

Abstract

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Magnesium, inflammation, and obesity in chronic disease.

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BACKGROUND: About 60% of adults in the United States do not consume the estimated average requirement for magnesium, but widespread pathological conditions attributed to magnesium deficiency have not been reported.

SUMMARY OF FINDINGS: Nevertheless, low magnesium status has been associated with numerous pathological conditions characterized as having a chronic inflammatory stress component. In humans, deficient magnesium intakes are mostly marginal to moderate (approximately 50% to <100% of the recommended dietary allowance). Animal experiments indicate that signs of marginal-to-moderate magnesium deficiency can be compensated or exacerbated by other factors influencing inflammatory and oxidative stress; recent studies suggest a similar happening in humans.

CONCLUSIONS: This suggestion may have significance in obesity, which is characterized as having a chronic low-grade inflammation component and an increased incidence of a low magnesium status. Marginal-to-moderate magnesium deficiency through exacerbating chronic inflammatory stress may be contributing significantly to the occurrence of chronic diseases such as atherosclerosis, hypertension, osteoporosis, diabetes mellitus, and cancer.

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