ical journals. The new ad, which started running in January 2003, displays a rear-facing car seat.

It was not our intent with the original ad to misdirect readers concerning the installation of car seats. Rather, the car seat was depicted this way to help readers understand at a glance the message of the ad, that unprotected sex can lead to unplanned pregnancy. Interestingly, although the Marvelon ad set out to deliver a very responsible message in one context, for some readers it communicated something very different in another context.

Given that the ad was placed only in medical journals, we trust that we have not inadvertently sent the wrong message to consumers. However, Organon has acted quickly to implement a solution that should satisfy everyone.

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Of navels and urinating horses

I very much enjoyed *CMAJ*'s 2002 Holiday Review. In particular, Carolyn Brown's reporting of the IgNobel prizes caught my attention, especially the item about navel-gazing.[1]

This little report immediately took me back some 56 or 57 years, to my second year of premed studies at the University of Saskatchewan. Our biochemistry lab professor, whose office was just off the lab, had told us to disturb him whenever we had problems or questions. At that particular time, we were studying the hormones found in urine and, among other things, were told about hormone replacement therapy, including the fact that the brand name Premarin (conjugated estrogen) was a short version of "pregnant mare's urine."

I had a question about my lab work and proceeded to the professor's office. He was very busy writing longhand on sheets of foolscap and did not look up for a minute or two. I asked him if he was writing up some research, and he said "Yes, indeed I am" and showed me the title on page 1. It read "On Fuzz-Gathering about the Umbilicus." I don't know if he ever completed this aspect of his "research," but I wish now that I had taken more interest!

As I was about to leave his office after he responded to my query, he asked me to wait a moment and hurriedly penned a couple of lines on a sheet of paper, which he asked me to pass around the lab. If my memory serves me correctly, and I'm sure it does, the lines were as follows:

> A permanently pregnant mare piddling perpetually produces more pee than an infinite series of mares peeing into pots periodically.

How I wish we had had more professors with his student rapport and sense of humour.

Joe Golumbia
Family Physician
Sidney, BC

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Osteoporosis in children: 2002 guidelines do not apply

The 2002 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada[1] cover both primary and secondary osteoporosis, but it is important to remember that these guidelines are based on evidence and experience with adult patients only and hence may not be applicable to younger patients.

Children and adolescents also experience fragility fractures, albeit rarely. In addition to their occurrence in association with genetic diseases (such as osteogenesis imperfecta), pediatric fragility fractures are seen in patients with immobilization (e.g., because of spinal cord injury), inflammatory diseases (e.g., juvenile idiopathic arthritis), glucocorticoid pharmacotherapy and combinations of these factors, sometimes with concomitant nutritional deficiencies of calcium and vitamin D; such fractures may also occur in patients with hypogonadism.

However, the World Health Organization densitometry categories[2,3] cannot be applied in these cases, as T-scores for children calculated by standard methods are falsely low because there is no adjustment for their smaller size.[4] Although T-scores should be neither computed nor reported for children, interpretation of pediatric densitometry results is possible if one has knowledge of various normal ranges for bone mass that depend on age, sex, bone size, pubertal tempo and pubertal stage. This process is analogous to analyzing children's growth curves without knowing the parents' heights.

Also currently lacking are data relating bone mass measurements to fracture risk in these special populations. As a result, it may be advisable to diagnose and consider pharmacotherapy for pediatric osteoporosis in the severe category — children who have already experienced a fragility fracture and who have identifiable risk factors. This definition is conservative but probably appropriate, given the lack of sufficient efficacy and safety data in children for the agents used for preventing fractures in older adults.

As Canadian child health programs develop recommendations for care for osteoporosis in children, it is hoped that diagnostic and clinical trials research will progress to the point that satisfying, evidence-based guidelines on the management of pediatric osteoporosis can one day be included.

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[One of the authors responds:]

The Osteoporosis Society of Canada (OSC) believes that pediatric osteoporosis is an emerging problem in this country. However, the OSC guidelines[1] were developed primarily to address osteoporosis in adults; accordingly, they should not be used for children, except for the well-supported guidelines on physical activity and nutrition.

The paucity of recommendations specific to children in the recently published guidelines[1] was unfortunate, yet justifiable. In contrast to the situation for adults, few high-quality osteoporosis trials involving children have been conducted, particularly with regard to treatment. This scarcity of trials makes it difficult or impossible to develop evidenced-based guidelines. Nonetheless, it is recognized that severely afflicted children must be treated. Because of the complexity and predominantly secondary causes of pediatric osteoporosis, its diagnosis and treatment should be reserved for specialists who keep abreast of this rapidly evolving field and who must combine sound clinical judgement with the limited evidence that is available.

The diagnosis of osteoporosis in children is complicated and unclear. At the root of the problem is the size dependency of bone mineral density data obtained by dual-energy x-ray absorptiometry. The density of smaller bones is systemically underestimated and that of larger bones is overestimated, which causes errors in interpretation when comparing children's values with adult norms, when comparing one child with another and when comparing values obtained during growth. Many methods have been proposed for dealing with this size dependency,[2-9] but none are in regular clinical use, nor have any been related to fracture risk. Canadian pediatric bone mineral density[10] and bone mineral content[11] norms are available, yet their proper use is unknown.

The roots of osteoporosis lie in childhood; as much bone is laid down during puberty as is lost in all later life.[11] Thus, any perturbation of normal bone accrual during growth (related to alcohol, smoking, bone-robbing medications, or lack of adequate physical activity or calcium) will have devastating effects on skeletal health in later years. The key is prevention.

More quality trials in the diagnosis, prevention and treatment of pediatric osteoporosis are sorely needed.

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Corrections

Note the following additional corrections to the *CMAJ* supplement containing the 2002 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada.[1]

On page S3, right column, under Definitions, the following text replaces the existing text for numbers 1–3.

1. Normal BMD is defined as a T-score between +2.5 and –1.0, inclusive (i.e., the patient's BMD is between 2.5 standard deviations [SDs] above the young adult mean and one SD below the young adult mean, inclusive).
2. Osteopenia (low BMD) is associated with a T-score between –1.0 and –2.5. …
3. Osteoporosis is defined as a T-score at or below –2.5.

Page S3, right column, fourth paragraph, "whose T-score is below –2.5" should read "whose T-score is at or below –2.5."

Page S5, Table 3, the first bullet under "Major risk factors" should read "Age ≥ 65 years."

Page S7, Fig. 2, the box in the upper right of the figure should read "Low BMD by DXA (T-score at or below –2.5)."

Page S11, left column, last paragraph, "and age over 65" should read "and age 65 and older." Other corrections appear in *CMAJ* 168(4) and 168(5).[2,3]

Reference

1. Brown JP, Josse RG, for the Scientific Advisory Council of the Osteoporosis Society of Canada. 2002 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada. *CMAJ* 2002;167(10 Suppl):S1-S34.
2. Corrections. *CMAJ* 2003;168(4):400.
3. Corrections. *CMAJ* 2003;168(5):544.