

Tubal ciliated cell loss represents a risk for ovarian cancer

Table S1.1. Clinical information of patients with low risk (benign control)

# Patients	Mean Age	Reasons for Surgical Resection (%)			
		Leiomyomata	Adenomyosis	Benign Ovarian Cyst	Other benign conditions
120	48	39 (32.5%)	15 (12.5%)	28 (23.3%)	38 (31.7%)

Other benign conditions included ovarian endometriosis, paratubal cysts, mucinous cystadenomas, benign Brenner tumors, mesothelial inclusion cysts, and chronic pelvic pain.

Table S1.2. Clinical information of patients with high risk

#Patients	Mean Age	BRCA1+	BRCA2+	Reasons for Surgical Resection (%)	
				Personal Breast Cancer history	Family history of Ovarian Cancer
60	45	25 (41.7%)	7 (11.7%)	20 (33.3%)	8 (13.3%)

BRCA1+: germline mutation of breast cancer susceptibility gene 1; BRCA2+: germline mutation of breast cancer susceptibility gene 2.

Table S1.3. Clinical information of patients with high-grade serous carcinoma of the ovary or the peritoneum

# Patients	Mean Age	Clinical Stage (International Federation of Obstetrics and Gynecology)			
		Stage I	Stage II	Stage III	Stage IV
60	61	0 (0.0%)	6 (10.0%)	49 (81.7%)	5 (8.3%)

Table S2. Tubal ciliated cell change among women in different age by microscopy (H&E)

Age	20-29 (n=14)	30-39 (n=29)	40-49 (n=48)	50-59 (n=64)	60-69 (n=42)	70-79 (n=37)	>80 (n=6)
#CC, Fimbria (Mean ± SD)	258 (80.4)	212 (55.9)	165 (32.6)	128 (42.0)	56 (21.5)	32 (17.6)	15 (9.5)
#CC, Ampulla (Mean ± SD)	260 (78.2)	243 (99.4)	188 (49.3)	156 (30.0)	85 (25.3)	52 (13.5)	48 (22.3)

#CC: average number of ciliated cells within the tubal segment. There is a clear trend that the number of ciliated cells decreases as a function of age in both fimbria and ampulla segments. Standard deviations and *p* values are shown in the corresponding bar graph in **Figure 1**.

Table S3. The number of ciliated cells in tubal fimbria and ampulla segments detected by tubulin stains (IHC)

#case	Mean age	#Ciliated Cells (fimbria)			#Ciliated Cells (ampulla)		
		Number	Percentage	<i>P</i> value	Number	Percentage	<i>P</i> value
Low-risk (± SD)	60	48 (3.6)	236 (101.4)	59%	248 (89.9)	61.5%	
High-risk (± SD)	30	45 (2.8)	118 (24.9)	29.5%	126 (33.8)	31.5%	<i>P</i> < 0.001 (vs. Low-risk)
O/PSC (± SD)	30	61 (4.1)	156 (46.5)	39%	139 (50.9)	34.8%	<i>P</i> < 0.001 (vs. Low-risk)

Standard deviations and *p* values are shown in the corresponding bar graph in **Figure 2**. Statistically significant differences were determined using the Mann-Whitney U test.

Tubal ciliated cell loss represents a risk for ovarian cancer

Table S4. Decreased number of tubal ciliated cells significantly associated with age, high-risk factors, and the status of ovarian or pelvic serous carcinoma

Age (Mean ± SD)	Low-risk (n=120)		High-risk (n=60)		O/PSC (n=60)	
	fimbria	ampulla	fimbria	ampulla	fimbria	ampulla
20-29 (25±2.1)	258	260	-	-	-	-
30-39(34±1.7)	227	240	182	190	-	-
40-49 (46±1.8)	182	195	137	128	147	139
50-59 (55±1.6)	135	162	96	91	126	115
60-69 (63±2.2)	86	120	55	61	110	118
70-79 (76±125)	63	76	28	30	46	51
> 80 (84±1.5)	42	58	-	-	10	15

O/PSC: ovarian or pelvic serous carcinoma. There was no high-risk case with age elder than 80 and no O/PSC case younger than 40 in this study. There were only 6 O/PSC cases with age elder than 80. Standard deviations are shown in the corresponding bar graph in **Figure 3**.