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### EFFECTS OF VITAMIN D SUPPLEMENTATION ON SYMPTOMS OF DEPRESSION IN OBESE SUBJECTS: RANDOMIZED DOUBLE BLIND TRIAL

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The objective of the present study was to examine the cross-sectional relation between serum 25-hydroxyvitamin D (25(OH)D) levels and depression in obese subjects, and to assess the effect of vitamin D supplementation on depressive symptoms. 441 subjects (body mass index 28 - 47 kg/m<sup>2</sup>, 159 men and 282 women, aged 21 - 70 years) were recruited by advertisements or from the out-patient clinic at the University Hospital of North Norway, and in a double blind controlled trial randomized to 20.000 or 40.000 IU vitamin D per week versus placebo for 1 year.

Subjects with serum 25(OH)D levels < 40 nmol/L scored significantly higher (more depressive traits) than those with serum 25(OH)D levels ≥ 40 nmol/L on the Beck Depression Inventory (BDI) total (6.0 (0 - 23) versus 4.5 (0 - 28) (median and range)) and the BDI subscale 1 - 13 (2.0 (0 - 15) versus 1.0 (0 - 29.5)) (P < 0.05). In the two groups given vitamin D, but not in the placebo group, there was a significant improvement in BDI scores after one year. There was a significant decrease in serum parathyroid hormone in the two vitamin D groups, without a concomitant increase in serum calcium.

It appears to be a relation between serum levels of 25(OH)D and symptoms of depression. Supplementation with high doses of vitamin D seems to ameliorate these symptoms, indicating a possible causal relationship.