

Melanoma

Australia has the highest rate of skin cancer in the world.

Melanoma is one of three main skin cancer types accounting for about 5% of all skin cancers. It was the fourth most common cancer amongst men and women in Tasmania in 2003, with 220 people diagnosed that year.

There were 28 deaths from melanoma in Tasmania the same year.

If diagnosed and treated early, the survival rate for people with melanoma is high.

Structure and function of skin

The skin is the largest organ of the body. It has several important functions. It acts as a protective layer against injury and disease and also regulates our body temperature and maintains its hydration.

The skin consists of three layers:

- the **epidermis** or the outer layer
- the **dermis** or the inner layer
- the subcutaneous fat layer.

The **epidermis** is made up of cells that produce **keratin**, a substance that covers the outside of the skin and resists heat, cold and the effects of many chemicals.

The cells in the epidermis also produce **melanin**, the substance that gives our skin its colour. Melanin is able to absorb ultraviolet light and provide some protection from its damaging effects.

The **dermis** is a tough, elastic structure that contains sweat and oil glands, hair follicles, nerves and blood and lymph vessels.

Melanoma is most commonly found on men's trunks and women's legs

What is melanoma?

Melanoma, like other cancers, is a disease of the body's cells. Normally, the body's cells grow and divide in an orderly manner so that worn out or injured tissue is replaced or repaired. Sometimes cells begin to grow and behave in an abnormal way and grow into a mass or lump of tissue called a **tumour**.

Tumours can be **benign** (non-cancerous) or **malignant** (cancerous). Benign tumours do not spread to other parts of the body.

Malignant tumours or cancers can invade neighbouring tissues and may also spread to other parts of the body. This can result in new cancer deposits called **secondaries** or **metastases**.

The **epidermis** consists of different types of cells. They are: **squamous cells**, **basal cells** and **melanocytes**.

Skin cancers are named after the type of cells from which they originate.

Melanoma occurs in the **melanocytes** (or pigment cells).

It is the most serious of all skin cancers as it may be fast growing and it can spread to other parts of the body.

Melanoma can occur in the skin anywhere on the body, however, it is more common in some sites than others eg. in males it is most common on the trunk, while in females the legs are the most common site.

Rare melanomas can occur in the eyes, the nervous system and the mucous membrane.

Signs and symptoms of melanoma

The first sign of a melanoma is a change in the colour, size and shape of an existing mole.

The letters **ABCD** may help you remember the signs of change to watch out for:

- | **A**symmetry - the shape of one side of the mole may not match the other.
 - | **B**order - the edges of the mole may be irregular, and not well defined.
 - | **C**olour - the colour is often uneven. Shades of black, brown, tan or other colours like red, pink or blue may be present.
 - | **D**iameter - there is usually an increase in the size of the mole.
- It may be that only one or all four of the above features are present as melanomas can vary greatly in the way they look.

Stages of melanoma

Like other cancers, melanoma can spread to other areas of the body. The extent or stage of melanoma depends upon the level of spread at the time of diagnosis. The treatment plan for a person with melanoma would therefore take into account the location and thickness of the melanoma, how deeply the melanoma has invaded the skin and whether the melanoma has spread to the lymph nodes or to other parts of the body.

What causes melanoma?

Melanoma is associated with exposure to ultraviolet radiation from the sun. Artificial ultraviolet light, from solariums for example, can also cause skin damage and increase the risk of melanoma. Melanoma seems to be related to episodes of sunburn that are short and sharp, especially during childhood which is a crucial time for sun protection. It is also associated with prolonged exposure to ultraviolet radiation. The following are risk factors that increase a person's risk of melanoma.

Fair complexion

People with fair skin are at a greater risk of developing melanoma because there is less melanin in their skin, and therefore less protection against ultraviolet radiation.

Number of moles on skin

Having many moles (more than 10 on the arms and more than 200 on the body) also increases the risk.

Dysplastic nevi

The presence of abnormal, precancerous moles or **dysplastic nevi** increases one's risk of melanoma. The larger the number of dysplastic nevi present, the greater the risk.

History of melanoma

People who have already been diagnosed with melanoma are at high risk for developing melanoma again.

Family history and genetic predisposition

About 10% of people with melanoma in Australia have a first degree relative (parent, child, brother or sister) who also has had a melanoma. This may be due to family members being exposed to similar environmental influences. It may also be due to an inherited faulty gene in the family that causes members to be more susceptible to developing cancer.

The more close relatives with melanoma, the higher the risk.

Age

Melanoma is diagnosed more often in older adults but also occurs in young adults and occasionally in teenagers. It is the most common cancer in people aged between 15 and 44 years and it is the major cause of cancer death in young adults.

What can be done to reduce the risk of melanoma?

It is never too early or too late to protect your skin. Here are a few simple steps that can protect you from ultraviolet radiation:

- | Avoid the sun when the ultraviolet radiation is at its strongest, between 10am and 3pm.
- | Seek shade
- | Slip on a long sleeved shirt, preferably with a high collar and made from closely woven material.
- | Wear a broad brimmed hat when outside.
- | Apply SPF 30+ sunscreen 20 minutes before going outside and reapply it regularly. Water resistant sunscreen is best if you are active. Remember to reapply it regularly, especially after swimming or exercise.
- | Wear sunglasses with an EPF of 10 or which comply with the Australian Standards AS1067.

Early detection

As skin cancers are visible, they can be seen and checked as soon as they develop. Early symptoms of skin cancer may seem quite minor but any suspicious spot should be seen by a doctor immediately. In particular, a new or existing mole or freckle that changes in colour, shape or size over a period of weeks to months should be checked.

Diagnosis and treatment

Surgery

If a doctor suspects that a mole on the skin is melanoma, a **biopsy** of the mole is taken. The biopsy is sent to a laboratory in order to confirm whether the mole is a melanoma or not. If the melanoma is at an early stage the whole melanoma is removed and no further treatment is required.

A larger melanoma that has grown deeper into the skin may require admission into hospital for surgery under a general anaesthetic.

During surgery it may be necessary to remove a section of normal looking skin around the cancer.

Skin grafts

Sometimes it is necessary to perform a skin graft to cover the wound. This involves the removal of skin from another part of the body to replace the skin around the area that has been removed in the operation.

Lymph node biopsy and resection

A **fine needle aspiration biopsy** or **sentinel lymph node biopsy** may be performed if the doctor suspects that the cancer has spread to the lymph nodes.

A **fine needle aspiration biopsy** involves the insertion of a fine needle into the lymph node suspected of being affected by cancer. The tissue removed is sent to a laboratory to confirm whether there are cancer cells present. If cancer is found the lymph nodes are surgically removed.

A **sentinel node biopsy** involves the insertion of a harmless dye into the melanoma site. The dye is taken up by the sentinel node(s), or the first lymph node(s) that the cancer is likely to spread to. If found to be positive for cancer the sentinel node(s) as well as the surrounding lymph nodes are surgically removed.

Radiotherapy

Radiotherapy is the use of x-ray beams to kill cancer cells. Treatment is planned to minimise the effects on normal cells.

Radiotherapy may be used following removal of the lymph nodes. It may also be used for certain types of melanoma at the site where it was removed.

Some side effects of radiotherapy are temporary and may include nausea, headache and tiredness.

The skin in the treatment area may become sore and inflamed.

Discomfort can be minimised by avoiding clothes that irritate the skin and

by taking care with gentle washing and avoiding shaving.

Chemotherapy

This is the treatment of cancer by drugs; the aim is to kill cancer cells, whilst doing the least damage to normal cells. The side effects of chemotherapy depend mainly on the drugs and the dosages given.

They may include nausea, vomiting, tiredness and hair loss. Chemotherapy is used in treating advanced melanomas.

Prognosis/outlook

The majority of people with melanoma can be treated very effectively if the melanoma is diagnosed at an early stage, when the cancer is confined to the epidermis and upper dermis.

The location of the melanoma on the body appears to have a bearing on one's prognosis.

Melanomas on the limbs have a better outlook than those on the trunk, head or neck.

Follow-up

People who have been successfully treated for melanoma still have a greater than average chance that another melanoma will appear.

The risk of recurrence is greater for patients whose melanoma was thick or had spread than for patients with very thin melanomas.

It is important that your doctor examines your skin at regular intervals if: | you have ever had a melanoma | you have a family history of melanoma | you have many moles or dysplastic nevi.

Seeking help and support

People react in different ways when they are diagnosed with melanoma and following treatment. It is quite normal to experience intense anxiety, grief and depression.

It may be helpful to talk about your feelings with your family and friends. It may also be beneficial to talk to a caring professional such as a social worker, nurse, psychologist or chaplain.

