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Health Spotlight: Cancer

Key statistics

- In 2024, it was estimated that there were 165,000 new cancer cases diagnosed in Australia¹
- In 2024, there were an estimated 52,700 cancer deaths in Australia²
- Lung cancer remains the leading cause of cancer death, followed by colorectal cancer, prostate cancer, and breast cancer³
- The most common cancers diagnosed were breast cancer, prostate cancer, colorectal cancer, melanoma, and lung cancer⁴
- As of the end of 2023, there were approximately 480,000 people living with cancer in Australia who had been diagnosed in the previous five years⁵

What is cancer?

Cancer is a disease where some of the body's cells grow uncontrollably and spread to other parts of the body. Normally, cells grow and divide to form new cells as needed. When cells grow old or become damaged, they die, and new cells take their place. However, in cancer, this orderly process breaks down. Abnormal or damaged cells grow and multiply when they shouldn't, forming lumps of tissue called tumours.

Tumours can be either benign (non-cancerous) or malignant (cancerous). Malignant tumours can invade nearby tissues and spread to other parts of the body through the blood and lymph systems, a process known as metastasis.⁶

Shared characteristics

All cancers share several common characteristics, despite originating in different parts of the body and having various causes. Here are some key features common to all cancers:

- 1) Uncontrolled cell growth:** Cancer cells grow and divide uncontrollably, bypassing the normal regulatory mechanisms that control cell growth and division.
- 2) Evading growth suppressors:** Cancer cells can evade the signals that normally inhibit cell growth, allowing them to continue proliferating.
- 3) Resisting cell death:** Cancer cells can avoid programmed cell death (apoptosis), which allows them to survive longer than normal cells.
- 4) Enabling replicative immortality:** Cancer cells can maintain their ability to divide indefinitely, unlike normal cells that have a limited number of divisions.
- 5) Inducing angiogenesis:** Cancer cells can stimulate the formation of new blood vessels (angiogenesis) to supply the growing tumour with nutrients and oxygen.
- 6) Activating invasion and metastasis:** Cancer cells can invade surrounding tissues and spread to other parts of the body (metastasis).⁷

Types of cancer

There are many types of cancer, each classified by the type of cell that is initially affected. Each type of cancer is named based on the specific cells and tissues where it originates, which helps in understanding its behaviour, treatment, and prognosis.

Type of Cell ⁸	Examples ⁹	Estimated deaths 2024	Causes	Risks	Prevention
Carcinomas: These cancers begin in epithelial cells, which are the cells that line the inside and outside surfaces of the body.	Lung Cancer: Starts in the epithelial cells of the lungs.	8,900 ¹⁰	Primarily caused by smoking, but also by exposure to radon gas, asbestos, and other carcinogens. ¹¹	Smoking, second hand smoke, exposure to radon gas, asbestos, and family history. ¹²	<ul style="list-style-type: none"> • Avoid smoking: The most significant risk factor. • Avoid second hand smoke: Stay away from environments where people smoke. • Test for radon: Ensure your home is free from radon gas.
	Breast Cancer: Begins in the epithelial cells of the breast ducts or lobules.	3,200 ¹³	Genetic mutations (e.g., BRCA1 and BRCA2), hormonal factors, and lifestyle factors. ¹⁴	Age, family history, genetic mutations, dense breast tissue, and hormone replacement therapy.	<ul style="list-style-type: none"> • Maintain a healthy weight: Obesity increases the risk. • Limit alcohol: Alcohol consumption is linked to a higher risk. • Breastfeed: If possible, breastfeeding can lower the risk.
	Prostate Cancer: Originates in the epithelial cells of the prostate gland.	3,900 ¹⁵	Genetic mutations and hormonal changes. ¹⁶	Age, family history, race (more common in African American men), and diet. ¹⁷	<ul style="list-style-type: none"> • Healthy diet: Eat more fruits and vegetables. • Regular exercise: Helps maintain a healthy weight. • Screening: Discuss prostate cancer screening with your doctor.
	Colorectal or Bowel Cancer: Starts in the colon or rectum, which are parts of the large intestine.	5,350 ¹⁸	Primarily caused by genetic mutations and can be influenced by factors such as a diet high in red and processed meats, inflammatory bowel disease, and certain inherited syndromes. ¹⁹	Risk increases with age, especially after 50. Family history, lack of physical activity, obesity, smoking, heavy alcohol use, and type 2 diabetes all raise the risk of colorectal cancer.	<ul style="list-style-type: none"> • Regular screenings: Starting at age 45, regular screenings can detect polyps before they become cancerous. • Healthy diet and physical activity: Maintain a healthy weight to reduce risk. • Avoid tobacco and limit alcohol: Avoiding smoking and limiting alcohol intake can lower risk. • Genetic counselling: To assess risk and guide preventive measures.

Type of Cell ⁸	Examples ⁹	Estimated deaths 2024	Causes	Risks	Prevention
Leukemias: These cancers begin in the blood-forming tissues of the bone marrow and result in large numbers of abnormal blood cells entering the bloodstream.	Acute Lymphoblastic Leukemia: Starts in early forms of white blood cells called lymphocytes. ²⁰	2,121 ²¹	Genetic mutations in blood-forming cells. ²²	Age (common in children), exposure to radiation, and certain genetic disorders (e.g., Down syndrome).	<ul style="list-style-type: none"> • Avoid radiation: Limit exposure to high-dose radiation. • Healthy lifestyle: Maintain a healthy diet and avoid smoking.²³
	Chronic Myeloid Leukemia: Begins in the bone marrow cells that produce blood cells. ²⁴		Genetic mutation known as the Philadelphia chromosome.	Age, exposure to high-dose radiation, and being male. ²⁵	
Sarcomas: These cancers start in connective or supportive tissues such as bone, cartilage, fat, muscle, or blood vessels.	Osteosarcoma: Begins in bone cells.	500 ²⁶	Genetic mutations, often related to rapid bone growth. ²⁷	Age (common in teenagers), genetic conditions (e.g., Li-Fraumeni syndrome), and previous radiation therapy.	<ul style="list-style-type: none"> • Avoid radiation exposure: Limit unnecessary radiation, especially in children. • Genetic counselling: For those with a family history of genetic conditions. • Healthy lifestyle: Maintain a healthy weight and avoid exposure to harmful chemicals.
	Liposarcoma: Starts in fat cells.		Genetic mutations in fat cells. ²⁸	Age (more common in adults), previous radiation therapy, and certain genetic conditions.	
Lymphomas: These cancers start in the cells of the immune system, particularly in the lymphatic system.	Hodgkin Lymphoma: Characterised by the presence of Reed-Sternberg cells.	1,766 ²⁹	Exact cause unknown, but linked to Epstein-Barr virus (EBV) infection.	Age (bimodal distribution: young adults and older adults), family history, and weakened immune system.	<ul style="list-style-type: none"> • Avoid infections: Protect against infections like Epstein-Barr virus (EBV) and HIV. • Healthy lifestyle: Maintain a healthy diet and avoid smoking.
	Non-Hodgkin Lymphoma: Includes various subtypes like diffuse large B-cell lymphoma. ³⁰		Genetic mutations in lymphocytes. ³¹	Age, exposure to certain chemicals, weakened immune system, and certain infections (e.g., HIV, EBV). ³²	
Central Nervous System (CNS) Cancers: These cancers begin in the tissues of the brain and spinal cord.	Glioblastoma: An aggressive type of brain cancer.	1,400 ³³	Genetic mutations in brain cells.	Age (more common in older adults), exposure to ionizing radiation, and certain genetic syndromes.	<ul style="list-style-type: none"> • Avoid radiation: Limit exposure to ionizing radiation. • Genetic counselling: For those with a family history of genetic conditions.
	Medulloblastoma: A common brain cancer in children.		Genetic mutations in developing brain cells. ³⁴	Age (common in children), genetic syndromes (e.g., Gorlin syndrome), and family history.	

Treatment options

Cancer treatment options are diverse and commonly used across various types of cancer, but the specific approach can vary depending on the type, stage, and individual characteristics of the cancer. Here's a quick summary:

- **Surgery:** Used to remove tumours and surrounding tissue.
- **Chemotherapy:** Uses drugs to kill or slow the growth of cancer cells.
- **Radiation therapy:** Uses high-energy radiation to target and kill cancer cells.
- **Immunotherapy:** Helps the body's immune system fight cancer.
- **Hormone therapy:** Blocks or removes hormones that fuel certain cancers.
- **Targeted therapy:** Uses drugs to target specific molecules involved in cancer growth.
- **Ablation therapy:** Destroys tumors using heat, cold, or other methods.
- **Palliative care:** Focuses on relieving symptoms and improving quality of life.
- **Clinical trials:** Research studies that test new treatments or approaches.

Each cancer type may require a tailored treatment plan based on its unique characteristics.³⁵

Preventing cancer

General cancer prevention

Preventing cancer involves adopting a healthy lifestyle and taking proactive measures. Here are some general cancer prevention tips to help reduce your risk:



Avoid tobacco: Major risk factor for cancers like lung, mouth, throat, and bladder.



Get vaccinated: HPV and hepatitis B vaccines can prevent certain cancers.



Maintain a healthy weight: Reduces risk of cancers such as breast, prostate, lung, colon, and kidney.



Avoid risky behaviors: Practice safe sex and avoid sharing needles to reduce infection-related cancers.



Eat a healthy diet: Focus on fruits, vegetables, whole grains, and lean proteins. Limit red and processed meats.



Regular screenings: Early detection through screenings for cancers like breast, cervical, colorectal, and prostate.



Stay physically active: Helps maintain weight and lowers risk of breast and colon cancer. Aim for 150 minutes of moderate exercise weekly.



Genetic counselling: For individuals with a family history of certain cancers, genetic counseling can help assess risk and guide preventive measures.



Protect yourself from the sun: Use sunscreen, wear protective clothing, and avoid excessive sun exposure to prevent skin cancer.



Limit alcohol consumption: Drinking alcohol increases the risk of several types of cancer, including breast, liver, and colorectal cancers. If you choose to drink, do so in moderation. For women, this means up to one drink per day, and for men, up to two drinks per day.³⁶

By incorporating these cancer prevention tips into your daily routine, you may be able to reduce your risk of developing cancer. Remember, early detection through regular screenings and maintaining a healthy lifestyle are key components in the fight against cancer. Stay informed, make healthy choices, and consult with healthcare professionals to tailor a prevention plan that works best for you.

Resources

For more information visit the [Cancer Council](#) website.

The Cancer Council has created comprehensive guides for 31 types of cancer:

[Your guides to best cancer care | Cancer Council](#)

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