

University of California Scientists Panel

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International Scientists Panel

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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, 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. Based on the evidence we now have at hand, action is urgent.

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 through increased UVB exposure, fortified foods or supplements. 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. The latest Institute of Medicine (IOM) report, 2010, indicates 10,000 IU/day is considered the NOAEL (no observed adverse effect level). 4000 IU/day can be considered a safe upper intake level for adults aged 19 and older.

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 at a community level.

Revised 1/12/11