Medical Policy

Bone Turnover Markers for Diagnosis and Management of Osteoporosis and Diseases Associated with High Bone Turnover

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- Policy: Medicare
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Policy Number: 549
BCBSA Reference Number: 2.04.15
NCD/LCD: National Coverage Determination (NCD) for Collagen Crosslinks, any Method (190.19)

Related Policies
- Bone Mineral Density Studies, #450
- Vertebral Fracture Assessment with Densitometry, #449

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity

Measurement of bone turnover markers in the diagnosis and management of osteoporosis is INVESTIGATIONAL.

Measurement of bone turnover markers in the management of patients with conditions associated with high rates of bone turnover, including but not limited to Paget’s disease, primary hyperparathyroidism and renal osteodystrophy is INVESTIGATIONAL.

Medicare HMO BlueSM and Medicare PPO BlueSM Members
BCBSMA covers urine-based collagen cross-links testing for the following indications, for Medicare HMO Blue and Medicare PPO Blue members in accordance with CMS NCD:
- Identify individuals with elevated bone resorption, who have osteoporosis in whom response to treatment is being monitored
- Predict response (as assessed by bone mass measurements) to FDA approved antiresorptive therapy in postmenopausal women, and
- Assess response to treatment of patients with osteoporosis, Paget’s disease of the bone, or risk for osteoporosis where treatment may include FDA approved antiresorptive agents, anti-estrogens or selective estrogen receptor moderators.

BCBSMA does not cover collagen cross-link assays in disorders where FDA restrictions indicate the test is not appropriate for Medicare HMO Blue and Medicare PPO Blue members in accordance with CMS NCD.
National Coverage Determination (NCD) for Collagen Crosslinks, any Method (190.19)

Prior Authorization Information
Pre-service approval is required for all inpatient services for all products.
See below for situations where prior authorization may be required or may not be required for outpatient services.
Yes indicates that prior authorization is required.
No indicates that prior authorization is not required.
N/A indicates that this service is primarily performed in an inpatient setting.

<table>
<thead>
<tr>
<th>Outpatient</th>
<th>Commercial Managed Care (HMO and POS)</th>
<th>This is not a covered service.</th>
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<tbody>
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<td></td>
<td>Commercial PPO and Indemnity</td>
<td>This is not a covered service.</td>
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<tr>
<td></td>
<td>Medicare HMO Blue&lt;sup&gt;SM&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>Medicare PPO Blue&lt;sup&gt;SM&lt;/sup&gt;</td>
<td>No</td>
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CPT Codes / HCPCS Codes / ICD Codes
Inclusion or exclusion of a code 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 as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.
The following CPT code is considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:

**CPT Codes**

<table>
<thead>
<tr>
<th>CPT codes</th>
<th>Code Description</th>
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<tr>
<td>82523</td>
<td>Collagen cross-links, any method</td>
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The following CPT code is considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

**CPT Codes**

<table>
<thead>
<tr>
<th>CPT codes</th>
<th>Code Description</th>
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<tr>
<td>83937</td>
<td>Osteocalcin (bone g1a protein)</td>
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Description
Bone turnover markers are biochemical markers of either bone formation or bone resorption. Assessment of bone turnover markers is proposed to supplement bone mineral density (BMD) measurement in the diagnosis of osteoporosis and aid in treatment decisions. Bone turnover markers could also potentially be used to evaluate treatment effectiveness before changes in BMD can be observed.

Bone turnover markers have been extensively researched in diseases associated with markedly high levels of bone turnover, such as Paget’s disease, primary hyperparathyroidism, glucocorticoid-induced osteoporosis, or renal osteodystrophy. There has been recent interest in the use of bone-turnover markers to evaluate age-related osteoporosis, a disease characterized by slow, prolonged bone loss, resulting in an increased risk of fractures at the hip, spine, or wrist.
Collagen cross-links are thought to be reliable markers of bone resorption because they are stable in serum and urine. In addition to collagen cross-links, alkaline phosphatase (ALP) is a commonly used marker due to its ease of measurement; however, it lacks sensitivity and specificity for detecting osteoporosis since only about half of the ALP activity is derived from bone.

This policy does not address the use of bone turnover markers with conditions such as hyperparathyroidism and renal osteodystrophy.

Examples of bone-turnover marker tests for the measurement of bone formation or bone resorption include the Ostase test from Beckman Coulter and the N-MID Osteocalcin One-Step ELISA from Osteometer Bio Tech. All bone-turnover marker tests for the measurement of bone formation or bone resorption are considered investigational regardless of the commercial name, the manufacturer or FDA approval status except as noted in the policy statement.

Examples of collagen cross-link tests for measurement of bone resorption include the Pyrilinks test from Metra Biosystems, the Osteomark test from Ostex International and the Serum Crosslaps One-step ELISA test. All collagen cross-link tests for measurement of bone resorption are considered investigational regardless of the commercial name, the manufacturer or FDA approval status except when used for the medically necessary indications that are consistent with the policy statement.

Summary
The literature suggests that bone turnover marker levels may be independently associated with osteoporosis and fracture risk in group of individuals. However, there is insufficient evidence that current methods for measuring bone turnover markers are sufficiently sensitive to reliably determine individual treatment responses. In addition, there is insufficient evidence from controlled studies that bone turnover marker measurement improves adherence to treatment or improves health outcomes such as reducing fracture rates. Thus, the use of bone turnover markers for the diagnosis and management of osteoporosis is considered investigational. There is insufficient evidence that measurement of bone turnover markers improves patient management or health outcomes in patients with conditions associated with high bone turnover including Paget's disease, primary hyperparathyroidism, and renal osteodystrophy. Thus, bone turnover marker testing for these other conditions is considered investigational.

Policy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>3/2018</td>
<td>New references added from BCBSA National medical policy.</td>
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<tr>
<td>11/2015</td>
<td>New references added from BCBSA National medical policy.</td>
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<tr>
<td>7/2015</td>
<td>Clarified coding information.</td>
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<tr>
<td>6/2014</td>
<td>Updated Coding section with ICD10 procedure and diagnosis codes, effective 10/2015.</td>
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<td>1/2014</td>
<td>New references added from BCBSA National medical policy.</td>
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<tr>
<td>11/2013</td>
<td>Added ICD-9 diagnosis code 256.9 to be in alignments with the NCD.</td>
</tr>
<tr>
<td>10/2013</td>
<td>Added ICD-9 diagnosis codes 252.00-252.02, 252.08 to be in alignment with the NCD.</td>
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Medical Technology Assessment Guidelines

References
