

Activity 22: Outdoor jobs

Aims

- To increase students' awareness of occupations with high risk of exposure to the sun and UV radiation.
- To present skin cancer as an occupational health and safety issue.

Assessment outcomes English 4.3; H&PE 4.6, 4.7; S&E 4.10, 4.11

Reference fact sheets Fact sheet 1: Skin cancer
See also Safeguards Information Sheet after Worksheet 22

Worksheets Worksheet 22A: Outdoor jobs
Worksheet 22B: Being safe at work

Teacher guidelines

- 1 Distribute Worksheet 22A: Outdoor jobs. In small groups, brainstorm a list of 10–15 jobs which involve outdoors work for part or all of the time.
- 2 Alongside each job, rank the risk of skin cancer according to the time spent in the sun as either high, medium or low. Students should reflect on their own experiences of work in part-time jobs, holidays or work experience, or experiences of family or friends.
- 3 Discuss what measures should be undertaken for workers to be protected, especially for those jobs involving high or medium risk. Safety measures could include wearing hats, using sunscreen, wearing clothing which covers exposed skin, providing shade and reorganising work schedules so that workers are not in the sun between 10 am and 3 pm.
- 4 Ask students who should be responsible for protecting workers from over-exposure to UV radiation – the employers, the workers or both? Remind them that both employers and employees have dual responsibility for health and safety issues. This issue could form the basis of a writing task, class discussion or a class debate.
- 5 Distribute Worksheet 22B: Being safe at work and copies of 'Preventing Skin Cancer' provided by Safework SA. This relates to safe practices for preventing skin cancer in the workplace. Either discuss this information or ask students to read through it, then students can answer the questions provided.



Worksheet 22A: Outdoor jobs (cont.)

- 2 Who do you think should provide the sun protection materials for the worker (the worker or the employer)? Why?

- 3 What knowledge and strategies related to sun protection would someone who was employed in a high-risk occupation need or need to develop?

- 4 Some workers are generally not considered to be outdoor workers (e.g. bus drivers, taxi drivers). When would these workers require sun protection? Consider times of the day or month and particular situations?



Worksheet 22B: Being safe at work

The information 'SAFEGUARDS Preventing Skin Cancer' provided at the end of this worksheet is from SafeWork SA. The Occupational Health, Safety and Welfare Act (1986) requires employers to 'provide a safe working environment.' Workers also have an obligation to protect their own health and safety. Both employers and employees are becoming aware of the responsibility for providing and using sun protection strategies.

Read the 'SAFEGUARDS Preventing Skin Cancer' information sheet and then answer the following questions:

Questions:



1 Why do outdoor workers have a high risk of developing skin cancers?

2 What does the Occupational Health, Safety and Welfare Act, 1986 require:

a) employers to do?

b) workers to do?

3 What are four ways to reduce the risk of skin cancer by minimising exposure to the sun?



4 There are certain types of hats recommended in the article i.e. broad brimmed hats with a brim of 10–12 cms. Why are these types of hats recommended?

5 What type of sunglasses are recommended?

6 Write down four points that are made about using sunscreen.

7 a) What types of protective clothing should be worn?

b) What other points are made about protective clothing?

8 The information in this document offers guidance to employers and workers. Whose responsibility do you think it is to ensure each person working outdoors is protected from the sun? Explain why.

9 To what extent do you think the workplace could be held responsible if an employee develops a skin cancer? Explain why.



Fact sheet 1: Skin cancer

Structure and function of the 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.

What is cancer?

Cancer is a disease of the body's cells. Normally the body's cells grow and divide in an orderly manner so that growth and healing of injured tissue occurs.

Occasionally some cells behave in an abnormal way and may grow into a lump which is called a tumour.

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

A malignant tumour is made up of cancer cells. These cells have the ability to spread beyond the original site and if left untreated may invade and destroy surrounding tissues. Sometimes cells break away from the original [primary] cancer and spread to other organs. When these cells reach a new site they may form another tumour often referred to as a secondary cancer or metastasis.

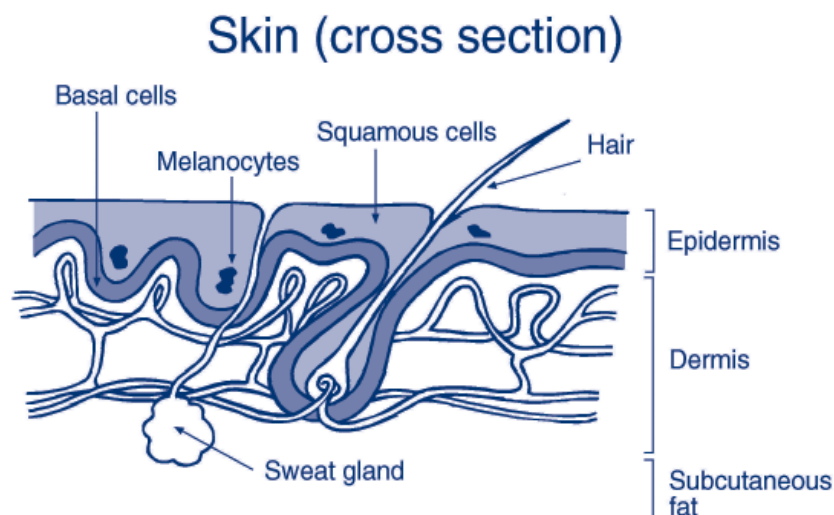
What is skin cancer?

Skin cancer is a type of cancer that begins in the basal layer of the epidermis. There are three main types of skin cancer: basal cell carcinoma, squamous cell carcinoma and melanoma. Melanomas start in the pigment cells [melanocytes] while basal and squamous cell carcinomas develop from the epidermal cells. [Carcinoma is a term used for some types of cancer].

Basal cell carcinoma [BCC]

Basal cell carcinomas are the most common but least dangerous type of skin cancer. They grow slowly over months to years but if left untreated a deep [rodent] ulcer may form. Fortunately they very rarely spread to other parts of the body. If you have one basal cell carcinoma you may have others, either at the same time or in later years.

Basal cell carcinomas are most commonly found on the face, neck and upper trunk. They appear as a lump or scaly area and are pale, pearly or red in colour. They may have blood vessels on the surface.



Fact sheet 1: Skin cancer (cont.)

Squamous cell carcinoma [SCC]

Squamous cell carcinomas are less common but more dangerous than basal cell carcinomas. They usually grow over a period of weeks to months. These cancers may spread to other parts of the body [metastasise] if not treated promptly.

Squamous cell carcinomas appear on areas of the skin most often exposed to the sun. They have scaling, red areas which may bleed easily and ulcerate, looking like an unhealed sore.

These common skin cancers generally occur in people over the age of 40. However basal cell carcinoma can occur in younger adults. The major cause of these skin cancers is sun exposure over many years.

Melanoma

Melanoma is the rarest but most dangerous skin cancer. If left untreated melanoma can spread to distant parts of the body to form secondary cancers or metastases.

Melanomas can appear anywhere on the body not only in areas that get a lot of sun. The first sign of a melanoma is usually a change in a freckle or mole, or the appearance of a new spot on normal skin. Changes are normally seen over a period of several weeks to months, not over several days. The changes are in size, shape or colour.

Melanoma can occur from adolescence onwards and is the most common cancer in the 15–44 year age group. In rare instances it may develop in children.

How common is skin cancer?

Skin cancer rates are higher in Australia than anywhere else in the world. It is the most common form of cancer in Australia affecting all age groups from adolescents upwards. Most common is basal cell carcinoma which accounts for about 75% of all skin cancers. Squamous cell carcinoma accounts for 20% and melanoma less than 5%.

One out of two Australians will develop a skin cancer in their lifetime – usually a basal cell carcinoma. In South Australia in 2003 the lifetime risk for developing melanoma was 1 in 31 for men and 1 in 39 for women.

Signs and symptoms

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.

The signs to look for are:

- A crusty, non-healing sore.
- A small lump which is red, pale or pearly in colour.
- A new spot, freckle or mole changing in colour, thickness or shape over a period of several weeks to months. Particular attention should be paid to spots that are dark brown to black, red or blue-black.

Diagnosis

If a doctor suspects a skin cancer, a biopsy may be performed. A biopsy is the removal of all or part of the affected skin, generally under local anaesthetic. It is a simple procedure that can be done by your family doctor or you can be referred to a specialist. The piece of skin that has been removed is then examined under a microscope. However in many cases the whole tumour is removed and a specimen is then sent to the laboratory for diagnosis.

Treatment

Common skin cancers



A variety of methods are available to treat the common skin cancers. Your doctor will choose your treatment by taking into consideration a number of factors. These will include the type of skin cancer, its size and position on your body and your personal preference.

Surgery can be used to remove the skin cancer and a small area of normal skin. This is quite simple and can usually be done under local anaesthetic.

Sunspots or pre-cancers can be briefly frozen with liquid nitrogen. This is called cryotherapy. Following cryotherapy the skin can become intensely red and peel away. Healing will begin in about a week.

Another technique is simply scraping off small common cancers [curettage] and burning the spot [cautery or diathermy].

Fact sheet 1: Skin cancer (cont.)

Radiation therapy is another option although less commonly used now. It causes a crusting sore which takes some weeks to heal and then leaves a scar.

Melanoma

Surgery is the preferred method of treatment for melanoma. Very thin melanomas are usually removed along with a small area of normal skin, under local anaesthetic.

For deeper melanomas a wide area of skin may need to be removed to make sure that all the cancer cells have been taken out. The local lymph glands may also be removed at this time.

Outlook

Virtually all basal and squamous cell carcinomas that are found and treated early are cured.

The majority of people with early melanoma which is appropriately treated do not have any further trouble with their disease. However because there is a chance that the melanoma will reappear, your doctor will examine you at regular intervals.

For further details on outlook you should speak to your own doctor who is familiar with your full medical history.

Causes of skin cancer

The major cause of skin cancer is exposure to the ultraviolet rays of the sun over many years.

Sunlight exposure

Childhood exposure to the sun is an important factor in the development of skin cancer later in life. Research also suggests there may be a link between sunburn during childhood and melanoma in adulthood.

Occupation

People who work outdoors have a greater risk of developing the common skin cancers than indoor workers. This is because of their greater exposure to sunlight. Workers in some industries have to take precautions against other known causes of common skin cancers, such as arsenic, polycyclic hydrocarbons and a number of other chemical compounds.

Who is at risk?

Everyone is at risk of skin cancer, although people with skin that burns easily and rarely tans are at the greatest risk. Those who burn in early summer and then tan are also at high risk if they do not protect their skin. Unprotected skin, whether tanned or not, is likely to be damaged by the sun and may develop skin cancer later in life.

Skin type

Skin cancer is seen most often in fair skinned people who have lived in Australia all their lives. It is most common in people of Celtic [Scottish, Irish and Welsh] background. However it also occurs in people whose parents migrated from Southern Europe e.g. Greece or Italy and who have themselves spent all or most of their lives in Australia. This is because the Australian sunlight is very harsh.

Existing skin damage

Solar keratoses [sunspots] are dry, rough spots on the skin that are common in people over 40. They are not skin cancers but an indication that the skin has had enough sun exposure to develop skin cancer. People with keratoses should take particular care to protect their skin from the sun. Keratoses may progress and develop into SCCs.

They should also be examined to make sure a skin cancer is not present.

How can you reduce your risk?

- Minimise your time in the sun between 10.00 am – 3.00 pm.
- Use shade as much as possible when outdoors.
- Wear protective clothing - a wide brimmed hat and cover-up clothing.
- Apply SPF 30+ broad spectrum sunscreen to skin which isn't covered by clothing.



SAFEGUARDS



Information

PREVENTING SKIN CANCER

OBJECTIVE

To provide guidelines for outdoor workers on minimising the risk of skin cancer.

BACKGROUND

Exposure to ultraviolet radiation (UVR) from the sun is the major cause of skin cancers in Australia. Outdoor workers have a high risk of developing skin cancers, as they are continually exposed to UVR.

Exposure to UVR from the sun is at its peak between 10 am and 2 pm (11 am and 3 pm daylight saving time).

Clouds can reduce the intensity of direct UVR, but sunburn can still occur from scattered and reflected UVR.

Outdoor workers should check for:

Sun Spots are rough, dry and firm spots on the skin. They are not skin cancers, but they do show that your skin has received an overdose of UVR. Very occasionally, sun spots turn into cancers.

Basal Cell Carcinomas (BCCs) are the most common type of skin cancer. BCCs rarely spread internally. These small, round or flattened lumps are red, pale or pearly in colour and may have blood vessels over the surface.

Squamous Cell Carcinomas are less common than BCC skin cancers, but more dangerous, as they can spread. They are red scaly areas that may bleed easily and turn into ulcers. They can look like a sore that does not heal.

Melanomas are the rarest and most dangerous of all skin cancers. Melanomas can be fatal, though most can be cured when treated early.

A melanoma looks like a spot, unusual freckle or mole that changes colour, size and shape over weeks to

months. It can be dark brown, black-red, blue-black or a combination of these colours.

Melanomas can appear anywhere on the body – even in areas that have been protected from the sun.

IMPORTANT

If you have a freckle, mole or sun spot that changes shape, colour, size, itches or bleeds or doesn't heal – see your doctor!

STATUTORY REQUIREMENTS

Section 19 of the Occupational Health, Safety and Welfare Act 1986 requires employers to provide a safe working environment. Workers also have an obligation under Section 21 to protect their own health and safety.

RISK CONTROL MEASURES

The most effective way to reduce the risk of skin cancer is to minimise exposure to the sun.

- Change the way the outdoor work is carried out:
 - o Relocate outside jobs to a shady area.
 - o Erect a temporary shelter.
 - o Provide a shady area for lunch and tea breaks.
 - o Organise work to be carried out early or late in the day, when UVR is less intense.
- Wear a hat to protect the face, neck, ears and head (because the scalp can still burn on a hair parting). The skin on your head is one of the places where you can easily get skin cancer, so ensure you choose an appropriate hat:
 - o 'Broad brimmed' hats are best and should have a 10 cm to 12 cm brim.
 - o 'Legionnaires' hats have a flap at the back and will keep the sun off the back of the neck.
 - o Flaps can be attached to hard hats.
- Wear sunglasses to reduce the risk of eye damage. Ensure they comply with AS 1067, as not all sunglasses provide sufficient protection from

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ultraviolet radiation.

- Use a SPF 30+ sunscreen on any exposed skin.
 - o Apply sunscreen liberally (about ½ to 1 teaspoon for one arm) to clean, dry skin 20 minutes before going outdoors and re-apply regularly at 2 hourly intervals. You should also check the expiry date of the sunscreen.
 - o Store sunscreen in a cool, dry place.
- Wear protective clothing such as:
 - o Long-sleeved shirts with a collar to protect the back of the neck.
 - o Long pants or skirts.

Also note:

- o Clothes that you can see light through will allow ultraviolet rays through as well.
- o Light coloured clothes are cooler in summer as they reflect the heat.
- o Natural fibres such as cotton allow sweat to evaporate better than artificial fibres.

FURTHER INFORMATION

Australian Standards

Further information can be purchased from Standards Australia
Tel. 1300 654 646
Website: www.standards.org.au

SafeWork SA

GPO Box 465
ADELAIDE SA 5001
Tel. 1300 365 255
(If calling from a mobile phone or from interstate
tel. (08) 8303 0400)
Website: www.safework.sa.gov.au

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Safeguard **Preventing Skin Cancer** continued

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