BONESENSE on...

Tests to determine secondary causes of bone loss

Primary osteoporosis is associated with the normal loss of estrogen following the menopause as well as age. The average older woman with normal bone density loses about 13% of her bone density in 10 years or about 1.3% per year. However, there are a number of medical conditions and medications that can cause more rapid bone loss - the most common conditions are hyperparathyroidism, hyperthyroidism, vitamin D deficiency and celiac disease, and the most common medications are steroids and aromatase inhibitors. If you have low bone density, there may be other tests that your doctor will consider to determine if active bone loss is occurring. It is important to correct underlying causes before taking a treatment for osteoporosis.

What tests to expect

Your doctor will ask questions about your medical history and may prescribe blood or urine tests. This is especially important if you have had any broken bones. There are also tests that your doctor might request before determining what osteoporosis medicine to prescribe.

Standard blood panel

- ❑ Complete blood count (CBC)
- ❑ Chemistry levels (Calcium, renal function, phosphorus and magnesium)
- ❑ Liver function tests
- ❑ Thyroid-stimulating hormone (TSH) level
- ❑ Serum 25(OH)D level
- ❑ Parathyroid hormone (PTH)
- ❑ Total testosterone and gonadotropin levels in younger men

Blood tests for certain situations

- ❑ Serum protein electrophoresis (SPEP), serum immunofixation, serum free light chains
- ❑ Tissue transglutaminase antibodies
- ❑ Iron and ferritin levels
- ❑ Homocysteine
- ❑ Tryptase
- ❑ Bone-specific Alkaline Phosphatase

Urine tests

- ❑ 24-hour urinary calcium
- ❑ Urine NTx (N-linked peptide of type 1 collagen)

Urine tests for certain situations

- ❑ Protein electrophoresis (UPEP)
- ❑ Urinary free cortisol level
- ❑ Urinary histamine

BONESENSE on...

AMERICAN BONE HEALTH

Factors and medical conditions that cause bone loss and increase fracture risk

Lifestyle factors		
Alcohol > 3 drinks/day	High salt intake	Smoking (active or passive)
Low calcium intake	Not enough physical activity	Falling
Vitamin D insufficiency	Immobilization	Weight < 127 lbs
Excess vitamin A		

Genetic
Cystic fibrosis
Ehlers-Danlos
Gaucher's disease
Glycogen storage diseases
Hemochromatosis
Homocystinuria
Hypophosphatasia
Idiopathic hypercalciuria
Marfan syndrome
Menkes steely hair syndrome
Osteogenesis imperfecta
Parent history of hip fracture
Porphyria
Riley-Day syndrome

Low sex hormone
Androgen insensitivity
Anorexia nervosa and bulimia
Hyperprolactinemia
Premature menopause
Premature ovarian failure
Athletic amenorrhea

Endocrine
Adrenal insufficiency
Diabetes mellitus (Type 2)
Cushing's syndrome
Hyperparathyroidism
Central Adiposity
Thyrotoxicosis

Gastrointestinal
Celiac disease
Gastric bypass
GI surgery
Inflammatory bowel disease
Malabsorption
Pancreatic disease
Primary biliary cirrhosis

Central nervous system
Epilepsy
Multiple sclerosis
Parkinson's disease
Spinal cord injury
Stroke

Other conditions
AIDS/HIV
Alcoholism
Amyloidosis
Chronic metabolic acidosis
Chronic obstructive lung disease
Congestive heart failure
Depression
End stage renal disease
Hypercalciuria
Idiopathic scoliosis
Muscular dystrophy
Chronic metabolic acidosis
Post-transplant bone disease
Sarcoidosis
Weight loss

Hematologic disorders
Multiple myeloma
Thalassemia
Leukemia and lymphomas
Systemic mastocytosis
Hemophilia
Monoclonal gammopathies
Sickle cell disease

Rheumatologic and autoimmune diseases
Ankylosing spondylitis
Lupus
Rheumatoid arthritis