Bone Density Testing

What is Osteoporosis?
Osteoporosis is a disease that causes bones to become thinner. Thin bones can break easily. Most people think of their bones as being solid like a rock. Actually, bone is living tissue, just like other parts of the body, such as your heart, brain, or skin. Bone just happens to be a harder type of tissue. Bone is always changing. Your body keeps your bones strong and healthy by replacing old bone with new bone.

Osteoporosis causes the body to remove more bone than it replaces. This means that bones get weaker. Weak bones are more likely to break. Osteoporosis is a bone disease that is quite common in women after menopause. At first, osteoporosis has no symptoms, but people with osteoporosis may develop loss of height and are more likely to break (fracture) their bones, especially the back (spine), wrist, and hip bones. Osteoporosis can be prevented, and with proper therapy it can be treated.

Bone Density Testing at Los Olivos Women's Medical Group
Los Olivos offers DXA bone density testing to patients at risk for osteopenia and osteoporosis. It is generally recommended for all women who are menopausal to have their bone density measured every two years.

If you would like to have your bone density tested, please discuss this with your physician. Please call your **receptionist** or the Los Olivos operator to schedule your appointment.
You must have a request slip from your physician to have the test.

Prior to the test, please fill out the **Bone Density Questionnaire**. If you have Medicare as your insurance, you must also sign an **Medicare ABN form**.

BMD measurement can be used to establish or confirm a diagnosis of osteoporosis and predict future fracture risk. BMD has a continuous, graded, inverse relationship to the risk of fracture: the lower the BMD, the greater the fracture risk. Many individuals have slight builds, and their BMD will generally be lower.

Measurements of BMD at any skeletal site have value in predicting fracture risk. A variety of densitometers are in clinical use and provide reliable assessment of fracture risk. However, hip BMD is the best predictor of hip fractures, and it predicts fractures at other skeletal sites. Thus, the recommendations made here are based on measurements of the hip.

Defining Osteoporosis by BMD
The World Health Organization has established the following definitions based on bone mass measurement at the spine, hip, or wrist in white postmenopausal women:

- Normal: BMD is within 1 SD of a "young normal" adult (T-score at -1.0 and above)
- Osteopenia: BMD is between 1 and 2.5 SD below that of a "young normal" adult (T-score between -1 and -2.5)
- Osteoporosis: BMD is 2.5 SD or more below that of a "young normal" adult (T-score at or below -2.5). Women in this group who have already experienced one or more fractures are deemed to have severe or "established" osteoporosis.

Although these definitions are necessary to establish the prevalence of osteoporosis, they should not be used as the sole determinant of treatment decisions.

Who should be tested?
The decision to test for BMD should be based on an individual's risk profile, and testing is never indicated unless the results could influence a treatment decision.

BMD testing should be performed on:

- All women aged 65 and older regardless of risk factors. Medicare covers BMD
- Younger postmenopausal women with one or more risk factors (other than being white, postmenopausal, and female).
- Postmenopausal women who present with fractures (to confirm diagnosis and determine disease severity). Estrogen deficient women at clinical risk for osteoporosis
- Individuals with vertebral abnormalities
- Individuals receiving, or planning to receive, long-term glucocorticoid (steroid) therapy
- Individuals with primary hyperparathyroidism
- Individuals being monitored to assess the response or efficacy of an approved osteoporosis drug therapy

BMD testing technique
Dual x-ray absorptiometry (DXA). DXA can be used to measure BMD in the spine, hip, or wrist, the most common sites for osteoporotic fractures. A DXA measurement can be completed in a few minutes with radiation exposure that is approximately one tenth that of a standard chest x-ray. Hip BMD is the best predictor of hip fracture risk. Central DXA of the hip and/or spine is the preferred measurement for definitive diagnosis.

How can osteoporosis and fractures be prevented?

Calcium: Increasing dietary calcium is the first-line approach, but calcium supplements should be used when an adequate dietary intake cannot be achieved. Postmenopausal American women typically consume about 600 mg per day of calcium in their diets. It is recommended that a total of 1000 mg per day be ingested if also using estrogen and 1200 mg per day if on no hormone replacement therapy.

Vitamin D: Vitamin D plays a major role in calcium absorption and bone health. It is recommended to ingest 400 IU per day of Vitamin D.

Regular weight-bearing exercise: Exercise reduces the risk of falls and fractures. Among its many health benefits, weight-bearing and muscle-strengthening exercise can improve agility, strength, and balance, which may reduce the risk of falls. In addition, exercise may increase bone density modestly.

Fall prevention: In addition to exercise as described above, strategies to reduce risk of falling include, but are not limited to, checking and correcting vision and hearing, evaluating any neurological problems, reviewing prescription medications for side effects that may affect balance and stability and providing a check list for improving safety at home. Wearing undergarments with hip protectors (brands: Safehip®, HIPS®, HipGuard®, ImpactWear®) may protect an individual from injuring the hip in the event of a fall.

Restriction of alcohol and tobacco: The use of tobacco products is detrimental to the skeleton as well as to overall health. Moderate alcohol intake has no known negative effect on bone and may even be associated with slightly higher bone density and lower risk of fracture in postmenopausal women. However, excessive alcohol intake is detrimental to bone health and requires treatment when identified.