

## Fragility Fracture Notification Letter

Dear \_\_\_\_\_,

Your patient, \_\_\_\_\_, has been identified as having a fracture type secondary to osteoporosis. He/she has a 2–5 fold increased risk of a subsequent major osteoporosis related fracture.

If he/she was an inpatient, the following was provided:

- **Started on vitamin D<sub>3</sub> (cholecalciferol) 2,000 units per day**, if not hypercalcemic.
- PT/OT consultation for assessment and instruction in fall and fracture risk reduction strategies/exercises.
- Nutrition consultation and instruction in a “healthy bones diet.”
- Nursing instruction and handout regarding life style factors and other osteoporosis risk factors.

*We recommend the following to optimize your patient’s skeletal health and prevent further osteoporosis related fractures:*

Ensure vitamin D (25) OH level > 30 ng/ml

- **Start vitamin D<sub>3</sub> (cholecalciferol) 2,000 units/day**. Alternatively, consider loading with ergocalciferol if vitamin D level is measured and is < 20 ng/ml. Avoid vitamin D supplementation in hypercalcemia, granulomatous disease (sarcoidosis,) and primary hyperparathyroidism. Vitamin D and calcium supplements can increase urinary stone formation in calcium oxalate nephrolithiasis.
- **Check vitamin D (25) OH level** 2–3 months following therapy initiation.
- Typical maintenance doses are vitamin D<sub>3</sub> 1,000 units oral daily (age < 65), 2,000 units oral daily (age > 65).
- Patients with severe vitamin D deficiency, chronic malnutrition, proteinuria, taking anticonvulsants, malabsorptive syndromes or obesity may need greater replacement and/or maintenance doses.

Ensure adequate calcium intake

- 1,200–1,500 mg/day from dietary sources is optimal (dairy = 300 mg/8 oz. serving).
- Supplemental calcium is poorly absorbed when PPI, H<sub>2</sub> blocker or iron therapy is given and when vitamin D levels are low. Dietary calcium has better bioavailability in these situations.
- Caution patients on Coumadin that Viactiv also contains vitamin K.

Ensure adequate protein intake

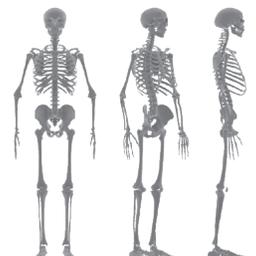
- Low protein intake is a risk factor for hip fracture.
- Protein supplementation has been shown to reduce mortality, shorten hospital stay and increase likelihood of return to independent living after hip fracture and can provide an additional source of calcium.
- 1 gm/kg/day protein is recommended.

Secondary causes of osteoporosis should be considered. Malabsorptive syndromes, anticonvulsants, lithium, steroids, cancer (esp. multiple myeloma), chronic kidney disease, liver diseases, primary hyperparathyroidism, hyperthyroidism, hypogonadism, multiple sclerosis, rheumatic diseases and many other conditions can cause osteoporosis.

Educate patient regarding modification of risk factors. Patients have received a handout on this.

- Avoid smoking, including secondary tobacco exposure.
- Reduce alcohol to < 3 drinks/day.
- Address fall risks including environmental factors and medications. Consider a home safety evaluation.
- Participate in regular exercise that includes core strength and balance training.

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Consider Bone Mineral Density (BMD) testing with DXA scan to measure disease severity and provide a baseline for future monitoring.

DXA bone density testing is available at:

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| • OSU Bone Density Lab, Gianni Maddalozzo, PhD | Fax: 737-2788 | • Phone: 737-6802 |
| • Samaritan Family Medicine                    | Fax: 768-5355 | • Phone: 768-5773 |
| • Samaritan Lebanon Community Hospital         | Fax: 451-7105 | • Phone: 451-7191 |
| • Samaritan North Lincoln Hospital             | Fax: 996-7308 | • Phone: 996-7145 |
| • Samaritan Pacific Communities Hospital       | Fax: 574-4701 | • Phone: 574-4710 |
| • Samaritan Valley Imaging Services, N. Albany | Fax: 812-5201 | • Phone: 812-5200 |
| • Spine Center NW/Todd Lewis, MD               | Fax: 757-7465 | • Phone: 757-7463 |
| • The Corvallis Clinic                         | Fax: 754-1269 | • Phone: 754-1373 |

The National Osteoporosis Foundation recommends initiation of treatment of postmenopausal women and men over age 50 with any of the following:

- A hip or vertebral fracture (regardless of T-score)
- T-score < -2.5 at the femoral neck, total hip, or spine after appropriate evaluation to exclude secondary
- Low bone mass (T-score between -1.0 and -2.5 at the femoral neck, total hip or spine) and any of the following:
  - ✓ Prior fracture after age 45 or 1st degree relative with fragility fracture
  - ✓ Secondary causes of low bone mass such as weight < 127 lbs or BMI < 20, current smoker, glucocorticoid use, prolonged immobility
  - ✓ 10-year probability of hip fracture  $\geq$  3% or a 10-year probability of major osteoporosis-related fracture  $\geq$  20% based on the US-adapted WHO algorithm (FRAX™)\*

Current FDA-approved pharmacologic options for osteoporosis prevention and treatment include:

- Bisphosphonates (Aledronate, Ibandronate, Risedronate, Zoledronate)—**vitamin D (25) OH level should be > 30 ng/dl prior to therapy initiation.** Consider IV route if unable to tolerate oral. There are differences among drugs, but overall can reduce fracture rates by 30–50% over subsequent 5–10 years. Adequate calcium and vitamin D levels must be maintained during therapy.
- Calcitonin—nasal, subcutaneous and oral routes available.
- Estrogen/hormone therapy—because of the risks, ET/HT should be used at the lowest effective doses for the shortest duration to achieve treatment goals. When considered solely for osteoporosis treatment, the FDA recommends that non-estrogen treatments be considered first.
- Estrogen agonist/antagonist (Raloxifene)—has been shown to reduce vertebral spine fractures. Beware of increased risk of DVT. Drug is contraindicated in high risk patients.
- Parathyroid hormone (teriparatide (Forteo))—may be indicated for men and women at high risk.

There may be instances when referral may be helpful. Endocrinology referral is suggested for patients with osteoporosis who cannot tolerate bisphosphonate therapy, those considered for teriparatide, or patients with other difficult management issues. Patients with chronic kidney disease with GFR < 30 ml/min should be referred to nephrology for metabolic bone disease management.

\*The FRAX™ fracture risk screening tool should be used for postmenopausal women and men over age 50 to aid in treatment decisions ([www.shef.ac.uk/FRAX](http://www.shef.ac.uk/FRAX)). This is an easy to use, Web-based algorithm endorsed by the World Health Organization that gives a 10-year absolute risk prediction for hip and major osteoporosis-related fractures based on validated risk factors. The calculation can be done with or without a T-score. A United States-specific cost analysis has shown that treatment was cost effective when either the 10-year hip fracture probability reached 3% or the major osteoporosis fracture probability reached 20%.

Useful Links:

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| National Osteoporosis Foundation               | <a href="http://www.nof.org">www.nof.org</a>                     |
| International Osteoporosis Foundation          | <a href="http://www.iofbonehealth.org">www.iofbonehealth.org</a> |
| International Society of Clinical Densitometry | <a href="http://www.iscd.org">www.iscd.org</a>                   |

For more information about Early intervention for fracture prevention and building bones for life, go to:

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| <a href="http://www.samhealth.org/bonesforlife">www.samhealth.org/bonesforlife</a> | <a href="http://www.corvallisclinic.com/bonesforlife">www.corvallisclinic.com/bonesforlife</a> |
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