Solving Vitamin D Deficiency – A Safety Profile

*Identify and quantify risk levels of vitamin D*

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**Low 25(OH)D predicts MS Risk in US Military Personnel**

Since 1985, the Department of Defense Serum Repository collected over 30 million serum samples leftover from routine HIV and deployment-related blood tests. All samples are cataloged and stored at −30°C.

The mean 25(OH)D concentration among whites was 9.5 nmol/L, and the mean among nonwhites was 8.1 nmol/L. Higher quintiles had a decrease in MS risk. Among whites, there was a 41% decrease in MS risk for every 50-nmol/L increase in 25(OH)D, and there was no significant difference by sex.

Munger et al JAMA. 2006;296:2832-2838

To raise an Adult’s 25(OH)D by 90 nmol/L requires about 90 mcg/day of vitamin D3.
Latitude, UV and Multiple Sclerosis Prevalence in Australia: Comparison across cities

MS prevalence even correlates with an indirect measure of human skin UV exposure. i.e. MS Correlates with the Incidence of Melanoma/SkinCancer

Van der Mei et al 2001 Neuroepidemiology 20:168

Vitamin D status as a predictor of MS outcome following an initial paediatric demyelinating event.

Heather E.C. Hanwell, Reinhold Vieth, Sandra Magalhaes, Melissa McGowan, Ruth Ann Marrie, Douglas L Arnold, A Dess Sadovnick, Amit Bar-Or, and Brenda Banwell on behalf of the Canadian Pediatric Demyelinating Disease Network

Paediatric Acquired Demyelinating Syndromes (ADS) ~15-30%

Child with ADS

Baseline 3 mos 12 mos 2 – 5 years Annual Visits

Serum 25(OH)D Serum 25(OH)D Serum 25(OH)D

Child has Relapse

MS patient

Serum 25(OH)D
Survival Curves of the Time To MS Diagnosis: Baseline Age and Vitamin D Sufficiency

The Ascent of the Evidence Mountain for MS:

- Probability of a role of vitamin D in MS
- Before MS: Rationale, Epidemiology
- After the start of MS: Biology, Therapeutics
- Phase III trials with vitamin D (not yet done)
- Confirmation
- Ongoing Phase I/II Trials
- Pediatric and Adult Findings

C. Pierrott-Deseligny, J. Neurol 2009