AMERICAN COLLEGE OF RHEUMATOLOGY

POSITION STATEMENT

SUBJECT: Bone Density Measurement

PRESENTED BY: Committee on Rheumatologic Care

FOR DISTRIBUTION TO: Members of the American College of Rheumatology
Medical Societies
Members of Congress
Centers for Medicare and Medicaid Services
Managed Care Organizations/Third-Party Carriers
Arthritis Foundation
National Osteoporosis Foundation

BACKGROUND:

1 Osteoporosis is associated with 1.5 million fractures annually in the United States. The annual
2 direct costs of osteoporosis in the U.S. in 2001 were estimated to be $17 billion dollars (1) and
3 projected costs by year 2025 will be $25.3 billion dollars (2). There is an excess15-20% one-
4 year mortality associated with a hip fracture. Of the hip fracture survivors, 50% are not able to
5 walk unassisted, and 25% are confined to nursing homes for long-term care. Thus, the early
6 diagnosis of osteoporosis and prevention of fractures are important to preserve not only the lives,
7 but also the functional independence of the large number of people at risk for fragility fracture
8 (1).
9
10 The measurement of bone mineral density (BMD) is vital to detect osteoporosis and low bone
11 mass, which are important risk factors for fragility fracture (3,4,5,). BMD measurement is a
12 critical component of World Health Organization absolute fracture risk assessment algorithm
13 tool (FRAX) (6). This algorithm utilizes BMD as well as other risk factors to assess an
14 individual's absolute risk of future fragility fractures. The Fracture risk assessment tool is then
15 used in conjunction with the National Osteoporosis Foundation guidelines for cost-effective
16 pharmacological intervention of osteoporosis (1,7).
17
18 Central measurement of BMD using dual energy x-ray absorptiometry (DXA) remains the gold
19 standard for the diagnosis of osteoporosis and low bone mass. Peripheral measurements of BMD
20 are predictive of fracture but are not precise enough for monitoring patients on therapy. Repeat
21 measurements of BMD are necessary to monitor efficacy of osteoporosis therapy and are also
22 necessary to monitor patients not on treatment who are near treatment thresholds. The
23 appropriate interval for repeat measurement is a clinical decision based on the individual
24 circumstance. Typically, this might be one year after initiation of therapy and then less
25 frequently once therapeutic effect has been established. In conditions where there may be rapid
26 bone loss (e.g. in the setting of glucocorticoid therapy) yearly or biannual BMD testing may be
27 appropriate (see the ACR Guidelines on *Recommendation for the Prevention and*
28 *Treatment of Glucocorticoid-Induced Osteoporosis – 2001 Update*) (8).

Osteoporosis is characterized by low bone mass, deterioration of bone tissue and disruption of bone architecture, compromised bone strength, and an increased in the risk of fracture. The World Health Organization's diagnostic classification defines osteoporosis by a bone mineral density (BMD) at the hip or spine of less than 2.5 standard deviations below peak bone mass (T-score -2.5). Osteoporosis is an intermediate outcome for fractures, however, most fractures occur in patients with low bone mass rather than osteoporosis (9). The National Osteoporosis Foundation has recommended treatment for patients with (1):

- A hip or vertebra fracture
- Other prior fractures with a T-score between -1.0 and -2.5 at femoral neck, total hip, or spine
- T-score ≤ -2.5 at the femoral neck, total hip, or spine
- Low bone mass (between -1.0 and -2.5) and secondary causes associated with high risk of fracture (glucocorticoids, immobilization)
- Low bone mass (between -1.0 and -2.5) and 10-year probability of major osteoporotic fracture ≥20% or hip fracture ≥3% based on US-adapted WHO algorithm (6,7)

POSITION:

1. The American College of Rheumatology supports the appropriate use of BMD testing for the diagnosis of osteoporosis or low bone mass. This is a critical element in absolute fracture risk assessment.
2. The American College of Rheumatology supports the use of serial BMD testing to monitor osteoporosis treatment response or to monitor progression of osteoporosis or low bone mass near treatment thresholds. The frequency of retesting could be as often as every six months depending upon the clinical judgment of the rheumatologist.
3. Rheumatologists are among those who are uniquely qualified to read and report BMD tests.
4. BMD test reports should have clinical information including a summary of osteoporosis risk factors and not just be a report of T-scores.
5. The American College of Rheumatology supports the National Osteoporosis Foundation guidelines on use of bone density measurements in both the diagnosis and interval monitoring of bone mass in the following groups of patients:
   a. postmenopausal women discontinuing estrogen should be considered for bone density testing
   b. adults with a condition (e.g., rheumatoid arthritis) or taking a medication (e.g., glucocorticoids, ≥ 5 mg/day for ≥ 3 months) associated with low bone mass or bone loss
   c. anyone:
      - being considered for pharmacologic therapy for osteoporosis
      - being treated for osteoporosis, to monitor treatment effect
      - not receiving therapy in whom evidence of bone loss would lead to treatment
      - women 65 years and older
      - men aged 70 years and older
      - adults who fracture after age 50
      - younger postmenopausal women and men aged 50 to 70 years when you have concern based on their clinical risk for fracture

75 6. The American College of Rheumatology supports adequate coverage for BMD testing by
76 Medicare and other health insurance carriers for the indications listed above.
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