

both 25(OH)D ($r = 0.683$; $p = 0.001$) and PTHi ($r = 0.467$; $p = 0.001$) blood levels between summer and winter.

Groups of Vitamin D ng/ml	Normal (> 30)	Insufficiency (21-29)	Deficiency (< 20)
Summer	37.0 (± 1.0)	24.7 (± 0.27)	16.9 (± 4.1)
Winter	33.2 (± 0.8)	23.4 (± 0.4)	14.3 (± 0.3)
Summer n (%)	48 (24.6)	100 (51.3)	47 (24.1)
Winter n (%)	3 (1.9)	23 (14.4)	134 (83.8)

Conclusions: Significant variations summer/winter of both 25(OH)D and iPTH blood levels, were found in this healthy young adult population. Also, the means of 25(OH)D were relatively low, suggesting that many young adults have already levels of deficiency/insufficiency, such as was described in other south European countries; however, the clinical significance of such inadequate levels still remains unclarified.

WCO03. VITAMIN D, BONE MINERAL DENSITY AND TRABECULAR BONE SCORE IN MEN

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Introduction: BMD and blood vitamin D concentrations decline slowly with ageing, as falls and osteoporotic fractures increase among elderly people. The bone quality may be accessed by trabecular bone score (TBS); together, TBS and DXA may evidence bone strength. However, data about the influence of vitamin D on the TBS are scarce.

Objectives: To evaluate the influence of the blood vitamin D levels on the BMD and TBS in normal men.

Methods: The bone mineral content (BMC, g), BMD (g/cm^2), and TBS (obtained from DXA scan) at the lumbar spine were evaluated in a group of normal men aged ≥ 40 years. Fasting blood collections were performed for measurements of the osteocalcin, 25(OH)D and iPTH concentrations. These men were divided in the normal, low BMD and osteoporosis groups, as well as in the normal, insufficiency and deficiency vitamin D groups (ES Guidelines). Total body fat and lean masses were also calculated. Adequate statistical tests were used (statistical significance $p < 0.05$).

Results: Men of deficiency group were heavier and with the lower TBS. The mean (\pm SD) osteocalcin, iPTH, 25(OH)D and TBS of the BMD are shown in the table. Significant correlation coefficients were detected between the blood 25(OH)D vs weight, vs total fat mass and vs TBS but not vs BMD.

Groups variable	Normal (50.0%)	Low BMD (41.1%)	Osteoporosis (8.9%)	p
Osteocalcin ng/ml	17.6 (± 1.6)	18.8 (± 1.7)	25.7 (± 3.7)	NSD
iPTH pg/ml	46.5 (± 6.5)	61.4 (± 7.0)	60.5 (± 15.0)	NSD
25(OH)D ng/ml	20.6 (± 1.8)	20.2 (± 2.0)	18.8 (± 4.4)	NSD
TBS L1-L4	1.334 (± 0.1)	1.319 (± 0.1)	1.281 (± 0.1)	NSD

Conclusions: Blood 25(OH)D levels may play an important role on the bone quality accessed by TBS in vitamin D deficient men, as they have worse bone quality. The data suggest that more studies are needed on larger cohort of men and it might be worth to investigate also elderly men with osteomalacia.

WCO04. ASSOCIATION BETWEEN SUBCLINICAL AND OVERT HYPERTHYROIDISM, VITAMIN D AND BONE DENSITY CHANGES

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Introduction: Patients with thyroid autoimmune diseases have lower blood level of vitamin D by comparison to a general population. However, there are few studies examining vitamin D status in patients with subclinical and overt hyperthyroidism depending on the degree of disease compensation.

Objectives: The aim of this study was determination of blood 25(OH)D level in patients with subclinical and overt hyperthyroidism, and also his possible influence on disease progression.

Methods: 80 patients of reproductive age with thyrotoxicosis syndrome were recruited. The thyroid functional state was estimated by means of determination of thyroid-stimulating hormone (TSH) basal concentrations and free thyroxine in the blood serum. Subjects were invited to attend quantitative ultrasound densitometry (Sahara), and a fasting blood sample from which osteocalcin, serum N-terminal propeptide of type 1 procollagen and crosslinks were also measured.

Results: 25(OH)D level (14.9 ± 1.8 ng/ml) was significantly lower in patients with diffuse toxic goiter in the state of sub- and decompensation, comparatively with the group of women with diffuse toxic goiter in the state of stabile thyrotoxicosis compensation (21.2 ± 2.4 ng/ml) and control group (23.9 ± 2.7 ng/ml). The results of correlation analysis testify to the presence in patients with diffuse toxic goiter in the state of thyrotoxicosis sub- and decompensation significant negative connection between blood 25(OH)D and level of thyrotropin receptor antibodies ($r = -0.47$; $p < 0.05$). Frequency of bone mineral density disorders in patients with thyrotoxicosis syndrome was 52.7%, including osteopenia in 40% and osteoporosis in 12.7%. A basic factor that results in the decline of bone mineral density in patients with thyrotoxicosis syndrome is excessive products of thyroid hormones, and also TSH-suppressive doses of levothyroxine.

Conclusions: The vitamin D blood level depends on the degree of thyrotoxicosis compensation. Significant association between 25(OH)D range and level of thyrotropin receptor antibodies established in the group of patients with an uncompensated thyrotoxicosis.

WCO05. THE EFFECTS OF VITAMIN D SUPPLEMENTATION IN THE GLUCOSE AND LIPID BLOOD PROFILES IN PERSONS WITH TYPE 2 DIABETES MELLITUS

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Introduction: Some recent epidemiological studies suggest an important role for vitamin D in the glycemic and lipid homeostasis.

Objectives: Longitudinal study to evaluate the possible effects of vitamin D supplementation in several cardio-metabolic and anthropometric variables of people affected by type 2 diabetes mellitus.

Methods: 21 T2DM women treated with oral antidiabetics of the bone metabolic diseases out-patient clinic were evaluated before and one year after beginning the supplementation with vitamin D. Fasting blood was collected for 25-hydroxy-vitamin D [25(OH)D], glucose, HbA1c, total cholesterol, LDL- and HDL- cholesterol and triglycerides measurements. Total body fat mass and fat percentage