



وزارة الصحة العامة
Ministry of Public Health
دولة قطر - State of Qatar



البيانات السريرية السريرية
NATIONAL CLINICAL GUIDELINES FOR QATAR

Information for Patients & Caregivers

What You Need to Know About Vitamin D Deficiency.

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+ VITAMIN D is an important nutrient that is involved in many of the body's processes.

It has two main forms:

- Vitamin D₂.
- Vitamin D₃.

These forms are processed in your liver and converted to a substance called 'calcidiol'. The concentration of calcidiol in blood is used to determine whether your level of vitamin D is adequate.

+ WHAT IS VITAMIN D DEFICIENCY & INSUFFICIENCY?

Vitamin D deficiency is a condition when your body does not have enough vitamin D and, therefore, cannot function properly.

Vitamin D insufficiency (or mild deficiency) is a condition when the levels of the vitamin are not very low but are still not ideal.

+ Vitamin D₂ vs. D₃

There are two types of Vitamin D supplements – Vitamin D₂ and Vitamin D₃. Vitamin D₂ is derived from animal products whereas D₃ is derived from plants.

Vitamin D₃ is thought to be more effective at raising vitamin D levels. However, whether this is relevant to human health is still debated.

Vitamin D is sometimes called the "sunshine vitamin" because 80-90% of vitamin D is produced in your skin in response to sunlight.

+ WHAT CAUSES VITAMIN D DEFICIENCY

Vitamin D deficiency can develop because of the following reasons:

- Inadequate exposure to sunlight.
- The production of vitamin D in skin is not as efficient as it should be.
- There is not enough vitamin D in the diet.
- The vitamin D in the body is being broken down by some other medicines.
- There are inherited problems of resistance to the action of the vitamin.
- Other health conditions that can affect vitamin D production or its use in the body.



+ PREVENTION OF VITAMIN D DEFICIENCY

Vitamin D deficiency can be prevented by following a healthy lifestyle that includes adequate sun exposure, a healthy diet, and good vitamin D supplementation.

Only 10-20% daily requirement of vitamin D is derived from food.

Try to have 3 sunlight exposures per week, for 10-15 minutes each from 9:00am-2:00pm.

NOTE: Darker skin people need extended time of sunlight exposure.

+ HEALTHY DIET

There are many dietary sources that contain vitamin D:

- Oily fish and fish products:
 - Trout.
 - Salmon.
 - Mackerel.
 - Herring.
 - Sardines.
 - Anchovies.
 - Pilchards.
 - Tuna.
 - Fish liver oil (cod liver oil).
- Egg yolk.
- Nuts (not very high amounts).
- Mushrooms.
- Fortified foods:
 - Cereals.
 - Milk, yogurt, cheese, butter, etc.
 - Margarine.
 - Cooking oils.
 - Orange juice.
 - Soy, rice, almond beverages.

NOTE: Breastmilk contains almost no vitamin D. Breastfed babies should be given vitamin D supplementation.

+ SAFE SUN EXPOSURE

To get enough sun, expose one third of your body to the sun, or just the face and arms during **outdoor activities**.

NOTE: Indoor exposure to sunlight through a window is not beneficial.

Use **sunscreen**, hats, and sunglasses. Normal use of sunscreen does not stop vitamin D production in the skin.

Indirect and non-burning sun exposure is advised for infants above 6 months old and older children with sunscreen/sunblock and protective clothing.

OVER EXPOSURE TO SUNLIGHT WILL NOT ADD ADDITIONAL VITAMIN D



+ SYMPTOMS OF VITAMIN D DEFICIENCY

Adults and children have different symptoms of vitamin D deficiency.

Typical symptoms of vitamin D deficiency in children include:

- Poor growth.
- Bone and muscle pains.
- Breathing difficulties.
- Late closure of the baby's soft spot on their head.
- Delay in walking.
- Swollen joints.
- Skeletal deformities (e.g. bowlegs or knock knees).
- Dental problems (e.g. late eruption of teeth).
- Spasms, seizures, or irritability.
- Delayed sexual maturation at puberty.

If left untreated, vitamin D deficiency can lead to *rickets*, which is a severe condition that involves loss of bone structure.

Typical symptoms of vitamin D deficiency in adults include:

- Fatigue with exercise.
- Non-specific bone and muscular pain and aches.
- Bone discomfort or pain in the lower back or legs.
- Frequent bone fractures.
- Muscle weakness.
- Mood changes, feeling low and depressed.

If you have been experiencing any of the above symptoms see your primary care doctor.



+ WHAT YOUR DOCTOR WILL DO

The doctor will ask you questions that help to find out a possible cause of the vitamin deficiency.

The doctor will examine you (or your child) and order laboratory tests when required. Blood test results will show how much vitamin D is in the body.

If the tests show a low vitamin D level, your doctor will select a vitamin D supplement that is best suitable for your treatment.

+ TREATMENT OPTIONS

There are many types of vitamin D supplements available for the treatment of vitamin D deficiency or insufficiency.

To restore vitamin D levels to normal, follow the treatment advised by your doctor.

You may also need to take a calcium supplement with vitamin D to help your bones. Your doctor will tell you if you need this.

Following treatment, you will need to maintain a healthy lifestyle and may need daily supplements to keep your vitamin D at the right levels.



+ ADDITIONAL INFORMATION

Additional information on vitamin D deficiency can be found in the National Clinical Guideline published by The Ministry of Public Health (MOPH) Qatar.

The Guideline is available to the public through the MOPH website:

www.moph.gov.qa