



# VITAMIN D FOR THE PREVENTION OF DISEASE

## PATIENT SUMMARY RESOURCE

### WHO DEVELOPED THESE RECOMMENDATIONS?

The Endocrine Society developed these recommendations by creating a guideline development panel that consisted of experts, guideline methodologists and a patient representative. National and international societies served as co-sponsors with representatives on the panel.

### HOW DID THE ENDOCRINE SOCIETY DEVELOP THESE RECOMMENDATIONS?

The Endocrine Society used a trusted process to develop these recommendations. The Endocrine Society guideline development method can be found at this [link](#).

### WHO WAS THIS GUIDELINE DEVELOPED FOR?

This guideline was developed for people who are healthy and without serious health problems. The main goal of this guideline was to see if taking vitamin D pills or getting tested could stop different diseases from happening.

As this may change depending on the population studied, the groups were divided by age ranges: the pediatric population (1 to 18 years), ages 19 to 49 years, ages 50 to 74 years, and age 75 years and older. Also, some special groups were included, such as pregnant people, people with obesity, people with dark complexion, and people with pre-diabetes.

This guideline doesn't include people with health problems that can cause low vitamin D status, such as intestinal disease or surgeries for obesity. It also doesn't include people who need to carefully manage how much vitamin D they get, such as osteoporosis or conditions related to problems with blood calcium.

### WHAT IS THE PROBLEM AND WHAT IS KNOWN ABOUT IT SO FAR?

Many common health problems show abnormal levels of vitamin D, but no actual cause has been established that links abnormal levels of vitamin D with the health problems. Supplementation with vitamin D in these health problems may or may not make these problems less severe.

## WHAT DO THE AUTHORS RECOMMEND THAT PATIENTS AND DOCTORS DO?

The recommendations were divided for each age group and for special conditions, such as pregnancy, obesity, pre-diabetes and people with dark complexion.

For situations where vitamin D supplementation possibly helps a health outcome, the authors suggest supplementation with different doses depending on the population. This happened for children and adolescents (1 to 18 years old), for people aged 75 or over, for pregnant people, and for people with pre-diabetes. For other age groups, it is suggested to stick to the daily doses established by the Institute of Medicine (IOM).

The benefits seen and the doses used in the evaluated studies were:

- 1 to 18 years
  - To prevent nutritional rickets (softening or weakening of the bone) and potentially lower the risk of respiratory tract infections.
  - The doses used in the studies ranged from 300 to 2000 IU (7.5 to 50 µg), with an estimated average of 1200 IU (30 µg) per day.
- 75 years and older
  - The potential to lower the risk of mortality (death).
  - The daily doses used ranged from 400 to 3333 IU (10 to 83 µg), with an estimated average of 900 IU (23 µg) per day.
- Pregnant people
  - The potential to lower the risk of preeclampsia (a blood pressure condition during pregnancy), intra-uterine mortality (death of a fetus in the womb), preterm birth, low birth weight, and neonatal mortality (death of the baby in the first 28 days of life).
  - The doses used in the studies evaluated ranged from 600 to 5000 IU/day (15 to 125 µg), with an estimated average of 2500 IU (63 µg) per day.
- People with pre-diabetes
  - Reduce the risk of progression to diabetes.
  - The daily doses used in the studies ranged from 842 to 7543 IU (21 to 189 µg), with an estimated average of 3500 IU/day (88 µg).

Other age groups (19 to 74 years old) must follow the IOM recommendations, which show supplementation with 600 IU (15 µg) daily for those aged between 19 and 69 years old, and 800 IU (20 µg) for those aged 70 years and over.

It was not possible to define the ideal target for 25 hydroxyvitamin D (25(OH)D) concentrations (this is the test used to determine how much vitamin D is in your body). So, the authors do not suggest determining its blood levels for healthy people in general, including pregnant people, obese people, and people with dark complexion, unless they need it for their health.



## WHAT ARE THE CAUTIONS RELATED TO THESE RECOMMENDATIONS?

- Populations who should get screening and for whom vitamin D supplementation is recommended, need to be identified.
- Regular testing and supplementation in populations not fitting these criteria is not helpful and may cause harm.
- If criteria for identifying at risk populations are not reached, the daily regular intake (DRI) established by the IOM is enough.

## WHY IS IT IMPORTANT TO KNOW YOUR VITAMIN D LEVEL?

The vitamin D status is currently evaluated by measuring the 25(OH)D in blood. In this research, the panel recognized that a normal vitamin D status is needed for good health.

But, in this review it was not possible to find a clear link between the benefits of supplementation with an ideal level of 25(OH)D in blood in any of the evaluated groups. So, the guideline recommendation is to give vitamin D without the need of 25(OH)D measurement.

The panel also considered that the requirement to measure these levels could possibly stop access to supplementation and prevent some people or communities from receiving the minimum recommended doses needed to avoid the bad health problems related to very low vitamin D levels.

### CAN I GET ENOUGH VITAMIN D FROM MY DIET, OR DO I NEED TO SUPPLEMENT?

Healthy people should follow the DRI recommended by the IOM. The DRI is enough for individuals not in one of the high-risk groups described in the guideline. Supplementation with therapeutic doses of vitamin D may be needed if levels are low in people who are in one of the high-risk groups.

### HOW MUCH VITAMIN D DO I NEED DAILY?

How much vitamin D you need will depend largely on the following factors:

- Where you live
- How you live
- Your clinical conditions

Healthy people who live in places with plenty of sunshine, participate in outdoor activities, or eat foods with vitamin D, usually have higher vitamin D levels than people who live in places where there are less ways to get vitamin D.

For people at low-risk of low vitamin D, this guideline suggests the daily doses of vitamin D defined by the IOM. This includes those between 19 and 74 years of age who are not pregnant or pre-diabetic (600 IU daily for those aged between 19 and 69 years, and 800 IU for those aged between 70 and 74 years).

Higher doses should be suggested for groups in which clear benefits from supplementation were found. But, in some health problems higher doses may be needed, which will need to be decided by the doctor.



### WHAT IS THE BEST FORM OF SUPPLEMENTAL D, D2 OR D3?

This guideline doesn't say if one type of vitamin D is better than another for vitamin D supplementation. All references to supplementation use the term "vitamin D supplementation".

### CAN I GET ENOUGH VITAMIN D FROM SUNLIGHT ALONE?

People who live far from the equator are more likely to have low vitamin D. But how much vitamin D your skin makes from the sun depends on where you live, what time of year it is, your skin color, your age, how much skin is showing, and if you use sunblock. So, it's hard to say how much sun is enough for someone without these considerations. Also, it is known that too much sun exposure can cause skin cancer and other damage to skin, so it is smart to be careful about sun exposure as a way of getting vitamin D.

### WHAT ARE SOME AREAS OF FUTURE RESEARCH FOR VITAMIN D?

Areas for future research include:

- Children with asthma and Type 1 diabetes
- Healthy adults younger than 50 years old with low baseline 25(OH)D levels
- Adults older than 50 years old with different levels of chronic conditions and fall/fracture risk
- Long term outcomes for babies
- People with dark skin complexion
- Obese adults