

Who is at risk of vitamin D deficiency?

There are groups within the population that are at higher risk of vitamin D deficiency including:

- People with naturally very dark skin. The melanin in dark skin affects UV penetration.
- People with little or no sun exposure including: older adults, those in residential care or housebound; people who wear concealing clothing for religious or cultural purposes; people who deliberately avoid sun exposure for cosmetic or health reasons; people hospitalised for a long time.
- Breast-fed babies born to vitamin D deficient mothers.
- People with conditions (obesity, end stage liver disease, renal disease and fat malabsorption syndromes such as cystic fibrosis, coeliac disease, inflammatory bowel disease) or are taking medications affecting vitamin D metabolism.

If you belong to one of these groups at risk of vitamin D deficiency and you're concerned about your vitamin D levels, consult your GP. Vitamin D levels can be checked with a blood test, and your GP can advise on options, such as supplementation, depending on your individual circumstances.

¹ Gies P, Roy C, Javorniczky J, Henderson S, Lemus-Deschamps L, Driscoll C. Global Solar UV Index: Australian Measurements, Forecasts and Comparison with the UK. Photochemistry and Photobiology, 2004; 79(1): 32-39.

** Hobart data is supplied from personal communication from ARPANSA.

For more information

- Cancer Council cancer.org.au/VitaminD
- Cancer Council SunSmart app cancer.org.au/SunSmartApp
- Cancer Council 13 11 20 (cost of a local call anywhere in Australia)
- Australasian College of Dermatologists dermcoll.edu.au
- Osteoporosis Australia osteoporosis.org.au
- Australian and New Zealand Bone and Mineral Society anzbms.org.au
- Bureau of Meteorology bom.gov.au/uv
- Endocrine Society of Australia endocrinesociety.org.au
- Australian Radiation Protection and Nuclear Safety Agency arpansa.gov.au



Be SunSmart with the free SunSmart smartphone app available at cancer.org.au/SunSmartApp

 **Cancer Council**
13 11 20
www.cancer.org.au

For support and information on cancer and cancer-related issues, call Cancer Council 13 11 20. This is a confidential service.

National Relay Service

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|--------------------------|--------------|
| Deaf or hearing impaired | 13 3677 |
| Speech impairment | 1300 555 727 |

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| Cantonese and Mandarin | 1300 300 935 |
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| Greek | 1300 301 449 |
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| Italian | 1300 301 431 |
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| Arabic | 1300 301 625 |
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For further information and details please visit our website: cancer.org.au

This information has been jointly developed by:



Getting the balance right: vitamin D and sun protection



How much sun is enough?

This information has been jointly developed by:



The sun's ultraviolet (UV) radiation is both the major cause of skin cancer and the best natural source of vitamin D.

In Australia we need to balance the risk of skin cancer from too much sun exposure with maintaining vitamin D levels.

What is vitamin D and why is it important?

Vitamin D forms in the skin when it is exposed to UVB radiation from sunlight.

We need vitamin D to maintain good health, in particular to keep bones and muscles strong and healthy.

Some foods, such as oily fish and eggs, also contain small amounts of vitamin D, while margarine and some types of milk have added vitamin D. However, food only makes a small contribution to the body's overall vitamin D levels and it is difficult to get enough from diet alone.

How much sun do we need for vitamin D?

When the skin is exposed to UV radiation from the sun, vitamin D is formed through a series of processes that start in the skin.

The amount of sunlight you need to make vitamin D depends on a range of factors such as the UV level, your skin type, and your lifestyle. UV levels vary across Australia and throughout the year. Therefore, the amount of time you need to be in the sun to make vitamin D will vary according to your location, the season and the time of day. The amount of vitamin D you make is also related to the amount of skin exposed to the sun – if you expose more of your skin, in most cases you'll make more vitamin D.

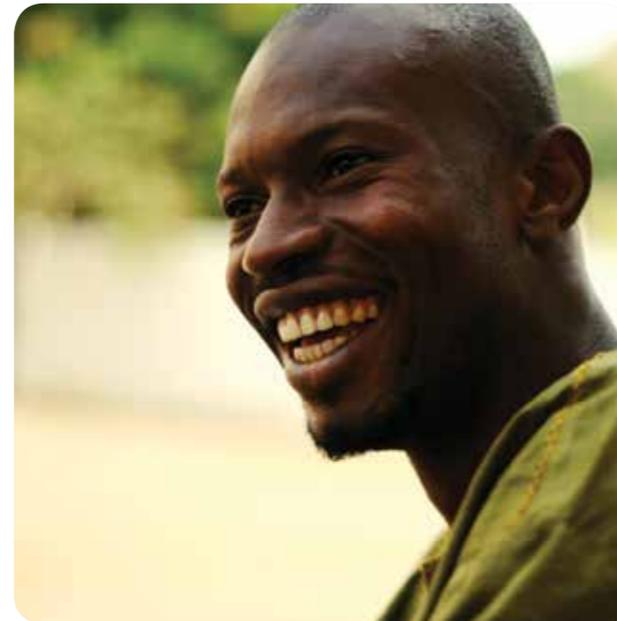
Prolonged sun exposure does not cause your vitamin D levels to increase further, but does increase your risk of skin cancer.

When UV levels are 3 or above most people need just a few minutes of sun exposure, such as walking from the office to get lunch, to get enough vitamin D.

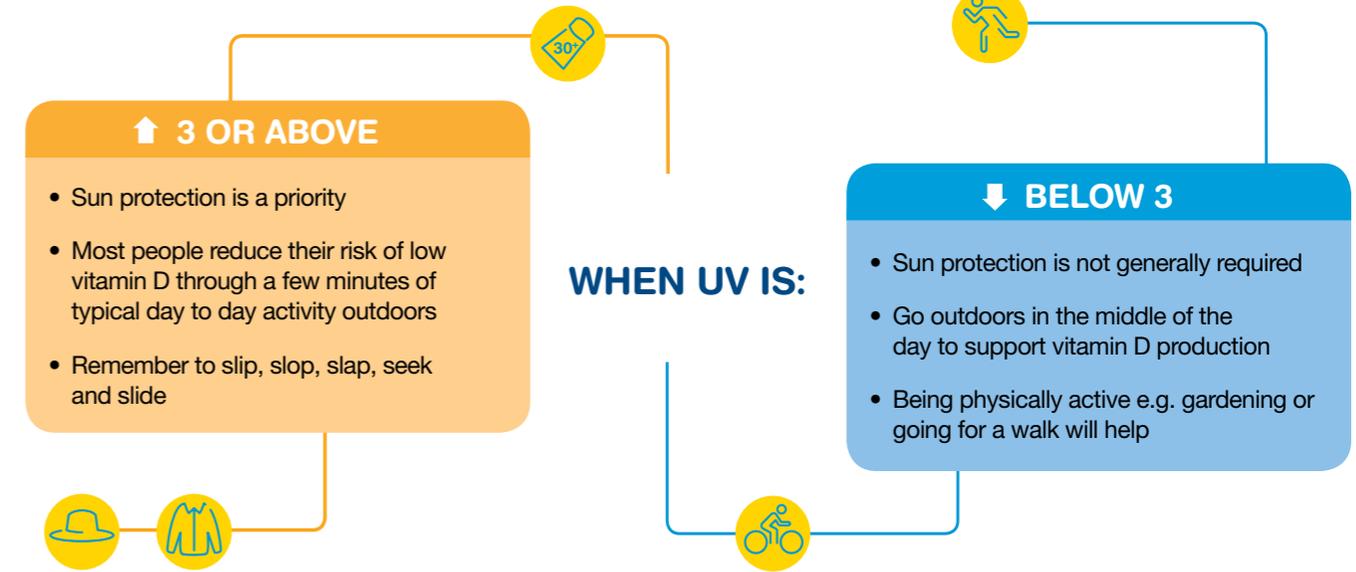
When UV levels are below 3 sun protection is not generally required. In some southern areas of the country where UV levels fall below 3 for most of the winter season, you can help maintain your vitamin D by spending short periods outdoors and being physically active.

If I protect myself from the sun, will I still get enough vitamin D?

Sensible sun protection when UV is 3 or above doesn't put most Australians at risk of vitamin D deficiency. When sunscreen is tested in lab conditions it is shown to reduce vitamin D production, however regular use in real life has been shown to have little effect on vitamin D levels.



Sun protection and vitamin D – getting the balance right



When do I need sun protection?

Sun protection is required when UV levels are 3 or above. The UV Index is an international standard measurement of the strength of UV radiation from the sun at a particular place on a particular day. UV levels are low in the early morning as the sun comes up, gradually increasing to a peak around the middle of the day when the sun is at its highest, and then decreasing slowly as the sun gets lower in the sky.

In the northern parts of Australia (for example Brisbane and Darwin), maximum daily UV levels are above 3 all year round and reach extreme levels of 14+ in summer, so sun protection is needed daily.

In the southern parts of the country, there are times of the year when sun protection is not generally required. For example, in Melbourne and Hobart, UV levels remain below 3 from May to August, so sun protection is not generally required unless you are at high altitudes, regularly work outside for extended periods or are near highly reflective surfaces like snow and water.

UV Index in selected Australian cities averaged over the days in each month

| Location | Jan | Feb | Mar | Apr | May | June | July | Aug | Sep | Oct | Nov | Dec |
|-----------|------|------|------|------|-----|------|------|------|------|------|------|------|
| Darwin | 12.3 | 12.6 | 12.5 | 11.1 | 9.2 | 8.2 | 8.7 | 10.2 | 11.9 | 12.6 | 12.4 | 12 |
| Brisbane | 11.8 | 11.2 | 9.5 | 6.9 | 4.8 | 3.7 | 4.1 | 5.4 | 7.4 | 8.9 | 10.5 | 11.3 |
| Perth | 11.8 | 11 | 8.6 | 5.8 | 3.8 | 2.8 | 3 | 4.3 | 6.1 | 8.1 | 9.8 | 11.4 |
| Sydney | 10.5 | 9.5 | 7.5 | 5.2 | 3.2 | 2.3 | 2.5 | 3.6 | 5.3 | 7.1 | 8.7 | 10 |
| Canberra | 10.7 | 7.7 | 6.9 | 4.8 | 2.9 | 1.9 | 2.2 | 3.3 | 5 | 6.8 | 8.5 | 10.6 |
| Adelaide | 11.2 | 10.1 | 7.8 | 5.1 | 3 | 2.1 | 2.3 | 3.4 | 5.2 | 7.2 | 9.2 | 10.7 |
| Melbourne | 10.3 | 9 | 7 | 4.4 | 2.4 | 1.6 | 1.7 | 2.8 | 4.3 | 6.3 | 8.3 | 9.8 |
| Hobart** | 8 | 7 | 4 | 3 | 1 | 1 | 1 | 2 | 3 | 4 | 6 | 7 |

Table is from Gies et al

UV levels remain below 3

The table above is a guide to average peak UV levels by month for Australian capital cities. The shaded area identifies the months of the year when sun protection may not be required.

You can refer to the SunSmart app to find out the sun protection times for your location.