



Canadian Breast Cancer Network  
Réseau canadien du cancer du sein

# HEREDITARY BREAST CANCER SYNDROME

## A GUIDE FOR PATIENTS & THEIR FAMILIES

### What is hereditary breast cancer?

Most cancer is caused by an accumulation of damage in our bodies caused by the normal aging process, exposure to certain chemicals, radiation, hormones, or other factors in the body and the environment. A small percentage of cancers are different and are hereditary. This means that they are related to a specific gene variant (commonly known as mutation) that is passed down or inherited in a family. These hereditary genetic variants can significantly increase the risk of developing certain types of cancer, such as breast and ovarian cancer for those with a hereditary breast cancer syndrome. Hereditary cancers often occur at younger ages than cancer in people without a genetic variant. Though its name may suggest that it affects only women, men and people who are transgender can have hereditary breast cancer. People with an inherited genetic risk for breast cancer may also be at increased risk for other types of cancer, such as pancreatic and prostate.

### Who is at risk of hereditary breast cancer?

Hereditary breast cancer syndromes affect less than 1% of the population but are more common in certain populations.<sup>[1]</sup> Approximately 5-10% of all individuals with breast cancer have an inherited gene variant.<sup>[1]</sup> Because it is an inherited syndrome, family history of breast, ovarian and certain other cancers is an important risk factor. If one parent has a genetic variant, each of their children will have a 50% chance of inheriting the same variant.

### Causes of hereditary breast cancer

The most common genes associated with hereditary breast (and ovarian) cancer are BRCA1 and BRCA2; however, the early 2000's began the discovery era of many genes associated with hereditary breast cancer such as PALB2, ATM, and CHEK2. There are various other genes that have been linked to high, moderate, or low risk of developing breast cancer.

### How do I find out if I have, or am at risk for, hereditary breast cancer?

1 in 8 patients with cancer has a genetic variant linked to increased cancer risk that is passed down through their family!<sup>[2]</sup> Hereditary cancer genetic testing allows healthcare providers to find which patients have these inherited genetic risks. Hereditary cancer genetic testing can be arranged through your healthcare provider and is usually done through a blood or saliva sample.

*Developed in collaboration with Invitae, [www.invitae.com](http://www.invitae.com)*

[1] <https://www.yalemedicine.org/conditions/hereditary-breast-and-ovarian-cancer-syndrome-hboc>

[2] <https://newsnetwork.mayoclinic.org/discussion/mayo-clinic-study-finds-1-in-8-patients-with-cancer-harbor-inherited-genetic-mutations/>

## Why is it important to know about hereditary breast cancer?

If you have a genetic variant, you are more likely to get certain cancers. Certain steps can be taken to reduce your cancer risks including:

- Earlier, more frequent, and/or additional cancer screenings
- Medications that can decrease the risk of developing breast cancer
- Risk-reducing surgery to remove breasts, ovaries, and/or fallopian tubes

If you have breast cancer, knowing you have a genetic variant can help:

- Treatment decision-making: genetic results may impact your surgery, chemotherapy, or targeted treatment options. In some cases, genetic results may also qualify you for clinical trials.
- Future health: genetic results may suggest whether you are at increased risk of developing another cancer in the future. Knowing this allows you and your doctor to be proactive with your next steps, as outlined above.
- Family members: discovering that you have a genetic variant means that your family members may also be at risk. They can get tested too and, if they also have the genetic variant, can take action to try to prevent cancer or detect cancer earlier, when treatment is most effective.

## Questions to ask your doctor if you are concerned about hereditary breast cancer

- Have you considered a genetic cause for my cancer?
- Would it be helpful to know about my other family members who have had cancer?
- Would hereditary cancer genetic testing help with my treatment plan?
- What are my options for accessing hereditary cancer genetic testing and what are the associated costs?
- What is the wait time to be referred for hereditary cancer genetic testing?

## Other facts to consider

- Genes are passed through a family, so it is important for your family members to be informed of your hereditary cancer genetic testing results.
- Hereditary cancer genetic testing results are not always certain and sometimes may not immediately provide helpful information for treatment and prevention decision-making.
- Hereditary cancer genetic testing technology changes over time and you may need to be re-tested. This means that genetic tests may not discover a genetic variant this year, but you still may have an inherited risk factor for cancer that could be uncovered in the future.
- You may not qualify for hereditary cancer genetic testing that is funded through the public healthcare system. If this is the case for you, there are still ways for you to access testing if you are still interested.

For more information, please visit the Canadian Breast Cancer Network website at [www.CBCN.ca/hereditary-breast-cancer](http://www.CBCN.ca/hereditary-breast-cancer).

Or call: (613) 230-3044 or toll-free: 1-800-685-8820