

MORE AND MORE EVIDENCE FOR TESTING OF FREE 25OH VITAMIN D!

Dear valued distributor,

We are excited to present you the most recent publications on the use of Free 25OH Vitamin D as a marker of the Vitamin D status amongst the population. They show the continuous interest of the scientific community for the measurement of Free 25OH Vitamin D, as well as new potential applications for IVD laboratories.

Many publications are still using calculations to estimate the concentrations of free 25OHD, although the accuracy of this method has been questioned by several key opinion leaders. The direct measurement of free 25OHD is definitely the key method for the evaluation of this parameter.

Critical Illness

- Vitamin D deficiency and supplementation in critical illness—the known knowns and known unknowns
Nair *et al.* *Critical Care* (2018) 22:276

In critically ill patients, DBP falls during the systemic inflammatory response, which theoretically is related to a fall in 25OH Vitamin D. This results in a complex situation in which the measurement of both total and free 25OHD could be recommended for new clinical trials in this field.

Racial – Asians vs Caucasians

- Effect of vitamin D supplementation on free and total vitamin D: A comparison of Asians and Caucasians
Gopal-Kothandapani *et al.* *Clinical Endocrinology*. 2019;90:222–231

As well known, Asians showed lower total 25OHD than Caucasians (-23%). However, and probably due to different forms and concentrations (-6%) of DBP, free 25OHD was similar in both populations. Free 25OHD also showed a higher increase than total after supplementation with Vitamin D3. Taken these findings into account, as well as the evolution of PTH values, they concluded that specific measurements protocols, e.g. total and/or free, must be developed for all ethnic groups.

Vitamin D Supplementation

- Associations Between Change in Total and Free 25-Hydroxyvitamin D With 24,25-Dihydroxyvitamin D and Parathyroid Hormone
Shieh *et al.* *Clin Endocrinol Metab*, September 2018, 103(9):3368–3375

During the first weeks of Vitamin D supplementation, the rise of free 25OHD, but not total, was associated with the rise of 24,25(OH)₂D and the decrease of PTH. The clinical implication of these findings is that early in the course of vitamin D repletion, entry of free 25OHD into target cells may be physiologically important. This suggests that a vitamin D supplementation regimen that more rapidly and robustly raises free 25OHD levels may be preferable.

Pediatric

- Measured free 25-hydroxyvitamin D in healthy children and relationship to total 25-hydroxyvitamin D, calculated free 25-hydroxyvitamin D and vitamin D binding protein
Lopez-Molina *et al.* <https://doi.org/10.1016/j.clinbiochem.2018.08.007>

In children aged 2-18 years, free 25OHD only correlated with Ca, which might indicate a better relationship with the phosphocalcic metabolism. Cut-off values for Vitamin D deficiency were also established, that match the cut-off values calculated for a healthy adult population.

Cardiovascular

- Serum Bioavailable and Free 25-Hydroxyvitamin D Levels, but Not Its Total Level, Are Associated With the Risk of Mortality in Patients With Coronary Artery Disease
Yu *et al.* *Circ Res.* 2018 Sep 28;123(8):996-1007

In patients with coronary artery disease, free 25OHD levels, but not total, were associated with increased risks of all-cause mortality and cardiovascular mortality. On the basis of data for cardiovascular mortality, free 25OHD is likely to be a more specific Vitamin D biomarker than total to estimate the risk of cardiovascular mortality.

Pregnancy

- Comparison of Free and Total 25-hydroxyvitamin D in Normal Human Pregnancy
Tsuprykov *et al.* doi:10.1016/j.jsbmb.2019.03.008

In this study conducted in 368 healthy white pregnant women, free 25OHD showed an overall better association with gestational age, Calcium, BSAP, adiponectin, LDL cholesterol and urea than total 25OHD. They concluded that free 25OHD is a more precise determinant of the Vitamin D status during normal human pregnancy.

Free 25OH Vitamin D

More and more studies support the importance of free 25OH Vitamin D, suggesting that this fraction of 25OH Vitamin D is a better measurement of Vitamin D status rather than the total 25OH Vitamin D in conditions in which the concentrations or forms of DBP are different.

THE NEXT GENERATION VITAMIN D ASSAY - FREE 25OH VITAMIN D ELISA

- Simple, accurate and direct method
- Only available kit on the market
- CE marked



Nicolas Heureux
Principal Scientist - Vitamin D
Tel: +32 (0)10 84 99 40
nicolas.heureux@diasource.be

Yours truly,

Jan Wauters
International Sales & Business Development Manager Vitamin D
Jan.wauters@diasource.be



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