Medical Coverage Policy | Bone Mineral Density Studies

EFFECTIVE DATE: 06|07|2011
POLICY LAST UPDATED: 10|01|2013

OVERVIEW
Bone density studies can be used to identify individuals with osteoporosis and 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 also available.

This policy is directed to those members whose coverage does not include a preventive benefit. Members whose coverage does include preventive benefits should follow the appropriate Preventive Services for Commercial Members or Preventive Services for BlueCHiP for Medicare policies.

MEDICAL CRITERIA
Not applicable

PRIOR AUTHORIZATION
Prior authorization review is not required.

POLICY STATEMENT
BlueCHiP for Medicare and Commercial Products
Bone densitometry testing, using DXA and computed tomography, is medically necessary for individuals considered at risk for osteoporosis, for those with a need to identify bone mass, detect bone loss, determine bone quality and to evaluate bone diseases and their response to treatment.

Bone density (bone mineral content) study, one or more sites; using single photon absorptiometry (SPA) or dual photon absorptiometry (DPA) is considered **not medically necessary** as there is insufficient peer-reviewed scientific literature that demonstrates that the procedure/service is effective.

BlueCHiP for Medicare
Ultrasound bone density measurement and interpretation and single energy X-ray absorptiometry is covered and not separately reimbursed only for BlueCHiP for Medicare members.

Commercial Products
Single energy X-ray absorptiometry is considered not medically necessary as there is insufficient peer-reviewed scientific literature that demonstrates the procedure/service is effective.

Note: Covered DXA services must be provided on a device capable of performing a central DXA and must include permanent image storage, interpretation and report.

COVERAGE
Benefits may vary between groups/contracts. Please refer to the Benefit Booklet, Evidence of Coverage, or Subscriber Agreement for applicable Diagnostic Imaging, Lab and Machine Tests benefits/coverage.

BACKGROUND
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 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 (i.e., Fosamax), selective estrogen receptor modulators (SERMs) such as raloxifene (i.e., Evista), the recombinant human parathyroid hormone teriparatide (Forteo), and calcitonin.

BMD 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.

There is evidence that bone mineral density measurements predict fracture risk and may be useful for individuals at increased risk of fracture who are considering pharmacologic therapy that would influence bone metabolism. The greatest amount of support is for central BMD measurements using DXA; other technologies such as ultrasound densitometry and quantitative computed tomography are not in common use for central BMD measurements.

Available evidence and the consensus of clinical evidence-based guidelines for serial or repeat measurement of BMD support at least a 2-year interval in BMD measurement to monitor response to pharmacologic therapy. 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.

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

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;
- Men age 70 and older, regardless of other risk factors;
- Younger postmenopausal women about whom there is a concern based on their risk factors;
- Men age 50-70 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.

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 to 5 years; the interval depends on patient risk factors.

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.

Medicare allows repeat testing not more frequently than every 2 years.

The following technologies for measuring BMD 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. It is unknown whether this technology can be used to predict response to pharmacologic therapy (ie, reduce fractures).

Single and dual photon absorptiometry (SPA and DPA) are now rarely used and may be considered obsolete, therefore, the services are considered not medically necessary.

CODING

The following CPT code is medically necessary for BlueCHiP for Medicare only, and not medically necessary for Commercial products:
76977

The following CPT code is covered but not separately reimbursed for BlueCHiP for Medicare members, and not medically necessary for Commercial products:
G0130

BlueCHiP for Medicare and Commercial Products
The following CPT codes are medically necessary:
77078
77080
77081
77085

The following CPT codes are considered not medically necessary:
78350
78351

RELATED POLICIES

Preventive Services for Commercial Members
Preventive Services for BlueCHiP for Medicare
Vertebral Fracture Assessment

PUBLISHED

Provider Update, February 2017
Provider Update, November 2015

Provider Update, August 2014
Provider Update, July 2013
Provider Update, April 2012
Provider Update, May 2011
Provider Update, June 2010

REFERENCES

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3. National Osteoporosis Foundation. Osteoporosis: Review of the evidence for prevention, diagnosis and treatment and cost-effectiveness analysis. Osteoporosis Int. 1998;8(suppl 4):1-88.
4. Gadam RK, Schlauch K, Izuora KE. Frax prediction without BMD for assessment of osteoporotic fracture risk. Endocr Pract. Sep-Oct 2013;19(5):780-784. PMID 24121261
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6. Johnell O, Kanis JA, Oden A, et al. Predictive value of BMD for hip and other fractures. J Bone Miner Res. 2005;20(7):1185-1194.
7. Berry SD, Samelson EJ, Pencina MJ, et al. Repeat bone mineral density screening and prediction of hip and major osteoporotic fracture. JAMA. Sep 25 2013;310(12):1256-1262. PMID 24065012
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9. Berger C, Langsetmo L, Joseph L, et al. Change in bone mineral density as a function of age in women and men and association with the use of antiresorptive agents. CMAJ. 2008;178(13):1660-1668.