# Medical Policy

PARAMOUNT

HMO AND PPO
ELITE (MEDICARE ADVANTAGE)
MARKETPLACE

## Bone Density Measurements

Policy Number: PG0320
Last Review: 10/01/2024

**GUIDELINES:**

- This policy does not certify benefits or authorization of benefits, which is designated by each individual policyholder terms, conditions, exclusions, and limitations contract. It does not constitute a contract or guarantee regarding coverage or reimbursement/payment. Self-Insured group specific policy will supersede this general policy when group supplementary plan document or individual plan decision directs otherwise.
- Paramount applies coding edits to all medical claims through coding logic software to evaluate the accuracy and adherence to accepted national standards.
- This medical policy is solely for guiding medical necessity and explaining correct procedure reporting used to assist in making coverage decisions and administering benefits.

**SCOPE:**

X Professional
X Facility

**DESCRIPTION:**

Bone mass degeneration (osteoporosis) is a disease in which bones become brittle or fragile from loss of tissue. It may be a result of aging or associated with certain medical conditions (eg, diabetes) or clinical therapies (eg, corticosteroids). If undetected and left untreated, loss of bone mass may result in fractures. Risk factors include but are not limited to: history of fracture as an adult, history of fragility fracture in a first-degree relative, history of rheumatoid arthritis, body mass index less than 18.5 kg/m2 , current smoker, impaired vision, estrogen deficiency at an early age, hypogonadism or premature menopause (younger than 45 years), dementia, poor health/frailty, recent falls, chronic low calcium intake, low physical activity, increased alcohol consumption (more than 2 drinks per day), or medical conditions associated with increased osteoporosis risk (e.g., chronic obstructive pulmonary disease, gastrectomy, multiple myeloma, celiac disease, type I [insulin dependent] diabetes, osteogenesis imperfecta in adults, untreated long-standing hyperthyroidism, chronic malnutrition or malabsorption, chronic liver disease, androgen deprivation therapy for prostate cancer). Other risk factors for osteoporosis include certain endocrine, hematologic, gastrointestinal tract and genetic disorders, hypogonadal states, and medications.

Bone mineral density measurement (BMD) is a noninvasive technique used to assess bone mineralization. Quantitative measurement of bone mineral density is useful to detect the presence of osteopenia and osteoporosis, assist in the assessment of osteoporotic fracture risk, and monitor the response to therapy.

Bone mass measurement studies are radiologic, radioisotopic or other procedures that meet all of the following conditions:

- quantify bone mineral density, detect bone loss, or determine bone quality
- are performed with either a bone densitometer (other than single-photon or dual-photon absorptiometry) or a bone sonometer system that has been cleared for marketing for BMM by the Food and Drug Administration (FDA) under 21 CFR part 807, or approved for marketing under 21 CFR part 814
- include a physician's interpretation of the results

The following procedures are used to measure bone mineral density:

- Dual X-ray Absorptiometry (DXA) (CPT 77080 (central dual x-ray absorptiometry) and 77081 (peripheral))
- Radiographic absorptiometry (RA) (CPT 77085, 77086)
- Ultrasound Densitometry (peripheral ultrasound) (CPT 76977)
- Single and dual photon absorptiometry (CPT 78350, 78351)

- Single energy X-ray absorptiometry (SEXA (G0130))
- Quantitative Computed Tomography (QCT) (CPT 77078)

Dual x-ray absorptiometry (DXA) is 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. Earlier technologies, such as single and dual photon absorptiometry are rarely used, and dual photon absorptiometry is considered obsolete.

According to the World Health Organization, osteoporosis is defined based on the following bone density levels:

- A T-score within 1 SD (+1 or -1) of the young adult mean indicates normal bone density.
- A T-score of 1 to 2.5 SD below the young adult mean (-1 to -2.5 SD) indicates low bone mass.
- A T-score of 2.5 SD or more below the young adult mean (more than -2.5 SD) indicates the presence of osteoporosis.

The FRAX® tool (Fracture Risk Assessment) has been developed by World Health Organization Collaborating Centre for Metabolic Bone Diseases (Sheffield, United Kingdom) to evaluate fracture risk of patients. It is based on individual patient models that integrate the risks associated with clinical risk factors as well as BMD at the femoral neck. The FRAX models have been developed from studying population-based cohorts from Europe, North America, Asia, and Australia. In their most sophisticated form, FRAX is available on newer DEXA machines or with software upgrades that provide the FRAX scores on the bone density report. The FRAX tool is computer-driven and is available online. In addition, several simplified paper versions, based on the number of risk factors are also available, and can be downloaded for office use. The FRAX algorithms give the 10-year probability of fracture. The output is a 10-year probability of hip fracture and the 10-year probability of a major osteoporotic fracture (clinical spine, forearm, hip, or shoulder fracture).

Dual-energy X-ray Absorptiometry (DXA) of the lumbar spine and proximal femur (hip) provides accurate and reproducible BMD measurements at important sites of osteoporosis-associated fracture. BMD is compared to 2 norms—healthy young adults (T-score) and age-matched adults (Z-score). First, BMD result is compared with the BMD results from healthy 25- to 35-year-old adults of the same sex and ethnicity. The standard deviation (SD) is the difference between the BMD and that of the healthy young adults. This result is the T-score. Positive T-scores indicate the bone is stronger than normal; negative T-scores indicate the bone is weaker than normal. In general, the risk for bone fracture doubles with every SD below normal.

**POLICY:**

**Paramount Commercial Insurance Plans and Elite (Medicare Advantage) Plans**

- **Initial or repeat bone mineral density (BMD) measurement are indicated as medically necessary when the results will influence treatment decisions.**
- **Bone density measurements (76977, 77080, 77081, G0130) do not require prior authorization when the coverage criteria indicated below is met.**
- **Vertebral fracture assessment by dual-energy x-ray absorptiometry (DEXA) (77085. 77086) does not require prior authorization when the coverage criteria indicated below is met.**
- **Procedures 77089, 77090, 77091, 77092, 0508T , 0558T, 0743T, 0749T, 0750T, 0691T, are considered experimental/investigational/unproven/not medically necessary for Commercial Insurance Plans and Elite (Medicare Advantage) Plans**
- **Procedures 78350, 78351, 0554T, 0555T, 0556T, 0557T, are considered experimental/investigational/unproven/not medically necessary, therefore noncovered for Commercial Insurance Plans**
- **Procedures 78350, 78351, 0554T, 0555T, 0556T, 0557T follow Medicare coverage criteria, prior authorization required, InterQual for the Elite (Medicare Advantage) Plans**

**COVERAGE CRITERIA:**

**Paramount Commercial Insurance Plans and Elite (Medicare Advantage) Plans**

SCREENING

Paramount covers any of the following bone mineral density measurement testing methods as medically necessary as screening for osteoporosis:

- peripheral ultrasound (76977)
- central dual x-ray absorptiometry (DEXA) (77080)
- peripheral DEXA (77081)
- peripheral single energy x-ray absorptiometry (G0130)

For ANY of the following indications:

- female age ≥65 years; or
- postmenopausal women < 65 years of age who have one of the following risk factors:
    - Menopause, natural or surgical, before age 40
    - History of non-traumatic fracture after age 45 in a first-degree relative
    - Current smoker (one pack or more per day)
    - On no hormone replacement therapy OR on hormone replacement therapy greater than 10-15 years; or
- female < 65 years of age whose fracture risk is at least equal to that of an average risk 65-year-old female according to the FRAX (Fracture Risk Assessment) tool; or
- male age >50 years with at least one factor related to an increased risk of osteoporosis (i.e., low body weight, weight loss >10%, physical inactivity, corticosteroid use, androgen deprivation therapy, gonadal insufficiency (primary and secondary) (includes androgen suppression) and previous fragility fracture);or
- male aged 70 years or older.

Paramount covers computed tomography (CT) (77078) for bone mineral density measurement testing as medically necessary as screening for osteoporosis when DEXA scanner is unavailable or known to be inaccurate for ANY of the following indications:

- female age ≥65 years; or
- postmenopausal female < 65 years of age who have one of the following risk factors:
    - Menopause, natural or surgical, before age 40
    - History of non-traumatic fracture after age 45 in a first-degree relative
    - Current smoker (one pack or more per day)
    - On no hormone replacement therapy OR on hormone replacement therapy greater than 10-15 years; or
- female < 65 years of age whose fracture risk is at least equal to that of an average risk 65-year-old female according to the FRAX (Fracture Risk Assessment) tool; or
- male age >50 years with at least one factor related to an increased risk of osteoporosis (i.e., low body weight, weight loss >10%, physical inactivity, corticosteroid use, androgen deprivation therapy, gonadal insufficiency (primary and secondary) (includes androgen suppression) and previous fragility fracture);or
- male aged 70 years or older.

Paramount does not cover bone mineral density measurement for screening for osteoporosis for any other population because it is considered experimental, investigational, or unproven.

NON-SCREENING/MONITORING

Paramount covers any of the following bone mineral density measurement testing methods as medically necessary:

- peripheral ultrasound (76977)
- central dual x-ray absorptiometry (DEXA) (77080)
- peripheral DEXA (77081)
- peripheral single energy x-ray absorptiometry (G0130)

For ANY of the following indications, not all-inclusive listing:

- prior to and during pharmacologic treatment for osteoporosis; or
- prolonged use of medications associated with low bone mass or bone loss (e.g., anticonvulsants, heparin, lithium, gonadotropin-releasing hormone agonists); or
- child or adolescent with a disease process known to adversely affect the skeleton; or
- primary hyperparathyroidism; or
- celiac sprue; or
- known osteoporotic fracture; or
- history of pathologic fracture; or
- history of low-impact fracture; or
- vertebral abnormalities as demonstrated by an x-ray to be indicative of osteoporosis, osteopenia, or vertebral fracture; or
- adults (age 18 years and older) with spinal cord injury resulting in permanent motor or sensory dysfunction; or
- receiving (or expected to receive) systemic glucocorticoid therapy equivalent to prednisone at least 5 mg per day for greater than 3 months; or
- women with Turner syndrome.

Paramount does not cover non-screening/monitoring bone mineral density measurement for any other indication (e.g., evaluation of osteoporosis/osteoporotic fractures in persons with schizophrenia who are on anti-psychotic medications, and monitoring individuals who are on anti-depressive agents) because it is considered experimental, investigational, or unproven.

Paramount covers computed tomography (CT) (77078) for bone mineral density measurement testing as medically necessary when DEXA scanner is unavailable or known to be inaccurate for ANY of the following indications:

- multiple healed compression fractures; or
- significant scoliosis; or
- follow-up in cases where QCT was the original study; or
- obese individual over the weight limit of the DEXA exam table or BMI >35kg/m2; or
- extremes in body height (i.e., very large and very small individuals); or
- extensive degenerative disease of the spine; or
- a clinical scenario that requires sensitivity to small changes in trabecular bone density (parathyroid hormone and glucocorticoid treatment monitoring).

Peripheral (lower arm, wrist, finger, or heel) BMD testing may be considered MEDICALLY NECESSARY when conventional central (hip/spine) DXA screening is not feasible or in the management of hyperparathyroidism, where peripheral DXA at the forearm (i.e., radius) is essential for evaluation.

BMD measurement using ultrasound densitometry, quantitative computed tomography, or dual x-ray absorptiometry of peripheral sites does not support criteria of effectiveness in improving health outcomes and is considered investigational.

BMD assessments may be warranted more often than every 24 months in certain clinical situations. Repeat bone density measurement is considered medically necessary no earlier than one year following a change in treatment regimen, and only when the results will directly impact a treatment decision (i.e., monitoring long-term glucocorticoid (steroid) therapy or anticonvulsant therapy of more than 3 months duration, monitoring uncorrected primary hyperparathyroidism, pathologic conditions associated with low mass or increased bone loss.)

<u>VERTEBRAL FRACTURE ASSESSMENT/SCREENING</u>

Vertebral fracture assessment from dual-energy x-ray absorptiometry (DXA) (CPT 77085-77086) is considered

medically necessary and eligible for reimbursement, providing that at least one of the following medical criteria is met;

- Female aged 65 years and older or male aged 80 years and older, if T-score at the lumbar spine, total hip, or femoral neck is ≤ − 1.0; or
- Male aged 70 to 79 years if T-score at the lumbar spine, total hip, or femoral neck is ≤ − 1.5; or
- Postmenopausal female or male aged 50 years and older, with at least one of the following specific risk factors:
    - Fracture during adulthood (age 50 years and older); or
    - Historical height loss of 1.5 in. or more; or
    - Prospective height loss of 0.8 in. or more; or
    - Recent or ongoing long-term glucocorticoid treatment; or
    - Medical conditions associated with bone loss, such as hyperparathyroidism.

Paramount considers repeat BMD studies and/or vertebral fracture assessments using DXA as an adjunct to BMD performed more frequently than once every 24 months not medically necessary and not eligible for reimbursement.

Paramount considers radiological computer-assisted prioritization / artificial intelligence (AI) software (e.g., HealthVCF) not medically necessary to aid in the identification of vertebral compression fractures during computed tomography (CT) scanning of the chest or abdomen, as the software does not provide diagnostic information beyond triage and prioritization of radiological medical images, and should not be used in place of full member evaluation, or relied upon to make or confirm diagnosis.

SINGLE/DUAL PHOTON ABSORPTIOMETRY (SPA/DPA)

Single/dual photon absorptiometry (CPT 78350 and 78351) is rarely used and considered obsolete.

- Paramount will consider procedure 78350 and 78351 as noncovered experimental/investigational for Paramount Commercial Insurance Plans
- Paramount will consider procedure 78350 and 78351 to follow Medicare coverage criteria (InterQual) for Medicare Advantage Plans.

VERTEBRAL FRACTURE ASSESSMENT/SCREENING

- Bone strength and fracture risk assessment services using the following procedure codes (CPT Codes 0554T, 0555T, 0556T, 0557T, 0558T, 0743T, 0749T, 0750T) are considered experimental/investigational and not eligible for reimbursement for Paramount Commercial Insurance Plans
- Bone strength and fracture risk assessment services using the following procedure codes (CPT Codes 0558T, 0743T, 0749T, 0750T) are considered experimental/investigational and not eligible for reimbursement for Elite (Medicare Advantage) Plans
- Bone strength and fracture risk assessment services using the following procedure codes (CPT Codes 0554T, 0555T, 0556T, 0557T) to follow Medicare coverage criteria (InterQual) for Medicare Advantage Plans.

PULSE-ECHO ULTRASOUND

Pulse-echo ultrasound (eg, Bindex) (CPT 0508T) for bone mineral density measurement testing is considered experimental/investigational.

AGN1 LOCAL OSTEO-ENHANCEMENT PROCEDURE (LOEP)

Paramount does not cover AGN1 Local Osteo-Enhancement Procedure (LOEP) for any indication, is considered experimental/investigational for all product lines.

TRABECULAR BONE SCORE (TBS)

Trabecular bone score (eg, TBS iNsight) (CPT 77089 – 77092) for any indication is considered experimental/investigational.

**CODING/BILLING INFORMATION:**
**The appearance of a code in this section does not necessarily indicate coverage. Codes that are covered may have selection criteria that must be met. Payment for supplies may be included in payment for other services rendered.**

| CPT CODES | |
|---|---|
| **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 (e.g., hips, pelvis, spine) |
| **77080** | Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; axial skeleton (e.g., hips, pelvis, spine) |
| **77081** | Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; appendicular skeleton (peripheral) (e.g., radius, wrist, heel) |
| **77085** | Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more sites; axial skeleton (eg, hips, pelvis, spine), including vertebral fracture assessment |
| **77086** | Vertebral fracture assessment via dual-energy x–ray absorptiometry (DXA) |
| **77089** | Trabecular bone score (TBS), structural condition of the bone microarchitecture; using dual X ray absorptiometry (DXA) or other imaging data on gray scale variogram, calculation, with interpretation and report on fracture risk **[Considered Experimental/Investigational/Unproven**] |
| **77090** | Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical preparation and transmission of data for analysis to be performed elsewhere **[Considered Experimental/Investigational/Unproven]** |
| **77091** | Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical calculation only **[Considered Experimental/Investigational/Unproven**] |
| **77092** | Trabecular bone score (TBS), structural condition of the bone microarchitecture; interpretation and report on fracture risk only by other qualified health care professional **[Considered Experimental/Investigational/Unproven]** |
| **78350** | Bone density (bone mineral content) study, 1 or more sites; single photon absorptiometry [Rarely used and considered obsolete] **[Considered Experimental/Investigational/Unproven for Paramount Commercial Insurance Plans] [Medicare Advantage Plans to follow Medicare coverage criteria, InterQual**] |
| **78351** | Bone density (bone mineral content) study, 1 or more sites; dual photon absorptiometry, 1 or more sites [Rarely used and considered obsolete] **[Considered Experimental/Investigational/Unproven for Paramount Commercial Insurance Plans] [Medicare Advantage Plans to follow Medicare coverage criteria, InterQual**] |
| **0508T** | Pulse-echo ultrasound bone density measurement resulting in indicator of axial bone mineral density, tibia [**Considered Experimental/Investigational/Unproven]** |
| **0554T** | Bone strength and fracture risk using finite element analysis of functional data, and bonemineral density, utilizing data from a computed tomography scan; retrieval and transmission of the scan data, assessment of bone strength and fracture risk and bone mineral density, interpretation and report **[Considered Experimental/Investigational/Unproven for Paramount Commercial Insurance Plans] [Medicare Advantage Plans to follow Medicare coverage criteria, InterQual]** |
| **0555T** | Bone strength and fracture risk using finite element analysis of functional data, and bonemineral density, utilizing data from a computed tomography scan; retrieval and transmission of the scan data **[Considered Experimental/Investigational/Unproven for Paramount Commercial Insurance Plans] [Medicare Advantage Plans to follow Medicare coverage criteria, InterQual]** |
| **0556T** | Bone strength and fracture risk using finite element analysis of functional data, and bonemineral density, utilizing data from a computed tomography scan; assessment of bone strength and fracture risk and bone mineral density **[Considered Experimental/Investigational/Unproven for Paramount Commercial Insurance Plans] [Medicare Advantage Plans to follow Medicare coverage criteria, InterQual]** |
| **0557T** | Bone strength and fracture risk using finite element analysis of functional data, and bonemineral density, utilizing data from a computed tomography scan; interpretation and report **[Considered** |

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|---|---|
| | **Experimental/Investigational/Unproven for Paramount Commercial Insurance Plans] [Medicare Advantage Plans to follow Medicare coverage criteria, InterQual]** |
| **0558T** | Computed tomography scan taken for the purpose of biomechanical computed tomography analysis **[Considered Experimental/Investigational/Unproven]** |
| **0743T** | Bone strength and fracture risk using finite element analysis of functional data and bone mineral density (BMD), with concurrent vertebral fracture assessment, utilizing data from a computed tomography scan, retrieval and transmission of the scan data, measurement of bone strength and BMD and classification of any vertebral fractures, with overall fracture-risk assessment, interpretation and report **[Considered Experimental/Investigational/Unproven]** |
| **0749T** | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report; **[Considered Experimental/Investigational/Unproven]** |
| **0750T** | Bone strength and fracture-risk assessment using digital X-ray radiogrammetry-bone mineral density (DXR-BMD) analysis of bone mineral density (BMD) utilizing data from a digital X ray, retrieval and transmission of digital X-ray data, assessment of bone strength and fracture risk and BMD, interpretation and report; with single-view digital X-ray examination of the hand taken for the purpose of DXR-BMD **[Considered Experimental/Investigational/Unproven]** |
| **0691T** | Automated analysis of an existing computed tomography study for vertebral fracture(s), including assessment of bone density when performed, data preparation, interpretation, and report [**Considered Experimental/Investigational/Unproven]** |
| **HCPCS CODE** | |
| **G0130** | Single energy X-ray absorptiometry (sexa) bone density study, one or more sites; appendicular skeleton (peripheral) (e.g., radius, wrist, heel) |

**REVISION HISTORY EXPLANATION: ORIGINAL EFFECTIVE DATE: 07/14/2015**

| Date | Explanation & Changes |
|---|---|
| **07/14/15** | • Policy created to reflect most current clinical evidence per Medical Policy Steering Committee |
| **04/10/18** | • Policy reviewed and updated to reflect most current clinical evidence per Medical Policy Steering Committee |
| **12/21/2020** | • Medical policy placed on the new Paramount Medical Policy Format |
| **04/28/2022** | • Policy reviewed and updated to reflect most current clinical evidence<br>• Added the following noncovered procedure codes 0508T, 0554T, 0555T, 0556T, 0557T<br>• Added the new 2022 noncovered procedure codes 77089, 77090, 77091, 77092, 0691T, as noncovered; exception procedures 77089, 77090, 77091, 77092 are covered for the Advantage product |
| **07/08/2022** | • Clarified the coverage criteria indications for procedures 78350 and 78351 for each of the product lines. |
| **02/20/2023** | • Medical Policy updated to reflect Medicaid coverage to Anthem as of 02/01/2023 |
| **03/14/2023** | • Updated the medical policy to indicate Commercial Insurance Plans |
| **7/1/2023** | • Policy reviewed and updated to reflect most current clinical evidence<br>• Added noncoverage for AGN1 Local Osteo-Enhancement Procedure (LOEP) for all product lines. |
| **03/08/2024** | • Medical policy placed on the new Paramount Medical Policy Format |
| **10/01/2024** | • Policy reviewed and updated to reflect most current clinical evidence<br>• Procedures 78350, 78351, 0554T, 0555T, 0556T, 0557T follow Medicare coverage criteria, prior authorization required, InterQual for the Elite (Medicare Advantage) Plans |

**Paramount reserves the right to review and revise our policies periodically when necessary. When there is an update, we will publish the most current policy to** https://www.paramounthealthcare.com/providers/medical-policies/policy-library

**REFERENCES/RESOURCES**

Centers for Medicare and Medicaid Services, CMS Manual System and other CMS publications and services https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Internet-Only-Manuals-IOMs

American Medical Association, *Current Procedural Terminology (CPT®)* and associated publications and services https://www.ama-assn.org/amaone/cpt-current-procedural-terminology

Centers for Medicare and Medicaid Services, Healthcare Common Procedure Coding System, HCPCS Release and Code Sets https://www.cms.gov/Medicare/Coding/HCPCSReleaseCodeSets/HCPCS-Quarterly-Update

U.S. Preventive Services Task Force, https://www.uspreventiveservicestaskforce.org/uspstf/
Industry Standard Review

Hayes, Inc., https://www.hayesinc.com/

Industry Standard Review