AMERICAN COLLEGE OF RHEUMATOLOGY
POSITION STATEMENT

SUBJECT:	Bone Mineral Density Measurement and the Role of Rheumatologists in the Management of Osteoporosis
PRESENTED BY:	Committee on Rheumatologic Care
FOR DISTRIBUTION TO:	Members of the American College of Rheumatology Medical Societies Centers for Medicare and Medicaid Services Managed Care Organizations/Third Party Carriers Members of Congress Arthritis Foundation Bone Health and Osteoporosis Foundation International Society for Clinical Densitometry

POSITIONS:

1. The American College of Rheumatology (ACR) supports the appropriate use of bone mineral density (BMD) testing for the diagnosis of osteoporosis or low bone mass.

2. The ACR supports the use of serial BMD testing when appropriate to monitor osteoporosis treatment response, or to monitor progression of osteoporosis or low bone mass (osteopenia). The frequency of retesting should be determined based upon previous test results, existing literature, and the clinical judgment of the rheumatologist or rheumatology health interprofessional. Shorter intervals between BMD testing may be indicated in the presence of factors associated with rapid bone loss or when monitoring response to therapy.

3. Dual X-RAY Absorptiometry (DXA) is the gold standard for determining bone mass, but patient access to testing is severely threatened by reimbursement rates which have fallen below the cost of providing the test. The ACR strongly advocates for adequate reimbursement for DXA testing at levels consistent with the actual cost and complexity of providing this test from both public and private payers.

4. Rheumatologists are among those who are uniquely qualified to read and report BMD tests and should be reimbursed for their reads (see also the ACR's Diagnostic Imaging Credentialing position statement).

5. The ACR concurs with the Bone Health and Osteoporosis Foundation (BHOF) and International Society for Clinical Densitometry (ISCD) guidelines on use of BMD measurements in both the diagnosis and interval monitoring of bone mass.

6. The ACR supports measuring BMD in children and adolescents who may benefit from interventions to decrease the risk of clinically significant fracture.

7. Many patients managed by rheumatology providers are at risk of glucocorticoid-induced osteoporosis (GIOP). The ACR supports adequate coverage by government and third-party insurance carriers for BMD testing for GIOP at intervals recommended by ACR guideline for the prevention and treatment of glucocorticoid-induced osteoporosis.

BACKGROUND:

Burden of Disease:
Osteoporosis is the most common bone disease in humans and represents a major public health concern (1). It is characterized by low bone mass, deterioration of bone tissue, disruption of bone architecture, compromised bone strength, and an increased risk of fracture (2). One in two women and up to one in four men over age 50 will break a bone due to osteoporosis. The number of annual fractures is projected to increase from 1.9 million to 3.2 million from 2018 to 2040, with costs rising from $57 billion to over $95 billion USD annually (3).

One-year mortality following a hip fracture in seniors is 22-30% (4). Of the hip fracture survivors, 60% do not regain their pre-fracture level of independence, and 20% are confined to nursing homes for long-term care. Less than 1 in 4 women aged 67 years or older with an osteoporosis-related fracture gets their bone density measured or begins osteoporosis treatment. Early diagnosis of osteoporosis and prevention of fractures are important to preserve not only the lives, but also the functional independence of the large number of people at risk for fragility fractures.

Frequency and Manner of Testing:
The measurement of BMD is vital to detecting osteoporosis and low bone mass, which in turn are important risk factors for fragility fractures (5). Fracture risk increases exponentially as BMD decreases (6). BMD measurement is also an integral component of the World Health Organization's absolute fracture risk assessment algorithm tool. This algorithm utilizes BMD and/or body mass index as well as other risk factors to assess an individual's absolute risk of future fragility fractures. The fracture risk assessment tool is then used in conjunction with ACR and/or BHOF guidelines for cost-effective pharmacological intervention. Other fracture risk assessment tools include the Garvan fracture risk calculator and The University of Sheffield's FRAX tool (7).

Central measurement of BMD using dual energy x-ray absorptiometry (DXA) remains the gold standard for the diagnosis of osteoporosis and low bone mass, although high resolution peripheral quantitative CT (HRpQCT) and assessment of bone quality on CT scans by

Hounsfield units are also used. Peripheral measurements of BMD (ie, distal 1/3 radius) are predictive of fracture but are not precise enough for monitoring patients on therapy. When available, the TBS (trabecular bone score) should be used to report fracture risk in individuals who are close to a specific pharmacologic intervention threshold. Serial measurements of BMD are necessary to monitor the efficacy of osteoporosis therapy and to monitor patients not on treatment who are near treatment thresholds (8). The appropriate interval for repeat measurement is a clinical decision based on individual circumstances. Typically, for someone on anti-resorptive treatment, this might be two years after initiation of therapy and then less frequently once therapeutic effect has been established. Shorter intervals between BMD testing may be indicated in the presence of factors associated with rapid bone loss or when evaluating the response to anabolic therapy. In the setting of glucocorticoid use or changing risk factors, more frequent testing may be appropriate (9).

Patient Access to Bone Density Testing:

Reimbursement for Dual X-RAY Absorptiometry (DXA), the gold standard for determining bone mass, has declined 75% since 2007, critically impacting patients' access to BMD testing (10). For practices with DXA machines that are no longer operational, it has become economically unfeasible to replace them. This decline in reimbursement has already begun to impact patient access to DXA testing, and the issue is expected to worsen unless reimbursement rates are increased.

DXA reimbursement from public and private payers should be consistent with the actual cost and complexity of the test. Greater access to DXA testing will reduce costs to Medicare, Medicaid, and the private sector by permitting access to fracture prevention services and reducing hospitalization and other costly fracture-related expenditures such as long-term nursing care. The ACR strongly advocates for measures which increase DXA reimbursement rates to reflect the actual cost of providing care for patients who warrant testing.

The Role of Rheumatologists in Bone Health Management:

Through training and experience, rheumatologists and rheumatology health interprofessionals possess several key competencies that allow them to provide expert care for people with osteoporosis, including:

- Knowledge of osteoporotic disease, reinforced by continuing education in this field.
- A practice structure that emphasizes detailed analysis of complex medical problems and highly organized and comprehensive management of chronic diseases.
- Interpretation of bone density measurement which is key to identifying and managing patients with osteoporosis and those at risk for osteoporosis.
- A focus on rehabilitation of individuals with physically disabling diseases to recover optimal function and quality of life,
- Prevention and treatment of glucocorticoid-induced osteoporosis

Who to test:
The ACR concurs with the Bone Health and Osteoporosis Foundation (BHOF) and the International Society for Clinical Densitometry (ISCD) guidelines for the use of BMD testing in the following patient demographics:

a. Women 65 years and older, regardless of clinical risk profile.
b. Men aged 70 years and older, regardless of clinical risk profile.
c. Younger postmenopausal women and men aged 50 to 69 years if there is concern for fracture based on their clinical risk.
d. Women in the menopausal transition if there is a specific risk factor associated with increased fracture risk, such as low body weight, prior low-trauma fracture, or high-risk medication.
e. Adults with a fragility fracture.
f. Adults with a disease or condition associated with low bone mass or bone loss.
g. Anyone being considered for pharmacologic therapy for osteoporosis.
h. Anyone being treated for osteoporosis, to monitor treatment effect.
i. Anyone not receiving therapy in whom evidence of bone loss would lead to treatment.
j. Postmenopausal women discontinuing estrogen.

The Bone Health and Osteoporosis Foundation identifies certain risk factors for women age 50 – 64 and men age 50 – 69 to receive early BMD testing. Osteoporosis risk factors include family history of osteoporosis and/or fracture, frequent falling, vitamin D deficiency, smoking, excessive alcohol intake, malabsorption, and use of glucocorticoids such as prednisone (11). The frequency of retesting should be determined based upon previous test results, existing literature, and the clinical judgment of the rheumatologist or rheumatology health interprofessional.

Additionally, the ACR supports assessing bone mass in children and adolescents who may benefit from interventions to decrease the risk of clinically significant fracture. DXA measurement is a critical component of a comprehensive bone health evaluation in children. DXA should be performed in children with primary bone diseases, or at risk for low bone mass due to an underlying rheumatologic condition or medication exposure. Baseline DXA reports should contain relevant medical history including previous fractures, assess BMC and/or areal BMD Z-scores using an appropriate reference data source, delineate any adjustment made for stature, and provide recommendations for follow up assessment (12).

Conclusion:
Rheumatologists and rheumatology health interprofessionals provide care to many patients with, or at risk for, osteoporosis. Osteoporosis is under-diagnosed, and preventable fractures create a large burden of morbidity and mortality in rheumatic disease patients. Adult and pediatric

patients who meet criteria for testing should have such testing covered by payers at medically appropriate intervals. Patients' access to DXA, the gold standard of BMD testing, is threatened by inadequate reimbursement. The ACR advocates for DXA reimbursement rates which reflect the cost of providing the service to safeguard access to fracture prevention services for rheumatic disease patients.

REFERENCES:

1. Wright NC, Looker AC, Saag KG, et al. The recent prevalence of osteoporosis and low bone mass in the United States based on bone mineral density at the femoral neck or lumbar spine. *J Bone Miner Res*. 2014;29(11):2520-2526. doi:10.1002/jbmr.2269
2. Cosman F, de Beur SJ, LeBoff MS, et al. Clinician's guide to prevention and treatment of osteoporosis. Osteoporosis Int. 2014; 25: 2359-81
3. Lewiecki EM, Ortendahl JD, Vanderpuye-Orgle J, et al. Healthcare Policy Changes in Osteoporosis Can Improve Outcomes and Reduce Costs in the United States. *JBMR Plus*. 2019;3(9):e10192. Published 2019 May 13. doi:10.1002/jbm4.10192
4. Downey C, Kelly M, Quinlan JF. Changing trends in the mortality rate at 1-year post hip fracture - a systematic review. *World J Orthop*. 2019;10(3):166-175. Published 2019 Mar 18. doi:10.5312/wjo.v10.i3.166
5. Office of the Surgeon General (US). *Bone Health and Osteoporosis: A Report of the Surgeon General*. Rockville (MD): Office of the Surgeon General (US); 2004.
6. Cosman F, de Beur SJ, LeBoff MS, et al. Clinician's guide to prevention and treatment of osteoporosis. Osteoporosis Int. 2014; 25: 2359-81
7. Fracture Risk Assessment Tool, https://frax.shef.ac.uk/FRAX/tool.aspx?country=9
8. Schreiber JJ, Anderson PA, Hsu WK. Use of computed tomography for assessing bone mineral density. *Neurosurg Focus*. 2014;37(1):E4. doi:10.3171/2014.5.FOCUS1483
9. Humphrey Et Al. American College of Rheumatology Guideline for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis Published 2023, Oct. 16. **https://doi.org/10.1002/art.42646**
10. Chindlers, Linda, **ACR Pushes for Increased DXA Reimbursement** http://www.the-rheumatologist.org.
11. .BHOF, Evaluation of Bone Health/Bone Density Testing
12. International Society for Clinical Densitometry. (2024, March 20). *Pediatric Positions*. ISCD.

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