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Lower serum zinc in Chronic Fatigue Syndrome (CFS): relationships to immune dysfunctions and relevance for the oxidative stress status in CFS.

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The present study examines serum zinc concentrations in patients with chronic fatigue syndrome (CFS) versus normal volunteers. Serum zinc levels were determined by means of an atomic absorption method. We found that serum zinc was significantly lower in the CFS patients than in the normal controls. There was a trend toward a significant negative correlation between serum zinc and the severity of CFS and there was a significant and negative correlation between serum zinc and the subjective experience of infection. We found that serum zinc was significantly and negatively correlated to the increase in the alpha2 protein fraction and positively correlated to decreases in the expression of mitogen-induced CD69+ (a T cell activation marker) on CD3+ as well as CD3+CD8+ T cells. These results show that CFS is accompanied by a low serum zinc status and that the latter is related to signs of inflammation and defects in early T cell activation pathways. Since zinc is a strong anti-oxidant, the present results further support the findings that CFS is accompanied by increased oxidative stress. The results of these reports suggest that some patients with CFS should be treated with specific antioxidants, including zinc supplements.

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