



**BONE DENSITY STUDIES**

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Review Dates: 01/05, 12/05, 12/06, 12/07, 12/08,  
10/09

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Status: Current

**Summary of Changes**

Clarifications:

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Deletions:

- Pg 3, Sec II, A, in the sentence “Priority Health will limit coverage for BMD studies to central DXA only”, office-based verbiage has been deleted. Central DXA will now be the only study covered in any setting.
- 77081\* Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; appendicular skeleton (peripheral) (eg, radius, wrist, heel) will no longer be covered.

Additions:

- Pg 3, Sec II, A, added: Any other BMD studies (e.g. peripheral, such as wrist, finger and heel) are not medically/clinically necessary and, therefore, not covered.
- Pg 3, Sec II, A, (2) added h-j to risk factors.

**I. DESCRIPTION**

Bone mineral density (BMD) can be measured with a variety of techniques in a variety of sites. Sites are broadly subdivided into central sites (e.g. hip or spine) and peripheral sites (e.g. wrist, finger, heel). While BMD measurements are predictive of fragility fractures at all sites, central measurements of the hip and spine are the most predictive. Additionally, fractures of the hip and spine (e.g. vertebral fractures) are the most clinically relevant. The most commonly used techniques are Dual X-ray Absorptiometry (DXA), Quantitative computed tomography (QCT), and Ultrasound Densitometry.

Dual-energy x-ray absorptiometry (DXA) is considered the gold standard because it is the most extensively validated test against fracture outcomes. In general, a central DXA BMD measurement should be strongly considered for initial screening purposes due to its reproducibility and ability to simultaneously establish the diagnosis of osteoporosis and provide a baseline if one is needed. This approach is endorsed by the National Osteoporosis Foundation’s Clinician’s Guide to Prevention and Treatment of Osteoporosis as well as the Michigan Quality Improvement Consortium Guideline: Management and Prevention of Osteoporosis

**Background:**

Osteoporosis, defined as low bone mass leading to an increased risk of fragility fractures, is an extremely common disease in the elderly due to age-related bone loss in both sexes and menopause-related bone loss in women. Current practice guidelines published by the National Osteoporosis Foundation (NOF) recommend that measurement of bone mineral density (BMD) be performed in all women over



the age of 65 and in postmenopausal women with additional risk factors. Additional risk factors include a personal history of fracture as an adult, history of fracture in a first-degree relative, current cigarette smoking, and low body weight (<127 lbs). Patients receiving glucocorticoid therapy are also at risk for bone loss, no matter what the age. Therefore, BMD measurements are often performed prior to initiating therapy.

BMD is one of the key determinants of the need for pharmacologic therapy. BMD is typically expressed in terms of the number of standard deviations (SD) the BMD falls below the mean for young, healthy adults. This number is termed the T score. The NOF guidelines recommend that pharmacologic therapy be initiated in women with T scores below -2 in the absence of other risk factors, and in women with BMD T scores below -1.5 if other risk factors are present. Current pharmacologic options include hormone replacement therapy, bisphosphonates such as alendronate (Fosamax), selective estrogen receptor modulators (SERMs) such as raloxifene (Evista), and calcitonin. While BMD measurements are typically used to determine the need for pharmacologic therapy, serial monitoring of BMD to determine treatment response is also performed.

Dual-energy x-ray absorptiometry (DXA) is considered the gold standard because it is the most extensively validated test against fracture outcomes. When used in the same patients, DXA machines from different manufacturers differ in the proportion of patients diagnosed to have osteoporosis by 6 to 15 percent. Published studies consistently show that the probability of receiving a diagnosis of osteoporosis depends on the choice of test and site. One analytical study, for example, found that 6 percent of women older than 60 years of age would receive a diagnosis of osteoporosis if DXA of the total hip were used as the only test, compared with 14 percent for DXA of the lumbar spine, 3 percent with quantitative ultrasonography, and 50 percent with quantitative computed tomography (Faulker, 1999).

A meta-analysis assessed 23 publications from 11 separate prospective cohort studies published before 1996. Nearly all of the data were from women in their late 60s or older. No studies of ultrasonography were included. The meta-analysis indicated that DXA at the femoral neck predicted hip fracture better than measurements at other sites, and was comparable to forearm measurements for predicting fractures at other sites. For bone density measurements at the femoral neck, the pooled relative risk per decrease of one SD in bone density was 2.6 (CI, 2.0-3.5). In direct comparisons, heel ultrasonography was slightly worse than but comparable to DXA of the hip in women older than 65 years of age). For both tests, a result in the osteoporotic range is associated with an increased short-term probability of hip fracture. No data compare DXA and ultrasonography for prediction of fracture in women younger than 65 years of age.

**Special Note:** This policy is based on the recommendations of Priority Health's Technology Assessment Committee on December 3, 2004.



## II. POLICY/CRITERIA

Priority Health will limit coverage for BMD studies to central DXA only. Any other BMD studies (e.g. peripheral, such as wrist, finger and heel) are not medically/clinically necessary and, therefore, not covered.

BMD studies will not be prior authorized by Priority Health.

Guidelines on the appropriate use of BMD include information from the National Osteoporosis Foundation and Priority Health's guidelines in conjunction with the Michigan Quality Improvement Consortium.

- A. A one-time measurement of BMD, using one method only, may be considered medically necessary to assess fracture risk and the need for pharmacologic therapy in the following patients considered at risk for osteoporosis, who are also considering treatment to prevent osteoporotic fracture:
1. All women aged 65 or men aged 70 and older regardless of risk factors.
  2. All individuals who have one or more of the following major risk factors for osteoporosis.
    - a. Personal history of fracture as an adult
    - b. History of fragility fracture in a first degree relative
    - c. Estrogen deficiency at an early age (<45 years)
    - d. Current cigarette smoking
    - e. Low body weight (<127 lbs)
    - f. Alcohol in amounts >2 drinks per day
    - g. Use of oral corticosteroid therapy for more than 3 months
    - h. History of osteopenia or osteoporosis diagnosed via x-ray
    - i. History of Depo-Provera® use
    - j. Other screenings that may be indicative of increased risk (i.e. screening done at health fair)
  3. Post menopausal women who present with fractures (to confirm diagnosis and determine disease severity).
  4. Individuals beginning glucocorticoid therapy, provided intervention is an option. The most commonly used glucocorticoids include prednisone, prednisolone, betamethasone, dexamethasone and decadron.
  5. Men with hypogonadism or receiving androgen deprivation treatment.
  6. Individuals who are at increased risk for fractures due to diseases, conditions or treatments including, but not limited to primary hyperparathyroidism, renal failure (patients on dialysis), decreased mineralization noted on other studies, lifelong low calcium intake, impaired vision, dementia, recent falls, low physical activity, poor health/frailty, and long-term anti-convulsant therapy ( e.g., phenytoin therapy).



- B. If the initial BMD measurement was medically necessary as defined above, serial measurements of BMD to monitor treatment response may be considered medically necessary when performed no more frequently than 24 months apart and when a change in treatment plan may be made based on BMD results. When the need for serial measurements is anticipated in high risk patients who are likely to require treatment, and for obtaining serial measurements, a central DXA BMD measurement should be obtained, as treatment related changes in BMD are not observed at peripheral sites.
- C. More frequent bone mass measurements may be considered medically necessary in any of the following circumstances:
1. Monitoring individuals on long-term glucocorticoid (steroid) therapy of more than 3 months duration; **or**
  2. For a confirmatory baseline bone mass measurement to permit monitoring of individuals in the future if the initial bone mass test was performed with a technique that is different from the proposed testing method; **or**
  3. Monitoring of individuals with uncorrected primary hyperparathyroidism.

### III. MEDICAL NECESSITY REVIEW

Required                       Not Required                       Not Applicable

### IV. APPLICATION TO PRODUCTS

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

- ❖ **HMO/EPO:** *This policy applies to insured HMO/EPO plans.*
- ❖ **POS:** *This policy applies to insured POS plans.*
- ❖ **PPO:** *This policy applies to insured PPO plans.*
- ❖ **ASO:** *For self-funded plans, consult individual plan documents. If there is a conflict between this policy and a self-funded plan document, the provisions of the plan document will govern.*
- ❖ **INDIVIDUAL:** *For individual policies, consult the individual insurance policy. If there is a conflict between this medical policy and the individual insurance policy document, the provisions of the individual insurance policy will govern.*
- ❖ **MEDICARE:** *Coverage is determined by the Centers for Medicare and Medicaid Services (CMS).*
- ❖ **MEDICAID:** *Coverage is determined by the Michigan Medicaid Provider Manual and the Michigan Medicaid Fee Schedule at: [http://www.michigan.gov/mdch/0,1607,7-132-2945\\_42542\\_42543\\_42546\\_42551-159815--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2945_42542_42543_42546_42551-159815--,00.html).*
- ❖ **MICHILD:** *For MICHILD members, this policy will apply unless MICHILD certificate of coverage limits or extends coverage.*

**V. CODING INFORMATION****ICD-9 Codes that may support medical necessity**

- 252.00 Hyperparathyroidism, unspecified
- 252.01 Primary hyperparathyroidism
- 252.08 Other hyperparathyroidism
- 256.2 Postablative ovarian failure
- 256.31 Premature menopause
- 256.39 Other ovarian failure
- 263.2 Arrested development following protein-calorie malnutrition
- 263.8 Other protein-calorie malnutrition
- 263.9 Unspecified protein-calorie malnutrition
- 268.2 Osteomalacia, unspecified
- 275.40 Unspecified disorder of calcium metabolism
- 275.41 Hypocalcemia
- 275.42 Hypercalcemia
- 275.49 Other disorders of calcium metabolism
- 303.9 Other and unspecified alcohol dependence
- 579.0 Celiac disease
- 579.1 Tropical sprue
- 579.2 Blind loop syndrome
- 579.3 Other and unspecified postsurgical nonabsorption
- 579.4 Pancreatic steatorrhea
- 579.8 Other specified intestinal malabsorption
- 579.9 Unspecified intestinal malabsorption
- 585.1 Chronic kidney disease, Stage I
- 585.2 Chronic kidney disease, Stage II (mild)
- 585.3 Chronic kidney disease, Stage III (moderate)
- 585.4 Chronic kidney disease, Stage IV (severe)
- 585.5 Chronic kidney disease, Stage V
- 585.6 End stage renal disease
- 585.9 Chronic kidney disease, unspecified
- 588.0 Renal osteodystrophy
- 588.81 Secondary hyperparathyroidism of renal origin
- 588.89 Other specified disorders resulting from impaired renal function
- 627.2 Symptomatic menopausal or female climacteric states
- 627.3 Postmenopausal atrophic vaginitis
- 627.4 Symptomatic states associated with artificial menopause
- 627.8 Other specified menopausal and postmenopausal disorders
- 627.9 Unspecified menopausal and postmenopausal disorder
- 719.7 Difficulty in walking
- 731.0 Osteitis deformans without mention of bone tumor
- 731.2 Hypertrophic pulmonary osteoarthropathy
- 731.3 Major osseous defects
- 733.00 Osteoporosis, unspecified
- 733.01 Senile osteoporosis
- 733.02 Idiopathic osteoporosis
- 733.03 Disuse osteoporosis
- 733.09 Other



- 733.10 Pathologic fracture, unspecified site
- 733.11 Pathologic fracture of humerus
- 733.12 Pathologic fracture of distal radius and ulna
- 733.13 Pathologic fracture of vertebrae
- 733.14 Pathologic fracture of neck of femur
- 733.15 Pathologic fracture of other specified part of femur
- 733.16 Pathologic fracture of tibia or fibula
- 733.19 Pathologic fracture of other specified site
- 733.90 Disorder of bone and cartilage, unspecified
- 733.93 Stress fracture of tibia or fibula
- 733.94 Stress fracture of the metatarsals
- 733.95 Stress fracture of other bone
- 733.99 Other and unspecified disorders of bone and cartilage
- 737.10 Kyphosis (acquired) (postural)
- 737.20 Lordosis (acquired) (postural)
- 737.40 Curvature of spine, unspecified
- 737.41 Curvature of spine, Kyphosis
- 737.42 Curvature of spine, Lordosis
- 737.43 Curvature of spine, Scoliosis
- 737.8 Other curvatures of spine
- 737.9 Unspecified curvature of spine
- 758.6 Gonadal dysgenesis
- 781.91 Loss of height
- 783.0 Anorexia
- 962.0 Poisoning; adrenal cortical steroids
- 966.1 Poisoning by hydantoin derivatives
- 995.20 Unspecified adverse effect of unspecified drug, medicinal and biological substance
- V11.3 Personal history of alcoholism
- V49.81 Postmenopausal status (age related) (natural)
- V50.42 Prophylactic removal of ovary
- V82.81 Osteoporosis

**CPT/HCPCS Codes<sup>1</sup>**

*Procedures may not be billable by all providers. Radiology privileging limitations are in effect.*

- 77080 Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; axial skeleton (eg, hips, pelvis, spine)
- 77082 Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; vertebral fracture assessment
- G0130\* Single energy x-ray absorptiometry (SEXA) bone density study, one or more sites; appendicular skeleton (peripheral) (e.g., radius, wrist, heel)  
*(Medicare only)*

**Related procedures:**

- 77083\* Radiographic absorptiometry (eg, photodensitometry, radiogrammetry), 1 or more sites
- 76977\* Ultrasound bone density measurement and interpretation, peripheral site(s), any method



Pre-authorization required:

**Note: American Imaging Management (AIM) provides prior authorization medical necessity review services on behalf of Priority Health for participating providers. Prior authorization for out-of-network providers must be requested through Priority Health. Please refer to AIM's Clinical Guideline (Quantitative CT – Bone Mineral Densitometry) for specific criteria ([www.americanimaging.net](http://www.americanimaging.net)).**

- 77078\* Computed tomography, bone mineral density study, 1 or more sites; axial skeleton (eg, hips, pelvis, spine)
- 77079\* Computed tomography, bone mineral density study, 1 or more sites; appendicular skeleton (peripheral) (eg, radius, wrist, heel)

Not covered:

- 77081\* Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; appendicular skeleton (peripheral) (eg, radius, wrist, heel)
- 78350 Bone density (bone mineral content) study, one or more sites; single photon absorptiometry
- 78351 Bone density (bone mineral content) study, one or more sites; dual photon absorptiometry, one or more sites
- G0130 Single energy x-ray absorptiometry (SEXA) bone density study, one or more sites; appendicular skeleton (peripheral) (e.g., radius, wrist, heel)

\* *These procedures are not covered for PriorityMedicare members if billed with dx 733.90, 733.00 – 733.09, 255.0.*

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Michigan Quality Improvement Consortium Guideline: Management and Prevention of Osteoporosis.  
<http://www.mqic.org/pdf/MQIC%202008%20OSTEOPOROSIS%20GUIDELINE.pdf>

The National Osteoporosis Foundation (NOF) Clinician's Guide to Prevention and Treatment of Osteoporosis: [http://nof.org/professionals/Clinicians\\_Guide.htm](http://nof.org/professionals/Clinicians_Guide.htm)

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