

## SCIENTIFIC INFORMATION STEROGYL

### VITAMIN D2 IS MUCH LESS EFFECTIVE THAN VITAMIN D3 IN HUMANS.

*Creighton University, 601 North 30th Street, Suite 4841, Omaha, Nebraska 68131, USA.*

#### Antecedents and aim

Vitamins D(2) and D(3) are generally considered to be equivalent in humans. Nevertheless, physicians commonly report equivocal responses to seemingly large doses of the only high-dose calciferol (vitamin D(2)) available in the U.S. market.

#### Material and methods

The relative potencies of vitamins D(2) and D(3) were evaluated by administering single doses of 50,000 IU of the respective calciferols to 20 healthy male volunteers, following the time course of serum vitamin D and 25-hydroxyvitamin D (25OHD) over a period of 28 d and measuring the area under the curve of the rise in 25OHD above baseline.

#### Results

The two calciferols produced similar rises in serum concentration of the administered vitamin, indicating equivalent absorption. Both produced similar initial rises in serum 25OHD over the first 3 d, but 25OHD continued to rise in the D(3)-treated subjects, peaking at 14 d, whereas serum 25OHD fell rapidly in the D(2)-treated subjects and was not different from baseline at 14 d. Area under the curve (AUC) to d 28 was 60.2 ng.d/ml (150.5 nmol.d/liter) for vitamin D(2) and 204.7 (511.8) for vitamin D(3) ( $P < 0.002$ ). Calculated AUC(infinity) indicated an even greater differential, with the relative potencies for D(3):D(2) being 9.5:1.

#### Conclusions

Vitamin D(2) potency is less than one third that of vitamin D(3). Physicians resorting to use of vitamin D(2) should be aware of its markedly lower potency and shorter duration of action relative to vitamin D(3).

**The Journal of Clinical Endocrinology & Metabolism 2004; 89(11):5387–5391**

Full article available (in Spanish) at your request [departamentomedico@spedrogcaillon.com](mailto:departamentomedico@spedrogcaillon.com)