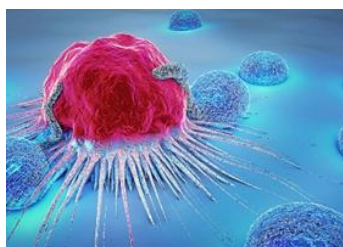




Confronting Cancer

Dr Rachel Coelho B.Sc, B.Med, FRACGP, DBM

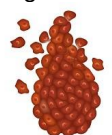
Cancer is one of the leading causes of death in Australia. Each year, an estimated 150,000 Australians are diagnosed with cancer, and one in two men and women will receive a cancer diagnosis by the age of 85. There is, however, encouraging news. In the 1980s, fewer than half of Australians diagnosed with cancer survived for five years or more. Today, almost 70% survive at least five years after diagnosis, and for some cancers, the five-year survival rate is as high as 90%. The most common cancers diagnosed in Australia (excluding non-melanoma skin cancer) are prostate, breast, bowel, melanoma, and lung cancer.



Cancer is a disease of the body's cells. It develops when abnormal cells begin to grow and divide uncontrollably. These cells differ from normal cells in their size, shape, and function, and cancer can arise in almost any part of

the body. As abnormal cells continue to multiply, they form tumours that can invade and damage nearby tissues. In some cases, cancer cells spread to other parts of the body through the bloodstream or lymphatic system. This process usually develops slowly over many years or even decades, although some cancers can progress much more rapidly.

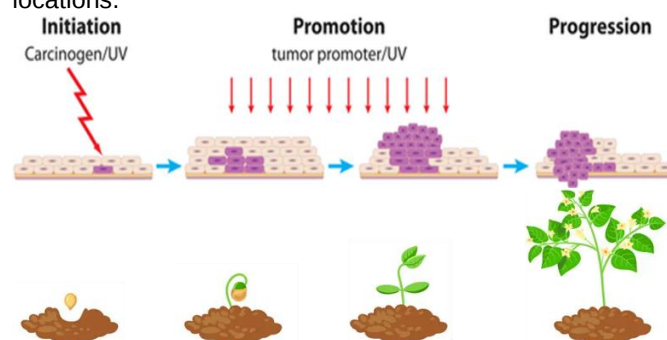
There are two main types of tumours: benign and malignant.

 Benign Tumours • Mildly abnormal cells • Slow to grow • Smooth border or capsule • Do not invade • Do not metastasize	 Malignant Tumours • Very abnormal cells • Erratic growth • Irregular border/ no capsule • Invade surrounding tissues • Can metastasize
---	--

Benign tumours are not considered cancer because they do not invade surrounding tissues or spread to other parts of the body. Malignant tumours, however, are cancerous. They can invade nearby tissues and may metastasise, or spread, to distant organs. Although it is possible for a benign tumour to become malignant, this is uncommon.

Cancer develops through three distinct phases: initiation, promotion, and progression. The first phase, initiation, occurs when exposure to carcinogens—such as certain chemicals or forms of radiation—causes permanent damage to a cell's DNA. This genetic mutation transforms the cell into one that has the potential to become cancerous. As the damaged cell divides, it passes these mutations on to its daughter cells. At this stage, the group of abnormal cells is microscopic and cannot be detected. Initiation can occur very quickly, sometimes within minutes, and the DNA changes are generally irreversible. An easy way to think of this phase is

as planting a seed in a garden. The second phase, promotion, is similar to a seed germinating and beginning to grow. During this stage, the initiated cells multiply and gradually form a detectable tumour. However, these abnormal cells will only continue to grow if the conditions are favourable. These conditions are known as promoting factors. If promoting factors are absent, the abnormal cells may remain dormant and never develop into a tumour. If the promoting factors are removed after growth has begun, cancer development may slow or even stop, with the cells remaining dormant until favourable conditions return. Importantly, there are also anti-promoting factors that can inhibit or slow the growth of abnormal cells. Many of both the promoting and anti-promoting factors are influenced by our diet and lifestyle. This is significant because, unlike the initiation phase, the promotion phase is potentially reversible. By reducing exposure to promoting factors and increasing protective lifestyle behaviours, it may be possible to reduce the likelihood of cancer developing or progressing. The final phase is progression. By this stage, the cancer has become established and more aggressive. It invades surrounding tissues, damages nearby structures, and may spread to distant parts of the body through the blood or lymphatic system. This spread of cancer cells is known as metastasis. An analogy is a plant that has grown unchecked, spreading throughout a garden and dispersing seeds to new locations.



Some cancer risk factors cannot be changed. These include increasing age, a previous cancer diagnosis, family history, and inherited genetic factors. However, many of the factors that influence cancer risk are within our control. Research suggests that at least one in three cancers could be prevented through healthier lifestyle choices. The major modifiable risk factors include poor dietary habits, excessive sun exposure, physical inactivity, overweight and obesity, alcohol consumption, and tobacco smoking. By adopting healthier behaviours, individuals can significantly reduce their risk of developing many types of cancer while also improving their overall health and wellbeing.

There are two key factors that can help reduce your susceptibility to cancer. The first is maintaining a strong and healthy immune system. An effective immune system, for example, one with an abundance of natural killer (NK) cells—

the body's specialised tumour-fighting cells—plays a vital role in identifying and destroying abnormal cells before they become established. The second factor is reducing chronic inflammation throughout the body. Persistent, low-grade inflammation creates an environment that can promote the development and progression of many chronic diseases, including cancer.

How can you strengthen your immune system and reduce inflammation naturally? One of the most important steps is to include God in your health journey. Research has shown that an active spiritual life is associated with improved immune function, a lower risk of developing certain diseases, including cancer, and better health outcomes for many people facing serious illness. Beyond the scientific evidence, the Bible reminds us that we are "fearfully and wonderfully made" by our Creator. God knows every aspect of our minds and bodies, making Him the greatest Physician to whom we can turn for wisdom, strength, and healing. **Jeremiah 30:17** reminds us of God's promise: "For I will restore health to you and heal you of your wounds," says the LORD. With this promise in mind, the first prescription is simple: spend time each day reading and meditating on God's Word, the Bible, and maintain a regular life of prayer. This provides hope, peace, and strength throughout life's challenges.



The next important step is to cultivate a healthy mindset. Chronic stress can weaken the immune system and increase chronic inflammation, creating conditions that may contribute to all three stages of cancer development—initiation, promotion, and progression. While stress is an unavoidable part of life, the way we respond to it can make a significant difference. Some practical principles for managing stress include:

- Choose to focus on positive, hopeful thoughts.
- Develop an attitude of gratitude, which builds resilience during difficult times.
- Maintain a spirit of forgiveness by confessing your sins to God and extending forgiveness to others.
- Share your burdens with God and with trusted family members or friends rather than carrying them alone.
- Seek God's guidance as you plan your life, helping to reduce unnecessary stress and worry.
- Make time for regular rest, physically, mentally, and spiritually, trusting God to renew your strength.

Diet plays a vital role in both the prevention and management of cancer. The foods we eat can either promote inflammation, creating an environment that encourages cancer development, or help reduce inflammation and support the body's natural defence systems. Pro-inflammatory foods that need to be avoided include processed and red meats, foods high in saturated fat from animal products, refined sugars, and highly processed foods such as white flour products, white rice, refined pasta, and many processed breakfast cereals. Regular consumption of these foods has been associated with an increased risk of several types of cancer. In contrast, a whole-food, plant-based diet provides a wide range of nutrients that help reduce inflammation, strengthen immune function, and protect cells from damage. This includes a variety of fruits and vegetables, legumes, whole grains, nuts, seeds, herbs, and spices in their natural or minimally processed forms. These foods are rich in vitamins, minerals, antioxidants, phytochemicals, and fibre, all of which contribute to better

health and help lower cancer risk. Research has identified many naturally occurring compounds in plant foods that appear to protect against cancer. While dietary supplements have generally not been shown to reduce cancer risk in healthy individuals, obtaining these nutrients from whole foods offers a broad range of protective benefits. Important examples include:

- Bioflavonoids, found in colourful fruits and vegetables.
- Omega-3 fatty acids, found in ground flaxseed (linseed), walnuts, and soybeans
- Vitamin C, abundant in citrus fruits and berries.
- Vitamin E, found in almonds, sunflower seeds, and green leafy vegetables.
- Beta-carotene, found in carrots, sweet potatoes, and other orange vegetables.
- Lycopene, found in tomatoes and watermelon.
- Curcumin, the active compound in turmeric.
- Selenium, found in Brazil nuts and sunflower seeds.
- Dietary fibre, found in whole grains, legumes, fruits, and vegetables.

Some foods stand out for their particularly impressive cancer-protective properties. Legumes, including chickpeas, soybeans, lentils, and lupini beans, contain a remarkable combination of fibre, antioxidants, and anti-inflammatory compounds. Research also suggests they contain naturally occurring substances that may help reduce the ability of cancer cells to spread. Sprouting or thoroughly cooking legumes enhances the availability of many of these beneficial compounds. Cruciferous vegetables, such as broccoli, cabbage, kale, Brussels sprouts, and cauliflower, are among the most studied cancer-protective foods. They contain anti-inflammatory compounds and protect DNA from damage. Berries rank among the richest sources of antioxidants of any fruit. Their polyphenols have been shown to reduce inflammation and may help slow the growth and proliferation of abnormal cells, making them valuable additions to a cancer-protective diet.



One of the simplest ways to increase your daily intake of fruits and vegetables is by making a whole-food plant smoothie. Unlike fruit juice, which removes much of the fibre, smoothies use the entire fruit or vegetable, preserving valuable fibre along with vitamins, minerals, and antioxidants. A simple plant

smoothie can be prepared by blending thoroughly washed fruits and vegetables with purified or filtered water. Excellent vegetables to choose from are broccoli, cauliflower, kale, Brussels sprouts, Chinese cabbage, purple cabbage, celery, parsley, beetroot, tomatoes, and carrots. Suitable fruits to choose from include blackberries, blueberries, raspberries, strawberries, cranberries, oranges, grapefruit, lemons, kiwifruit, and apples. You may also choose to add nutrient-rich powders such as barley grass or acai berry, together with a small handful of nuts and seeds turning the smoothie into a satisfying meal. One note of caution: cruciferous vegetables such as broccoli, cabbage, cauliflower, and kale are extremely healthy. However, consuming very large quantities of them raw every day may interfere with thyroid function in susceptible individuals. Lightly steaming these vegetables reduces this effect while preserving most of their nutritional value.

Adequate hydration is another important component of good health. Drinking sufficient water supports normal body functions and may help reduce the risk of certain cancers, particularly those affecting the bladder and bowel. It assists the body's natural waste removal. As a general guide, aim for approximately 30 mL of water per kilogram of body weight each day, up to 8 glasses of water for the average female, and 10 glasses for the average male. During hot weather or periods of heavy physical activity, fluid requirements may increase.

How food is prepared is just as important as the food itself. Cooking methods that use very high, dry heat—including grilling, barbecuing, frying, roasting, and baking—can produce compounds known as advanced glycation end products (AGEs). High intakes of AGEs have been associated with increased oxidative stress and inflammation. Animal-based foods, particularly meat, cheese, eggs, butter, cream, and foods cooked in oils or fats, tend to produce the highest amounts of AGEs when cooked at high temperatures. For the anti-inflammatory benefits, enjoy fruits, vegetables, nuts, and seeds in their whole, fresh, and minimally processed forms. When cooking is required, choose gentler methods such as steaming, boiling, poaching, or preparing soups and stews. These moist-heat cooking techniques produce far fewer AGEs while helping to preserve many valuable nutrients.

Avoiding tobacco and limiting alcohol are two of the most important lifestyle choices for reducing cancer risk. Tobacco smoke contains dozens of known carcinogens, along with many other chemicals that damage DNA, promote inflammation, and interfere with the body's normal ability to repair cells. Smoking substantially increases the risk of many cancers, including those of the lungs, mouth, throat, oesophagus, pancreas, bladder, kidney, stomach, cervix, and bowel. Quitting smoking at any age reduces cancer risk and provides immediate and long-term health benefits.

Alcohol is also a well-established cause of several cancers. Current evidence indicates that there is no completely risk-free level of alcohol consumption when it comes to cancer. Alcohol can contribute to both the initiation of cancer by damaging DNA and the promotion of tumour growth through a variety of biological mechanisms. The risk increases with the amount consumed. Avoiding alcohol is therefore one of the most effective ways to lower cancer risk.

Regular physical activity is another powerful strategy for cancer prevention. Research has consistently shown that exercise reduces the risk of several cancers, including cancers of the bowel, breast, bladder, endometrium, oesophagus, kidney, and stomach. Exercise protects against cancer in several ways. It:

- Reduces chronic inflammation throughout the body.
- Strengthens immune system function.
- Helps regulate blood sugar and insulin levels, reducing exposure to elevated insulin, which has been linked to cancer development and progression.
- Improves digestive function, helping food move more efficiently through the gastrointestinal tract and reducing the time the bowel is exposed to potential carcinogens.
- Supports the maintenance of a healthy body weight, an important factor in reducing cancer risk.

Physical activity also benefits people who have been diagnosed with cancer. During and after treatment, regular exercise can reduce fatigue, improve physical function, enhance quality of life, and, for some cancers, improve long-term survival.

Aim for at least three to four hours of moderate-intensity exercise each week, such as brisk walking, cycling, swimming, or other activities that raise your heart rate while still allowing you to hold a conversation.



Healthy sleep is another often-overlooked component of cancer prevention. Our bodies operate according to a natural biological clock, or circadian rhythm, which regulates sleep, hormone production, immune function, and cellular repair. Disruption of this rhythm—particularly through long-term shift work, excessive exposure to artificial light at night, or chronic sleep deprivation—has been associated with an increased risk of several cancers, including bowel, breast, prostate, liver, lung, pancreatic, and ovarian cancers. Poor sleep can increase inflammation, impair immune function, and reduce the body's ability to repair damaged DNA. Aim for seven to eight hours of quality sleep each night, with a regular sleep schedule whenever possible. Sleep obtained before midnight generally aligns more closely with the body's natural circadian rhythm and will provide greater restorative benefits. Healthy sleep supports cancer prevention by:

- Allowing cells time to repair DNA damage.
- Supporting normal production of hormones and other protective compounds involved in cellular repair.
- Strengthening immune system function.
- Reducing chronic inflammation.



Appropriate sun exposure also contributes to good health through the production of vitamin D. Adequate vitamin D levels have been associated with a lower risk of several cancers, including bowel, breast, prostate and lung cancer. The amount of sun exposure needed varies according to skin colour, the season, geographic location, and the UV index. As a general guide, brief exposure to direct sunlight on the face, arms, and legs—approximately one-quarter of the time it would normally take your skin to become sunburnt—is usually sufficient for many people. During the warmer months, it is advisable to avoid prolonged exposure during peak UV hours, generally between 10:00 am and 2:00 pm, or 11:00 am to 3:00 pm during daylight saving time.

A number of medicinal herbs have also been studied for their potential role in supporting cancer prevention and complementary cancer care. While laboratory and early clinical research is encouraging for several herbs, they should not be regarded as substitutes for conventional cancer treatment. If you are undergoing cancer treatment, always discuss herbal supplements with your healthcare team, as some herbs may interact with medications. Garlic has well-documented anti-inflammatory and antioxidant properties. Population studies suggest that diets rich in garlic are associated with a lower risk of several cancers. Laboratory studies have shown that garlic compounds may inhibit cancer cell growth, support immune function, and influence the activity of genes involved in cancer protection. Garlic retains the greatest concentration of beneficial compounds when consumed fresh (uncooked) or as gently processed, low-temperature dried preparations. Typical

amounts used include 1–4 fresh cloves daily or 2–4 grams of dried garlic. Astragalus is a traditional medicinal herb known for its immune-supporting properties. Laboratory and some clinical studies suggest it may enhance immune function, slow tumour growth, and improve quality of life during cancer treatment. Typical doses range from 2–6 grams of dried root daily. Triphala, an herbal blend made from three dried fruits, is one of the richest natural sources of plant antioxidants. Laboratory research has demonstrated anti-inflammatory, antiproliferative, and anti-metastatic effects against several cancer cell lines, including bowel, liver, pancreatic, stomach, breast, and ovarian cancers. Human research remains limited, but Triphala continues to be an area of active investigation. A commonly used dose is approximately 2.5 grams daily. Panax ginseng and Siberian ginseng contain compounds that have demonstrated antioxidant and immune-modulating properties. Experimental studies suggest they may inhibit cancer cell growth, reduce tumour spread, and promote cancer cell death. Typical doses are around 3 grams of dried root daily. St Mary's Thistle (Milk Thistle) has also been investigated for potential anticancer effects, largely due to its active compound, silymarin. While laboratory studies have shown promising antioxidant and anti-inflammatory activity, clinical evidence in humans remains limited, and its role in cancer prevention or treatment has not yet been well established. Traditional doses range from 1–4 grams of dried seeds daily.



Preventing & Assisting Cancer Treatment Prescription

- Put Your Health in God's Hands
- Manage your Mindset
- Whole-Food-Plant Based Diet
- Include Plant Smoothies
- Drink Plenty of Water
- Anti-inflammatory Cooking
- Avoid Smoking & Alcohol
- Exercise
- Adequate Sleep
- Appropriate Sunlight

