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TO THE EDITOR:

Regarding "Instructional Course Lecture. Osteoporosis: Diagnosis and Treatment" (78-A: 618-632, April 1996), by Lane et al., I would like to correct errors in the definition of bone mineral density, especially as outlined in Table II, which described a treatment protocol for osteoporosis, and as mentioned on page 628. Osteopenia and osteoporosis are measured in terms of standard deviations below young-adult levels, not those of age-matched peers. Because of this confusion, many individuals who have osteoporosis have not been managed appropriately and have been underdiagnosed when compared with age-matched peers. I recommend that this information be corrected so that the definition is consistent with that of the World Health Organization.

There are also some more minor, debatable points. One issue is the recommended vitamin-D requirement of 800 international units a day for the elderly population. Other areas that are probably not as strictly defined as outlined in the protocol given by Lane et al. are indications for types of therapy. For instance, Lane et al. mentioned estrogen and progesterone only for patients who are less than seventy years old, when indeed there are no specific contraindications to hormone replacement therapy in patients who are seventy years old or more. Also, use of Fosamax (alendronate) or calcitonin is indicated in situations other than those mentioned in Table II. For example, individuals who have a bone mineral density that is two standard deviations below that in young adults often are considered candidates for management with Fosamax or calcitonin if they cannot be managed with hormone replacement therapy. In addition, other categories of individuals are not covered well in this treatment protocol. One example is individuals who have a bone mineral density that is two standard deviations below the density in a young adult who has had a fracture. This is alluded to in Table II, but it is not entirely clear.

These are minor suggestions, and I realize fully that the field of evaluation and treatment of osteoporosis is evolving rapidly, but I was disappointed to see the definition of osteoporosis erroneously depicted in the primary orthopaedic journal in the United States and elsewhere.

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Dr. Lane, Dr. Riley, and Dr. Wirganowicz reply:

We agree that the field of evaluation and treatment of osteoporosis is evolving rapidly. Dr. Babbitt's primary comments center on the definition of osteoporosis and treatment strategies. The latter is indeed under continuous modification. Our article was written just as the new second-generation bisphosphonates and calcitonin in a nasal spray were being introduced. After six months, our team has gained confidence in these new therapeutic techniques. Consequently, we have updated our approach to accommodate these agents.

The World Health Organization proposed to define the skeleton in terms of a normal thirty-year-old bone mass corrected for gender. By that definition, almost 50 per cent of women fall into a category of osteoporosis by the age of at least eighty years, but not all of these women will sustain a fracture in their lifetime. With the development of new strategies for the prevention of osteoporosis, women who begin this treatment at menopause could, in principle, live out their lives with substantially more bone mass than the average elderly woman today. With this in mind, the World Health Organization developed a proactive definition that requires "all" women to rigorously defend their skeleton throughout life so as not to enter the domain of the World Health Organization's definition of osteoporosis. Thus, any woman whose peak bone mass falls one to 2.5 standard deviations below normal has osteopenia, those in whom it falls 2.5 standard deviations below normal without fracture have osteoporosis, and those who have a fragility fracture are said to have severe osteoporosis. These definitions are the most inclusive. They oblige the practitioner to give essentially all individuals some form of prophylactic care or frank treatment. With the release of the newer safe anti-osteoporotic agents, including calcitonin in a nasal spray and alendronate, our unit has shifted its definition of osteoporosis to that of the World Health Organization.

We now consider all patients who have bone mass of the hip or spine, or both, that is 2.5 standard deviations below the peak value or who have a fragility fracture as having frank osteoporosis. We manage such patients with estrogen, alendronate, or calcitonin as was described in Table II. Lastly, we agree that the use of estrogen can be recommended not only for early postmenopausal women but also for elderly women. Robert Lindsey is a strong advocate for older patients, but the occurrence of menstrual cycles and breast enlargement have been poorly accepted by most octogenarians.

We have provided a new and updated version of our current treatment protocol (Table I).

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TABLE I
UPDATED PROTOCOL FOR TREATMENT OF OSTEOPOROSIS

I. Premenopause

A. Eumenorrheic

1. Physiological calcium (1000 mg/day)
2. Vitamin D (400 international units/day)
3. Exercise

B. Amenorrheic

1. Physiological calcium (1000 mg/day)
2. Cyclical estrogen and progestin* or birth control pills
3. Vitamin D (400 international units/day)
4. Appropriate caloric intake
5. Exercise

II. Postmenopause

A. Bone mineral density within 1 standard deviation less than normal peak bone mass

1. Calcium (1500 mg/day)
2. Vitamin D (400–800 international units/day)—higher dose for housebound individuals
3. Consider cyclical estrogen and progestin* if patient <70 yrs. old

B. Bone mineral density 1 to 2.5 standard deviations less than peak bone mass and no fracture

1. Calcium (1500 mg/day)
2. Vitamin D (400–800 international units/day)—higher dose for housebound individuals
3. Cyclical estrogen and progestin* or alendronate (10.0 mg/day) if bone density 2.0 standard deviations less than peak bone mass

C. Bone mineral density > 2.5 standard deviations less than that of peak bone mass, or fracture

1. Calcium (1500 mg/day)
2. Vitamin D (400–800 international units/day)—higher dose for housebound individuals
3. Calcitonin (50 to 100 units subcutaneously or 200 units nasal spray daily) for as long as 18 months—in case of fracture or back pain
4. Cyclical estrogen and progestin* or alendronate (10.0 mg/day)

* A typical regimen consists of 0.625 milligram of estrogen per day and 2.5 milligrams of progestin per day.