

Take vitamin D3 if it's your only spend on MS. Use a few pence a day on getting your vitamin D3 levels to 125-150 nmol/L."

Says Mark Walker, pharmaceutical consultant

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With vitamin D, it's important to get both the formulation and your blood level right. If you want vitamin D to be absorbed, don't take it as tablets.

Getting vitamin D from sunshine is best thing, short bursts of sunbathing without any sunburn is ideal. Living in the UK this is not usually possible, so we need to take supplements to achieve an optimal blood level of D3 or go on regular sunny holidays.

Vitamin D3 is an oil-soluble vitamin, and it needs to be dissolved before we can absorb it. The easiest formulation to take is a soft gelatine capsule. A gelatine outside layer contains oil, usually olive oil. Vitamin D3 is dissolved in the oil.

Vitamin D3 is more bio-available and effective than D2, which is sold in tablets. I never recommend anyone to take vitamin D2. People with MS might think they are doing themselves good by taking any sort of vitamin D, but they are probably wasting their money with tablets. The reason is that your body has to convert vitamin D2 to vitamin D3, the active form, and people with MS may not do this.

Vitamin D3 in capsules is extracted from natural sources such as sheep lanolin, fish body oil and even krill oil. However, be careful if using cod liver oil as your source of vitamin D as it also contains vitamin A, which is toxic to humans at high levels. You can get vitamin D from eating oily fish and people living on the coast of Norway suffer less with MS, despite getting even less sunshine than we do.

Higher levels of vitamin D = fewer relapses

A small study found that high levels of Vitamin D3 meant fewer relapses and the beneficial effect increases up to 115nmol/L. From this and other studies I recommend that pwMS have a lower target of 125nmol/L. Such research has been largely ignored by the medical establishment and larger studies are just starting.

In suggesting a target level blood level for vitamin D3 for people with MS I

have used lots of research data and considered human history. I started by thinking about human evolution! Humans evolved spending most of their time in daylight, foraging for food. Vitamin D3 is manufactured by the skin and stored in the body's fat until it was required. This continued until the Industrial Revolution, which changed everything. Unfortunately, vitamin D3 levels were not measured in the 1600s, so we have no historic data! However, a study measured the natural levels of D3 in lifeguards in St Louis, USA. The average level was 150 nmol/L. I suggest this as my upper target level because it is natural for humans to have this level of vitamin D3. The medical establishment (see box) gives warnings about toxic high levels of D3, which have no basis in science. If you want to read more about high but safe levels of D3 visit the Vitamin D Council website. My upper value of 150nmol/L is extremely cautious and very safe for pwMS.

To illustrate bizarre analysis on vitamin D3 I quote from the European Food Standards Authority (EFSA): *"In adults, a daily vitamin D dose of 250 µg/day (range 234-275 µg/day) was considered to reflect a no observed adverse effect level (NOAEL)."* 250 µg/day is 10,000 IU per day. However, EFSA then says: *"the UL (upper level) for adults including pregnant and lactating women was set at 100 µg/day."* EFSA's upper level is 4,000IU per day!

In summary, EFSA say 10,000IU per day is safe but EFSA's upper level is 4,000IU per day. I recommend that pwMS take 5,000IU per day. If you wish to follow the EFSA guidelines then just take it for 6 days a week, but I feel this is overly cautious.

NHS Figures for Vitamin D status:

Less than 15 nmol/L	Severe deficiency
15 -30	Deficiency
30.1 -50	Insufficiency
Greater than 50	Adequate

Total vitamin D levels above 220 nmol/L are considered 'High' and increase the risk of vitamin D toxicity.

Source: Department of Clinical Biochemistry, City Hospital, Birmingham.

Sandwell & West Birmingham Hospitals NHS Trust

For pwMS the 50 nmol/L given by the NHS is a totally inadequate level for pwMS. When you are given any test results always ask for the actual result, not the NHS interpretation of your result.

Vitamin D3 is vital for human health because it is a precursor for vitamin D3 hormone (also known as Calcitriol), which is an immune system regulator. This means that vitamin D3 is also useful for MSers with progressive MS, not only relapsing-remitting MS.

Some very recent research uses vitamin D3 and Calcitriol in a novel protocol to reset the immune system in pwMS. It works in mice and I await a 'proof of concept' trial in humans, with great interest.

My target range level of 25 (OH) D3 in blood for someone with MS is 125-150 nmol/L. The key is getting people with MS at this level – it's a no-brainer. If it's the only thing you do, spend a few pence a day on getting your vitamin D levels into this range.

If your level goes above 220 nmol/L, your GP may be concerned and you may need to reduce your supplements to keep him/her happy. I believe there is no vitamin D toxicity below 500 nmol/L as the human body is a wonderful machine – if there is excess, we get rid of it.

I recommend that you get your level checked and your Calcium levels at the same time. Your GP/Practise Nurse can do this on the NHS. Measuring calcium and vitamin D together is a good indication of bone health. PwMS need healthy bone as we know that falling over is a hazard of MS. You might need to badger your doctor for these tests. It is best to know your baseline before starting to take D3 supplements so you have a figure to compare against.

My advice for anyone with MS is to take 5000 IU a day of vitamin D3, all year round. I take 10,000 IU in the winter (daylight saving period of October to March) and 5,000 IU in the lighter, summer months. Added to this, I love sunbathing and try to get a winter sun holiday.

However, some people with MS find it hard to get up to levels of 125 nmol/L even if they are taking 5,000 IU dose every day. They may not be absorbing the vitamin D well because they don't have enough of certain minerals and trace elements, sometimes called co-factors. When this happens I suggest taking Lambert's Mega Mineral Complex, which contains calcium, phosphorus, iron, magnesium, zinc, iodine, manganese, boron, copper, chromium, selenium and

molybdenum (other brands contain similar ingredients). This is a practical solution to trying to discover which elements are low in your diet, as the NHS does not allow testing to discover if you are efficient in one of the co-factors. Once again the body excretes what you do not require.

Prof. George Ebers (recently retired Head of Department of Clinical Neurology, Oxford University) tried to convince the Scottish Government on the BBC (search BBC website) to supplement vitamin D to the whole Scottish population. Unfortunately the politicians would not listen to him.

I suggest a less dramatic programme. Research shows that Epstein Barr virus is a major risk factor for MS and Scotland has the highest incidence of MS in the UK. We could cut down the number of cases of MS if everyone who gets glandular fever or who has had the disease (Epstein Barr virus) is checked for vitamin D levels and given supplements so that their levels get to 125-150nmol/L. The medical establishment says we need more data but will not commission the research. This is extremely short-sighted as Oxford University published data showing that the total lifetime economic cost of a diagnosis of MS is one million pounds. (Diagnosis of MS costs £1m in a person's lifetime if you include lost earnings, benefits paid, cost to the family, the NHS and the economy in general).

The cost of vitamin D3 is low. Currently, I supply 5000 IU of vitamin D3 in a soft gelatine capsule to any member or personal caller to my local MS Therapy Centre who wants it. Cost is £10 for 360 capsules, a year's supply, imported from the USA. OMSTC's website also has a link, which points you to an internet supplier. Your GP may give you 5,000IU per day on an NHS script, it is worth asking.

To show that vitamin D3 would help, I hope that medics in Orkney and Shetland (whose population have the highest levels of MS in the UK) will start testing vitamin D3 levels in their young people who get Glandular Fever and those who had it the past. Then supplement D3 levels to 125-150nmol/L. I am not holding my breath for a response as no one listened to Prof Ebers. Why will I get noticed? Politicians are just deaf to this. I do not understand why conducting D3 tests and giving capsules costing a few pence per day is not tried in Shetland and Orkney, as an open label population study. I guess you have done the arithmetic - giving 5,000IU a day to all of the 100,000 of us with MS would cost around £1 million. It makes economic sense, why not just do it.

I was 19 when I had glandular fever. Now I wonder how differently things might have turned out if I had started taking vitamin D3 and boosted my D3

level, all those many years ago.

Author info:

Mark Walker, 54, was diagnosed with MS in 1996. An interview he gave to the Daily Telegraph - <http://www.telegraph.co.uk/health/7882358/Can-a-controversial-new-treatment-for-multiple-sclerosis-offer-relief.html> - gives details of his background. He is also an advocate for CCSVI and wrote an article - <http://www.telegraph.co.uk/health/8359854/MS-experts-in-Britain-have-to-open-their-minds.html>

Mark lives near Oxford with Natasha Austin, his wife.
