Skin cancer and outdoor work.

A work health and safety guide.

Cancer information and support

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Cancer Council

Skin cancer and outdoor work: A work health and safety guide.

Developed on behalf of the National Skin Committee. Special acknowledgment to Karyn Knight, Cancer Council Victoria, together with contributions from the other state and territory Cancer Councils for the original publication.

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Contents.

Introduction.

Those who spend all or part of the day regularly working outdoors are at increased risk of skin cancer.[1] This is because the sun's ultraviolet radiation (UV radiation) is the major cause of skin cancer, including melanoma.[2] All skin tones can be damaged by exposure to UV radiation. Damage is permanent, irreversible and increases with each exposure.[3] Both high intensity and low intensity UV radiation exposure has been linked to an increased risk of skin cancer.[3, 4]

Under Victorian occupational health and safety legislation, employers, self-employed people and those with management or control of workplaces have a duty to protect health and safety by conducting their undertaking in a way, and providing and maintaining a working environment, that is safe and without risks to health. This includes risks that are associated with harmful levels of exposure to UV radiation that can lead to skin cancer.[5]

Implementing a comprehensive sun protection program that includes leadership buy-in and commitment, workplace champions and a range of simple and tailored protective measures, businesses can prevent UV-related injuries and reduce the suffering and costs associated with skin cancer—including reduced productivity, morale and financial returns.

Long term this will contribute to a culture of workplace safety that avoids incidents and injuries, improves workplace efficiency and builds staff retention.

Occupations and industries especially at risk due to the outdoor nature of the work include, but are not limited to:

- agricultural, farming and horticultural workers
- painters
- plumbers
- heavy vehicle drivers
- handypersons
- electrical and communications workers
- automobile drivers
- construction workers
- engineers
- civil contractors
- warehousing workers
- mining and earth resource workers
- carpenters
- vehicle trades workers
- emergency workers
- passenger transport workers
- machine operators
- scientists
- PE teachers and fitness instructors
- those who work around water—lifeguards, fishermen, marine workers
- outdoor council workers[6]

Purpose of this resource

This booklet outlines the relationship between exposure to UV radiation and skin cancer. It provides you with information and advice to understand and confidently implement good sun protection policies and practices in your workplace.

A comprehensive sun protection program is described, including various sun protection control measures presented as per the hierarchy of workplace hazard controls. Tips for success are included, along with a sample policy and practical resources, including a toolbox talk resource that may assist you with the development and implementation of your sun protection program.

The case for sun protection at work.

Australia has one of the highest rates of skin cancer in the world. Skin cancer, including melanoma and basal cell carcinoma and squamous cell carcinoma, is the most common cancer in Australia.

Despite being a highly preventable disease, two in three Australians will develop skin cancer by the age of 70.[7] In Australia it's estimated approximately 200 melanomas and 34,000 other skin cancers diagnosed each year are the result of UV radiation damage in the workplace.[8]

Outdoor workers receive between five and 10 times more UV radiation exposure than indoor workers. It is not surprising that those who spend long periods working in the sun have a higher than average risk of skin cancer. However, embedding workplace policies into everyday practice can significantly reduce the risk of skin cancer.

The harmful health effects of UV radiation

Exposure to UV radiation can damage the skin and eyes. Short-term damage can be visible, presenting as skin reddening, sunburn or a suntan, while other damage can take many years to surface, such as premature ageing of the skin and skin cancer.[9]

Sunburn and tanning

Sunburn is a radiation burn to the skin. In Australia, sunburn can occur in as little as 15 minutes on a fine January day.[10] All types of sunburn, whether serious or mild, can cause permanent and irreversible skin damage.

Tanning is a photoprotective response to UV radiation-induced DNA damage, causing more melanin (pigment) to be produced, thereby darkening the skin. A suntan is a sign of skin damage—not a sign of health—and every suntan contributes to an increased skin cancer risk.[11]

DID YOU KNOW

It is a common misconception that you can 'feel yourself getting sunburnt'. UV radiation cannot be seen or felt, so it can damage your skin without you knowing. In fact, it can take up to 24 hours for UV radiation damage to be seen and felt.

Solar keratoses and premature ageing of the skin

Solar keratoses are red, flattish, dry, scaling areas on the skin, also known as sunspots. Sunspots are a warning sign that a person is at higher risk of skin damage and skin cancer.

Most visible signs of ageing are the result of damage to the skin caused by exposure to UV radiation. This can include skin wrinkling, loss of elasticity, irregular pigmentation and altered skin texture.[3]

> *"The risk of exposure to solar UV radiation may not be obvious for some workers, for example vehicle drivers like taxi, bus, truck, delivery and courier services. Certain workers like physical education teachers may be in and out of the sun during the day so exposure may be intermittent. The accumulated exposure creates a risk to their health and safety."*
>
> — Stephanie Creagh, Director *Safe Work Australia*, 2018

Eye damage

Acute effects of exposure to UV radiation on the eye include photokeratitis (inflammation of the cornea and the iris) and photoconjunctivitis (inflammation of the conjunctiva), more commonly known as snow blindness or welder's flash. Symptoms range from mild irritation to severe pain.

Long-term exposure to UV radiation contributes to age-related macular degeneration and cataracts, both a cause of blindness. Long-term effects may also include pterygium (white or creamy opaque growth on the cornea), squamous cell carcinoma of the conjunctiva and cancer on the skin surrounding the eye.[4]


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Skin cancer: The facts

UV radiation is the major cause of skin cancer. Our body is made up of tiny building blocks called cells. Cells normally grow, divide, die and are replaced in a controlled way. Cancer occurs when the cells of the body are damaged, causing them to grow out of control.

Skin cancer can grow when skin cells are damaged. In most cases this damage is caused by overexposure to UV radiation.[4]

The top layer of the skin contains three different types of cells: basal cells, squamous cells and melanocytes. Skin cancer types are named after the type of skin cell in which the cancer develops.

The three types of skin cancer:

1. **Basal cell carcinoma (BCC)** is the most common type of skin cancer. It grows slowly over months and years and may damage nearby tissues and organs if left untreated.
2. **Squamous cell carcinoma (SCC)** is less common but grows faster. It may spread to other parts of the body if left untreated.

   Basal cell carcinomas and squamous cell carcinomas are often grouped together and called non-melanoma skin cancers.
3. **Melanoma** is the least common, but most dangerous type of skin cancer. Most skin cancer deaths are from melanoma. It is often fast growing and can spread to other parts of the body where it can form a secondary cancer.[4]

DID YOU KNOW

Skin cancer is highly preventable: at least 95 per cent of all skin cancers are caused by overexposure to UV radiation. This means that if we reduce our exposure to UV radiation, we reduce our skin cancer risk. Both melanoma and non-melanoma skin cancers can appear anywhere on the body, not just sun-exposed areas.

Skin cancer: An occupational disease priority

Skin cancer can result from repeated and long-term exposure to UV radiation in the workplace.[12] UV radiation is, therefore, a workplace hazard that must be reduced as much as reasonably practicable. The most common cause of compensated cancer claims between 2000 to 2009 was sun exposure (51 per cent).[13] A total of 1,679 workers' compensation claims for sun-related injury/disease were made in Australia between 2009 and 2019, at a total cost of $63 million in compensation payments.[14] It is suggested that, given the lag time between UV radiation exposure and the development of skin cancer, it is likely compensation claims greatly understate the actual incidence of work-related skin cancer.

EMPLOYERS WARNED BY SKIN CANCER JUDGMENT

McKechnie and Military Rehabilitation and Compensation Commission - November 2017 - VETERANS' APPEALS DIVISION

A veteran from the Australian Defence Force has been awarded compensation for malignant melanoma for UV exposure which he said was caused, aggravated or accelerated due to his former service.

McKenchie suffered significant damage to his skin while employed by the Royal Australian Regiment from 1989 to 1990 and again from 1993 to 2002. This service included a lot of outdoor training exercises including in the Northern Territory. As a member of the military the claimant said they were seldom indoors but were not offered sunscreen.

In 1996 he noticed a small black lump on his right calf which was found to be a malignant melanoma. Again, in 2014 another suspicious spot appeared on his right groin which was found to be a Stage 4 metastatic melanoma. The second melanoma was deemed to be a recurrence of his previous melanoma removed in 1996. Medical evidence showed that the applicant's military service had "materially contributed in more than a minimal degree to the onset of the melanoma due to sun exposure" due to lack of sun protection training about the risk of overexposure to UV radiation and supply of personal protective equipment for UV exposure.

Legal obligations

Occupational health and safety legislation, specific to each Australian state or territory, has the clear objective of preventing illness and injury at work and saving lives.

All employers must protect workers by providing a safe working environment that is free of risks to health or safety. This includes taking proper steps to reduce overexposure to UV radiation for workers who spend time working outdoors.

Workers also have a duty to take reasonable care of their own health and safety and must cooperate with employers' efforts to improve health and safety in the workplace.[5]

To work safely in the sun, workers must follow workplace sun protection policies and procedures, attend training and follow instructions and advice provided, and use personal protective equipment (PPE) as instructed.

Other key documents providing technical advice and guidelines on sun protection for outdoor workers include:

- Radiation Protection Series 12 (RPS 12): Radiation Protection Standard for Occupational Exposure to Ultraviolet Radiation (2006)—Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). Visit **arpansa.gov.au** to obtain a copy.
- Sun protection for outdoor workers—Worksafe Victoria. Visit **worksafe.vic.gov.au** for a copy.
- Guide on Exposure to Solar Ultraviolet Radiation (UVR)—Safe Work Australia. Visit **safeworkaustralia.gov.au** to obtain a copy.

SKIN CANCER JUDGMENT: A WAKE-UP CALL TO INDUSTRY

15 August 2003 (SunSmart Victoria Program Media Release).

The verdict delivered in a landmark hearing against Boral Bricks today highlights the importance of sun protection in the workplace, according to Cancer Council.

A judge in the County Court today found that skin cancer is considered 'serious' and 'dangerous' enough for Eric Reeder, a retired truck driver, to sue his employer of 35 years for damages.

Mr Reeder has developed multiple skin cancers on his back, neck and shoulders and has had malignant melanomas removed from his back. He has to undergo regular treatment to remove multiple skin cancers.

SunSmart Campaign Manager, Craig Sinclair said, "Mr Reeder's case is the first court case in Victoria to establish that skin cancer can be a serious occupational injury.

"This ruling is very significant and is a wake-up call to all industries that employ outdoor workers... This case puts sun protection on the agenda with other well-known occupational health and safety issues."

Facts about ultraviolet radiation.

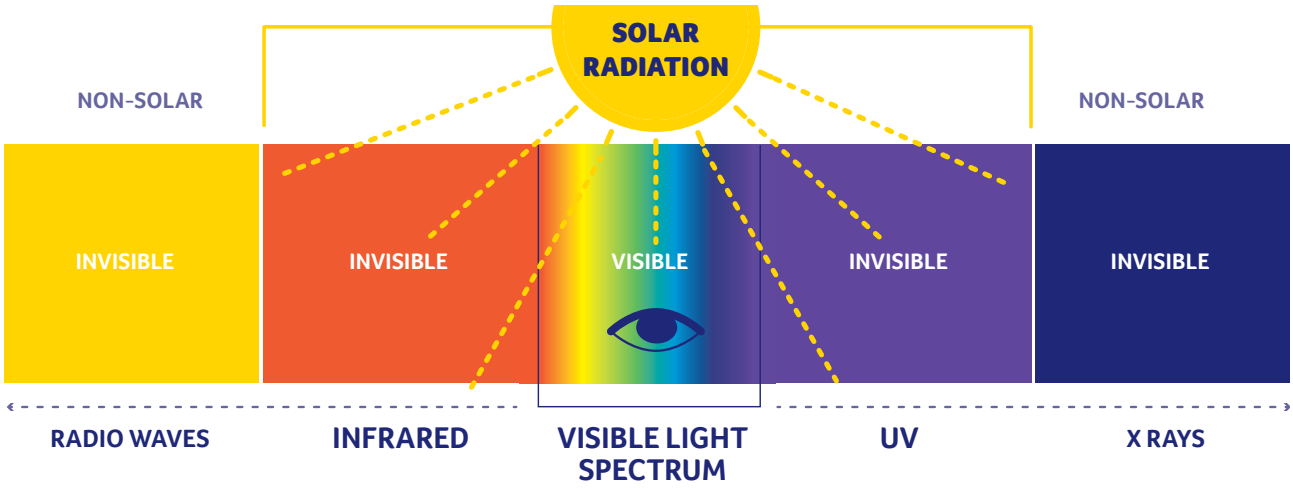

Figure 1: Electromagnetic radiation emitted by the sun.[8]

UV radiation is part of the electromagnetic spectrum emitted by the sun. But unlike the sun's light, which we can see, and the sun's infrared radiation, which we feel as heat, our senses can't detect UV radiation.[15]

UV radiation is divided into three types: UVA, UVB and UVC. While all UVC radiation is absorbed by the atmosphere, all UVA and about 10 per cent of UVB radiation does reach the Earth's surface. Both UVA and UVB are known causes of skin cancer.[7]

DID YOU KNOW

UV radiation from the sun:

- is high-energy radiation, capable of causing damage to living organisms
- is carcinogenic to humans
- cannot be seen or felt
- is not related to temperature
- can be high even on cool and cloudy days
- can pass through clouds
- can pass through loosely woven material
- can bounce off reflective surfaces such as metal, concrete, water and snow.

Factors affecting levels of UV radiation

UV radiation can reach you on the ground directly from the sun. It can also be scattered by particles in the air and reflected by ground surfaces such as metal, concrete, sand and snow.[16]

The total amount of UV radiation present in a given location is affected by:

- sun elevation—the higher the sun is in the sky, the higher the levels of UV radiation at the Earth's surface. Therefore, levels of UV radiation are highest in the middle of the day and during summer months
- latitude—the closer to the equator you are, the higher the levels of UV radiation
- cloud cover—UV radiation can pass through light cloud cover, and on lightly overcast days the intensity of UV radiation can be similar to that of a cloud free day. Heavy cloud can reduce the intensity of UV radiation. Scattered cloud has a variable effect on levels of UV radiation, which rise and fall as clouds pass in front of the sun
- altitude—at higher altitudes, the atmosphere is thinner and absorbs less UV radiation
- ozone—ozone absorbs some of the UV radiation that would otherwise reach the Earth's surface
- reflective surfaces—some building and ground surfaces such as polished aluminium, construction materials, lightly coloured concrete and water can reflect UV radiation back onto the skin and eyes.


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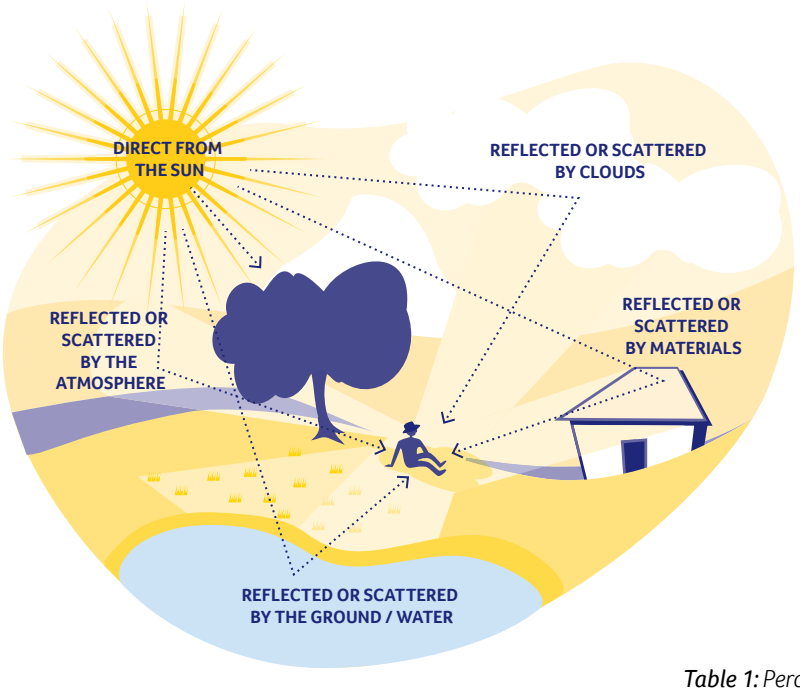


Figure 2: Factors affecting levels of UV radiation

Material	Percentage of reflected UV radiation
Grasslands	1-2%
Lawn, grass	2-5%
Soil, clay	4-6%
Asphalt road	4-9%
Beach sand, wet	7%
Boat deck	7-9%
Open water/ocean	3-8%
Concrete	8-12%
Beach sand, dry	15-18%
White house paint	22%
Sea surf, foam	25-30%
Snow	50-88%

Table 1: Percentage of UV radiation reflected by different surfaces.
Source: Cancer Council Victoria. Shade for everyone.

> *"For most of the day, there is as much scattered solar UV radiation from the sky as there is from the direct sun. Employers need to adopt a combination of sun-protective measures and controls that address both risks."*
>
> — Rick Tinker, Chief Radiation Health Scientist, ARPANSA, 2024

Measuring UV radiation

UV radiation is quantified on a UV Index and in UV doses to enable employers to manage the risk of overexposure. We cannot see or feel UV radiation. Therefore, when there is uncertainty about UV levels, a preventative approach should be taken.

The UV Index

Levels of UV radiation vary across Australia on any given day. The UV Index, a rating system adopted from the World Health Organization, describes the amount of UV radiation at the Earth's surface.

The values of the UV Index range from zero upward. The higher the number, the higher the levels of UV radiation and the less time it takes for damage to occur.[17]

Generally, when the UV Index is at 3 and above, sun protection is required. At this level, the amount of UV radiation reaching the Earth's surface is high enough to damage unprotected skin, which can lead to skin cancer. However, because UV radiation damage accumulates over time, it is recommended that outdoor workers—or those working near highly reflective surfaces—use sun protection year-round, even when the UV Index is below 3.

For the best protection, a combination of sun protection measures is needed (hat, covering clothing, sunglasses, shade and sunscreen).[18]

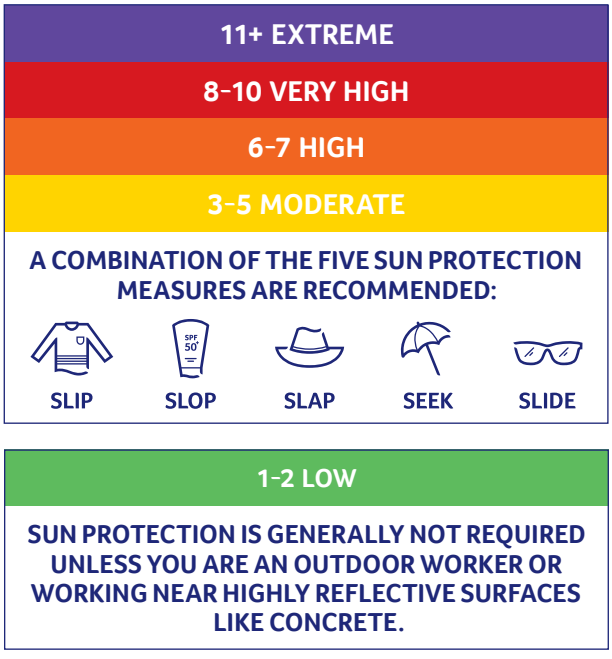


Figure 3: The UV Index.

UV radiation doses

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) reports solar UV radiation in Standard Erythemal Doses or SEDs. Exposure to one SED per day is considered safe for most people. A dose of two SEDs can be enough to cause a burn for people with pale skin. When the UV Index is extreme, this dose can be delivered in 12 minutes or less.

The graphs below show the number of SEDs—hourly and the total—that can be accumulated on a winter's day (Figure 4) versus a summer's day (Figure 5).

As you can see, from the orange line showing recommended maximum daily dose of 2 SED, the amount of hourly and total exposure in both winter (total of 9 SED on this day) and summer (total of 63 SED on this day) are enough to damage unprotected skin and eyes.

Visit **arpansa.gov.au** to view hourly and daily accumulated **UV Dose Reports** for all capital cities in Australia in SEDs.

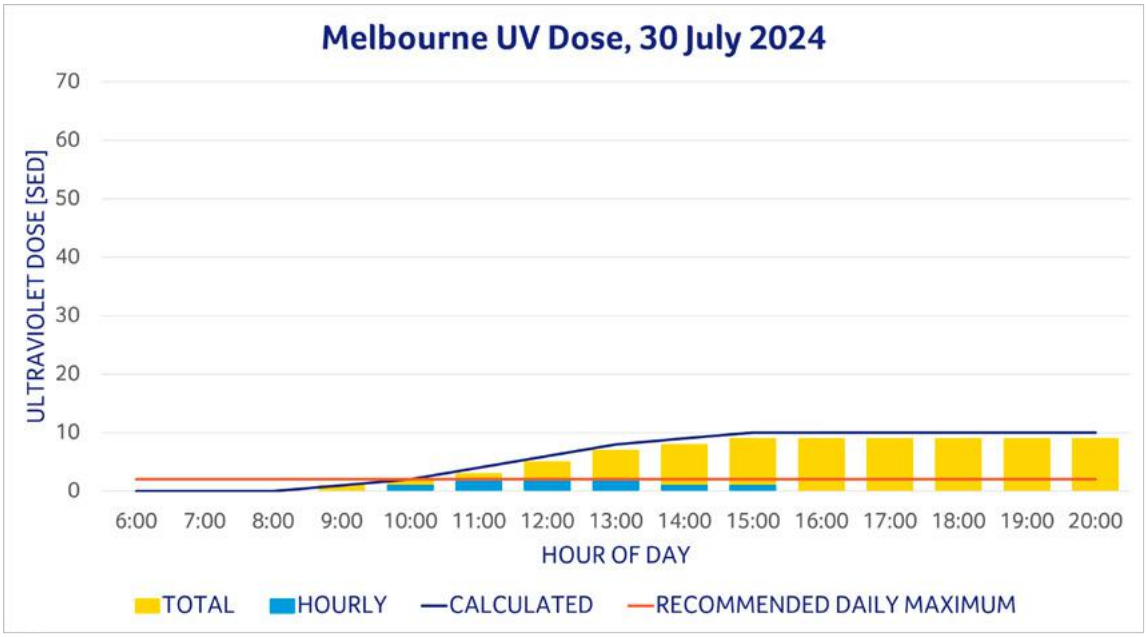


Figure 4: Hourly accumulation of SEDs on a winter day with maximum UV Index of 2. Total: 9 SEDs.

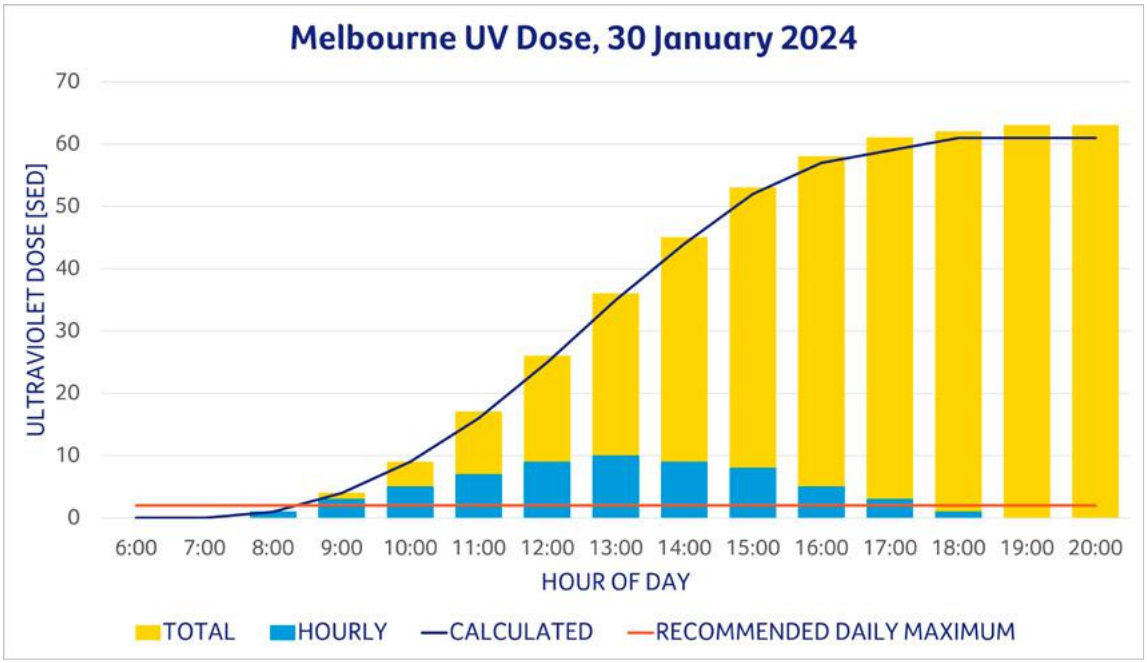


Figure 5: Hourly accumulation of SEDs on a summer day with maximum UV Index of 10. Total: 63 SEDs.

The sun protection times

The sun protection times are a forecast of when the UV Index will be 3 and above for that day, which means sun protection measures are recommended, including a hat, covering clothing, sunscreen, shade and sunglasses. Daily sun protection times and UV data can be found at:

- SunSmart website (**sunsmart.com.au**)
- Cancer Council website (**cancer.org.au**)
- Bureau of Meteorology website (**bom.gov.au/uv**)
- Australian Radiation Protection and Nuclear Safety Agency website (**arpansa.gov.au**)

The sun protection times are reported daily in some television and radio weather forecasts and in newspapers around Australia. They are also available from the following SunSmart tools.

The SunSmart widget

The SunSmart widget shows the daily sun protection times and can be displayed on a workplace intranet or website as a reminder to workers to protect their skin. Using data supplied by the Bureau of Meteorology and the Australian Radiation Protection and Nuclear Safety Agency, the widget also shows the maximum forecast and real-time UV level for your location.

The SunSmart widget can be added to your workplace intranet pages by visiting **sunsmart.com.au/widget**

The SunSmart Global UV app

The free **SunSmart Global UV app** provides daily sun protection times and weather information for locations across Australia and the world. The app also includes daily sun protection time reminders, sunscreen calculator, a sunscreen reapplication reminder and information about UV radiation and sun protection.

It is free for mobile and tablet devices on the App Store and Google Play.

Photosensitivity

Photosensitivity is an abnormally high sensitivity of the skin or eyes to UV radiation. This can cause the skin to become damaged more easily, thereby increasing the risk of skin cancer.[18]

Photosensitivity is caused by some medical conditions, such as lupus, or ingestion, inhalation or skin contact with substances known as photosensitisers. Some substances that cause photosensitivity include industrial chemicals, medications, drugs, plants and some essential oils and fragrances.[18]

A risk assessment used to identify work situations where workers are exposed to UV radiation should also identify any photosensitising substances which may be associated with the work people do. Refer to the product Safety Data Sheet (SDS) for all products used in the workplace to identify any photosensitising substances. Individuals using medications should be encouraged to talk to their doctor or pharmacist about the risk of increased photosensitivity as a result of the medicine. Alternative medication may be available.

COAL TAR AND DERIVATIVES	
anthracene	phenanthrene
pitch	creosote
DYES	
acridine	fluorescin
bromofluorescein	methylene blue
eosine	rhodamine
erythrocin	rose bengal
CHLORINATED HYDROCARBONS	
chlorobenzols	triphenyls
diphenyls	
PLANTS	
bergamot	fennel
bind weed	fig
buttercup	lemon
chrysanthemum	lime
dill	St John's Wort

Table 2: *Common substances that cause photosensitivity.*

Source: *Safe Work Australia.* ***Guide on Exposure to Solar Ultraviolet radiation (UVR)*** *2019.*

UV radiation and glass

There are many different types of glass. Each provides very different levels of sun protection.

Building glass

UVA transmission through building glass is highly dependent on the type of glass. Laminated building glass reduces transmission of UVA completely, while tempered building glass and smooth annealed building glass can allow around 70 per cent of UVA transmission.[19] Where windows are under deep eaves, verandas or awnings, the transmission of UV radiation is reduced.

Employers with building glass that is not laminated may want to consider window tinting if workers are spending extended periods of time close to a window that receives direct sun or have a photosensitive skin disorder.

Vehicle glass

Laminated windscreens, which are made of a tough plastic layer bonded between two panes of glass, have PF ratings of 50+. However, the plain window glass used in car side windows is usually about PF 12, which provides only moderate protection unless clear or tinted film is applied.[20]

A person sitting in a car can still receive significant exposure to UV radiation. Cancer Council recommends:

- employers consider tinting the side and rear windows of work vehicles and that work vehicles have air conditioning so that the side windows remain closed
- people who spend long periods of time in a car without tinting use sun protection (hat, sunglasses, long clothing and sunscreen).

For more information about window tinting, see the Cancer Council fact sheet on tinted windows at **www.cancer.org.au/about-us/policy-and-advocacy/prevention/uv-radiation/related-resources/tinted-windows**.
Note: Film and tint applied to car windows must meet state and territory regulations. The ***Window Film Association of Australia and New Zealand*** *has information on regulations.*

The difference between UV radiation and heat

In addition to UV radiation, the sun emits other forms of electromagnetic radiation, including visible light and infrared radiation. We can see visible light and we feel infrared radiation as heat. Temperature refers to infrared radiation—not ultraviolet radiation—so it is incorrect to use temperature as a guide to determine when sun protection is needed (see Figure 1 on page 7). As you can see in Table 3 below, when weather patterns move across a location the maximum daily temperature can vary substantially over several days, while the maximum UV radiation level remains relatively constant. Sun protection is needed on all of these days despite cooler conditions on some of the days. In fact, the highest UV radiation level was recorded on the coolest day.

DATE IN MELBOURNE	MAXIMUM TEMPERATURE (°C)	MAXIMUM UV INDEX
9 Feb 2024	21.2 degrees	10.8
10 Feb 2024	26.7 degrees	9.9
11 Feb 2024	33.2 degrees	9.9
12 Feb 2024	35.8 degrees	9.8

Table 3. Example of a week in Melbourne showing the maximum temperature and UV Index for each day (data from BOM).

The graph opposite (Figure 6) also shows how heat (temperature) and UV radiation act differently on one particular day. UV radiation (blue line) peaks in the middle of the day (at solar noon), whereas temperature (red line) peaks around 3 pm. They do not follow the same pattern; again demonstrating we cannot connect the risk of over-exposure to UV radiation to temperature. UV radiation can be high on cool or cloudy days. Notice the UV radiation is above 3 (green line) from 9 am to 5 pm on this day but the temperature remains hot past 8 pm that evening.

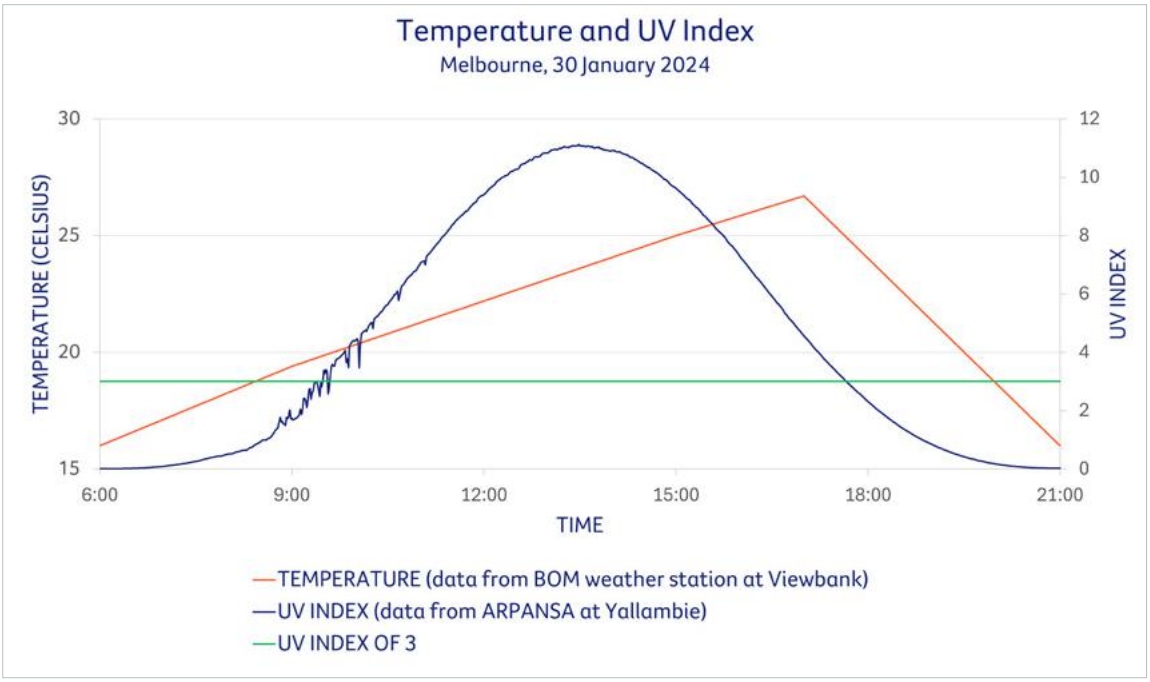


Figure 6: Temperature vs UV radiation between sunrise and sunset in Melbourne. Please note that this graph depicts a hot, cloud free day. This pattern of temperature and UV radiation behaviour may vary depending on the temperature and amount of cloud on a particular day.

Heat illness

Heat illness covers a range of medical conditions including heat stroke, heat exhaustion, heat cramps, skin rashes and worsening of pre-existing illnesses and conditions. Signs and symptoms of heat illness include nausea, dizziness, clumsiness, collapse and convulsions. If left untreated, heat illness can be fatal. (Refer to **www.safeworkaustralia.gov.au/doc/guide-managing-risks-working-heat**)

While exposure to UV radiation and heat illness are separate work hazards, the effect of heat must be considered when implementing a sun protection program for the following reasons:

- Working in hot conditions may contribute to non-compliance with sun protection measures. The use of personal protective equipment and clothing may decline due to heat discomfort.
- Inappropriately designed and heavy clothing worn for sun protection can contribute to a worker's risk of heat illness and reluctance to wear it. Employers should select material and a design that provides sun protection while keeping workers cool in hot conditions.

Heat and UV radiation: Control together

In some cases, control measures can reduce workers' risk of both heat illness and exposure to UV radiation. These include:

- provision of shade for outdoor work (shade may be portable, built or natural shade from trees)
- rest breaks in cooler, shaded or indoor areas (additional breaks may be needed)
- provision of long-sleeved shirts and long pants that are loose fitting and lightweight for air movement and sun protection
- changes to work schedules that allow heavy work to occur during cooler times of the day (this may also coincide with the times when UV radiation is less intense, such as early in the morning or later in the afternoon)
- relocating tasks either indoors or under shade
- the use of more people and rotation of workers between cooler, shaded tasks and hot outdoor work.

Protecting your workers with a tailored and comprehensive policy.

When it comes to health, prevention is far better than cure.

Sun protection measures should be demonstrated by everyone in the workplace including senior management and WHS teams to ensure sun safety is prioritised, supported and demonstrated from above. The identification of workplace champions is also critical to keep UV safety on the agenda and sustain momentum within the workplace.

In consultation with health and safety representatives and workers, employers should identify UV exposure hazards, existing controls, opportunities for improvement, and introduce new or enhance current control measures to maintain health and safety when working in the sun. Cancer Council recommends workplaces have a comprehensive and sustained sun protection program in place tailored to the workplace needs that includes:

- risk assessments: periodic assessment of the UV exposure risk to all workers
- sun safety control measures: the introduction and maintenance of multiple protective measures in line with workplace hazard controls
- sun protection policy: documentation of the program, including control measures, in a written policy
- role modelling by leadership: when supervisors and managers are actively involved in safety, workers are more likely to support and follow safe work procedure and raise issues
- training workers to work safely in the sun: the provision of information, instruction, training and supervision for workers
- good planning and a phased approach: forward planning and delivering change over multiple years to ensure sun safety is sustained over time
- monitoring program effectiveness: a process to determine the effectiveness of control measures and identify changes that may further reduce exposure.

Note: *See the appendices for a sample sun protection policy and other resources to assist you with implementing a workplace sun protection policy. Contact Cancer Council for additional resources and sun protection support.*

Risk assessment

Risk assessment is a step in the hazard management process used to identify:

- workers who are exposed to UV radiation
- situations or work systems where exposure to UV radiation occurs.

Factors affecting levels of UV radiation exposure

Total exposure to UV radiation during outdoor jobs depends on factors such as:

- geographical location of the job
- time of year when outdoor work occurs
- times of the day when outdoor work occurs
- pattern and length of exposure—exposure can occur in an ongoing episode or via a series of shorter episodes which add up over the day. Workers who spend all day outdoors are advised to use sun protection at all times, even when the UV radiation level is low
- availability and use of control measures
- presence of reflective surfaces
- presence of photosensitisers.

Note: *Refer to UV radiation risk control for outdoor work on page 37.*

> *"Even though darker skin offers some natural protection against solar UV radiation, people with a darker complexion are still not immune to developing skin cancers. Employers need to make sure that all workers take precautions in protecting themselves from solar UV radiation."*
>
> — Rick Tinker, Chief Radiation Health Scientist, ARPANSA, 2024

IMPLEMENTING SUN PROTECTION IN YOUR WORKPLACE: TIPS FOR SUCCESS

PLAN

- ✓ Gain management support for sun safety. Make your case by using Cancer Council sun safety resources and researching the issue in your organisation. Collect data and information on numbers of workers at risk, compensation claims for sun-related injuries, incidence of sunburn, and what similar organisations and industries are doing. Clarify your duty of care, legal obligations and importantly benefits of improved sun protection.
- ✓ Form a small working party. Seek representatives from across the organisation to investigate, plan, develop and guide implementation of your sun protection program. Health and safety representatives should be involved in the working party.
- ✓ Assess your UV risks and review control measures to understand where the greatest risk of UV exposure is in your workplace, what control measures are being used to prioritise areas for improvement.
- ✓ Consult workers and their representatives. Ask their opinions and needs, and conduct surveys and interviews with workers to learn more about attitudes, awareness of the issue and current behaviour in regard to sun protection.
- ✓ Design your sun protection program. Use the recommendations in this booklet to design the program and write your policy (see policy template at the back of this booklet). Circulate the draft to seek feedback and approval.
- ✓ Establish a budget to develop and implement the program. Associated costs might include new signage, UV safety training for staff, provision of UV protective PPE such as hats and sunscreen.

DO

- ✓ Officially launch the program so all workers are aware of its existence. Use newsletters and websites to publicise the program as widely as possible.

REVIEW

- ✓ Document the process. Keep a written record of what has been undertaken and the results of all actions. This will provide valuable information to review the program and policy later, and identify possible reasons for success or failure.
- ✓ Improve your program. Look at what has worked and what factors contributed to its success. Apply these learnings to areas that need improving, then think about what can be done next.

Sun protection measures

Once the risk has been assessed, employers and workers should work together to minimise the risk.

A comprehensive sun protection program should include the introduction of protective measures in line with workplace hazard controls, including:

- engineering controls, which are measures that reduce exposure to UV radiation by a physical change to the work environment
- administrative controls, which are measures that reduce exposure to UV radiation by a change in work procedure and the way work is organised
- personal protective equipment and clothing, which are measures that reduce exposure to UV radiation by providing a personal barrier between individual workers and the hazard.

Remember: For the best protection from UV radiation damage, use a combination of sun protection measures including a hat, sunglasses, covering clothing, shade and sunscreen.

Engineering controls

Providing shade, modifying reflective surfaces and using window tinting on vehicles are all examples of engineering controls that reduce workplace exposure to direct and indirect sources of UV radiation.

Provide shade

Shade is one of the most effective forms of sun protection for outdoor workers and can reduce 50 per cent of direct UV radiation. Shade can come naturally from trees and shrubs, or artificially from permanent or portable structures, which can be easily erected and adapted to suit different types of equipment and workplaces.

Although some forms of shade can initially be expensive, the cost and health benefits are long term. Even if it is difficult for work to occur in the shade, provision should be made for shade during breaks, especially lunch breaks.

When considering shade options to protect workers from UV radiation, keep in mind the following:

- The quality of shade from natural sources such as vegetation depends on the density of the foliage, the size of the canopy, the shape of the vegetation and how far the canopy is from the ground.
- Choose shade that blocks as much of the sky as possible to minimise reflection of UV radiation off other surfaces and under the shade.
- There are different types of shade materials. Look for shade fabric that has a UVE (Ultraviolet Effectiveness) rating of 95+ per cent for 'most effective' protection.
- In general, the larger the structure that is providing shade, the more protection provided.
- Position under the shade is important. Levels of UV radiation are greater near the edge of shaded areas than at the centre.
- UVE ratings for shade apply to shade fabrics only. The overall protection provided also depends on the design of the structure itself, its placement relative to the sun and how it is used.
- Portable shade offers limited protection. It can provide a quick and cheap solution to shade small numbers of people, and is ideal for places where no other shade options are available. Position the portable shade to allow occupants to work away from the sides and/or openings.
- Existing shade at the worksite, such as buildings, trees and other structures, may provide shade for workers. Look to relocate jobs to take advantage of existing shade if possible.

You can never rely on shade alone. A person working in the shade may still receive a substantial amount of exposure from indirect sources of UV radiation such as reflection from nearby surfaces. Always combine shade with personal sun protection measures (hats, covering clothing, sunscreen and sunglasses).

Modify reflective surfaces

Some ground and building surfaces reflect UV radiation.

MATERIAL	LEVEL OF REFLECTED SOLAR UVR (%)
Grasslands	0.8-1.6
Lawn	2.0-5.0
Open water	3.3
Soil, clay/humus	4.0-6.0
Asphalt—new black roadway	4.1
Wood, wood boat deck	6.6
Wet beach sand	7.1
Open ocean	8.0
Asphalt—old grey roadway	8.9
Fibreglass boat deck	9.1
Concrete, footpath	8.2-12.0
Dry beach sand	15.0-18.0
White house paint	22.0
Sea surf/white foam	25.0-30.0
Snow old/new	50.0-88.0

Table 4: *Level of reflected solar UVR (%) of different materials.*

Source: *Safe Work Australia. Guide on Exposure to Solar Ultraviolet Radiation (UVR), 2019.*

When considering changes to reduce exposure to indirect UV radiation from reflective sources, keep in mind the type and colour of the surface reflects the UV radiation differently. As a rule of thumb, surfaces that reflect glare well will also reflect UV radiation well. Consider:

- surface type—soft and rough, or natural surfaces (e.g. grass, soil) reflect less UV radiation than hard and/or smooth surfaces (e.g. snow, white house paint)
- colour—bright colours reflect more UV radiation. Direct UV radiation exposure can be reduced by simply painting a surface a darker colour.

Consider window tinting

Clear or tinted films applied to the side windows can substantially reduce the amount of UV radiation transmitted into a vehicle. The level of protection varies with different products, so check with the product supplier.

Applying films and tints will only be effective if the windows are closed, so air conditioning of vehicles may also be required to keep vehicles cool. See page 12 for more information on UV radiation and glass.

Check with the **Window Film Association of Australia and New Zealand** website or your state government department that manages vehicle services for guidelines and specifications on window tinting your vehicle.

Administrative controls

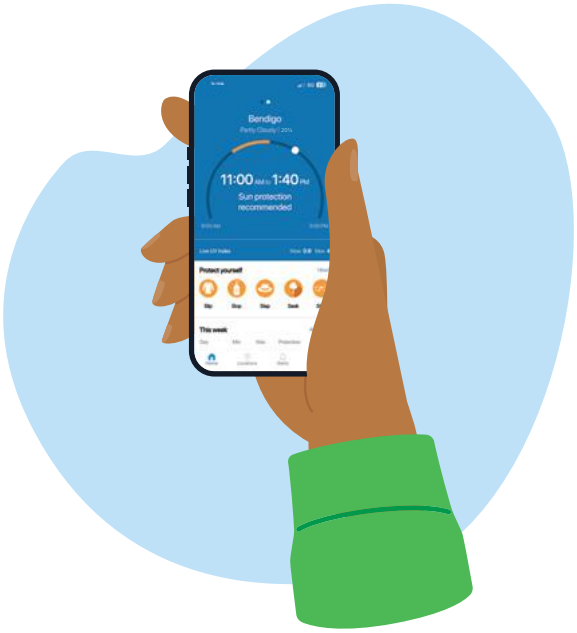
An effective way to protect workers is to encourage them to minimise the amount of time spent working in the sun, particularly during the middle of the day, when UV radiation levels are strongest.

Reschedule outdoor work programs

When considering changes to outdoor work schedules to minimise exposure:

- Plan work routines so outdoor tasks are carried out earlier in the morning or later in the afternoon, when UV radiation levels are lower.
- Plan work routines so indoor or shaded tasks are carried out in the middle of the day, when UV radiation levels are strongest.
- Move outdoor tasks indoors or into shaded areas, where possible.
- Share outdoor tasks and rotate employees so the same person is not always outside for long periods of time.

Refer to **sunsmart.com.au** for more information on types of shade, effective shade planning and shade development.



Use the SunSmart Global UV app and widget

Encourage workers to check the UV radiation level every day. The SunSmart Global UV app and widget provide the daily sun protection times for locations across Australia. Check for the location closest to your workplace. Visit **sunsmart.com.au/app** for more information.

To better communicate the UV radiation level to workers, you can:

- Send all workers a daily text message or email reminder of the maximum UV radiation level that day or encourage workers to download the free SunSmart Global UV app to check the UV radiation level and set up reminders.
- Embed the SunSmart widget on your intranet. Remind workers to check the maximum UV radiation daily.
- Display a sign showing the daily maximum UV radiation level at key worksite entrance and exit points and on bulletin boards in workers' common areas.
- Make sun protection reminders during the day.

Calculated maximum UV radiation level and real-time UV radiation levels are available for Melbourne, Canberra, Sydney, Newcastle, Brisbane, Gold Coast, Townsville, Darwin, Alice Springs, Perth, Adelaide, Kingston (Tas), Emerald (Qld), as well as Macquarie Island, Casey, Davis and Mawson Australian Antarctic stations from **Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)**. Live UV radiation levels for these locations are also available on the SunSmart Global UV app and widget.

The UV radiation level varies in Australia by location. Get the UV radiation forecast for your area from the weather section of some newspapers; websites, including **SunSmart**, **MyUV**, **UV Daily**, **Cancer Council**, and **Bureau of Meteorology** (BOM); and apps, including the SunSmart Global UV app and BOM weather app.

Personal protective equipment and clothing

The use of personal protective equipment (PPE) and clothing with regard to sun protection includes provision and use of:

- sun-protective work clothing
- sun-protective hats
- sunglasses or UV-protective safety glasses
- sunscreen and UV-protective lip balm.

When choosing sun protection PPE, consider the type of outdoor work being performed. The design must balance sun protection with the need to stay cool in hot conditions.

Workers must be trained in the correct use of all PPE. It is important that design or usage does not create a secondary hazard, such as loose clothing becoming caught in machinery. Sun protection PPE should always be used in combination with other control measures where possible.

Sun-protective work clothing

The most effective barrier between skin and the sun is clothing. The overall protection provided by clothing depends both on the material from which it is made and the design.[7]

When selecting sun-protective clothing for outdoor workers, keep in mind:

- Different types of fabric provide different protection. Closeness of weave, colour and condition can affect the ability of material to absorb UV radiation.
- Fabrics may carry a swing tag with a UPF (Ultraviolet Protection Factor) rating. These fabrics have been tested to determine how effective they are at blocking UV radiation. The higher the UPF rating, the more protection provided. UPF50+ provides excellent all-day protection. Fabrics that do not carry a UPF rating do not necessarily offer less protection. It just means they haven't been tested for sun protection. All clothing and sun protection products that have been tested and approved as meeting the Australian Standard for UPF protection can be sold with an ARPANSA swing tag.
- The clothing should cover as much skin as possible. Long pants and shirts with a collar and long sleeves provide the best coverage.
- Keeping cool is also important. Specially designed work clothing is now available that is lightweight and cool and minimises heat stress, yet still provides maximum sun protection. In the heat, it is important that garments draw perspiration away from the body to help the body stay cool.

When selecting sun–protective clothing when working in hot conditions, you should:

- Choose medium to dark fabric colours as they absorb more UV radiation than light colours and are cooler than black. A UPF50+ will guarantee protection, regardless of colour.
- Choose long sleeves and long pants, as they offer the best protection. Short sleeves or shorts are not recommended.
- Choose a shirt made with a high percentage of natural fibre (e.g. cotton, wool, bamboo), because it's more comfortable than synthetic materials.
- Look for shirts with lots of well-placed venting, but not large amounts of mesh where the UV radiation can penetrate to the skin beneath. Armpit vents are a good idea as they allow air flow and are unlikely to be exposed to direct UV radiation.
- Replace clothes once the material becomes worn as thin material will allow UV radiation through.
- Look for ripstop fabrics, such as nylon, as they are both lightweight and hard wearing.
- Consider the effects of clothing on potential heat stress.

Sun-protective hats

A sun-protective hat is one that shades the face, head, ears and neck. As with clothing, the overall protection provided depends on the material from which the hat is made, together with the design.

When selecting sun-protective hats for your outdoor workers, you should:

- Choose a hat with a UPF50+ rating. As with clothing, hats will carry a swing tag if the material has been tested to determine how effectively it blocks UV radiation. If it does not have a UPF rating, choose a hat with a tight weave—if you can see through the hat material, UV radiation will get through.
- Choose a broad-brimmed, bucket or legionnaire-style hat for best protection. Research has shown that broad-brimmed and bucket hats provide the most sun protection for the face and head. Legionnaire hats provide satisfactory sun protection and are more suitable when work involves a lot of bending.
- Avoid baseball caps as they do not provide adequate protection from UV radiation. Baseball caps are not recommended as they leave most of the face, neck and ears unprotected as demonstrated in ***Figure 7***.
- Look for broad-brimmed hats with a brim of at least 7.5cm.
- Look for bucket hats with a deep crown, which sit low on the head and have an angled brim of at least 6cm.
- Look for legionnaire-style hats with a flap that covers the neck. The side of the flap should overlap at the peak to provide protection to the side of the face.
- Improve the sun protection of hard hats and helmets with attachable brims and neck flaps.
- Use hats in combination with other forms of sun protection, and continue to wear them even when in the shade. A broad-brimmed hat can reduce UV radiation exposure to the eyes by 50 per cent. Team with UV protective eyewear for best protection.

Refer to **sunsmart.com.au** or **arpansa.gov.au** for more information on what to look for when choosing sun-protective clothing and hats.

Figure 7: *Example of the sun protection offered by a broad-brimmed hat compared with the lack of protection from a baseball cap.*

ULTRAVIOLET PROTECTIVE FACTOR (UPF)	CLASSIFICATION	MINIMUM LEVEL OF UV PROTECTION (%)
15	Minimum	93.3
30	Good	96.7
50, 50+	Excellent	98

Table 5: *Ultraviolet protective factor ratings and protection categories for clothing, including hats and gloves.*

Source: *Standards Australia. 2020. Australian Standard AS 4399:2020 Sun protective clothing - Evaluation and classification.*

Figure 8: UV protective hard hat attachment

Sunglasses and protective eyewear

Sunglasses can provide excellent protection for the eyes. The overall protection provided depends on the protective qualities of the lens, as well as the design of the sunglasses. Safety glasses should offer impact protection as well as UV radiation protection. Look for tinted safety glasses or those marked "O" for outdoor use.

Given the sensitivity of eyes, it is recommended that eye protection is used at all times outdoors, regardless of the UV radiation level. During overcast conditions or during winter, when glare is less of an issue, consider clear or lightly tinted eye protection that still offers high levels of UV radiation protection.

Wearing a broad-brimmed hat in conjunction with eye protection can further reduce UV radiation exposure to eyes.

When selecting protective eyewear for your workers, keep in mind that:

- All sunglasses sold in Australia must comply with the sunglass standard AS/NZS 1067 Eye and Face protection—Sunglasses and fashion spectacles.
- The sunglass standard defines five categories of lenses and all sunglasses sold in Australia must be labelled to indicate which category they comply with. Look for the words 'good UV protection' on the label or swing tag. Be aware that Category 0 and 1 are fashion spectacles, not sunglasses, and do not offer good UV radiation protection.

DID YOU KNOW

The darkness of the lens should not be used to gauge protection from UV radiation. Some clear lenses may provide maximum protection from UV radiation, although a tint is desirable to reduce glare. In fact, it is possible to get clear or lightly-tinted safety glasses that provide high levels of UV radiation protection.

- Due to colour or darkness of the lens, some sunglasses must not be used when driving. They will be marked 'not suitable for driving and road use' or marked with a car symbol crossed out. Category 4 sunglass lenses should not be used for driving or operating machinery that requires good colour perception, especially in the red, amber and green wavelengths. Situations of extreme sun glare, such as deserts, snow fields and at sea, are exceptions. Category 3 polarised lenses may also be suitable in these circumstances. If your workers are required to operate vehicles, read the label description carefully to ensure sunglasses are suitable for driving.
- Some sunglasses may be labelled with a rating system known as an eye protection factor (EPF). This is a scale from 1–10 which is used to classify how well a lens blocks UV radiation. If a lens has been tested, it may state an EPF rating on the label. Sunglasses with an EPF of 9 and 10 transmit almost no UV radiation. Sunglasses may also be labelled UV 400 (blocking 100 per cent of UV radiation), or state the amount of UV radiation blocked as a percentage.

FILTER CATEGORY	DESCRIPTION	USAGE
0 and 1	Light tint sunglasses or fashion spectacles.	Some UV protection. Limited or very limited reduction of sun glare.
2 and 3	General purpose sunglasses.	Good UV protection. Good to high protection against sun glare.
4	Very dark special purpose sunglasses.	Good UV protection. Very high sun glare reduction.

Table 6: *Eye and face protection—categories of sunglasses and fashion spectacles.*

Source: *Australian/New Zealand Standard AS/NZS 1067.1.*

Close-fitting, wrap-around style sunglasses are best. This design helps reduce UV radiation from entering the sides and top of the lenses.

Remember that:

- Polarised lenses reduce glare, which is reflected visible light. Note that polarisation does not block or impact UV radiation transmission. Check the label for UV radiation protection.
- Eye protection that complies with Australian Standard AS/NZS 1337 is recommended as these provide at least the same amount of protection against UV radiation as sunglasses, as well as impact protection. Untinted eye protectors marked "O" (for outdoor) also have sufficient UV radiation protection for outdoor use. For specialist safety glasses and filters for protection against artificial and welding UV radiation emissions that also meet the standard for safety glasses, choose ones marked AS/NZS 1338.2.
- Prescription glasses, clear or tinted, are excluded from AS/NZS 1067 but may still provide protection against UV radiation. Workers with prescription glasses or prescription sunglasses should check with their optometrist. Fit-over sunglasses are recommended for use with eyeglasses as they are close fitting and wrap-around in style.

See Cancer Council eye protection fact sheet on how to protect eyes from UV radiation at **www.cancer.org.au/about-us/policy-and-advocacy/prevention/uv-radiation/related-resources/eye-protection**.

DID YOU KNOW

There is no need to spend lots of money on sunglasses. Low-cost sunglasses that comply with the Australian sunglass standard may also provide excellent protection from UV radiation.

Refer to **sunsmart.com.au** for more information on sunglasses.

Sunscreen

Sunscreen should be the last line of defence against UV radiation. Never rely on sunscreen alone. The most effective way to protect yourself is to use a combination of sun protection measures, including covering clothing (e.g. long sleeves and long trousers), a hat, shade, and sunglasses. Sunscreen should be used on areas of exposed skin that can't be covered with clothing, such as the face and hands.

It is important to realise no sunscreen offers 100 per cent protection from UV radiation and application can play a significant role in its effectiveness.

When providing sunscreen as PPE, keep in mind that:

- Sunscreen needs to be applied to clean, dry skin.
- All sunscreen must carry a sun protection factor (SPF) rating. Cancer Council recommends the use of SPF50 (or higher), broad-spectrum and water-resistant sunscreen. Broad-spectrum sunscreen filters both UVA and UVB radiation.
- Employers must provide training to workers on the correct way to apply and use sunscreen.
- Sunscreen should be applied to all exposed skin 20 minutes before going outdoors so that it can be absorbed into the skin properly.
- Regardless of the instructions on the bottle, sunscreen should be reapplied every two hours, or more often if perspiring, swimming or towel drying.

- Don't just look at the SPF rating! Look for a primary sunscreen with an AUST L registration indicating it is registered with the TGA. Note products with an SPF but no AUST L, particularly tinted make ups and lip moisturisers are secondary sunscreen products and may not provide broad spectrum protection.
- The average-sized adult should apply at least one teaspoon of sunscreen to each arm, leg, front of body and back of body and head (including the face, ears and neck)—that is, 35ml (or seven teaspoons) of sunscreen for one full body application.
- Any moisturiser or make up should be applied on top of sunscreen.
- Price is not always an indication of quality. Any broad-spectrum, water-resistant sunscreen with an SPF50 (or higher) rating will, if applied correctly, provide good sun protection.
- Sunscreen should be kept in easily accessible places, such as tearooms, bathrooms and site offices.
- Sunscreen can expire, so always check the expiry date and store in a cool place below 30°C. As work vehicles can get very hot, they are not a good place to store sunscreen. Keep sunscreen in your cooler box instead of the glove compartment of your vehicle. If you notice that it has separated, discontinue use.
- Sunscreen can be bought as a cream, lotion, milk or gel. Aerosol sunscreens are not recommended as it is hard to ensure sufficient sunscreen is applied evenly to the skin. All sunscreens labelled SPF50 (or higher) and broad-spectrum work equally well as long as they are applied correctly.
- Some dry-touch sunscreens are available in Australia. These may be a good option for individuals who do not like the feel of wearing sunscreen, or those that work in a dusty environment.
- SPF50 (or higher) lip balms should be used to protect lips. The skin on lips is very thin and a common spot for sun damage and skin cancers.

For more, see Cancer Council webpage on sunscreen at **www.cancer.org.au/cancer-information/causes-and-prevention/sun-safety/about-sunscreen**

Cancer Council recommends five simple steps to protect workers from sun damage:


Slip on covering clothing.


Slop on SPF50 (or higher), broad-spectrum, water-resistant sunscreen.


Slap on a broad-brimmed hat.


Seek shade.


Slide on sunglasses.

CONTROL MEASURES: TIPS FOR SUCCESS

✓ Involve workers in designing and/or selecting suitable sun-protective clothing and hats, sunglasses and sunscreen. Ask workers which styles and types they prefer.

✓ Select a manufacturer or supplier which is able to respond to the needs of your industry/ workers and design/develop new sun-protective products.

✓ Trial new initiatives. Have outdoor workers trial samples of sun protection clothing and equipment and ask for their views. Some workplaces have a timeline to phase in new uniforms.

✓ Document feedback. It is particularly important that any feedback, including complaints about changes to clothing or work practices, is documented as soon as it is received.

✓ Set an example. Ensure managers and supervisors model the use of all sun-protective behaviour and practices.

✓ Train workers in the use of sun-protective PPE. There are many misconceptions about the use of sun protection that can be dispelled when workers are informed.

✓ Sun protection in the workplace is more than Slip! Slop! Slap! Seek! Slide! Ensure your workers are aware of all the sun protection control measures available in your organisation and the importance of using each in combination, wherever possible.[20]

Training workers to work safely in the sun

Raising awareness and providing education and training to safety officers, health and safety representatives, supervisors, outdoor workers and new workers is essential to the success of a workplace sun protection program.

A workplace training program should aim to:

- raise the profile of UV radiation exposure as a health and safety issue
- improve knowledge and understanding of sun protection measures
- dispel common misconceptions about UV radiation and various sun protection measures
- provide new workers with information on sun-protective measures in place within your organisation
- help workers detect the early signs of skin cancer by encouraging them to check their own skin
- provide safety personnel and site supervisors with knowledge to confidently address issues that may arise
- improve sun protection behaviour of workers both 'on' and 'off' the job
- raise workers' awareness about your workplace sun protection program and policy
- demonstrate the commitment of management to providing a safe working environment
- provide a forum for feedback from workers.

Topics should include:

- understanding UV and factors affecting levels of UV radiation
- harmful health effects of exposure to UV radiation
- risk factors for skin cancer
- correct application and use of sun protection measures
- how to check your own skin for skin cancer and what to look for
- what to do if concerned about a suspicious spot.

EDUCATION AND TRAINING: TIPS FOR SUCCESS

- ✓ Target groups for training include management, health and safety personnel, safety officers, worksite supervisors, at risk workers and new workers.
- ✓ Tailor your training program to meet the ongoing needs of the workplace and workers. Use employee surveys, audit results and checklists to identify needs.
- ✓ Use a variety of training methods and tools, including: tool box talks, guest speakers, introductory or refresher sessions, newsletter articles, poster displays, dissemination of educational brochures and flyers, a health and safety noticeboard, reminders via meetings and SMS messages, signage, and pay slip notes.
- ✓ Be creative—use incentive programs, role modelling, family events and competitions to raise awareness about the issue. Try a SunSmart employee of the month or SunSmart team of the week award. Remember, colleagues with a personal experience to share can be powerful advocates for sun protection.

DID YOU KNOW

The Australian Taxation Office has recognised the importance of sun protection for outdoor workers, with tax deductions available for sunscreen, hats and sunglasses. Visit **ato.gov.au** for further information.

Refer to **sunsmart.com.au** for resources, advice and services to help with the design and delivery of education and training for workers.

A workplace sun protection policy

A sun protection policy should record in writing why and how the UV radiation risk is to be managed by your workplace.

The policy should include the following key elements:

- description of the hazard and key reasons for the policy
- details of UV radiation protection control measures to action
- details of education and training requirements
- an outline of who is responsible for implementation and monitoring
- procedures for reporting UV radiation-related injuries and for managing non-compliance
- details of review processes.

(Refer to page 33 for a sample sun protection policy)

DEVELOPING A POLICY: TIPS FOR SUCCESS

- ✓ Decide if your organisation needs a new policy or if an existing policy or procedure can be modified to incorporate UV radiation protection.
- ✓ Circulate drafts of the policy to workers for comment.
- ✓ Include procedures for dealing with feedback, non-compliance, reporting incidents of UV radiation injuries (sunburns) and complaints. Non-compliance with the sun protection policy should be managed, as any other non-compliance issue would be. Use the organisation's standard incident management, refresher training and disciplinary procedures.
- ✓ Ensure management is well informed and confident to deal with questions about the policy and non-compliance.
- ✓ Set realistic timeframes for the implementation of the policy and its ongoing review. Some workplaces designate a period for adjustment before making UV radiation protection equipment compulsory.
- ✓ Provide training to all workers who will be affected by the new policy.
- ✓ Put new reporting procedures in place for UV radiation-related injuries and communicate to workers.
- ✓ Regularly reassess the risk and review the policy to ensure it remains current.

Monitoring program effectiveness

When sun protection control measures have been implemented, they must be monitored and reviewed on a regular basis or at least every three years. Employers must also provide supervision to ensure correct use and compliance with control measures.

Where possible, incorporate monitoring of UV radiation protection control measures into existing audit tools used in the workplace, including health and safety inspections, on-site supervisor reports and checklists.

Where monitoring reveals non-compliance, it should be managed, as any other non-compliance issue would be, by using the organisation's refresher training and standard disciplinary procedures.

Reviewing your sun protection program

It is important to review the success of your sun protection program. This may include:

- Asking workers for comments, concerns or difficulties experienced with the new policy and/or control measures
- Repeating the risk assessment to provide information on changes in UV radiation risk levels and success of UV radiation protection control measures
- Examining results of monitoring processes to identify behaviour changes in regards to UV radiation protection and the extent of compliance with control measures
- Repeating employee surveys to identify changes in attitudes and awareness of the issue.[22]

MONITORING AND REVIEW: TIPS FOR SUCCESS

✓ Monitor the program and the use of control measures closely in the first 12 months.

✓ Establish a system for collecting regular and ongoing feedback from workers. Try surveys, focus group interviews and employee quizzes.

✓ Ensure feedback is documented and considered when making changes.

✓ Consult with workers and their representatives prior to making changes.

✓ Once established, review the program and policy on a regular basis, or at least every three years.

✓ Use information gathered during monitoring processes to inform training needs.

Health surveillance and skin cancer.

Should I organise skin checks in my workplace?

Cancer Council recommends employers, as part of work health and safety responsibilities, focus their attention on the introduction and maintenance of effective sun protective control measures—including education and the importance of early detection—over skin cancer screening programs.

It is important to note that there is no government-funded screening program in Australia to detect either melanoma or non-melanoma skin cancer, as there is no evidence that such screening is effective.[21] The majority (55–70 per cent) of melanomas are detected by patients themselves, or by their partners and not during a skin check with a health professional. Given this, it is very important to know how to check one's own skin.[22, 23, 24]

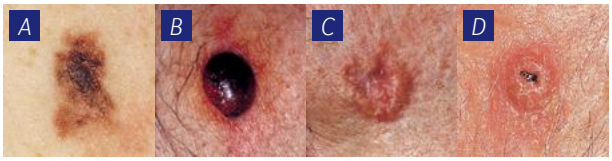
Cancer Council encourages people to become familiar with their own skin, including skin not normally exposed to the sun, and consult a doctor if they notice anything unusual; a change in shape, colour or size of a lesion; or the development of a new spot.

People at high risk of developing skin cancer—including those who work outdoors—should consult their doctor about developing a surveillance program.

Employers should encourage workers to examine their own skin instead of providing in-house skin check programs. If skin checks are provided at work, employers should ensure that workers know that they also need to check their own skin in between workplace checks and to go to their doctor as soon as possible if they notice anything changing.

Early diagnosis and treatment of skin cancer relies heavily on early detection, with an emphasis on self-examination.

Workers should be advised to see their doctor as soon as possible if they notice anything new or unusual or have concerns about their skin.



Melanoma (A), nodular melanoma (B), basal cell carcinoma (C), and squamous cell carcinoma (D) are the most commonly diagnosed skin cancer types in Australia.

CHECKING YOUR SKIN

Get to know all of your skin – not just sun-exposed areas – and what looks normal for you to help you find changes earlier.

Don't rely on an annual skin check to detect suspicious spots.

Be mindful of:

- new spots
- changes in colour, size or shape of existing spots
- a spot that looks different from the others around it.

If you notice anything, see your general practitioner (GP) as soon as possible.

If you have previously had a skin cancer, consult your doctor to develop a surveillance plan.

Refer to Cancer Council's position statement on screening and early detection of skin cancer at **cancer.org.au**.

Workplace medical checks and skin cancer

Cancer Council recommends workplaces focus their health surveillance activities on encouraging workers to examine their own skin and providing information to promote the key early detection messages outlined on page 27. However, some workplaces may want to provide skin cancer checks within their regular medical examination activities.

The decision to provide a skin cancer check service for workers should be carefully considered as:

- Skin cancer can grow quickly. There is a danger workers will come to rely on skin cancer checks provided by their workplace and therefore not check their own skin and thus fail to notice a skin cancer that appears in the interim.
- A focus on skin cancer checks may result in workers becoming complacent about the use of sun protection control measures to prevent skin cancer.
- The experience and expertise—and therefore quality—of skin check service providers vary.
- An employer's legal obligations may not be met by providing skin checks unless there is a clear emphasis on workers knowing how to regularly examine their own skin.
- If skin cancer checks are conducted on a voluntary basis, early detection messages, if delivered, will not reach workers who choose not to attend.

Everyone should regularly check their skin for suspicious spots. It is important that workers know what their skin looks like normally so changes will be noticed early.[25]

Cancer Council does not operate, recommend or endorse any skin check services or clinics. If your organisation decides to provide a skin cancer check for workers, it is important to ensure the medical practitioner conducting the checks has expertise and training in skin cancer.

The medical practitioner or skin check service provider should:

- Identify workers at high risk such as those with a family history of skin cancer, workers with fair skin that burns rather than tans, workers who are aged 50 or over, workers who have solar keratoses (sunspots).
- Always promote the complete early detection message (see above for key early detection messages for workers).
- Always encourage workers to get to know their own skin so changes will be noticed.
- Stress the importance of workers checking their skin regularly throughout the year and not relying on workplace medical checks alone to detect skin cancer.
- Provide information on how to check for skin cancer.
- Undertake a full body examination for skin cancer.
- Keep a record of the skin examination, including a body map documenting suspicious spots.
- Remind your workers that prevention is better than cure.

If a skin cancer is suspected:

- Refer the employee or other persons to their own doctor or a skin specialist for confirmation of diagnosis and further action.
- Stress to the employee or other persons the importance of getting further diagnosis and treatment without delay.
- Ensure workers follow up with referrals and receive diagnosis and treatment.

Remember, all workers should be encouraged and provided with information, to examine their own skin whether they attend a workplace skin cancer check or not.

References and contacts.

Further information and contacts

Cancer Council Australia is Australia's peak cancer control organisation. Its members are the eight state and territory Cancer Councils (see below), which work together to undertake and fund cancer research, prevent and control cancer and provide information and support for people affected by cancer.

People seeking information and advice about cancer and cancer prevention can:

- Call the Cancer Council on 13 11 20
- Visit **sunsmart.com.au** for advice on skin cancer and sun protection.

Sun protection products can be purchased at **cancercouncilshop.org.au** or from your nearest Cancer Council retail outlet. For more information call Toll Free 1300 354 144.

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Web: **actcancer.org**

Cancer Council NSW
153 Dowling Street
WOOLLOOMOOLOO NSW 2011
Tel: (02) 9334 1900
Fax: (02) 8302 3570
Email: feedback@nswcc.org.au
Web: **cancercouncil.com.au**

Cancer Council Northern Territory
Unit 1-3, Casi House
25 Vanderlin Drive
CASUARINA NT 0810
Tel: (08) 8944 1800
Fax: (08) 8927 4990
Email: admin@cancernt.org.au
Web: **nt.cancer.org.au**

Cancer Council Tasmania
15 Princes Street
SANDY BAY TAS 7006
Tel: (03) 6169 1900
Fax: (03) 6169 1920
Email: infotas@cancertas.org.au
Web: **cancertas.org.au**

Cancer Council Victoria
200 Victoria Parade
EAST MELBOURNE VIC 3002
Tel: (03) 9514 6100
Fax: (03) 9514 6800
Email: enquiries@cancervic.org.au
Web: **sunsmart.com.au/work**

Cancer Council WA
Level 1, 420 Bagot Road
SUBIACO WA 6008
Tel: (08) 9212 4333
Fax: (08) 9212 4334
Email: questions@cancerwa.asn.au
Web: **cancerwa.asn.au**

Cancer Council Queensland
553 Gregory Terrace
FORTITUDE VALLEY QLD 4006
Tel: (07) 3634 5100
Fax: (07) 3257 1306
Email: info@cancerqld.org.au
Web: **cancerqld.org.au**

Cancer Council SA
202 Greenhill Road
EASTWOOD SA 5063
Tel: (08) 8291 4111
Fax: (08) 8291 4122
Email: cc@cancersa.org.au
Web: **sunsmart.org.au**

For specialist UV radiation advice, UV radiation exposure information and testing services, contact the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

Australian Radiation Protection and Nuclear Safety Agency
619 Lower Plenty Road,
YALLAMBIE VIC 3085
Freecall: 1800 022 333
Email: info@arpansa.gov.au
Website: **arpansa.gov.au**

Explanation of terms and abbreviations

ARPANSA: Australian Radiation Protection and Nuclear Safety Agency, the Australian Government's primary authority on radiation protection and nuclear safety who provide live UV radiation levels.

Carcinogen: any substance or radiation that can cause cancer.

Employee: person who has a contract of employment or contract of training. Volunteers are not employees. Independent contractors may be employees.

Employee and other persons: those with a contract of employment or training including apprentices, volunteers and work experience students. This also includes an independent contractor engaged by the employer, a sub-contractor or a worker of that contractor, or a person whose services are provided to an employer by a labour hire or recruitment agency.

Employer: for the purposes of this resource refers to 'persons conducting a business or undertaking' (PCBU), used in health and safety documentation in Australia, which is currently being updated.

Erythema: reddening of the skin caused by dilation of blood vessels due to UV radiation exposure.

Eye protection factor (EPF): a measure of the amount of protection against solar UV radiation provided by sunglasses that have been tested in accordance with Australian Standard AS:1067.

Outdoor worker: an employee or other person who, in the course of their duties, is required to work outdoors for part or all of the day.

PF: Protection Factor

PPE: personal protective equipment and clothing.

SEDs: Standard Erythemal Dose is the unit of measure that describes a dose of UV radiation. One SED per day is considered safe while more than this may cause permanent damage to human skin.

Skin cancer: cancer that starts in the cells of the skin. Types include basal cell carcinoma, which starts in the basal cells of the skin; squamous cell carcinoma, which starts in the squamous cells of the skin; and melanoma, which starts in the melanocytes of the skin.

Solar radiation: electromagnetic radiation emitted by the sun. At the Earth's surface it consists of visible light, infrared radiation and ultraviolet radiation.

Solar ultraviolet radiation (solar UV radiation): the components of ultraviolet radiation emitted by the sun that reach the Earth's surface. It contains radiation in the range 290 to 400 nanometres. Wavelengths in the range 100 to 280 nanometres (all UVC and 90 per cent of UVB) are absorbed in the atmosphere.

Sunburn: an acute skin inflammation following overexposure to UV radiation. Redness (erythema), warmth, oedema (accumulation of fluid), and tenderness to the touch are characteristic of sunburn, with pain and blistering characteristic of severe sunburn.

Sun protection: various health and safety issues can arise during outdoor work due to exposure to the sun.

For the purpose of this booklet, the term sun protection refers to the modification of the work environment or use of equipment or clothing specifically to reduce exposure and protect against solar UV radiation.

Sun protection factor (SPF): a measure of the amount of protection provided by a sunscreen against solar UV radiation. SPF ratings are determined by testing sunscreens on the skin of human volunteers in accordance with Australian Standard AS2604:2012 (Sunscreen products - Evaluation and classification).

Sun protection times: the times when UV radiation is forecast to be 3 or higher on a particular day. During these times, sun protection is recommended, including covering clothing, sunscreen, a hat, shade and sunglasses. Sun protection times are forecast by the Bureau of Meteorology.

Ultraviolet protection factor (UPF): a measure of the UV radiation protection provided by fabric. UPF ratings are determined by testing fabrics in a laboratory in accordance with Australian Standard AS 4399.

Ultraviolet radiation (UV radiation): part of the electromagnetic spectrum emitted by the sun. Ultraviolet radiation refers to all ultraviolet radiation in the range 100 to 400 nanometres which can be further classified by wavelength into three regions: UVA, UVB and UVC.

UVA: UV radiation in the range 315–400 nanometres

UVB: UV radiation in the range 280–315 nanometres

UVC: UV radiation in the range 100–280 nanometres

UV Index: a number that describes the rate at which solar UV radiation arrives at the Earth's surface. The higher the UV Index, the more solar UV radiation present and the greater the potential for skin and eye damage.

References

1. Schmitt J, Seidler A, Diepgen TL, Bauer A. ***Occupational ultraviolet light exposure increases the risk for the development of cutaneous squamous cell carcinoma: a systematic review and meta-analysis.*** Br J Dermatol 2011 Feb;164(2):291-307
2. Bauer A, Diepgen TL, Schmitt J. ***Is occupational solar ultraviolet irradiation a relevant risk factor for basal cell carcinoma? A systematic review and meta-analysis of the epidemiological literature.*** Br J Dermatol 2011 Sep;165(3):612-25
3. Leiter U, Garbe C. ***Epidemiology of melanoma and nonmelanoma skin cancer--the role of sunlight.*** Adv Exp Med Biol 2008;624:89-103
4. Armstrong BK. ***How sun exposure causes skin cancer: An epidemiological perspective*** In: Hill D, Elwood JM, English D. Prevention of Skin Cancer. Dordrecht, The Netherlands: Kluwer Academic Publishers; 2004. p. 89-116
5. WorkSafe Victoria. ***Occupational health and safety – your legal duties. An overview of employer and employee responsibilities under the Occupational Health and Safety Act 2004***. 2018. Accessed 18 November 2019 at https://www.worksafe.vic.gov.au/occupational-health-and-safety-your-legal-duties
6. Carey RN, Glass DC, Peters S, Reid A, Benke A, Driscoll TR, Fritschi L. Occupational exposure to solar radiation in Australia: who is exposed and what protection do they use? Aust NZ J Public Health. 2014; 38:54-9;
7. Staples MP, Elwood M, Burton RC, Williams JL, Marks R, Giles GG. ***Non-melanoma skin cancer in Australia: the 2002 national survey and trends since 1985.*** Med J Aust 2006 Jan 2;184(1):6-10
8. Fritschi L, Driscoll T. ***Cancer due to occupation in Australia.*** Aust N Z J Public Health 2006 Jun;30(3):213-9
9. Scharffetter-Kochanek K, Brenneisen P, Wenk J, Herrmann G, Ma W, Kuhr L, et al. ***Photoaging of the skin from phenotype to mechanisms.*** Exp Gerontol 2000 May;35(3):307-16
10. Samanek AJ, Croager EJ, Gies P, Milne E, Prince R, McMichael AJ, et al. ***Estimates of beneficial and harmful sun exposure times during the year for major Australian population centres.*** Med J Aust 2006 Apr 3;184(7):338-41
11. Coelho SG, Choi W, Brenner M, Miyamura Y, Yamaguchi Y, Wolber R, et al. ***Short- and long-term effects of UV radiation on the pigmentation of human skin.*** J Investig Dermatol Symp Proc 2009 Aug;14(1):32-5
12. Vishvakarman D, Wong JC. ***Description of the use of a risk estimation model to assess the increased risk of non-melanoma skin cancer among outdoor workers in Central Queensland, Australia.*** Photodermatol Photoimmunol Photomed 2003 Apr;19(2):81-8
13. National Data Team, Safe Work Australia. ***Workplace compensation data.*** Canberra, Australia; 2011. p. 4.
14. Safe Work Australia. ***Workplace compensation data.*** Canberra, Australia: National Data Team, Safe Work Australia; 2014
15. International Agency for Research on Cancer. ***Solar and ultraviolet radiation.*** Vol. 100D.Lyon, France: International Agency for Research on Cancer; 2012.
16. Sliney DH. ***Physical factors in cataractogenesis: ambient ultraviolet radiation and temperature.*** Invest Ophthalmol Vis Sci 1986 May;27(5):781-90
17. World Health Organization. ***Global Solar UV Index: A Practical Guide.*** Geneva, Switzerland: World Health Organization; 2002
18. Safe Work Australia. ***Guide on Exposure to Solar Ultraviolet Radiation (UVR).*** Canberra Australia; 2019.
19. Duarte I, Rotter A, Malvestiti A, Silva M. ***The role of glass as a barrier against the transmission of ultraviolet radiation: an experimental study.*** Photodermatol Photoimmunol Photomed 2009 Aug;25(4):181-4
20. Bernstein EF, Schwartz M, Viehmeyer R, Arocena MS, Sambuco CP, Ksenzenko SM. ***Measurement of protection afforded by ultraviolet-absorbing window film using an in vitro model of photodamage.*** Lasers Surg Med 2006 Apr;38(4):337-42
21. Wilson JMG, Jungner G. ***Principles and practices of screening for disease.*** Geneva, Switzerland: World Health Organization; 1968. Report No.: Public Health Papers No. 34.
22. Richard MA, Grob JJ, Avril MF, Delaunay M, Gouvernet J, Wolkenstein P, et al. ***Delays in diagnosis and melanoma prognosis (II): the role of doctors.*** Int J Cancer 2000 May 20;89(3):280-5
23. McPherson M, Elwood M, English DR, Baade PD, Youl PH, Aitken JF. ***Presentation and detection of invasive melanoma in a high-risk population.*** J Am Acad Dermatol 2006 May;54(5):783-92
24. Epstein DS, Lange JR, Gruber SB, Mofid M, Koch SE. ***Is physician detection associated with thinner melanomas?*** JAMA 1999 Feb 17;281(7):640-3

Appendix 1.

Sample UV protection policy for workplaces with outdoor workers

(Name of organisation)

Background

The sun's ultraviolet (UV) radiation (which cannot be seen or felt) is a known human carcinogen. UV radiation exposure is responsible for skin damage (sunburn, tanning, ageing), eye damage, and more than 95% of skin cancers. Australia has one of the highest rates of skin cancer in the world. More than two in three Australians will be diagnosed with skin cancer in their lifetime.

People who work outdoors in Australia receive up to 10 times more UV exposure than indoor workers, placing them at higher risk of skin damage and skin cancer. Skin cancer is one of the most preventable cancers.

Obligations

As an employer, we must ensure our responsibilities under the under the Occupational Health and Safety Act 2004 (Vic) and the Occupational Health and Safety Regulations 2017 are met. This includes our responsibilities to provide and maintain a safe working environment and facilities and implement policies and procedures to control the risk of UV exposure as far as reasonably practicable.

Our commitment

We are committed to all our work activities being carried out safely to the highest possible standards to protect from the identified and known risks associated with UV radiation.

Scope

This policy applies to all our employees (permanent, temporary and casual), contractors and visitors at all times during the day (as appropriate for the required task). Although UV protection is typically recommended whenever UV levels reach three or more (as indicated via the SunSmart Global UV app), our outdoor workers are advised to use UV protection at all times due to constant and cumulative exposure and associated risks.

Definitions

Ultraviolet (UV) radiation - a type of energy produced by the sun and some artificial sources, such as arc welders, solariums and collariums. Direct and indirect (reflected off different surfaces and scattered by particles in the air) UV exposure causes damage.

Skin cancer - UV radiation damages DNA in the skin cells. If this damage does not repair itself, or the cells continue to be exposed to UV, further damage occurs leading to skin cancer including melanoma, which can spread to other organs such as the brain, lungs and liver.

Responsibilities

Our employees are expected to co-operate and comply with the following UV risk control measures introduced, monitored and maintained by management.

Engineering controls

Where possible, in consultation with employees, management will;

- Provide shade (built/natural/portable) for work tasks and breaks,
- Modify UV reflective surfaces,
- Identify and minimise contact with photosensitising substances,
- Consider applying window tinting to work vehicles.

Administrative controls

Where possible, in consultation with employees, management will;

- Schedule work to earlier in the morning or later in the afternoon when UV levels are less intense,
- Schedule shaded work tasks to occur in middle of the day when UV levels are most intense,
- Rotate work tasks and workers to minimise UV exposure.

Personal protective equipment (PPE)

In consultation with employees, management will provide and require the use of the following PPE;

- Cool, loose-fitting, covering clothing made from UPF50+ material i.e., long-sleeved shirt with a collar and long trousers,
- Broad-brimmed, bucket or legionnaire hat that shades the face, head, ears and neck,
- Attachable brims and neck flaps when wearing a hard hat as applicable
- SPF50 or 50+ broad-spectrum, water-resistant sunscreen and lip balm. Sunscreen is stored below 30°C and applied to any skin not covered with clothing 20 minutes before going outdoors. Sunscreen and lip balm are reapplied every two hours.
- Close fitting, wrap-around style sunglasses (AS/NZS 1067) or safety glasses rated "O" (AS/NZS 1337.1),
- UV protective gloves as applicable.

Information, instruction, training and supervision

- In consultation with employees, management will provide UV risk control and early detection training, reminders, and monitoring.

Policy authorised by:

Designated authority: ..... Position: .....

Signature: ..... Date: .....

Policy communicated to all employees: ..... Next policy review due: .....

References

- ***Occupational Health and Safety Act*** (2004)
- ***Occupational Health and Safety Regulations 2017 and Equipment (Public Safety) Regulations 2017***
- ***Workplace Injury Rehabilitation and Compensation Act 2013***
- ARPANSA ***Radiation Protection Standard for Occupational Exposure to Ultraviolet Radiation*** (2006)
- WorkSafe Victoria: ***Sun protection***
- Safe Work Australia: ***Guide on exposure to solar ultraviolet radiation (UVR)*** (Dec 2019)
- SunSmart
  - ***Sun protection information for workplaces***
  - ***Skin cancer and outdoor work – A work health and safety guide***
- AS 4174:2018 (Amd 2019) Knitted and woven shade fabrics
- AS/NZS 1067.1:2016 (Amd 2021), Eye and face protection - Sunglasses and fashion spectacles
- AS 4399:2020, Sun protective clothing - Evaluation and classification
- AS/NZS 2604:2012 Sunscreen products - Evaluation and classification

Appendix 2.

Toolbox talk:

UV radiation safety and skin cancer

KEY MESSAGES

- Working outdoors exposes you to up to 10 times more ultravoilet (UV) radiation than indoor workers.
- If you regularly work outdoors, protection is recommended all year round, regardless of UV radiation level.
- Both employers and employees share a 'duty of care' to rminimise the risks to health and safety associated with exposure to UV radiation in the workplace.
- Where possible, move tasks indoors or in the shade and take breaks in the shade, particularly in the middle of the day when UV radiation levels are highest.
- Wear suitable personal protective equipment (PPE) to protect yourself from the sun: long sleeved shirt with a collar and long pants, a broad-brimmed hat or a hard hat attachment, sunscreen and sunglasses or safety glasses that meet the Australian Standard.
- Check all of your skin regularly—not just sun-exposed skin.
- See your GP immediately if you notice a new or changing spot.

WHY SHOULD YOU CARE

- More than 2,000 Australians die from skin cancers every year, but most skin cancers can be prevented. As a comparison, more people die from skin cancer than on our roads each year.
- If your job is outdoors, you are exposed to a lot of UV radiation at work. Outdoor workers get up to 10 times more UV radiation exposure than indoor workers.
- UV radiation also causes serious damage to your eyes, as well as dryness, wrinkling and premature ageing of your skin.

RISK FACTORS Ask: *"Who is at risk of getting skin cancer?"*

Almost all (95 per cent) skin cancers are caused by UV radiation damage. Anyone can get skin cancer, but your risk is higher if you:

- work outdoors
- have fair skin that burns easily
- have many moles on your skin
- have a history of bad sunburn
- have had a skin cancer already or have a family history of skin cancer
- spend a lot of time outdoors, unprotected
- sun tan, use/have used solariums

UV RADIATION Ask: *"What is UV radiation?"*

- UV radiation is a form of energy that comes from the sun and some artificial sources (e.g. sunbeds).
- We can feel infrared radiation (heat) and see the sun's visible light, but we can't see or feel UV radiation.
- UV radiation can be high on cool or cloudy days, so don't be fooled.
- To check what the UV level is, check with the Bureau of Meteorology or the free SunSmart Global UV app.
- Sun protection is recommended for most people when UV levels reach three or more. However, if you work outdoors you get regular UV radiation exposure and should use sun protection every day to minimise UV radiation damage adding up over time.

LEGISLATION

UV radiation is a known cause of workplace injury and disease.

Therefore, in meeting occupational health and safety legislative and regulatory requirements, all employers of workers who may be exposed to UV radiation in the workplace should address UV radiation as a workplace hazard and develop and implement control measures (including PPE) to ensure that risks to workers' health and safety are reduced, so far as is reasonably practicable. Workers also have a responsibility to take care of their own health and safety and are also required to co-operate with any action undertaken by an employer to comply with health and safety legislative requirements, which may include health and safety initiatives and policies in relation to UV radiation protection.

REDUCE THE RISK
Ask: *"How could you reduce your exposure to UV radiation while working outdoors?"*

To reduce risk wherever possible, you can:

- work under shade—trees or portable and permanent shade structures
- move the job indoors
- plan work so that outdoor tasks are scheduled earlier in the morning or later in the day
- take breaks indoors or in the shade
- use sun-protective PPE
- move away from or modify reflective surfaces such as water, concrete, sand, glass, roofing iron and snow
- make sure vehicles have tinted windows.

Personal protective equipment (PPE):

Slip on a long-sleeved shirt with a collar and trousers ideally made from material with an ultraviolet protection factor (UPF) of 50+.

Slop on broad-spectrum, water-resistant sunscreen and lip balm with a sun protection factor (SPF) of 50 or higher. Apply sunscreen 20 minutes before going out in the sun and reapply every two hours.

Slap on a hat that shades the face, head, ears and neck. It should be broad-brimmed, bucket or legionnaire (caps do not protect your neck and ears). Wear attachable brims and neck flaps when wearing a hard hat.

Seek shade, particularly when you take breaks.

Slide on wrap-around sunglasses that are close fitting and meet the Australian Standard AS/NZS 1067–category 2, 3 or 4 or safety glasses that meet the Australian Standard AS/NZS 1337.1.

GET TO KNOW YOUR OWN SKIN

Most skin cancers (including melanoma) can be treated successfully if found early. By getting to know your own skin, you are more likely to notice anything new or different at an earlier stage.

Check your skin regularly and see your GP as soon as possible if you see a:

- new spot
- sore that doesn't heal
- spot that looks different from other spots around it
- spot, mole or unusual freckle that has changed in shape, size or colour
- any skin spot that you are worried about.

Adapted with permission from Cancer Council NSW, 2018.

Appendix 3.

UV radiation risk control for outdoor work

Use this worksheet to assess if there is a risk of hazardous levels of exposure to ultraviolet (UV) radiation from the sun associated with performing a role in your organisation.

Work location:	Description of task(s) performed:
Assessed by:	
Health & Safety Representative:	
Date:	

1. UV radiation risk assessment

To assess UV radiation risk, tick the most relevant box for each factor below. Each category adds to the accumulated level of risk; please assess the risk based on the combination of factors.

Time of day spent in the sun (including in vehicles without tinting)

☐ all day	☐ 10am-3pm	☐ 3-5pm	☐ 8-10am	☐ after 5pm	☐ before 8am	☐ at night

Altitude of worksite

☐ more than 1500m	☐ 1000-1500m	☐ 500-1000m	☐ less than 500m

Season when work takes place

☐ all year	☐ summer	☐ autumn/spring	☐ winter

Shade during work

☐ no shade	☐ partial shade	☐ total shade	☐ indoor work

Shade at rest breaks

☐ no shade/partial shade	☐ total shade	☐ indoor break area

Latitude (proximity to equator)

☐ QLD, NT, northern WA	☐ VIC, SA, southern WA, NSW, ACT	☐ TAS

2. Assessment of hazardous factors

Photosensitivity:

Certain substances increase sensitivity to UV radiation, meaning sunburn occurs more quickly. Substances that cause photosensitivity include industrial chemicals, drugs, plants, fragrances and some medications.

- ☐ check the MSDS to identify substances that cause photosensitivity
- ☐ advise workers to consult their GP if taking medication that may cause photosensitivity

The presence of reflective surfaces increases the risks posed by UV radiation exposure:

- ☐ snow
- ☐ sand
- ☐ house paint (white)
- ☐ concrete
- ☐ glass
- ☐ roofing iron
- ☐ water
- ☐ other _____

3. Assessment of protective factors

Personal protective equipment (PPE) in use:

- ☐ portable shade structure
- ☐ construction helmet with brim attachment
- ☐ broad-brimmed, bucket or legionnaire hat
- ☐ shirt with longer sleeves and a collar made from UPF50+ material
- ☐ long trousers made from UPF50+ material
- ☐ sunscreen and lip balm with SPF50 (or higher)
- ☐ wrap-around sunglasses (AS/NZS 1067/EPF of 9 or 10) or safety glasses (AS/NZS 1337.1)

4. Taking action:

Use this worksheet to assess if there is a risk of hazardous levels of exposure to UV radiation from the sun associated with performing a role in your organisation. Identify which risk control measures you will use.

Use of engineering controls

OPTIONS/ACTIONS	☐	☐	TIMEFRAME (short/medium/long)
• Use shade (natural, portable or permanent structures)			
• Modify reflective surfaces or move work away from these surfaces			
• Provide window tinting for work vehicles			
• Other			

Use of administrative controls

OPTIONS/ACTIONS	☐	☐	TIMEFRAME (short/medium/long)
Reschedule outdoor work: • Outdoor tasks are done early in the morning or later in the afternoon when UV radiation levels are lower.			
• Shaded work is done in the middle of the day.			
• Move jobs indoors or into shaded areas.			
• Rotate employees and work, so that the same person is not always outside.			
• Supervisors refer to the SunSmart Global UV app to check current UV radiation levels for their location. Download the free **SunSmart Global UV app** or check the widget at **sunsmart.com.au/widget**			

Use of personal protective equipment and clothing

OPTIONS/ACTIONS	☐	☐	TIMEFRAME (short/medium/long)
Clothing: • Provide a uniform or require work wear that has long sleeves, long pants and a collar. • Use sun-protective fabrics—those with a tight weave or rated with an ultraviolet protection factor (UPF) of 50+ is recommended (AS/NZS 4399).			
Hats: • Provide or require the use of a UV-protective hat in legionnaire, broad-brimmed or bucket style, or attachable brims and neck flaps for hard hats or helmets.			
Sunglasses: • Provide or encourage the use of wrap-around sunglasses (AS/NZS 1067 or with an eye protection factor (EPF) of 9 or 10) or safety glasses (AS/NZS 1337.1).			
Sunscreen: • Purchase broad-spectrum, water-resistant sunscreen that is SPF50 (or higher) and make it easily accessible. • Encourage employees to apply sunscreen 20 minutes before going outdoors, and to reapply it every two hours, and/or if they get wet or perspire. • Encourage employees to apply SPF50 (or higher) lip balm before going outdoors and to reapply throughout the day (at least every two hours).			

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Australian Government

Australian Radiation Protection and Nuclear Safety Agency

Cancer Council