

Medical Policy



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Title: Bone Mineral Density Studies

Professional

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DESCRIPTION

Risk factors for fracture include low bone mass, low bone strength, a personal history of fracture as an adult, or a history of fracture in 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 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 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 (i.e., Fosamax), selective estrogen receptor modulators (SERMs) such as raloxifene (i.e., Evista), the recombinant human parathyroid hormone teriparatide (Forteo), and calcitonin.

Bone mineral density can be measured with a variety of techniques in a variety of central (i.e., hip or spine) or peripheral (i.e., 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 (i.e., vertebral fractures) are also considered to be the most clinically relevant. 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 following technologies are most commonly used.

1. Dual X-Ray Absorptiometry (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 2 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 2 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.

2. Quantitative Computed Tomography (QCT)

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

3. Ultrasound Densitometry

Ultrasound densitometry is a technique for measuring BMD at peripheral sites, typically the heel, but also the tibia and phalanges. Compared to 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.

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

POLICY

Initial or repeat bone mineral density (BMD) measurement is not indicated unless the results will influence treatment decisions.

- A. 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:
1. Women age 65 and older, regardless of other risk factors;
 2. Men age 70 and older, regardless of other risk factors;
 3. Younger postmenopausal women about whom there is a concern based on their risk factors (see risk factors);
 4. Men age 50-70 about whom there is a concern based on their risk factors (see risk factors);

5. Adults with a condition or taking a medication associated with low bone mass or bone loss.

Risk Factors (applies to A3 and A4)

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 bone mineral density (BMD), risk factors included in the WHO Fracture Risk Assessment Model (FRAX) are:

1. Anorexia Nervosa
 2. Low body mass index (BMI of 20 or less);
 3. Parental history of fragility hip fracture;
 4. Previous fragility fracture in adult life (i.e., occurring spontaneously, or a fracture arising from trauma which, in a healthy individual, would not have resulted in a fracture);
 5. Current smoking
 6. Current alcohol 3 or more units/day, where a unit is equivalent to a standard glass of beer (285ml), a single measure of spirits (30ml), a medium-sized glass of wine (120ml), or 1 measure of an aperitif (60ml);
 7. A disorder strongly associated with osteoporosis. These include:
 - rheumatoid arthritis
 - type I (insulin dependent) diabetes
 - osteogenesis imperfecta in adults
 - untreated long-standing hyperthyroidism
 - hypogonadism
 - premature menopause (<45 years)
 - chronic malnutrition or malabsorption
 - chronic renal failure
 - chronic liver disease
 - hyperparathyroidism
 - chronic use of anti-convulsants (particularly Dilantin)
 - chronic use of heparin
 - prolonged immobilization
 - radiographic evidence of osteopenia
 - malignancies (multiple myeloma)
 - organ transplantation
 8. 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).
- B. Regular (not more frequent than every 2–3 years) serial measurements of central BMD to monitor treatment response may be considered **medically necessary** when the information will affect treatment decisions such as duration of therapy.

- C. Repeat measurement of central (hip/spine) BMD for individuals who previously tested normal (does not require pharmacologic treatment) may be considered **medically necessary** at an interval not more frequent than every 3–5 years; the interval depends on patient risk factors.
- D. Ultrasound densitometry is considered **not medically necessary**. As discussed further in the Rationale section, it is unknown whether this technology can be used to predict response to pharmacologic therapy (i.e., reduce fractures).

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 is considered **not medically necessary** except:

- when the hip/spine or hip/hip cannot be done or the patient is over the table limit for weight;
- for 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 non-closure of growth plates (e.g., 15 years of age or younger).

RATIONALE

Prior updates of this policy were based in part on 1998 guidelines from the National Osteoporosis Foundation (NOF) and TEC Assessments from 1999 and 2002. The 1998 NOF guidelines did not recommend one particular type or site of BMD testing technology, although the background report stated that hip measurements are preferred. (2, 3) TEC Assessments in 1999 and 2002 specifically addressed the use of ultrasound densitometry, not only to assess fracture risk but to predict response to drug therapy. (4, 5) The TEC Assessments concluded that while both DXA and ultrasound densitometry were equivalent in predicting fracture risk, the 2 techniques appeared to identify different populations of at-risk patients. Furthermore, treatment-related changes in BMD were not observed at peripheral sites (6) In addition, since randomized trials of various drug therapies, such as bisphosphonates and selective estrogen receptor modulators, had all used DXA to measure therapy-induced changes in bone mineral density, it was not known whether the results of these trials could be extrapolated to the potentially different population identified by ultrasound densitometry. On this basis, ultrasound densitometry did not meet the TEC criteria as a technique to predict response to pharmacologic therapy. Although the evidence indicated that a central DXA measurement should be the initial BMD test performed in patients at high risk for osteoporosis, due to the imprecision of BMD measurement it was a poor predictor of treatment response, and a second 1999 TEC Assessment concluded that there was no direct evidence regarding the utility of BMD monitoring in patients undergoing treatment for osteoporosis. (7, 8)

Searches of the MEDLINE database performed for the periods of 2003–2005 and 2006 through February 2007 identified a number of publications on the predictive value of BMD measurements. One meta-analysis of data from 9,891 men and 29,082 women (from 12 different European, Scandinavian, and Canadian cohorts) found that BMD was a strong predictor of hip fractures for both genders. (9) At the age of 65 years, risk ratio increased by 2.94 in men and by 2.88 in women for each standard deviation decrease in BMD. The meta-analysis, along with a number of other recent articles, suggests that while not as precise as central measurements, peripheral measurements of BMD are also predictive of future fracture. (9) A population study from Canada (2,699 women and 1,032 men 65 years of age or older) determined that the number needed to screen to detect one previously undiagnosed case of osteoporosis is 6 women aged greater or equal to 65 years, 13 men aged greater or equal to 65 years, and 10 men aged greater or equal to 70 years. (10) Although 26% of the women and 9% of the men from the study population had osteoporosis as defined by BMD, the majority (77% of the women and 93% of the men) were not aware of it. Another retrospective review of 1,171 men from a non-profit healthcare organization found that BMD measurement had been conducted in only 1% of the men aged 65 or older and that only 16% of those with a hip or vertebral fracture had received medication for osteoporosis following the index fracture. (11)

Prediction of fracture risk following repeated total hip BMD measurements was assessed by Hillier and colleagues. (12) Total hip BMD was measured in 4,124 women with assessment of vertebral fractures by x-ray in 2,129 of these women; BMD was repeated after 8 years, and spine fractures were measured after an average of 11.4 years. Spine fractures were identified in 340 women and non spine fractures (including 275 hip fractures) were identified in 877 women. Analysis showed that the initial and repeat BMD measurements were similarly associated with fracture risk for non spine (hazard ratio, 1.6), spine (odds ratio, 1.8-1.9), and hip (hazard ratio, 2.0-2.2) fractures, indicating no difference in fracture risk prediction between the initial and repeat measurements. These results support the conclusion reached above that repeating a measurement of BMD up to 8 years later provides little additional value to the initial BMD measurement for predicting incident fractures.

Due in large part to accessibility of the procedure, BMD was at this time the most established measure of fracture risk. It was noted that as research on the determinants of bone strength proceeds, the specific BMD threshold(s) used to identify the patients at highest risk for fracture, and the standards for treatment, are likely to change. (3)

2008 Update

A search of the MEDLINE database was conducted for the period of March 2007 through June 2008.

Longitudinal changes in BMD, as a function of age and antiresorptive agents, were reported by the Canadian Multicentre Osteoporosis Study Research Group. (13) Of a random selection of 9,423 men and women from 9 major Canadian cities, 4,433 women and 1,935 men (70%) were included for analysis. The subjects were 25 years of age or older with BMD measurements repeated 3 or 5 years apart; they tended to have better health than the 30% who did not have longitudinal data and who were excluded from analysis. Results showed that annual rates of bone loss, measured at the hip or femoral neck, increased between 25 to 85 years of age in women who were not on antiresorptive therapy, with accelerated periods of bone loss around menopausal transition (40–54 years of age) and after 70 years of age. Antiresorptive therapy,

which consisted primarily of hormone replacement when the study began in 1995, was associated with attenuated bone loss across all age ranges. In women 50–79 years of age, the average loss in BMD over a 5-year period was 3.2% in nonusers of antiresorptive therapy and 0.2% in women who used antiresorptive therapy. The pattern in men was generally similar to that of women with two exceptions, BMD loss began earlier in men, and the rate of change remained relatively constant between 40 and 70 years of age. Notably, BMD at the lumbar spine did not parallel measurements at the hip and femoral neck, suggesting that vertebral bone density assessment may be obscured by degenerative changes in the spine or other artifact. The report concluded that “although current guidelines recommend that measurements of bone density be repeated once every 2–3 years, our data suggest that, at this rate of testing, the average person would exhibit change well below the margin of error, especially since only 25% of women experienced a loss of bone density that exceeded 5% over 5 years.” Poor concordance between different densitometers (e.g., Prodigy and DPX) has also been reported for BMD change measured over 2 years. (14)

Physician Specialty Society and Academic Medical Center Input

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 addition, 7 unsolicited letters were received through 2 additional physician specialty societies. While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted. The reviewers agreed with the policy statement that an initial BMD test may be medically necessary. They also recommended an interval between measurements in individuals who previously tested normal of 3–5 years, depending on risk factors. Reviewers considered serial measurement of BMD important to guide treatment decisions (e.g., 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 with 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.

Guidelines and Physician Specialty Society Recommendations

The National Osteoporosis Foundation updated their practice guidelines in 2008.(15) Current NOF guidelines recommend that all postmenopausal women and older men should be evaluated clinically for osteoporosis risk to determine the need for bone mineral density (BMD) testing. In general, the more risk factors that are present, the greater the risk of fracture. BMD assessment is indicated in:

- Women age 65 and older and men age 70 and older, regardless of other risk factors;
- Younger postmenopausal women and men age 50–70 about whom you have concern based on their clinical risk factor profile;
- 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;
- Adults who have a fracture after age 50;

- 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;
- Anyone being considered for pharmacologic therapy for osteoporosis;
- Anyone not receiving therapy in whom evidence of bone loss would lead to treatment;
- Postmenopausal women discontinuing estrogen should be considered for bone density testing.

The NOF guidelines suggest that BMD measurement is not indicated unless the results will influence the patient's treatment decision, and that serial monitoring of BMD is appropriate for monitoring bone loss in patients on pharmacotherapy (commonly performed at 2-year intervals). These guidelines are based on economic analysis that takes into consideration the cost effectiveness of treatments and competition for resources in the United States. NOF analysis concluded that it is cost effective to treat individuals with a prior fracture and those with BMD T scores below -2.5 in the absence of other risk factors, and in individuals with BMD T scores between -1.0 and -2.5 (osteopenia), if other risk factors are present (this is a change from prior recommendations).

The U.S. Surgeon General published a report on bone health and osteoporosis in 2004. (16) DXA measurements were considered precise enough to be used for monitoring patients over time, provided the interval between measurements is tailored to the specific patient's situation. Several points were made regarding the most appropriate approaches for BMD monitoring.

- For individuals who are not currently receiving treatment, the timing of a repeat test should be based on the current BMD and the expected rate of bone loss (e.g., faster during early menopause). For older individuals with above-average T-scores, repeat testing may not be necessary at all. For younger individuals who were initially screened due to risk factors but who have normal BMD values, repeat testing every 5–10 years may be helpful.
- For monitoring patients on treatment, testing annually is inappropriate, unless receiving high-dose long-term glucocorticoid therapy. There is insufficient evidence to determine if testing every 2 years is useful.
- When repeating BMD measurements, it is important to avoid over-interpretation of small changes as these can be due to differences in equipment or changes in positioning. One important point of concern about the interpretation of results is the variability that exists across BMD machines. Despite the limitations, bone mineral density remains the single best predictor of fracture risk available today.

Guidelines from the U.S. Preventative Services Task Force (USPSTF) in 2002 recommend that women aged 65 and older should be screened routinely for osteoporosis with bone density measurements. (17) The USPSTF recommends that routine screening begin at age 60 for women at increased risk for osteoporotic fractures and "makes no recommendation for or against routine osteoporosis screening in postmenopausal women who are younger than 60 or in women aged 60–64 who are not at increased risk for osteoporotic fractures." The available evidence indicated that screening women at lower risk can identify women who may be eligible for treatment, but it would prevent a small number of fractures. Regarding repeat testing, the report states that no studies have evaluated the optimal intervals for repeated screening. "Because of limitations in the precision of testing, a minimum of 2 years may be needed to reliably measure a change in bone mineral density; however, longer intervals may be adequate for repeated screening to identify new cases of osteoporosis. Yield of repeated screening will be higher in older women, those with

lower BMD at baseline, and those with other risk factors for fracture. No data were available to determine the appropriate age to stop screening.

2008 guidelines from the American College of Physicians (ACP) recommend that clinicians periodically perform individualized assessment of risk factors for osteoporosis in men older than 50 years (Grade: strong recommendation; moderate-quality evidence). (18) Factors that increase the risk for osteoporosis in men include age (>70 years), low body mass index (BMI), weight loss, physical inactivity, corticosteroid use, androgen deprivation therapy, and previous fragility fracture. The ACP recommends that clinicians obtain DXA for men who are at increased risk for osteoporosis and are candidates for drug therapy (Grade: strong recommendation; moderate-quality evidence). The guidelines indicate that bone density measurement with DXA is the accepted reference standard for diagnosing osteoporosis in men; because treatment trials have not measured the effectiveness of therapy for osteoporosis diagnosed by ultrasound densitometry rather than DXA, the role of ultrasound in diagnosis remains uncertain. This evidence-review found no studies that evaluated the optimal intervals for repeated screening by using BMD measurement with DXA in men.

Practice guidelines from the American College of Radiology (ACR), amended in 2006 and 2007, recommend that BMD measurement is indicated whenever a clinical decision to intervene will be directly influenced by the result of the test. (19, 20) The ACR states that BMD measurement is used to identify patients with low bone density and increased fracture risk or patients being monitored to assess the response to or efficacy of an FDA-approved osteoporosis drug therapy, with DXA being the gold standard and the only BMD technology for which WHO criteria for diagnosis of osteoporosis, originally for postmenopausal Caucasian women over age 65, can be used. Follow-up for treatment can be performed using DXA and QCT only and "should be performed at appropriate intervals as indicated." All other measurements are peripheral and for identifying individuals at risk for fracture and low BMD (pDXA, pQCT, SXA, QUS).

Hyperparathyroidism is an exception to routine BMD testing where the forearm is essential for diagnosis. Another exception is pediatric patients where DXA can measure spine, but total body calcium is preferred because it helps reduce the issue of following patients with growing bones. Guidelines from the American College of Obstetricians and Gynecologists (ACOG) from 2004 indicate that testing of bone mineral density should be performed on the basis of an individual woman's risk profile and is not indicated unless the results will influence a treatment or management decision. (21) The following guidelines were recommended:

- Bone mineral density testing should be performed on all postmenopausal women with fractures to confirm the diagnosis of osteoporosis and determine disease severity;
- Bone mineral density testing should be recommended to all postmenopausal women aged 65 years or older;
- Bone mineral density testing may be recommended to postmenopausal women younger than 65 years who have 1 or more risk factors for osteoporosis. (see below "Risk Factors for Osteoporotic Fracture in Postmenopausal Women"*);
- Bone mineral density testing may be useful for premenopausal and postmenopausal women with certain diseases or medical conditions and those who take certain drugs associated with an increased risk of osteoporosis.

American College of Obstetricians and Gynecologists (ACOG) recommends that in the absence of new risk factors, subsequent screening should not be performed more frequently than every 2 years. The usefulness of repeated screening will be greater in older women, those with lower

baseline bone mineral density, and those with numerous risk factors. For older women who have experienced an osteoporotic vertebral fracture, treatment may be given without bone mineral density measurement; although baseline bone mineral density testing may be useful to follow the effects of therapy. A nonvertebral fracture (e.g., hip or wrist) is, by itself, not an indication for treatment in the absence of low bone mineral density. Testing of bone mineral density in early postmenopausal women may be of value in helping women make a decision about preventive therapy; however, it cannot be justified on the basis of fracture reduction in the short term.

Guidelines from the American Association of Clinical Endocrinologists (AACE), published in 2003, indicate that in women who are at risk for postmenopausal osteoporosis, BMD measurement can accomplish the following (22):

- Establish the diagnosis of postmenopausal osteoporosis;
- Determine fracture risk;
- Identify candidates for intervention;
- Assess changes in bone mass over time in treated and untreated patients;
- Enhance acceptance of and adherence to treatment.

Specifically regarding serial BMD measurements, the AACE guidelines state that they are “useful for monitoring changes in bone mass. Each technique for evaluation of bone density has an inherent variability (that is, precision error) that must be considered when the clinical significance of BMD changes is assessed.....Until specific data about the most efficient use of BMD for monitoring become available, the following general guidelines for performing follow-up BMD measurements may be used:

- For patients with “normal” baseline BMD (T-score more than -1.0), consider a follow-up measurement every 3 to 5 years. Patients whose bone density is well above the minimal acceptable level may not need further BMD testing.
- For patients in an osteoporosis prevention program, perform a follow-up measurement every 1 to 2 years until bone mass stability is documented. After BMD has stabilized, perform follow-up measurements every 2 to 3 years.
- For patients on a therapeutic program, perform a follow-up measurement yearly for 2 years. If bone mass has stabilized after 2 years, perform a follow-up measurement every 2 years. Otherwise, continue with annual follow-up measurements until stability of bone mass is achieved.”

The American College of Rheumatology Ad Hoc Committee on Glucocorticoid-Induced Osteoporosis (2001) recommends obtaining a baseline measurement of BMD at the lumbar spine and/or hip when initiating long-term (i.e., >6 months) glucocorticoid therapy. (23) Longitudinal measurements may be repeated as often as every 6 months for monitoring glucocorticoid-treated patients to detect bone loss. In patients who are receiving therapy to prevent bone loss; annual follow-up measurements are probably sufficient.

The Institute for Clinical Systems Improvement (ICSI) recommends the bone density testing in individuals as follows (24):

- Prior fracture with minor trauma (fall from a standing height or less);
- Those who have been or are anticipated to be receiving glucocorticoid therapy for 3 more months at a dose equivalent to or greater than 5 mg prednisone per day;
- Radiographic osteopenia or vertebral deformity consistent with fracture;
- All women 65 year of age or older;

- Postmenopausal women less than age 65 with one of the following additional risk factors:
 - Body weight less than 127 lbs or a BMI of 20 or less;
 - History of nontraumatic fracture after age 45 in a first-degree relative;
 - Current smoker;
 - Not using hormone replacement therapy;
 - Surgical menopause, or natural menopause before age 40;
- Chronic diseases known to be associated with bone loss;
- Premenopausal women with amenorrhea greater than 1 year;
- Men with hypogonadism more than 5 years;
- Prolonged severe loss of mobility (unable to ambulate outside of one's dwelling without a wheelchair for greater than 1 year);
- Solid organ or allogeneic bone marrow transplant recipient;
- Medications for malignancy are likely to cause bone loss.

The 2007 International Society for Clinical Densitometry (ISCD) guidelines recommend bone density testing in the following patients (25):

- Women age 65 and older;
- Postmenopausal women under age 65 with risk factors for fracture;
- 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 with clinical risk factors for fracture;
- 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.

Study results suggest that routine bone mineral density monitoring within three years of starting bisphosphonates in postmenopausal women is not helpful, because nearly all these patients benefit from treatment, "the large variability associated with the measurement of bone mineral density obscures the true treatment response in the individual, which makes monitoring of bone mineral density unnecessary and potentially misleading. Bone mineral density monitoring after three years of treatment seems reasonable.

CODING

The following codes for treatment and procedures applicable to this policy are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

CPT/HCPCS

- | | |
|-------|--|
| 76977 | Ultrasound bone density measurement and interpretation, peripheral site(s), any method |
| 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)
- 77080 Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; axial skeleton (eg, hips, pelvis, spine)
- 77081 Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; appendicular skeleton (peripheral) (eg, radius, wrist, heel)
- 77082 Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; vertebral fracture assessment
- 77083 Radiographic absorptiometry (eg, photodensitometry, radiogrammetry), 1 or more sites
- 78350 Bone density (bone mineral content) study, 1 or more sites; single photon absorptiometry
- 78351 Bone density (bone mineral content) study, 1 or more sites; dual photon absorptiometry, 1 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)

DIAGNOSIS

- 203.00 Multiple myeloma, without mention of remission
- 203.01 Multiple myeloma, in remission
- 242.00 Toxic diffuse goiter without mention of thyrotoxic crisis or storm
- 242.01 Toxic diffuse goiter with mention of thyrotoxic crisis or storm
- 242.10 Toxic uninodular goiter without mention of thyrotoxic crisis or storm
- 242.11 Toxic uninodular goiter with mention of thyrotoxic crisis or storm
- 242.20 Toxic multinodular goiter without mention of thyrotoxic crisis or storm
- 242.21 Toxic multinodular goiter with mention of thyrotoxic crisis or storm
- 242.30 Toxic nodular goiter, unspecified without mention of thyrotoxic crisis or storm
- 242.31 Toxic nodular goiter, unspecified with mention of thyrotoxic crisis or storm
- 242.40 Thyrotoxicosis from ectopic thyroid nodule without mention of thyrotoxic crisis or storm
- 242.41 Thyrotoxicosis from ectopic thyroid nodule with mention of thyrotoxic crisis or storm
- 242.80 Thyrotoxicosis of other specified origin without mention of thyrotoxic crisis or storm
- 242.81 Thyrotoxicosis of other specified origin with mention of thyrotoxic crisis or storm
- 242.90 Thyrotoxicosis without mention of goiter or other cause without mention of thyrotoxic crisis or storm
- 242.91 Thyrotoxicosis without mention of goiter or other cause with mention of thyrotoxic crisis or storm
- 244.1 Other postablative hypothyroidism
- 244.2 Iodine hypothyroidism
- 244.3 Other iatrogenic hypothyroidism
- 244.8 Other specified acquired hypothyroidism
- 244.9 Unspecified hypothyroidism
- 252.00 Hyperparathyroidism, unspecified
- 252.01 Primary hyperparathyroidism
- 252.02 Secondary hyperparathyroidism, non-renal
- 252.08 Other hyperparathyroidism
- 253.4 Other anterior pituitary disorders
- 255.0 Cushing's syndrome

256.2 Postablative ovarian failure
256.31 Premature menopause
256.39 Other ovarian failure
257.2 Other testicular hypofunction
307.1 Anorexia nervosa
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
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
714.0 Rheumatoid arthritis
733.00 Osteoporosis, unspecified
733.01 Senile osteoporosis
733.02 Idiopathic osteoporosis
733.03 Disuse osteoporosis
733.09 Osteoporosis, 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
V07.4 Hormone replacement therapy (postmenopausal)
V42.0 Organ or tissue replaced by transplant, Kidney
V42.1 Organ or tissue replaced by transplant, Heart
V42.2 Organ or tissue replaced by transplant, Heart valve
V42.3 Organ or tissue replaced by transplant, skin
V42.4 Organ or tissue replaced by transplant, bone
V42.5 Organ or tissue replaced by transplant, cornea
V42.6 Organ or tissue replaced by transplant, lung
V42.7 Organ or tissue replaced by transplant, liver
V49.81 Asymptomatic postmenopausal status (age-related) (natural)
V58.65 Long-term (current) use of steroids
V58.69 Long-term (current) use of other medications
V82.81 Osteoporosis

REVISIONS

10-19-2009	<p>The Description section updated.</p> <p>The Policy section was updated. The previous policy language was:</p> <ol style="list-style-type: none"> 1. A baseline, central (not peripheral) bone density measurement is considered medically necessary if ONE of the following criteria (a. through g.) is met: <ol style="list-style-type: none"> a. ALL Postmenopausal (amenorrheic for longer than six (6) months) women under age 65 who have one or more risk factors for osteoporotic fracture (besides menopause) listed below: <ol style="list-style-type: none"> 1) Personal history of recent fracture 2) First degree relative with history of osteoporosis 3) Currently smokes tobacco 4) Excessive alcohol intake (history of or current use) b. All women aged 65 and older, regardless of additional risk factors c. Postmenopausal women (amenorrheic for longer than six (6) months) who are considering therapy for osteoporosis when results will facilitate treatment decisions. d. Repeat or follow-up central bone density measurement will be considered medically necessary if at least 23 months have passed since last bone density measurements. e. Primary hyperparathyroidism (male or female) f. Receiving long-term glucocorticoid therapy equivalent to or greater than 7.5 mg/day of prednisone, for three months or longer (male or female). g. Bone density measurement will be considered for the following conditions (male or female): <ol style="list-style-type: none"> 1) Anorexia nervosa 2) Calcitonin deficiency 3) Chemotherapeutic agents which affect bone density 4) Chronic renal failure 5) Chronic use of anti-convulsants (particularly Dilantin) 6) Chronic use of heparin 7) Cushing's Syndrome 8) Fragility fracture 9) Hypersecretion of calcitonin 10) Hyperthyroidism or Hypothyroidism 11) Hypogonadism 12) Lupron therapy in men 13) Malabsorption Syndromes 14) Malignancies (multiple myeloma) 15) Organ transplantation 16) Prolonged amenorrhea (six (6) months duration or longer) 17) Prolonged immobilization 18) Radiologic evidence of osteopenia 19) Rheumatoid arthritis 20) Untreated premature menopause 2. Bone density measurement is considered NOT medically necessary in the following: <ol style="list-style-type: none"> a. Routine screening for osteoporosis or osteoporosis risk when criteria above are not met. b. Individuals who do not intend to use hormonal or non-hormonal therapy c. When the results obtained will not influence treatment decisions. d. Peripheral bone density studies (77079, 77081, 76977 and G0130) e. Bone density measurements done at peripheral sites with tests such as peripheral dual-energy x-ray absorptiometry (pDEXA) of the forearm, radiographic absorptiometry of the phalanges, or ultrasound of the heel may not change reliably with treatment. Central measurements of the hip and spine are more predictive of fracture than peripheral sites.
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	<p>3. Osteopenia - Bone density Testing will be allowed if the doctor indicates osteopenia in the records or on the claim.</p> <p>4. Sahara Ultrasound System - Sahara Ultrasound System Bone density Testing system will be allowed once per year, based on the same criteria as the DEXA, utilizing Procedure Code 76977 (ultrasound bone density measurement and interpretation, peripheral site(s), any method). The procedure is applicable for the above Diagnosis Code.</p> <p>Procedure code 77080 is to be processed as preventive care. Categories of qualified individuals include ONE of the following:</p> <ul style="list-style-type: none"> • An estrogen-deficient woman at clinical risk for osteoporosis • An individual with vertebral abnormalities • An individual receiving long-term glucocorticoids (steroid) therapy • An individual with primary hyperparathyroidism, or • An individual being monitored to assess the response to or efficacy of an approved osteoporosis drug therapy. <p><u>UTILIZATION</u></p> <ol style="list-style-type: none"> 1. Coverage for follow-up bone mass measurements will be limited to only one measurement every two (2) years for members who receive coverage of bone mass measurements. 2. Follow-up bone mass measurements performed more frequently for pathological diagnosis may be covered when medically necessary. <p>The policy updates primarily pertained to the following:</p> <ul style="list-style-type: none"> ▪ More clearly identified men as eligible for BMD measurement and added criteria. ▪ Liberalized the risk factor criteria for which younger postmenopausal women are eligible for BMD measurement. ▪ Provides peripheral measurement of BMD in two situations, when the hip/spine or hip/hip cannot be done or the patient is over the table limit for weight and for hyperparathyroidism, where the forearm is essential for diagnosis ▪ Increased the repeat measurement time frame from "at least 23 months" to "(not more frequent than every 2-3 years)...when the information will affect treatment decisions such as duration of therapy" and "not more frequent than every 3-5 years, depending on patient risk factors...for individuals who previously tested normal". ▪ Removed indication of "Sahara Ultrasound System Bone Density Testing system will be allowed once per year, based on the same criteria as the DEXA...", on the 2003 decision of the Family Practice, OB/GYN, and Internal Medicine Liaison Committees to eliminate eligibility of peripheral bone density studies. <p>The Rationale section was added.</p> <p>In the Coding section:</p> <ul style="list-style-type: none"> ▪ Added CPT/HCPCS codes: 77079, 77081, 77083, 78350, G0130 ▪ Added Diagnoses codes: 244.8, 244.9, 627.2, 627.3, 627.8, 627.9, V07.4, V49.81, V58.69
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