

## **Does Vitamin D Deficiency Contribute to Cognitive Dysfunction in Patients with Systemic Lupus Erythematosus**

**Objective:** Neurocognitive impairment is one of the most common systemic lupus erythematosus (SLE) manifestations. However, its pathophysiology is still poorly understood. Vitamin D deficiency is a possible risk factor for cognitive impairment. The aim of this study was to evaluate the relationship between 25-dihydroxy(OH) D3 levels and cognitive performance in patients with SLE. **Methods:** This was a cross-sectional, case-control study that included 30 Egyptian patients diagnosed with SLE and 20 age, sex, and educational level-matched controls. Study participants were subjected to a battery of neuropsychological evaluation using the California Verbal Learning Test (CVLT- II), Controlled Oral Word Association Test (COWAT), and Trail Making Test and evaluation of depression using Beck Depression Inventory (BDI). Serum levels of 25(OH) D3 were measured in the SLE group and control group. **Results:** The patients with SLE performed worse on total recall of verbal memory and executive function tests than the healthy controls. There was no significant difference between the patients and controls in Beck Depression Inventory (BDI). There was a significant negative correlation between vitamin D levels and executive function assessed by Trail Making Test ( $r=-0.399$ ,  $p=0.03$ ). **Conclusion:** Vitamin D deficiency could have a significant impact on cognitive performance in patients with SLE.

**Keywords:** Systemic lupus erythematosus, neuropsychiatric systemic lupus erythematosus, cognition, cognitive impairment, vitamin D

**Published in :** Innovation in clinical *Neuroscience* 2018;15(9–10):25–29