Letters

The Impact of Food Fortification on Folic Acid Intake in Canada

Dear Editor:


In November 1998, Canada introduced a national program by which folic acid was added to all flour, and some corn and rice products, so as to increase folic acid consumption by an estimated 100µg/d. This initiative paralleled a similar program in the US, both of which are intended to reduce the occurrence of neural tube defects (NTDs). The study by Ray et al. assessed the effect of fortification on the nutritional status of Canadians, which is an important first step in determining the health impact of this program.

We recently reported an evaluation of published data to determine the relationship between the change in serum folate concentration and folic acid intake. A literature review identified four studies (representing a total of 12 treatment regimes) in which folic acid had been consumed daily for periods sufficient for serum folate concentrations to reach equilibrium. From these data, we derived a linear regression equation relating change in serum folate concentration [ΔFolate (nmol/L)] to the daily folic acid intervention [FA/d (µg/d)]:

ΔFolate = 0.05756 x (FA/d) + 0.1165 (n=12; r=0.984; p<0.0001)

Using this equation and reverse prediction, it was possible to calculate from observed changes in serum folate concentration the causal change in daily folic acid consumption. This model is internally consistent and is in good agreement with other observational studies. For instance, our estimate that fortification caused an increase in folic acid consumption of 215µg/d in the Framingham Cohort is in good agreement to the estimate of 190µg/d derived for the same cohort using food frequency questionnaires and updated food composition tables. On the basis of the change in serum folate concentration reported by Ray et al. for Canadians, we estimate that the Canadian fortification program has increased folic acid consumption by 150µg/d and not the target 100µg/d.

Ray et al. have clearly demonstrated that fortifying cereal grain with folic acid has had the desired effect of increasing folate nutrition and reducing the incidence of deficiency. However, these benefits have been a result of a higher than intended intake of folic acid. While the Canadian level of intake (150µg/d) is considerably less than that estimated for the US (190µg/d to 245µg/d), it still represents a margin of error within the fortification model. In particular, steps may be needed to ensure that folic acid levels in grain products, which are already higher than intended, do not fluctuate further from the mandated concentrations.

The discrepancy between the Canadian and US fortification programs represents a significant difference in the exposure of the two populations to folic acid. We suggest that this presents an opportunity to assess the benefits of the two disparate fortification levels. We also suggest that efforts should be made to identify strategies to further supplement the target population (i.e., women of childbearing years) while minimizing further exposure to folic acid by people consuming large amounts of fortified products.

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REFERENCES


Criminal Code Sanctions

Dear Editor:

At a time when consideration is being given to taking pot possession out of the Criminal Code, some want drinking drivers to be criminalized at very low blood alcohol concentrations. Indeed, earlier this year, the federal Justice minister was asked to look at criminalizing cell phone use in cars!

Criminal Code sanctions are very severe. Justifiably, the legal process to charge and convict a felon is intricate and costly. The Criminal Code is meant to address acts that violate basic societal norms, such as murder, robbery and assault. There are other, better regulatory tools to deal, for example, with traffic safety issues.

Criminalization is a last resort, when other countermeasures cannot protect society.

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