0-515
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 G1 Q2 Q3 Q4 G1 Q2 Q3 Q4 G1 Q2 Q3 Q4 G1 Q2 Q3 Q4 Q4 G1 Q2 Q3 Q4 Q4 Q1 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 G1 Q2 Q3 Q4 Q4 G1 G1 G1 G1 G1 G1 G1 G1 G1 G1	Range, µg/g creatinine 1-03-228 86 228 87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 36-45-83-95 83-96-259-16 259-17-33006-97 0.09-1603 16-04-43-41 43-42-142-67 142-68-23200.00 0.06-7.71 0.77-26-90 0.62-97-11 0.77-26-90 0.62-91-11514-39 0.02-0.55 0.66-2-49 2.50-13-51 13-52-9857-52 0.05-2.74	N (HRC/non-HRC) 4/800 2/003 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/764 3/765 3/765 3/765 3/765 3/765 4/852		OR (95% Cl) 1.00 (Ref) 0.34 (0 100-16) 0.34 (0 100-85) 0.44 (0 100-88) 1.00 (Ref) 0.78 (0 109-951) 0.89 (0 00-9-876) 1.00 (Ref) 0.38 (0 02-8-18) 2.23 (0 46-10-71) 1.49 (0 21-10-44) 0.95 (0 00-9-175) 1.28 (0 15-10-76) 1.20 (Ref) 0.00 (Ref) 0.0	P for trend           0-132           0.777           0.409           0.964           0.957           0.051	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total softworne           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Centistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q3           Q4           Equol           Q1	Range, μg/g creatinine           1:27-314-58           461:73-711-7           85:32-152:008           1696-72-27355:07           0:94-43-89           46:49-103:27           11:20-034:21           305:28-24420:12           0:08-18:28           18:90-50:083           55:00-176:94           173:64-18352:94           0:07-8:98           0:19-23:30           25:71-79:61           80:54-10020:65           0:03-0:73           0:86-19:35           15:68-3939:953           0:06-3:34	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/284 38/313 28/281 30/287 35/306 30/287 35/306 30/287 35/304 36/249 28/343 38/289 28/343 38/289 28/343 38/289		OR (95% CI) 100 (Ref) 083 (0.38-1-80) 1.36 (0.69-2.68) 1.28 (0.65-2.53) 1.00 (Ref) 0.49 (0.19-1-25) 0.93 (0.41-2.69) 0.93 (0.41-2.69) 0.96 (0.46-2.68) 0.96 (0.46-1.98) 0.93 (0.46-1.98) 0.93 (0.46-1.97) 0.91 (0.46-1.97) 0.91 (0.46-1.97) 0.91 (0.46-1.97) 0.91 (0.46-1.97) 0.91 (0.46-1.97) 0.91 (0.46-1.97) 0.91 (0.46-1.97) 1.00 (Ref) 1.72 (0.76-3.69) 1.24 (0.51-3.00) 1.24 (0.51-3.00) 1.44 (0.69-2.67) 1.00 (Ref)	P for trend           0.254           0.529           0.387           0.774           0.515           0.341
(b) <u>Urinary Phytoestrogens</u> <=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q2 Q3 Q4 Cenistein Q4 Cenistein Q5 Cenistein	Range, µg/g creatinine 103-228 86 228 87-535 53 535 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 229-17-33908 97 0.09-16.03 16:04-43.41 43.42-142.67 142:68-32200 00 0.06-7.71 7.72-197.1 19:72-62.90 62:91-11514-39 0.02-0.55 0.56-2.49 2.50-13.51 13:52-957.52 0.05-2.74 2.75-5.80	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/745 3/785 3/785 3/785 3/785 3/785 3/785 3/759 6/735 4/852 2/780		OR (95% Cl) 1.00 (Ref) 0.34 (0 10-1.16) 0.33 (0 10-0.85) 0.44 (0 07-2.88) 1.00 (Ref) 0.78 (0 06-60) 1.36 (0 19-9.51) 0.68 (0 00-8.76) 1.00 (Ref) 0.75 (0 06-5.81) 0.38 (0 02-6.18) 2.23 (0 46-10.71) 1.00 (Ref) 1.28 (0 08-11.75) 1.28 (0 15-10.76) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 0.02 (0 00-0.73) 1.36 (0 47-3.93) 1.00 (Ref) 1.00 (Ref) 0.35 (0 05-2.25)	P for trend           0.132           0.777           0.409           0.964           0.957           0.051	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isofiavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           C-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4	Range, µg/g creatinine 1.27-314.58 461:73-711.17 853:82-152:008 1696:72-27355.07 0.94-43.89 46.49-103.27 112:00-334.21 305:28-24420.12 0.08-18:28 1890-50-83 55:00-176.94 173:64-18352.94 0.07-8.98 10.19-23.30 25:71-79.61 80:54-10020.65 0.03-0.73 0.65-3.33 3.66-19.35 15:68-3939.53 0.06-3.34 4.22-6.98	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 33/284 37/304 36/289 35/306 30/287 35/306 30/287 35/304 39/290 28/343 38/289 30/271 43/284 43/285 31/270	1. <u>11</u>	OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:28 (0:65-2:63) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:36-1:63) 0:96 (0:46-2:02) 0:64 (0:33-1:25) 1:00 (Ref) 0:96 (0:46-1:86) 0:93 (0:46-1:87) 0:95 (0:46-1:87)	P for trend           0-254           0-529           0-387           0-774           0-515           0-341
(b) <u>Urinary Phytoestrogens</u> <pre>&lt;=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q2 Q3 Q4 Equol Q4 Q4 Equol Q2 Q3 Q4 Q4 Equol Q4 Q4 Equol Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4</pre>	Range, µg/g creatinine 1.03-228.86 228.87-535.53 535.54-1139.12 1139.13-54004.41 0.77-36.45 36.45-83.95 83.96-259.16 259.17-33908.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-7.71 7.72-19.71 19.72-62.90 62.91-11.514.39 0.02-0.55 0.65-2.49 2.50-13.51 13.52-855.752 0.05-2.74 2.75-5.80 5.61-11.93	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/745 3/764 3/765 3/765 3/765 3/765 3/765 3/759 6/735 4/852 2/780 6/772		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:6) 0:33 (0:00-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:76 (0:06-960) 1:36 (0:19-9:51) 0:88 (0:09-8:76) 1:00 (Ref) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 1:00 (Ref) 0:22 (0:06-0:29) 0:04 (0:00-0:29) 0:35 (0:05-2:25) 0:37 (0:03-4:27)	P for trend           0-132           0.777           0.409           0.964           0.957           0.051	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Q1           Q2           Q3           Q4           Q1           Q2           Q3           Q4           Q3           Q4           Q1           Q2           Q3           Q4           Q1           Q2           Q3	Range, µg/g creatinine 1:27-314-58 461:73-711-17 853:82-1520:08 1696:72-27355:07 0:94-43-89 46:49-103:27 112:00-334 21 305:28-24420:12 0:09-18:28 18:90-50:83 55:00-176:94 173:64-18352:94 0:07-86 10:19-23:30 25:71-79:61 80:54-10020:65 0:03-073 0:65-3:33 3:66-19:35 15:66-3939:53 0:06-33:44 4:22-668 7:53-14:47	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 39/290 28/343 38/299 28/343 38/299 28/343 38/291 28/343 38/291 38/284 38/291 38/291 38/284 38/28	╡┇╸╧┇ <mark>┊╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴</mark>	OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:80) 1:36 (0:69-2:68) 1:28 (0:65-2:53) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:66 (0:35-1:27) 1:00 (Ref) 0:96 (0:46-2:02) 0:96 (0:46-2:02) 0:96 (0:46-1:63) 0:96 (0:46-1:63) 0:93 (0:46-1:63)	P for trend 0.254 0.529 0.387 0.774 0.515 0.341
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 CDMAA Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q1 Q2 Q3 Q4 Equuol Q4 Equuol Q4 Equuol Q4 Equuol Q4 Equuol Q4 Equuol Q4 Equuol Q4 Equuol E	Range, µg/g creatinine 103-228 86 228 87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 33-645-83-95 83-96-259-16 259-17-33008-97 0.09-16-03 16-04-43-41 43-42-142-67 142-68-23020 00 0.06-7.71 7.72-19.71 19.72-62-90 62:91-11514-39 0.02-0.55 0.56-249 2:50-13.51 13-52-9557-52 0.05-2.74 2:75-580 5:81-11-93 11.94-11635-77	N (HRC/non-HRC) 4/800 2/803 2/877 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/785 3/782 4/761 3/765 3/765 3/856 1/743 3/759 6/735 4/852 2/780 6/772 1/689		OR (95% CI) 1.00 (Ref) 0.34 (0:10-1:16) 0.03 (0:00-985) 0.44 (0:07-2:88) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.49 (0:21-10.44) 0.55 (0:08-1:10) 1.28 (0:15-10.76) 1.00 (Ref) 1.00	P for trend           0-132           0.777           0.409           0.964           0.957           0.051	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Datosflavone           Q1           Q2           Q3           Q4           Datosflavone           Q1           Q2           Q3           Q4           Datosflavone           Q1           Q2           Q3           Q4           Canadatzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           C-DMA           Q1           Q2           Q3           Q4           Texto livere	Range, µg/g creatinine	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 30/290 28/343 30/271 43/2284 46/395 31/270 30/258		OR (95% CI) 1 00 (Ref) 0 83 (0 38-1-80) 1 36 (0 69-2 68) 1 28 (0 65-2 53) 1 00 (Ref) 0 49 (0 19-1-25) 0 93 (0 41-2 09) 0 66 (0 35-1-27) 1 00 (Ref) 0 66 (0 26-1-63) 0 96 (0 46-2 02) 0 64 (0 33-1-26) 1 00 (Ref) 1 00 (Ref) 1 72 (0 76-3 89) 1 72 (0 76-3 89) 1 74 (0 69-2 97) 1 00 (Ref) 1 74 (0 69-2 97) 1 00 (Ref) 1 72 (0 52-2 41) 1 1 13 (0 55-2 41) 1 1 13 (0 55-2 41) 1 13 (0 55-2 51) 0 63 (0 27-1 46)	P for trend 0-254 0-529 0-387 0-774 0-515 0-341
(b) Urinary phytoestrogens <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Senistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Equol Q1 Q4 Equol Q1 Q3 Q4 Equol Equol Q4 Equol Q4 Equol Equol Equol Equol <td>Range, µg/g creatinine 1-03-228-86 228-87-535-53 535-54-1139-12 1139-13-54004-41 0.77-36-45 36-45-83-95 83-96-259-16 2259-17-33908-97 0.09-16-03 16-04-43-41 43-42-142-67 142-68-23200.00 0.06-7.71 19-72-62-90 62-91-11514-39 0.02-0.55 0.056-2.49 2-50-13-51 13-51 2-55-80 5-81-11-93 11-94-1163-577 0.21-98-72</td> <td>N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/765 3/762 3/765 3/762 4/761 3/765 3/765 5/775 6/735 6/735 4/852 2/780 6/772 1/68 4/768</td> <td></td> <td>OR (95% Cl) 1.00 (Ref) 0.34 (0 10-1-16) 0.03 (0 00-0.85) 0.44 (0 10-7-2.88) 1-00 (Ref) 0.76 (0 00-9-60) 1.36 (0 10-9-51) 0.89 (0 00-9-76) 1-00 (Ref) 0.36 (0 02-6-18) 2-23 (0 46-10-71) 1-00 (Ref) 1-00 (Ref) 1-00 (Ref) 0.36 (0 02-9-18) 2-23 (0 46-10-71) 1-00 (Ref) 1-00 (Ref) 0.36 (0 00-9-73) 1-36 (0 47-3-33) 0-37 (0 03-4-27) 0.37 (0 03-4-27) 0.37 (0 03-4-27) 0.07 (0 01-0-82) 1-00 (Ref)</td> <td>Pfor trend           0.132           0.777           0.409           0.964           0.957           0.051           0.054</td> <td>Urinary phytoestrogens           &gt;60 y (n=1,326)           Total phytoestrogen           01           02           03           Q4           Total isofisone           01           02           03           Q4           Datdzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           C=0MA           Q1           Q2           Q3           Q4           Equol           Q1           Q2</td> <td>Range, μg/g creatinine           1:27-314-58           461:73-711-7           85:32-152:008           1696-72-27355:07           0:94-43-89           46:49-103:27           11:20-034:21           305:28-24420:12           0:08-18:28           18:90-50:083           55:00-176:94           173:64-18352:94           0:07-8:98           0:03-0:73           0:65-103           0:65-103           0:65-333           3:66-19:35           15:68-3939:953           0:06-3:34           4:22-698           7:53-14:47           14:99-5883:13           0:15-153:06</td> <td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/284 38/313 28/281 30/287 35/306 30/287 35/306 30/287 35/304 39/289 30/271 34/284 46/395 31/270 39/264 31/270</td> <td></td> <td>OR (95% CI) 1:00 (Ref) 0:83 (0:36-1.60) 1:36 (0:69-2.63) 1:28 (0:65-2.63) 1:28 (0:65-2.63) 1:00 (Ref) 0:49 (0:19-1.25) 0:93 (0:41-2.09) 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0.36 (0 02-9-18) 2-23 (0 46-10-71) 1-00 (Ref) 1-00 (Ref) 0.36 (0 00-9-73) 1-36 (0 47-3-33) 0-37 (0 03-4-27) 0.37 (0 03-4-27) 0.37 (0 03-4-27) 0.07 (0 01-0-82) 1-00 (Ref)	Pfor trend           0.132           0.777           0.409           0.964           0.957           0.051           0.054	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           01           02           03           Q4           Total isofisone           01           02           03           Q4           Datdzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           C=0MA           Q1           Q2           Q3           Q4           Equol           Q1           Q2	Range, μg/g creatinine           1:27-314-58           461:73-711-7           85:32-152:008           1696-72-27355:07           0:94-43-89           46:49-103:27           11:20-034:21           305:28-24420:12           0:08-18:28           18:90-50:083           55:00-176:94           173:64-18352:94           0:07-8:98           0:03-0:73           0:65-103           0:65-103           0:65-333           3:66-19:35           15:68-3939:953           0:06-3:34           4:22-698           7:53-14:47           14:99-5883:13           0:15-153:06	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/284 38/313 28/281 30/287 35/306 30/287 35/306 30/287 35/304 39/289 30/271 34/284 46/395 31/270 39/264 31/270		OR (95% CI) 1:00 (Ref) 0:83 (0:36-1.60) 1:36 (0:69-2.63) 1:28 (0:65-2.63) 1:28 (0:65-2.63) 1:00 (Ref) 0:49 (0:19-1.25) 0:93 (0:41-2.09) 0:66 (0:26-1.63) 0:96 (0:46-2.02) 0:64 (0:35-1.22) 1:00 (Ref) 1:28 (0:61-1.98) 0:93 (0:46-1.98) 0:93 (0:46-1.98) 0:94 (0:46-1.98) 0:95 (0:46-1.98) 0:96 (0:46-1.98)	P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168
(b) <u>Urinary Phytoestrogens</u> <a href="https://www.strogens.org"> </a> <a href="https://www.strogens.org"> <a href="https://www.strogens.org"> </a> </a> </a> </a> </a> </a> </a> <td>Range, µg/g creatinine 1 03-228 86 228 87-535 53 535 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33008-97 0.09-16.03 16:04-43.41 43:42-142.67 142:68-23200 00 0.06-7.71 7.72-19.71 19:72-62:90 62:91-11514:39 0.02-0.55 0.562-249 2:60-13.61 13:52-9557.52 0.05-2.74 2:75-5.80 5:81-11:93 11:94-11:635.77 0.21-98.72 96:73-311.15</td><td>N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/728 4/728 4/728 4/761 3/785 3/785 3/785 6/735 4/852 2/780 6/772 1/689 1/830</td><td></td><td>OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:16) 0:33 (0:00-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:76 (0:06-6:0) 1:36 (0:19-9:51) 0:89 (0:09-8:76) 1:00 (Ref) 0:57 (0:06-6:81) 0:36 (0:02-6:18) 2:23 (0:46-10:71) 1:00 (Ref) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:36 (0:47-3:93) 1:36 (0:47-3:93) 1:37 (0:03-4:27) 0:37 (0:03-4:27) 0:76 (0:01-0:82) 1:00 (Ref) 0:36 (0:05-2:25) 0:37 (0:03-4:27) 0:07 (0:01-0:82) 1:00 (Ref) 0:36 (0:05-2:25) 0:37 (0:03-4:27) 0:07 (0:01-0:82) 1:00 (Ref) 0:74 (0:27-2:00)</td><td>P for trend           0-132           0.777           0-409           0-964           0-957           0.051           0.046</td><td>Urinary phytoestrogens           &gt;60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           C-DMA           Q1           Q2           Q3           Q4           Call           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Call           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4</td><td>Range, µg/g creatinine 1.27-314-58 461:73-711-17 853:82-152:008 1696:72-27355:07 0.94-43:89 464:99-103:27 112:00-334:21 305:28-24420:12 0.08-18:28 18:90-50:83 50:00-176:94 173:64-18:352:94 0.07-898 10:19-23:30 25:71-79:61 80:54-10020:65 0.03-07:30 0:65-333 3:66-19:35 15:68-3039:53 0:06-33:44 4:22-698 7:53-14:47 14:99-5983:13 0:15-153:06 26:149-43:6-13</td><td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/304 38/289 30/271 43/284 46/395 31/270 39/264 23/256</td><td><u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></td><td>OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:20 (0:67-2:63) 0:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:33-1:26) 1:00 (Ref) 0:96 (0:46-1:86) 0:95 (0:46-1:86)</td><td>P for trend           0-254           0-529           0-387           0-774           0-515           0-341           0-168</td></a></a></a></a></a>	Range, µg/g creatinine 1 03-228 86 228 87-535 53 535 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33008-97 0.09-16.03 16:04-43.41 43:42-142.67 142:68-23200 00 0.06-7.71 7.72-19.71 19:72-62:90 62:91-11514:39 0.02-0.55 0.562-249 2:60-13.61 13:52-9557.52 0.05-2.74 2:75-5.80 5:81-11:93 11:94-11:635.77 0.21-98.72 96:73-311.15	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/728 4/728 4/728 4/761 3/785 3/785 3/785 6/735 4/852 2/780 6/772 1/689 1/830		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:16) 0:33 (0:00-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:76 (0:06-6:0) 1:36 (0:19-9:51) 0:89 (0:09-8:76) 1:00 (Ref) 0:57 (0:06-6:81) 0:36 (0:02-6:18) 2:23 (0:46-10:71) 1:00 (Ref) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:36 (0:47-3:93) 1:36 (0:47-3:93) 1:37 (0:03-4:27) 0:37 (0:03-4:27) 0:76 (0:01-0:82) 1:00 (Ref) 0:36 (0:05-2:25) 0:37 (0:03-4:27) 0:07 (0:01-0:82) 1:00 (Ref) 0:36 (0:05-2:25) 0:37 (0:03-4:27) 0:07 (0:01-0:82) 1:00 (Ref) 0:74 (0:27-2:00)	P for trend           0-132           0.777           0-409           0-964           0-957           0.051           0.046	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           C-DMA           Q1           Q2           Q3           Q4           Call           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Call           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4	Range, µg/g creatinine 1.27-314-58 461:73-711-17 853:82-152:008 1696:72-27355:07 0.94-43:89 464:99-103:27 112:00-334:21 305:28-24420:12 0.08-18:28 18:90-50:83 50:00-176:94 173:64-18:352:94 0.07-898 10:19-23:30 25:71-79:61 80:54-10020:65 0.03-07:30 0:65-333 3:66-19:35 15:68-3039:53 0:06-33:44 4:22-698 7:53-14:47 14:99-5983:13 0:15-153:06 26:149-43:6-13	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/304 38/289 30/271 43/284 46/395 31/270 39/264 23/256	<u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:20 (0:67-2:63) 0:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:33-1:26) 1:00 (Ref) 0:96 (0:46-1:86) 0:95 (0:46-1:86)	P for trend           0-254           0-529           0-387           0-774           0-515           0-341           0-168
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 C-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 1.03-228.86 228.87-535.53 535.54-1139.12 1139.13-54004.41 0.77-38.45 36.45-83.95 83.96-259.16 259.17-33008.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-7.71 7.72-19.71 19.72-62.90 62.91-11514.39 0.02-0.55 0.66-2.49 2.50-13.51 13.52-957.52 0.05-2.74 2.75-5.80 5.81-11.93 11.94-11635.77 0.21-98.72 96.73-311.15 31.116-72.702	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/765 3/765 3/765 3/765 3/765 3/765 3/759 6/735 4/852 2/780 6/735 4/852 2/780 6/725 1/689 4/768 1/830 3/774		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:16) 0:33 (0:00-985) 0:44 (0:07-2:88) 1:00 (Ref) 1:00 (Ref) 0:78 (0:06-960) 1:36 (0:19-951) 0:57 (0:06-581) 0:36 (0:02-6:18) 2:23 (0:46-10:71) 1:00 (Ref) 1:49 (0:21-10:44) 0:55 (0:06-11:75) 1:28 (0:15-10:76) 1:00 (Ref) 0:02 (0:00-0:29) 0:04 (0:00-73) 1:36 (0:47-3:93) 1:00 (Ref) 0:35 (0:05-2:25) 0:37 (0:03-4:27) 0:77 (0:01-0:82) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 0:35 (0:05-2:25) 0:37 (0:03-4:27) 0:77 (0:01-0:82) 1:00 (Ref) 0:74 (0:27-2:00) 0:74 (0	P for trend           0-132           0.777           0.409           0.964           0.957           0.051           0.046	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2	Range, µg/g creatinine	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/287 35/304 30/287 35/304 30/289 32/290 28/343 38/299 32/290 28/343 38/299 32/290 28/343 38/299 31/247 32/258 31/347 32/256 31/347 32/256		OR (95% CI) 1 00 (Ref) 0 83 (0 38-1.80) 1 36 (0:65-2.63) 1 28 (0:65-2.63) 1 28 (0:65-2.63) 1 28 (0:65-2.63) 0 93 (0:41-2.09) 0 93 (0:41-2.09) 0 96 (0:46-1.420) 0 96 (0:46-1.420) 0 96 (0:46-1.437) 0 93 (0:46-1.4	P for trend           0.254           0.529           0.387           0.774           0.515           0.341
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Total lignan Q1 Q2 Q3 Q4 O	Range, µg/g creatinie 103-228 86 228 87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 36-45-83-95 83-96-259-16 2259-17-33908-97 0.09-16-03 16-04-435-41 43-42-142-67 142-68-23200-00 0.06-7-71 19-72-62-90 0.29-11514-39 0.02-0.55 0.56-2.49 2.50-13-51 13-52-955-52 0.05-2.74 2.75-580 5-81-11-93 11-94-7163-777 0.21-98-72 98-73-311-15 311-16-727 02 72703-528925-53	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/765 3/782 4/781 3/765 3/765 3/765 4/852 2/780 6/735 4/852 4/768 1/830 3/774 5/721		OR (95% CI) 1.00 (Ref) 0.34 (0 10-1-16) 0.34 (0 10-2-88) 1-00 (Ref) 1.75 (0 10-9-51) 0.89 (0 00-9-876) 1.36 (0 19-9-51) 0.89 (0 00-9-876) 1.00 (Ref) 0.36 (0 02-8-18) 2.23 (0 46-10-71) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 1.36 (0 47-3-93) 1.36 (0 47-3-93) 1.00 (Ref) 0.35 (0 05-2-25) 0.37 (0 00-4-27) 1.00 (Ref) 0.74 (0 27-2-00) 0.21 (0 04-105) 1.00 (Ref) 1.75 (0 27-2-01) 0.21 (0 04-105) 1.00 (Ref) 1.76 (0 27-2-01) 0.21 (0 04-125)	P for trend           0-132           0.777           0.409           0.964           0.957           0.051           0.046	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           01           02           03           Q4           Total isofiavone           01           02           03           Q4           Daidzein           Q1           Q2           Q3           Q4           Baidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2	Range, µg/g creatinine	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/284 38/313 28/281 36/289 35/306 30/271 39/290 28/343 38/289 38/289 38/289 38/289 39/290 28/343 38/289 38/281 39/290 28/343 38/281 39/290 28/343 38/281 38/28		OR (95% CI) 1:00 (Ref) 0:83 (0:36-1.60) 1:36 (0:69-2.63) 1:28 (0:65-2.53) 1:00 (Ref) 0:49 (0:19-1.25) 0:93 (0:41-2.09) 0:66 (0:26-1.63) 0:96 (0:46-2.02) 0:66 (0:26-1.63) 0:96 (0:46-1.98) 0:96 (0:46-	P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168
(b) <u>Urinary Phytoestrogens</u> <=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Entercoliol Co-DMA Q1 Q2 Q3 Q4 Entercoliol Co-DMA Q1 Q2 Q3 Q4 Entercoliol Co-DMA Q1 Q2 Q3 Q4 Entercoliol Co-DMA Q1 Q2 Q3 Q4 Entercoliol Co-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA CO-DMA	Range, µg/g creatinie 103-228 86 228 87-535 53 535 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33908 97 0.09-16.03 16:04-434 43:42-142.67 142:68-32200 00 0.06-7.71 7.72-19.71 19:72-62:90 62:91-11514:39 0.02-0.55 0.58-249 2:50-13.51 13:52-9557.52 0.05-2.74 2:75-580 5:81-11:93 11:94-11:65:77 0.21-99:72 98:73-311.15 311:16-727.02 727:03-52892.53	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/785 3/785 3/785 3/785 3/759 6/735 4/852 2/780 6/772 1/689 1/830 3/774 5/721		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:6) 0:33 (0:10-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:78 (0:08-9:67) 1:36 (0:19-9:51) 0:89 (0:08-9:76) 1:00 (Ref) 0:57 (0:06-9:61) 0:38 (0:02-6:18) 2:23 (0:48-10:71) 1:00 (Ref) 1:28 (0:19-10:44) 0:55 (0:08-11:75) 1:28 (0:15-10:76) 1:00 (Ref) 0:02 (0:00-0:73) 1:36 (0:47-3:93) 1:00 (Ref) 0:35 (0:05-225) 0:37 (0:03-427) 0:07 (0:01-0:82) 1:00 (Ref) 0:35 (0:05-225) 0:37 (0:03-427) 0:07 (0:01-0:82) 1:00 (Ref) 0:74 (0:27-200) 0:21 (0:04-1:06) 0:15 (0:02-1:25)	P for trend           0.132           0.777           0.409           0.964           0.957           0.051           0.046           0.036	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Contal lignan           Q1           Q2           Q3           Q4           Chall lignan           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Total lignan           Q1	Range, µg/g creatinine 1.27–314-58 461:73–711-17 853:82–152:008 1696:72–27355:07 0.94–43:89 46:49–103:27 112:00–334:21 305:28–24420:12 0.08–18:28 18:90–50:83 55:00–176:94 173:64–18:352:94 0.07–8:98 10:19–23:30 25:71–79:61 80:54–10020:65 0:03–07:30 0:65–3:33 3:66–19:35 15:68–3939:53 0:06–3:34 4:22–6:98 7:53–14:47 14:99–5:983:13 0:15–153:06 26:14:94–435:13 61:3:88–1001:71 1227:41–27259:86	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 33/284 37/304 38/313 28/289 37/284 38/313 28/289 36/289 36/289 36/289 36/289 30/271 43/284 46/395 31/270 39/264 23/258 31/347 32/296 40/289 36/255		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:28 (0:65-2:63) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:33-1:26) 1:00 (Ref) 1:72 (0:76-3:69) 1:24 (0:51-3:00) 1:44 (0:69-2:97) 1:00 (Ref) 1:22 (0:52-2:41) 1:33 (0:57-3:02) 1:55 (0:76-3:63) 1:55 (0:76-3:63) 1:55 (0:75-3:02) 1:55 (0:75-3:02) 1:55 (0:75-3:02) 1:55 (0:75-3:02) 1:55 (0:75-3:02) 1:55 (0:75-3:02) 1:55 (0:75-3:02) 1:56	P for trend           0-254           0-529           0-387           0-774           0-515           0-341           0-168           0-048
(b) <u>Urinary Phytoestrogens</u> <=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q5 Q5 Q5 Q5 Q5 Q5 Q5 Q5 Q5 Q5	Range, µg/g creatinine 1.03-228.86 228.87-835.53 538.54-1139.12 1139.13-54004.41 0.77-36.45 3645-83.95 83.96-259.16 259.17-33908.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-7.71 7.72-19.71 19.72-62.90 62.91-11.514.39 0.02-0.55 0.66-2.49 2.50-13.51 13.322-8557.52 0.05-2.74 2.75-5.60 5.81-11.93 11.94-11635.77 0.21-98.72 98.73-311.15 31.1.16-727.02 7.27.03-52892.53 0.02-12.67 12.48-31.07	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/745 3/764 3/765 3/785 3/785 3/785 3/785 6/735 4/852 2/780 6/772 1/889 4/768 1/830 3/774 5/721 4/878		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:6) 0:33 (0:00-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:76 (0:06-960) 1:36 (0:19-9:51) 0:89 (0:09-8:76) 1:00 (Ref) 0:57 (0:06-5:81) 0:57 (0:06-5:81) 0:05 (0:00-11:75) 1:28 (0:15-10:76) 1:00 (Ref) 0:35 (0:05-2:25) 0:74 (0:27-2:00) 0:74 (0:27-2:00) 0:15 (0:02-1:25) 1:00 (Ref) 0:15 (0:02-1:27) 1:00 (Ref)	P for trend           0-132           0.777           0.409           0.964           0.957           0.051           0.046           0.036	Urinary phytoestrogens           >€0 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Cotal lignan           Q1           Q2           Q3           Q4           Entercodiol           Q1      Q2 </td <td>Range, µg/g creatinine</td> <td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304 38/289 36/306 30/287 33/304 38/289 36/306 30/287 38/290 28/343 38/299 28/343 38/299 28/343 38/299 38/291 39/291 43/221 46/395 31/270 39/264 46/395 31/270 39/255 32/266 40/289 32/255 32/363 32/361</td> <td></td> <td>DR (95% CI) 1:00 (Ref) 0:83 (0:38-1:80) 1:36 (0:65-2:63) 1:28 (0:65-2:63) 1:28 (0:65-2:63) 1:00 (Ref) 0:93 (0:41-2:09) 0:93 (0:41-2:09) 0:93 (0:41-2:09) 0:96 (0:46-2:02) 0:96 (0:46-2:02) 0:96 (0:46-1:63) 0:96 (0:46-1:63) 0:93 (0:46-1:87) 0:91 (0:48-1:73) 1:00 (Ref) 1:24 (0:51-3:00) 1:44 (0:69-2:87) 1:12 (0:52-2:41) 1:13 (0:55-2:35) 0:63 (0:27-1:46) 1:55 (0:76-3:16) 1:55 (0:76-3:16) 1:55 (0:76-3:35) 1:00 (Ref) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55</td> <td>P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048</td>	Range, µg/g creatinine	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304 38/289 36/306 30/287 33/304 38/289 36/306 30/287 38/290 28/343 38/299 28/343 38/299 28/343 38/299 38/291 39/291 43/221 46/395 31/270 39/264 46/395 31/270 39/255 32/266 40/289 32/255 32/363 32/361		DR (95% CI) 1:00 (Ref) 0:83 (0:38-1:80) 1:36 (0:65-2:63) 1:28 (0:65-2:63) 1:28 (0:65-2:63) 1:00 (Ref) 0:93 (0:41-2:09) 0:93 (0:41-2:09) 0:93 (0:41-2:09) 0:96 (0:46-2:02) 0:96 (0:46-2:02) 0:96 (0:46-1:63) 0:96 (0:46-1:63) 0:93 (0:46-1:87) 0:91 (0:48-1:73) 1:00 (Ref) 1:24 (0:51-3:00) 1:44 (0:69-2:87) 1:12 (0:52-2:41) 1:13 (0:55-2:35) 0:63 (0:27-1:46) 1:55 (0:76-3:16) 1:55 (0:76-3:16) 1:55 (0:76-3:35) 1:00 (Ref) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55 (0:76-3:35) 1:55	P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Enterodiol Q1 Q1 Q2 Q3 Q4 Enterodiol Q1 Q2 Q4 Enterodiol Q1 Q2 Q4 <td>Range, µg/g creatinine 103-228 86 228 87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 36-45-83-95 83-96-259-16 2259-17-33008-97 0.09-1603 16-04-43-41 43-42-142-67 142-68-23200 00 0.06-7.71 7.72-19-71 19-72-62:90 62:91-11514-39 0.02-0.55 0.65-2-49 2:50-13-51 13-52-8557-52 0.05-2.74 2:55-580 5:81-11:93 11:14-11635-77 0.21-98-72 98-73-311-15 31:16-72702 727:03-52892-53 0.02-12-67 12:86-31:97 31:98-76:91</td> <td>N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/764 3/765 3/765 3/765 3/765 3/765 3/765 4/852 2/780 6/735 4/852 2/780 4/778 1/889 4/768 1/830 3/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 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    0.964           0.957           0.051           0.046           0.036</td> <td>Urinary phytoestrogens           &gt;60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoffavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Cennistein           Q1           Q2           Q3           Q4           CPUMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Enterodiol           Q1           Q2&lt;</td> <td>Range, µg/g creatinine</td> <td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/271 43/228 40/299 30/276 31/377 30/258 31/347 32/258 32/363 34/321 34/32</td> <td></td> <td>OR (95% CI) 1:00 (Ref) 9:83 (0:38-1:40) 1:36 (0:69-2:63) 1:28 (0:65-2:53) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:66 (0:26-1:63) 0:96 (0:46-2:02) 0:66 (0:26-1:63) 0:96 (0:46-1:26) 0:96 (0:46-</td> <td>P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048</td>	Range, µg/g creatinine 103-228 86 228 87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 36-45-83-95 83-96-259-16 2259-17-33008-97 0.09-1603 16-04-43-41 43-42-142-67 142-68-23200 00 0.06-7.71 7.72-19-71 19-72-62:90 62:91-11514-39 0.02-0.55 0.65-2-49 2:50-13-51 13-52-8557-52 0.05-2.74 2:55-580 5:81-11:93 11:14-11635-77 0.21-98-72 98-73-311-15 31:16-72702 727:03-52892-53 0.02-12-67 12:86-31:97 31:98-76:91	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/764 3/764 3/765 3/765 3/765 3/765 3/765 3/765 4/852 2/780 6/735 4/852 2/780 4/778 1/889 4/768 1/830 3/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/721 4/878 2/785 1/774 5/72 1/74 5/72 1/74 5/7 1/74 5/7 1/74 5/7 1/74 5/7 1/7 1/7 1/7 1/7 1/7 1/7 1/7 1/7 1/7 1		OR (95% CI) 1.00 (Ref) 0.34 (0 10-1-16) 0.34 (0 10-288) 1-00 (Ref) 0.78 (0 00-9.85) 0.44 (0 07-2.88) 1-00 (Ref) 0.57 (0 00-9.76) 1.00 (Ref) 0.00 (Ref) 0.00 (Ref) 0.00 (Ref) 0.00 (Ref) 0.00 (Ref) 0.00 (Ref) 0.00 (00-0.73) 1.88 (0 47-3.93) 1.00 (Ref) 0.37 (0 00-2.72) 0.37 (0 00-2.72) 0.37 (0 00-2.72) 0.37 (0 00-2.72) 1.00 (Ref) 0.74 (0 27-2.00) 0.51 (0 02-1.25) 1.00 (Ref) 0.74 (0 27-2.00) 0.51 (0 02-1.25) 1.00 (Ref) 0.75 (0 02-2.25) 1.00 (Ref) 0.75 (0 02-2.25) 1.00 (Ref) 0.75 (0 02-1.25) 1.00 (Ref) 0.75 (0 02-1.25) 1.00 (Ref) 0.75 (0 02-0.25) 1.00 (Ref) 0.75 (0	P for trend           0-132           0.777           0.409           0.964           0.957           0.051           0.046           0.036	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoffavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Cennistein           Q1           Q2           Q3           Q4           CPUMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Enterodiol           Q1           Q2<	Range, µg/g creatinine	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/271 43/228 40/299 30/276 31/377 30/258 31/347 32/258 32/363 34/321 34/32		OR (95% CI) 1:00 (Ref) 9:83 (0:38-1:40) 1:36 (0:69-2:63) 1:28 (0:65-2:53) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:66 (0:26-1:63) 0:96 (0:46-2:02) 0:66 (0:26-1:63) 0:96 (0:46-1:26) 0:96 (0:46-	P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048
(b) <u>Urinary Phytoestrogens</u> <=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Enterodiol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Enterodiol Enterodiol	Range, µg/g creatiniee 103-228 86 228 87-535 53 535 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33908-97 0.09-1603 16:04-4341 43:42-142.67 142:66-23200 00 0.06-7.71 7.72-1971 19:72-62:90 62:91-11514:39 0.02-0.55 0.56-2.49 2:50-13.51 13:52-955.752 0.05-2.74 2:75-5 60 5:81-11:93 11:94-1163:77 0.21-98:72 9:673-311:15 311:16-727:02 727:03-52892:53 0.02-12.67 12:86-31:97 31:98-76:91 7:692-11699:61	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/728 4/728 3/785 3/785 3/785 3/785 3/785 3/785 3/759 6/735 4/852 2/780 6/772 1/688 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/830 3/774 5/721 1/850 2/785 1/774 5/721 1/850 2/785 1/774 5/721 1/850 2/785 1/774 5/721 1/80 2/785 1/774 5/721 1/80 2/785 1/774 5/721 1/80 2/785 1/774 5/721 1/80 2/78 2/785 1/774 2/785 1/774 5/72 1/74 5/72 5/72 1/74 5/72 5/72 5/7 5/7 5/7 5/7 5/7 5/7 5/7 5/7 5/7 5/7		OR (95% CI) 1.00 (Ref) 0.34 (0.10-1.16) 0.33 (0.00-0.85) 0.44 (0.07-2.88) 1.00 (Ref) 0.78 (0.06-60) 1.36 (0.19-9.51) 0.89 (0.09-8.76) 1.00 (Ref) 0.75 (0.06-60) 1.36 (0.02-6.18) 2.23 (0.46-10.71) 1.00 (Ref) 1.49 (0.21-10.44) 0.95 (0.08-11.75) 1.28 (0.15-10.76) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 0.05 (0.00-2.25) 0.37 (0.03-427) 0.07 (0.01-0.82) 1.00 (Ref) 1.00 (Ref)	Pfor trend           0.132           0.777           0.409           0.964           0.957           0.051           0.046           0.036	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           Cenistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2 </td <td>Range, µg/g creatinine 1.27-314-58 461:73-711-7 85:32-152:008 1696:72-27355:07 0.94-438:9 46:49-103:27 112:00-334:21 305:28-24420:12 0.08-18:28 1890-50:83 55:00-176:94 173:64-18:352:94 0.07-8.98 10:19-23:30 25:71-79:61 80:54-10020:65 0.03-07:3 0.65-3:33 26:6-19:35 15:68-3939:53 0.06-3:34 422-6.98 7:53-14:47 14:99-5893:13 0.15:5153.06 26:14:9-435:13 61:38-1001:71 41:27:41-27:59:86 0.03-16:67 18:72-43:15 45:55-106:67 103:03-11077:02</td> <td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 33/284 37/304 38/313 28/289 37/284 38/313 28/289 30/287 35/306 30/287 30/276 30/287 30/276 30/27</td> <td></td> <td>OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:63) 1:28 (0:65-2:53) 1:28 (0:65-2:53) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:26-1:63) 0:96 (0:46-1:63) 0:96 (0:46-</td> <td>P for trend           0-254           0-529           0-387           0-774           0-515           0-341           0-168           0-048</td>	Range, µg/g creatinine 1.27-314-58 461:73-711-7 85:32-152:008 1696:72-27355:07 0.94-438:9 46:49-103:27 112:00-334:21 305:28-24420:12 0.08-18:28 1890-50:83 55:00-176:94 173:64-18:352:94 0.07-8.98 10:19-23:30 25:71-79:61 80:54-10020:65 0.03-07:3 0.65-3:33 26:6-19:35 15:68-3939:53 0.06-3:34 422-6.98 7:53-14:47 14:99-5893:13 0.15:5153.06 26:14:9-435:13 61:38-1001:71 41:27:41-27:59:86 0.03-16:67 18:72-43:15 45:55-106:67 103:03-11077:02	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 33/284 37/304 38/313 28/289 37/284 38/313 28/289 30/287 35/306 30/287 30/276 30/287 30/276 30/27		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:63) 1:28 (0:65-2:53) 1:28 (0:65-2:53) 1:00 (Ref) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:65 (0:26-1:63) 0:96 (0:46-2:02) 0:64 (0:26-1:63) 0:96 (0:46-1:63) 0:96 (0:46-	P for trend           0-254           0-529           0-387           0-774           0-515           0-341           0-168           0-048
(b) <u>Urinary Phytoestrogens</u> <pre>&lt;=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Cenistein Cenistein C</pre>	Range, µg/g creatinine 1 03-228 86 228 87-335 53 538 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33008-97 0.09-16.03 16:04-43.41 43:42-142.67 142:68-23200 00 0.06-7.71 7.72-19.71 19:72-62:90 62:91-11514:39 0.02-0.55 0.562-249 2:50-13:61 13:52-9557.52 0.05-2.74 2:75-5.60 5:81-11:93 11:94-11635.77 0.21-98.72 98:73-311-15 311:16-727.02 727:03-25992.53 0.02-12.67 12:68-31.97 31:98-76.91 76:92-11689.61	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/728 4/745 3/764 3/765 3/759 6/735 4/852 2/780 6/772 1/68 1/830 3/774 5/721 1/88 1/830 3/774 5/721 4/878 2/785 1/774 6/656		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:6) 0:33 (0:10-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:76 (0:06-60) 1:36 (0:19-9:51) 0:88 (0:09-8:76) 1:00 (Ref) 0:57 (0:06-681) 0:36 (0:02-6:18) 2:23 (0:46-10:71) 1:00 (Ref) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:28 (0:15-10:76) 1:28 (0:47-3:93) 1:30	P for trend           0-132           0.777           0.409           0.964           0.957           0.051           0.046           0.036           0.044	Urinary phytoestrogens           >60 y (n=1,326)           Total iphytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           C>DMA           Q1           Q2           Q3           Q4           Q1           Q2           Q3           Q4           Q1           Q2           Q3           Q4           Q2           Q3           Q4           Q1           Q2           Q3           Q4           Total ignan           Q1           Q2 <td>Range, µg/g creatinine 1:27-314-58 461:73-711-17 853:82-1520:08 1696:72-27355:07 0:94-43-89 46:49-103:27 112:00-334:21 305:28-24420:12 0:08-18:28 18:90-50:83 55:00-176:94 173:64-18352:94 0:07-89 10:19-23:30 25:71-79:61 80:54-10020:65 0:03-073 0:65-333 3:66-19:35 15:68-3939:53 0:06-334 4:22-6:98 7:53-14:47 14:99-5893:13 0:15-153:06 26:14:94-436:13 61:38-1001:71 1227:41-27259:86 0:03-16:40 18:72-43:15 46:55-106:67 103:03-11077:02</td> <td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 30/271 43/284 46/395 31/270 39/264 23/258 31/347 32/258 31/347 32/258 31/270 39/264 32/258 31/270 39/264 32/258 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 31/27</td> <td></td> <td>DR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:20 (0:67-2:69) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:66 (0:35-1:27) 1:00 (Ref) 0:96 (0:46-2:02) 0:96 (0:46-2:02) 0:96 (0:46-1:63) 0:96 (0:46-1:63) 1:20 (0:52-2:41) 1:31 (0:57-3:02) 1:55 (0:76-3:16) 1:58 (0:76-</td> <td>P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048           0.167</td>	Range, µg/g creatinine 1:27-314-58 461:73-711-17 853:82-1520:08 1696:72-27355:07 0:94-43-89 46:49-103:27 112:00-334:21 305:28-24420:12 0:08-18:28 18:90-50:83 55:00-176:94 173:64-18352:94 0:07-89 10:19-23:30 25:71-79:61 80:54-10020:65 0:03-073 0:65-333 3:66-19:35 15:68-3939:53 0:06-334 4:22-6:98 7:53-14:47 14:99-5893:13 0:15-153:06 26:14:94-436:13 61:38-1001:71 1227:41-27259:86 0:03-16:40 18:72-43:15 46:55-106:67 103:03-11077:02	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 36/289 30/271 43/284 46/395 31/270 39/264 23/258 31/347 32/258 31/347 32/258 31/270 39/264 32/258 31/270 39/264 32/258 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 33/225 31/272 31/27		DR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:20 (0:67-2:69) 0:49 (0:19-1:25) 0:93 (0:41-2:09) 0:66 (0:35-1:27) 1:00 (Ref) 0:96 (0:46-2:02) 0:96 (0:46-2:02) 0:96 (0:46-1:63) 0:96 (0:46-1:63) 1:20 (0:52-2:41) 1:31 (0:57-3:02) 1:55 (0:76-3:16) 1:58 (0:76-	P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048           0.167
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Edual lignan Q1 Q2 Q3 Q4 Enterodiol Q1 Q2 Q3 Q4 Enterolactone Q1	Range, µg/g creatinine 103-228 86 228 87-535-53 535-54-1139-12 1139-13-54004-41 0.77-3645 36-45-83-95 83-96-259-16 259-17-33008-97 0.09-16-03 16-04-43-41 43-42-142-67 142-68-23200-01 0.06-7.71 7.72-19.71 19.72-62.90 652-91-1514-39 0.02-0.55 0.56-2.49 2.560-13.61 13.52-9557.52 0.05-2.74 2.75-580 561-11-93 11.94-11635.77 0.21-98.72 98.73-311-15 31.11-97-2702 727.03-52892.53 0.02-12.67 12.86-31.97 31.98-76.91 76.92-11689.61 76.92-11689.61	N (HRC/non-HRC) 4/800 2/003 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/746 3/764 3/764 3/765 3/765 3/765 3/765 3/765 3/765 3/765 3/755 4/852 2/780 6/735 4/852 2/780 4/768 1/830 3/774 4/768 1/830 3/774 5/721 4/878 2/785 1/774 6/656 4/756		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:16) 0:33 (0:00-85) 0:44 (0:07-2:88) 1:00 (Ref) 0:78 (0:06-960) 1:36 (0:19-951) 0:57 (0:06-581) 0:36 (0:02-6:18) 2:23 (0:46-10:71) 1:00 (Ref) 1:49 (0:21-10:44) 0:55 (0:06-11:75) 1:28 (0:15-10:76) 1:00 (Ref) 0:25 (0:00-229) 0:44 (0:00-723) 1:36 (0:47-3:93) 1:00 (Ref) 0:37 (0:03-225) 0:37 (0:03-225) 1:00 (Ref) 0:15 (0:02-1:25) 1:00 (Ref) 0:15 (0:02-1:11) 1:00 (Ref)	Pfortrend           0-132           0.777           0.409           0.964           0.957           0.051           0.046           0.036           0.044	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Equal           Q1           Q2           Q3           Q4           Equal           Q1           Q2           Q3           Q4           Equal           Q1           Q2           Q3           Q4           Enterodiol           Q1           Q2 </td <td>Range, µg/g creatinine</td> <td>N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/287 35/304 30/289 32/289 30/271 43/284 46/395 31/370 39/264 23/258 31/347 32/296 40/289 36/255 32/363 34/321 34/276 34/321 34/276 34/27</td> <td></td> <td>OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:80) 1:36 (0:65-2:63) 1:28 (0:65-2:63) 1:28 (0:65-2:53) 1:00 (Ref) 0:93 (0:41-2:09) 0:93 (0:41-2:09) 0:96 (0:46-1:42) 0:96 (0:46-1:42) 0:96 (0:46-1:42) 0:96 (0:46-1:42) 0:93 (0:46-1:43) 0:93 (0:46-1:43) 1:12 (0:52-2:41) 1:12 (0:52-2:41) 1:13 (0:52-2:45) 0:63 (0:27-1:46) 1:31 (0:57-3:02) 1:56 (0:76-3:16) 1:56 (0:76-3:16) 1:56 (0:76-3:16) 1:58 (0:75-3:55) 1:00 (Ref) 2:23 (1:23-4:04) 1:93 (0:79-4:71) 2:78 (1:29-5:98) 1:00 (Ref)</td> <td>P for trend           0:254           0:529           0:387           0:774           0:515           0:341           0:168           0:048           0:167</td>	Range, µg/g creatinine	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/306 30/287 35/304 30/289 32/289 30/271 43/284 46/395 31/370 39/264 23/258 31/347 32/296 40/289 36/255 32/363 34/321 34/276 34/321 34/276 34/27		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:80) 1:36 (0:65-2:63) 1:28 (0:65-2:63) 1:28 (0:65-2:53) 1:00 (Ref) 0:93 (0:41-2:09) 0:93 (0:41-2:09) 0:96 (0:46-1:42) 0:96 (0:46-1:42) 0:96 (0:46-1:42) 0:96 (0:46-1:42) 0:93 (0:46-1:43) 0:93 (0:46-1:43) 1:12 (0:52-2:41) 1:12 (0:52-2:41) 1:13 (0:52-2:45) 0:63 (0:27-1:46) 1:31 (0:57-3:02) 1:56 (0:76-3:16) 1:56 (0:76-3:16) 1:56 (0:76-3:16) 1:58 (0:75-3:55) 1:00 (Ref) 2:23 (1:23-4:04) 1:93 (0:79-4:71) 2:78 (1:29-5:98) 1:00 (Ref)	P for trend           0:254           0:529           0:387           0:774           0:515           0:341           0:168           0:048           0:167
(b) <u>Urinary Phytoestrogens</u> <=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q1 Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Q2 Q3 Q4 Co-DMA Co-DMA Q2 Q3 Q4 Co-DMA CO-DMA CO-DM	Range, µg/g creatinine 103-228 86 228 87-535-53 535-54-1139-12 1139-13-54004-41 0.77-364-5 36-45-83-95 83-96-259-16 2259-17-33908-97 0.09-16-03 16-04-43-41 43-42-142-67 142-68-23200.00 0.06-7.71 7.72-1971 19-72-62-90 62-91-11514-39 0.02-0-55 0.02-0-55 0.02-0-55 581-11-93 11-94-11635-77 0.21-98-72 98-73-311-15 311-16-727.02 727-03-52892-53 0.02-12-67 12-86-31-97 31-88-7691 76-82-11689-61 0.08-63-78 63-79-257-24 257-75-80 537-632-11689-61	N (HRC/non-HRC)  4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/728 4/745 3/785 3/782 4/745 3/785 3/782 4/761 3/785 5/721 4/852 2/780 6/735 6/735 6/735 5/721 4/852 2/780 4/768 1/830 3/774 4/878 2/785 1/774 4/878 2/785 1/774 4/878 2/785 1/774 5/82 1/774 5/82 1/774 5/82 1/774 5/82 1/774 5/82 1/774 5/82 1/774 5/82 1/774 5/82 1/774 5/8 1/830 5/724 5/82 1/74 5/8 1/830 5/724 5/8 1/830 5/724 5/8 5/8 1/830 5/724 5/8 5/8 5/8 5/8 5/8 5/8 5/8 5/8 5/8 5/8		OR (95% CI) 1.00 (Ref) 0.34 (0.10-1.16) 0.33 (0.00-9.85) 0.44 (0.10-2.88) 1.00 (Ref) 0.76 (0.00-9.60) 1.36 (0.19-9.51) 0.89 (0.02-9.61) 0.89 (0.02-9.61) 1.00 (Ref) 0.75 (0.06-5.81) 0.36 (0.02-9.61) 1.00 (Ref) 1.49 (0.21-10.44) 0.95 (0.08-11.75) 1.28 (0.15-10.76) 1.00 (Ref) 1.00 (Ref) 1.00 (Ref) 0.36 (0.02-2.25) 0.37 (0.03-4.27) 0.07 (0.01-0.82) 1.00 (Ref) 0.74 (0.27-2.00) 0.21 (0.04-1.05) 1.00 (Ref) 0.14 (0.01-1.79) 0.15 (0.02-1.25) 1.00 (Ref) 0.14 (0.01-1.79) 0.15 (0.02-1.21) 1.00 (Ref) 0.14 (0.01-2.20) 0.15 (0.02-1.21) 1.00 (Ref) 0.12 (0.02-0.81) 1.00 (Ref) 0.12 (0.02-0.81) 1.	Pfor trend           0.132           0.777           0.409           0.964           0.957           0.051           0.046           0.036           0.044	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           01           02           03           Q4           Total isofiavone           01           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Centistein           Q1           Q2           Q3           Q4           Centistein           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Enterolactone           Q1	Range, µg/g creatinine 1.27-314.58 461:73-711-17 853:82-152:008 1696:72-27355:07 0.94-43:89 46:49-103:27 112:00-334:21 305:26:24420:12 0.08-18:28 18:90-50:83 55:00-176:94 175:64-18:352:94 0.07-8.98 10:19-23:30 25:71-79:61 80:54-10020:65 0.03-0:73 0:65-3:33 3:66-19:35 1:568-3939:53 0:06-3:34 4:22-6:98 7:53-14:47 14:99-5693:13 0:15-183:06 261:49-436:13 61:88-1001:71 12:27:41-27:25:98 0:03-31:10 12:741-27:25:98 0:03-31:10 12:741-27:25:98 0:03-31:10 12:741-27:25:98 0:03-31:10 12:741-27:25:98 0:03-31:10 12:741-27:25:98 0:03:03-11077:02 0:10-94:14 199:36-351:43 5:04:183:06 12:741-27:55 0:05-115 0:05-	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 35/298 37/284 38/313 28/281 37/304 38/289 36/289 36/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 35/306 30/287 30/28		OR (95% CI) 100 (Ref) 983 (0.38-1.60) 1.36 (0.69-2.63) 1.28 (0.65-2.63) 1.28 (0.65-2.63) 1.28 (0.65-2.63) 1.00 (Ref) 0.49 (0.19-1.25) 0.93 (0.41-2.09) 0.66 (0.26-1.63) 0.96 (0.46-2.02) 0.64 (0.33-1.26) 1.00 (Ref) 1.72 (0.76-3.89) 1.24 (0.69-2.97) 1.44 (0.69-2.97) 1.45 (0.76-3.48) 1.24 (0.51-3.00) 1.44 (0.69-2.97) 1.55 (0.76-3.46) 1.55 (0.76-3.46) 1	P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048           0.167
(b) <u>Urinary Phytoestrogens</u> <=60 y (n=3,106) Total Phytoestrogen Q1 Q2 Q3 Q4 Total isoflavone Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Daidzein Q1 Q2 Q3 Q4 Genistein Q1 Q2 Q3 Q4 C-DMA Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Equol Q1 Q2 Q3 Q4 Enterodiol D1 Q2 Q2 Q3 Q4 Enterodiol D1 Q2 Q3 Q4 Enterodiol D1 Q2 Q3 Q4 Enterodiol D1 Q2 Q3 Q4 Enterodiol D1 Q2 Q3 Q4 Enterodiol D1 D1 D1 D1 D1 D1 D1 D1 D1 D1	Range, µg/g creatiniee 103-228 86 228 87-535 53 535 54-1139-12 1139-13-54004 41 0.77-3645 3645-83 95 83 96-259-16 259-17-33908 97 0.09-16.03 16:04-434 43:42-142.67 142:66-32200 00 0.06-7.71 7.72-19.71 19:72-62:90 62:91-11514-39 0.02-0.55 0.58-2.49 2:50-13.51 13:52-957.52 0.05-2.74 2:75-5.60 5:81-11:93 11:94-11:65:77 0.21-96:72 98:73-311:15 311:16-727:02 727:03-52892:53 0.02-12.67 12:88-31:97 31:98-76:91 76:92-11:689-61 0.08-63.78 63:79-257:24 2:57-25 64:397-43:368:66	N (HRC/non-HRC)  4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/732 4/728 4/745 3/765 3/765 3/856 1/743 3/759 6/735 4/852 2/780 6/772 1/689 1/830 3/774 5/721 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 1/774 4/878 2/786 5/721 4/878 2/786 5/721 4/878 2/786 5/721 4/878 2/780 4/750 2/834 2/788 5/721 4/878 2/88 5/721 4/878 2/788 5/721 4/878 2/788 5/721 4/878 2/788 5/721 4/878 2/780 4/750 2/834 2/788 5/721 4/878 2/788 5/721 4/87 8/855 1/774 2/88 5/721 4/87 8/855 5/721 4/87 8/855 5/721 4/87 8/855 5/721 5/72 5/72 5/72 5/7 8/8 5/72 5/72 5/72 5/7 8/8 5/72 5/72 5/7 8/8 5/72 5/7 8/8 5/72 5/7 8/8 5/7 1/7 8/8 5/7 1/7 8/8 5/7 1/7 8/8 5/7 1/7 8/8 5/7 1/7 1/ 8/8 5/7 1/7 1/ 8/8 5/7 1/7 1/ 8/8 5/7 1/7 1/ 8/8 5/7 1/ 1/ 8/8 5/7 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:6) 0:33 (0:00-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 0:76 (0:06-960) 1:36 (0:19-9:51) 0:89 (0:09-8:76) 1:00 (Ref) 0:57 (0:06-961) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 0:00 (Ref) 0:	P for trend           0.132           0.777           0.409           0.964           0.957           0.051           0.046           0.036           0.036	Urinary phytoestrogens           >60 y (n=1,326)           Total phytoestrogen           Q1           Q2           Q3           Q4           Total isoflavone           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           O-DMA           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Enterodiol           Q1           Q2           Q3           Q4           Enterolactone           Q1	Range, µg/g creatinine 127-314-58 461/3-7/11-7 853-82-1520-08 1696-72-27355-07 0.94-43-89 464-9-103.27 112-00-334-21 305-28-24420-12 0.08-18.28 18.90-50-83 55:00-176-94 173-64-18352-94 0.07-8.98 10-30-30 025-71-79-61 80:54-10020-65 0.03-0-73 0.65-333 3.66-19.35 15-68-3039-53 0.06-3.34 4.22-6.98 7.53-14.47 14.99-5698.13 0.15-153.06 25.14.9-435-13 613-88-1001-71 1227.41-27259.86 0.03-16.40 1872-43.15 46:55-106.67 103-03-11077.02 0.10-94.14 19.90-63.314 350.61-883.05 10-93.14	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304 36/289 35/306 30/287 35/304 38/289 30/271 43/284 46/395 31/270 39/264 23/258 31/377 39/264 23/258 31/377 32/296 40/289 36/255 32/363 34/321 34/321 34/321 36/252		OR (95% CI) 1:00 (Ref) 0:83 (0:38-1:60) 1:36 (0:69-2:68) 1:28 (0:65-2:63) 1:20 (0:67-2:63) 1:20 (0:67-2:63) 0:93 (0:41-2:09) 0:65 (0:35-1:27) 1:00 (Ref) 0:95 (0:46-2:02) 0:64 (0:33-1:28) 1:00 (Ref) 0:95 (0:46-2:02) 0:96 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 0:95 (0:46-1:48) 1:22 (0:52-2:41) 1:33 (0:52-2:45) 1:00 (Ref) 1:58 (0:75-3:02) 1:55 (0:75-3:02) 1:55 (0:75-3:02) 1:58	P for trend           0-254           0-529           0-387           0-774           0-515           0-341           0-168           0-048           0-167
(b) <u>Urinary phytoestrogens</u> <=60 y (n=3,106) Total phytoestrogen Q1 Q2 Q3 Q4 Total isoflawone Q1 Q2 Q3 Q4 Q4 Daidzein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Genistein Q1 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q2 Q3 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4 Q4	Range, µg/g creatinine 1.03-228.86 228.87-335.53 538.54-1139.12 1139.13-54004.41 0.77-36.45 364.5-83.95 83.96-259.16 259.17-33908.97 0.09-16.03 16.04-43.41 43.42-142.67 142.68-23200.00 0.06-7.71 7.72-19.71 19.72-62.90 62.91-11.51.439 0.02-0.55 0.56-2.49 2.50-13.61 13.52-9557.52 0.05-2.74 2.75-5.60 5.81-11.63 5.81-11.	N (HRC/non-HRC) 4/800 2/803 2/777 5/713 2/841 4/737 5/767 2/748 2/856 4/745 3/764 3/765 3/785 3/785 3/785 3/785 6/735 4/852 2/780 6/772 1/889 4/768 1/830 3/774 5/721 4/878 2/785 1/774 6/656 4/750 2/788 5/721		OR (95% CI) 1:00 (Ref) 0:34 (0:10-1:6) 0:33 (0:00-0:85) 0:44 (0:07-2:88) 1:00 (Ref) 1:00 (Ref) 0:76 (0:06-9:60) 1:36 (0:19-9:51) 0:88 (0:02-6:18) 2:23 (0:46-10:71) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 1:00 (Ref) 0:26 (0:06-225) 0:37 (0:03-427) 0:37 (0:03-428) 0:37 (0:0	P for trend           0-132           0.777           0.409           0.964           0.957           0.051           0.046           0.036           0.044	Urinary phytoestrogens           >€0 y (n=1,326)           Total iphytoestrogen           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Daidzein           Q1           Q2           Q3           Q4           Genistein           Q1           Q2           Q3           Q4           Co-DMA           Q1           Q2           Q3           Q4           Equol           Q1           Q2           Q3           Q4           Total lignan           Q1           Q2           Q3           Q4           Cotal lignan           Q1           Q2           Q3           Q4           Enterodiol           Q1	Range, µg/g creatinine	N (HRC/non-HRC) 34/353 29/284 40/293 36/257 39/325 28/280 37/284 38/313 28/281 37/304 38/289 36/306 30/287 33/304 38/289 36/306 30/287 38/289 30/271 43/284 46/395 31/270 39/284 46/395 31/270 39/284 32/298 31/377 32/298 32/298 31/377 32/298 32/298 31/377 32/298 32/298 31/377 32/298 32/29		DR (95% Cl)           1:00 (Ref)           0:83 (0:38-1:60)           1:36 (0:65-2:63)           1:28 (0:65-2:53)           1:00 (Ref)           0:49 (0:19-1:25)           0:93 (0:41-2:09)           0:66 (0:35-1:27)           1:00 (Ref)           0:65 (0:26-1:63)           0:96 (0:46-2:02)           0:46 (0:33-1:26)           1:00 (Ref)           0:96 (0:46-1:63)           0:93 (0:46-1:637)           0:94 (0:46-1:637)           0:94 (0:46-1:637)           0:94 (0:46-1:637)           0:94 (0:46-1:637)           0:94 (0:46-1:637)           1:00 (Ref)           1:12 (0:52-2:41)           1:13 (0:52-2:435)           0:55 (0:76-3:16)           1:55 (0:76-3:16)           1:55 (0:76-3:16)           1:55 (0:76-3:16)           1:55 (0:76-3:16)           1:55 (0:76-3:16)           1:58 (0:77-3:02)           1:50 (0:76-3:16)           1:58 (0:77-3:02)           1:50 (0:76-3:16)           1:58 (0:77-3:02)           1:50 (0:76-3:16)           1:58 (0:72-3:404)           1:93 (0:79-4:71)           2:33 (0:62-2:86)	P for trend           0.254           0.529           0.387           0.774           0.515           0.341           0.168           0.048           0.167

Fig. 4. The stratified analysis between urinary phytoestrogens and HRC among males from NHANES 1999-2010. The analysis was stratified by (a) race/ethnicity (White and non-White) and (b) age group (< 60 years and > 60 years). Adjusted for age (continuous, not for age-stratified analysis), race/ethnicity (non-Hispanic White, non-Hispanic Black, Mexican American or other, not for race/ethnicity-stratified analysis), education level (below high school, high school or college or above), marital status (married/living with partner, divorced/separated/widowed or never married), poverty income ratio (0-1·30, 1·31-3·50, or 3·51-), BMI (< 25, 25-30 or > 30 kg/m<sup>2</sup>), physical activity (vigorous, moderate or inactive), smoking status (non-smoker, current smoking or former smokers), alcohol intake (no drinking, moderate drinking or heavy drinking), hypertension (yes or no), diabetes (yes or no), dyslipidaemia (yes or no), total energy intake (continuous) and fat intake (continuous). HRC, hormone-related cancer; NHANES, National Health and Nutrition Examination Survey; NH, non-Hispanic; O-DMA, O-desmethylangolensin.

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Table 3. Correlation of urinary phytoestrogens with female cancer biomarkers among 678 participants from NHANES 2001–2002

	CA	125	CA	15-3	HE4		
Urinary phytoestrogens, μg/g creatinine	r <sub>partial</sub>	Ppartial	<i>r</i> partial	Ppartial	r <sub>partial</sub>	Ppartial	
All participants (n 678)							
Total phytoestrogen	-0.023	0.559	0.044	0.258	0.014	0.727	
Isoflavone	-0.011	0.780	0.019	0.625	0.016	0.687	
Daidzein	-0.005	0.899	0.020	0.607	0.030	0.464	
Genistein	0.001	0.993	0.021	0.591	0.015	0.706	
O-DMA	-0.035	0.375	-0.005	0.894	-0.002	0.955	
Equol	-0.004	0.913	0.002	0.956	-0.009	0.822	
Lignan	-0.005	0.898	0.038	0.329	-0.004	0.921	
Enterodiol	0.014	0.727	0.015	0.698	0.001	0.972	
Enterolactone	-0.009	0.814	0.026	0.495	-0.004	0.913	
With HRC group (n 24)							
Total phytoestrogen	0.189	0.401	0.145	0.510	0.478	0.098	
Isoflavone	-0.012	0.957	0.218	0.319	0.132	0.668	
Daidzein	-0.083	0.713	0.304	0.159	0.017	0.957	
Genistein	0.001	0.999	-0.080	0.717	0.194	0.525	
O-DMA	-0.017	0.941	0.050	0.821	0.177	0.563	
Equol	0.097	0.666	0.448	0.032	0.226	0.457	
Lignan	0.321	0.145	0.107	0.624	0.488	0.090	
Enterodiol	0.293	0.185	0.006	0.978	0.377	0.205	
Enterolactone	0.345	0.116	0.093	0.673	0.511	0.074	
Normal group (n 654)							
Total phytoestrogen	-0.039	0.336	0.046	0.245	-0.005	0.898	
Isoflavone	-0.012	0.773	0.015	0.701	0.009	0.830	
Daidzein	-0.003	0.950	0.015	0.695	0.025	0.539	
Genistein	-0.001	0.993	0.025	0.526	0.007	0.856	
O-DMA	-0.036	0.365	-0.005	0.892	-0.008	0.855	
Equol	-0.011	0.786	-0.017	0.670	-0.013	0.757	
Lignan	-0.028	0.491	0.041	0.291	-0.022	0.591	
Enterodiol	-0.003	0.936	0.021	0.590	-0.009	0.831	
Enterolactone	-0.031	0.438	0.029	0.455	-0.020	0.630	

Abbreviations: CA125, cancer antigen 125; CA15.3, cancer antigen 15.3; HE4, human epididymal secretory protein E4; HRC, hormone-related cancers; NHANES, National Health and Nutrition Examination Survey; O-DMA, O-desmethylangolensin.

Data were expressed as the weighted correlation coefficient (r) and adjusted P-value.

For CA125, partial correlation analyses adjusted for age (continuous) and hypertension (yes or no). For CA15.3, partial correlation analyses adjusted for marital status (married/living with partner, divorced/separated/widowed or never married). For HE4, partial correlation analyses adjusted for age (continuous), race/ethnicity (non-Hispanic White, non-Hispanic Black, Mexican American, or other), education (below high school, high school or college or above), marital status (married/living with partner, divorced/separated/widowed or never married), smoking status (non-smoker, current smoking or former smokers), hypertension (yes or no), diabetes (yes or no), dyslipidaemia (yes or no), total energy intake (continuous) and fat intake (continuous). A level of < 0.05 for two-sided *P* values was considered statistically significant.

postmenopausal majority. Menopausal status as an effect modifier may have an influence on the association between phytoestrogens and female cancer risk. Ward et al.<sup>(20)</sup> stratified by menopausal status and detected a stronger association between total urinary isoflavones and breast cancer risk in premenopausal and perimenopausal women (OR = 1.30), but null findings in postmenopausal women (OR = 1.01). In our study, total urinary isoflavones were positively associated with HRC in both pre- and post-menopausal women, but the OR in premenopausal women was quite larger than that in post-menopausal women. For certain quartiles, the OR of Q2 and Q4 for pre-menopausal and Q3 for post-menopausal were significant. Similarly, the effects of lignans seemed more significant in pre-menopausal women. Since phytoestrogens have dual effects, it is necessary to understand the effects of phytoestrogens on HRC in different menopausal states and hormone levels. Nonetheless, the evidence suggests that there may be circumstances where phytoestrogen exposure increases HRC (e.g. breast cancer) risk, and thus the evidence on the role of phytoestrogens modified by menopausal status deserves further study.

Herein, we found that participants with HRC had higher serum HE4 concentrations and lower PSA ratios than those without HRC, which was in line with our expectations. HE4 is a novel tumour marker for ovarian cancer with higher specificity and sensitivity than CA125<sup>(53)</sup>. PSA ratio has proven to be an effective tool in prostate cancer screening, especially in the setting of total PSA in the intermediate range of 4-10 ng/ml and a negative digital rectal examination<sup>(54)</sup>. Knowledge is still limited about the association of phytoestrogens and cancer biomarkers. A case report showed that the serum CA125 concentration of a postoperative patient with ovarian cancer dropped from 756 µg/ ml to 311 µg/ml after an intervention of the fermented soybean product for 6 weeks<sup>(31)</sup>. In our study, we did not find any effect of phytoestrogens on CA125, but a stimulative effect of equol on CA15.3 in twenty-four HRC patients. We further analysed the correlation between CA15.3 and urinary equol in twenty-four HRC patients by cancer type and found that there was a discrepant correlation in the various cancers (for breast cancer: n 16, r=0.420, P=0.119; for uterine cancer: n 7, r=0.843; P=0.035; data not shown). Studies have suggested that

#### Phytoestrogens with HRC and cancer biomarkers

Table 4.	Correlation of urinary	phytoestrogens with male	cancer biomarkers among 2	2159 participants from	NHANES 2001–2010

	Total	PSA	Free	PSA	PSA ratio		
Urinary phytoestrogens, µg/g creatinine	r <sub>partial</sub>	Ppartial	r <sub>partial</sub>	Ppartial	r <sub>partial</sub>	P <sub>partial</sub>	
All participants (n 2159)							
Total phytoestrogen	-0.036	0.108	-0.015	0.498	0.032	0.143	
Isoflavone	-0.011	0.610	-0.014	0.539	0.005	0.832	
Daidzein	-0.015	0.511	-0.016	0.447	0.008	0.712	
Genistein	-0.018	0.412	-0.026	0.247	-0.002	0.940	
O-DMA	-0.009	0.673	-0.001	0.982	0.020	0.362	
Equol	0.018	0.431	0.016	0.467	-0.013	0.548	
Lignan	-0.021	0.358	0.008	0.718	0.032	0.144	
Enterodiol	-0.032	0.160	-0.032	0.159	0.018	0.401	
Enterolactone	-0.022	0.322	0.012	0.593	0.035	0.107	
Prostate cancer group (n 13)							
Total phytoestrogen	-0.796	0.204	-0.648	0.551	-0.079	0.818	
Isoflavone	0.934	0.067	0.951	0.200	-0.301	0.368	
Daidzein	0.900	0.100	0.934	0.232	-0.206	0.544	
Genistein	0.884	0.116	0.805	0.404	-0.439	0.177	
O-DMA	-0.628	0.372	-0.902	0.284	-0.136	0.691	
Equol	-0.201	0.799	0.421	0.723	0.356	0.282	
Lignan	-0.987	0.014	-0.993	0.072	0.423	0.194	
Enterodiol	-0.905	0.095	-0.871	0.328	0.035	0.918	
Enterolactone	-0.979	0.021	-0.986	0.105	0.636	0.036	
With HRC group (n 18)							
Total phytoestrogen	-0.085	0.873	0.162	0.795	-0.088	0.747	
Isoflavone	0.242	0.644	-0.005	0.993	-0.379	0.148	
Daidzein	0.382	0.455	0.130	0.834	-0.307	0.247	
Genistein	0.223	0.671	-0.020	0.975	-0.442	0.087	
O-DMA	0.383	0.454	0.455	0.442	-0.289	0.277	
Equol	-0.002	0.997	0.249	0.686	0.298	0.262	
Lignan	-0.460	0.359	-0.065	0.917	0.292	0.272	
Enterodiol	0.159	0.763	0.539	0.349	0.016	0.953	
Enterolactone	-0.553	0.255	-0·177	0.776	0.445	0.084	
Normal group (n 2141)							
Total phytoestrogen	-0.038	0.095	-0.017	0.446	0.032	0.139	
Isoflavone	-0.015	0.502	-0.016	0.473	0.007	0.735	
Daidzein	-0.019	0.402	-0.019	0.402	0.010	0.633	
Genistein	-0.021	0.354	-0.027	0.238	0.002	0.931	
O-DMA	-0.012	0.580	-0.001	0.958	0.220	0.310	
Equol	0.015	0.501	0.011	0.615	-0.015	0.489	
Lignan	-0.020	0.371	0.005	0.816	0.028	0.189	
Enterodiol	-0.033	0.143	-0.035	0.119	0.017	0.419	
Enterolactone	-0.022	0.339	0.009	0.694	0.031	0.157	

Abbreviations: HRC, hormone-related cancers; NHANES, National Health and Nutrition Examination Survey; O-DMA, O-desmethylangolensin; PSA, prostate-specific antigen. Data were expressed as the weighted correlation coefficient (r) and adjusted P-value.

For total PSA, partial correlation analyses were adjusted for age (continuous), BMI (< 25, 25–30, or > 30 kg/m<sup>2</sup>), hypertension (yes or no), total energy intake (continuous) and fat intake (continuous). For free PSA, partial correlation analyses adjusted for age (continuous), BMI (< 25, 25–30, or > 30 kg/m<sup>2</sup>), smoking status (non-smoker, current smoking or former smokers), hypertension (yes or no), total energy intake (continuous) and fat intake (continuous). For PSA ratio, partial correlation analyses adjusted for age (continuous). For PSA ratio, partial correlation analyses adjusted for race/ethnicity (non-Hispanic White, non-Hispanic Black, Mexican American or other) and marital status (married/living with partner, divorced/separated/widowed or never married).

CA15.3 levels significantly correlated with prognostic factors and were a useful prognostic tool for endometrial (uterine) cancer<sup>(55)</sup>. However, whether equol impacts the initiation and development of endometrial cancer by affecting the level of CA15.3 needs further research verification. A randomised, double-blind, placebo-controlled study indicated that a daily diet containing four slices of bread rich in heat-treated soy grits favourably influenced the PSA level and the free/total PSA ratio in patients with prostate cancer, which provides some evidence to support epidemiologic studies claiming that male populations who consume high phytoestrogen diets have a decreased risk of the PSA abnormality and even prostate cancer<sup>(56)</sup>. Additionally, a cross-sectional study examining the relationship between the serum PSA level and urine phytoestrogen concentration from NHANES 2001–2004 revealed that in general healthy US men,

40+ years old without a diagnosis of prostate cancer, urinary isoflavone and lignan concentrations were not associated with serum PSA level<sup>(57)</sup>. Similar results were found among healthy men without HRC from NHANES 2001–2010 in this study. Of note, among small-scale prostate cancer patients, enterolactone seemed to favourably reduce total PSA levels and increase PSA ratio. The hormone-related activity of lignans may exert anti-hormonal activity and somehow alter physiological hormonal homeostasis in the presence of prostate cancer. Current research is ongoing to better understand the mode of action of phytoestrogens on cancer.

Theoretically, our findings enriched the study of the potential effects of phytoestrogens on HRC and for the first time showed a positive correlation of urinary equol with CA15.3 and a negative and positive correlation of urinary

enterolactone with total PSA and PSA ratio in men, respectively. However, there are some limitations and challenges to be settled in our research. First, the cross-sectional data reduces our capacity for evidence. More prospective studies are warranted to explore the causal association. Second, selection bias and recall bias may exist. For instance, information on the history of cancer was recalled and orally reported by the subjects, not confirmed by cancer registries or medical records. And information on cancer treatment or stage of cancer was unavailable. Third, information on dietary phytoestrogens was not included in our analysis and urinary phytoestrogens reflect short term (24-48 h) rather than long-term dietary intake. Meanwhile, since the phytoestrogen data for most of our cancer patients reflect a point in time after diagnosis, it is possible that the eating habits have changed and cannot reflect the typical dietary behaviours before the cancer experience. Such information, if included, would make our analysis more convincing. Besides, even though the potential covariates of interest had been adjusted in the partial correlation analyses, there may be other unknown variables affecting the relationship between phytoestrogens and cancer biomarkers. Therefore, further research is needed to further clarify this issue.

In conclusion, our findings indicated that higher concentrations of total isoflavones and enterodiol were positively associated with HRC among females and equol was negatively linked to HRC among males, differentiated by race/ethnicity and age. Urinary equol excretion was related to serum CA15.3 among participants with HRC, and enterolactone concentration may affect PSA levels in prostate cancer patients. Nonetheless, further prospective studies and a larger number of subjects are warranted to be verified and provide stronger evidence.

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The National Center for Health Statistics Ethics Review Board at the Centers for Disease Control and Prevention approved collection of the NHANES data and posting of the NHANES publicuse files, which were required for this investigation. All NHANES participants provided written informed consent.

#### Supplementary material

For supplementary material/s referred to in this article, please visit https://doi.org/10.1017/S0007114522003877

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