What are the cancer risks for men with a BRCA gene mutation?

Men with BRCA gene mutations are at increased risk for several types of cancer above the risks of cancer faced by men who do not have BRCA gene mutations including breast cancer, prostate cancer, pancreatic cancer, and melanoma. Men with mutations in the BRCA2 gene generally have a higher chance of being diagnosed with the above cancers than men with mutations in the BRCA1 gene.

The lifetime risk of breast cancer in a man who does not carry a BRCA gene mutation is less than 1% (1 in 1000).

The risk of breast cancer in men with a BRCA2 mutation is approximately 8% by age 80. The risk of breast cancer for men with BRCA1 mutations is lower but still increased at 1.8%.

Men with BRCA2 gene mutations have about a 20% chance of being diagnosed with prostate cancer by age 80 compared to a 15% risk of prostate cancer for men who do not carry a BRCA gene mutation.

The risk of prostate cancer in men with BRCA1 gene mutations is likely only moderately increased above the general population risk. The risks of both pancreatic cancer and melanoma in men with BRCA 1 or BRCA2 gene mutations is increased above the general population risk for these cancers, but is likely less than a 4% risk of either cancer over a man's lifetime.

What are the risks to my family members if I have a BRCA gene mutation?

If you have a BRCA gene mutation, all of your first degree relatives (parents, siblings, and children) are at 50% chance to have the same gene mutation. If your male relatives (father, brothers, and sons) carry the same mutation as you; these men will have the same cancer risks mentioned above. If your female relatives (mother, sisters, daughters) carry the same mutation, these women will face up to an 87% lifetime risk of breast cancer and also up to a 44% lifetime risk of ovarian cancer. Women with BRCA mutations are also at increased risk of both pancreatic cancer and melanoma above the general population risk. The NCCN has recommendations for cancer screening and prevention for women who have BRCA gene mutations. These options include yearly mammograms and breast MRI for breast cancer screening beginning at age 25, medications that can reduce the risk of breast and ovarian cancer, and also surgical options with the goal of preventing cancer before it even occurs. It is important that the women in your life know whether or not they carry a BRCA gene mutation as their medical care will change dramatically and knowing this information might save the lives of your loved ones.

If you have a BRCA gene mutation, other relatives in your extended family may also be at risk including grandparents, aunts, uncles, nieces and nephews. It is important to share information about your BRCA test result with everyone in your family.

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For more information about breast cancer and BRCA mutations:

Myriad Genetic Laboratories
www.myriadtests.com

American Cancer Society
www.cancer.org

John W. Nick Foundation, Inc.
www.malebreastcancer.org

OUR MISSION:

To educate the world about the risk of breast cancer in men, and to provide preventive and reactive measures to cancer through education and research.

MALE BREAST CANCER

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What percentage of breast cancer is hereditary?

Cancer is caused by cells that grow and divide out of control, invading other parts of the body. Most of the time cancer is sporadic, meaning the mutations happen by chance as a person ages. These mutations randomly occur throughout a person's lifetime and cannot be passed to children.

About 10-20% of breast cancer is thought to be familial. Familial cancer is a clustering of cancers in a family due to shared environment, common lifestyle choices, and similar genetic make-up.

In even fewer families the cancer is caused by an inherited mutation passed down from a parent. This hereditary breast cancer is due to a single genetic change passed down through a family for generations. About 7% of all breast cancers are thought to be hereditary.

What are BRCA Mutations?

Most hereditary breast cancer is caused by an inherited mutation in the BRCA1 or BRCA2 genes (BR for "breast" and CA for "cancer"). When the BRCA1 and BRCA2 genes work properly, they help protect us from cancer. Every person has two copies of BRCA1 and BRCA2, one copy of each gene from their mother and a second copy of each gene from their father. People that inherit one mutated or non-working copy of a BRCA gene are at a much greater risk of developing certain types of cancer including breast cancer in both men and women and ovarian cancer in women.

This brochure is not intended for diagnosis or replacement for medical care. Contact a breast care center or your physician for further evaluation.

Who is at risk to have a BRCA mutation?

Anyone, male or female, can have a BRCA mutation. Approximately 1 in 400 persons has a BRCA mutation. Certain personal or family medical histories make a person or family more likely to have a BRCA mutation. These risk factors or 'Red Flags' include:

- Breast cancer diagnosed at an early age (usually before age 50).
- Ovarian cancer diagnosed at any age.
- Two primary breast cancers in an individual.
- Both breast and ovarian cancer in an individual.
- Male breast cancer diagnosed at any age.
- Two or more breast cancers in a family, one under age 50.
- Ashkenazi Jewish ancestry.
- A relative with a known BRCA gene mutation.

The chance of identifying a BRCA1 or BRCA2 mutation for a man with breast cancer, regardless of family history, is 12.8%. This is approximately 1 in every 8 men diagnosed with breast cancer. Should there be additional family history of breast or ovarian cancer, the risk increases. Additionally, BRCA mutations are more likely in some groups of people than others. People with Ashkenazi Jewish ancestry (Jewish ancestors from Eastern/Central Europe) are more likely to have a BRCA mutation. Approximately 1 in 40 Ashkenazi Jewish individuals has a BRCA mutation. In considering men with breast cancer who are of Ashkenazi Jewish ancestry, the prevalence of a BRCA mutation is approximately 15%, regardless of family history.

How do I know if I have a BRCA mutation?

The only way to know if you have a BRCA mutation is to have a genetic test to check your BRCA1 and BRCA2 genes for an abnormality. This genetic testing is typically done through a blood test, but can also be done by looking at cells from your mouth (buccal cells) with a saliva sample.

In order to have the testing done, you should have a detailed conversation by a trained health care provider. This provider will review your personal and family history, discuss the associated cancer risks, and options for steps you could take to decrease your cancer risks. You can find a provider near you by going to Myriad Genetic Laboratories' Find a Doc website ***www.myriadtests.com/ finddoc.php*** or to find a Genetic Counselor in your area, go to the National Society of Genetic Counselors' website at ***www.nsgc.org***. Or you can ask your healthcare provider for more information.

Why would I want to know if I have a BRCA gene mutation?

Finding out if you have a BRCA gene mutation or not is important because you can use the information to take action regarding your own health risks. Another reason that finding out if you have a BRCA gene mutation is important is that it may help members of your family also take action. If you have a BRCA gene mutation, members of your family are also at risk of having the same gene mutation.

What action should I take if I have a BRCA gene mutation?

The National Comprehensive Cancer Network (NCCN) recommends that men with a BRCA gene mutation have self breast exam training with their physician and that men perform self breast exams monthly. In addition, men with a BRCA mutation should see their physician twice a year for a clinical breast exam. Your doctor should order a baseline mammogram and based on those findings, may also order a repeat mammogram once a year to screen for breast cancer. This screening is important because the earlier breast cancer is detected, the better chance that a patient has to survive the cancer.

In addition the NCCN also recommends that men with BRCA mutations follow prostate cancer early detection screening guidelines. Prostate cancer screening should include a baseline digital rectal exam and blood test (prostate specific antigen or PSA) at age 40. How often additional screening will occur depends on the results of the baseline tests. If you have a family history of prostate cancer be sure and discuss this history with your physician as you may need to begin prostate cancer screening at a younger age or continue with screening more frequently.

Men with a BRCA gene mutation who have a close relative with pancreatic cancer may consider enrolling in research trials at centers that are investigating screening options for patients who are at increased risk of pancreatic cancer. For more information about these trials, a patient or physician can go to ***www.pancreatica.org***.