

Understanding Inherited Cancers

Your helpful guide to inherited cancers, gene variants, and taking informed next steps.



What are inherited cancers?

Cancer is unfortunately very common, but the reasons it develops vary. Most cancers are sporadic, meaning they occur by chance and are not linked to inherited factors. Sometimes, cancer appears to “run in families”, these are called familial cancers. Familial cancers may be caused by shared genes, lifestyle, or environmental factors, but without a single identifiable inherited genetic cause.

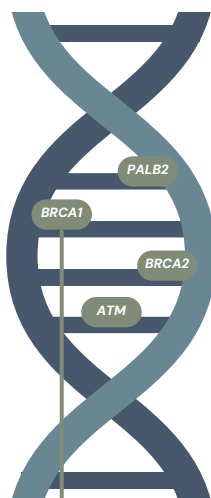
Only about 5–10% of all cancers are inherited. Inherited cancers occur when a person is born with a pathogenic gene variant. These variants can be passed from parent to child, which may significantly increase the chance of developing certain types of cancer.

Key Genetics Terms Made Simple

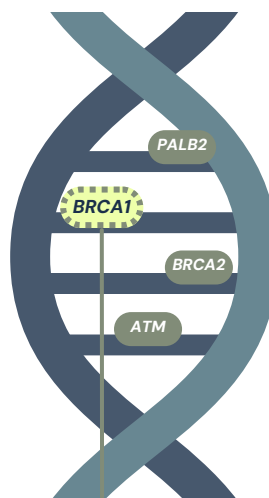
- **Genes:** Instructions inside our cells that tell the body how to grow and function.
- **DNA:** The code that makes up our genes.
- **Variant:** A change in a gene. Some are harmless, but others can raise the chance of disease.
- **Pathogenic Variant (formerly called "mutation"):** A gene change known to increase the chance of disease, including cancer.



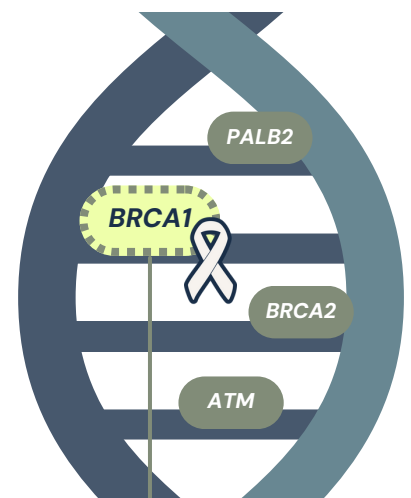
Your genes are part of your DNA



Genes carry instructions for your body



Variants are differences in DNA from birth



Pathogenic variants disrupt genes which can lead to disease

How do cancer genes work?

Our bodies contain a large number of special genes that help protect us from cancer. Examples include *BRCA1*, *BRCA2*, *PALB2*, *ATM* and *TP53*. These genes fall into different categories, each playing a unique role:

- **Tumour Suppressor Genes:** Act like brakes, slowing down cell growth or fixing damaged DNA.
- **DNA Repair Genes:** Help fix mistakes in our genetic code.
- **Oncogenes:** Normally help cells grow, but when altered, they can cause cells to grow out of control.

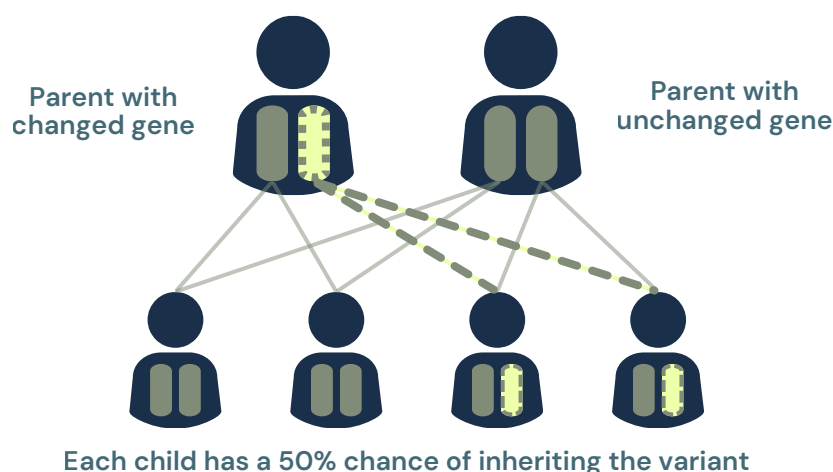
What happens when these genes are disrupted?

If a person inherits a **pathogenic variant in one of these protective genes**, the body may **lose the ability to control cell growth**, increasing the chance of cancer.

How is Cancer Predisposition Inherited?

We inherit two copies of most genes: one from each parent. If one copy carries a pathogenic variant, a person may have an increased chance of developing cancer, even though they still have one unchanged gene.

- **A person with an inherited variant doesn't always develop cancer**, but their chance is higher.
- These changes can be passed down from **either the mother or the father**, to **both sons and daughters**.
- Most inherited cancer syndromes follow an autosomal dominant pattern of inheritance. This means that **having just one altered copy of the gene is enough to increase the chance of getting cancer**.
- Each child of a parent who has a cancer variant has a **50% chance of inheriting it**.





What does having a gene variant mean for me?

Having a gene variant increases the chance of developing certain cancers.

This doesn't mean you will definitely get cancer. It means you now have information that can help you plan ahead, like doing regular screening or learning about ways to reduce your chance of developing cancer. Support is available to help you take it one step at a time.

You can learn more about your specific chance of developing cancer, along with risk management options to discuss with your doctor, in our dedicated [gene variant support guides](#).



Understanding your chance of developing cancer is a powerful first step. Support is available to help you move forward at your own pace.

[Find Support](#)

What does this mean for my family?

A gene variant can be passed down through generations, which means your genetic testing result may also have important meaning for your family.

Sharing your result with your family can give them the chance to understand their own risk. If they choose to, they can take steps early, including genetic testing, to manage it, as inherited cancer can affect anyone, regardless of gender or age.

This process is known as **predictive** or **cascade genetic testing**: where close family members may be offered genetic testing to see if they also have the same variant.

Predictive / Cascade Genetic Testing



- It's called *cascade* testing because it **creates a flow of genetic information through the family**.
- One person's genetic result can open the door for others to understand their own risk and take action early, if they choose to.
- Cascade genetic testing **may be Medicare-funded** for eligible relatives.



How do I navigate these family conversations?

Conversations about cascade testing can be complex, but you don't have to do it all at once, or on your own:

- You can take time to consider **what** feels right to share, **when** to share it, and **who** you want to share it with.
- **Genetic counsellors** can support you in these conversations by helping you plan what to say and offering resources you can pass on to family members.
- If you're sharing with children or young adults, it doesn't have to be a single or complete explanation. **These conversations can be gradual and ongoing**, with support from genetic counsellors to help you find the right timing and language.



Our conversation guides and templates can support you in sharing information with your family, in a way and at a time that feels right.

[Browse Resources](#)

Support for Reproductive Decision-Making

If you're considering or planning to have children, support is available to help you understand how a gene variant may relate to family planning and reproductive decisions.

- A **genetic counsellor** can talk through what having a gene variant means for your potential future children and help you explore your options.
- Genetic counsellor can discuss reproductive options with you, which might include **prenatal diagnostic testing of a naturally conceived pregnancy**, or **preimplantation genetic testing (PGT) of embryos created through IVF**.
- Fertility specialists can provide more information about options such as **IVF** or **egg preservation**, and whether **PGT** is possible through their clinic.



Explore our fertility resources to learn about the options available and find support for decisions that feel right for you.

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Who might be involved in my care?

Understanding and managing an inherited gene variant often involves various health professionals across different stages. This list is here to show the range of support available and may help you recognise what kind of care could be helpful as your needs evolve. Your GP is usually the first step and can guide referrals based on your needs.

Genetic & Specialist Care

- Genetic counsellor
- Clinical geneticist
- Fertility specialist
- Menopause specialist / clinic

Surgery & Screening

- High-risk screening clinic
- Breast surgeon
- Plastic surgeon
- Gynaecological surgeon
- Breast care nurse

Mental Health Support

- GP (for referrals & care planning)
- Psychologist / counsellor
- Psycho-oncologist
- Relationship or family counsellor

Wellbeing Support

- Physiotherapist
- Exercise physiologist
- Dietitian
- Social worker



Visit our Resource Centre for helpful questions to ask at your next appointment.

[Browse Resources](#)



How can Inherited Cancers Australia help?

Discovering a gene variant can bring up a lot of thoughts and questions. You might be figuring out what it means for your health, your family, or your next steps. You don't have to work through it alone.

Inherited Cancers Australia offers personalised support grounded in lived experience. Whether you're looking for information, guidance, connection, or a community that understands, we're here to support you in the way that feels right for you.



Inherited Cancer Support Service

Talk to our genetic counsellor who can help answer questions and guide your options.

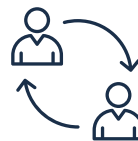
Get Support



National Online Support Groups

Join a safe space to connect with people who are navigating a similar experience.

Join Community



Peer Support Program

Connect with a trained community member for support, understanding, and reassurance from someone who's been there.

Connect Now



Info & Support Events

Join nationwide events that bring together local experts and community voices to help you stay informed, connected, and supported.

Upcoming Events



Online Resource Centre

Explore evidence-based, expert-reviewed resources to help you feel more prepared and informed about your next steps.

Browse Resources



Psychosocial Support

Access helpful tools and resources that support your emotional and mental wellbeing while living with an inherited gene variant.

Find Support Tools

Visit our website for more information:

inheritedcancers.org.au