Rationale for Dietary Antioxidant Treatment of ADHD

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Abstract

Increasing understanding arises regarding disadvantages of stimulant medication in children with ADHD (Attention-Deficit Hyperactivity Disorder). This review presents scientific findings supporting dietary antioxidant treatment of ADHD and describes substantial alterations in the immune system, epigenetic regulation of gene expression, and oxidative stress regulation in ADHD. As a result, chronic inflammation and oxidative stress could develop, which can lead to ADHD symptoms, for example by chronic T-cell-mediated neuroinflammation, as well as by neuronal oxidative damage and loss of normal cerebral functions. Therefore, modulation of immune system activity and oxidant-antioxidant balance using nutritional approaches might have potential in ADHD treatment. The use of natural antioxidants against oxidative conditions is an emerging field in the management of neurodegenerative diseases. Dietary polyphenols, for example, have antioxidant capacities as well as immunoregulatory effects and, therefore, appear appropriate in ADHD therapy. This review can stimulate the development and investigation of dietary antioxidant treatment in ADHD, which is highly desired.