Supplemental Table 1. Partial correlation coefficients among sex steroid hormone measures and SHBG in BEEDS control subjects, adjusted for age and BMI (n=212)

	DHEA	DHEAS	Androstenediol	Androstenedione	T	DHT	3adiol3g	3adiol17g	ADT	ADT-G	E1	E1S	E2	SHBG	Free T	Free DHT	Free E2
DHEA																	
DHEAS	**0.45**																
Androstenediol	**0.40**	0.11															
Androstenedione	**0.47**	0.10	**0.31**														
T	**0.15**	**-0.16**	**0.55**	**0.46**													
DHT	**0.15**	-0.10	**0.37**	**0.22**	**0.63**												
3adiol3g	0.10	**0.21**	0.01	0.04	-0.04	-0.08											
3adiol17g	0.08	0.06	0.07	0.07	0.11	0.13	**0.60**										
ADT	**0.55**	**0.38**	**0.34**	**0.43**	**0.15**	**0.33**	0.12	0.08									
ADT-G	**0.28**	**0.28**	0.09	**0.14**	0.04	0.09	**0.71**	**0.44**	**0.22**								
E1	**0.26**	**0.27**	**0.25**	**0.43**	**0.20**	**0.16**	**0.15**	**0.24**	**0.41**	0.10							
E1S	0.12	**0.42**	0.02	0.03	-0.04	-0.08	**0.30**	**0.27**	0.16	**0.15**	**0.54**						
E2	**0.17**	0.07	**0.39**	**0.41**	**0.51**	**0.38**	0.03	**0.22**	**0.30**	0.00	**0.74**	**0.35**					
SHBG	0.09	**-0.18**	**0.32**	**0.18**	**0.60**	**0.59**	**-0.18**	0.01	0.00	-0.02	0.00	**-0.26**	**0.23**				
Free T	0.13	-0.08	**0.42**	**0.45**	**0.75**	**0.28**	-0.18	0.14	**0.20**	0.08	**0.26**	**0.17**	**0.48**	-0.02			
Free DHT	**0.21**	-0.01	**0.33**	**0.28**	**0.51**	**0.74**	0.08	**0.20**	**0.44**	**0.19**	**0.27**	0.12	**0.43**	0.04	**0.63**		
Free E2	**0.15**	**0.15**	**0.28**	**0.34**	**0.28**	**0.14**	0.09	**0.22**	**0.32**	0.01	**0.75**	**0.47**	**0.92**	**-0.14**	**0.50**	**0.42**	

Bolded correlation coefficients are significant at the 0.05 level. Abbreviations: E1, estrone; E2, estradiol; T, testosterone.

Supplemental Table 2. Multivariable analysis of the associations between sex steroid hormones, SHBG and Barrett's esophagus stratified by age

Variable	Age<50.60					Age ≥50.60				
	Controls	Cases	OR	95% CI	p value	Controls	Cases	OR		p value
DHEA (nmol/L)										
<5.90	12	8				40	62			
5.90-<9.20	13	9	0.37	(0.08 ,1.80)	0.22	32	39	0.76	(0.38 ,1.51)	0.43
9.20-<11.85	29	7	0.33	(0.07 ,1.69)	0.18	18	11	0.36	(0.14 ,0.94)	**0.04**
>11.85	36	9	0.27	(0.06 ,1.27)	0.10	11	14	0.57	(0.21 ,1.57)	0.28
p value for effect modification					*0.66*					
continuous	90	33	0.44	(0.19 ,0.98)	**0.05**	101	126	0.54	(0.30 ,0.99)	**0.05**
p value for effect modification					*0.55*					
DHEAS (umol/L)										
<2.25	12	9				35	58			
2.25-<3.32	14	4	0.30	(0.05 ,1.89)	0.20	32	28	0.50	(0.23 ,1.09)	0.08
3.32-<4.72	22	10	0.58	(0.14 ,2.43)	0.46	19	13	0.31	(0.12 ,0.82)	**0.02**
>4.72	37	8	0.32	(0.07 ,1.37)	0.12	6	13	1.50	(0.43 ,5.23)	0.52
p value for effect modification					*0.08*					
continuous	85	31	0.69	(0.30 ,1.58)	0.38	92	112	0.75	(0.38 ,1.48)	0.41
p value for effect modification					*0.56*					
Androstenediol (pmol/L)										
<1715.26	12	5				38	48			
1715.26-<2323.60	26	10	0.90	(0.17 ,4.76)	0.90	21	35	1.42	(0.64 ,3.12)	0.39
2323.60-<3162.90	21	6	0.87	(0.15 ,4.97)	0.88	28	24	0.60	(0.27 ,1.33)	0.21
>3192.9	31	12	1.15	(0.24 ,5.58)	0.86	14	17	0.92	(0.35 ,2.39)	0.86
p value for effect modification					*0.99*					
continuous	90	33	0.82	(0.29 ,2.31)	0.71	101	124	0.89	(0.50 ,1.59)	0.70
p value for effect modification					*0.59*					
Androstenedione (nmol/L)										
<2.32	15	8				32	44			
2.32-<2.83	19	9	1.08	(0.22 ,5.29)	0.93	32	27	0.47	(0.22 ,1.03)	0.06
2.83-<3.87	30	11	1.18	(0.29 ,4.82)	0.82	17	33	0.94	(0.40 ,2.21)	0.88
>3.87	26	5	0.34	(0.07 ,1.67)	0.18	20	22	0.63	(0.27 ,1.46)	0.28

p value for effect modification					*0.23*					
continuous	90	33	0.46	(0.16 ,1.32)	0.15	101	126	0.95	(0.55 ,1.66)	0.87
p value for effect modification					*0.09*					
Testosterone (nmol/L)										
<10.72	16	8				32	26			
10.72-<14.14	21	4	0.30	(0.05 ,1.76)	0.18	28	40	2.26	(0.98 ,5.22)	0.06
14.14-<18.31	25	7	0.85	(0.18 ,3.98)	0.83	22	35	2.93	(1.18 ,7.29)	**0.02**
>18.31	28	14	1.31	(0.31 ,5.55)	0.71	19	24	1.82	(0.70 ,4.73)	0.22
p value for effect modification					*0.06*					
continuous	90	33	1.21	(0.38 ,3.82)	0.75	101	125	1.13	(0.53 ,2.41)	0.75
p value for effect modification					*0.62*					
DHT (pmol/L)										
<767.38	20	8				28	30			
767.38-<1107.03	21	7	1.10	(0.25 ,4.94)	0.90	26	31	1.16	(0.49 ,2.70)	0.74
1107.03-<1559.02	20	11	2.42	(0.58 ,10.14)	0.23	28	40	1.44	(0.61 ,3.42)	0.40
>1559.02	29	7	0.79	(0.17 ,3.64)	0.76	19	25	1.36	(0.53 ,3.53)	0.52
p value for effect modification					*0.62*					
continuous	90	33	1.03	(0.39 ,2.71)	0.96	101	126	1.22	(0.66 ,2.27)	0.52
p value for effect modification					*0.33*					
3adiol3g (nmol/L)										
<2.42	16	6				33	41			
2.42-<3.31	20	7	0.75	(0.15 ,3.82)	0.73	27	20	0.68	(0.29 ,1.57)	0.36
3.31-<4.96	23	9	1.11	(0.23 ,5.29)	0.90	22	34	1.04	(0.46 ,2.34)	0.92
>4.96	30	11	0.84	(0.19 ,3.64)	0.82	18	27	1.26	(0.52 ,3.03)	0.60
p value for effect modification					*0.78*					
continuous	89	33	0.89	(0.51 ,1.54)	0.67	100	122	1.00	(0.72 ,1.37)	0.98
p value for effect modification					*0.48*					
3adiol17g (nmol/L)										
<6.00	14	9				36	35			
6.00-<8.65	20	4	0.53	(0.09 ,2.94)	0.47	25	26	1.44	(0.62 ,3.32)	0.39
8.65-<12.36	27	11	1.06	(0.27 ,4.08)	0.94	21	34	2.28	(0.99 ,5.21)	0.05
>12.36	28	9	0.58	(0.14 ,2.42)	0.45	18	23	1.74	(0.71 ,4.30)	0.23
p value for effect modification					*0.25*					

continuous	89	33	0.80	(0.41 ,1.55)	0.51	100	118	1.01	(0.70 ,1.44)	0.96
p value for effect modification					*0.82*					
ADT (pmol/L)										
<617.13	13	8				37	69			
617.13-<803.65	18	5	0.59	(0.11 ,3.09)	0.53	31	28	0.39	(0.19 ,0.84)	**0.02**
803.65-<1031.64	27	12	1.52	(0.37 ,6.18)	0.56	21	16	0.31	(0.12 ,0.76)	**0.01**
>1031.64	32	8	0.79	(0.18 ,3.41)	0.75	12	13	0.40	(0.15 ,1.12)	0.08
p value for effect modification					*0.61*					
continuous	90	33	0.98	(0.44 ,2.17)	0.95	101	126	0.61	(0.32 ,1.17)	0.14
p value for effect modification					*0.74*					
ADT-G (nmol/L)										
<56.45	11	8				36	46			
56.45-<78.02	19	4	0.29	(0.05 ,1.68)	0.17	29	32	1.00	(0.47 ,2.14)	1.00
78.02-<118.98	31	11	0.72	(0.16 ,3.19)	0.67	16	24	1.25	(0.53 ,2.97)	0.61
>118.98	27	10	0.57	(0.12 ,2.69)	0.48	19	20	0.77	(0.32 ,1.83)	0.55
p value for effect modification					*0.76*					
continuous	88	33	1.04	(0.60 ,1.80)	0.89	100	122	0.82	(0.54 ,1.26)	0.37
p value for effect modification					*0.71*					
E1 (pmol/L)										
<97.50	30	9				19	27			
97.50-<127.97	20	10	2.56	(0.66 ,9.95)	0.17	27	38	0.91	(0.38 ,2.17)	0.83
127.97-<161.59	23	11	3.52	(0.84 ,14.78)	0.09	23	36	1.27	(0.52 ,3.10)	0.60
>161.59	17	3	0.46	(0.07 ,3.03)	0.42	32	25	0.42	(0.17 ,1.03)	0.06
p value for effect modification					0.56					
continuous	90	33	0.68	(0.20 ,2.35)	0.55	101	126	0.42	(0.21 ,0.84)	**0.01**
p value for effect modification					*0.48*					
E1S (nmol/L)										
<0.92	26	12				19	42			
0.92-<1.49	16	8	1.07	(0.23 ,4.96)	0.93	27	25	0.42	(0.17 ,1.03)	0.06
1.49-<2.17	23	5	0.39	(0.09 ,1.69)	0.21	22	24	0.54	(0.22 ,1.37)	0.20
>2.17	18	6	0.65	(0.15 ,2.77)	0.56	23	23	0.38	(0.15 ,0.97)	**0.04**
p value for effect modification					*0.61*					
continuous	83	31	0.56	(0.23 ,1.35)	0.19	91	114	0.48	(0.28 ,0.83)	**0.01**

p value for effect modification					*0.53*					
E2 (pmol/L)										
<73.33	22	9				27	29			
73.33-<90.44	23	5	0.53	(0.12 ,2.32)	0.40	23	31	1.73	(0.72 ,4.17)	0.22
90.44-<112.73	25	15	1.87	(0.51 ,6.82)	0.34	23	43	2.36	(1.01 ,5.51)	**0.05**
>112.73	20	4	0.42	(0.07 ,2.55)	0.35	28	23	0.87	(0.37 ,2.08)	0.76
p value for effect modification					*0.62*					
continuous	90	33	1.02	(0.27 ,3.76)	0.98	101	126	0.74	(0.37 ,1.49)	0.40
p value for effect modification					*0.71*					
SHBG (nmol/L)										
<19.22	32	14				16	17			
19.22-<31.53	20	9	1.44	(0.38 ,5.47)	0.59	25	47	1.58	(0.61 ,4.11)	0.35
31.53-<44.53	18	2	0.31	(0.05 ,1.94)	0.21	30	33	0.89	(0.32 ,2.44)	0.82
>44.53	20	7	0.85	(0.21 ,3.42)	0.82	30	29	0.74	(0.27 ,2.02)	0.56
p value for effect modification					*0.52*					
continuous	90	32	0.76	(0.24 ,2.37)	0.63	101	126	0.81	(0.49 ,1.37)	0.44
p value for effect modification					*0.74*					
Parent Estrogens (pmol/L)										
<175.89	27	9				20	26			
175.89-<220.52	20	11	1.56	(0.42 ,5.85)	0.51	31	41	0.95	(0.41 ,2.21)	0.91
220.52-<280.81	26	11	1.92	(0.48 ,7.71)	0.36	18	38	2.05	(0.82 ,5.12)	0.13
>280.81	17	2	0.21	(0.02 ,1.79)	0.15	32	21	0.42	(0.17 ,1.07)	0.07
p value for effect modification					*0.62*					
continuous	90	33	0.77	(0.20 ,2.91)	0.70	101	126	0.48	(0.23 ,1.00)	**0.05**
p value for effect modification					*0.54*					
Testosterone: Parent Estrogens Ratio (pmol/L)										
<46.71	17	5				32	23			
46.71-<69.53	19	8	1.87	(0.34 ,10.40)	0.48	29	53	2.70	(1.17 ,6.24)	**0.02**
69.53-<89.55	22	8	2.20	(0.41 ,11.80)	0.36	26	35	2.23	(0.89 ,5.62)	0.09
>89.55	32	12	2.09	(0.39 ,11.32)	0.39	14	14	1.84	(0.61 ,5.52)	0.28
p value for effect modification					*0.84*					
continuous	90	33	1.15	(0.46 ,2.86)	0.77	101	125	1.70	(0.74 ,3.93)	0.21
p value for effect modification					*0.49*					

Androstenedione: E1 Ratio (pmol/L)										
<17.81	12	7				39	44			
17.81-<22.84	19	6	1.40	(0.25 ,7.92)	0.70	28	35	0.69	(0.32 ,1.47)	0.33
22.84-<30.43	26	6	0.53	(0.10 ,2.90)	0.46	22	27	0.83	(0.37 ,1.89)	0.66
>30.43	33	14	0.92	(0.18 ,4.68)	0.92	12	20	1.37	(0.53 ,3.55)	0.52
p value for effect modification					*0.48*					
continuous	90	33	0.52	(0.19 ,1.42)	0.20	101	126	1.35	(0.67 ,2.70)	0.40
p value for effect modification					*0.09*					
Testosterone: E2 Ratio (pmol/L)										
<119.31	16	6				34	24			
119.31-<160.81	20	9	1.16	(0.25 ,5.37)	0.85	27	50	2.55	(1.13 ,5.77)	**0.02**
160.81-<205.73	27	6	0.73	(0.14 ,3.64)	0.70	21	30	1.88	(0.76 ,4.66)	0.17
>205.73	27	12	1.28	(0.27 ,6.09)	0.76	19	21	1.79	(0.67 ,4.78)	0.24
p value for effect modification					*0.42*					
continuous	90	33	1.08	(0.37 ,3.09)	0.89	101	125	1.15	(0.50 ,2.69)	0.74
p value for effect modification					*0.72*					
Free Testosterone (nmol/L)										
<0.24	11	1				37	38			
0.24-<0.29	18	6	8.91	(0.71 ,112.16)	0.09	32	29	1.04	(0.49 ,2.22)	0.91
0.29-<0.38	25	7	3.85	(0.29 ,50.60)	0.31	25	41	1.84	(0.84 ,4.01)	0.13
>0.38	36	18	10.07	(0.85 ,119.27)	0.07	7	17	2.49	(0.81 ,7.63)	0.11
p value for effect modification					*0.48*					
continuous	90	32	1.73	(0.62 ,4.82)	0.29	101	125	2.00	(0.81 ,4.93)	0.13
p value for effect modification					*0.48*					
Free DHT (pmol/L)										
<21.21	14	3				35	36			
21.21-<27.13	16	3	0.98	(0.13 ,7.36)	0.98	32	34	1.26	(0.59 ,2.66)	0.55
27.13-<35.44	25	7	1.19	(0.20 ,6.96)	0.85	23	30	1.57	(0.68 ,3.62)	0.29
>35.44	35	19	3.65	(0.66 ,20.15)	0.14	11	25	2.47	(0.93 ,6.55)	0.07
p value for effect modification					*0.94*					
continuous	90	32	1.55	(0.67 ,3.61)	0.31	101	125	1.89	(0.89 ,4.00)	0.10
p value for effect modification					*0.30*					
Free Estradiol (pmol/L)										

<1.96	21	8				28	32			
1.96-<2.42	22	6	0.57	(0.12 ,2.77)	0.48	27	40	1.52	(0.69 ,3.35)	0.30
2.42-<3.09	24	11	1.42	(0.38 ,5.31)	0.60	24	34	1.59	(0.69 ,3.66)	0.28
>3.09	23	7	0.60	(0.13 ,2.79)	0.51	22	20	0.87	(0.35 ,2.20)	0.77
p value for effect modification					*0.92*					
continuous	90	32	1.28	(0.39 ,4.21)	0.69	101	126	0.79	(0.37 ,1.71)	0.55
p value for effect modification					*0.47*					

Adjusted for smoking status, alcohol consumption, heartburn, regurgitation, gastroesophageal symptom score (excluding heartburn and regurgitation), BMI, and race. Continuous sex steroid hormone values were standardized to half of the difference between the 75th and 25th centiles of the distribution.

Supplemental Table 3. Multivariable analysis of the associations between sex steroid hormones, SHBG and Barrett's esophagus stratified by body mass index

Variable	BMI <27.62					BMI ≥27.62				
	Controls	Cases	OR	95% CI	p value	Controls	Cases	OR	95% CI	p value
DHEA (nmol/L)										
<5.90	23	24				28	46			
5.90-<9.20	17	18	0.89	(0.25 ,3.16)	0.86	28	30	0.93	(0.40 ,2.15)	0.87
9.20-<11.85	22	7	0.92	(0.22 ,3.93)	0.91	25	11	0.35	(0.12 ,1.02)	0.05
>11.85	28	10	1.58	(0.37 ,6.79)	0.54	21	13	0.72	(0.23 ,2.24)	0.57
p value for effect modification					*0.72*					
continuous	90	59	0.92	(0.42 ,2.03)	0.83	102	100	0.62	(0.32 ,1.19)	0.15
p value for effect modification					*0.74*					
DHEAS (umol/L)										
<2.25	21	27				24	40			
2.25-<3.32	18	12	1.73	(0.40 ,7.43)	0.46	29	20	0.58	(0.23 ,1.47)	0.25
3.32-<4.72	20	8	0.89	(0.19 ,4.15)	0.88	23	15	0.72	(0.26 ,2.01)	0.53
>4.72	22	8	2.92	(0.52 ,16.49)	0.22	21	13	0.77	(0.24 ,2.42)	0.65
p value for effect modification					*0.57*					
continuous	81	55	2.22	(0.92 ,5.36)	0.08	97	88	0.75	(0.35 ,1.61)	0.46
p value for effect modification					*0.62*					
Androstenediol (pmol/L)										
<1715.26	18	17				32	36			
1715.26-<2323.60	20	14	1.46	(0.32 ,6.67)	0.63	28	31	1.26	(0.54 ,2.93)	0.60
2323.60-<3162.90	29	12	0.56	(0.14 ,2.16)	0.40	19	18	1.25	(0.47 ,3.33)	0.65
>3192.9	23	15	2.63	(0.65 ,10.64)	0.17	23	14	0.94	(0.33 ,2.69)	0.91
p value for effect modification					*0.35*					
continuous	90	58	1.50	(0.68 ,3.34)	0.32	102	99	0.82	(0.38 ,1.77)	0.62
p value for effect modification					*0.58*					
Androstenedione (nmol/L)										
<2.32	15	19				33	33			
2.32-<2.83	25	16	0.23	(0.06 ,0.88)	**0.03**	24	20	1.02	(0.40 ,2.59)	0.96
2.83-<3.87	29	17	0.33	(0.09 ,1.29)	0.11	18	27	1.52	(0.57 ,4.08)	0.41
>3.87	21	7	0.29	(0.06 ,1.30)	0.10	27	20	0.90	(0.36 ,2.27)	0.83

p value for effect modification					*0.24*					
continuous	90	59	1.27	(0.62 ,2.61)	0.51	102	100	0.79	(0.37 ,1.66)	0.53
p value for effect modification					*0.76*					
Testosterone (nmol/L)										
<10.72	11	10				37	24			
10.72-<14.14	24	16	0.60	(0.13 ,2.84)	0.52	26	28	1.66	(0.67 ,4.11)	0.28
14.14-<18.31	25	15	0.66	(0.15 ,2.95)	0.59	21	27	3.54	(1.31 ,9.58)	**0.01**
>18.31	30	18	0.79	(0.18 ,3.39)	0.75	18	20	2.95	(1.03 ,8.49)	**0.04**
p value for effect modification					*0.27*					
continuous	90	59	0.89	(0.31 ,2.51)	0.82	102	99	1.57	(0.68 ,3.59)	0.29
p value for effect modification					*0.34*					
DHT (pmol/L)										
<767.38	9	11				39	27			
767.38-<1107.03	21	10	0.39	(0.07 ,2.07)	0.27	26	28	1.64	(0.68 ,3.97)	0.27
1107.03-<1559.02	26	23	0.66	(0.15 ,3.00)	0.59	23	28	1.97	(0.80 ,4.89)	0.14
>1559.02	34	15	0.34	(0.07 ,1.54)	0.16	14	17	1.71	(0.59 ,4.92)	0.32
p value for effect modification					*0.52*					
continuous	90	59	0.75	(0.30 ,1.85)	0.53	102	100	1.29	(0.65 ,2.53)	0.47
p value for effect modification					*0.56*					
3adiol3g (nmol/L)										
<2.42	19	14				28	33			
2.42-<3.31	23	9	0.72	(0.16 ,3.27)	0.67	26	18	0.92	(0.36 ,2.38)	0.87
3.31-<4.96	22	16	1.73	(0.36 ,8.16)	0.49	22	27	1.06	(0.42 ,2.67)	0.90
>4.96	24	18	3.72	(0.90 ,15.41)	0.07	25	20	0.97	(0.37 ,2.58)	0.96
p value for effect modification					*0.75*					
continuous	88	57	1.32	(0.81 ,2.16)	0.26	101	98	0.93	(0.66 ,1.31)	0.67
p value for effect modification					*0.56*					
3adiol17g (nmol/L)										
<6.00	24	23				24	21			
6.00-<8.65	24	9	0.89	(0.24 ,3.34)	0.87	22	21	1.25	(0.44 ,3.52)	0.67
8.65-<12.36	24	13	1.48	(0.44 ,4.97)	0.52	24	32	1.95	(0.75 ,5.08)	0.17
>12.36	16	10	1.11	(0.28 ,4.43)	0.89	31	22	1.34	(0.48 ,3.75)	0.57
p value for effect modification					*0.73*					

continuous	88	55	1.24	(0.57 ,2.70)	0.58	101	96	0.91	(0.64 ,1.29)	0.61
p value for effect modification					*0.61*					
ADT (pmol/L)										
<617.13	21	20				27	57			
617.13-<803.65	20	16	1.47	(0.35 ,6.21)	0.60	30	17	0.23	(0.08 ,0.63)	**0.004**
803.65-<1031.64	26	12	1.38	(0.35 ,5.36)	0.64	22	16	0.43	(0.16 ,1.15)	0.09
>1031.64	23	11	3.36	(0.71 ,15.89)	0.13	23	10	0.21	(0.07 ,0.66)	**0.01**
p value for effect modification					*0.11*					
continuous	90	59	1.63	(0.67 ,3.95)	0.28	102	100	0.65	(0.33 ,1.28)	0.21
p value for effect modification					*0.30*					
ADT-G (nmol/L)										
<56.45	15	14				30	40			
56.45-<78.02	23	16	1.07	(0.26 ,4.38)	0.92	27	20	0.80	(0.32 ,1.99)	0.63
78.02-<118.98	24	11	1.08	(0.23 ,4.92)	0.93	24	24	1.74	(0.67 ,4.56)	0.26
>118.98	25	17	2.14	(0.53 ,8.55)	0.28	20	13	0.51	(0.18 ,1.49)	0.22
p value for effect modification					*0.19*					
continuous	87	58	1.44	(0.76 ,2.75)	0.26	101	97	0.76	(0.47 ,1.22)	0.25
p value for effect modification					*0.26*					
E1 (pmol/L)										
<97.50	26	16				22	20			
97.50-<127.97	24	17	0.74	(0.21 ,2.62)	0.64	23	31	1.42	(0.53 ,3.80)	0.48
127.97-<161.59	23	20	1.31	(0.35 ,4.91)	0.69	24	27	1.37	(0.52 ,3.65)	0.52
>161.59	17	6	0.33	(0.07 ,1.55)	0.16	33	22	0.68	(0.26 ,1.78)	0.43
p value for effect modification					*0.71*					
continuous	90	59	0.64	(0.22 ,1.85)	0.41	102	100	0.48	(0.22 ,1.01)	0.05
p value for effect modification					*0.51*					
E1S (nmol/L)										
<0.92	24	20				20	34			
0.92-<1.49	19	16	0.80	(0.22 ,2.87)	0.73	23	17	0.42	(0.16 ,1.13)	0.08
1.49-<2.17	21	12	0.80	(0.19 ,3.31)	0.76	25	17	0.51	(0.19 ,1.39)	0.19
>2.17	16	7	0.31	(0.06 ,1.49)	0.14	27	22	0.50	(0.20 ,1.28)	0.15
p value for effect modification					*0.48*					
continuous	80	55	0.47	(0.21 ,1.07)	0.07	95	90	0.64	(0.36 ,1.14)	0.13

p value for effect modification					*1.00*					
E2 (pmol/L)										
<73.33	28	17				19	21			
73.33-<90.44	21	12	0.63	(0.17 ,2.32)	0.49	26	24	0.99	(0.37 ,2.64)	0.98
90.44-<112.73	23	21	1.29	(0.38 ,4.42)	0.69	27	37	1.86	(0.72 ,4.82)	0.20
>112.73	18	9	0.67	(0.16 ,2.78)	0.58	30	18	0.69	(0.25 ,1.90)	0.47
p value for effect modification					*0.99*					
continuous	90	59	0.66	(0.19 ,2.29)	0.52	102	100	0.85	(0.41 ,1.76)	0.66
p value for effect modification					*0.91*					
SHBG (nmol/L)										
<19.22	11	5				38	26			
19.22-<31.53	21	18	0.76	(0.14 ,3.99)	0.74	28	38	1.31	(0.54 ,3.21)	0.55
31.53-<44.53	27	17	0.33	(0.06 ,1.78)	0.20	18	18	1.01	(0.36 ,2.87)	0.98
>44.53	31	18	0.25	(0.05 ,1.21)	0.09	18	18	0.76	(0.27 ,2.14)	0.61
p value for effect modification					*0.99*					
continuous	90	58	0.40	(0.17 ,0.95)	**0.04**	102	100	0.94	(0.47 ,1.90)	0.87
p value for effect modification					*0.44*					
Parent Estrogens (pmol/L)										
<175.89	26	15				21	20			
175.89-<220.52	24	20	1.15	(0.34 ,3.88)	0.82	26	32	0.87	(0.33 ,2.28)	0.78
220.52-<280.81	23	19	1.20	(0.33 ,4.44)	0.78	23	30	1.74	(0.65 ,4.66)	0.27
>280.81	17	5	0.45	(0.10 ,2.14)	0.32	32	18	0.47	(0.17 ,1.29)	0.14
p value for effect modification					*0.67*					
continuous	90	59	0.61	(0.18 ,2.01)	0.42	102	100	0.56	(0.25 ,1.23)	0.15
p value for effect modification					*0.73*					
Testosterone: Parent Estrogens Ratio (pmol/L)										
<46.71	13	5				36	23			
46.71-<69.53	19	21	5.62	(1.04 ,30.37)	**0.05**	31	40	2.08	(0.88 ,4.93)	0.10
69.53-<89.55	26	18	2.05	(0.41 ,10.19)	0.38	22	25	2.38	(0.90 ,6.29)	0.08
>89.55	32	15	2.64	(0.53 ,13.23)	0.24	13	11	2.07	(0.61 ,7.06)	0.25
p value for effect modification					*0.45*					
continuous	90	59	1.51	(0.57 ,4.00)	0.40	102	99	2.30	(0.92 ,5.78)	0.08
p value for effect modification					*0.21*					

Androstenedione: E1 Ratio (pmol/L)										
<17.81	15	15				36	36			
17.81-<22.84	23	16	0.82	(0.23 ,2.94)	0.76	23	25	0.73	(0.29 ,1.83)	0.50
22.84-<30.43	26	14	0.44	(0.12 ,1.68)	0.23	24	19	0.99	(0.38 ,2.54)	0.98
>30.43	26	14	2.89	(0.67 ,12.48)	0.15	19	20	1.30	(0.49 ,3.48)	0.60
p value for effect modification					*0.85*					
continuous	90	59	1.60	(0.60 ,4.29)	0.35	102	100	1.28	(0.60 ,2.74)	0.53
p value for effect modification					*0.55*					
Testosterone: E2 Ratio (pmol/L)										
<119.31	12	8				38	22			
119.31-<160.81	18	17	0.57	(0.12 ,2.61)	0.47	30	42	2.24	(0.97 ,5.20)	0.06
160.81-<205.73	28	13	0.44	(0.11 ,1.80)	0.25	21	23	2.08	(0.78 ,5.54)	0.14
>205.73	32	21	1.08	(0.29 ,4.02)	0.90	13	12	2.08	(0.66 ,6.55)	0.21
p value for effect modification					*0.51*					
continuous	90	59	1.26	(0.45 ,3.51)	0.65	102	99	1.78	(0.68 ,4.64)	0.24
p value for effect modification					*0.32*					
Free Testosterone (nmol/L)										
<0.24	19	13				27	26			
0.24-<0.29	21	14	2.13	(0.49 ,9.30)	0.32	29	21	1.24	(0.47 ,3.25)	0.66
0.29-<0.38	25	18	5.30	(1.25 ,22.48)	**0.02**	25	30	2.01	(0.75 ,5.37)	0.16
>0.38	25	13	4.37	(0.90 ,21.17)	0.07	21	22	5.81	(1.67 ,20.21)	**0.01**
p value for effect modification					*0.34*					
continuous	90	58	2.81	(0.83 ,9.48)	0.10	102	99	2.15	(0.92 ,5.02)	0.08
p value for effect modification					*0.83*					
Free DHT (pmol/L)										
<21.21	15	13				31	26			
21.21-<27.13	23	9	0.95	(0.22 ,4.21)	0.95	25	28	1.44	(0.60 ,3.48)	0.41
27.13-<35.44	22	20	4.41	(0.99 ,19.74)	0.05	27	17	1.20	(0.45 ,3.25)	0.71
>35.44	30	16	3.55	(0.77 ,16.33)	0.10	19	28	4.87	(1.60 ,14.83)	**0.01**
p value for effect modification					*0.09*					
continuous	90	58	2.02	(0.69 ,5.92)	0.20	102	99	1.62	(0.82 ,3.21)	0.16
p value for effect modification					*1.00*					
Free Estradiol (pmol/L)										

<1.96	31	20				16	20			
1.96-<2.42	24	15	0.48	(0.14 ,1.66)	0.25	24	31	1.41	(0.50 ,3.92)	0.51
2.42-<3.09	22	17	1.11	(0.34 ,3.61)	0.87	28	28	1.12	(0.42 ,3.02)	0.82
>3.09	13	6	1.37	(0.30 ,6.12)	0.68	34	21	0.86	(0.31 ,2.39)	0.77
p value for effect modification					*0.76*					
continuous	90	58	1.36	(0.40 ,4.69)	0.62	102	100	0.88	(0.41 ,1.89)	0.75
p value for effect modification					0.64					

Adjusted for age, smoking status, alcohol consumption, heartburn, regurgitation, gastroesophageal symptom score (excluding heartburn and regurgitation), and race. Continuous sex steroid hormone values were standardized to half of the difference between the 75th and 25th centiles of the distribution.