



Our Facility

We use a state of the art GE Lunar Prodigy densitometer with the capacity for vertebral fracture assessment (VFA).

If you, or your staff, are interested in trying this technology for yourself, please schedule with Patty von Gruening, our office manager.

She can also provide you with brochures, script pads or whatever other information you might need.

You can reach Patty at ext. 102.

Spruce Street Osteoporosis Center

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Secondary Causes of Osteoporosis

You Only Find What You Look For!

Secondary causes of osteoporosis include any comorbid condition or drug use that requires an intervention APART from a bone-active agent to increase the likelihood of successful prevention or treatment of osteoporosis, including: alteration in current therapies, additional prescriptive interventions, and lifestyle modifications.

Formerly, we used a Z-score of -2.0 to help identify patients in whom we should look for secondary causes. However, this has proven to be an unreliable indicator. Therefore, we should *consider* secondary causes in anyone for whom

- we are considering prescribing a bone active agent.
- Anyone with a significant loss of BMD on therapy
- Anyone fracturing on therapy.

How common?

Several studies have found that secondary causes contribute to almost half of identified cases of osteopenia and osteoporosis (Brown et al. 2002. J Bone Miner Res. **17**: 8261; Johnson et al, 1989. Arch Intern Med, **149**: 1069).

In Johnson's study of patients with osteoporosis, aged 34-86, diagnoses included: steroid use, premature menopause, low 25(OH) vitamin D, hyperthyroidism, rheumatoid arthritis, celiac disease, hyperparathyroidism, and multiple myeloma.

What labs to use?

Tannenbaum evaluated 173 *otherwise healthy women* and found hypercalciuria; malabsorption; hyperparathyroidism; vitamin D deficiency and exogenous hyperthyroidism to be the most common diagnoses. (2002. J Clin Endocrinol **87**:4431).

He looked at the yield of lab testing to identify secondary causes of osteoporosis in otherwise healthy women. **Four tests identified 92% of all disorders:**
serum calcium
25(OH) vitamin D
24 hour urine calcium
TSH in women receiving thyroid hormone

24 hour urine calcium: values > 250 mg/d for estrogen replete, and 300 mg/d for estrogen deficient women, should be considered abnormal. Values below 40 mg/d should also be considered unusual. (Heany et al, 1999. Osteoporosis Int **9**:13).

Keep in mind that **Celiac Disease** is under-diagnosed and is highly associated with osteopenia, osteoporosis and fractures. In symptomatic patients, the prevalence more than doubles (1/56) compared to asymptomatic patients (1/133), and doubles again (1/22), if there is a first degree relative identified (Fasano et al. 2003. Arch Intern Med: **10**:286).

In summary: To evaluate a healthy female patient with low bone mass: careful history and physical with initial lab studies for calcium, phosphorus, alk phos, albumin, creatinine CBC, 24 hour urine calcium, 25(OH) vitamin D (see newsletter 5- Jan 2005), TSH (in patients receiving exogenous thyroid hormone)

Second Tier lab studies: PTH, tTG or celiac panel, SPEP, UPEP.

Remember, You Only Find What You Look For!