

## Ovary removal does not protect BRCA1 mutation carriers against breast cancer, study finds

### WOMEN'S COLLEGE HOSPITAL SCIENTISTS REEVALUATE OOPHORECTOMY IN BREAST CANCER PREVENTION

TORONTO, September 6, 2016 – Ovary-removal surgery, or oophorectomy, does not reduce the risk of breast cancer for most women with a BRCA1 or BRCA2 genetic mutation as much as previously thought, a new study by scientists at Women's College Hospital (WCH) has found. However, the surgery may reduce risk for BRCA2 carriers under the age of 50.

The findings, published in the *Journal of the National Cancer Institute*, reinforce the recommendation that women with a BRCA1 or BRCA2 mutation should consider preventive mastectomy. Scientist Joanne Kotsopoulos, PhD, and senior author Dr. Steven Narod, the director of the familial cancer research group at WCH and a Tier 1 Canada Research Chair in Breast Cancer, conducted the study.

“Our findings show that oophorectomy does not protect against breast cancer for BRCA1 mutation carriers,” said Kotsopoulos. “We did see a protective effect for BRCA2 mutation carriers diagnosed before age 50. However, this requires further confirmation.” Tumours in BRCA2 carriers are more sensitive to sex hormones produced within the ovaries, which could account for why younger BRCA2 carriers were protected.

Previously, surgery to remove both the ovaries and fallopian tubes was thought to reduce the risk of breast cancer by up to 50 per cent. “This reminds us that it is important to re-evaluate the role of known risk factors for hereditary cancer through large, long-term studies of many women,” Kotsopoulos said.

The study is the largest analysis of its kind. Scientists recruited 3,722 women from around the world with a BRCA1 or BRCA2 mutation and no history of cancer. They used follow-up surveys over several years to track oophorectomies and breast cancer diagnoses.

“It is important for women to understand their risk of breast cancer and the options available to them. Preventive mastectomy is highly effective at preventing breast cancer and recommended to

women with a BRCA mutation,” Dr. Narod said. “We are also investigating new prevention options for BRCA mutation carriers that may save more lives without resorting to surgery.”

The authors reiterate that they still recommend oophorectomy for high-risk women at age 35 if they carry a BRCA1 mutation and age 40 if they carry a BRCA2 mutation. Previous studies have shown that oophorectomy reduces the risk of ovarian, fallopian and peritoneal cancer by 80 per cent and reduces the risk of death from all causes.

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### **About Joanne Kotsopoulos**

Joanne Kotsopoulos, PhD, is a scientist at Women's College Research Institute and an associate professor at the Dalla Lana School of Public Health at the University of Toronto, with a cross-appointment to the Department of Nutritional Sciences. She has received a Cancer Care Ontario Research Chair in Population Studies and a Canadian Cancer Society Career Development Award in Prevention. Her research focuses on the role of hormonal, reproductive and modifiable risk factors on the risk of developing breast and ovarian cancer among women with a BRCA1 or BRCA2 mutation.

### **About Dr. Steven Narod**

Dr. Steven Narod, MD, FRCPC, PhD (hon), FRSC, is a world-leader in the field of breast and ovarian cancer genetics. He is a senior scientist and director of the familial cancer research unit at Women's College Research Institute, a professor at the Dalla Lana School of Public Health and in the Department of Medicine at the University of Toronto, and a Tier 1 Canada Research Chair in Breast Cancer. Over the course of his career, he has profoundly shaped current knowledge of how to assess breast and ovarian cancer risk and reduce its mortality among carriers of BRCA1 and BRCA2 mutations. He is among the most cited researchers in his field. Dr. Narod is a Fellow of the Royal Society of Canada and the recipient of many honours, including the Killam Prize for Health Sciences and the Basser Global Prize.

### **Women's College Hospital**

For more than 100 years Women's College Hospital (WCH) has been developing revolutionary advances in healthcare. Today, WCH is a world leader in the health of women and Canada's leading, academic ambulatory hospital. A champion of health equity, WCH advocates for the health of all women from diverse cultures and backgrounds and ensures their needs are reflected in the care they receive. It focuses on delivering innovative solutions that address Canada's most

pressing issues related to population health, patient experience and system costs. The WCH Institute for Health System Solutions and Virtual Care (WIHV) is developing new, scalable models of care that deliver improved outcomes for patients and sustainable solutions for the health system as a whole.

Women's College Research Institute (WCRI) is tackling some of the greatest health challenges of our time. Its scientists are conducting global research that advances the health of women and improves healthcare options for all, and are then translating those discoveries to provide much-needed improvements in healthcare worldwide.

For more information about how WCH and WCRI are transforming patient care, visit [www.womenscollegehospital.ca](http://www.womenscollegehospital.ca) and [www.womensresearch.ca](http://www.womensresearch.ca)

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