2007

Folate and vitamin B12 in older Australians

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**Publication Details**

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Abstract
The recent viewpoint by Kamien1 and letter by Gunasekera2 rightly highlight the benefits of folate fortification and the unlikely occurrence of masking pernicious anaemia. Food Standards Australia New Zealand recently submitted a proposal supporting the mandatory fortification of bread-making flour to increase folate intakes in women of child-bearing age, with the aim of reducing the risk of children being born with neural tube defects.3 This proposal has had extensive public comment and will be considered by the Australia and New Zealand Food Regulation Ministerial Council. Several public groups and individuals continue to raise concerns that higher dietary folate levels could increase B12 deficiency. Our data, collected from a population-based sample of 2596 older people in the Blue Mountains region, from 1997 to 2000, do not suggest that this is a likely outcome.

Keywords
b12, vitamin, folate, australians, older

Disciplines
Arts and Humanities | Life Sciences | Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details

This journal article is available at Research Online: http://ro.uow.edu.au/hbspapers/359
From the Editor's Desk

THE HEART OF THE MATTER

When should you call the heart clinic? When you are over 40? When you are overweight? When you are a smoker? When your blood pressure and cholesterol are too high? When your chest is tight? When your breathing is short? When your heart beats irregularly?

While your heart beats … before you have a heart attack, not after.

This advertisement, played incessantly on commercial radio, targets the “worried well” and invites them to make contact with a heart check clinic for potential cardiac and vascular testing. Given the commercialisation of medicine, self-referral clinics are to be expected. Medicare provides a reliable revenue stream, and aggressive advertising is the key to throughput and success.

Indeed, the business of heart clinics must be booming. In the past 2 years, Medicare statistics reveal an unprecedented doubling in claims for vascular testing. In turn, the federal Minister for Health is considering instituting a ban on radio advertising for heart testing, noting: “I am far from convinced that [they are] a good thing, on public policy grounds.”

Herein lies the rub. Direct advertising to the public by pharmaceutical firms and doctors is either illegal or unprofessional. In contrast, advertising by commercial concerns is relatively laissez faire, as ads for erectile dysfunction, prostate problems, and attention deficit hyperactivity disorder choke the airwaves.

But more fundamental issues are at stake. Firstly, self-referral clinics usurp the traditional “gatekeeper” role of general practitioners. Secondly, the Medicare Benefits Schedule (MBS) provisions for health screening are readily exploitable.

The solutions are simple. The analysis of Medicare payments needs to be more rapid and focused. More importantly, the MBS provisions for health screening need to be reviewed urgently by informed professionals.

It’s time to get to the heart of the matter.

Martin B Van Der Weyden

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Priorities for reducing the burden of injuries in sport: the example of Australian Football

Belinda J Gabbe, Caroline F Finch and Peter A Cameron

To the Editor: Safe sports participation has become a key national issue, especially in view of the potential for concerns about safety to inhibit sports participation,1 in a nation where obesity rates are rising2 and more exercise is recommended.

Australians participate in many sports, but the safety of the football codes is especially criticised by the media and the community because of the intense focus on injuries to players at the elite level. This is particularly the case for Australian Football (AF) and its elite game, the Australian Football League (AFL).

National reports released in 2006 have identified AF as the sport most associated with injury admissions to hospital3 and with private health insurance claims.4 These have sparked media commentary about the safety of AF. Response to these injury reports prompted an unprecedented media release5 from the country’s peak sports medicine body, Sports Medicine Australia, detailing their interpretation and supporting the efforts of the football codes in improving participant safety.

The modified version of the game (Auskick), which is played by children, has been shown to be safer,6 but there is a progression to adult rules by the under-15 age group, and the umbrella of safety provided by modified rules is eventually gone, raising the question of how safe the non-modified version is. Recently released AFL figures suggest that injury rates at the elite level are at a historical low,7 but the report provided insufficient information to assess whether this represents a significant decline since 1997, and the data are already one season behind. Equivalent information for the more than 450 000 adult, non-elite participants is not available.

Published literature related to injury prevention highlights a dearth of knowledge relating to the causes of injuries in non-elite participants and a very small evidence base for ways to prevent injuries in AF. With AF played almost exclusively in Australia, the onus to provide evidence for improving the safety of participation clearly falls on the stakeholders of the sport here. Gains in reducing both the public health impact of football injuries and the fear of injury associated with participation will only come from substantial investment in large-scale trials at the non-elite level, and a multidisciplinary approach to safety and injury issues across all levels of play. This will require active and committed collaboration of key stakeholders such as clinicians, allied health practitioners, researchers, clubs, sports administrators, coaches and the participants themselves.

Acknowledgements: Belinda Gabbe was supported by a Public Health Research Fellowship (237024) and Caroline Finch by a Principal Research Fellowship from the National Health and Medical Research Council of Australia.

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Mean serum vitamin B12 levels in a population of older Australians, for various folate intakes (from diet and supplements) (n = 2596)

<table>
<thead>
<tr>
<th>Folate intake</th>
<th>Mean serum B12 (95% CI) adjusted for age and sex</th>
<th>Mean serum B12 (95% CI) adjusted for age, sex and B12 intake (diet and supplements)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folate (μg DFE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quintile 1-4 (&lt; 571.8) (n = 2077)</td>
<td>273 (263–289)</td>
<td>278 (267–289)</td>
</tr>
<tr>
<td>Quintile 5 (&gt; 571.8) (n = 519)</td>
<td>316 (295–337)</td>
<td>297 (275–319)</td>
</tr>
<tr>
<td>P</td>
<td>&lt; 0.001</td>
<td>0.132</td>
</tr>
<tr>
<td>Folate cut-points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 500 μg DFE (n = 1828)</td>
<td>273 (261–284)</td>
<td>278 (267–290)</td>
</tr>
<tr>
<td>500–1000 μg DFE (n = 645)</td>
<td>294 (276–314)</td>
<td>289 (270–308)</td>
</tr>
<tr>
<td>&gt; 1000 μg DFE (n = 123)</td>
<td>346 (303–389)</td>
<td>300 (253–348)</td>
</tr>
<tr>
<td>P for trend</td>
<td>&lt; 0.001</td>
<td>0.239</td>
</tr>
</tbody>
</table>

DFE = dietary folate equivalents.

Folate and vitamin B12 in older Australians

Victoria Flood and Paul Mitchell

To the Editor: The recent viewpoint by Kamien1 and letter by Gunasekera2 rightly highlight the benefits of folate fortification and the unlikely occurrence of masking pernicious anaemia. Food Standards Australia New Zealand recently submitted a proposal supporting the mandatory fortification of bread-making flour to increase folate intakes in women of child-bearing age, with the aim of reducing the risk of children being born with neural tube defects.3 This proposal has had extensive public comment and will be considered by the Australia and New Zealand Food Regulation Ministerial Council. Several public groups and individuals continue to raise concerns that higher dietary folate levels could increase B12 deficiency. Our data, collected from a population-based sample of 2596 older people in the Blue Mountains region, from 1997 to 2000, do not suggest that this is a likely outcome.

We recently reported the prevalence of low serum vitamin B12 levels in the Blue Mountains Eye Study cohort of people aged 50
years and older. We found that 22.9% had low serum B12 levels (<185 pmol/L). New data from this study show that higher intakes of folate (from diet and supplements) did not increase the likelihood of low serum B12 levels; in fact, people whose diets included folate in the highest quintile of intake had significantly higher serum B12 levels than those consuming lower dietary folate (Box), after accounting for age and sex (P < 0.001). After also adjusting for vitamin B12 from diet and supplements, there was no significant difference in mean serum B12 levels for the various quintiles of folate intake.

We also investigated older people who reported consuming high amounts of folate (> 500 μg dietary folate equivalents [DFE] [n = 645] and >1000 μg DFE [n = 123]) and found higher mean serum B12 levels in these groups than in people who consumed < 500 μg DFE, after adjusting for age and sex (P for trend < 0.001). After further adjustment for vitamin B12 intake, there were no significant differences in mean serum B12 levels for these high dietary folate intakes (Box).

We also examined the frequency of macrocytic anaemia in our cohort (n = 6, 0.2%); two of these had low serum B12 levels (0.3% of subjects with low serum B12 levels).

In the United States, where mandatory folate fortification began a decade ago, a study of the presence of anaemia in people with B12 deficiency found no significant change in the proportion with anaemia before and after the introduction of mandatory fortification.

Although many older Australians have low serum levels of vitamin B12, our data show that higher intakes of folate do not increase the likelihood of low serum B12 levels. Given the relatively high prevalence of low serum B12 levels among older people, it would seem reasonable for this to be monitored more frequently in this age group. We suggest that this is not a valid concern that should prevent moves to proceed with mandatory folate fortification of key foods in Australia.

**Competing interests:** Victoria Flood and Paul Mitchell received a Kellogg’s Research Grant 1998–2000. Victoria Flood, Nutritional Epidemiologist¹ Paul Mitchell, Director² and Professor³

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**LETTERS**

**Exposure to environmental tobacco smoke in cars increases the risk of persistent wheeze in adolescents**

**Peter D Sly, Marie Deverell, Merci M Kusel and Patrick G Holt**

**To the Editor:** The adverse health effects of environmental tobacco smoke (ETS) are well documented. Workplaces are increasingly smoke-free, and restrictions on smoking in restaurants, pubs and clubs are increasing. Paediatricians counsel parents to make their children’s home smoke-free and to smoke outside if they can not quit. In Australia, attention is turning to ETS exposure in the car, the belief that the confined space may result in increased exposure, even if the windows are wound down. However, few, if any, objective data on the health effects of ETS exposure in cars have been published.

We report here the risks of current wheeze at the age of 14 years in children exposed to ETS in their parents’ car. Questionnaire data were available from parents of 1427 children taking part in the 14-year assessment of a longitudinal birth cohort in Perth. Characteristics of the cohort have been described elsewhere. Information about current wheeze (defined as the occurrence of wheeze in the previous 12 months) and asthma risk factors, including ETS exposure in the house and car, was obtained. Standard spirometry, methacholine challenge and skin prick tests to local Aeroallergens were performed in 1400, 1334 and 1308 children, respectively. Current wheeze was reported in 191 children (14.0%) at the age of 14 years, compared with 537 (38.2%) when they were seen at 6 years of age. Persistent wheeze, at both 6 and 14 years of age, was reported in 145 children (10.2%).

ETS exposure in the parents’ car was common. The 14.6% of children who were exposed at 14 years had increased risk of both current wheeze (odds ratio [OR], 1.55; 95% CI, 1.02–2.35; P = 0.038) and persistent wheeze (OR, 2.14; 95% CI, 1.34–3.42; P = 0.001). These risks were higher than those for ETS in the home: for the 8.9% of children exposed in the home, the OR for current wheeze was 1.33 (95% CI, 0.80–2.22; P = 0.27) and the OR for persistent wheeze was 1.98 (95% CI, 1.12–3.50; P = 0.016). Those with current wheeze and ETS exposure in the car had increased methacholine responsiveness: PC_{20} (provocative concentration required to produce a 20% fall in forced expiratory volume in 1 second) was 5.9 mg/mL in children with ETS exposure compared with 15.2 mg/mL in those not exposed (P = 0.004). These effects were independent of sex and atopic status.

These data provide evidence that the community needs to be educated about the adverse health consequences of ETS exposure in cars and suggest that health care professionals should include such education in counselling sessions for families of children with asthma. Teenagers can escape ETS exposure in the home, either by removing themselves or by their parents smoking outside. However, children of this age and younger have no choice but to travel with their parents in the car, especially given the phenomenon of “mum’s taxi” transporting children to school and extracurricular activities. Smoke-free cars are important for all children.

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