

About Genes

Genes are in every cell in our bodies. Genes are made of DNA, which tells cells how to grow and work together. We have two copies of each gene in each cell—one from our mother and one from our father.

When the *BRCA1* gene works right, it helps prevent cancer by fixing damage to your DNA. Sometimes changes to the *BRCA1* gene happen. These changes are called mutations. Mutations can make the gene stop working. This raises the risk for certain types of cancer.

A mutation in the *BRCA1* gene raises the risk of breast and ovarian cancers in women and breast and prostate cancers in men.

BRCA1 Mutations and Cancer Risk

Breast Cancer: About 10 in 100 women get breast cancer during their life. For women with a *BRCA1* mutation, 50 to 80 in 100 get breast cancer during their life. Women with a *BRCA1* mutation who already had breast cancer have an increased risk above the general population of a second, new breast cancer in the same or other breast.

Male breast cancer is usually very rare—fewer than 1 in 100 men will get it during their life. Men with a *BRCA1* mutation have a slightly higher lifetime risk of breast cancer above the general population.

Ovarian Cancer: About 1 in 100 women will get ovarian cancer during their life. For women with a *BRCA1* mutation, 40 to 60 in 100 women will get ovarian cancer.

Prostate Cancer: About 15 in 100 men will get prostate cancer during their life. Those with a *BRCA1* mutation have a slightly higher lifetime risk. They may also have a risk for a more aggressive form of prostate cancer.

Other Cancers: People with *BRCA1* mutations may have a slightly higher risk for melanoma (a type of skin cancer) and pancreatic cancers.

Recommendations

WOMEN

- Starting at age 25: Breast exam by a doctor two times a year
- Between ages 25 and 30: Breast MRI every year
- Starting at age 30: Mammogram and breast MRI every year, switching exams every 6 months
- After age 35: Surgery to remove ovaries and fallopian tubes, if no plans to be pregnant

Women may consider taking medicine to reduce their risk of getting breast cancer. They may also consider surgery to remove both breasts (bilateral mastectomy) to reduce their risk as much as possible.

It is important to talk with your doctor about what is best for you based on your medical and family history.

MEN

- Starting at age 35: Breast exam by a doctor every year
- Starting at age 40: Consider prostate screening

WOMEN AND MEN

At this time, screenings for melanoma and pancreatic cancers are the same for people with *BRCA1* mutations as the general population, unless a person has a strong family history of these cancers. Discuss your family history with your doctor to know if screening is right for you.

KIDS AND SIBLINGS

Siblings and children of people with a *BRCA1* mutation have a 50% chance of also having the mutation. Both men and women can carry *BRCA1* mutations and can pass them on to their children. Genetic testing and counseling are recommended after age 18.

Family Members Who Test Negative

Family members who do not have the *BRCA1* mutation usually have the same level of risk for breast, ovarian, prostate, melanoma, and pancreatic cancers as the general population if they do not have other risk factors. They should follow general cancer screening guidelines.

Resources

www.facingourrisk.org • brcatool.stanford.edu/brca.html

**Questions about your risk for cancer? We can help with a screening plan that is best for you.
Contact the Family Cancer Assessment Clinic: 801-587-9555 • huntsmancancer.org/fcac**