

**Supplementary Table 1** Mutually adjusted ORs (95%-CI) for doubling of circulating hormone concentrations by tumor invasiveness and histology

Testosterone	Crude <sup>a</sup>			Adjusted for testosterone			Adjusted for androstenedione			Adjusted for 17-OHP		
	Ca/Co	OR (95%-CI)	P <sub>het</sub>	Ca/Co	OR (95%-CI)	P <sub>het</sub>	Ca/Co	OR (95%-CI)	P <sub>het</sub>	Ca/Co	OR (95%-CI)	P <sub>het</sub>
Invasive	640/1,609	1.24 (1.08 - 1.42)	0.13				640/1,608	0.97 (0.74 - 1.27)	0.12	451/1,250	1.21 (1.00 - 1.47)	0.067
Borderline	407/1,064	1.47 (1.23 - 1.76)		407/1,064	1.35 (0.99 - 1.83)	309/883	1.61 (1.27 - 2.03)					
Invasive serous	282/713	1.02 (0.82 - 1.26)	0.07				282/713	0.66 (0.44 - 1.01)	0.005	198/554	0.84 (0.63 - 1.13)	0.006
Borderline serous	193/499	1.41 (1.08 - 1.86)		193/499	1.62 (1.01 - 2.59)	147/418	1.59 (1.13 - 2.24)					
Invasive mucinous	150/388	1.33 (1.01 - 1.74)	0.51				150/387	0.77 (0.43 - 1.36)	0.30	114/321	1.47 (0.99 - 2.18)	0.64
Borderline mucinous	204/537	1.50 (1.18 - 1.90)		204/537	1.12 (0.73 - 1.71)	154/441	1.66 (1.19 - 2.31)					
Endometrioid	101/235	1.39 (0.96 - 1.99)				101/235	3.45 (1.62 - 7.35)		60/159	1.75 (1.00 - 3.06)		
Clear cell	26/65	1.12 (0.61 - 2.08)				26/65	0.35 (0.08 - 1.54)		17/46	1.92 (0.72 - 5.11)		
<b>Androstenedione</b>				<i>r = 0.84<sup>b</sup></i>								
Invasive	640/1,609	1.31 (1.13 - 1.51)	0.43	640/1,608	1.34 (1.01 - 1.77)	0.39				451/1,251	1.35 (1.09 - 1.66)	0.38
Borderline	409/1,068	1.43 (1.20 - 1.72)		407/1,064	1.12 (0.81 - 1.53)		311/887	1.55 (1.22 - 1.99)				
Invasive serous	282/714	1.18 (0.95 - 1.46)	0.71	282/713	1.67 (1.09 - 2.55)	0.04				198/555	1.02 (0.74 - 1.41)	0.32
Invasive mucinous	193/499	1.26 (0.95 - 1.67)		193/499	0.84 (0.52 - 1.36)		147/418	1.31 (0.90 - 1.91)				
Borderline mucinous	150/387	1.50 (1.12 - 2.01)	0.85	150/387	1.93 (1.05 - 3.54)	0.43				114/321	1.68 (1.09 - 2.61)	0.81
Bor mucinous	206/541	1.56 (1.22 - 1.99)		204/537	1.43 (0.92 - 2.21)		156/445	1.81 (1.28 - 2.55)				
Endometrioid	101/235	1.02 (0.71 - 1.48)		101/235	0.33 (0.15 - 0.73)				60/159	1.55 (0.84 - 2.86)		
Clear cell	26/65	1.46 (0.74 - 2.85)		26/65	4.03 (0.79 - 20.41)				17/46	3.42 (0.99 - 11.77)		
<b>17-OHP</b>				<i>r = 0.42</i>			<i>r = 0.48</i>					
Invasive	451/1,251	1.21 (1.02 - 1.43)	0.73	451/1,250	1.08 (0.88 - 1.32)	0.63	451/1,251	1.01 (0.81 - 1.25)	0.91			
Borderline	311/887	1.26 (1.03 - 1.55)		309/883	1.00 (0.79 - 1.26)		311/887	0.99 (0.77 - 1.26)				
Invasive serous	198/555	1.16 (0.90 - 1.51)	0.26	198/554	1.27 (0.93 - 1.72)	0.82	198/555	1.15 (0.83 - 1.58)	0.68			
Borderline serous	147/418	1.46 (1.08 - 1.97)		147/418	1.20 (0.87 - 1.67)		147/418	1.27 (0.89 - 1.81)				
Invasive mucinous	114/321	1.30 (0.93 - 1.82)	0.52	114/321	1.03 (0.68 - 1.56)	0.45	114/321	0.94 (0.61 - 1.45)	0.57			
Borderline mucinous	156/445	1.13 (0.84 - 1.51)		154/441	0.84 (0.59 - 1.18)		156/445	0.79 (0.56 - 1.13)				
Endometrioid	60/159	0.90 (0.54 - 1.49)		60/159	0.64 (0.34 - 1.18)		60/159	0.67 (0.35 - 1.29)				
Clear cell	17/46	0.66 (0.26 - 1.65)		17/46	0.41 (0.13 - 1.35)		17/46	0.27 (0.07 - 1.04)				
<b>Progesterone</b>				<i>r = 0.15</i>			<i>r = 0.17</i>			<i>r = 0.45</i>		
Invasive	451/1,252	1.12 (0.89 - 1.42)	0.59	451/1,251	1.07 (0.85 - 1.35)	0.32	451/1,251	1.05 (0.83 - 1.33)	0.35	451/1,251	0.99 (0.76 - 1.29)	0.37
Borderline	310/884	1.02 (0.77 - 1.34)		308/880	0.89 (0.67 - 1.18)		310/884	0.88 (0.66 - 1.18)		310/884	0.82 (0.60 - 1.12)	

Invasive serous	198/555	1.18 (0.83 - 1.66)	0.74	198/554	1.20 (0.84 - 1.70)	0.45	198/555	1.15 (0.81 - 1.63)	0.51	198/555	1.08 (0.71 - 1.63)	0.22
Borderline serous	146/415	1.07 (0.71 - 1.62)		146/415	0.97 (0.64 - 1.47)		146/415	0.96 (0.63 - 1.45)		146/415	0.72 (0.45 - 1.17)	
Invasive mucinous	114/322	1.38 (0.85 - 2.26)	0.37	114/322	1.26 (0.76 - 2.06)	0.28	114/321	1.23 (0.75 - 2.03)	0.30	114/321	1.20 (0.70 - 2.07)	0.51
Borderline mucinous	156/445	1.04 (0.70 - 1.53)		154/441	0.88 (0.59 - 1.32)		156/445	0.88 (0.59 - 1.31)		156/445	0.95 (0.62 - 1.47)	
Endometrioid	60/159	0.93 (0.48 - 1.82)		60/159	0.92 (0.47 - 1.81)		60/159	0.92 (0.47 - 1.79)		60/159	0.97 (0.48 - 1.98)	
Clear cell	17/46	0.63 (0.20 - 1.94)		17/46	0.57 (0.19 - 1.77)		17/46	0.49 (0.15 - 1.56)		17/46	0.83 (0.17 - 4.11)	

<b>Estradiol</b>				<b>r = 0.43</b>				<b>r = 0.35</b>				<b>r = 0.10</b>		
Invasive	451/1,252	1.11 (0.95 - 1.28)	0.91	451/1,251	1.01 (0.86 - 1.19)	0.54	451/1,251	1.01 (0.87 - 1.19)	0.85	451/1,251	1.08 (0.93 - 1.25)	0.97		
Borderline	310/884	1.12 (0.94 - 1.33)		308/880	0.94 (0.77 - 1.13)		310/884	0.99 (0.82 - 1.19)		310/884	1.08 (0.91 - 1.29)			
Invasive serous	198/555	0.93 (0.74 - 1.17)	0.48	198/554	0.94 (0.73 - 1.21)	0.54	198/555	0.90 (0.71 - 1.14)	0.95	198/555	0.91 (0.72 - 1.14)	0.71		
Borderline serous	146/415	1.06 (0.80 - 1.40)		146/415	0.83 (0.61 - 1.13)		146/415	0.91 (0.67 - 1.22)		146/415	0.97 (0.73 - 1.30)			
Invasive mucinous	114/322	1.22 (0.91 - 1.63)	0.93	114/322	1.05 (0.76 - 1.46)	0.88	114/321	1.06 (0.77 - 1.45)	0.79	114/321	1.17 (0.86 - 1.58)	0.80		
Borderline mucinous	156/445	1.24 (0.98 - 1.57)		154/441	1.09 (0.84 - 1.40)		156/445	1.12 (0.88 - 1.43)		156/445	1.23 (0.97 - 1.56)			
Endometrioid	60/159	1.89 (1.20 - 2.98)		60/159	1.81 (1.12 - 2.93)		60/159	1.87 (1.17 - 3.00)		60/159	1.93 (1.22 - 3.05)			
Clear cell	17/46	1.12 (0.56 - 2.26)		17/46	1.03 (0.46 - 2.32)		17/46	0.94 (0.44 - 2.04)		17/46	1.41 (0.62 - 3.23)			

<b>SHBG</b>				<b>r = 0.29</b>				<b>r = 0.11</b>				<b>r = 0.10</b>		
Invasive	429/1,209	1.04 (0.87 - 1.24)	0.87	427/1,197	0.99 (0.82 - 1.18)	0.73	427/1,197	1.02 (0.85 - 1.22)	0.93	427/1,197	1.05 (0.88 - 1.26)	0.93		
Borderline	306/879	1.06 (0.86 - 1.31)		303/870	0.94 (0.76 - 1.16)		305/874	1.03 (0.84 - 1.27)		305/874	1.06 (0.86 - 1.31)			
Invasive serous	185/528	0.98 (0.74 - 1.29)	0.97	184/524	0.99 (0.74 - 1.32)	0.57	184/525	0.97 (0.73 - 1.28)	0.99	184/525	0.97 (0.74 - 1.29)	0.96		
Borderline serous	143/413	0.98 (0.73 - 1.32)		142/408	0.88 (0.65 - 1.18)		142/408	0.97 (0.72 - 1.30)		142/408	0.98 (0.73 - 1.33)			
Invasive mucinous	113/319	1.09 (0.77 - 1.56)	0.71	113/319	1.05 (0.73 - 1.49)	0.96	113/318	1.09 (0.76 - 1.56)	0.84	113/318	1.10 (0.77 - 1.56)	0.74		
Borderline mucinous	155/443	1.20 (0.88 - 1.63)		153/439	1.04 (0.75 - 1.43)		155/443	1.15 (0.84 - 1.56)		155/443	1.19 (0.87 - 1.61)			
Endometrioid	55/150	1.10 (0.64 - 1.89)		54/146	1.15 (0.66 - 2.01)		54/146	1.21 (0.69 - 2.10)		54/146	1.18 (0.67 - 2.08)			
Clear cell	15/43	1.11 (0.39 - 3.16)		15/43	0.96 (0.33 - 2.76)		15/43	0.95 (0.34 - 2.68)		15/43	1.19 (0.40 - 3.51)			

**Supplementary Table 1** continued

<b>Testosterone</b>	<b>Crude <sup>a</sup></b>			<b>Adjusted for progesterone</b>			<b>Adjusted for estradiol</b>			<b>Adjusted for SHBG</b>		
	<b>Ca/Co</b>	<b>OR (95%-CI)</b>	<b>P<sub>het</sub></b>	<b>Ca/Co</b>	<b>OR (95%-CI)</b>	<b>P<sub>het</sub></b>	<b>Ca/Co</b>	<b>OR (95%-CI)</b>	<b>P<sub>het</sub></b>	<b>Ca/Co</b>	<b>OR (95%-CI)</b>	<b>P<sub>het</sub></b>
Invasive	640/1,609	1.24 (1.08 - 1.42)	0.13	451/1,251	1.25 (1.06 - 1.47)	0.06	451/1,251	1.25 (1.05 - 1.50)	0.07	427/1,197	1.34 (1.13 - 1.59)	0.18
Borderline	407/1,064	1.47 (1.23 - 1.76)		308/880	1.61 (1.31 - 1.99)		308/880	1.64 (1.31 - 2.05)		303/870	1.62 (1.31 - 2.00)	
Invasive serous	282/713	1.02 (0.82 - 1.26)	0.07	198/554	0.93 (0.72 - 1.20)	0.004	198/554	0.98 (0.74 - 1.29)	0.005	184/524	0.97 (0.74 - 1.28)	0.006
Borderline serous	193/499	1.41 (1.08 - 1.86)		146/415	1.69 (1.23 - 2.32)		146/415	1.85 (1.30 - 2.62)		142/408	1.76 (1.27 - 2.44)	
Invasive mucinous	150/388	1.33 (1.01 - 1.74)	0.51	114/322	1.47 (1.06 - 2.04)	0.82	114/322	1.47 (1.04 - 2.09)	0.98	113/319	1.51 (1.09 - 2.08)	0.99
Borderline mucinous	204/537	1.50 (1.18 - 1.90)		154/441	1.55 (1.16 - 2.06)		154/441	1.46 (1.08 - 1.98)		153/439	1.51 (1.13 - 2.00)	
Endometrioid	101/235	1.39 (0.96 - 1.99)		60/159	1.40 (0.89 - 2.21)		60/159	1.14 (0.70 - 1.87)		54/146	1.62 (1.00 - 2.65)	
Clear cell	26/65	1.12 (0.61 - 2.08)		17/46	1.35 (0.62 - 2.93)		17/46	1.19 (0.51 - 2.79)		15/43	1.76 (0.72 - 4.27)	
<b>Androstenedione</b>												
Invasive	640/1,609	1.31 (1.13 - 1.51)	0.43	451/1,251	1.34 (1.13 - 1.60)	0.18	451/1,251	1.35 (1.12 - 1.61)	0.24	427/1,197	1.47 (1.23 - 1.75)	0.80
Borderline	409/1,068	1.43 (1.20 - 1.72)		310/884	1.62 (1.31 - 2.00)		310/884	1.59 (1.28 - 1.98)		305/874	1.52 (1.24 - 1.87)	
Invasive serous	282/714	1.18 (0.95 - 1.46)	0.71	198/555	1.09 (0.84 - 1.42)	0.066	198/555	1.15 (0.88 - 1.51)	0.10	184/525	1.17 (0.89 - 1.54)	0.29
Invasive mucinous	193/499	1.26 (0.95 - 1.67)		146/415	1.61 (1.16 - 2.23)		146/415	1.66 (1.18 - 2.33)		142/408	1.47 (1.07 - 2.02)	
Borderline mucinous	150/387	1.50 (1.12 - 2.01)	0.85	114/321	1.58 (1.12 - 2.23)	0.88	114/321	1.58 (1.10 - 2.27)	0.91	113/318	1.63 (1.16 - 2.30)	0.84
Bor mucinous	206/541	1.56 (1.22 - 1.99)		156/445	1.63 (1.22 - 2.18)		156/445	1.54 (1.15 - 2.06)		155/443	1.56 (1.18 - 2.06)	
Endometrioid	101/235	1.02 (0.71 - 1.48)		60/159	1.23 (0.77 - 1.97)		60/159	1.03 (0.62 - 1.71)		54/146	1.48 (0.89 - 2.48)	
Clear cell	26/65	1.46 (0.74 - 2.85)		17/46	1.83 (0.76 - 4.39)		17/46	1.54 (0.66 - 3.62)		15/43	2.34 (0.89 - 6.19)	
<b>17-OHP</b>												
Invasive	451/1,251	1.21 (1.02 - 1.43)	0.73	451/1,251	1.21 (1.00 - 1.47)	0.36	451/1,251	1.19 (1.00 - 1.41)	0.58	427/1,197	1.22 (1.02 - 1.45)	0.89
Borderline	311/887	1.26 (1.03 - 1.55)		310/884	1.40 (1.11 - 1.77)		310/884	1.28 (1.04 - 1.58)		305/874	1.24 (1.01 - 1.52)	
Invasive serous	198/555	1.16 (0.90 - 1.51)	0.26	198/555	1.13 (0.82 - 1.54)	0.06	198/555	1.18 (0.91 - 1.54)	0.17	184/525	1.14 (0.88 - 1.49)	0.31
Borderline serous	147/418	1.46 (1.08 - 1.97)		146/415	1.77 (1.23 - 2.53)		146/415	1.57 (1.15 - 2.15)		142/408	1.41 (1.04 - 1.92)	
Invasive mucinous	114/321	1.30 (0.93 - 1.82)	0.52	114/321	1.23 (0.85 - 1.79)	0.77	114/321	1.26 (0.89 - 1.77)	0.52	113/318	1.29 (0.92 - 1.80)	0.51
Borderline mucinous	156/445	1.13 (0.84 - 1.51)		156/445	1.14 (0.83 - 1.58)		156/445	1.08 (0.81 - 1.45)		155/443	1.11 (0.83 - 1.48)	
Endometrioid	60/159	0.90 (0.54 - 1.49)		60/159	0.91 (0.53 - 1.56)		60/159	0.82 (0.48 - 1.39)		54/146	0.95 (0.55 - 1.64)	
Clear cell	17/46	0.66 (0.26 - 1.65)		17/46	0.73 (0.20 - 2.66)		17/46	0.54 (0.19 - 1.54)		15/43	0.78 (0.29 - 2.10)	
<b>Progesterone</b>												

Invasive	451/1,252	1.12 (0.89 - 1.42)	0.59	451/1,252	1.06 (0.82 - 1.37)	0.49	427/1,198	1.10 (0.85 - 1.42)	0.57
Borderline	310/884	1.02 (0.77 - 1.34)		310/884	0.92 (0.68 - 1.26)		304/871	0.98 (0.72 - 1.33)	
Invasive serous	198/555	1.18 (0.83 - 1.66)	0.74	198/555	1.26 (0.87 - 1.83)	0.54	184/525	1.17 (0.80 - 1.71)	0.85
Borderline serous	146/415	1.07 (0.71 - 1.62)		146/415	1.05 (0.66 - 1.65)		141/405	1.11 (0.71 - 1.73)	
Invasive mucinous	114/322	1.38 (0.85 - 2.26)	0.37	114/322	1.25 (0.73 - 2.15)	0.27	113/319	1.37 (0.81 - 2.30)	0.26
Borderline mucinous	156/445	1.04 (0.70 - 1.53)		156/445	0.85 (0.55 - 1.32)		155/443	0.92 (0.61 - 1.41)	
Endometrioid	60/159	0.93 (0.48 - 1.82)		60/159	0.45 (0.20 - 1.04)		54/146	0.76 (0.35 - 1.64)	
Clear cell	17/46	0.63 (0.20 - 1.94)		17/46	0.41 (0.10 - 1.74)		15/43	0.56 (0.13 - 2.47)	

### Estradiol

*r* = 0.36

Invasive	451/1,252	1.11 (0.95 - 1.28)	0.91	451/1,252	1.09 (0.93 - 1.28)	0.69	427/1,198	1.15 (0.96 - 1.38)	0.87
Borderline	310/884	1.12 (0.94 - 1.33)		310/884	1.15 (0.94 - 1.39)		304/871	1.13 (0.92 - 1.38)	
Invasive serous	198/555	0.93 (0.74 - 1.17)	0.48	198/555	0.88 (0.69 - 1.12)	0.40	184/525	0.93 (0.70 - 1.24)	0.47
Borderline serous	146/415	1.06 (0.80 - 1.40)		146/415	1.04 (0.77 - 1.42)		141/405	1.10 (0.79 - 1.52)	
Invasive mucinous	114/322	1.22 (0.91 - 1.63)	0.93	114/322	1.15 (0.84 - 1.59)	0.58	113/319	1.24 (0.88 - 1.75)	0.93
Borderline mucinous	156/445	1.24 (0.98 - 1.57)		156/445	1.30 (1.00 - 1.68)		155/443	1.22 (0.93 - 1.60)	
Endometrioid	60/159	1.89 (1.20 - 2.98)		60/159	2.42 (1.42 - 4.12)		54/146	2.35 (1.32 - 4.17)	
Clear cell	17/46	1.12 (0.56 - 2.26)		17/46	1.59 (0.65 - 3.88)		15/43	1.67 (0.52 - 5.31)	

### SHBG

*r* = 0.30

*r* = 0.51

Invasive	429/1,209	1.04 (0.87 - 1.24)	0.87	427/1,198	1.02 (0.85 - 1.24)	0.77	427/1,198	0.96 (0.78 - 1.18)	0.86
Borderline	306/879	1.06 (0.86 - 1.31)		304/871	1.07 (0.85 - 1.34)		304/871	0.99 (0.77 - 1.26)	
Invasive serous	185/528	0.98 (0.74 - 1.29)	0.97	184/525	0.94 (0.70 - 1.26)	0.94	184/525	1.02 (0.73 - 1.43)	0.71
Borderline serous	143/413	0.98 (0.73 - 1.32)		141/405	0.96 (0.70 - 1.32)		141/405	0.93 (0.66 - 1.32)	
Invasive mucinous	113/319	1.09 (0.77 - 1.56)	0.71	113/319	1.02 (0.71 - 1.48)	0.47	113/319	0.95 (0.63 - 1.43)	0.74
Borderline mucinous	155/443	1.20 (0.88 - 1.63)		155/443	1.23 (0.88 - 1.71)		155/443	1.05 (0.73 - 1.49)	
Endometrioid	55/150	1.10 (0.64 - 1.89)		54/146	1.28 (0.71 - 2.32)		54/146	0.68 (0.35 - 1.33)	
Clear cell	15/43	1.11 (0.39 - 3.16)		15/43	1.49 (0.41 - 5.48)		15/43	0.69 (0.16 - 3.04)	

17-OHP, 17-hydroxyprogesterone; CI, confidence interval; OR, odds ratio; SHBG, sex hormone-binding globulin.

Note: All models including non-androgens are adjusted for GA.

<sup>a</sup> Effect estimates in the subset limited to women with data on all hormones are similar to the ones presented here.

<sup>b</sup> Pearson partial correlations in controls (adjusted for cohort and gestational age (except androgens)).