

## About GrassrootsHealth

GrassrootsHealth is a nonprofit public health research organization dedicated to moving public health messages regarding vitamin D from science into practice. It has a panel of 48 senior vitamin D researchers from around the world. GrassrootsHealth is currently running the D\*action population intervention program to solve the vitamin D deficiency epidemic worldwide. Under the D\*action umbrella, there are programs looking at the entire population as well as a targeted program for breast cancer prevention, and the 'Protect Our Children NOW!' program to reduce the complications of vitamin D deficiency encountered during pregnancy and childhood.

A Scientists' Call to Action has been issued to alert the public to the importance of having preventive vitamin D serum levels between 40 and 60 ng/ml. Reaching this level is safe and inexpensive.

The benefit of an adequate vitamin D level to each individual may include better overall health and a reduction in illness and, ultimately, a significant reduction in health care costs. The benefit of adequate vitamin D levels to society/businesses is a more productive workforce and, lower health care costs.

**Join D\*action:** [www.grassrootshealth.net](http://www.grassrootshealth.net)  
**Get your blood level tested, take action!**

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

D\*action is a public health project of  
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## Call to D\*action Scientists

### 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

Can  
Vitamin D Prevent  
**Breast Cancer?**

What is your D level?



**GrassrootsHealth**  
Moving Research into Practice

## What's the evidence?\*

There have been many studies on vitamin D and breast cancer that demonstrate a 50-80% lower risk of breast cancer diagnosis for women with serum levels > 40 ng/ml versus levels of 25 ng/ml or lower.

**77% reduction in all non-skin cancer risk:** A 2007 randomized clinical trial at Creighton University led by Joan Lappe, PhD, RN, FAAN, found that a dose of 1100 IU/day of vitamin D along with 1400-1500 mg/day of calcium helped women aged 55 and older raise their average serum vitamin D level to 38 ng/ml (from a baseline of 29 ng/ml) and prevent approximately 4 out of 5, or 80%, of all invasive cancers including breast cancer.

**70% lower breast cancer risk:** A 2013 case control study at UCSD School of Medicine found that the three months prior to tumor diagnosis was a relevant window of time for cancer prevention and that those with vitamin D levels  $\geq 35$  ng/ml had a 70% lower risk of developing breast cancer than those with levels <15 ng/ml.

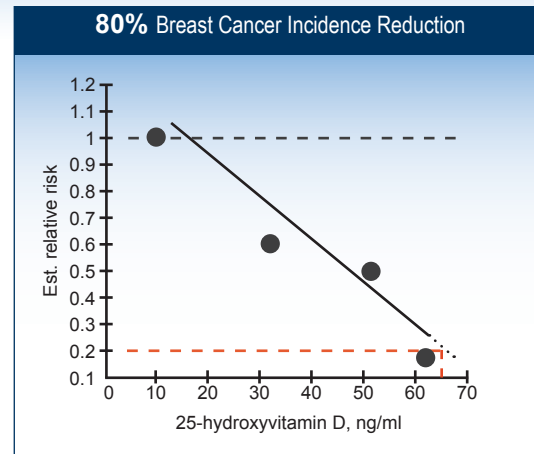
**83% lower breast cancer risk:** Lowe et al. demonstrated in a 2005 case control study that women with serum levels of >20 ng/ml had more than a five-fold (80%) lower breast cancer risk compared to women with levels <20 ng/ml.

**69% lower breast cancer risk:** In a 2008 case control study, Abbas et al. found that those with 25(OH)D levels  $\geq 30$  ng/ml had an almost 70% lower risk of post-menopausal breast cancer compared to those with levels <12 ng/ml.

**62% lower breast cancer risk:** In a 2009 case control study, Rejnmark found that pre-menopausal women with 25(OH)D levels  $\geq 34$  ng/ml had more than a 60% lower breast cancer risk compared to women with levels <24 ng/ml.

**63% lower breast cancer risk:** In a 2011 case control study, Yao et. al. found that women with 25(OH)D levels  $\geq 30$  ng/ml had more than a 60% lower breast cancer risk compared to women with levels <20 ng/ml. Among post-menopausal women, the risk was a 71% lower.

## How does vitamin D help?



Source: Garland et al. (2007) based on data in Lowe et al. (2006)

Vitamin D impacts our bones, regulates calcium and strengthens our immune system. Researchers have found vitamin D directly affects the cells in the breast.

### Vitamin D Receptors

Inside almost every cell in the body is a vitamin D receptor (VDR). A VDR is a protein that controls the expression of genes. The vitamin D in our blood enters breast cells, binds to the VDRs, and triggers positive change, including preventing, slowing or even stopping cancer growth.

Source: JoEllen Welsh, PhD, University at Albany, State University of New York, Member of GrassrootsHealth Panel of Scientists

### Daily doses of Vitamin D

It is important to get vitamin D3 through diet, sunlight, or supplements every day because when vitamin D is sent directly to the body tissue it is only active for 24 hours. This is new research, as the vitamin D which aids in bone health is active for up to 3 weeks in the body. To boost our immune system and ward off cancer - we need new input every day.

Source: Bruce H. Hollis, PhD, Medical University of South Carolina Member of GrassrootsHealth Panel of Scientists

## What should you do?

**Act now – it is never too early to prevent disease**

Measure the 25-hydroxyvitamin D serum levels of your whole family.

Achieve daily intake from UVB exposure, supplements, and/or foods to get serum levels to 40-60 ng/ml (100-150 nmol/L). Consult GrassrootsHealth charts on intake vs. serum levels.

Expected Level (ng/ml) ▶	20	30	40	50	60
10 (ng/ml) ▶	2000	4000	6000	10,000	10,000
15 (ng/ml) ▶	1000	3000	6000	9000	10,000
20 (ng/ml) ▶		2000	5000	8000	10,000
25 (ng/ml) ▶		1000	4000	7000	10,000
30 (ng/ml) ▶			3000	6000	10,000
35 (ng/ml) ▶			1000	5000	9000
40 (ng/ml) ▶				3000	8000
45 (ng/ml) ▶				2000	6000
50 (ng/ml) ▶					4000

\* values rounded to the nearest 1000 IU; highest recommended intake is 10,000 IU/day

The latest Institute of Medicine (IOM) report, 2010, indicated 10,000 IU/day is considered the “no observed adverse effect level” (NOAEL) and 4000 IU/day can be considered a safe upper intake level for adults aged 19 and older.

If you are a woman age 60 years or older, have no current cancer, and are not being treated for cancer, you qualify for our breast cancer prevention study. Get your D levels checked every 6 months and help fund research on vitamin D and breast cancer. Learn more at [grassrootshealth.net/breast-cancer-prevention](http://grassrootshealth.net/breast-cancer-prevention).