Journal of the National Cancer Institute JNCI

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Meta-analysis Confirms Value of Risk-Reducing Salpingo-oophorectomy for Women with BRCA Mutations

Prophylactic salpingo-oophorectomy—removal of the ovaries and fallopian tubes--reduces the relative risk of breast cancer by approximately 50 percent and the risk of ovarian and fallopian tube cancer by approximately 80 percent in women who carry a mutation in the *BRCA1* or *BRCA2* gene, researchers report in the January 13 online issue of the *Journal of the National Cancer Institute*.

Previous studies have shown substantial reduction in the risks of breast and ovarian or fallopian tube cancers in *BRCA1/2* mutation carriers following salpingo-oophorectomy. However, the magnitude of the benefit has been unclear.

To establish a more reliable estimate of the magnitude of the benefit, Timothy Rebbeck, Ph.D., of the University of Pennsylvania School of Medicine in Philadelphia, and colleagues analyzed the pooled results of 10 published studies.

They found that risk-reducing salpingo-oophorectomy was associated with a 79 percent relative reduction in ovarian and fallopian tube cancer risk and a 51 percent relative reduction in breast cancer risk in women who carried mutations in *BRCA1* or *BRCA2*. When the researchers analyzed the effect of the prophylactic surgery on *BRCA1* and *BRCA2* mutation carriers separately, they found a similar benefit for the two groups in terms of breast cancer risk, with a 53 percent risk reduction for each group. The groups were too small to be examined independently for gynecologic cancer risk.

"In conclusion, the summary risk reduction estimates presented here confirm that *BRCA1/2* mutation carriers who have been treated with [risk-reducing salpingo-oophorectomy] have a substantially reduced risk of both breast and ovarian cancer," the authors write. "However, residual cancer risk remains after surgery. Therefore, additional cancer risk reduction and screening strategies are required to maximally reduce cancer incidence and mortality in this high-risk population."

In an accompanying editorial, Mark H. Greene, M.D., and Phuong L. Mai, M.D., of the National Cancer Institute in Bethesda, Md., commend Rebbeck and colleagues' effort and review the steps the study authors took to develop the most precise estimates of risk reduction following prophylactic salpingo-oophorectomy. The results "should benefit women who are trying to decide whether or not to undergo [risk-reducing salpingo-oophorectomy]," the editorialists write. "We urge providers of cancer genetics counseling services to adopt the summary risk estimates developed by Rebbeck et al. as those most currently reliable when counseling *BRCA* mutation carriers."

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Citations:

- Article: Rebbeck T, et al. Meta-analysis of Risk Reduction Estimates Associated with Risk Reducing Salpingo-Oophorectomy in BRCA1 or BRCA2 Mutation Carriers. J Natl Cancer Inst 2009;101:80–87.
- Editorial: Greene M and Mai PL. What Have We Learned from Risk-Reducing Salpingo-oophorectomy? J Natl Cancer Inst 2009;101:7–71.