Nutrients and contaminants in human milk from mothers on macrobiotic and omnivorous diets.

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Abstract

The effect of alternative dietary habits and prolonged lactation on the nutrient and contaminant concentrations in human milk was studied. The study sample consisted of mothers on macrobiotic diets, containing little or no dairy products and meat, at 2-3 months postpartum (n = 9) and 9-13 months postpartum (n = 12), and mothers on omnivorous diets at 2-3 months postpartum (n = 10). Protein and zinc concentrations in breast-milk from macrobiotic mothers decreased with stage of lactation. After adjustment for stage of lactation, milk from macrobiotic mothers contained less calcium, magnesium and saturated fatty acids C15:0-C20:0, and more polyunsaturated fatty acids. Observed tendencies for lower protein and fat and higher lactose concentrations in the macrobiotic group were not statistically significant. Concentrations of vitamin B12, HCB and polychlorinated biphenyls (PCB 118, PCB 138, PCB 153 and PCB 180) were lower in the macrobiotic group. After adjustment for confounding variables, meat and fish consumption, but not dairy products, contributed to vitamin B12 concentrations. Meat and dairy products strongly contributed to breast-milk concentrations of dieldrin and PCBs, fish to PCB 118, and smoking to DDT and dieldrin. Our findings suggest that breast-milk contamination could be reduced by abstinence from smoking and a moderate intake of animal products. However, risk of nutritional deficiencies rules out complete avoidance of meat, fish or dairy products. Quantitative research on the effects of a reduced consumption of animal products, as well as smoking, on breast-milk contamination is warranted.