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Increased Consumption of Folic Acid Can Reduce Birth Defects but May Also Be Associated With Colorectal Cancer

Folic acid can reduce birth defects including neural tube defects, congenital heart disease and oral clefts but some speculate high intakes of folic acid may be associated with adverse events such as colorectal cancer, states an article in Canadian Medical Association Journal (CMAJ) .

This study, conducted by researchers at Children's Hospital of Eastern Ontario Research Institute and The Hospital for Sick Children, is the first of its kind in more than three decades, to examine the folate status of Canadians including a subset of women of childbearing age. Red blood cell folate concentrations were examined in 5248 Canadians aged 6 to 79 years based on survey data representing around 96% of the Canadian population. After adjusting for age, sex and socio-economic status, the study found that less than 1% of Canadians showed folate deficiencies and 40% showed high folate concentrations. However, in the subset of women of childbearing age, 22% were below the concentration considered safe to guard against neural tube defects.

"Some medical practitioners argue that many women of childbearing age need high-dose folic acid supplements and that doubling the level of folic acid fortification in the food supply should be considered," writes Cynthia Colapinto, CHEO Research Institute, Healthy Active Living and Obesity Research Group, Ottawa, Ontario and coauthors. "This argument has sparked considerable debate because folic acid fortification targets women of childbearing age by exposing the entire population to high levels of folic acid. Given the absence of folate deficiency in the general population and the apparent shift toward Canadians having high serum folate concentrations, there appears to be little rationale for doubling folic acid levels in the Canadian food supply."

Folate deficiency is almost completely absent in the Canadian population, though high folate concentrations exist.

"Correction of folate deficiency and improved folate status, in part through fortification, has been associated with positive health outcomes such as the dramatic reduction in neural tube defects," write the authors. "However, given speculations about the possible adverse effects associated with high levels of folic acid, including increased risk of certain cancers in those with pre-existing neoplasms, further attempts to improve the folate status of Canadian women of childbearing age by increasing fortification levels should be approached cautiously."

The authors conclude that although folic acid is beneficial for women of childbearing age, some people may have undesirable results so ongoing monitoring of the folate status of Canadians and the relationship between folic acid and health outcomes is needed.

Cynthia K. Colapinto, Deborah L. O'Connor and Mark S. Tremblay. Folate status of the population in the Canadian Health Measures Survey. CMAJ, 2010 DOI: 10.1503/cmaj.100568