

Title	Clinical utility of the measurement of vitamin D
Agency	HAS, French National Authority for Health (Haute Autorité de Santé) 2 avenue du Stade de France – F 93218 La Plaine Cedex, France Tel: + 33 (0) 1 55 93 70 00 – Fax: + 33 (0) 1 55 93 74 35, contact.seap@has-santé.fr , www.has-sante.fr
Reference	ISBN number: 978-2-11-138058-5, link to full report in French: http://www.has-sante.fr/portail/jcms/c_1356838/fr/utilite-clinique-du-dosage-de-la-vitamine-d-rapport-d-evaluation?xtmc=&xtcr=13

Aim

A very large number of epidemiological and interventional studies have observed the existence of a link between vitamin D and certain diseases, both bone diseases and non-bone diseases. In parallel, the number of measurements of 25(OH)D performed in France has increased considerably over about the last 10 years, becoming the largest item of expenditure in relation to laboratory tests. Therefore, the question of the clinical utility of this measurement has been raised. In this work, it was proposed that the measurement would be considered useful i) if the link between vitamin D and disease has been demonstrated, ii) if it is possible to define the therapeutic threshold for the concentration of 25(OH)D, and iii) if prior measurement would improve the clinical results of vitamin D supplementation. A positive response to these three questions would justify the measurement of 25(OH)D.

Conclusions and results

- In response to the first question of the assessment, neither the literature data nor the opinion of the WG establishes an association between vitamin D and mortality, bone mineral density in healthy children and adolescents, breast cancer, prostate cancer or cystic fibrosis.
- In response to the second question, in the remaining situations studied, neither the literature data nor the opinion of the WG permits the definition of the therapeutic target for an improvement of the clinical signs or for risk reduction in the following situations: falls, functional performances, colorectal cancer, arterial hypertension, cardiovascular diseases, allergies, autoimmune diseases, type 2 diabetes, chronic renal failure, adverse events during pregnancy, infectious diseases, cognitive performances or lipid profile. In relation to the risk of fracture, an observational study seems to indicate that a threshold concentration of vitamin D of at least 60 nmol/l would be necessary to observe a protective effect in a population aged over 65. Because of the existence of a threshold of this type, the working group considered that it could be useful to determine vitamin D in patients with chronic illness that cause a shortage or deficiency of vitamin D, patients with osteoporosis, or patients with a disease or undergoing a treatment that induces

osteoporosis. Nevertheless, the beneficial effect of supplementation reported in the literature related to a very limited population (elderly population at risk of fracture – low bone mineral density or osteoporosis – or an elderly population in institutional care). Furthermore, this value of 60 nmol/l came from a single observational study.

- In response to the third question, in the only situation that has been studied that remains at this stage, that is to say, the risk of fracture, no literature data have been identified, so it is not possible to respond positively to this question.

In all the situations analysed in this assessment, the data analysed fail to demonstrate the clinical utility of the measurement of vitamin D.

Methods

To answer these questions, a literature search was carried out. Two systematic reviews of good methodological quality were initially identified and a systematic search using the Medline, Embase, and Cochrane central database was carried out to identify all systematic reviews published since then. The selection criteria permitted the identification of 46 systematic reviews, 41 of them meta-analyses. These publications related to nineteen different clinical situations. A critical analysis of this literature was performed and the opinion of a working group (WG) made up of healthcare professionals from different specialities involved in these situations was ascertained.

Written by

Olivier Allaire, organisation (HAS), France