

# Acceptability of Salpingectomy with Delayed Oophorectomy as Risk-Reducing Surgery for BRCA Mutation Carriers

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## Abstract

**OBJECTIVES:** Based upon the adverse effects of surgical menopause and the evidence for the fimbria as the site of origin for serous carcinomas, there is interest in studying salpingectomy without oophorectomy as risk-reducing surgery for women at high risk for ovarian cancer. We aimed to determine the acceptability of a study of salpingectomy among BRCA mutation carriers.

**METHODS:** We performed a retrospective study of the results of an online survey of salpingectomy as ovarian cancer prevention. This survey was conducted by Facing Our Risk of Cancer Empowered (FORCE), a patient advocacy group, for its members from October 2010 to August 2012. Women with BRCA mutations were included. Exclusion criteria were postmenopausal status, history of ovarian cancer, or prior bilateral salpingo-oophorectomy (BSO).

**RESULTS:** To date, 204 women completed the survey. Of these, median age was 35 years, 92.5% were white, 25.7% Jewish, and 16.7% had a history of breast cancer. Overall, 34.3% reported definite interest in a study of salpingectomy, 35.3% were unsure, and 30.4% said they would not be interested in the study. Women who reported interest in the study noted the possibility of lowering ovarian cancer risk without menopause as the most compelling reason to participate (83.8%). Of the women who would not participate in a salpingectomy study, 46.6% were concerned about surgical complications, 42.2% worried about potential ovarian damage, 32.4% were planning BSO soon, and 32.8% had concerns about surgical costs. Among all women queried, 77.2% found salpingectomy followed by oophorectomy later an acceptable risk, 68% said the potential of undergoing the procedure but not lowering the risk of ovarian cancer was acceptable, and 66.5% reported potential disruption of ovarian blood supply to be acceptable. Nulliparous women were more likely to find potential ovarian damage (p=0.009) and salpingectomy followed by later oophorectomy (p=0.043) unacceptable, and less likely to find undergoing salpingectomy but not lowering ovarian cancer risk (p=0.021) acceptable.

**CONCLUSIONS:** Many BRCA carriers eligible for risk-reducing surgery indicated interest in participating in a study of salpingectomy alone. Potential study risks were acceptable to most women. These findings suggest that adequate patient accrual for a clinical trial of prophylactic salpingectomy with delayed oophorectomy would be possible.

## Background

- BRCA1 mutation carriers have a lifetime risk of ovarian cancer of up to 46% while BRCA2 mutation carriers have a lifetime risk of up to 27%. [1]

- Risk-reducing salpingo-oophorectomy (RRSO) is currently recommended for all BRCA mutation carriers at the age of 35-40, or completion of childbearing, to reduce their cancer risk. [2]

- Despite the benefits of RRSO, concerns remain regarding the adverse effects of surgical menopause in these young women.

- Multiple studies have provided evidence for the fallopian tube as the true site of origin for many high-grade pelvic serous malignancies.[3]

- There is increasing interest in the possibility of prophylactic salpingectomy with delayed oophorectomy as an alternative to RRSO in high risk women.

- Little is known regarding patients' interest in participating in a clinical trial of prophylactic salpingectomy.

## Objective

- To determine the interest of BRCA mutation carriers in participating in a clinical trial of salpingectomy with delayed oophorectomy.

## Methods

- Survey offered online at Facing Our Risk of Cancer Empowered website beginning in October 2010.
- Women were included in this study if they met the following criteria:
  - Completed online survey from October 2010 – August 2012
  - Self-reported BRCA mutation carrier
  - Pre-menopausal
  - No history of ovarian, fallopian tube, or primary peritoneal carcinoma
  - No history of bilateral salpingo-oophorectomy
- The survey queried participant demographics and medical history, as well as beliefs and attitudes toward salpingectomy for ovarian cancer prevention.
- Survey results were analyzed with SPSS.
- IRB-approved.
- As no identifying information was collected from participants, a waiver of informed consent was granted from the IRB.

## Results

- Of the 488 women that completed a survey, 204 met eligibility criteria and were included in the analysis.

### Participant Characteristics

Age	Years
Median (Range)	35 (21-53)
Mean	35.4
Race	% (n)
White	92.5 (185)
Hispanic	3.4 (7)
African-American	1 (2)
Asian/Pacific Islander	1 (2)
Caribbean/West Indian	1 (2)
Native American	1 (2)
Ashkenazi Jewish	%(n)
	25.7 (52)
BRCA Status	% (n)
BRCA 1 Mutation	62.3 (127)
BRCA 2 Mutation	37.7 (77)
Personal Cancer History	% (n)
No History	83.3 (170)
History of Breast Cancer	16.7 (34)
Education	% (n)
Some High School	0.5 (1)
High School Graduate	2.5 (5)
Some College	13.7 (28)
College Graduate or Advanced Degree	82.4 (168)
Unknown	1 (2)

## Results

- In all, 34.3% (n=69) of respondents reported definite interest in a study of salpingectomy as risk-reducing surgery.

- 35.3% (n=71) of women were unsure if they would be interested in a salpingectomy study.

- 30.3% (n=61) of respondents stated they were not interested in this type of trial.

### Acceptability of Risks of Salpingectomy with Delayed Oophorectomy

Risks	Found Risk Acceptable % (n)
Risk of losing ovarian function due to disruption of blood supply.	66.5 (111)
Undergoing salpingectomy followed by oophorectomy in 3-5 years.	77.2 (132)
Risk of undergoing a surgery which may prove to not lower the risk for ovarian cancer.	68 (119)
Traveling to the study site twice yearly for study-related evaluations.	93.2 (165)
Having blood drawn twice yearly for evaluations from a lab near your home.	98 (193)

- For women that reported definite or possible interest in the study, the most compelling reason to participate was the possibility of lowering ovarian cancer risk without menopause (83.8%).

### Reasons for Declining to Participate in a Trial of Salpingectomy with Delayed Oophorectomy

Reasons	Agree % (n)
I am concerned about undergoing anesthesia.	14.7 (30)
The surgery could lead to complications.	46.6 (95)
The surgery could damage the ovaries and put me into menopause.	42.2 (86)
I am already planning oophorectomy soon.	32.4 (66)
I do not wish to travel for surgery.	11.3 (23)
I am concerned about the cost of surgery.	32.8 (67)

## Results

- Post-hoc subgroup analyses were performed on the surveys of nulliparous and parous women.

- There was no difference between the parous and nulliparous groups in the number of women interested in participating in a trial of salpingectomy with delayed oophorectomy (p=0.42).

- When queried about acceptability of salpingectomy risks, nulliparous women were more likely than parous women to find potential disruption to ovarian blood supply (43.1% vs 26.6%, p=0.03) unacceptable.

- Parous women were more likely to find salpingectomy followed by oophorectomy (28.9% vs 15.1%, p=0.04) and the risk of undergoing surgery without lowering their ovarian cancer risk (39.2% vs 22.1%, p=0.02) unacceptable.

- Nulliparous women were more likely than parous women to report concerns about potential ovarian damage as a reason to not participate in a salpingectomy trial (52.9% vs 34.2%, p=0.01).

## Conclusions

- Many BRCA carriers eligible for risk-reducing surgery expressed interest in participating in a trial of prophylactic salpingectomy.

- Potential study risks were acceptable to the majority of survey respondents.

- Our findings suggest that adequate patient accrual for a trial of prophylactic salpingectomy with delayed oophorectomy would be possible.

- Limitations of this study include the potential for non-response bias and that the accuracy of responses rely solely on the participants as no medical records are available to review.

## Selected References

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