Cancer and heredity

Summary

- Latest research suggests that most cancers are caused by environmental rather than genetic factors.
- The cancers with the highest genetic contribution include breast, bowel, stomach and prostate cancers.
- Referral to a specialist cancer genetics service may be appropriate for people with a strong family history of cancer.

Genes play a role in the development of some cancers. The link is strongest for breast, bowel and stomach cancers. Current research suggests that environmental factors such as tobacco, diet, infection, alcohol, drugs, radiation and chemicals are more important than genetic (hereditary) factors in determining development of most cancers.

All cancer is triggered by altered genes. However, only five to 10 per cent of cancers are actually hereditary.

Heredity may sometimes appear to be the reason for a cancer, especially when the same types of cancers run in families.

Cancers with a genetic component

These cancers do appear to have some genetic link:

- Breast cancer
- Bowel cancer
- Stomach cancer
- Prostate cancer

Genetics and breast cancer

Breast cancer is the most common cancer in Australia women. There are almost 2,900 cases in Australia each year. This means that one in 11 women is affected by breast cancer during her life. Many risk factors can influence a woman’s chance of developing breast cancer. The most common risk factors are being a woman and getting older. Family history of breast or ovarian cancer is also an important risk factor in developing breast cancer. Hereditary factors are only responsible for about one in 20 cases of breast cancer (5%).

Genetics and bowel cancer

Bowel cancer is the second most common cancer in Australia after prostate cancer. There are almost 3,500 cases diagnosed in Australia each year. The biggest single risk factor is age. More than eight out of 10 bowel cancers are diagnosed in the over-60s. The risk of getting this disease increases as you get older. It is estimated that about two out of three bowel cancers could be prevented with changes in diet and lifestyle.

Assessing a family history of cancer

When a person has a ‘strong family history’ of cancer, it usually means that they have several relatives diagnosed with the same cancer, over different generations on the same side of the family. It can also mean that one or more relatives were diagnosed at an unusually young age, or a relative with two or more separate cancers.

People who have a strong family history of cancer may be offered a referral to a specialist genetics service. Understanding an individual’s family history usually includes checking the cancer diagnoses of the person’s relatives by obtaining pathology reports. An estimate of the risk of cancer to the individual may be provided.

If indicated, certain additional tests can be helpful in the risk assessment. In some situations, genetic testing may
be appropriate and might be offered after careful discussion about its implications.

People assessed to have a higher than average risk of cancer will be referred to a specialist. They can talk to the person about having screening so as to detect signs of cancer as early as possible. This can ensure prompt treatment and optimal outcome.

**Where to get help**

- Your GP (doctor)
- The [Cancer Council of Victoria, Information and Support Line](tel:131120) Tel. 13 11 20
- [Multilingual Cancer Information Line](tel:(03) 9209 0169) Victoria Tel. (03) 9209 0169
- Cancer Council Victoria - Genetics and Risk
- Cancer Council Victoria - Bowel Cancer risk calculator.
- Cancer Australia - Breast cancer risk calculator.

This page has been produced in consultation with and approved by:

Victorian Clinical Genetics Services (VCGS)

Content on this website is provided for information purposes only. Information about a therapy, service, product or treatment does not in any way endorse or support such therapy, service, product or treatment and is not intended to replace advice from your doctor or other registered health professional. The information and materials contained on this website are not intended to constitute a comprehensive guide concerning all aspects of the therapy, product or treatment described on the website. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions and to ascertain whether the particular therapy, service, product or treatment described on the website is suitable in their circumstances. The State of Victoria and the Department of Health & Human Services shall not bear any liability for reliance by any user on the materials contained on this website.

For the latest updates and more information, visit [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)

**Copyright © 1999/2020** State of Victoria. Reproduced from the Better Health Channel (www.betterhealth.vic.gov.au) at no cost with permission of the Victorian Minister for Health. Unauthorised reproduction and other uses comprised in the copyright are prohibited without permission.