Iron deficiency on neuronal function

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Because of the intrinsic ability of iron to catalyze the formation of reactive oxygen species, it has been associated with oxidative stress and neurodegenerative diseases. However, iron deficiency (ID) also negatively impacts various functions of the brain, suggesting that iron plays an important physiological role in neuronal processes such as myelination, synaptogenesis, behavior and synaptic plasticity (SP). ID not only produces changes in the hippocampus, striatum, amygdale or prefrontal cortex, it also affects the interaction among these systems. In both humans and rodents, the perturbations of these structures are associated to cognitive deficits. These cognitive alterations have been well correlated with changes in neural plasticity, the possible cellular substrate of memory and learning. Given that SP is strongly affected by early ID and the lasting-neurological consequences remain even after ID has been corrected, it is important to prevent ID as well as to seek effective ther