



+ 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.

+ 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.

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.



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**

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.



⊕ 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.



⊕ 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.
 - Margarines.
 - Cooking oils.
 - Orange juice.
 - Soy, rice, almond beverages.

