

# Vitamin D and sun protection

The sun's ultraviolet (UV) radiation is both a major cause of skin cancer and our best source of vitamin D. We need vitamin D to develop and maintain strong and healthy bones, muscles and teeth.

## How do we get vitamin D?

Vitamin D, is made in the body when skin is exposed to UVB radiation from the sun. We can get a small amount of vitamin D from some foods such as fish with skin on, eggs, mushrooms that have been exposed to light, and margarines that have vitamin D added. However it is difficult to get enough vitamin D from food alone.

In Australia, almost all our vitamin D comes from the sun's UV radiation. However, the need for exposure to sunlight for vitamin D must be balanced against the risk of skin cancer. Too much UV radiation exposure can cause skin damage that can lead to melanoma and other skin cancers.

## How much sun do you need for vitamin D?

Production of vitamin D is influenced by a number of factors including:

- UV levels in the atmosphere;
- your age;
- your skin colour; and
- the amount of skin you have exposed to the sun.

UV levels vary depending on time of day, time of year and where you are in NSW making it difficult to provide advice about the amount of sun exposure required to make adequate vitamin D to the population as a whole.

In NSW, people with moderately fair skin should get enough vitamin D by exposing about 15% of the body (hands and arms or lower legs) to sunlight for the recommended time periods on most days of the week. The recommended time periods below have been developed as a **guide only** to assist people living in NSW maintain adequate vitamin D levels, while minimising the risk of skin cancer.

### October to March\*\*

- 10 minutes in mid-morning or mid-afternoon.

### April, May, August and September\*\*

- 15 minutes in mid-morning or mid-afternoon.

### June and July\*\*

- Southern NSW (eg Sydney, Batemans Bay, Wagga Wagga): 30-40 minutes in the middle of the day.
- Northern and far western NSW (eg Cape Byron, Armidale, Cobar): 20-25 minutes in mid-morning or mid-afternoon.

\*\* Care must be taken by people with very fair skin and/or at high risk of skin cancer. Always check UV levels in your local area at [cancercouncil.com.au/sunsmart](http://cancercouncil.com.au/sunsmart) or download the free SunSmart app. When UV levels are 3 and above, use sun protection.

## Reducing the risk of skin cancer

Australia has among the highest rate of skin cancer in the world. Almost all these skin cancers are caused by overexposure to UV radiation and it is important that time spent in the sun for vitamin D does not increase your risk of melanoma and other skin cancers.

Research has demonstrated that short periods of exposure to UV radiation are more efficient at producing vitamin D than long or intense periods of exposure. Long periods in the sun do not improve vitamin D levels but increase the risk of skin damage and skin cancer.

UV levels that are 3 and above are strong enough to cause permanent damage to your skin and eyes. Cancer Council NSW recommends that when UV levels are 3 and above, you should protect your skin in five ways:

- **Slip** on clothing that covers your arms and legs
- **Slop** on SPF30+ or SPF50+, broad-spectrum sunscreen
- **Slap** on a broad-brimmed, bucket or legionnaire-style hat
- **Seek** shade
- **Slide** on wrap-around sunglasses with Australian Standard AS/NZS 1067.1: 2016 and have an eye protection factor of (EPF) of 10.

## Getting enough vitamin D

The amount of time you need to be in the sun to make vitamin D will depend on the following:

### Your geographic location

All areas of NSW experience high levels of UV radiation most of the year round. In northern and far western regions of NSW, UV levels remain moderate to high (3 and above) all year round. In southern parts of NSW, UV levels drop below 3 in June and July only. When UV levels are 3 and above, sun protection is recommended.

### Time of year

UV radiation is stronger in summer than in winter because the sun is high in the sky and its rays pass through less atmosphere before reaching the earth's surface. We make more vitamin D in less time when UV levels are high. However, high levels of UV radiation also increase the risk of skin damage and skin cancer.

### Time of day

UV radiation levels change throughout the day - lower in the morning, peaking in the middle part of the day, and gradually dropping again throughout the afternoon.

In the early morning and late afternoon (especially in the southern parts of NSW), UV levels may be too low to make vitamin D. When UV levels are below 3, most people do not require sun protection unless you:

- have very fair skin (skin type 1)
- are at high altitudes (mountains)
- are outside for extended periods of time
- are near highly reflective surfaces like water or snow.

## Your skin type

Naturally dark skin has more melanin, the black/brown pigment that gives skin its colour, than fair skin. Melanin protects the skin by absorbing damaging UV radiation and preventing it from reaching cells deeper in the skin.

This means that people with naturally dark skin are at lower risk of skin cancer than people with fair skin. However, people with dark skin will need longer periods of sun exposure and expose more of their skin to the sun (see below) to make adequate vitamin D than people with fair skin.

Even though skin cancer is less common in people with dark skin, skin cancers that do occur are often detected at a later and more dangerous stage. It is recommended that people with dark skin should also protect their eyes from the damaging effects of UV radiation by wearing broad-brimmed hats and sunglasses.

## Amount of skin exposed

The more skin you have exposed, the faster your body will make vitamin D. However, exposing about 15% of the body (hands and arms or lower legs) for the recommended time periods should produce enough vitamin D for most people.

## Who is at risk of low vitamin D?

Some groups in the community may be at risk of low levels of vitamin D:

- Elderly people, particularly those who don't go outdoors very often.
- People with naturally dark skin.
- People who cover their skin and heads with clothing and veils for cultural or religious reasons. The less skin that is exposed to UV radiation the harder it is to get adequate vitamin D.
- People with prolonged illnesses who spend little time outside.
- People who work indoors and spend little time outside.
- Babies of mothers who have low levels of vitamin D. An unborn baby is dependent on the mother's levels of vitamin D to form healthy bones. As breast milk is not a good source of vitamin D, a baby born with low or deficient levels will find it difficult to get the vitamin D they need. If you are concerned about your baby's vitamin D levels, do not stop breastfeeding and do not deliberately expose your baby to sunlight. Talk to your general practitioner (GP) or a child health nurse at your Early Childhood Health Centre.
- People with prolonged illnesses who spend little time outside.
- People who work indoors and spend little time outside.

People in identified risk groups should talk to their GP about vitamin D. A GP can decide whether to order a blood test to check your vitamin D levels, and can advise you about sun exposure, diet and supplements.

## Can using a sunbed increase vitamin D levels?

UV radiation in sunbeds is a significant risk for skin cancer and should not be used to increase vitamin D levels.

## Does sunscreen stop vitamin D?

Sunscreen filters out most but not all UV radiation. Research indicates that people who use sunscreen regularly when UV levels are 3 and above, do not have lower vitamin D levels than people who do not use sunscreen.