Introduction

A bone density test is done to estimate the strength of bones. It looks at concentration of certain minerals like calcium. Bone density tests, which are also called bone mineral density tests or BMD tests, help doctors know if a person is at risk of broken bones due to osteoporosis. Osteoporosis means “porous bone.” It’s caused by the body’s loss of too much bone, its inability to make enough bone, or both. Risk factors include age, low body mass index, and other conditions associated with osteoporosis such as rheumatoid arthritis and diabetes. A bone density test also is used to measure how well osteoporosis treatment is working. A bone mineral density test generally uses a special type of x-ray or ultrasound. This policy describes when a bone density test may be considered medically necessary.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.
Initial or repeat bone mineral density (BMD) measurement is not indicated unless the results will influence treatment decisions.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Medical Necessity</th>
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</thead>
</table>
| **Initial measurement**              | An initial measurement of BMD at the hip or spine may be considered medically necessary to assess fracture risk and the need for pharmacologic therapy in both women and men who are considered at risk for osteoporosis. BMD testing may be indicated under the following conditions:  
  - Women age 65 and older, regardless of other risk factors  
    (Covered under the ACA as a preventive benefit)  
  - Men age 70 and older, regardless of other risk factors  
  - Women age <65 years whose 10-year risk of a major osteoporotic fracture is 16.6% or greater based upon the Fracture Risk Assessment (FRAX) Tool  
  - Men age 50 to 70 about whom there is a concern based on their risk factors  
  - Adults with a condition or taking a medication associated with low bone mass or bone loss |
<p>| <strong>Repeat Measurement – no osteoporosis/osteopenia</strong> | Repeat measurement of central (hip/spine) BMD for individuals who previously tested normal (no osteoporosis/osteopenia and not taking a medicine for treatment) may be considered medically necessary at an interval not more frequent than every 5 years. |
| <strong>Repeat Measurement – osteopenia</strong>   | Repeat measurement of central (hip/spine) BMD for individuals who previously tested as having osteopenia not requiring pharmacologic treatment may be considered medically necessary at an interval not more frequent than every 2-3 years. |
| <strong>Repeat Measurement – monitoring pharmacologic treatment</strong> | Regular (not more frequent than every 2-3 years) serial measurements of central (hip/spine) BMD to monitor treatment response may be considered medically necessary when the information will affect treatment decisions such as duration of therapy. |</p>
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tr>
<td>CPT</td>
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<td>0508T</td>
<td>Pulse-echo ultrasound bone density measurement resulting in indicator of axial bone mineral density, tibia (new code effective 7/1/18)</td>
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<td>76977</td>
<td>Ultrasound bone density measurement and interpretation, peripheral site(s), any method</td>
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<tr>
<td>77081</td>
<td>Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; appendicular skeleton (peripheral) (eg, radius, wrist, heel)</td>
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<td>78350</td>
<td>Bone density (bone mineral content) study, 1 or more sites; single photon absorptiometry</td>
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<tr>
<td>78351</td>
<td>Bone density (bone mineral content) study, 1 or more sites; dual photon absorptiometry, 1 or more sites</td>
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<tr>
<td>HCPCS</td>
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<tr>
<td>G0130</td>
<td>Single energy x-ray absorptiometry (SEXA) bone density study, one or more sites; appendicular skeleton (peripheral) (eg, radius, wrist, heel)</td>
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**Related Information**

**Definition of Terms (World Health Organization)**

**Normal bone density:** T-score between 0.00 and -1.00

**Osteopenia:** T-score between -1.01 and -2.49

**Osteoporosis:** T-score -2.50 and below

The decision to perform bone density assessment should be based on an individual’s fracture risk profile and skeletal health assessment.¹ In addition to age, gender, and BMD, risk factors included in the World Health Organization (WHO) Fracture Risk Assessment (FRAX) Tool are:

- Low body mass index
- Parental history of hip fracture
- Previous fragility fracture in adult life (ie, occurring spontaneously or a fracture arising from trauma which, in a healthy individual, would not have resulted in a fracture)

- Current smoking or alcohol 3 or more units/day, where a unit is equivalent to a standard glass of beer (285 mL), a single measure of spirits (30 mL), a medium-sized glass of wine (120 mL), or 1 measure of an aperitif (60 mL)

- A disorder strongly associated with osteoporosis. These include rheumatoid arthritis, type I (insulin dependent) diabetes, osteogenesis imperfecta in adults, untreated long-standing hyperthyroidism, hypogonadism or premature menopause (<45 years), chronic malnutrition or malabsorption, and chronic liver disease

- Current exposure to oral glucocorticoids or the patient has been exposed to oral glucocorticoids for more than 3 months at a dose of prednisolone of 5 mg daily or more (or equivalent doses of other glucocorticoids)

A 2011 joint position statement from the International Society for Clinical Densitometry (ISCD) and the International Osteoporosis Foundation (IOF) includes the official position that FRAX with BMD predicts risk of fracture better than clinical risk factors or BMD alone. In addition, the joint position statement states that measurements other than BMD or T score at the femoral neck by DXA are not recommended for use with FRAX.

The FRAX tool does not include a recommendation about which patients to further assess or treat. The FRAX website states that this is a matter of clinical judgment and recommendations may vary by country.

**Bone Mineral Density Technologies**

Ultrasound densitometry is an office-based technology. As discussed further in the Rationale section, it is unknown whether this technology can be used to predict response to pharmacologic therapy (ie, reduce fractures).

DXA of axial central sites (ie, hip and spine) is the most commonly used technique, but peripheral (appendicular) DXA and QCT scanning are sometimes used, based on local availability. Peripheral measurement can identify patients with low bone mass but does not predict response to pharmacologic therapy and is not a substitute for central DXA measurements. Therefore, central DXA (hip/spine) is required for both the initial diagnosis and repeat BMD assessments.

Peripheral measurement of BMD may be appropriate:
If the hip/spine or hip/hip cannot be done or the patient is over the table limit for weight

Hyperparathyroidism, where the forearm is essential for diagnosis

In pediatric patients, total body calcium is preferred because it helps reduce the issue of following patients with growing bones. This applies to pediatric patients who are not skeletally mature as documented by nonclosure of growth plates (e.g., 15 years of age or younger).

Benefit Application

Preventive Care Services

Affordable Care Act covered preventive services: Osteoporosis screening in women has a US Preventive Services Task Force rating of B in the following populations:

- Women age 65 and older, with no known risk factors for osteoporosis
- Women age <65 whose 10 year fracture risk is equal to or greater than that of the average 65 year old white woman without additional risk factors. The standard 10-year fracture risk described by USPSTF is a FRAX score of 9.3% or greater.

Consideration of Age

The ages in this policy for which the initial measurement of bone mineral density is considered medically necessary to assess risk and need for therapy are based on covered preventive services outlined in the Patient Protection and Affordable Care Act, National Osteoporosis Foundation, American College of Physicians, and the American College of Radiology.

Evidence Review

Description

Bone mineral density (BMD) studies can be used to identify individuals with osteoporosis and to monitor response to osteoporosis treatment, with the goal of reducing the risk of fracture. Bone
density is most commonly evaluated with dual x-ray absorptiometry (DXA); other technologies are available.

**Background**

Risk factors for fracture include low bone mass, low bone strength, a personal history of osteoporotic fracture as an adult, or a history of osteoporotic fracture in a first-degree relative. Osteoporosis, defined as low bone mass leading to an increased risk of fragility fractures, is an extremely common disease in the elderly population due to age-related bone loss in both sexes and menopause-related bone loss in women. Conditions that can cause or contribute to osteoporosis include lifestyle factors such as low intake of calcium, high intake of alcohol or cigarette smoking, and thinness. Other risk factors for osteoporosis include certain endocrine, hematologic, gastrointestinal tract and genetic disorders, hypogonadal states, and medications. Low bone mineral density (BMD) is a primary indication for pharmacologic therapy. Current pharmacologic options include bisphosphonates such as alendronate (ie, Fosamax), selective estrogen receptor modulators (SERMs) such as raloxifene (ie, Evista), the recombinant human parathyroid hormone teriparatide (ie, Forteo), and calcitonin.

BMD can be measured with a variety of techniques in a variety of central (i.e., hip or spine) or peripheral (ie, wrist, finger, heel) sites. While BMD measurements are predictive of fragility fractures at all sites, central measurements of the hip and spine are the most predictive. Fractures of the hip and spine (ie, vertebral fractures) are also considered to be the most clinically relevant. BMD is typically expressed in terms of the number of standard deviations the BMD falls below the mean for young healthy adults. This number is termed the T score.

The following technologies are most commonly used.

**DXA**

DXA is probably the most commonly used technique to measure BMD because of its ease of use, low radiation exposure, and its ability to measure BMD at both the hip and spine. DXA can also be used to measure peripheral sites, such as the wrist and finger. DXA generates two x-ray beams of different energy levels to scan the region of interest and measure the difference in attenuation as the low- and high-energy beams pass through the bone and soft tissue. The low energy beam is preferentially attenuated by bone, while the high energy beam is attenuated by both bone and soft tissue. This differential attenuation between the two beams allows for
correction for the irregular masses of soft tissue, which surround the spine and hip, and therefore the measurement of bone density at those sites.

**Quantitative Computed Tomography (QCT)**

QCT depends on the differential absorption of ionizing radiation by calcified tissue and is used for central measurements only. Compared with DXA, QCT is less readily available and associated with relatively high radiation exposure and relatively high cost.

**Ultrasound Densitometry**

Ultrasound densitometry is a technique for measuring BMD at peripheral sites, typically the heel but also the tibia and phalanges. Compared with osteoporotic bone, normal bone demonstrates higher attenuation of the ultrasound wave and is associated with a greater velocity of the wave passing through bone. Ultrasound densitometry has no radiation exposure, and machines may be purchased for use in an office setting.

These techniques dominate BMD testing. Single and dual photon absorptiometry and radiographic absorptiometry are now rarely used and may be considered obsolete.

**Summary of Evidence**

For individuals who are eligible for screening of bone mineral density (BMD) based on risk factor assessment who receive dual x-ray absorptiometry (DXA) analysis of central sites (hip or spine), the evidence includes large cohort studies, observational studies, and systematic reviews. Relevant outcomes are disease-specific survival, morbid events, functional outcomes, health status measures, quality of life, hospitalizations, medication use, and resource utilization. BMD measurements with central DXA identify individuals at increased risk of fracture. There is sufficient evidence that osteoporosis medications are effective at reducing fracture risk in postmenopausal women with BMD in the osteoporotic range identified by central DXA. Therefore, a chain of evidence establishes that screening BMD with central DXA is likely to improve health outcomes. Evidence to support serial or repeat measurement of BMD is less compelling; nonetheless, the available evidence and the consensus of clinical evidence-based guidelines support at least a 2-year interval in BMD measurement to monitor response to pharmacologic therapy. Finally, available evidence suggests that at least a 3- to 5-year
timeframe is reasonable for repeat measurement of BMD in individuals who initially tested normal and to monitor pharmacologic therapy. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who are eligible for screening of BMD based on risk factor assessment who receive ultrasound densitometry, or quantitative computed tomography, or DXA analysis of peripheral sites, the evidence includes observational studies and systematic reviews. Relevant outcomes are disease-specific survival, morbid events, functional outcomes, health status measures, quality of life, hospitalizations, medication use, and resource utilization. These technologies are not commonly used for BMD measurements in practice and no studies have shown that they can select patients who benefit from treatment for osteoporosis. There is little to no evidence on the usefulness of repeat measurement of BMD using these techniques. The evidence is insufficient to determine the effects of the technology on health outcomes. Therefore ultrasound densitometry, quantitative computed densitometry and DXA analysis are considered not medically necessary as screening or monitoring response to therapy for individuals at risk of osteoporosis.

**Clinical Input Received Through Physician Specialty Societies and Academic Medical Centers**

While the various physician specialty societies and academic medical centers may provide appropriate reviewers who collaborate with and make recommendations during this process, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

In response to requests, input was received from 4 physician specialty societies (7 reviewers) and 2 academic medical centers while this policy was under review in 2008. In addition, 7 unsolicited letters were received through 2 additional physician specialty societies. The reviewers agreed with the policy statement that an initial BMD test may be medically necessary. They also recommended an interval of 3 to 5 years between measurements in subjects who previously tested normal, depending on risk factors. Reviewers considered serial measurement of BMD important to guide treatment decisions (eg, continuing or changing medication).

Based on the consensus of clinical opinion regarding the value of the information provided by monitoring treatment response, serial BMD measurements (at least a 2-year interval) may be considered appropriate when this information will impact patient care. It should be noted that within the margin of error of BMD measurements with DXA, questions remain about the interval over which a clinically significant change can be observed. The minimal clinically significant
change also raises concerns about the potential for over-interpretation of small fluctuations with repeat testing.

**Practice Guidelines and Position Statements**

*American College of Obstetricians and Gynecologists*

In 2012, (reaffirmed 2014) the American College of Obstetricians and Gynecologists issued updated guidelines on managing osteoporosis in women. The guidelines recommend that BMD screening should begin for all women at age 65 years. In addition, they recommend screening for women younger than 65 years in whom the Fracture Risk Assessment (FRAX) Tool indicates a 10-year risk of osteoporotic fracture of at least 9.3%. ACOG also recommends BMD screening of postmenopausal women younger than 65 or with any of the following risk factors (these are similar, but not identical to risk factors in FRAX):

- Personal medical history of a fragility fracture
- Parental medical history of hip fracture
- Weight less than 127 lb
- Medical causes of bone loss (ie, medications or disease)
- Current smoker
- Alcoholism
- Rheumatoid arthritis

For women who begin medication treatment for osteoporosis, a repeat BMD is recommended 1 to 2 years later to assess effectiveness. If BMD is improved or stable, additional BMD testing (in the absence of new risk factors) is not recommended. The guideline notes that it generally takes 18 to 24 months to document a clinically meaningful change in BMD and thus a 2-year interval after treatment initiation is preferred to 1 year.

The guidelines do not specifically discuss repeat BMD screening for women who have a normal finding on the initial test.

Routine BMD screening is not recommended for newly menopausal women as a “baseline” screen.
National Osteoporosis Foundation

The National Osteoporosis Foundation (NOF) updated its practice guidelines in 2014. NOF guidelines recommend that all postmenopausal women and men age 50 and older should be evaluated clinically for osteoporosis risk to determine the need for BMD testing. Indications for BMD testing are:

- Women age 65 and older and men age 70 and older, regardless of other risk factors;
- Postmenopausal women and men above age 50-69, based on risk factors profile
- Adults who have a pathologic fracture after age 50
- Adults with a condition or taking a medication associated with low bone mass or bone loss

NOF states that measurements for monitoring patients should be performed in accordance with medical necessity, expected response and in consideration of local regulatory requirements. NOF recommends that repeat BMD assessments every two years generally agree with Medicare guidelines, but recognizes that testing more frequently may be warranted in certain clinical situations.

NOF also indicates that, “Central DXA assessment of the hip or lumbar spine is the ‘gold standard’ for serial assessment of BMD. Biological changes in bone density are small compared to the inherent error in the test itself, and interpretation of serial bone density studies depends on appreciation of the smallest change in BMD that is beyond the range of error of the test. This least significant change (LSC) varies with the specific instrument used, patient population being assessed, measurement site, technologist’s skill with patient positioning and test analysis, and the confidence intervals used. Changes in the BMD of less than 3-6 percent at the hip and 2-4 percent at the spine from test to test may be due to the precision error of the testing itself.”

American College of Physicians

2017 guidelines from the American College of Physicians (ACP) make the following recommendations for clinicians who screen and treat individuals for low bone density and osteoporosis:
1. ACP recommends that clinicians offer pharmacologic treatment with alendronate, risedronate, zole- dronic acid, or denosumab to reduce the risk for hip and vertebral fractures in women who have known osteoporosis. (Grade: strong recommendation; high-quality evidence)

2. ACP recommends that clinicians treat osteoporotic women with pharmacologic therapy for 5 years. (Grade: weak recommendation; low-quality evidence)

3. ACP recommends that clinicians offer pharmacologic treatment with bisphosphonates to reduce the risk for vertebral fracture in men who have clinically recognized osteoporosis. (Grade: weak recommendation; low-quality evidence)

4. ACP recommends against bone density monitoring during the 5-year pharmacologic treatment period for osteoporosis in women. (Grade: weak recommendation; low-quality evidence) ACP recommends against using menopausal estrogen therapy or menopausal estrogen plus progesterone therapy or raloxifene for the treatment of osteoporosis in women. (Grade: strong recommendation; moderate-quality evidence)

5. ACP recommends that clinicians should make the decision whether to treat osteopenic women 65 years of age or older who are at a high risk for fracture based on a discussion of patient preferences, fracture risk profile, and benefits, harms, and costs of medications. (Grade: weak recommendation; low-quality evidence)

6. ACP also made the following statements regarding High-Value Care:

   The current evidence does not support frequent monitoring of women with normal BMD for osteoporosis, because data showed that most women with normal DXA scores did not progress to osteoporosis within 15 years. Data also does not support monitoring BMD during the initial 5 years of treatment in patients taking pharmacologic agents to treat osteoporosis. Clinicians should select generic drugs to treat osteoporotic patients when possible.

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**American College of Radiology**

Practice guidelines from the American College of Radiology, last amended in 2014, state that BMD measurement is indicated whenever a clinical decision is likely to be directly influenced by the result of the test. Indications for DXA include but are not limited to the following patient populations:
• All women age 65 years and older and men age 70 years and older (asymptomatic screening). Premenopausal females with risk factors and males 20 to 50 years of age with risk factors.
  
  o Women younger than age 65 years who have additional risk for osteoporosis, based on medical history and other findings. Additional risk factors for osteoporosis include:
    
    a. Estrogen deficiency
    b. A history of maternal hip fracture that occurred after the age of 50 years
    c. Low body mass (less than 127 lbs or 57.6 kg)
    d. History of amenorrhea (more than 1 year before age 42 years)

• Women younger than age 65 years or men younger than age 70 years who have additional risk factors, including:
  
  o Current use of cigarettes
  o Loss of height, thoracic kyphosis

• Individuals of any age with bone mass osteopenia, or fragility fractures on imaging studies such as radiographs, computed tomography (CT), or magnetic resonance imaging (MRI)

• Individuals age 50 years and older who develop a wrist, hip, spine, or proximal humerus fracture with minimal or no trauma, excluding pathologic fractures

• Individuals of any age who develop 1 or more insufficiency fractures

• Individuals receiving (or expected to receive) glucocorticoid therapy for more than 3 months

• Individuals beginning or receiving long-term therapy with medications known to adversely affect BMD (e.g., anticonvulsant drugs, androgen deprivation therapy, aromatase inhibitor therapy, or chronic heparin)

• Individuals with an endocrine disorder known to adversely affect BMD (e.g., hyperparathyroidism, hyperthyroidism, or Cushing’s syndrome)

• Hypogonadal men older than 18 years and men with surgically or chemotherapeutically induced castration

• Individuals with medical conditions that could alter BMD, such as:
  
  o Chronic renal failure
- Rheumatoid arthritis and other inflammatory arthritis
- Eating disorders, including anorexia nervosa and bulimia
- Organ transplantation
- Prolonged immobilization
- Conditions associated with secondary osteoporosis, such as gastrointestinal malabsorption or malnutrition, sprue, osteomalacia, vitamin D deficiency, acromegaly, chronic alcoholism or established cirrhosis, and multiple myeloma
- Individuals who have had gastric bypass for obesity. The accuracy of DXA in these patients might be affected by obesity

- Individuals being considered for pharmacologic therapy for osteoporosis
- Individuals being monitored to:
  - Assess the effectiveness of osteoporosis drug therapy
  - Follow-up medical conditions associated with abnormal BMD

**International Society for Clinical Densitometry**

The 2013 update of the International Society for Clinical Densitometry guidelines recommend bone density testing in the following patients:

- Women age 65 and older
- Postmenopausal women under age 65 with risk factors for fracture such as:
  - Low body weight
  - Prior fracture
  - High risk medication use
  - Disease or condition associated with bone loss
- Women during the menopausal transition with clinical risk factors for fracture, such as low bone weight, prior fracture or high-risk medication use
- Men age 70 and older
• Men under age 70 if they have risk factors for low bone mass such as:
  o Low body weight
  o Prior fracture
  o High risk medication use
  o Disease or condition associated with bone loss
• Adults with a fragility fracture
• Adults with a disease or condition associated with low bone mass or bone loss
• Adults taking medications associated with low bone mass or bone loss
• Anyone being considered for pharmacologic therapy
• Anyone not receiving therapy in whom evidence of bone loss would lead to treatment

**American Association of Clinical Endocrinologists**

The AACE and American College of Endocrinology (ACE) 2016 Clinical Practice Guidelines for the Diagnosis and Treatment of Postmenopausal Osteoporosis lists the following:

**Indications for Bone Mineral Density (BMD) testing**

• All women ≥65 years old
• All postmenopausal women
  o With a history of fracture(s) without major trauma
  o With osteopenia identified radiographically
  o Starting or taking long-term systemic glucocorticoid therapy (≥3 mo)
• Other peri- or postmenopausal women with risk factors for osteoporosis if willing to consider pharmacologic interventions
  o Low body weight (<127 lb or body mass index <20 kg/m2)
  o Long-term systemic glucocorticoid therapy (≥3 mo)
  o Family history of osteoporotic fracture
Early menopause (<40 years old)
Current smoking
Excessive alcohol consumption
• Secondary osteoporosis

Bone Mineral density measurements: potential uses in post-menopausal women
• Screening for osteoporosis
• Establishing the severity of osteoporosis or bone loss in patients with suspected osteoporosis (eg, patients with fractures or radiographic evidence of osteopenia)
• Determining fracture risk—especially when combined with other risk factors for fractures
• Identifying candidates for pharmacologic intervention
• Assessing changes in bone density over time in treated and untreated patients
• Enhancing acceptance of, and perhaps adherence with, treatment
• Assessing skeletal consequences of diseases, conditions, or medications known to cause bone loss

North American Menopause Society
The North American Menopause Society issued a 2010 position statement\(^{26}\) which states that fracture is the most significant risk of low bone density. The statement also concludes that BMD is an important determinant of fracture risk, especially in women 65 years and older.

The American Board of Internal Medicine’s (ABIM) Foundation Choosing Wisely® Initiative
Choosing Wisely, an initiative of the American Board of Internal Medicine, aims to promote conversations between providers and patients by helping patients choose care that is supported by evidence. The program publishes lists of specific, evidence-based recommendations from specialty societies. The American College of Rheumatology list (2013) includes a caution on routine repeat DXA scans:
Even in high-risk patients receiving drug therapy for osteoporosis, DXA changes do not always correlate with probability of fracture. Therefore, DXAs should only be repeated if the result will influence clinical management or if rapid changes in bone density are expected. Recent evidence also suggests that healthy women age 67 and older with normal bone mass may not need additional DXA testing for up to ten years provided osteoporosis risk factors do not significantly change.

_The American Academy of Family Physicians_

The American Academy of Family Physicians (2012) recommends that DXA scan not be used for screening for osteoporosis in women younger than 65 or men younger than 70 with no risk factors.

_U.S. Preventive Services Task Force Recommendations_

The U.S. Preventive Services Task Force (USPSTF) updated recommendations on screening for osteoporosis with bone density measurements in January 2011. The USPSTF recommends routine osteoporosis screening in women age 65 years or older and in younger women whose risk of fracture is at least equal to that of a 65-year-old average-risk white woman. This represents a change from the previous (2002) version in which there was no specific recommendation regarding screening in women younger than 65 years-old. The supporting document notes that there are multiple instruments to predict risk for low BMD and that the USPSTF used FRAX. The updated USPSTF recommendations state that the scientific evidence is insufficient to recommend for or against routine osteoporosis screening in men. The Task Force did not recommend specific screening tests but said that the most commonly used tests are DXA of the hip and lumbar spine and quantitative ultrasound of the calcaneus.

USPSTF recommendations state the following on BMD screening intervals: “...a lack of evidence exists about the optimal intervals for repeat screening and whether repeated screening is necessary in a woman with normal BMD. Because of limitations in the precision of testing, a minimum of 2 years may be needed to reliably measure a change in BMD; however, longer intervals may be necessary to improve fracture risk prediction.”
Medicare National Coverage

Medicare pays for a screening bone mass measurement (BMM) once every 2 years (at least 23 months have passed since the month the last covered BMM was performed).\textsuperscript{27} When medically necessary, Medicare may pay for more frequent BMMs. Examples include, but are not limited to, monitoring beneficiaries on long-term glucocorticoid (steroid) therapy of more than 3 months, and confirming baseline BMMs to permit monitoring of beneficiaries in the future.

Conditions for coverage of BMM can be found in chapter 15, section 80.5 of Pub. 100-02, Medicare Benefit Policy Manual. Medicare covers BMM under the following conditions:

- Is ordered by the physician or qualified nonphysician practitioner who is treating the beneficiary following an evaluation of the need for a BMM and determination of the appropriate BMM to be used.

- Is performed under the appropriate level of physician supervision as defined in 42 CFR 410.32(b).

- Is reasonable and necessary for diagnosing and treating the condition of a beneficiary who meets the conditions described in §80.5.6.

- In the case of an individual being monitored to assess the response to or efficacy of an FDA-approved osteoporosis drug therapy, is performed with a dual-energy x-ray absorptiometry system (axial skeleton).

- In the case of any individual who meets the conditions of §80.5.6 and who has a confirmatory BMM, is performed by a dual-energy x-ray absorptiometry system (axial skeleton) if the initial BMM was not performed by a dual-energy x-ray absorptiometry system (axial skeleton). A confirmatory baseline BMM is not covered if the initial BMM was performed by a dual-energy x-ray absorptiometry system (axial skeleton).

Center for Evidence-Based Policy

The Center for Evidence-Based Policy at Oregon Health & Science University released an evidence summary in 2013 regarding osteoporosis screening and monitoring by dual-energy x-ray absorptiometry (DXA). Their Evidence Summary regarding repeat screening states:

Bone measurement tests predict short-term risk for osteoporotic fractures in women and men. The most appropriate interval for screening has not been identified, but repeating a BMD measurement up to 8 years after an initial measurement does not significantly change
fracture estimates, and transition to osteoporosis occurs for most women with normal BMD no sooner than 17 years. In postmenopausal women who have no previous osteoporotic fractures, drug therapies reduce the risk for fractures (primary prevention). Bisphosphonates, parathyroid hormone, raloxifene, and estrogen have all been shown to reduce vertebral fractures in this population. Potential harms of screening for osteoporosis include false-positive test results causing unnecessary treatment, false-negative test results, and patient anxiety about positive test results.

**Regulatory Status**

Various devices are commercially available.

In October 2003, the Hologic QDR®-3000 Explorer™ X-Ray Done Densitometer (Hologic; Bedford, MA) was cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process. FDA determined that this device was substantially equivalent to existing devices for use in measurement of bone mineral content (BMC), estimation of BMD, comparison of measurements with reference databases, estimation of fracture risk, body composition analysis, and measurement of periprosthetic BMD.

**References**


**History**

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<th>Date</th>
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<td>09/08/14</td>
<td>New policy, add to Radiology section. Policy created based on a literature review through February 11, 2014. An initial measurement of BMD at the hip or spine may be considered medically necessary to assess fracture risk and the need for pharmacologic therapy when criteria are met. Repeat measurement of BMD may be considered medically necessary when criteria are met. Policy approved with a hold for provider notification and will be effective February 15, 2015.</td>
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<td>04/14/15</td>
<td>Annual Review. Policy updated with literature review through February 6, 2015; references 18, and 25-28 added and references 8, 23, 24 updated. Policy statement regarding initial measurement of women age &lt;65 clarified. Repeat measurement now described in 3 categories – no osteoporosis/osteopenia, osteopenia and monitoring pharmacologic treatment. Interval of repeat testing when no osteoporosis/osteopenia is present has been changed to 5 years.</td>
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<td>02/09/16</td>
<td>Annual Review. Policy updated with literature review through January 2016. Summary statement revised. No change to the policy statement.</td>
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<tr>
<td>12/01/16</td>
<td>Minor update approved November 8, 2016. Language added to the Rationale section to indicate that the age range specifications within this policy for which the initial measurement of bone mineral density is considered medically necessary to assess risk and need for therapy are based on covered preventive services outlined in the Patient Protection and Affordable Care Act, National Osteoporosis Foundation, American College of Physicians, and the American College of Radiology. No change in policy statements.</td>
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<tr>
<td>01/01/18</td>
<td>Annual Review, approved December 12, 2017. Policy moved into new format. Policy statements clarified, but the intent remains unchanged. References and Practice Guidelines were updated.</td>
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<td>Comments</td>
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<tr>
<td>07/01/18</td>
<td>Coding update, added new CPT code 0508T, effective 7/1/18.</td>
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**Disclaimer**: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. The Company adopts policies after careful review of published peer-reviewed scientific literature, national guidelines and local standards of practice. Since medical technology is constantly changing, the Company reserves the right to review and update policies as appropriate. Member contracts differ in their benefits. Always consult the member benefit booklet or contact a member service representative to determine coverage for a specific medical service or supply. CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). ©2018 Premera All Rights Reserved.

**Scope**: Medical policies are systematically developed guidelines that serve as a resource for Company staff when determining coverage for specific medical procedures, drugs or devices. Coverage for medical services is subject to the limits and conditions of the member benefit plan. Members and their providers should consult the member benefit booklet or contact a customer service representative to determine whether there are any benefit limitations applicable to this service or supply. This medical policy does not apply to Medicare Advantage.
Discrimination is Against the Law

Premera Blue Cross complies with applicable Federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. Premera does not exclude people or treat them differently because of race, color, national origin, age, disability or sex.

Premera:
• Provides free aids and services to people with disabilities to communicate effectively with us, such as:
  • Qualified sign language interpreters
  • Written information in other formats (large print, audio, accessible electronic formats, other formats)
• Provides free language services to people whose primary language is not English, such as:
  • Qualified interpreters
  • Information written in other languages

If you need these services, contact the Civil Rights Coordinator.

If you believe that Premera has failed to provide these services or discriminated in another way on the basis of race, color, national origin, age, disability, or sex, you can file a grievance with:

Civil Rights Coordinator - Complaints and Appeals
PO Box 91102, Seattle, WA 98111
Toll free 855-332-4535, Fax 425-918-5592, TTY 800-842-5357
Email AppealsDepartmentInquiries@Premera.com

You can file a grievance in person or by mail, fax, or email. If you need help filing a grievance, the Civil Rights Coordinator is available to help you.

You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically through the Office for Civil Rights Complaint Portal, available at https://ocrportal.hhs.gov/ocr/portal/lobby.jsf, or by mail or phone at:

U.S. Department of Health and Human Services
200 Independence Avenue SW, Room S09F, HHH Building
Washington, D.C. 20201, 1-800-368-1019, 800-537-7697 (TDD)
Complaint forms are available at

Getting Help in Other Languages

This Notice has Important Information. This notice may have important information about your application or coverage through Premera Blue Cross. There may be key dates in this notice. You may need to take action by certain deadlines to keep your health coverage or help with costs. You have the right to get this information and help in your language at no cost. Call 800-722-1471 (TTY: 800-842-5357).


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Português (Portuguese):
Este aviso contém informações importantes. Este aviso poderá conter informações importantes a respeito de sua aplicação ou cobertura por meio do Premera Blue Cross. Poderão existir dados importantes neste aviso. Talvez seja necessário que você tome providências dentro de determinados prazos para manter sua cobertura de saúde e ajuda de custos. Você tem o direito de obter esta informação e ajuda em seu idioma e sem custos. Ligue para 800-722-1471 (TTY: 800-842-5357).

Polskie (Polish):

Română (Romanian):