

VITAMIN D AND SUNLIGHT



Multiple Sclerosis Society
of SA & NT

For many years, Vitamin D has been known to have important effects throughout the body. Most commonly, Vitamin D has been shown to have an important role on maintaining bone health.

Recent studies have linked low Vitamin D levels to many diseases, including MS.

What is Vitamin D?

Vitamin D is a hormone as well as a vitamin. It is often referred to as the “sunshine vitamin” because sun exposure is crucial for the body to synthesize the active form of vitamin D.

Why is Vitamin D important?

Vitamin D has been in the news a lot lately. This naturally occurring bodily substance has been linked to lower rates of diabetes, colon and prostate cancer, and it may also have an important role in the development of certain immune-mediated conditions such as rheumatoid arthritis and MS.

Vitamin D is vital for optimal bone health and the absorption of calcium. A deficiency of Vitamin D

can lead to osteoporosis and influences strength and balance.

The body cannot absorb calcium without Vitamin D – hence if you take calcium supplements then you must also get enough Vitamin D to enable your body to absorb the calcium.

Geographical distribution of MS

An Australian study has shown that the further away from the equator that you live the higher the incidence of MS. In other words the incidence of MS is higher in Tasmania than in Queensland and even lower for those who live closer to the equator. People with MS with a severe disability are more likely to have a low level of Vitamin D. Other studies show that people with a high Vitamin D level have a low relapse rate.

The Australian study found that people with a higher disability are 3 times more likely to have low Vitamin D levels than the general population. It seems that people with a higher disability may spend less time outside and therefore

have lower Vitamin D levels.

What is the right level of Vitamin D?

It may sound obvious, but Vitamin D deficiency is higher in winter/spring compared to summer/autumn.

A simple blood test conducted by your GP can detect your Vitamin D levels, and you should have a test at the end of winter and then annually if your levels are adequate. The amount of time you spend in the sun, the time of day that you are outside, the amount of clothing that you wear outside, the use of sunscreens and your body's ability to absorb sunlight all affect your Vitamin D levels.

The current recommended minimum Vitamin D level for Australians is 50nmol/L, with research suggesting levels of at least 75 nmol/L and up to 150 nmol/L. Less than 25nmol/L indicates a Vitamin D deficiency.

You are more likely to be Vitamin D deficient if you have dark skin or are of Asian origin, older or overweight, rarely go outside, always 'slip, slop and slap' when outdoors. Pregnant and breastfeeding women are also at

risk of low levels of vitamin D, as are people with medical conditions that affect the way the body handles Vitamin D such as Coeliac disease, Crohn's disease and those taking certain medications – carbamexepine, phenytoin or barbituates. Finally, those with a family history of Vitamin D deficiency are also at risk of low levels of Vitamin D. The more factors that apply to you, the higher your risk of low Vitamin D levels.

In Australia, 30 – 50% of people have low Vitamin D levels.

How to increase your Vitamin D level

Dietary sources

Unless you take cod liver oil and eat fatty fish in large quantities every day, you are not able to get your optimal level of Vitamin D from food sources. Small amounts can be obtained from fatty fish (mackerel, Atlantic salmon, herring) and some fortified margarines and milks.

Sunlight

Exposing your body to sunlight is the cheapest way to get your Vitamin D, but it can come at the cost of increasing your risk to skin cancer and eye disease.

A review of Vitamin D production from sunlight recommended getting all over sun, such as wearing nothing more than your bathers or less, *without sunscreen* for about 10 – 15 minutes on a standard UV index of 7 about 2 – 3 times a week. Check the www.bom.gov.au for the daily UV index. This dose of UV light is just less than the level to get some colour on your skin. This amount of whole body exposure generates the maximum amount of Vitamin D possible ie about 10,000 to 15,000IU. Staying longer in the sun does not cause extra Vitamin D to be made, and longer exposure will increase your risk of skin cancer and other diseases. Exposing a smaller area of your body, eg your arms and legs for longer does not work either. Once all the Vitamin D is made in a given area of the body, such as the arms and legs in the 15 minutes or so, no more is made until the chemical in the skin is formed again, roughly by the next day.

In South Australia we generally have enough sunlight in winter so that it is not necessary to get extra sunlight – so long as you get your sun exposure when the UV index

is 7 or higher.

UVB rays produce Vitamin D when they hit the skin. As all UV light goes through water, swimming is a good way to exercise and get your levels of Vitamin D up.

Sitting in the sun behind glass will not increase your Vitamin D level because glass does not allow UVB to pass through. Solariums use a mixture UVA and UVB rays so you need to check if a solarium uses UVB if you choose to use a sun bed on cloudy days. The Society does not recommend solariums.

If your levels of disability are higher then you should consider greater sun exposure and taking supplements, depending on your Vitamin D test results.

Supplements

The current recommended daily intake for Australians is 400IU daily. However, scientific studies are generally suggesting a much higher level for people with MS, at least 1000IU per day. It is not possible to get toxic levels of Vitamin D if it all comes from the sun, and if taken by supplements only very high levels (>10,000IU) are toxic.

Over the counter vitamin D3 supplements are readily available

however check with your GP or Pharmacist. Check the dosage in each tablet as it varies greatly between brands. Calcium supplements usually contain Vitamin D, but it is unlikely that you would get enough Vitamin D just from calcium supplements. If you are a vegan or a vegetarian be aware that vitamin D3 supplements are manufactured from lanolin. You can get high dose Vitamin D2 supplements from online vegan stores. If you take a Vitamin D supplement you should inform your GP.

If you are interested in more information:

The Society has more information sheets included in the Healthy Living Series as well as a Managing MS and Symptoms series. Please see the website for more details.

References

If you are researching Vitamin D for people with MS then your first choice should be Australian sources as they are more relevant – obviously there is more sunlight in Australia than in the UK or Canada.

Menzies Research Institute University of Tasmania

http://www.menzies.utas.edu.au/pdf/Vitamin_D_A4_Brochure_VanderMei.pdf

Overcoming MS - Dr George Jelinek's website

Sunlight and vitamin D <http://www.overcomingmultiplesclerosis.org/Recovery-Program/Sunlight-and-Vitamin-D/>

Overcoming MS (book) by Dr George Jelinek 2010
<http://www.overcomingmultiplesclerosis.org/book/>

MS Society of New Zealand

Sunlight and vitamin D
http://www.msactivesource.com/msasProject/msas.portal/_baseurl/threeColLayout/M

Sunlight and other MS

symptoms

The heat of the sun might make your MS symptoms worse. If this is the case avoid the direct heat by going outside when there is a breeze or swimming in cool water.

Summary

Vitamin D is increasingly promoted as part of a healthy lifestyle for all Australians, but if you have MS, Vitamin D may be an important addition to your health care routine, right alongside taking your treatment as prescribed.

SASRepository/en_US/msas/home/wellness/multiple-sclerosis-exercise-and-fitness/index.xml

MS Resource Centre (MSRC)

<http://www.msrc.co.uk/index.cfm/fuseaction/show/pageid/1334>

MS Trust (UK)

Vitamin D fact sheet <http://www.mstrust.org.uk/downloads/vitamind.pdf>

Other sources

Dr Michael Holick 'The Vitamin D Solution' 2010 (book). The first chapter is available at

http://us.penguinroup.com/nf/Book/BookDisplay/0,,9781594630675,00.html?sy_m=EXC

His website is <http://www.vitaminhealth.org/>

MS Society (US)

[nationalmssociety.org/vitaminDstudies.](http://nationalmssociety.org/vitaminDstudies)

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