

Vitamin D and Bone Health

Vitamin D is needed to absorb calcium from the intestine to support healthy bones. Vitamin D also plays a role in supporting growth and maintenance of the skeleton and regulating calcium levels in the blood.

Sunshine and Vitamin D

For Australians the main source of vitamin D is from exposure to sunlight. Vitamin D is produced when our skin is exposed to ultraviolet B (UVB) light from the sun. Limited sun exposure is needed to produce adequate levels of vitamin D. Exposure times vary based on the season and location within Australia. Skin type and the amount of skin exposed also affects the amount of sun needed for healthy bones.

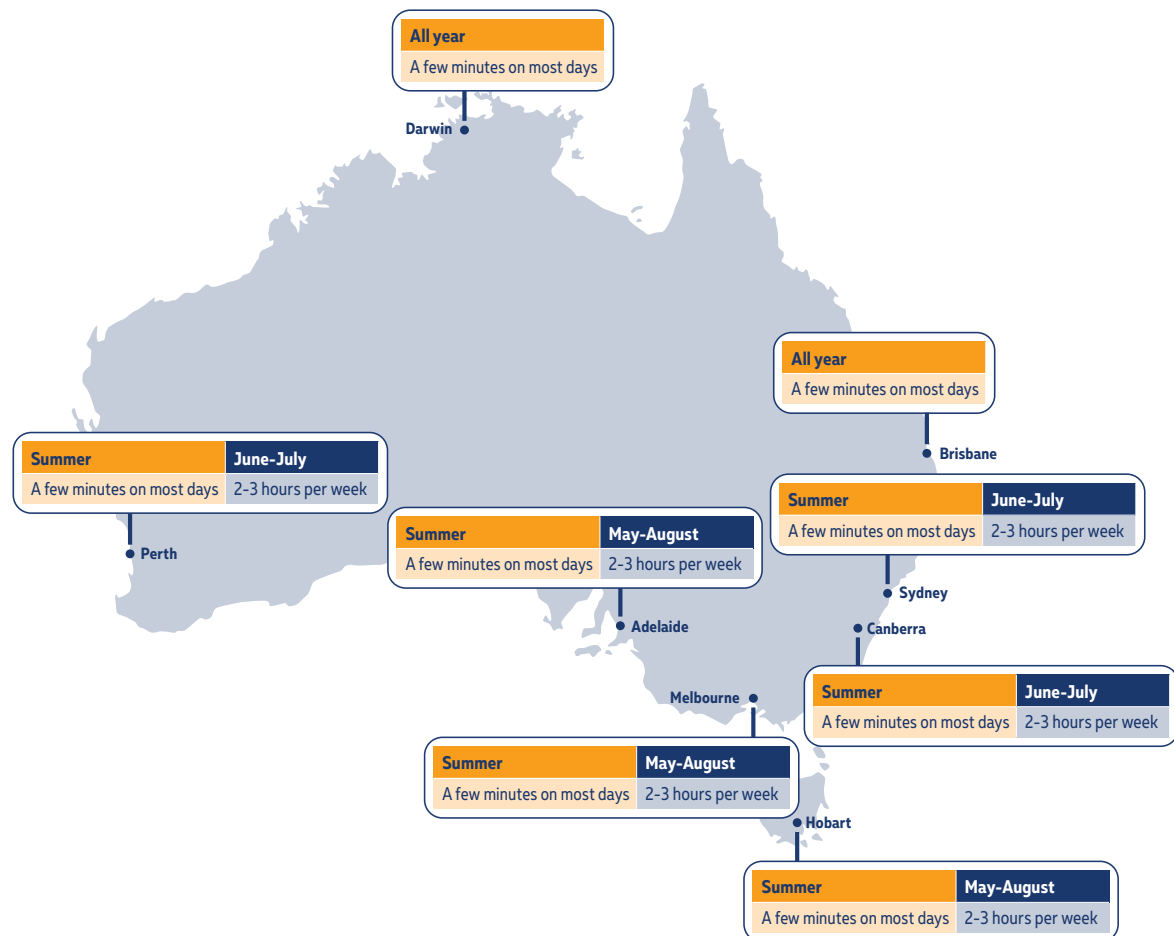
It is important to balance the need for limited sun exposure for vitamin D, while avoiding the risk of any sun damage. In line with Cancer Council Australia's recommendations when the UV Index is 3 or above sun protection is required when outdoors for more than a few minutes.

Seasonal Changes

In summer a few minutes mid-morning or mid-afternoon (outside UV Index 3 or above) is generally adequate for vitamin D and in winter longer exposure times are needed. Refer to the Sunshine Map below as a general guide and check the UV index (via the SunSmart app, myuv.com.au or Australian Bureau of Meteorology website).

Sunshine Map

Recommended sun exposure for vitamin D based on location within Australia.



Vitamin D and Bone Health cont.

Vitamin D Levels

Vitamin D levels change throughout the year. Your levels are highest in late summer and lowest at the end of winter. Healthy Bones Australia recommends a vitamin D level of at least 50 nmol/L at the end of winter and during summer higher levels are common in the range of 60-70 nmol/L.

Your doctor will only test your vitamin D level (with a blood test) if you are at risk of vitamin D deficiency. People at risk include:

- Adults mainly indoors due to health or work
- Naturally dark skinned (darker skin reduces the penetration of UV light)
- Sun avoiders due to skin protection or medical advice
- Covering body for cultural or religious reasons
- Medical conditions which can impact the ability to absorb / process vitamin D
- Pregnant or breastfeeding women
- Elderly, housebound or in residential care

Vitamin D Deficiency

In Australia over 30% of adults have a mild, moderate or severe deficiency of vitamin D. Vitamin D deficiency can:

- Lead to osteoporosis
- Result in bone and joint pain
- Increase the risk of falls and related fracture in older people

In addition it can impact an unborn child in a vitamin D deficient mother, resulting in rickets (in severe cases) and can be linked to other diseases.

Vitamin D Supplements

For people with low vitamin D levels a supplement may be required as advised by your doctor or pharmacist. Low vitamin D levels can be easily corrected but may take several months to improve. Vitamin D supplements are available as tablets, capsules, drops or liquid. Most vitamin D supplements are vitamin 'D3' and the standard dose is in International Units (IU). Your doctor will advise you on the appropriate dose required and your pharmacist can provide general advice on vitamin D supplements.

Healthy Bones Australia recommends the following doses of vitamin D as a general guide only:

People who obtain some sun exposure but not at the recommended level	• Adults at least 600IU per day • Over 70 years at least 800IU per day
Sun avoiders or people at risk of vitamin D deficiency	• 1,000 IU - 2,000 IU per day • Higher doses may be required
Moderate to severe vitamin D deficiency	• 3,000 – 4,000 IU per day for 6-12 weeks to raise the level of vitamin D quickly, followed by a maintenance dose of 1,000 -2,000 mg per day • As advised by a doctor

Vitamin D and Food

Food does not provide an adequate amount of vitamin D. A limited number of foods contain small amounts of vitamin D such as egg yolks, liver, oily fish (salmon, tuna, mackerel, herring) and selected products fortified with vitamin D (eg milk powder, margarine and cereal).

Vitamin D and Bone Health cont.

Calcium and Exercise

Simple steps to help support your bone health in addition to adequate vitamin D intake.

Focus On	Recommended
Calcium	• 1,000 mg per day from the diet • Increasing to 1,300 mg for women over 50 years and men over 70 years • If dietary intake is low a supplement may be required
Exercise	• Specific mix of weight bearing, resistance training and balance exercises

Other Common Risk Factors

Review other common risk factors for osteoporosis. If any risk factors apply to you – discuss these with your doctor.

Personal History	Medical Conditions	Medications
Previous fracture (from minor bump or fall)	Coeliac disease	Certain treatment for breast cancer
Family history of osteoporosis (parent/sibling)	Overactive thyroid or parathyroid	Certain treatment for prostate cancer
Loss of height (3 cm or more)	Rheumatoid arthritis	Glucocorticoids (steroids)
Smoking/Excessive alcohol	Early menopause/Low testosterone	Anti-epilepsy treatment
Inadequate calcium, vitamin D or lack of exercise	Chronic kidney disease or liver disease	
Age 70 years and over	Diabetes	

For more information



Call our national toll-free number

1800 242 141



Visit our website

healthybonesaustralia.org.au



Talk to your doctor

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