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Reinhold Vieth, Ph.D.

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**Sunlight, Nutrition and Health
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Scientists' Call to D*action

The Vitamin D Deficiency Epidemic

40-75% of the world's population is vitamin D deficient.

The causal link between severe vitamin D deficiency and rickets or the bone disease of osteomalacia is overwhelming, while the link between vitamin D insufficiency and osteoporosis with associated decreased muscle strength and increased risk of falls in osteoporotic humans is well documented by evidence-based intervention studies

There are newly appreciated associations between vitamin D insufficiency and many other diseases, including tuberculosis, psoriasis, multiple sclerosis, inflammatory bowel disease, type-1 diabetes, high blood pressure, increased heart failure, muscle myopathy, breast and other cancers which are believed to be linked to the non-calcemic actions of the parent vitamin D and its daughter steroid hormone. However a causal link has yet to be proven by appropriate vitamin D intervention studies.

It is projected that the incidence of many of these diseases could be reduced by 20%-50% or more, if the occurrence of vitamin D deficiency and insufficiency were eradicated by increasing vitamin D intakes. The appropriate intake of vitamin D required to effect a significant disease reduction depends on the individual's age, race, lifestyle, and latitude of residence. New evidence indicates that the intake should be in the range of 2000 IU per day for adults. Intake of 2000 IU/day is the current no adverse event level of the National Academy of Sciences, Institute of Medicine, Food and Nutrition Board.

It is well documented that the darker the skin, the greater the probability of a vitamin D deficiency. Even in southern climates, 55% of African Americans and 22% of Caucasians are deficient.

More than 1 billion people worldwide are affected at a tremendous cost to society.

A Scientists' Call to Action has been issued to alert the public to the importance to have **vitamin D serum levels between 40 and 60 nanograms/milliliter (100-150 nanomoles/liter)** to prevent these diseases. Implementing this level is safe and inexpensive.

The benefit of an adequate vitamin D level to each individual will be better overall health and a reduction in illnesses 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.

The D*action project has as its purpose to serve as a model for public health action on vitamin D. It is a test bed for techniques, and for providing outcome evaluation

Sunlight & Vitamin D

“There is substantial scientific evidence supporting the role of vitamin D in the prevention of cancer.”

This bold statement is made by 16 eminent doctors and scientists in a Call-To-Action at:

www.grassrootshealth.org/documentation/scientistcall.php

Thousands of lives are lost each year due to fractures, diabetes, heart disease, multiple sclerosis, osteoporosis and other auto-immune diseases in which vitamin D deficiency plays a major role.

If you do not expose yourself to enough sunlight, because you live too far from the equator, or because you have dark skin, or because you use too much sun-screen, or because you cover most of your body, you are unlikely to receive enough vitamin D from natural sources.

You would probably benefit from taking 2,000 IU per day of Vitamin D3

(Holick & Vieth report no adverse reaction to 10,000 IU per day, subject to blood tests)

If you are concerned about your levels of Vitamin D you should ask your doctor for a blood test that checks the level of serum **25 hydroxy-vitamin D**.

Target levels are 40-60 ng/mL (100-150 nmol/L outside USA)

The first signs of osteoporosis can be seen in teenagers, so take action when you are young !

For more information see:

www.grassrootshealth.org

See the **Documentation & D*facts** sections for many articles, reports & videos.

Download the presentation: **Is it true ?**

Check the chart for **Disease Incidence Prevention**.

This shows target levels of 25 hydroxy-vitamin D required to prevent many illnesses

Download: Symposium in Print -**Vitamin D for Cancer Prevention: Global Perspective**

Shows how supplementation with Vitamin D & Calcium could reduce cancer by 77%

www.ucsd.tv

Watch the videos of a scientific conference held at University of California at San Diego
Search by the name of the presenter or “Vitamin D”

There is an excellent 30-minute introduction by Carole Baggerly

There are overview presentations by Frank Garland, Robert Heaney & Michael Holick

Other presentations are by Cedric Garland, Edward Gorham, David Sane & Donald L Trump

Anyone suffering from Cancer should watch the presentations from Garland & Trump

www.uvadvantage.org & www.vitaminhealth.org

Reports, factsheets, books and videos from Dr Michael Holick, Professor of medicine, dermatology, physiology, and biophysics at Boston University, USA.

www.direct-ms.org/presentations.html

There is an excellent 60 minute presentation on **Prospects for Vitamin D Nutrition** by Professor Reinhold Vieth about Vitamin D and how it relates to Cancer, Osteoporosis and Multiple Sclerosis.

www.vitaminCouncil.org / www.vitaminD3world.com / www.thevitaminDcure.com

Excellent overview information, with links to many other sources & websites worldwide

Read the book by Dr James Dowd: The Vitamin D Cure

www.vitaminDandcholesterol.com & www.healthresearchforum.org.uk

Excellent source of UK-based information, including 3 online books by Dr Oliver Gillie

Read the book by Dr David Grimes: Vitamin D & Cholesterol, The importance of the sun

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Disease Incidence Prevention by Serum 25(OH)D Level

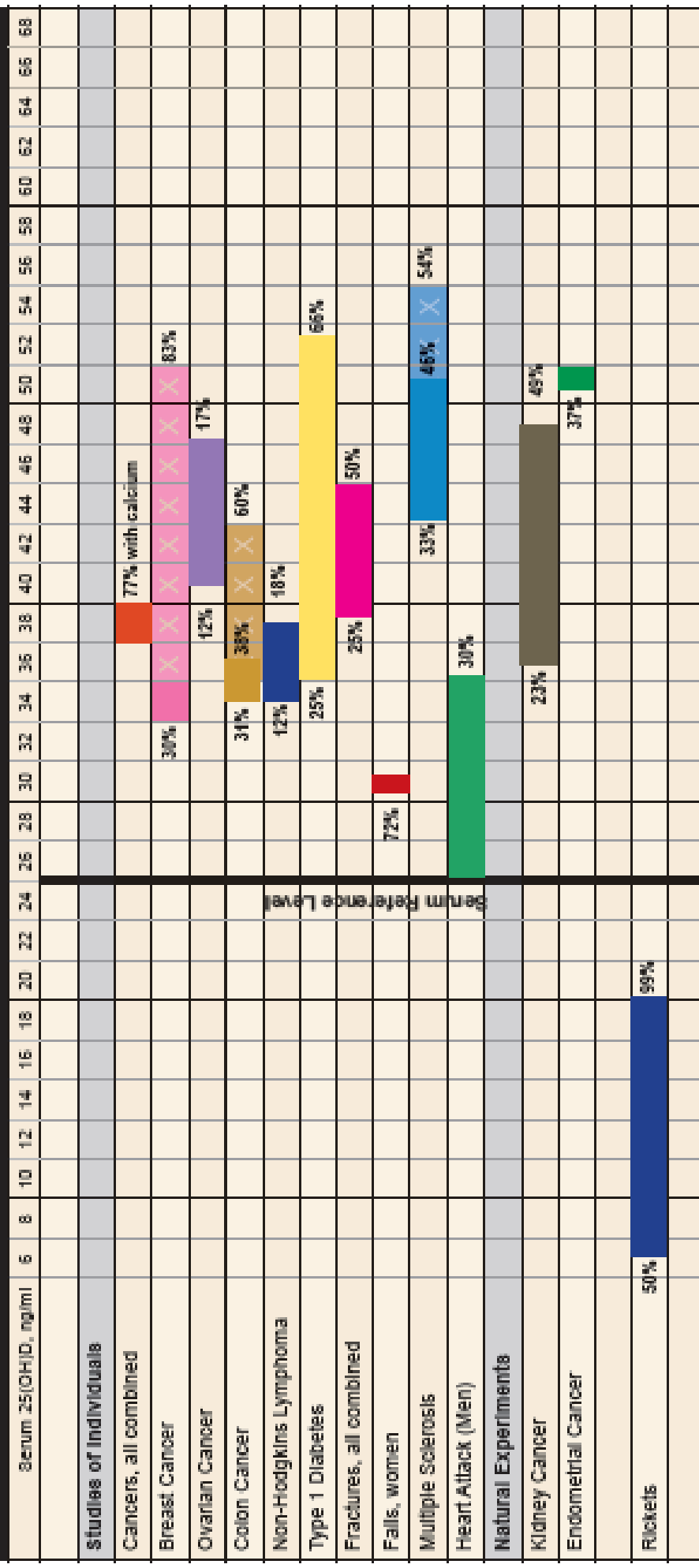


Chart prepared by: Garland CF, Baggerly CA

Legend:

All percentages reference a common baseline of 25 ng/ml as shown on the chart.
 %s reflect the disease prevention % at the beginning and ending of available data. Example: Breast cancer incidence is reduced by 30% when the serum level is 34 ng/ml vs the baseline of 25 ng/ml. There is an 83% reduction in incidence when the serum level is 50 ng/ml vs the baseline of 25 ng/ml.
 The 'x's in the bars indicate 'reasonable extrapolations' from the data but are beyond existing data.

References:

All Cancers: Lappe JM, et al. Am J Clin Nutr. 2007;85:1586-91. Breast: Garland CF, Gorham ED, Mohr SB, Grant WB, Garland FC. Breast cancer risk according to serum 25-Hydroxyvitamin D: Meta-analysis of Dose-Response (abstract). American Association for Cancer Research Annual Meeting, 2008. Reference serum 25(OH)D was 5 ng/ml.
 Garland, CF, et al. Amer Assoc Cancer Research Annual Mtg, April 2008. Colon: Gorham ED, et al. Am J Prev Med. 2007;32:210-6. Diabetes: Hyppönen E, et al. Lancet 2001;358:1500-3. Endometrium: Mohr SB, et al. Prev Med. 2007;45:323-4. Falls: Broe KE, et al. J Am Geriatr Soc. 2007;55:234-9. Fractures: Bischoff-Ferrari HA, et al. JAMA. 2005;293:2257-64. Heart Attack: Giovannucci et al. Arch Intern Med/Vol 168 (No 11) June 9, 2008. Multiple Sclerosis: Munger KL, et al. JAMA. 2006;296:2832-8. Non-Hodgkin's Lymphoma: Purdue MP, et al. Cancer Causes Control. 2007;16:989-99. Ovary: Tworoger SS, et al. Cancer Epidemiol Biomarkers Prev. 2007;16:783-8. Renal: Mohr SB, et al. Int J Cancer. 2006;119:2705-9. Rickets: Arnaud SB, Copyright GrassrootsHealth, 03/23/10 www.grassrootshealth.net

Personal Action Plan – Sunlight & Vitamin D

Lack of sunlight is implicated in many diseases & illnesses:

Cancer:	Breast, Bladder, Colon, Endometrial, Gallbladder, Gastric, Hodgkin's Lymphoma, non-Hodgkin's Lymphoma, Oesophageal, Ovarian, Pancreatic, Prostate, Rectal, Skin, Testicular
Bones:	Bone development in puberty, Osteomalacia, Osteoarthritis, Osteoporosis, Osteopenia, Rickets
Auto-immune:	Alzheimer's, Asthma, Autism, Chronic Obstructive Pulmonary Disease, Motor neurone, Parkinson's Crohn's, Cystic Fibrosis, HIV, Inflammation, Lupus, Multiple Sclerosis, Rheumatoid Arthritis
Diabetes:	Type-1 in children, Type-2, Retinopathy, Insulin Deficiency, Insulin Resistance
Cardio-vascular:	Cardiomyopathy, Congestive Heart Failure, Hypertension, Left Ventricle Hypertrophy, Myocardial Infarction (Heart Attack), Peripheral Arterial Disease, Stroke
Pain:	Chronic Low Back Pain, Fibromyalgia, Growing Pain, Hurting Hair, Tired Legs, Chronic Fatigue
Pregnancy:	Pre-conception health, Low Birth Weight, Pre-eclampsia, Post-natal depression
Depression:	Anxiety, Depression, Seasonal Affective Disorder
Psychiatric:	Bipolar Disorder, Schizophrenia
Sight:	Macular Degeneration, Retinitis Pigmentosa, Cataracts, Myopia
Skin:	Alopecia, Dermatitis, Psoriasis, Rosacea
Teeth:	Periodontal disease, Gingivitis, Sensitive teeth, Caries
Gynaecological:	Infertility, Polycystic Ovary syndrome, Pre-menstrual Syndrome
Infection:	Influenza
Muscle:	Muscle weakness & pain, Muscle degeneration, Sarcopenia
Aging:	Falls, poor physical performance
Sources:	Online: www.grassrootshealth.org , Vitamin D Council, BMJ (Dr Peter Lewis) Books: <i>The Vitamin D Cure</i> (Dr James Dowd) <i>Vitamin D & Cholesterol</i> (Dr David Grimes)

If you are pregnant, or would like to conceive, you should have your Vitamin D tested

Search for reports of trials (RCT) by Dr Bruce Hollis & Dr Carol Wagner, advising 6,000IU per day
Your birth will be easier and your baby will be bigger & healthier if you have high Vitamin D

Go to: www.grassrootshealth.net/is-it-true & download the chart: **Disease Incidence Prevention**

The chart shows the level of Vitamin D [Serum 25(OH)D] required to reduce the incidence of the illnesses shown in the chart, *compared to a baseline reference level of 25 ng/mL*

Ask your Doctor for a Blood Test for Vitamin D (25-hydroxyvitamin D)

(NHS or privately via: www.biolab.co.uk or www.vitaminD3world.com)

Always ask your Doctor for a copy of the results and note the units (see conversion below)

A rough guide is that you need 1,000IU of Vitamin D3 per day to add 10 ng/mL

If you are overweight or of African or Asian origin you may need significantly larger amounts.
Check all your other sources of Vitamin D, such as food, summer sunlight without sunscreen and other multi-vitamin supplements, and do not take more than 750 mg of Calcium per day.

Assuming you have the average UK value of 20 ng/mL (50 nmol/L) you will probably need to take 2,000IU-5,000IU of Vitamin D3 per day. Capsules with 20,000IU or 50,000IU are also available (some on prescription) and can be taken weekly. The half-life of Vitamin D3 in the body is about 20 days, so don't worry if you miss a day. Useful sources are: www.sunvitd3.co.uk (Vegetarian 1,000IU), www.solgar.co.uk (Kosher, 1,000IU & 2,200IU), www.bigvits.co.uk (1,000IU - 5,000IU), www.hollandandbarrett.com (1,000IU), www.boots.com High-Strength capsules (only 500IU)
Vitamin D tablets are made in different strengths, so take note of the amount (10 µg = 400IU)

Note that the current UK Recommended Daily Amount (RDA) of Vitamin D3 is 400IU per day
If you follow this Action Plan you may be taking more than 10 times the RDA, so take advice from a qualified medical person, such as a Doctor, Pharmacist, Nurse or registered Dietician.

Have a Blood Test repeated after 2-3 months and modify the amount you take according to the new results.

The first signs of osteoporosis can be seen in teenagers, so take action when you are young !

Educate yourself by reading information written by experts, such as Doctors and Scientists.

Set up a daily Google Alert for Vitamin D

ng/mL 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68
nmol/L 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170