

Degenerative Bone Disease

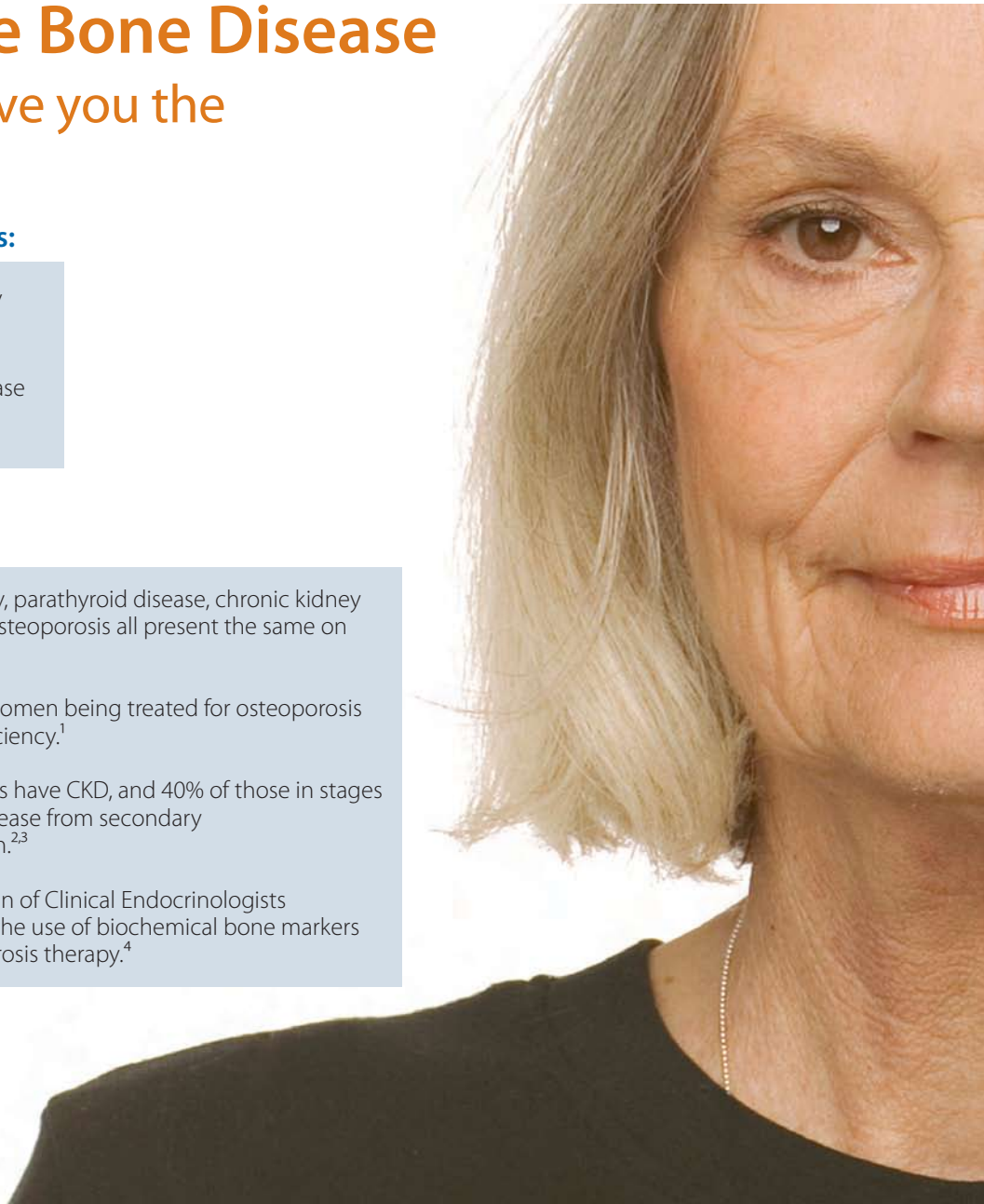
Do bone scans give you the whole picture?

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.^{2,3}
- 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.

Test Name:

- Vitamin D, 25-Hydroxy, LC/MS/MS
- PTH, Intact and Calcium
- CTx – Collagen Type I C-Telopeptide
- NTx – Collagen Cross-Linked N-Telopeptide, urine (includes creatinine)
- NTx – Collagen Cross-Linked N-Telopeptide, 24-hour urine (includes creatinine)
- Calcitonin

Test Code:

- 902068
- 102846
- 901960
- 10922
- 90080
- 9151



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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 loss¹

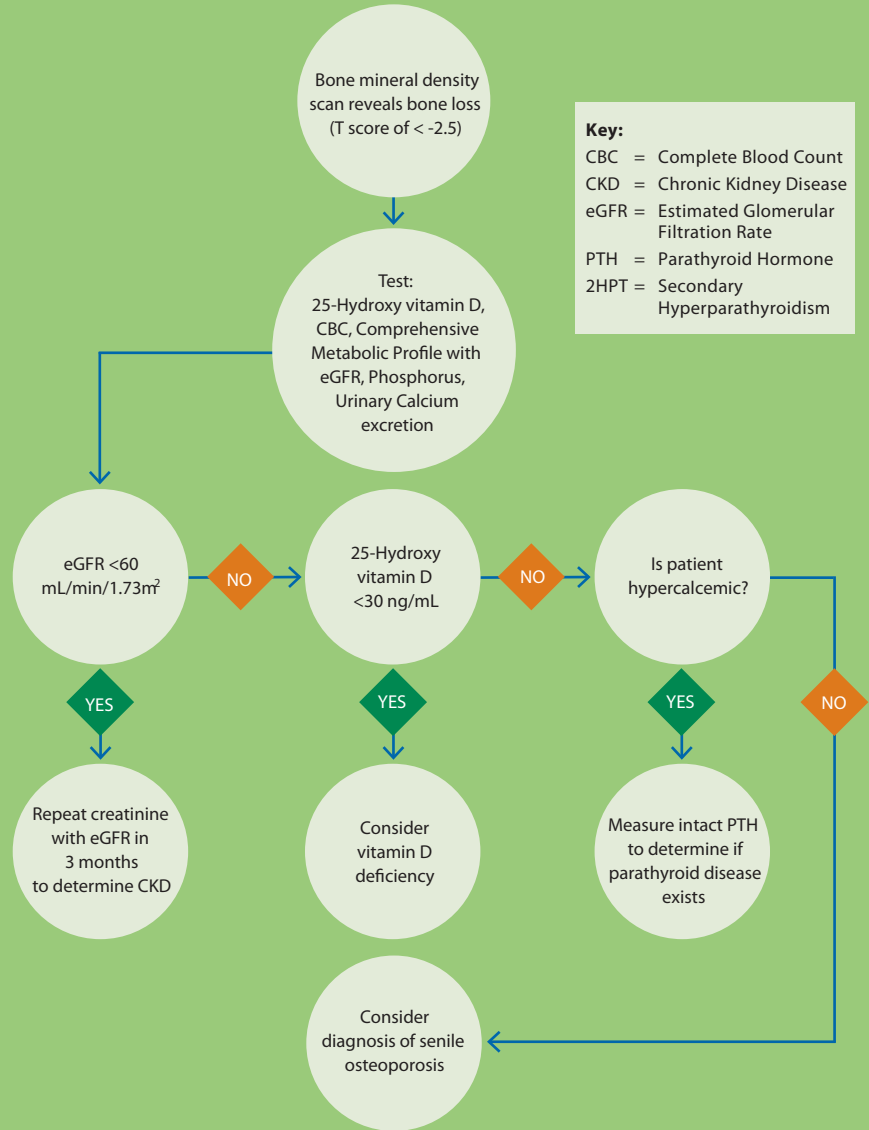
PTH helps determine if the cause of abnormal calcium levels is parathyroid disease

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

Differentiation of Degenerative Bone Disease*



Key:
 CBC = Complete Blood Count
 CKD = Chronic Kidney Disease
 eGFR = Estimated Glomerular Filtration Rate
 PTH = Parathyroid Hormone
 2HPT = Secondary Hyperparathyroidism

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

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*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.

- Holick M, et al. Prevalence of Vitamin D Inadequacy Among Postmenopausal North American Women Receiving Osteoporosis Therapy. *JCEM* 90(6):3215-3224.
- National Kidney Foundation. K/DOQI Clinical Practice Guidelines for Bone Metabolism and Disease in Chronic Kidney Disease. *Am J Kidney Dis* 42:S1-S202, 2003 (suppl 3).
- Andress DL. PTH in CKD Stages 3 and 4: The Need for Early Testing and Treatment. Improving Clinical Outcomes for Hemodialysis Patients in the International Dialysis Outcomes and Practice Pattern Studies (DOPPS). Program and Abstracts of the American Society of Nephrology Renal Week 2005; November 8-13, 2005; Philadelphia, Pennsylvania. www.medscape.com/viewarticle/520102; accessed October 23, 2007.
- American Association of Clinical Endocrinologists Medical Guidelines for Clinical Practice for the Prevention and Treatment of Postmenopausal Osteoporosis: 2001 Edition, with Selected Updates for 2003.

