

UVR Protection and Vitamin D

Some people are confused about whether they should get more sun to make sure they get enough vitamin D. This information sheet explains that you need to protect yourself from over-exposure of the sun's ultraviolet radiation (UVR) because it puts people at risk of developing skin cancer. While the sun's UVR also helps your body produce vitamin D, you only need a little exposure to get the benefit.

How the sun affects our health

The link between exposure to the sun's UV radiation and skin cancer is proven. Australians have been advised to protect themselves from the sun for over two decades.

Vitamin D is needed for strong and healthy bones. People mostly produce vitamin D through exposure to the sun's UVB radiation. Recent studies have found that some groups of people who have limited exposure to the sun don't have enough vitamin D. Does this mean that everyone should ignore sun protection messages and go out in the sun more? If not, how do you get enough vitamin D without increasing the risk of skin cancer?

Australians are at high risk of skin cancer

Australia has high levels of UV radiation, mainly because the country is close to the equator. Australians are also at high risk of skin cancer because they are mostly fair-skinned and enjoy an outdoor lifestyle¹.

UV radiation levels vary through the year. This can depend on:

- the height of the sun (the higher the sun is in the sky, the higher the UV radiation level)
- whether you're in the north or south of the country
- the amount of cloud cover
- the altitude
- ozone levels
- UV reflective surfaces (e.g. light coloured concrete, water or snow).

The higher the UV levels, the less time it takes for skin damage to occur. Generally, UV radiation levels are at their daily strongest around the middle hours of the day (10 am to 2 pm or 11 am to 3 pm during daylight saving). This is when people should aim to take 'extra care', especially during the daylight saving period when UVR levels soar!

How intense is the sun? Using the UV Index

The UV Index (UVI) is a simple way to show the sun's UV radiation intensity throughout the day. It divides UV radiation levels into Low (1–2), Moderate (3–5), High (6–7), Very High (8–10) and Extreme (11 and above).

In Australia, the Bureau of Meteorology (BOM) forecasts the highest UV level for the following day **and** the period of the day *when* sun protection is recommended on their website at www.bom.gov.au. When the UV levels are forecast to reach **3 or above**, sun protection is recommended because UV radiation is intense enough to damage your unprotected skin.

How to protect yourself against skin cancer

To protect against skin cancer when the UV is **3 (moderate) or above**:

- use shade wherever possible
- wear clothing that covers as much skin as possible
- wear hats that protect the face, ears and neck
- wear close fitting sunglasses that meet the Australian Standard 1067
- use broad spectrum, water resistant SPF 30+ sunscreen, and reapply it every two hours.

Always take particular care during the middle of the day as daily UV levels are at their highest and skin damage will occur quicker (11 am to 3pm).

When in alpine regions, or near highly reflective surfaces like snow or water, use sun protection at all times of the year, anywhere in Australia.

Do you need more sun to get enough vitamin D?

Most people receive enough vitamin D simply by going about their day-to-day lives. So you shouldn't need to make a special effort to go outside to increase your 'dose' of vitamin D.

How much sun to get – around Australia

Northern Australia (Queensland, NT, the top half of WA, Northern NSW and Northern SA)

- Protect yourself against skin cancer ALL year round.
- UV radiation levels are Moderate or higher all year round.
- Expose your face, arms and hands to the sun for a few minutes either side of the peak UV period on most days of the week to maintain adequate vitamin D levels.

Central Australia (Canberra, Sydney, Adelaide and Perth)

- Protect yourself against skin cancer from August to May.
- UV radiation levels are Moderate or higher during this period for part of or most of each day.
- To get enough vitamin D:
 - from August to May, expose your face, arms and hands to the sun for a few minutes either side of the peak UV period on most days of the week.
 - during June and July, expose your face, arms and hands to the sun for two to three hours spread over the week.

Southern Australia (Victoria and Tasmania)

- Protect yourself against skin cancer from September to April.
- UV radiation levels are Moderate or higher during this period.
- To get enough vitamin D:
 - from September to April, expose your face, arms and hands to the sun for a few minutes either side of the peak UV period on most days of the week
 - from May to August, expose your face, arms and hands to the sun for two to three hours spread over the week.

Will sunscreen stop you getting enough vitamin D?

Sunscreen filters out most but not all UV radiation. Regular use of sunscreen when the UV radiation level is 3 (moderate) or above does not greatly decrease vitamin D levels over time^{2,3,4}.

Most people are not at risk of low vitamin D

Only some people living in Australia have low levels of vitamin D⁵. They include:

- the elderly, especially those who do not go outdoors very often – older people also don't produce vitamin D as well as young people
- babies of mothers who have low levels of vitamin D
- people with dark skin, who naturally have more melanin, the pigment that reduces the amount of UV radiation getting through the skin
- people who cover their skin and heads with clothing and veils, for cultural or religious reasons, so less skin is exposed to UV radiation.

- Patients with osteoporosis

These people generally have little exposure to the sun, especially during winter if they live in the southern half of Australia. This is usually why they may not get enough vitamin D.

People with a diagnosed lack of vitamin D may need to add vitamin D to their diet rather than seek more exposure to the sun. They should discuss this with their doctor.

Further information and resources

View Cancer Council Australia's Position Statement- **Risks and Benefits of Sun Exposure** at www.cancer.org.au or download **How much sun is enough? Getting the balance right** from our website.

For further information visit our website at www.actcancer.org or contact the **Cancer Council Helpline on 13 11 20**.

This information can be photocopied for distribution.

References

- 1 Gies P et al. Global Solar UV Index: Australian measurements, forecasts and comparison with the UK. *Photochem Photobiol* 2004;79(1):32–9.
- 2 Marks R, Foley PA, Jolley D, Knight KR, Harrison J, Thompson SC. The effect of regular sunscreen use on vitamin D levels in an Australian population. Results of a randomised controlled trial. *Arch Dermatol* 1995 Apr;131(4):415–21.
- 3 Farrerons J, Barnadas M, Rodriguez J, Renau A, Yoldi B, Lopez-Navidad A, Moragas J. Clinically prescribed sunscreen (sun protection factor 15) does not decrease serum vitamin D concentration sufficiently either to induce changes in parathyroid function or in metabolic markers. *Br J Dermatol* 1998 Sep;139(3):422–7.
- 4 Farrerons J, Barnadas M, Lopez-Navidad A, Renau A, Rodriguez J, Yoldi B, Alomar A. Sunscreen and risk of osteoporosis in the elderly: a two-year follow-up. *Dermatology* 2001; 202(1):27–30.
- 5 Australian and New Zealand Bone and Mineral Society, Osteoporosis Australia, Australasian College of Dermatologists and the Cancer Council Australia: Risks and benefits of sun exposure. Position Statement .

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