

## Actions

### What's needed to Solve the vitamin D Deficiency?

- Measure the 25-hydroxyvitamin D serum levels.
- Provide intake from UVB exposure, supplements, fortified foods, to get serum levels to 40-60 ng/ml (100-150 nmol/L).

### D\*action Project

- An international study to assess the health effects of large populations who have serum levels in the 40-60 ng/ml (100-150 nmol/L) range.
- Cedric F. Garland, Dr. P.H., F.A.C.E., Moores Cancer Center, University of California San Diego is the study's principal investigator.
- Participants will provide health information and do a vitamin D test every 6 months for a period of 5 years.
- Physicians, clinics, research groups and other health interested groups are encouraged to join the project. Individuals can also enroll in the project.
- There are currently over 7000 individual participants from all over the world in the study; approximately 50% of them started with levels below 40 ng/ml (100 nmol/L).
- Diagnosis & Treatment of Vitamin D Deficiency seminars are held for medical professionals.
- Custom studies are done for research groups. Contact Carole Baggerly, Director, [info@grassrootshealth.org](mailto:info@grassrootshealth.org) for further information.

**Join D\*action:** [www.joinaction.org](http://www.joinaction.org)

**Get your blood level tested, take action!**

**Download the Disease Incidence Prevention Chart showing serum levels required to prevent many diseases:**  
[www.grassrootshealth.net/diseasepreventionchart.pdf](http://www.grassrootshealth.net/diseasepreventionchart.pdf)

**D\*action** is a public health project of GrassrootsHealth, a 501c3 non-profit organization.

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## Call to D\*action Scientists

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### International Scientists Panel

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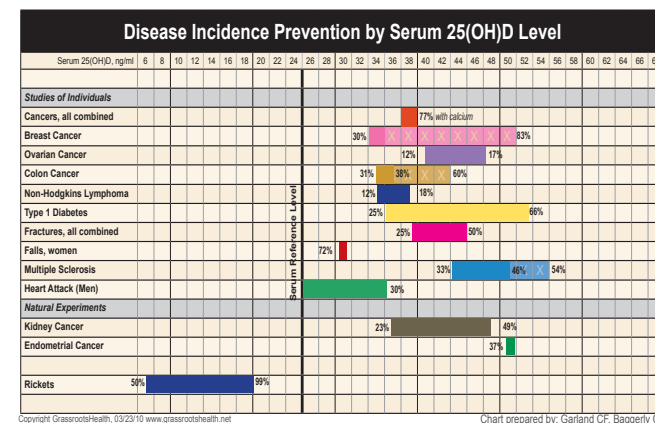
Vitamin **D\*action**

A Consortium of Scientists, Institutions and Individuals  
Committed to Solving the Worldwide Vitamin D Deficiency Epidemic

## FAQ's

(Frequently Asked Questions)

## Vitamin D



# Vitamin D Frequently Asked Questions

## Why do we need vitamin D?

Every tissue in our bodies needs vitamin D and will not work correctly if we do not get enough. In its most extreme forms, vitamin D deficiency produces rickets in children and osteomalacia (bone softening) in adults.

Milder degrees of deficiency are now understood to be one of the causes of a vast array of chronic diseases, including osteoporosis, impaired immune competence, various autoimmune diseases (such as diabetes and multiple sclerosis), several cancers (breast, colon, lung, lymphoma and prostate, among others) high blood pressure, pregnancy complications and cardiovascular disease. All may develop because of, or be exacerbated by, vitamin D deficiency. Asking the body to deal with these disorders without adequate vitamin D is like asking a fighter to enter battle with one hand tied behind his/her back.

## What is vitamin D?

Vitamin D is one of the chemicals that the tissues of our body use to unlock the DNA blueprints which each tissue contains and which are needed for our cells to produce the many biochemical products required for their day-to-day functioning.

## Where do I get vitamin D?

The principal source of vitamin D is your own skin. A chemical compound naturally present in the superficial layers of skin is converted, on exposure to UV-B radiation, to cholecalciferol (vitamin D3). However, we manufacture this vitamin D only if we expose our skin to UV-B radiation. If we spend all day indoors or go out only in the early morning or late afternoon, we don't produce any vitamin D. You can also get vitamin D from food (limited), supplements and other UV-B sources.

## How long should I be outdoors?

There is no single right answer. A light skinned person, wearing a bathing suit, will make about 15,000 IU of vitamin D in 15-20 minutes in July at midday. Darker-skinned individuals can do the same, but it will take twice as long.

## What is the effect of sunscreen?

Sunscreen blocks UV-B radiation and prevents the manufacture of vitamin D.

## What about skin cancer?

The brief exposure needed to produce adequate vitamin D is not enough to cause skin cancer. However, if you are worried about that risk, apply sunscreen after the first 15 minutes of exposure.

## Does the body have to process vitamin D before it becomes active?

The body converts vitamin D, whether by mouth or made in the skin, to a compound called 25-hydroxyvitamin D [25(OH)D]. This compound circulates in the blood and is the measure physicians or scientists use to assess vitamin D status. High levels of serum 25(OH)D show that you are getting enough vitamin D, while low levels indicate deficiency.

## How much vitamin D do I need?

The body needs at least 4000 IU/day in order to maintain a healthy concentration of 25(OH)D in the blood. Because most of us don't get enough sun exposure, the little vitamin D we get that way, plus food and fortified food sources, totals no more than about 2000 IU/day. Thus in order to meet the body's need for about 4000 IU/day, most adults should take supplements providing 1000-3000 IU daily.

## Is vitamin D safe?

Vitamin D is safe, if consumed in reasonable quantities. (See 'How much vitamin D do I need?') It is instructive to know that outdoor summer workers by the end of summer will typically have serum levels of 60-80 ng/ml (150-200 nmol/L). However vitamin D is an extremely potent compound, and if taken in abnormally high doses, can produce severe toxicity leading even to death. However, there have been no reported cases of vitamin D toxicity at serum levels of 25(OH)D below 200 ng/ml (500 nmol/L).

## What about calcium and vitamin D?

Vitamin D enables the body's regulation of calcium absorption. With inadequate calcium or vitamin D intake, there is insufficient calcium absorption. However, there is no hyper-absorption with high vitamin D levels. There is also a substantial body of evidence indicating there is an inverse relationship between calcium intake and kidney stone risk.

## Is it important to take vitamin D daily?

As long as the total dose is sufficient, vitamin D does not have to be taken every day. Some physicians prescribe weekly or monthly dosing. **The important thing is to achieve and maintain a range of 40-60 ng/ml (100-150 nmol/L).**

## What about the current IOM (Institute of Medicine) published requirements for vitamin D?

The IOM recently (2010) increased the 'no observable adverse event level' from 2000 IU/day to 10,000 IU/day. This is significant progress. They tripled the intake for all individuals up to age 50. Their focus was limited, however, to skeletal health, not the full array of diseases considered by the D\*action Scientists' Panel.