

<http://www.lef.org/>  
May 6, 2008

### **Low vitamin D levels linked with depression**

The May, 2008 issue of the American Medical Association journal *Archives of General Psychiatry* reported that older men and women with elevated parathyroid hormone (PTH) levels and low levels of vitamin D were more likely to be depressed than those with normal levels.

For the current investigation, Witte J. G. Hoogendijk, MD, PhD and associates at the Vrije Universiteit Medical Center in Amsterdam evaluated data from 1,282 participants in the Longitudinal Aging Study, an ongoing study of the predictors and consequences of changes in autonomy and well-being in men and women aged 55 to 85. The present study included subjects aged 65 and older who participated in the first follow-up, during which depression status and severity were assessed.

Twenty-six participants were diagnosed with major depression, and 169 with minor depression.

Blood samples assayed for serum 25-hydroxyvitamin D averaged 21 nanograms per milliliter and parathyroid hormone levels averaged 3.6 picograms per milliliter. Vitamin D insufficiency was determined in 38.8 percent of the men and 56.9 percent of the women in this study. The team found that serum vitamin D levels were 14 percent lower in both those with major and minor depression compared with levels among those who were not depressed. This association was adjusted for a number of factors, and was not explained by differences in season of data acquisition, physical activity levels, or antidepressant use.

Among those affected by major depression, parathyroid levels were 33 percent higher, and in those with minor depression, PTH levels were 5 percent higher. Primary hyperparathyroidism is known to be frequently accompanied by depression.

Although the authors are uncertain whether low vitamin D levels are a cause or effect of depression, they note several ways that low levels of the vitamin could be involved in the development of depression.

“Underlying causes of vitamin D deficiency such as less sun exposure as a result of decreased outdoor activity, different housing or clothing habits and decreased vitamin intake may be secondary to depression, but depression may also be the consequence of poor vitamin D status,” the authors write. “Moreover, poor vitamin D status causes an increase in serum parathyroid hormone levels.”

The findings are not entirely “depressing” because low vitamin D and high parathyroid levels can be treated by increasing vitamin D and calcium intake. The authors recommend longitudinal studies to determine whether low vitamin D levels and increased PTH levels precede depression or follow it.