

Research article

[Science](#), [Biology](#)



For Cancer Risk, Some BRCA Mutations Are More Dangerous Than Others

Mutation can be described as any change in sequence of nucleotides in the DNA of an organism. Mutations are mistakes that take place during replication, due to certain external agents as well as spontaneous reactions. An article by Karen Kaplan, claims that physicians have long known that women having mutations in 2 specific genes-BRCA1 and BRCA2-usually have a high ovarian and breast cancer risk and have now began figuring out which mutation is worse than the other one.

Consequently, doctors have realized that some of these mutations might minimize a woman's risk of getting ovarian or breast cancer to much lower levels than thought previously. According to the authors, this study is the first step in definition of differences related to location and kind of BRCA1 and BRCA2 mutations and awareness of mutation-specific dangers may offer critical information for evaluation of clinical risk which will assist women and their physicians to establish the finest treatment plan for them. Everybody has BRCA1 and BRCA2 genes; which carries instructions for manufacturing proteins that are tasked with fighting tumors through fixation of mistakes in the DNA. Nevertheless, some unfortunate individuals experience mutations in these genes that increase their vulnerability of getting ovarian and breast cancers as well as other cancers such as prostate, pancreas, peritoneum and fallopian tubes).

It is approximated that 1 in 300 to 1 in 800 individuals have one of these destructive mutations. Nonetheless, some populations have much higher prevalence. Having BRCA1 and BRCA2 mutations raises the risk of having both ovarian and breast cancers by various percentages. A JAMA study

enlisted over 30, 000 women from 33 countries on six continents; all having BRCA mutations known to raise the risk of cancer. Over 90 percent of the women were white while almost 10 percent were Ashkenazi Jews. The women were categorized into “ bins” on the basis of where mutations occurred in the genome. They then examined to know how many women in every bin were diagnosed with ovarian/breast cancer while being monitored. It was discovered that 46 percent of the 19, 581 women having a BRCA1 mutation tested positive for breast cancer, 12 percent tested positive for ovarian cancer, 5 percent had both and only 37 percent were cancer free. In addition, the average age during diagnosis was 39. 9 years for breast cancer and more than 50 for ovarian cancer.

On the other hand, amongst the 11, 900 women having BRCA2 mutation 52 percent tested positive for breast cancer, 6 percent had ovarian cancer , 2 percent had both while 40 percent had neither during the entire period of the research. The average age for breast cancer in this category was 42. 8 years and ovarian cancer had 54. 5 years. The researchers also noted that as far as Cancer risk is concerned, all BRCA mutations are not equally created. Finally, the researchers stressed that these risks estimations are not exact since they do not take into consideration the family history of a particular woman as well as other factors that have an effect on life expectancy. The researchers further noted that their findings might not generalize all women having BRCA1 and BRCA2 mutations.

Work cited

Kaplan, Karen. " For cancer risk, some BRCA mutations are more dangerous than others." Los Angeles Times (2015): np.

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