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Therapeutic Use of omega-3 Fatty Acids in Bipolar Disorder

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Abstract

Bipolar disorder (BD) is a severe, chronic affective disorder, associated with significant disability, morbidity and premature mortality. Omega-3 polyunsaturated fatty acids (PUFAs) play several important roles in brain development and functioning. Evidence from animal models of dietary omega-3 (n-3) PUFA deficiency suggest that these fatty acids are relevant to promote brain development and to regulate behavioral and neurochemical aspects related to mood disorders, such as stress responses, depression and aggression, as well as dopaminergic content and function. Preclinical and clinical evidence suggests roles for PUFAs in BD. n-3 PUFAs seem to be an effective adjunctive treatment for unipolar and bipolar depression, but further large-scale, well-controlled trials are needed to examine its clinical utility in BD. The use of n-3 as a mood stabilizer among BD patients is discussed here. This article summarizes the molecular pathways related to the role of n-3 as a neuroprotective and neurogenic agent, with a specific focus on BDNF. It is proposed that the n-3-BDNF association is involved in the pathophysiology of BD and represents a promising target for developing a novel class of rationally devised therapies.

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