

Abstract

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Effect of vitamin B12 deficiency on neurodevelopment in infants: current knowledge and possible mechanisms.

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BACKGROUND: Severe vitamin B(12) deficiency produces a cluster of neurological symptoms in infants, including irritability, failure to thrive, apathy, anorexia, and developmental regression, which respond remarkably rapidly to supplementation. The underlying mechanisms may involve delayed myelination or demyelination of nerves; alteration in the S-adenosylmethionine:S-adenosylhomocysteine ratio; imbalance of neurotrophic and neurotoxic cytokines; and/or accumulation of lactate in brain cells.

DISCUSSION: This review summarizes the current knowledge concerning infantile vitamin B(12) deficiency, including a pooled analysis of case studies of infants born to mothers with untreated pernicious anemia or a strict vegetarian lifestyle and a discussion of the mechanisms that may underlie the manifestations of deficiency.

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