# Essential fatty acids and human brain

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## Abstract

The human brain is nearly 60 percent fat. We've learned in recent years that fatty acids are among the most crucial molecules that determine your brain's integrity and ability to perform. Essential fatty acids (EFAs) are required for maintenance of optimal health but they can not synthesized by the body and must be obtained from dietary sources. Clinical observation studies has related imbalance dietary intake of fatty acids to impaired brain performance and diseases. Most of the brain growth is completed by 5-6 years of age. The EFAs, particularly the omega-3 fatty acids, are important for brain development during both the fetal and postnatal period. Dietary decosahexaenoic acid (DHA) is needed for the optimum functional maturation of the retina and visual cortex, with visual acuity and mental development seemingly improved by extra DHA. Beyond their important role in building the brain structure, EFAs, as messengers, are involved in the synthesis and functions of brain neurotransmitters, and in the molecules of the immune system. Neuronal membranes contain phospholipid pools that are the reservoirs for the synthesis of specific lipid messengers on neuronal stimulation or injury. These messengers in turn participate in signaling cascades that can either promote neuronal injury or neuroprotection. The goal of this review is to give a new understanding of how EFAs determine our brain's integrity and performance, and to recall the neuropsychiatric disorders that may be influenced by them. As we further unlock the mystery of how fatty acids affect the brain and better understand the brain's critical dependence on specific EFAs, correct intake of the appropriate diet or supplements becomes one of the tasks we undertake in pursuit of optimal wellness.

# Maternal Antidepressant Use During Pregnancy and the Risk of Attention-Deficit/Hyperactivity Disorder in Children: A Systematic Review of the Current Literature

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## Abstract

Purpose: This study reviewed the current literature examining the potential relationship between use of antidepressants during pregnancy and attention-deficit/hyperactivity disorder (ADHD) in children.

Methods: PubMed was searched for English language reports between January 1, 1995, and July 31, 2017, by using combinations of the key words pregnancy, antidepressants, selective serotonin reuptake inhibitors (SSRIs), selective serotonin-norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), children, offspring, and ADHD. Studies that reported association between ADHD in children and use of antidepressant in pregnant women were included in the review.

Results: A total of 7 relevant studies that met the review criteria were examined. The studies reported that compared with nonusers adjusted risks of ADHD in children were 1.2 to 1.6 for the use of any antidepressant, 0.91 to 1.66 for selective serotonin reuptake inhibitors, 1.1 to 1.4 for selective serotonin-norepinephrine reuptake

inhibitors, and 1.1 to 1.8 for tricyclic antidepressants. There was some scientific evidences suggesting a connection between antidepressant use during all trimesters of pregnancy and increased risk of ADHD in children. In addition, the study results suggest that underlying maternal anxiety or depressive disorders may also contribute to increased risk of ADHD.

Implications: Although some studies have suggested a moderately increased risk of ADHD in children with maternal antidepressant use during pregnancy, based on limitations and results of the studies, this review concluded that there is no strong evidence to suggest a causal link.