

Corporate Medical Policy

Bone Mineral Density Studies

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Description of Procedure or Service

Bone mineral density (BMD) studies are non-invasive diagnostic tests that are used to measure the amount of minerals in bones. These studies are used to predict whether a person needs treatment to protect them from bone loss (osteoporosis) and whether they are at risk for fractures.

All patients at risk for osteoporosis should be counseled by their physician. Conservative measures for treating osteoporosis include adequate intake of calcium and vitamin D in their diet, exercise, avoidance of tobacco use and alcohol abuse. Pharmacological treatment should be utilized for those at increased risk for significant bone loss despite conservative measures.

BMD is one of the key determinations 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.

BMD can be measured in a variety of sites with a variety of techniques. The sites are subdivided into central sites (i.e., hip or spine) and peripheral sites (i.e., wrist, finger, heel). BMD measurements may predict fractures of fragile bones at all sites, however, the central measurements of the hip and spine are the most predictive and accurate. Fractures of the hip and spine (i.e., vertebral fractures) are the most clinically relevant fractures. Three (3) technologies are most commonly used to measure bone density. They are:

1. Dual-energy X-ray Absorptiometry (DXA)

DXA is probably the most commonly used technique to measure bone mineral density, 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 uses two x-ray beams of different energy levels to scan the region of interest and measure the attenuation as the beam passes through the bone. Low-energy beams experience greater attenuation than high-energy beams, and bone attenuates x-rays more than soft tissue. Based on this discrepancy, corrections for soft tissue can be made, which are particularly important due to the individual variability in soft tissue content around the hip and spine.

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 (US)

Ultrasound densitometry is a relative new technique for measuring BMD at peripheral sites, typically the heel. 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 accuracy of these methods is significantly less than either the DXA or QCT

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The above three techniques dominate BMD testing. Two other methods, single and dual photon absorptiometry and radiographic absorptiometry are now rarely used. In particular, dual photon absorptiometry may be considered obsolete.

NOTE: This policy does not address the use of DXA as a technique to screen for vertebral fractures. That application of DXA is addressed in a separate policy, RAD5159-Screening for Vertebral Fracture with Dual X-Ray Absorptiometry.

Policy

BCBSNC will provide coverage for Axial (Central) Bone Mineral Density (BMD) studies when they are determined to be medically necessary because the medical criteria and guidelines shown below are met.

Benefits Application

Please refer to certificate for availability of benefit. This policy relates only to the services or supplies described herein. Benefits may vary according to benefit design, therefore certificate language should be reviewed before applying the terms of the policy.

When Bone Mineral Density studies are covered

An initial (baseline) measurement of axial BMD by either DXA or QCT may be considered medically necessary to assess fracture risk and the need for pharmacologic therapy in women or men who are considered at risk for osteoporosis.

A. For the initial measurement of axial BMD, any of the following (1, 2, 3, 4, 5 or 6) must be met.

1. The patient is postmenopausal, aged 65 years or older regardless of additional risk factors.
2. The patient is estrogen deficient and is at clinical risk of osteoporosis. At risk means the patient has **at least 3** of the following demographic/physical characteristics
 - a. Female gender
 - b. Age \geq 40 years
 - c. Caucasian race
 - d. Inactive lifestyle
 - e. Low body weight (BMI < 22)
3. The patient has radiographic evidence of osteopenia anywhere in the skeleton.
4. The patient is at risk for osteoporosis because he or she is taking a medication that has the potential of reducing bone mineral density or causing osteoporosis. These include but are not limited to:
 - a. Glucocorticoids. The most commonly used glucocorticoids include prednisone, prednisolone, betamethasone, dexamethasone, and decadron.
 - b. Thyroid replacement therapy where the TSH level is chronically below the normal range.
 - c. Long-term phenytoin (Dilantin) therapy (greater than 3 months).
 - d. Long-term heparin therapy (greater than 1 month).
 - e. Long-term, Depo-Provera Contraceptive Injections (e.g., longer than 2 years)

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5. The patient has primary hyperparathyroidism.
 6. The patient has a history of low trauma fractures.
- B. **Peripheral bone density** using DXA or QCT is covered for a patient with a recent long bone fracture.
- C. **Follow up BMD studies** may be necessary to determine the effectiveness of the drug therapy when **one** of the following guidelines are met:
1. Patient has known osteoporosis ($T > -2.5$) and has been on drug therapy for 24 months, **or**
 2. When another treatment regime is added, a repeat study may be indicated 12-18 months later, **or**
 3. Monitoring patients on long-term glucocorticoid therapy of more than three months.

When Bone Density studies are not covered

- Bone mineral density studies are not covered if the criteria listed above are not met.
- Use of ultrasound to measure and interpret bone density at peripheral sites by any method is considered investigational. BCBSNC does not cover investigational services.
- For screening individuals who are at low risk for osteoporosis.
- Peripheral or appendicular bone density studies are not medically necessary except as noted above. They are not sensitive enough to make a diagnosis of osteoporosis. The ongoing predictive value of an appendicular (peripheral) bone density study is not sufficient to cover it as a screening test.

Policy Guidelines

Other factors to consider are as follows:

- ♦ The procedure must be ordered by a physician or qualified practitioner after a complete assessment of the patient's condition determines that a bone mass measurement is medically necessary.
- ♦ If diagnosis, frequency, or documentation does not support medical necessity, coverage will be denied.
- ♦ Bone mass measurement must be done with a device that has been approved by the FDA.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: 77078, 77079, 77080, 77081, 77083, 76977, 78350, 78351, G0130

Documentation requirements:

The need for bone mass measurement more frequently than every 2 years must have documentation defining the medical necessity. Documentation must include the complete medical record including previous bone densitometry study results and any other pertinent test findings, medication lists, and office notes. Letters summarizing the medical record may be useful, but are not considered adequate documentation.

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BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Policy Key Words

Key Words: Bone densitometry, Dual-photon, Single-photon, Bone Mineral Density Studies, Dual-Energy Radiographic Absorptiometry, Osteoporosis, Quantitative Computed Tomography, DEXA, DPA, SPA, QCT, Ultrasound (US), RAD5010

Medical Term Definitions

Scientific Background and Reference Sources

BCBSA Medical Policy Reference Manual

Physician Advisory Group - 1/25/96

American Association of Clinical Endocrinologists Clinical Guidelines, 1996.

“Screening for Postmenopausal osteoporosis”, Guide to clinical Preventive Services, 2nd Ed. Report of the U.S. Preventive Services Task force, 1996.

Consultant Review 11/18/97

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Medical Policy Advisory Group - 3/99

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TEC Evaluation - 1999; Tab 19

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TEC Assessment - 2002; Tab 5

Specialty Matched Consultant Advisory Panel - 8/2003

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BCBSNC Medical Policy Oversight Committee - 5/17/04

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Specialty Matched Consultant Advisory Panel - 8/25/05

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Specialty Matched Consultant Advisory Panel - 8/29/07

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Policy Implementation/Update Information

- 10/98 Policy revised. See policy (L)78350.ARC for policy prior to date.
- 1/99 Added new codes; deleted QUS; changed screening codes to not medically necessary; and DPA and US codes as investigational.
- 3/99 Medical Policy Advisory Group - 3/99
- 6/99 Reformatted, Description of procedure or service changed, Medical Term Definitions added.
- 12/99 Reaffirmed, Medical Policy Advisory Group
- 10/00 System coding changes.
- 9/01 Specialty Matched Consultant Advisory Panel review. Policy reformatted for ease of understanding. Ultrasound is listed as investigational. Policy key word added.
- 11/01 Title changed to Bone Mineral Density Studies.
- 9/02 System coding changes.
- 12/03 Specialty Matched Consultant Advisory Panel review 8/2003. Under "When Covered" section, A. added "or 5" to "any of the following" (1,2,3,4)"; Changed B. to C., B. now reads "Peripheral bone density is covered for a patient with a recent long bone fracture." Added CPT code 76071 to Billing/Coding section and removed HCPCS Level II codes G0131 and G0132 as they are no longer valid codes as of 12/31/02. Added "D" to "vitamin" in second paragraph, second sentence of "Description" section. Typos corrected.
- 8/12/04 Reference sources added.
- 7/7/05 Under When Covered section, A.3 - second sentence "These include:...." added...."but are not limited to:". Also added A.3.e - Long-term, Depo-Provera Contraceptive Injections (e.g., longer than 2 years)". Key word and Reference sources added.
- 9/1/05 Added reference to separate policy for screening for vertebral fracture with DXA under "Description" section. Under "When Covered", C. re: Follow up BMD added #3- "Monitoring patients on long-term glucocorticoid therapy of more than three months." Added reference source. Specialty-Matched Consultant Advisory Panel review - 8/25/05. Following review, under "When Covered", B. Peripheral bone density-added "using DXA or QCT".
- 1/17/07 CPT codes 77078, 77079, 77080, 77081 and 77083 effective January 1, 2007 added to Billing/Coding section. Removed deleted CPT codes 76070, 76071, 76075, 76076 and 76078.
- 10/8/07 Under "**When Covered**" section, changed "*those*" to "*women or men*"; also added "The patient is postmenopausal, aged 65 years or older regardless of additional risk factors." Reference sources added.

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.