

Preliminary study finds BRCA variation may work alongside COMT variation to reduce breast cancer incidence

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Research looking at genomic data from women with a genetic risk for breast cancer, who may never develop cancer, found their cancer-free state may be related to a second genetic variation. Researchers at the George Washington University (GW) found through looking at data of women with BRCA 1/2 genetic mutations, that some women also have the co-occurrence of a rare COMT genetic variant.

The data set looked at women who volunteered for non-cancer related clinical trials, leading researchers to believe they have not developed cancer or have a family history of cancer.

"Not all mutation carriers develop the disease and the underlying reasons for this should be looked at, particularly with the large data sets now available to researchers," said Anelia Horvath, Ph.D., senior author for the study and associate research professor of pharmacology & physiology at the GW School of Medicine and Health Sciences.

The research, published in the *New England Journal of Medicine*, outlines a strategy for looking at similar [genetic mutations](#).

"We do not claim the variant is preventative of [breast cancer](#) in BRCA 1/2 carriers; further research is needed to make those claims," said Horvath. "What we have done is illustrate a strategy for looking at the many data sets available for scientists today to look at different genes,

different mutations, and discover patterns for why someone may never develop the disease predisposed by their high-risk mutation."

The next step would be to do a well-designed wet lab study to further look at this variant and determine whether it is functional or works with another variant to stop the incidence of cancer. Horvath and her research team hope to continue applying this model to other genetic conditions.

More information: Mercedeh Movassagh et al, Co-Occurrence of and Variants in a Population, *New England Journal of Medicine* (2017). [DOI: 10.1056/NEJMc1701592](https://doi.org/10.1056/NEJMc1701592)

Provided by George Washington University

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