Degenerative Bone Disease

Do bone scans give you the whole picture?

Common causes:

- Vitamin D deficiency
- Parathyroid disease
- Chronic kidney disease
- Senile osteoporosis

The facts:

- Vitamin D deficiency, parathyroid disease, chronic kidney disease and senile osteoporosis all present the same on a bone scan.¹
- More than 50% of women being treated for osteoporosis have vitamin D deficiency.¹
- 20 million Americans have CKD, and 40% of those in stages 3-5 exhibit bone disease from secondary hyperparathyroidism.²³
- American Association of Clinical Endocrinologists guidelines support the use of biochemical bone markers to monitor osteoporosis therapy.⁴

Additional testing can help you identify underlying causes of degenerative bone disease.

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Test Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D, 25-Hydroxy, LC/MS/MS</td>
<td>902068</td>
</tr>
<tr>
<td>PTH, Intact and Calcium</td>
<td>102846</td>
</tr>
<tr>
<td>CTx – Collagen Type I C-Telopeptide</td>
<td>901960</td>
</tr>
<tr>
<td>NTx – Collagen Cross-Linked N-Telopeptide, urine (includes creatinine)</td>
<td>10922</td>
</tr>
<tr>
<td>NTx – Collagen Cross-Linked N-Telopeptide, 24-hour urine (includes creatinine)</td>
<td>90080</td>
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<tr>
<td>Calcitonin</td>
<td>9151</td>
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</tbody>
</table>
Diagnosis and monitoring of degenerative bone disease

Get a more complete picture.

As more patients present with degenerative bone disease, understanding and monitoring underlying causes is more important than ever.

25-Hydroxy vitamin D helps identify vitamin D deficiency, the most common cause of bone loss.

PTH helps determine if the cause of abnormal calcium levels is parathyroid disease.

eGFR helps check for CKD and is automatically included with any serum creatinine tests.

Calcium/Phosphorus helps identify senile osteoporosis.

NTx and CTx help monitor therapy for senile osteoporosis.

Bone mineral density scan reveals bone loss (T score of < -2.5)

Test:
25-Hydroxy vitamin D, CBC, Comprehensive Metabolic Profile with eGFR, Phosphorus, Urinary Calcium excretion

eGFR <60 mL/min/1.73m²

Is patient hypercalcemic?

NO

YES

Repeat creatinine with eGFR in 3 months to determine CKD

NO

YES

25-Hydroxy vitamin D <30 ng/mL

Consider vitamin D deficiency

Consider diagnosis of senile osteoporosis

Measure intact PTH to determine if parathyroid disease exists

NO

YES

Consider vitamin D deficiency

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For more information, please contact your Account Manager, or visit www.sonoraquest.com.

*This flow chart was developed by clinical experts at Quest Diagnostics Nichols Institute, from the UpToDate online medical textbook and Williams Textbook of Endocrinology, as a helpful reference to doctors in selecting tests to assist in their differential diagnosis of degenerative bone disease. This flow chart is not intended to provide medical advice nor replace the medical judgment of the ordering physician. The determination of tests to be ordered is at the sole discretion of the ordering physician.


