

cTnI test was negative, then repeat testing may be requested.

Eugene Dagnone

Department of Emergency Medicine

Christine Collier

Department of Pathology

Faculty of Health Sciences

Queen's University

Kingston, Ont.

References

1. Pope JH, Aufderheide TP, Ruthazer R, Woolard RH, Felman JA, Beshansky JR, et al. Missed diagnosis of acute cardiac ischemia in the emergency department. *N Engl J Med* 2000; 342(16):1163-70.
2. Young GP, Gibler WB, Hedges JR, Hoekstar JW, Slovis C, Aghababian R, et al. Serial creatine kinase-MB results are a sensitive indicator of acute myocardial infarction in chest pain patients with non-diagnostic electrocardiograms: the second Emergency Medicine Cardiac Research Group. *Acad Emerg Med* 1997;4:869-77.

Folic acid supplementation: more work is needed

James House and colleagues recently reported that 25% of Newfoundland women had low or indeterminate red blood cell folate levels (< 420 nmol/L) at their first prenatal visit.¹ Booth and colleagues reported that the reference values in use today were defined on the basis of absence of biochemical signs of folate deficiency.² These values do not reflect recommendations for folic acid intake to prevent neural tube defects.³ Booth and colleagues found that for women of child-bearing age attempting to reach a folate intake of 400 µg/day, deficiency is best defined as a serum homocysteine value above 10 µmol/L or a red blood cell folate value below 615 nmol/L.²

We recently completed a case-control study of 28 women with a previous pregnancy resulting in a neural tube defect and 38 matched controls with a normal pregnancy outcome. All mothers were ascertained to be screen positive by an elevated maternal serum α-fetoprotein level between 1983 and 1999. We used a semiquantitative food frequency survey to measure dietary and supplemental intake of folate and vitamins B₁₂ and B₆. The dietary survey

was later validated using biochemical results from 25 and 32 of the case and control mothers respectively. Linear regression analysis showed significant correlation between reported intake of folate and serum folate ($p = 0.018$) and red blood cell folate levels ($p = 0.002$), but an inverse correlation with serum homocysteine levels ($p = 0.029$). Analysis indicated consistent underreporting of actual vitamin intake (common in food frequency surveys). We found no difference between case and control subjects in terms of intake or eating patterns.

Even after correcting for underreporting, we found that in our case and control groups combined, 58% of women were not consuming enough folate, 46% were not consuming enough vitamin B₆ and 28% were not consuming enough vitamin B₁₂. Only 12% reported preconceptional supplementation whereas 82% reported supplementing after they became pregnant. There was no difference in preconceptional supplementation patterns after 1994, when preconceptional supplementation with folic acid was recommended.⁴

Although none of our mothers were folate deficient according to current reference values, 34% had serum homocysteine values in excess of 10 µmol/L and 10% had levels higher than 13 µmol/L, the current reference value. Our results, albeit in a much smaller and differently selected group, support the results of the Newfoundland study and indicate that vitamin B₆ intake may also be suboptimal in many women of child-bearing age.

Natalie K. Björklund

Department of Biochemistry and Medical Genetics

Jane A. Evans

Departments of Biochemistry and Medical Genetics, Pediatrics and Child Health, and Community Health Sciences

Cheryl R. Greenberg

Departments of Biochemistry and Medical Genetics, and Pediatrics and Child Health
University of Manitoba
Winnipeg, Man.

References

1. House JD, March SB, Ratnam S, Ives E, Brosnan JT, Friel JK. Folate and vitamin B₁₂ status of women in Newfoundland at their first prenatal visit. *CMAJ* 2000;162(11):1557-9.
2. Booth CK, Clark T, Fenn A. Folic acid, riboflavin, thiamine, and vitamin B-6 status in a group of first time blood donors. *Am J Clin Nutr* 1998;68(5):1075-80.
3. Hall JG. Folic acid: the opportunity that still exists. *CMAJ* 2000;162(11):1571-2.
4. Canadian Task Force on the Periodic Health Examination. Periodic health examination, 1994 update: 3. Primary and secondary prevention of neural tube defects. *CMAJ* 1994;151(2):159-66.

[One of the authors responds:]

We are pleased that data presented by the group led by Natalie Björklund, Jane Evans and Cheryl Greenberg support our results showing a high risk for neural tube defects in Newfoundland.¹ If we had applied the less conservative interpretation suggested by Booth and colleagues² to our data, our results would have indicated that even more Newfoundland women were at risk.

It is clear from the work of Björklund and colleagues and from our own experience that public education in this area has been truly neglected, to the detriment of all Canadian women. Canadian women are simply not going to get the 400 µg/day of folate needed to prevent neural tube defects from a normal diet. Folate fortification at current levels is not sufficient to meet dietary goals, let alone reduce the incidence of neural tube defects. Furthermore, there is no evidence that public health attempts to raise the awareness of women of child-bearing age about the necessity of taking a dietary folate supplement to prevent neural tube defects have been successful.

Data from a Chinese study confirm unequivocally that just 400 µg/day will nearly eliminate this disease.³ As health professionals we are morally obligated to push forward these findings to our policy-makers and to our patients.

James K. Friel

Department of Biochemistry
Memorial University of Newfoundland
St. John's, Nfld.

References

1. House JD, March SB, Ratnam S, Ives E, Bros-

- nan JT, Friel JK. Folate and vitamin B₁₂ status of women in Newfoundland at their first prenatal visit. *CMAJ* 2000;162(11):1557-9.
- Booth CK, Clark T, Fenn A. Folic acid, riboflavin and vitamin B-6 status of a group of first-time blood donors. *Am J Clin Nutr* 1998; 68(5):1075-80.
 - Berry RJ, Li Z, Erickson JD, Li S, Moore CA, Wang H, et al. Prevention of neural-tube defects with folic acid in China. *N Engl J Med* 1999; 341:1485-90.

Driving and our aging population

The Canadian Medical Association has prepared and published a handbook to help physicians determine whether their patients are medically fit to drive.^{1,2} By 2024, it is expected that 1 in 4 Canadians will be older than 65. With the growing number of elderly people who drive, physicians are increasingly being called upon to assess the driving skills of their older patients, some of whom have cognitive deficits.

In the section on identifying patients with progressive dementia, the guide indicates that “individuals showing a score of less than 24 on this test [the Mini-Mental State Examination] are ineligible to hold a driver licence of any class pending complete neurological assessment.”

Use of a specific score as a cut-off for this examination has never been validated because it is only a screening instrument with a specificity and sensitivity in the range of 85%. As the authors of the guide state, the test can be affected by language difficulties, lack of education and an age of more than 85 years.

In the current format, with the above explicit statements, are physicians liable legally if their patients with a score of 23 are responsible for an accident? The guide is also not clear on what is meant by a complete neurological assessment. Does it mean that all patients with a score of less than 24 need to be referred to a neurologist?

This guideline seems not only scientifically unsupported but also legally charged.

With the greying of Canada, we urgently need a scientifically sound and well-validated assessment tool to evaluate fairly the increasing number of Canadians with cognitive deficits who may be at risk, and may be putting others at risk, while driving.

Anna M. Byszewski

Division of Geriatrics
University of Ottawa
Ottawa, Ont.

William B. Dalziel

Chief, Regional Geriatric Assessment
Program
University of Ottawa
Ottawa, Ont.

References

- Canadian Medical Association. *Determining medical fitness to drive: a guide for physicians*. Ottawa: The Association; 2000.
- Sibbald B. Revised fitness-to-drive guide now available. *CMAJ* 2000;163(2):198.