

# Patient Information: Vitamin D Deficiency



## Why is vitamin D important?

Vitamin D (also called ergocalciferol or colecalciferol) is important to maintain good health. Its action is to regulate the concentration of calcium and phosphate in the bloodstream and promote the healthy growth of bone. Vitamin D prevents rickets in children and osteomalacia in adults, and together with calcium, helps to protect older adults from osteoporosis.

Vitamin D also affects nerve and muscle function, inflammation, and influences the action of many genes that regulate the growth of cells.

## Who is at risk of deficiency?

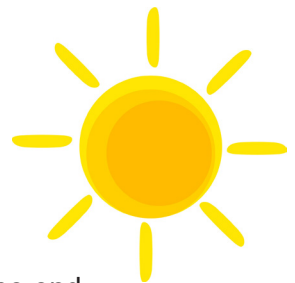
People may be at a greater risk of having vitamin D deficiency if they:

- Have darker skin tones such as those of Mediterranean or Black, Asian and Minority Ethnic heritage
- Are over 65 years
- Are young children under 5 years
- Are pregnant or breastfeeding
- Are overweight
- Wear occlusive garments when outside
- Have a diet restricted to certain food (e.g. vegetarian or vegan)
- Spend a lot of time indoors (e.g. hospital, housebound or care home)
- Have certain medical conditions (e.g. malabsorption, renal or hepatic diseases)
- Take certain medicines (e.g. psychotropics or anti-epileptics)

## Sources of vitamin D

### Sunlight

Vitamin D is made in the skin by the action of sunlight. The best way to increase vitamin D levels for most people in the UK is by spending time outdoors regularly over the summer months. Recommended daily exposure for around 10 to 15 minutes between 11am to 3pm from late March to the end of September is adequate for most people. Covering up and protecting skin with sunscreen (at least SPF 15 and UVA protection) before the skin starts to turn red or burn is important. People with naturally darker skin will need 3-6 times the exposure level of people with fair to olive skin. Extra care should be taken with children.



## Supplementation

Vitamin D supplements can be purchased over the counter from pharmacies, health stores and supermarkets. They are available as colecalciferol in different forms and strengths. Some vitamin D preparations contain peanut or soya which are unsuitable for people with such allergies, and not all vitamin D preparations are suitable for those on vegetarian, vegan, halal or kosher diets.



### ***Adults and children over 4 years***

Adults who are at risk of vitamin D deficiency should take daily supplementation of 10 micrograms (400 IU) of vitamin D throughout the year. Public Health England now recommend that everyone should consider taking a daily supplement if they are indoors most of the day, and during the autumn and winter months.

### ***Pregnant and breastfeeding women***

Pregnant and breastfeeding women should take a maximum of 10 micrograms (400 IU) of vitamin D daily. Many pregnancy supplements already contain vitamin D. Check with a doctor or pharmacist before starting further supplementation.

### ***Babies and children under 5***

Breastfed babies from birth to one year of age should be given a daily supplement containing 8.5 - 10 micrograms (340 – 400 IU) of vitamin D.

Formula-fed babies should not be given a vitamin D supplement until they are receiving less than 500ml (about a pint) of infant formula a day, because infant formula is fortified with vitamin D.

Children aged 1 - 4 years should be given a daily supplement containing 10 micrograms (400 IU) of vitamin D.

## Dietary intake

Vitamin D intake from food only meets about 10% of our needs. Dietary sources are particularly important during the winter months and among people at higher risk of vitamin D deficiency.



Try to include these foods regularly as part of a healthy balanced diet to top up your vitamin D levels.

- Oily fish – salmon, sardines, pilchards, tuna
- Egg yolk
- Dairy – Cheese, milk, butter, yoghurt
- Red meat and liver
- Fortified foods – margarine and low fat spreads, some breakfast cereals
- Mushrooms
- Soya products

## What should I do if I have signs of vitamin D deficiency?

The main symptoms of vitamin D deficiency are bone pain or unexplained tiredness. If you have concerns about vitamin D deficiency you should discuss this with your GP. You may require a blood test to check your vitamin D level. More severe deficiency is treated medically with higher doses of vitamin D than those provided in supplements.

## Are there any risks with taking vitamin D?

Although the risk of having too much vitamin D is extremely rare, you should check with a doctor or pharmacist before you start taking vitamin D supplements. This is particularly important if you:

- Have an underlying condition
- Are pregnant or breastfeeding
- Are taking other supplementation or medicines containing vitamin D
- Are obtaining supplementation for a child

Most people do not experience side-effects from vitamin D supplementation, but these can include abdominal pain, headache and nausea. Taking excess vitamin D supplements over a long period of time can cause calcium to build up in the body (hypercalcaemia). This can weaken the bones and damage the kidneys and the heart. Always follow the daily recommended dose and advice from your doctor or pharmacist.