

## Letters to the Editor

### Vitamin D

#### The 2010 recommendations of the American Institute of Medicine for daily intakes of vitamin D

Madam

Late in 2010 the US Institute of Medicine (IOM) recommended that adults should have dietary intakes of vitamin D of 15 µg/d (20 µg/d in older adults), based on evidence that these intakes improve bone health<sup>(1)</sup>. In the UK, the only one of thirty-one European countries to have no daily intake recommendation for vitamin D for adults between 19 and 64 years old<sup>(2)</sup>, where current recommended intakes for pregnant women are 10 µg/d but where intakes average less than 5 µg/d<sup>(3)</sup>, the implementation of these recommendations would improve vitamin D repletion at the population level. The IOM found no evidence of other health benefits from the specifically delineated types of evidence that it reviewed. However, there is now a large body of evidence for associations of hypovitaminosis D with non-bony health disorders such as multiple sclerosis, diabetes types 1 and 2, CVD, wound healing, periodontitis, and bacterial, viral and tuberculous infections, as well as for many cancers<sup>(4)</sup>. There is also much mechanistic evidence demonstrating how activated vitamin D produces protective effects for such diseases<sup>(5)</sup>. But there is still a shortage of data from randomized controlled trials (RCT) giving supplemental vitamin D in doses of 20 µg/d or more for risk reduction of these disorders, so that causality has not been proven for each of these conditions. Despite this, the weight of evidence has led the WHO's International Agency for Research into Cancer to accept that hypovitaminosis D is causal for colonic cancer<sup>(6)</sup>. The IOM report recommendations are for minimal intakes but their report also states that vitamin D intakes of up to 100 µg/d can be regarded as safe for healthy adults. While this sounds inconsistent, this considered conclusion should facilitate approval of RCT comparing vitamin D supplementation at up to 100 µg/d with currently recommended intakes, for their effects on many health outcomes, in order to establish both optimal vitamin D status and the intakes necessary for it to be achieved.

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### Vitamin D

#### Vitamin D, how much is enough and how much is too much?

Madam

The recent Institute of Medicine (IOM) report on vitamin D<sup>(1)</sup> underemphasizes the potential benefits of vitamin D to many individuals who have low levels, while overstating the evidence for potential harm associated with higher intakes. In describing studies of mortality, the report concludes: 'In general, these studies, as expected, indicated that low serum 25(OH)vitamin D levels akin to deficiency states (<20 nmol/l or 12 ng/ml) are associated with an increased risk of mortality. Further, as serum 25(OH)D levels increase – up to a point – mortality is lowered'. Assuming 'as expected' implies a causal relationship between some low level of 25-hydroxyvitamin D (25(OH)D) and total mortality, this statement is surprising because no other health effect for vitamin D was recognized besides skeletal health, which alone could not account for the increased mortality. Further, the report states: '...the committee emphasizes that, with few exceptions, all North Americans are receiving enough calcium and vitamin D'. The fact that numerous studies detect an inverse association between 25(OH)D level and mortality (in addition to various other health outcomes) would indicate that a substantial proportion of individuals must not be getting optimal vitamin D; if all received enough vitamin D, no association would be detectable. Even if a level as low as 50 nmol/l is required to eliminate excess risk, many people remain deficient. For example,