

Study examines risk reduction and screening for ovarian cancer among women following BRCA testing

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Following BRCA testing, many women who are non-BRCA carriers undergo risk-reducing procedures and additional ovarian cancer screenings, despite limited data to determine the effectiveness of these interventions among the general population, according to a report published Online First by *Archives of Internal Medicine*, a JAMA Network publication.

"The [lifetime risk](#) of developing ovarian cancer is only 1 percent to 2 percent in the general population; however, women with deleterious [BRCA mutations](#) have a cumulative lifetime risk of developing ovarian cancer of approximately 40 percent in BRCA1 carriers and approximately 20 percent in BRCA2 carriers," according to background in the article. "In light of these statistics, there has been significant interest in defining the role of ovarian cancer [screening](#) in individuals who might be at higher-than-average risk."

Gabriel N. Mannis, M.D., and colleagues with the University of California, San Francisco, surveyed 1,077 women after BRCA testing to identify the prevalence and post-test predictors of risk-reducing and screening interventions, including risk-reducing salpingo-oophorectomy (RRSO; surgical removal of an ovary together with a fallopian tube), screening transvaginal ultrasonography (TVUS; vaginal ultrasound), and screening serum cancer antigen 125 (CA-125; [blood serum](#) test for CA-125).

BRCA test results were categorized as positive (shown to carry known deleterious BRCA mutation), true-negative (negative test result for a known deleterious family BRCA mutation), uninformative negative (negative BRCA results without a known family mutation), or variant of undetermined significance (found to have a change in DNA that has unknown effects on BRCA [protein function](#)).

Among the respondents, 201 women (18.7 percent) received positive test results for a deleterious mutation, 103 women (9.6 percent) received true-negative test results, and 773 women (71.8 percent) received uninformative results.

Overall, 19.1 percent of eligible women underwent RRSO and 39.6 percent used screening procedures. Women who received a positive BRCA test result had increased odds of undergoing RRSO, TVUS and serum CA-125, while a true-negative BRCA result was associated with a reduced odds for undergoing the three procedures.

Of the 71.8 percent of women who received uninformative results after BRCA testing, 12.3 percent underwent RRSO, 33.8 percent reported ever having undergone screening serum CA-125 since BRCA testing, and 37.3 percent reported ever having undergone screening TVUS since BRCA testing.

Additionally, when the authors compared screening rates in the preceding three years on the basis of BRCA results, they found that approximately 69.6 percent of BRCA carriers, 30.2 percent of women with uninformative BRCA results, and 9.6 percent of [women](#) with true-negative BRCA results reported having undergone [ovarian cancer](#) screening.

"Results of BRCA testing strongly predict RRSO and ovarian [cancer screening](#)," the authors conclude. "Use of RRSO and ovarian screening

was reported in a sizable percentage of non-BRCA carriers despite insufficient data to determine the effectiveness of these interventions."

In an accompanying commentary, Victor Grann, M.D., M.P.H. and Maxine Ashby-Thompson, M.P.H. of Columbia University, N.Y., write, "the study by Mannis et al shows that genetic testing, even if negative, does not always allay deep-seated fears of cancer."

"Cancer biology is in the midst of a major transition that has led from a primary focus on oncogenes to a focus on systems," they continue. "The challenge of the field is to identify persons needing additional or different treatment without scaring those who do not into additional interventions.

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