



# Vitamin D - The Unique Vitamin



Sunshine, not food, is where most of your vitamin D comes from. So even a healthy and well balanced diet, that provides all the other vitamins and nutrients, is unlikely to provide enough vitamin D.

To get enough vitamin D you need to spend some time outside with some bare skin on most days during the summer months.

## How is vitamin D different to other nutrients?

You make vitamin D under your skin when you are outside in daylight, which is the reason vitamin D is sometimes called the sunshine vitamin. By definition, a vitamin is a nutrient that we cannot make in our body. Vitamin D is actually a hormone rather than a vitamin. Very few foods contain vitamin D naturally.

## What does vitamin D do in my body?

Vitamin D makes sure you absorb enough calcium for your bones and teeth. Even if you have a calcium-rich diet, without enough vitamin D you cannot absorb calcium into the body. Its importance as a hormone is also being recognised. It helps maintain a healthy immune system and reduces the risk of some forms of cancer. Population studies suggest that lack of vitamin D may increase the risk of chronic health conditions such as multiple sclerosis.

## When is vitamin D made in skin?

The amount of vitamin D you make depends on how strong the sunlight or ultraviolet light is. You will make more in the middle of the day than early morning or late afternoon. Similarly you will make more when you are in direct sunlight than in the shade or on a cloudy day. Ultraviolet B rays enable vitamin D to be made, yet sun damage caused by excessive ultraviolet B exposure increases the incidence of malignant melanoma and other skin tumours.

You do not have to sunbathe to make enough vitamin D and most people make enough by spending some time outside on most days in the summer with some bare skin such as hands, face and arms or legs. You need to make enough during the summer to build up a store to last you through the winter.

You will make less vitamin D under your skin:

- If you have a dark skin
- If you always cover up when you go outdoors
- If you are housebound, or rarely leave work during lunchbreaks
- The further north you live
- If the air is quite polluted
- When you use sunscreen above factor 8



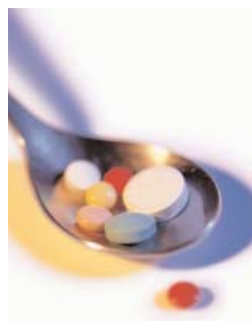
It is possible to make a smaller amount of vitamin D when the skin is covered by fine material, such as fine silk, or 10-20 denier tights. Strong sunshine at the Equator is sufficient to make vitamin D year-round. It is estimated that here in the UK ultraviolet light is only strong enough to make vitamin D on exposed skin in the middle of the day (probably about 10am - 3pm) during the summer months: April to September. Exposing skin for about 20 minutes (but longer for older people or those with darker skin) before applying sunscreen during these times, on most days, will probably ensure you make enough vitamin D to last you the whole year.



Outside these times and seasons ultraviolet light may be too weak to make vitamin D. If you are concerned about the risk of skin cancer, and always use a high factor sunscreen or cover your skin when outside, the only way to ensure a healthy vitamin D status is to take a supplement.

## Who may not make enough vitamin D?

- Babies and young children who are growing quickly need a lot of vitamin D
- Pregnant women and breastfeeding mothers need more than other women.
- Pregnant teenagers are vulnerable because their own bones are still developing and they need extra for their baby
- The elderly because their skins are not as good at making vitamin D
- People with darker skins living in the UK or other northern climates - that is those of Asian, African, Afro-Caribbean and middle-eastern origin. They make less





- vitamin D than white people do
- If you always cover most of your skin when you are outside
- Children and adolescents who spend little time playing outside
- Anyone who spends very little time outside during the summer - the housebound, shop or office workers, night shift workers.

## Which foods contain vitamin D?

- Oily fish such as salmon, sardines, pilchards, trout, kippers, eel are the only foods which naturally contain reasonable amounts of vitamin D.
- Cod liver oil contains a lot of vitamin D.
- Eggs and meat contain small amounts.
- Margarine, some breakfast cereals and infant formula have added vitamin D.

## What happens if you don't have enough vitamin D

- Babies and children can get rickets.
- Very young babies sometimes have fits.
- Adults can get osteoporosis (brittle bone disease) or osteomalacia which causes pain in their bones.
- Adults are also more likely to get breast cancer or prostate cancer.
- Some scientists believe that more people are getting Type 1 diabetes, rheumatoid arthritis, multiple sclerosis and some bowel diseases because of not having enough vitamin D

## Who needs a vitamin D supplement?

- Anyone with a dark skin, or who covers most of their skin when outside in summer
- Pregnant and breastfeeding women need 10 mcg of vitamin D daily. This is to make sure they have enough for their fetus and their breast milk. Babies born with low levels of vitamin D and those who do not get enough in breast milk may have fits or develop rickets. Breastmilk is fairly low in vitamin D but will be very low

when the breastfeeding mother is deficient herself.

- Breastfeeding babies need 7 mcg vitamin D daily from six months of age.
- Formula fed babies need 7 mcg vitamin D daily when they begin to have less than 500mls formula each day.
- Young children up to five years of age need 7 mcg daily.



## Where are vitamin D supplements available?

Vitamin D only supplements are not widely available. Vitamin D is available as part of the children's Healthy Start vitamin drops (containing A, D and C) and Healthy Start vitamin tablets for pregnant and breastfeeding women (containing C, D and folic acid) which are available from NHS health clinics, children's centres and some retail pharmacies and are free to Healthy Start beneficiaries.

Vitamin D is included in broad-spectrum one-a-day multivitamin supplements, and in calcium supplements prescribed by your GP to prevent or treat osteoporosis.



## Can someone have too much vitamin D?

Taking a vitamin D supplement as well as spending a lot of time outside in sunshine will not be a problem. However do not take two or more supplements with vitamin D.

Remember that cod-liver oil contains vitamin D and should

be counted as a vitamin D supplement.

Always choose a supplement tailored to the age group or condition, as fish liver oils and high dose multivitamin supplements often contain vitamin A, too much of which can cause liver and bone problems, especially in very young children, and the elderly.

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