

are too large for the results to have statistical significance (e.g., mean systolic blood pressure of 124.3 with SD of 17.7 mm Hg and mean diastolic blood pressure of 75.4 with SD of 10.9 mm Hg at baseline). Furthermore, the range of blood pressure measurements (as derived from the means and standard deviations presented in the article) indicate that the volunteers were not all that healthy.

Another problem relates to the study's power. Pittler and associates<sup>1</sup> state in the Methods section that there would be a power of 80% with 16 participants, but it is not clear if they recalculated the power on the basis of the 15 participants who actually completed the study. Also, the Methods section does not state the critical estimated scores of the 2 groups. The authors do admit a limitation relating to a possible type II error because of the small sample size. If this type II error was large, the authors are not justified in saying that "artichoke extract does not prevent the signs and symptoms of alcohol-induced hangover over and above placebo."

#### Frank C. Leung

Retired  
Division of Infection and Immunology  
Health Canada  
Toronto, Ont.

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1. Pittler MH, White AR, Stevinson C, Ernst E. Effectiveness of artichoke extract in preventing alcohol-induced hangovers: a randomized controlled trial. *CMAJ* 2003;169(12):1269-73.

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#### [Two of the authors respond:]

**W**e welcome the opportunity to restate important limitations of our study, which we discuss in our paper.<sup>1</sup> Frank Leung's main concern relates to sample size and its implications. The sample size of 16 for a power of 80% was calculated using an estimated standard deviation of 2.0 and an estimated mean difference of 1.5 cm on a 10-cm visual analogue scale. This mean difference was considered adequate in

the expected and confirmed sample of moderately hungover individuals.<sup>2</sup> Because of the small sample size and the measurement variation, which proved larger than expected, we discuss in our paper the degree of uncertainty relating to the data and state that this might have obscured a possible true effect. Acknowledging the study's limitations and in the absence of any trend in favour of artichoke extract, we stand by our conclusion that "our findings do not suggest that artichoke extract is effective in preventing alcohol-induced hangover."

#### Max H. Pittler

#### Edzard Ernst

Complementary Medicine  
Peninsula Medical School  
Universities of Exeter and Plymouth  
Exeter, UK

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### Taking our vitamins

**I**n Eric Woollorton's article on vitamin and mineral supplements,<sup>1</sup> a footnote to Table 1 states that vitamin K has an anticoagulant effect. In fact, vitamin K promotes healthy coagulation, because it is a cofactor in a carboxylation reaction that is essential for the clotting process.<sup>2</sup> [A correction on this point was published previously.<sup>3</sup> — Editor.]

Vitamin K was excluded from this table because it "is not available in Canadian multivitamin preparations."<sup>1</sup> However, vitamin K is included in some multivitamins available in the United States. Given the popularity of cross-border shopping and the availability of products through the Internet, it is possible that many patients of *CMAJ* readers, or even the journal's readers themselves, are consuming vitamin K in supplement form.

Despite several trials evaluating vita-

min K (vitamin K<sub>1</sub> [phylloquinone] and vitamin K<sub>2</sub> [menatetrenone]) for its effects on bone quality and density<sup>4-6</sup> and its usefulness in other contexts,<sup>6</sup> the toxic effects of even pharmaceutical doses of these 2 naturally occurring forms of vitamin K have not been identified.<sup>8</sup> In addition, at least one study, which evaluated the effects of large doses of vitamin K<sub>2</sub> (45 mg of menaquinone-4) on hemostatic activation, found no thrombotic tendency at high doses.<sup>8</sup>

#### Ruth Wilson

Medical Student, Class of 2006  
University of Western Ontario  
London, Ont.

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**I** commend Eric Woollorton<sup>1</sup> for alerting Canadian physicians to the potential of health risks with excessive consumption of some vitamins and minerals. However, the recommended intakes listed in Table 1 of that article do not reflect dietary reference intake (DRI) values,<sup>2</sup> which should be used as the dietary standards for Canadians. Furthermore, there is no mention of

tolerable upper level (TUL) intakes, which have been developed as part of the DRI initiative (a collaborative project involving Health Canada and the Food and Nutrition Board of the US Institute of Medicine).<sup>3-5</sup> The TUL is "the highest level of daily nutrient intake that is likely to pose no risk of adverse health effects to almost all individuals in the general population."<sup>6</sup> The TUL values can serve as guides for health care professionals in educating patients about the possible health risks of excessive consumption of specific nutrients.

#### Stephanie Atkinson

Department of Pediatrics  
Faculty of Health Sciences  
McMaster University  
Hamilton, Ont.

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## Unforeseen complication of brachytherapy

Our practice includes treatment of prostate cancer with brachytherapy, which involves the implantation of radioactive iodine seeds. The side effects of this therapy are well documented.<sup>1,2</sup> However, one of our patients recently experienced a consequence of this treatment that, to our knowledge, has not previously been reported.

The patient underwent implantation for early-stage prostate cancer in October 2003 without complication. He was well when seen for initial review 1 month later. His business requires frequent visits to the United States. Late last year, he was passing through customs and immigration at a major international airport when he was approached by a guard carrying a small device that looked like a pager. He was taken to a separate room where he was asked to stand against the wall and refrain from speaking while workers examined his luggage. Eventually, he was asked why he kept setting off the radiation detector, whereupon he explained his situation. The agents had not heard of such a procedure and called for their superior. Fortunately, the superior's brother-in-law had recently undergone an implantation procedure, and our patient was immediately released.

The doses of leaked radiation related to prostate brachytherapy are minute. The episode we have reported probably

occurred because of the use of increasingly sensitive radiation detection devices, especially in relation to the recent Code Orange security status invoked in the United States. Our patient found the entire episode frustrating and embarrassing and is concerned that long delays at airports will seriously affect his work. Because we have many patients who travel, we now provide a form letter, explaining the trace radiation, to those who are undergoing brachytherapy. We encourage family physicians, urologists and oncologists to consider doing the same for any of their patients who are undergoing brachytherapy.

#### Ian Dayes

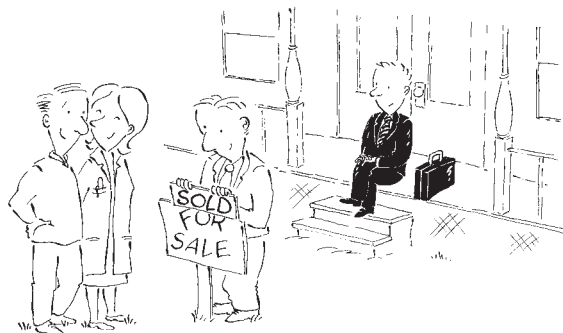
Jink Sathya  
Radiation Oncology

#### Ian Davis

Urology  
Juravinski Cancer Centre  
Hamilton Health Sciences  
McMaster University  
Hamilton, Ont.

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