

Cancer
Cancer

Falls
Falls



Hypertension
Hypertension

Type 1 Diabetes
Type 1 Diabetes

Vitamin D Prevents

MS
MS

Infectious Diseases
Infectious Diseases

Is it TRUE?

**A Public Health Program on Vitamin D and Disease
Prevention Sponsored by GrassrootsHealth**

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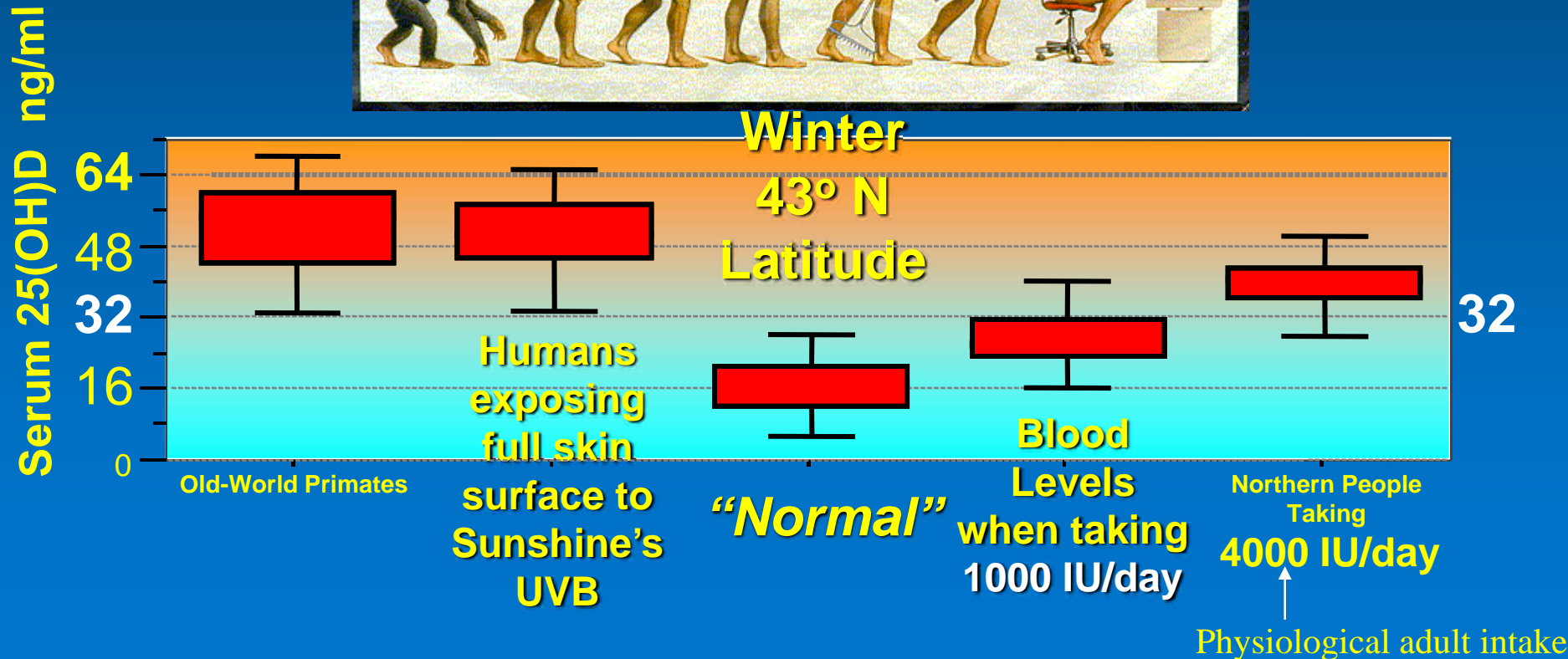
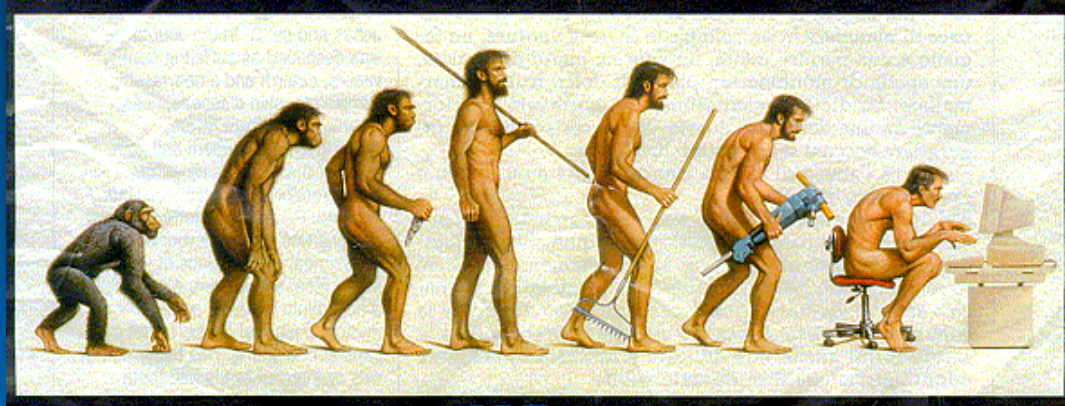


Basis for Recommendations

40-60 ng/ml serum hydroxyvitamin D level
(100-150 nmol/L)

2000 IU/day is safe

Vitamin D Status in Primates and Early Humans



Disease Incidence Prevention by Serum 25(OH)D Level

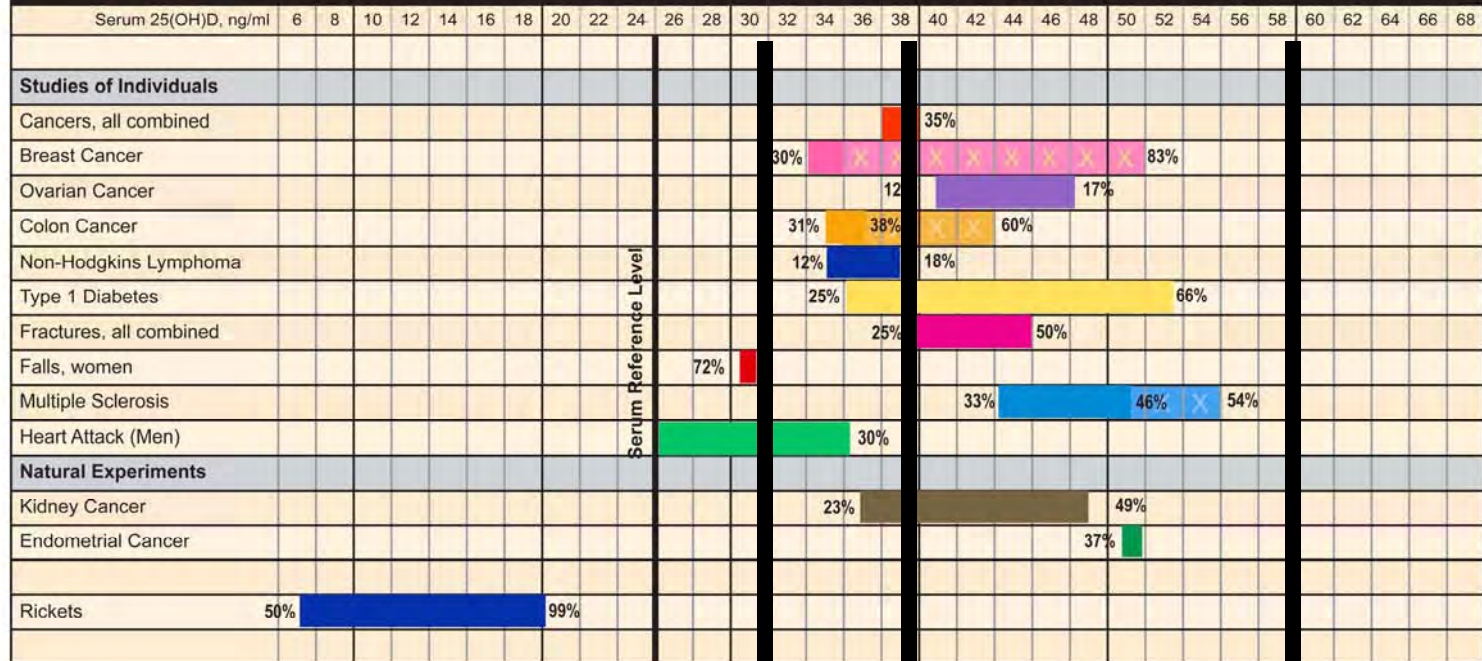


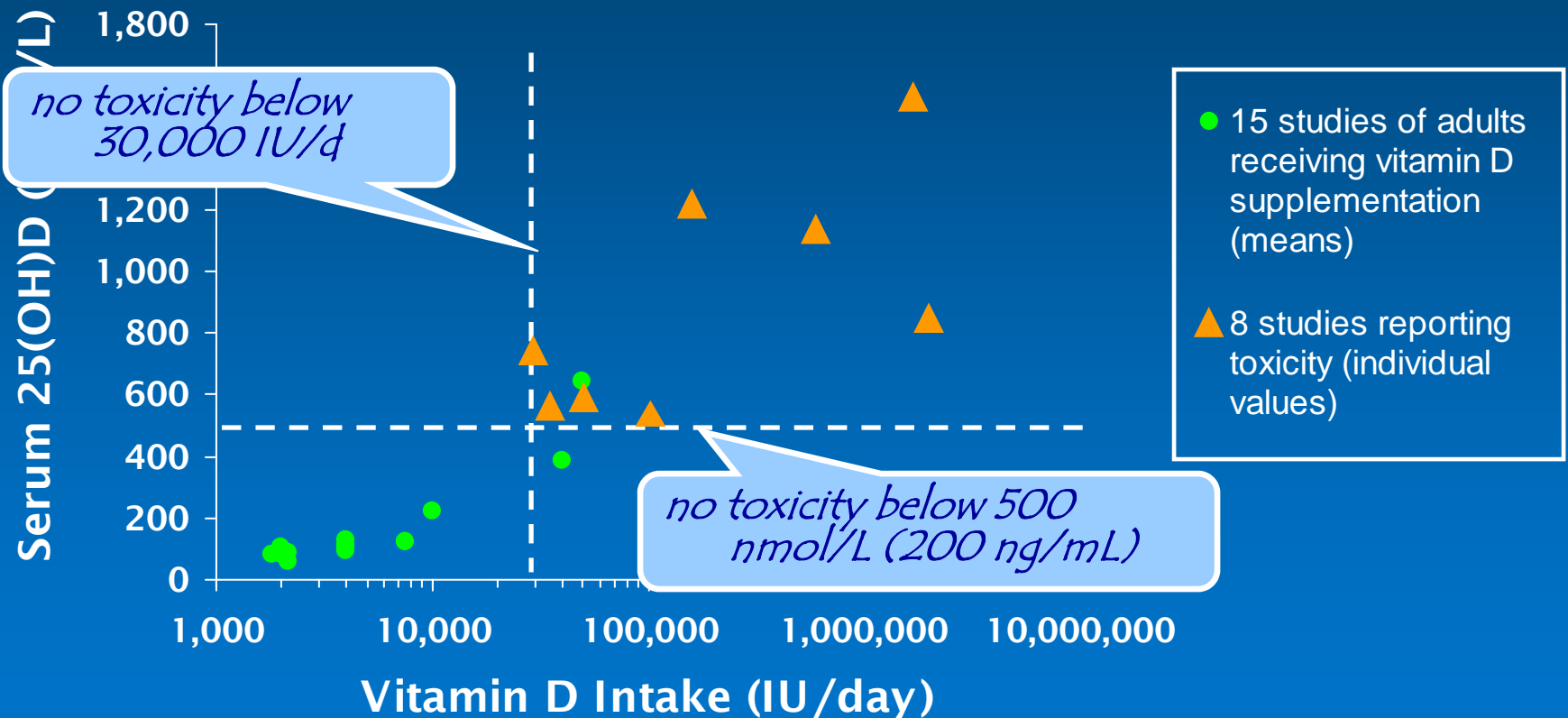
Chart prepared by: Garland CF, Baggerly CA

**All percentages reference a common baseline of 25 ng/ml as shown on the chart.

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;18:989-99. 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, et al. Pediatrics. 1976 Feb;57(2):221-5.

VITAMIN D INTAKE & TOXICITY





By following the recommendations, it is estimated that we could have an ANNUAL

67-70% reduction in incidence of

Breast Cancer

Type 1 Diabetes

Multiple Sclerosis

Colon Cancer

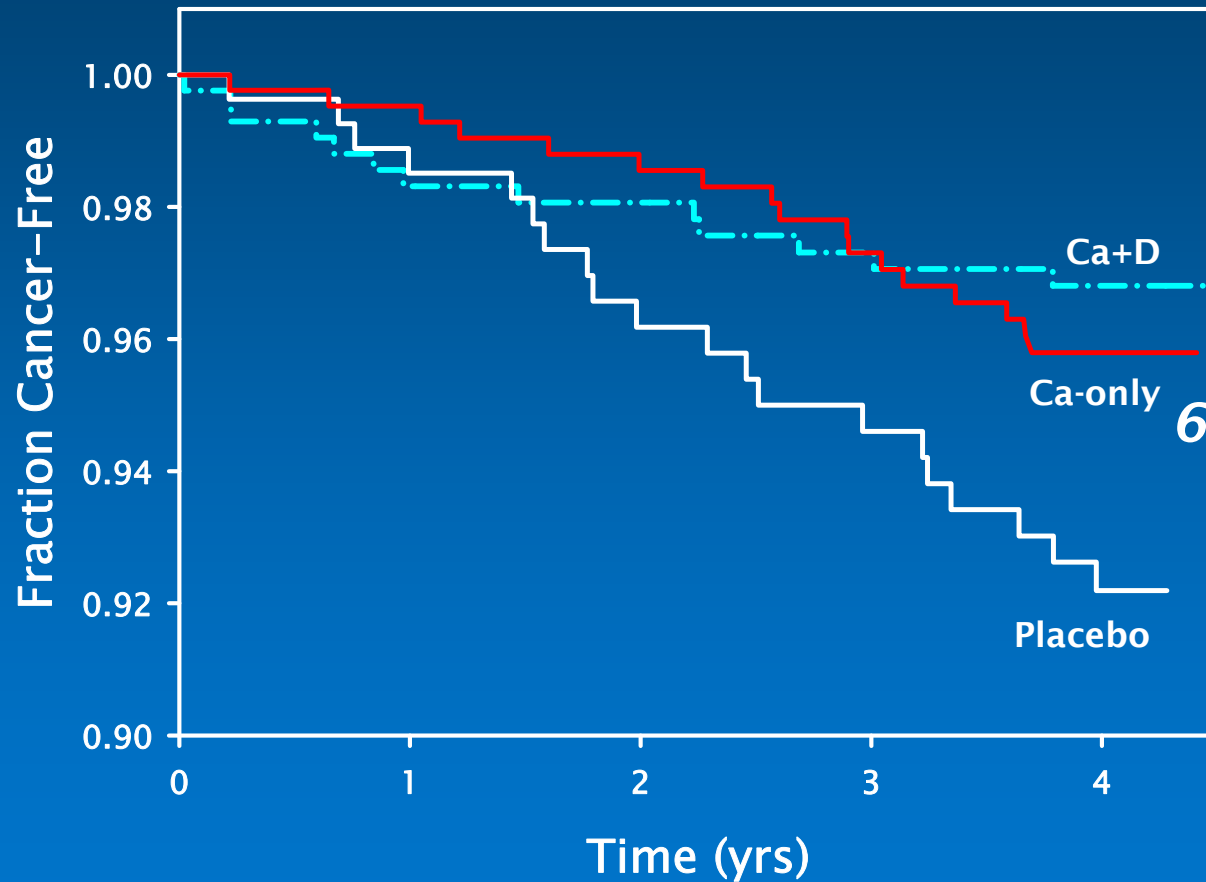
Within only 5 years!

Studies

Controlled Trials with D

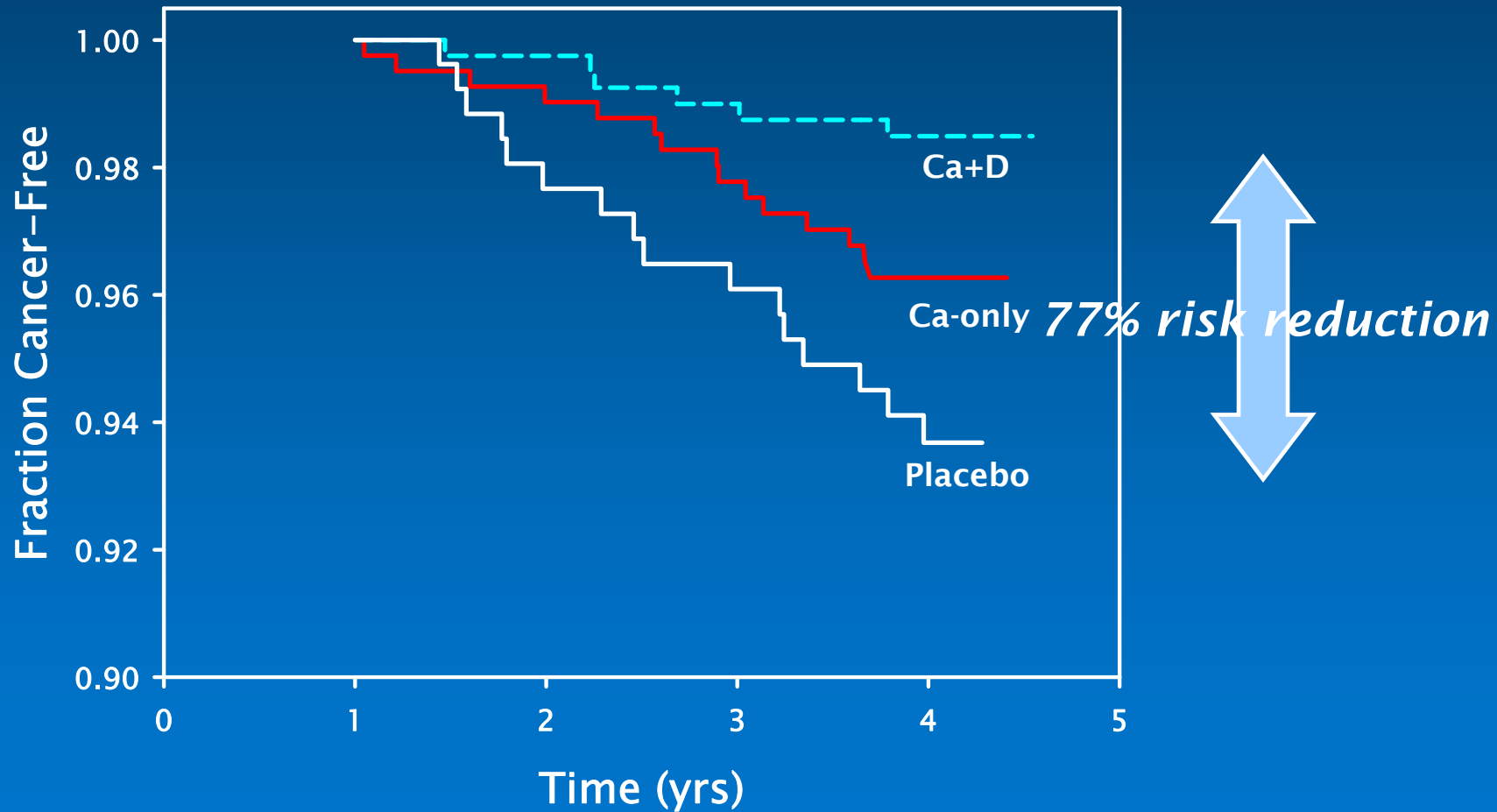
- **All Cancers, Lappe, 35% reduction incidence** (1179 women, 28 ng/ml to 38 ng/ml, 1100 IU/d + Ca, 4 yr)
- **Falls, Bischoff, 49% reduction incidence** (122 women, 800 IU/d + Ca, 12-20 ng/ml, 12 wks)
- **Neuromuscular Function, Wicherts, 1.8 times better performance at >30 ng/ml vs 10 ng/ml**
- **Blood Pressure, Pfeifer, 13 % reduction at approximately 30 ng/ml vs 20 ng/ml** (148 women, 800 IU/d + Ca, 8 wks)
- **Influenza, Aloia, 77% reduction at 38 ng/ml vs 18 ng/ml** (208 African American women, 2000 IU/d, 3 yr)

VITAMIN D & CANCER

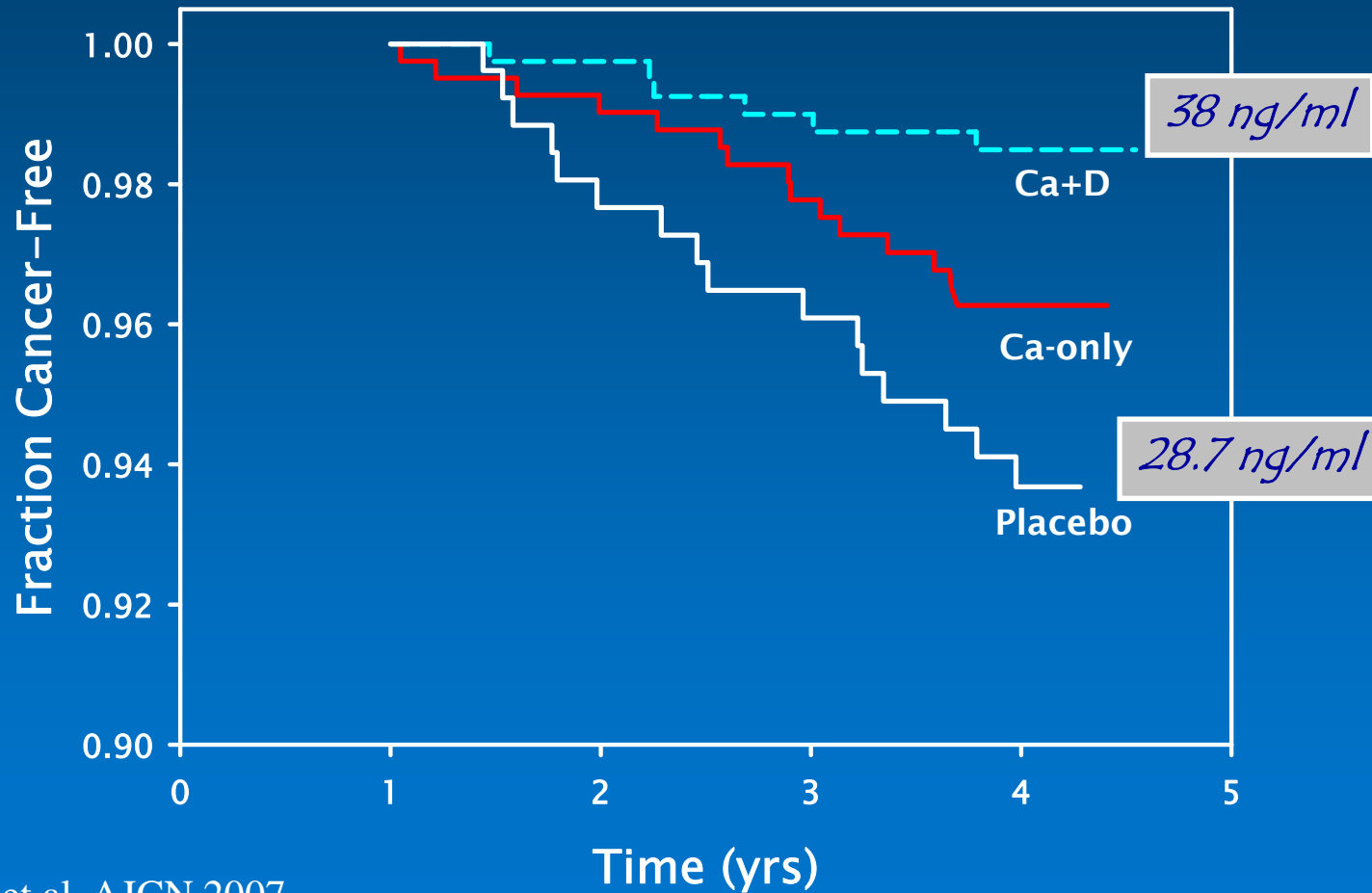


60% risk reduction

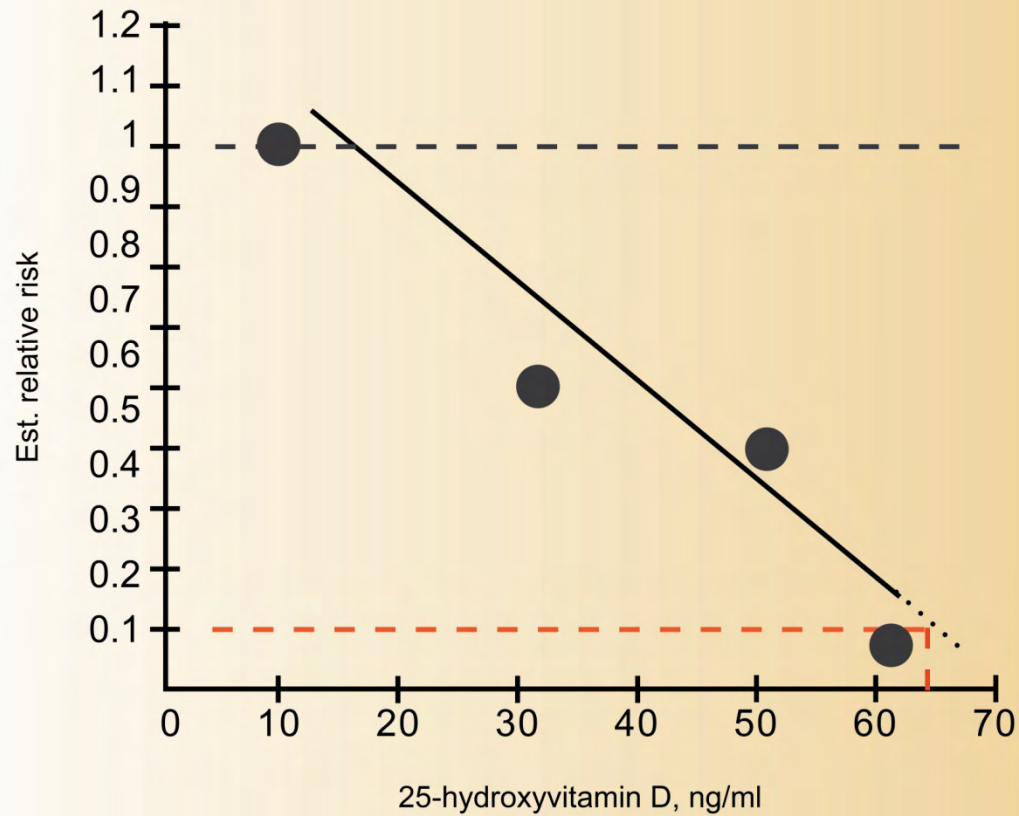
VITAMIN D & CANCER



VITAMIN D & CANCER

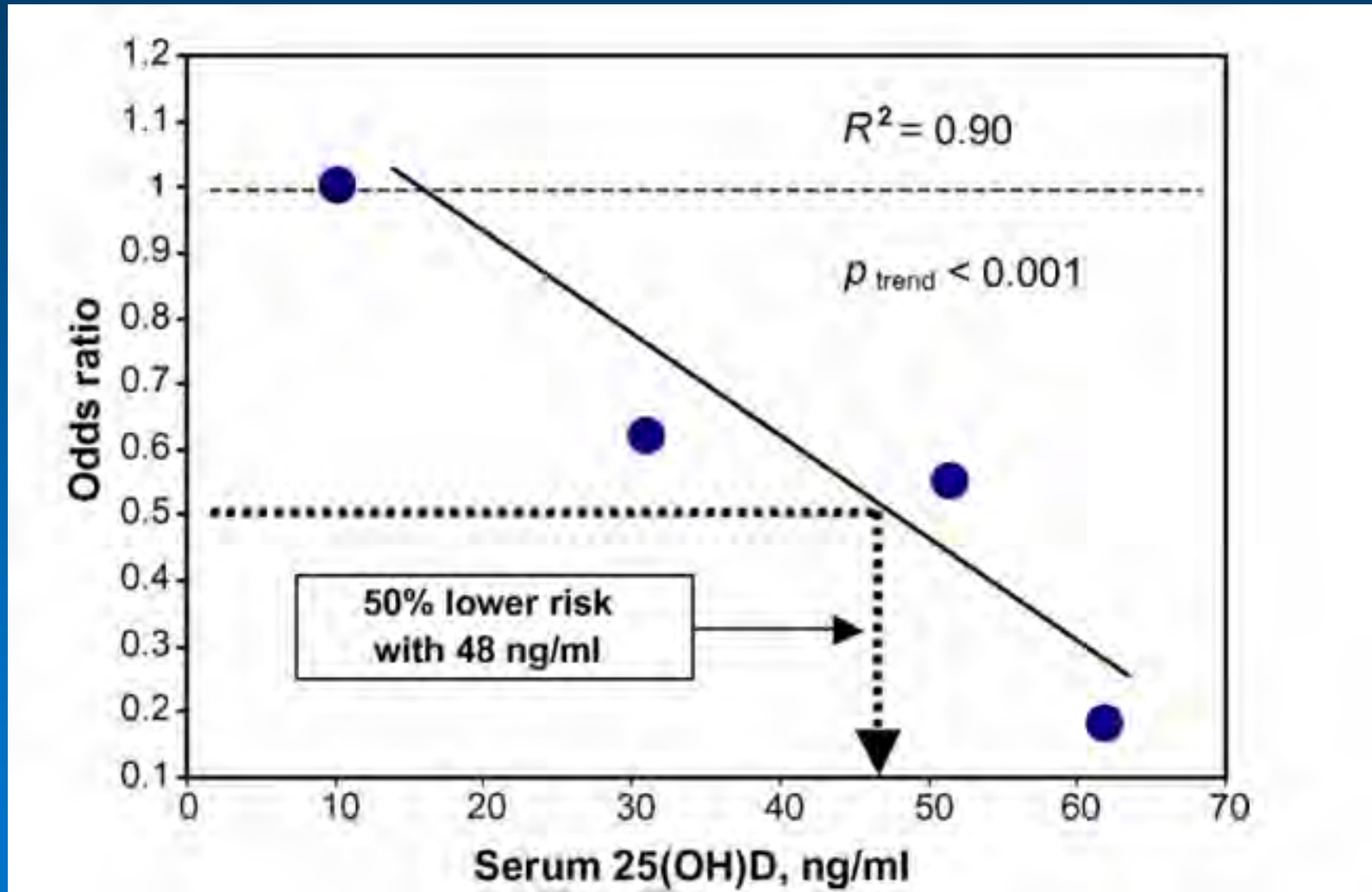


80% Breast Cancer Incidence Reduction



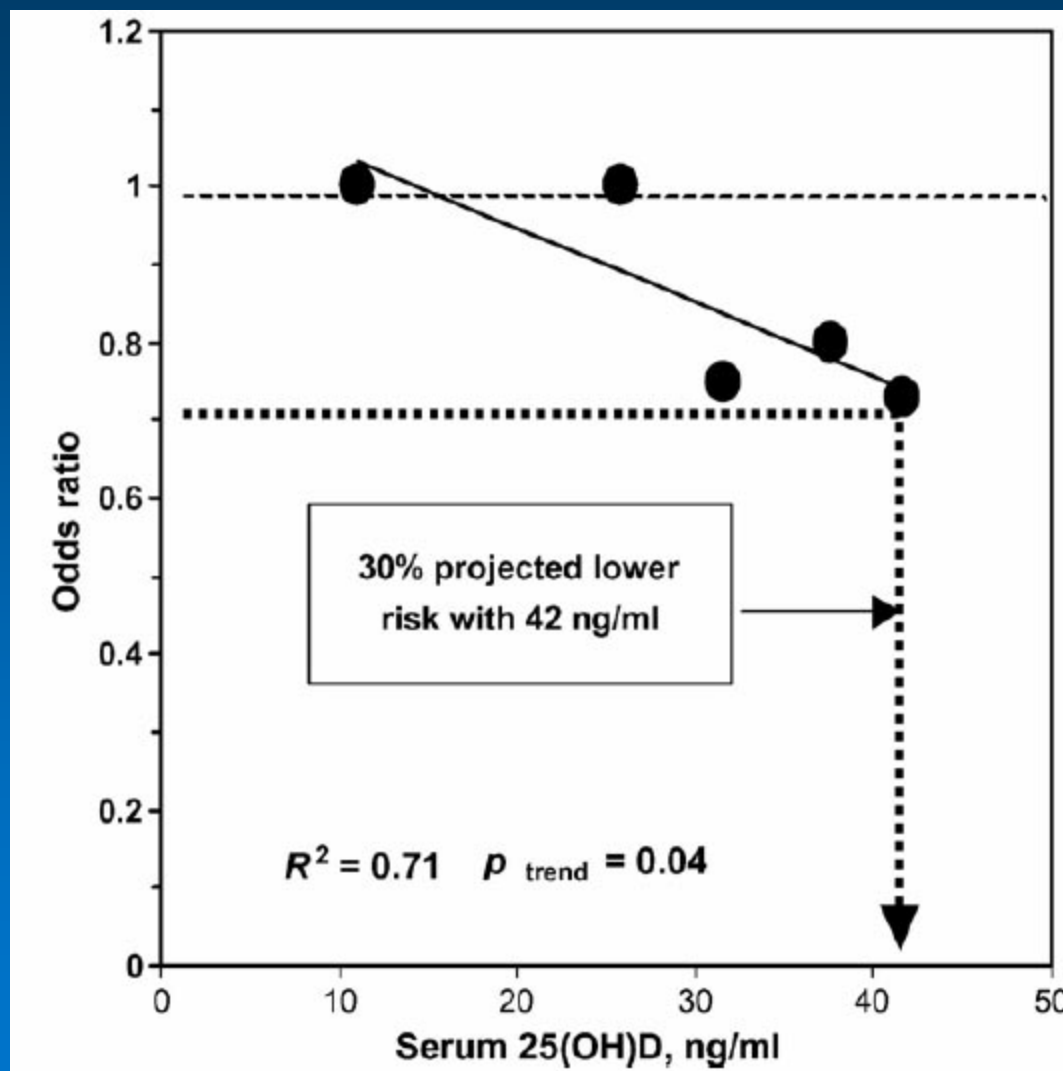
Source: Garland et al. (2007) based on data in Lowe et al. (2006)

Breast Cancer Dose Response Risk Reduction



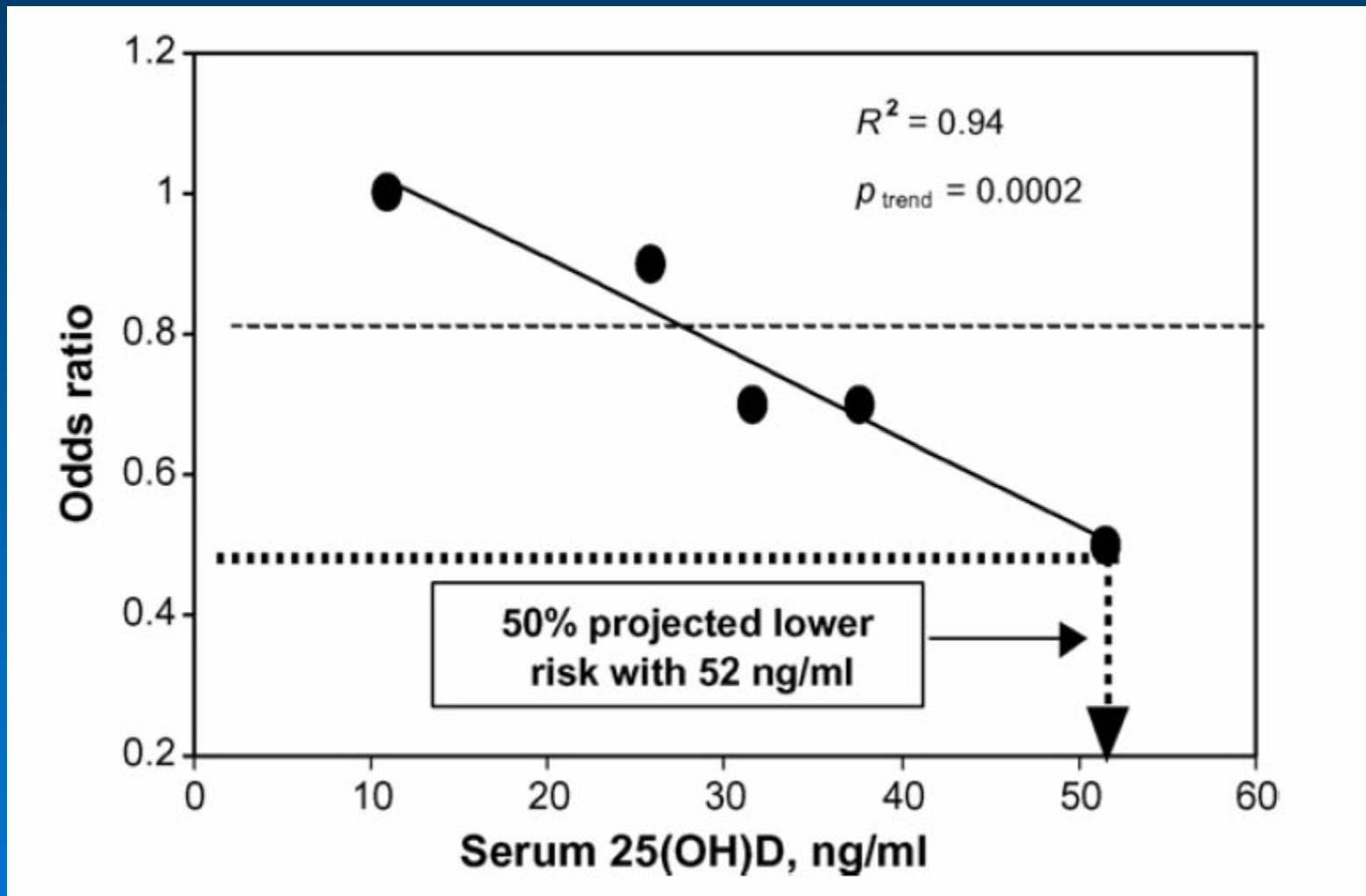
Data from: Lowe LC, et al. Plasma 25-hydroxy vitamin D concentrations, vitamin D receptor genotype and breast cancer risk in a UK Caucasian population. Eur J Cancer. 2005;41:1164-9.

Breast Cancer Dose Response Risk Reduction



Data from: Bertone-Johnson, E.R. et al. Plasma 25-hydroxyvitamin D and 1,25-dihydroxyvitamin D and risk of breast cancer. *Cancer Epidemiol. Biomarkers Prev.* 2005; 14: 1991-7.

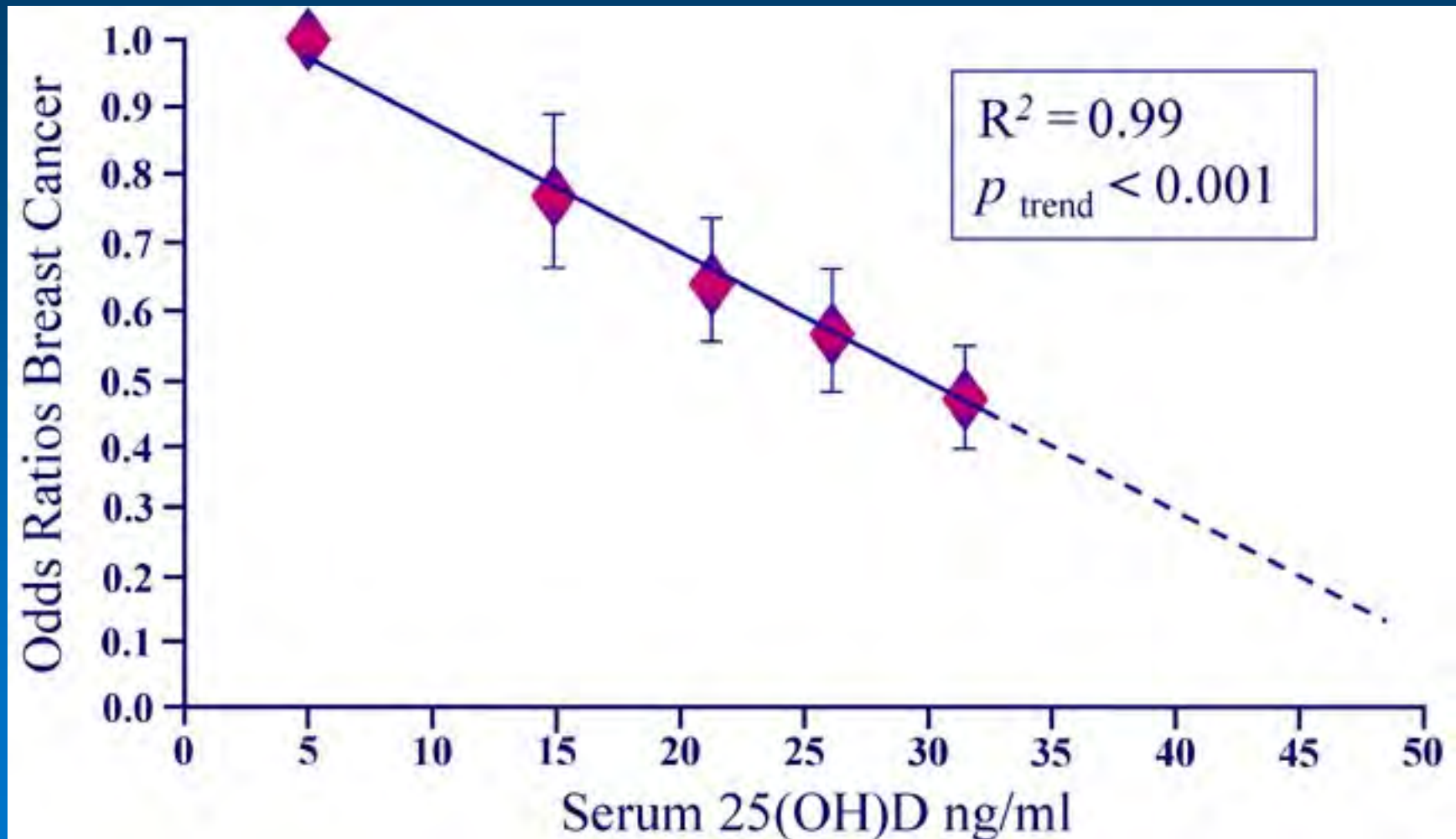
Breast Cancer Dose Response Risk Reduction



Source: Garland CF, et al. Vitamin D and prevention of breast cancer: Pooled analysis, J Steroid Biochem Mol Biol. 2007;103:708-11

Breast Cancer Dose Response Risk Reduction

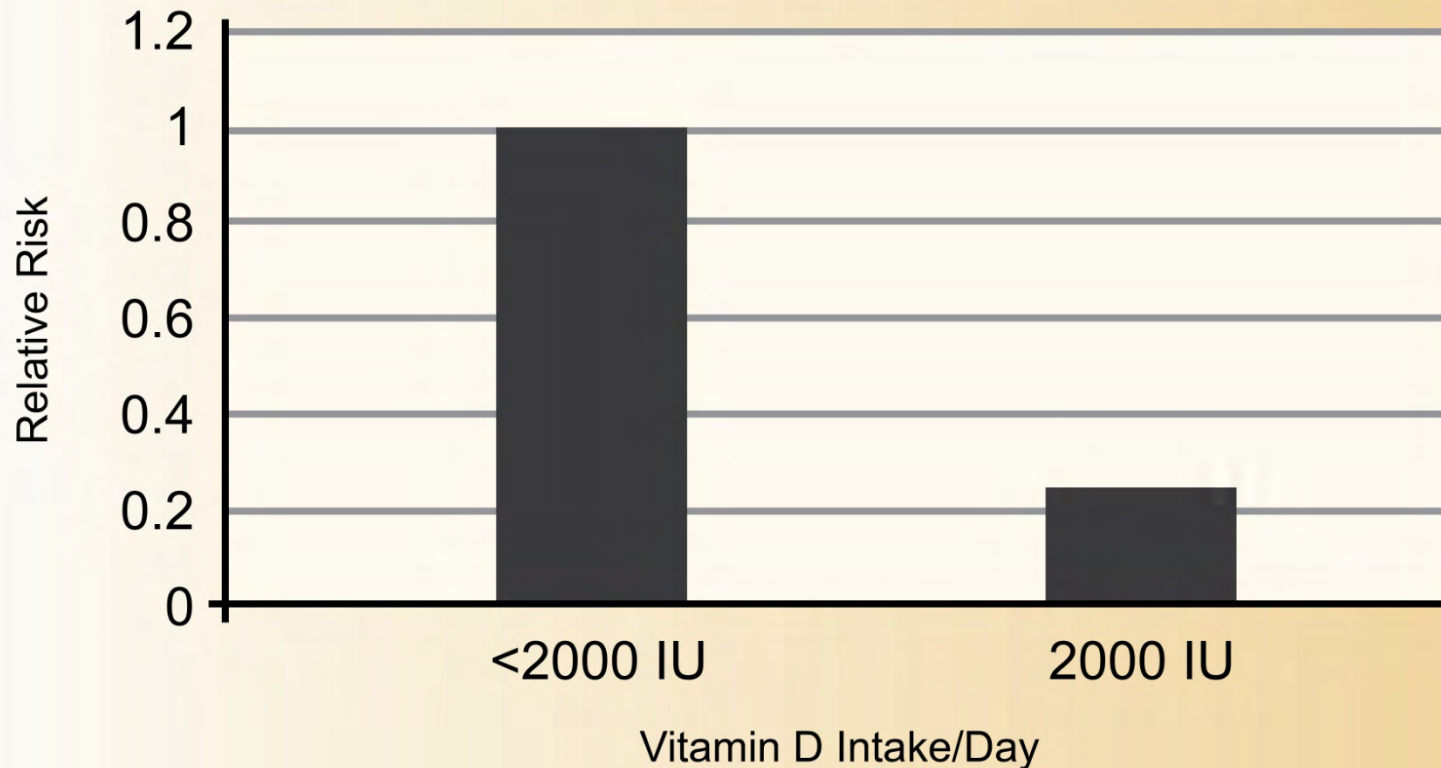
Garland, et al. Meta-Analysis of Dose Response, 2008



1. Lowe LC, et al. Plasma 25-hydroxy vitamin D ... Eur J Cancer. 2005;41:1164-9.
2. Bertone-Johnson, E.R. et al. Cancer Epidemiol Biomarkers Prev. 2005; 14: 1991-7.

3. Abbas S, et al. Serum 25-hydroxyvitamin D and risk of breast...Carcinogenesis. 2008;29:93-9.
4. Woolfe B. [Methods for combining 2x2 tables.] Ann Hum Genet 1955;19:251-5.

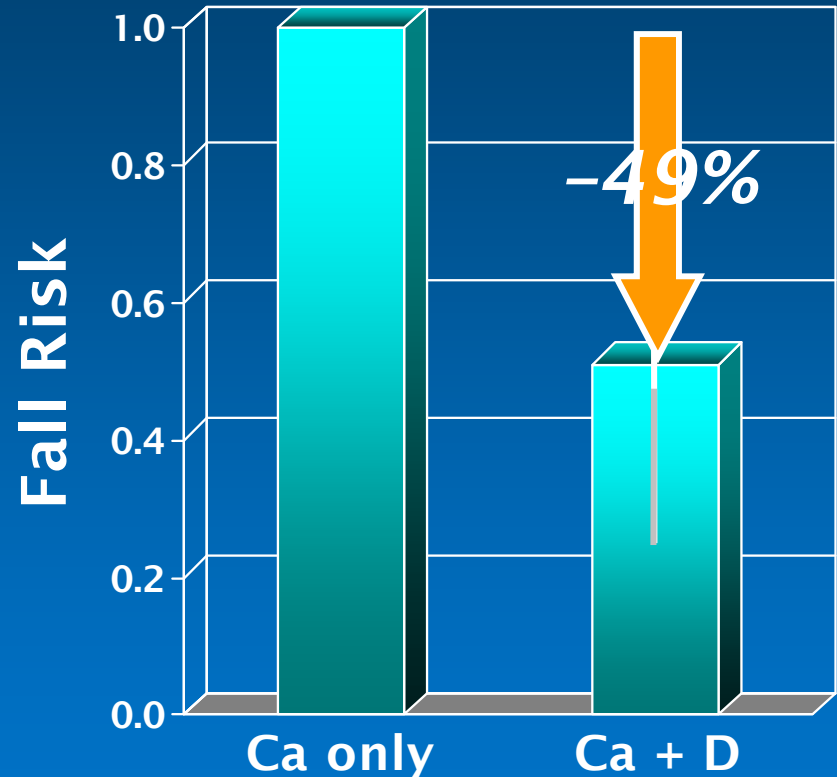
78% Type 1 Diabetes Incidence Reduction



Source: Hyponen, Lancet Nov 2001

VITAMIN D & RISK OF FALLING

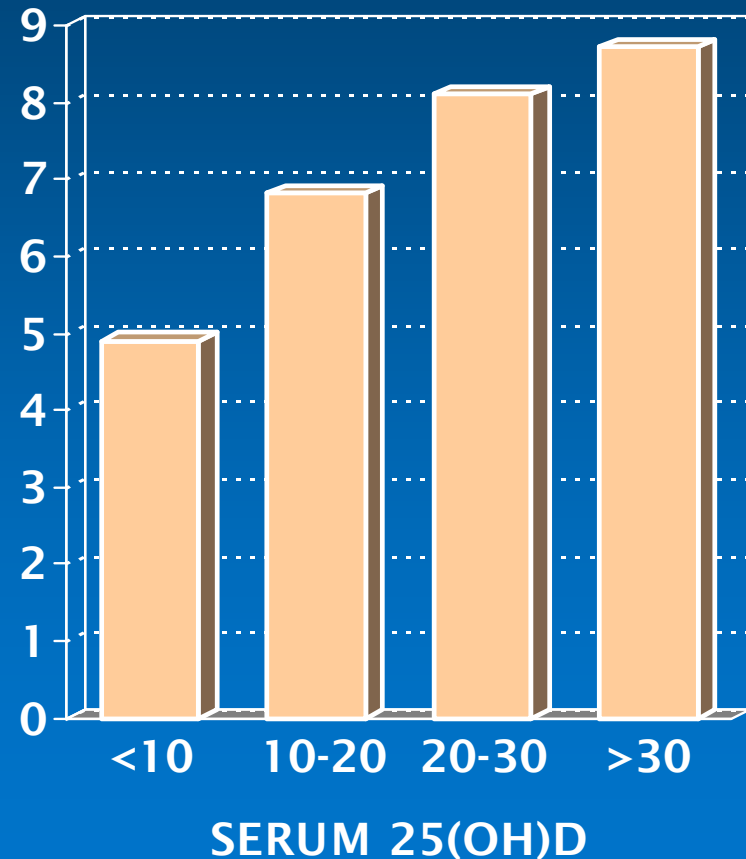
- 122 women
- Age: 63–99
- DB-RCT
 - Ca 1,200 mg/d
 - Ca + 800 IU Vit D
- 12 week duration
- 25(OH)D 12 ng/mL at baseline



VIT D & NEUROMUSCULAR FUNCTION

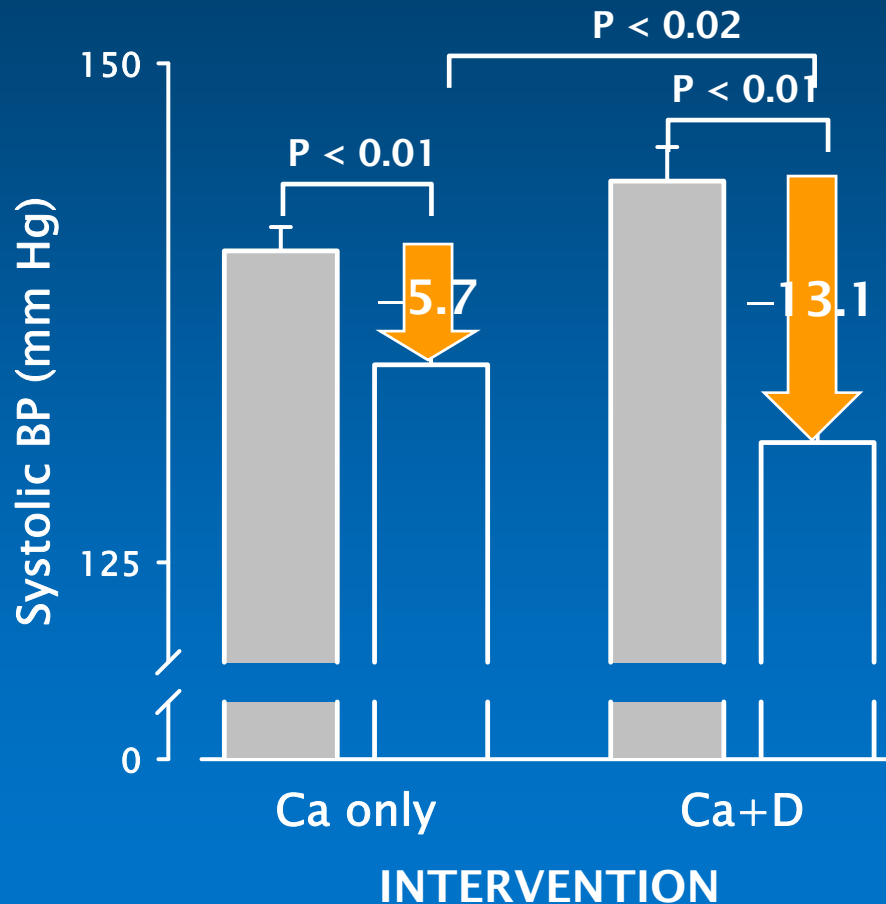
- 1359 men & women; mean age 75.5
- Amsterdam longitud. aging study
- neuromuscular performance measured on a scale of 0 to 12 (higher is better)
- each step statistically significant

Performance Score

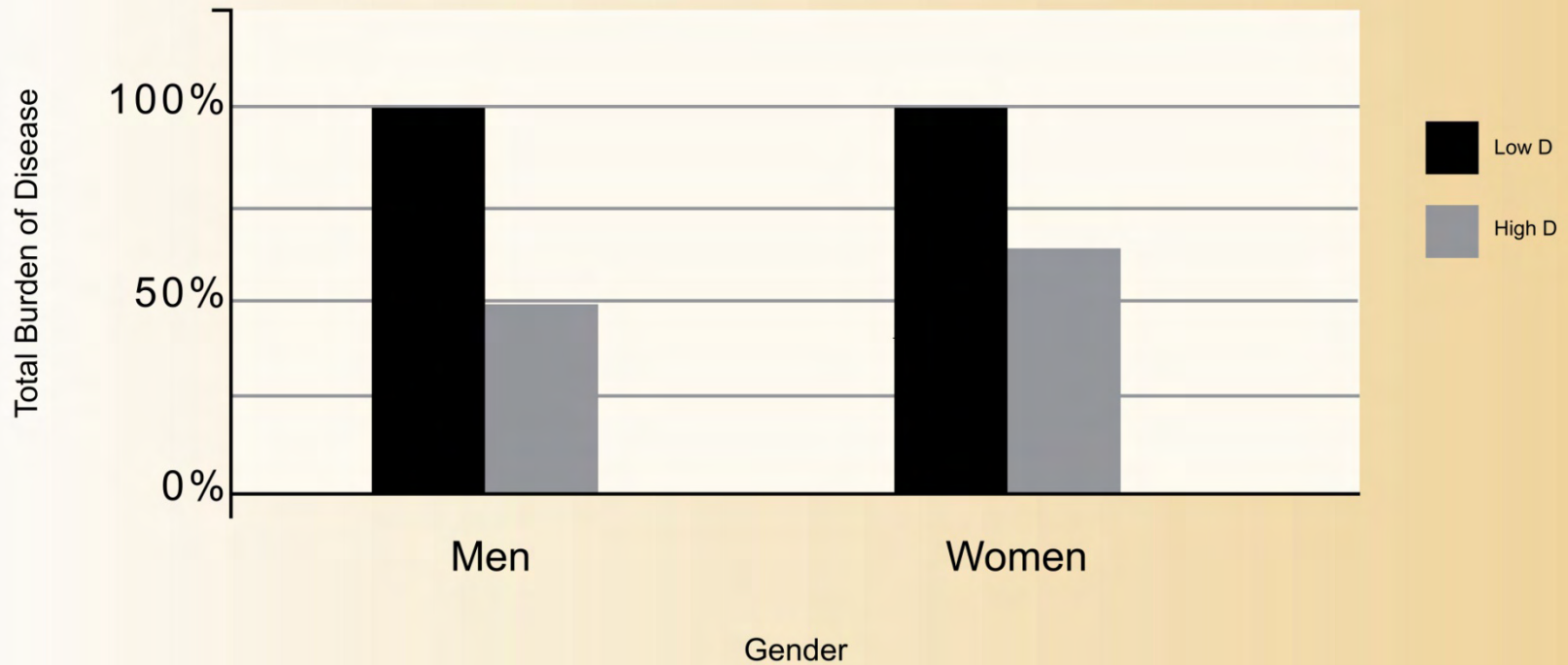


VIT D & BLOOD PRESSURE

- 148 women, aged 74 ± 1
- DB-RCT
- baseline 25(OH)D < 20 ng/ml
- treated for 8 wks with:
Ca 1200 mg/d or
Ca + 800 IU vit D/d

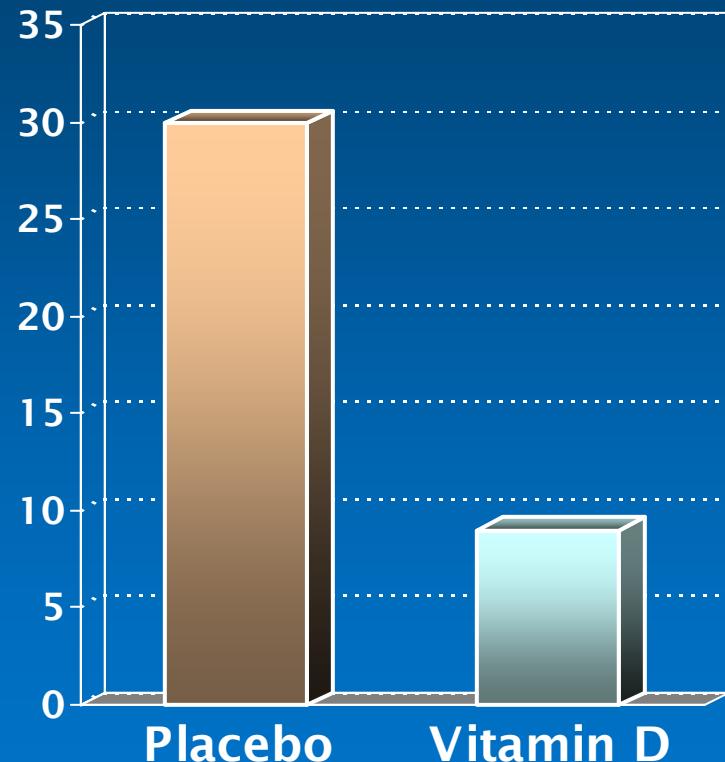


30-50% Hypertension Burden Reduction



VITAMIN D & INFLUENZA

- 208 African-American, postmenopausal women
- 3 yr DB-RCT
- placebo or vit D₃
 - 800 IU/d – 2 yrs
 - 2000 IU/d – 3rd yr
- basal 25(OH)D: 18.8 ± 7.5
- P < 0.002



Disease Summary

- Disease List for *very* positive effects is extensive—breast cancer, type 1 diabetes, multiple sclerosis, colon cancer, heart disease, falls, fractures
- The ‘some help’ list includes aggressive prostate cancer, endometrial cancer, both lymphoma’s, lung cancer

Disease Summary, cont.

- **To be researched, studied more**
 - **Brain development/cognition**
 - **Infectious Diseases**
 - **Pain**
 - **Autism**
 - **Depression**
 - **Mental Illness**



What's D*action?



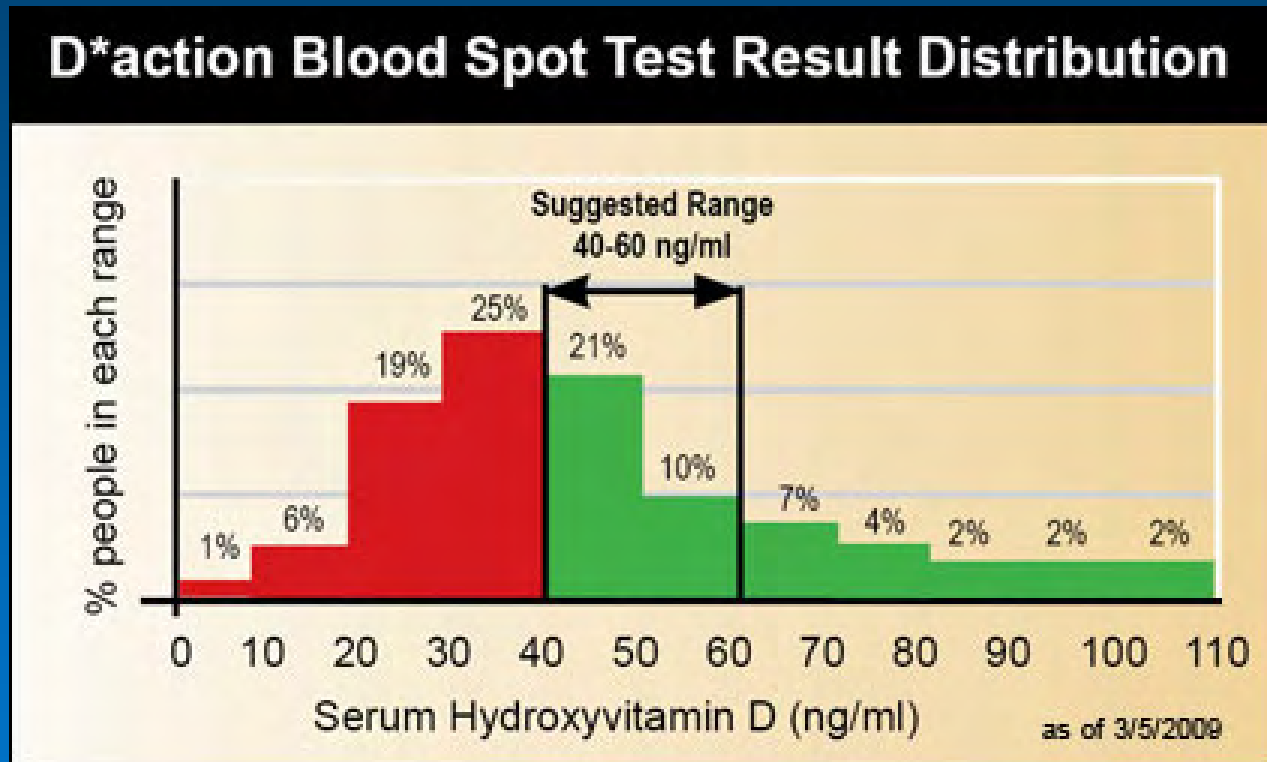
*A 5 year public health project to provide
education and research to
SOLVE the vitamin D deficiency epidemic*

*By measuring serum levels, health data and
Tracking the health effects of getting serum
Levels to
40-60 ng/ml (100-150 nmol/L)*



*Cedric F. Garland, Dr. P.H., Professor,
University of California School of Family &
Preventive Medicine is leading the research
team with the data analysis.*

51% Vitamin D Deficient



D*action study results



TAKE ACTION NOW! We know enough to reduce diseases today!

- 1. Measure your serum level (sign up for D*action and participate in the study)
www.joindaction.org**
- 2. Adjust serum level to 40-60 ng/ml (100-150 nmol/L)**
- 3. Spread the word to everyone you know!**