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OXIDATIVE STRESS AND BRAIN GLUTAMATE-MEDIATED EXCITABILITY IN DEPRESSED PATIENTS

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**Introduction:** Several neuropsychiatric pathologies have been recently linked to oxidative stress.

**Objectives:** In this study, we investigated the relationship between depression, markers of oxidative stress and neurotransmission, as expressed by sensory cortex excitability.

**Methods:** Serum levels of oxidative stress markers and somatosensory magnetic fields, evoked by external galvanic stimulation, were measured in 13 depressed patients and 13 controls.

**Results:** Depressives had higher levels of total and free copper than controls and lower levels of transferrin. They also showed lower sensory cortex excitability, which correlated with copper levels in controls, but not in patients. Transferrin correlated with sensory cortex excitability in both patients and controls, although in opposite ways. Copper level results associated with the patients' clinical status.

**Conclusions:** Pro-oxidant agents appear to affect neuronal excitability and clinical state of depressed patients, as free copper excess alters their cortical glutamatergic neurotransmission.