



## Colorado Medicaid Benefit Coverage Standard

# BONE MASS MEASUREMENT

### Brief Coverage Statement

Osteoporosis is the consequence of continued bone loss throughout adulthood, low achieved peak bone mass, or both. Bone mass measurement (BMM) (previously bone mineral density testing) is a radiologic procedure performed for the purpose of quantifying bone mass, measuring changes in bone mass over time, or assessing bone quality. BMM can be used to establish the diagnosis of osteoporosis, to assess an individual's risk of fracture, or to determine the efficacy of osteoporosis drug therapy.

The following are risk factors for osteoporosis and osteoporotic fracture:

1. A prior fragility fracture,
2. Parental history of hip fracture,
3. Current tobacco smoking,
4. Long-term use of oral glucocorticoids,
5. Rheumatoid arthritis,
6. Secondary causes of osteoporosis,
7. Daily alcohol use of three or more units daily,
8. Advanced age (greater than 65),
9. Body habitus (weight less than 127 pounds or BMI less than or equal to 20),
10. Caucasian or Asian race,
11. Hypogonadism,
12. Sedentary lifestyle,
13. Diet deficient in calcium or vitamin D without adequate supplementation,
14. Increased likelihood of falling.

### Services Addressed in Other Benefit Coverage Standards

- None

### Eligible Providers

All providers must be enrolled with Colorado Medicaid.

#### PRESCRIBING PROVIDER

Physician  
Advanced Practice Nurse  
Physician Assistant

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### RENDERING PROVIDER

Physician

### Eligible Place of Service

1. Office
2. Clinic
3. Federally Qualified Health Center (FQHC)
4. Rural Health Center (RHC)
5. Outpatient Hospital
6. Ambulatory Surgery Center (ASC)
7. Skilled Nursing Facility

### Eligible Clients

Medicaid covers BMM when the medical record documents that the client meets the medical indications for at least one of the categories listed below.

1. A female client determined to be estrogen deficient and at clinical risk for osteoporosis based on medical history and other findings
2. A client with vertebral abnormalities, as demonstrated by an X-ray, that is indicative of osteoporosis, osteopenia, or vertebral fracture
3. A client at risk of osteoporosis due to long-term medication:
  - 3.1. Long-term (anticipated or actual) glucocorticoid therapy equivalent to 5.0 mg of prednisone, or greater, per day, for three months or greater
  - 3.2. Long-term or excess thyroid replacement therapy with evidence for hyperthyroidism
  - 3.3. Long-term anti-convulsant therapy for three months or greater
  - 3.4. Long-term heparin therapy for one month or greater
  - 3.5. Long-term Depo-Provera therapy (for two years or greater)
4. A client with primary hyperparathyroidism
5. A client being monitored to assess the response to or efficacy of an FDA-approved osteoporosis drug therapy
6. A client with a history of low trauma fracture
7. A female recipient 65 years of age or older
8. A male recipient 65 years of age or older
9. A client with other conditions, or on medical therapies, known to cause low bone mass



## Covered Services and Limitations

Bone density measurement with Dual-energy X-ray absorptiometry (DXA) is the accepted reference standard for diagnosing osteoporosis in men. Men who are at increased risk for osteoporosis are candidates for DXA. Little evidence about alternatives to DXA exists. The two most studied methods are quantitative ultrasonography, usually of the calcaneus (heelbone), and the osteoporosis self-assessment screening tool (OST). Available evidence indicates that neither alternative is sufficiently sensitive or specific at predicting DXA-determined bone mass to be recommended as a substitute for DXA.

### FOLLOW-UP TESTING

1. BMM is limited to one test every two years for individuals at risk for low bone mass (at least 23 months must have passed since the month the last covered BMM was performed).
2. An additional BMM may be covered more frequently than every 23 months for the following conditions:
  - 2.1. Long-term glucocorticoid therapy of 5.0 mg of prednisone or more per day of more than three months' duration;
  - 2.2. Long-term anticonvulsant therapy of more than three months' duration ;
  - 2.3. Monitoring with uncorrected primary hyperparathyroidism; or
  - 2.4. Follow up testing after commencing therapy.

### SEQUENTIAL TESTING

Sequential bone density testing using central DXA may be useful and is generally recommended in monitoring drug therapy for the treatment of osteopenia or osteoporosis. Ideally, such testing should be performed on the same machine as the pretreatment bone density and no more than every 12-24 months. A frequency as often as every 12 months may be indicated in the case of glucocorticoid treated patients or those on suppressive doses of thyroid hormone. Use for those who have discontinued estrogen and are not on another bone protective agent. The lumbar spine and the total proximal femur have the highest reproducibility and are the preferred sites for monitoring therapy. Changes in Bone Mineral Density (BMD) should only be reported as significant if they exceed the "least significant change" for the DXA center. Stability or increase in BMD indicates successful therapy. A significant decline in BMD may require further investigation.

A significant decrease in BMD on therapy may be due to:

1. Poor drug adherence
2. Improper medication administration technique in the case of bisphosphonates
3. A missed secondary cause of osteoporosis (e.g., hyperparathyroidism, malabsorption)
4. Inadequate calcium intake
5. Untreated vitamin D deficiency
6. A true treatment failure due to the drug itself

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### 7. Malabsorption of orally administered drugs

Further follow-up BMD testing after stability or improvement over three to four years has been demonstrated is recommended by most experts.

## Non-Covered Services and General Limitations

### NON-COVERED SERVICES

BMM is not covered when:

1. The client does not meet the requirements listed within this Benefit Coverage Standard;
2. The procedure unnecessarily duplicates another provider's procedure; or
3. The procedure is experimental, investigational, or part of a clinical trial.

### GENERAL LIMITATIONS

The following individuals are at low risk of low bone density and future fracture; bone density testing in general is not recommended:

1. Premenopausal women who have not had a fracture with minor trauma are not on chronic glucocorticoid therapy, do not have secondary amenorrhea, and do not have a chronic disease associated with bone loss.
2. Eugonadal men less than age 65 who have not had a fracture with minor trauma, are not on glucocorticoid therapy, and do not have any significant additional risk factors associated with bone loss.
3. Postmenopausal women under age 65 who have been on hormone replacement therapy since menopause and who do not have any significant additional risk factors.

## Prior Authorization Requirements

These services do not require Prior Authorization.

## Definitions

| Term                                   | Definition   |
|--|--|
| Dual-energy X-ray absorptiometry (DXA) | A means of measuring bone mineral density (BMD). Two X-ray beams with differing energy levels are aimed at the patient's bones. When soft tissue absorption is subtracted out, the BMD can be determined from the absorption of each beam by bone. Dual energy X-ray absorptiometry is the most widely used and most thoroughly studied bone density measurement technology. |



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| <b>Term</b>         | <b>Definition</b>   |
|---------------------|---|
| Glucocorticoids     | A hormone that predominantly affects the metabolism of carbohydrates.                                 |
| Hyperparathyroidism | Excessive production of parathyroid hormone (PTH) by the parathyroid glands.                          |
| Hypogonadism        | When the sex glands produce little or no hormones.  |
| Osteopenia          | Refers to BMD that is lower than normal peak BMD but not low enough to be classified as osteoporosis. |

### References

Qaseem A, Snow V, Shekelle P, Hopkins R Jr, Forciea MA, Owens DK, Clinical Efficacy Assessment Subcommittee of the American College of Physicians. Screening for osteoporosis in men: a clinical practice guideline from the American College of Physicians. *Ann Intern Med* 2008 May 6;148(9):680-4.

Institute for Clinical Systems Improvement. *Diagnosis and Treatment of Osteoporosis*. Sep. 2008 [www.icsi.org](http://www.icsi.org)

  
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Medicaid Director Signature

4/16/10  
Date