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1: Nutrition 2001 Oct;17(10):858-67

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Micronutrients in women's health and immune function.

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Lawrence J. Machlin's contributions to elucidating the roles of nutrients in optimizing human health included the support of research in the areas of women's health and immune function. Several essential nutrients have been shown to affect women's health throughout the different life stages. Symptoms of premenstrual syndrome affect the vast majority of menstruating women, and calcium supplementation significantly reduces physical and emotional symptoms. Premenstrual syndrome in fact might be a predictor of osteoporosis induced by low calcium intake. Periconceptional multivitamin supplementation has reduced the risk of serious birth defects, premature delivery, and low birth weight by 50% and improved maternal health during pregnancy. Micronutrients of particular importance for prevention of adverse pregnancy outcomes are folic acid, zinc, and iron. However, if the preterm delivery is caused by preeclampsia, then data suggest that calcium supplementation and high doses of vitamins C and E significantly reduce that risk. Well-controlled studies consistently have shown that calcium supplementation, with or without vitamin D, significantly reduces the risk of hip fracture. Antioxidants such as vitamins C and E have been shown to reduce the risk of fracture in women smokers. As in the rapidly growing embryo, the immune system includes rapidly multiplying cells whose functions are dramatically affected by an individual's micronutrient status. Multivitamins have been shown to enhance many aspects of immune response, and antioxidant micronutrients consistently have been found to enhance lymphocyte-proliferative responses and skin-test responses, especially in the elderly.

PMID: 11684393 [PubMed - in process]

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