What is it?
Bone is constantly in the process of remodeling, breaking down and then reforming. Osteoporosis is a bone disease that leads to less bone formation as well as poor bone quality. The major problem with osteoporosis is an increased risk of weak bones that are more likely to break (fracture). Aging is associated with the development of osteoporosis. This kind of bone loss is called primary osteoporosis, and it is more common in women after menopause. Secondary osteoporosis, due to an underlying disease or medication, can occur in men and women equally at any age.

Who is at Risk?
Risk factors for osteoporosis include female gender, advanced age, low body weight, long term steroid medication (glucocorticoids) use such as use of prednisone, cigarette-smoking, rheumatoid arthritis, excessive alcohol intake, other endocrine disorders (for example, diabetes, hyperthyroidism, and malabsorption), certain ethnicities (e.g. Caucasian race), and nutrition or hormonal deficiencies (for example, low calcium, vitamin D, and low estrogen). Young athletes with low energy availability, where the amount of energy used during exercise is more than the amount of energy ingested through food, may also be at risk for osteoporosis. Females with abnormalities in their menstrual cycle, which may lead to low estrogen levels, are at risk for osteoporosis.

Symptoms
Osteoporosis doesn’t have symptoms, and most patients do not know they have it until they have broken bones. These fractures are often at unexpected sites, like the spine, hips, and wrists, and from unexpected, minor injuries. Patients with osteoporosis often break bones that others would not because their bones are weaker and more brittle due to their bone loss. This is why screening and additional diagnostic tests are important.

Sports Medicine Evaluation
To diagnose osteoporosis, a Sports Medicine specialist may order a dual-energy X-ray absorptiometry (DEXA) test to evaluate a person’s bone mineral density. This result, given as “T” or “Z” scores, provide a value in comparison to healthy and age-matched controls. A result that is positive is normal, one that is between -1.1 and -2.4 is considered “osteopenic,” and one that is less than -2.5 is considered “osteoporotic.” The bone density result, along with any clinical history of fractures, helps to make the diagnosis. A Sports Medicine Specialist may order blood tests to look for reasons behind the osteoporosis. In the evaluation, the physician should take a detailed diet and exercise history to evaluate for energy availability as well.
**Sports Medicine Treatment**
The physician will likely talk to patients about the recommended amount of calcium and vitamin D to be taking daily, along with the type of exercise that can help prevent additional bone loss as well as risk for fracture. Sometimes medications are prescribed, like bisphosphonates, to help reduce the risk of fractures in men and postmenopausal women. These are not indicated in women of childbearing age.

**Injury Prevention**
To prevent bone loss, it is important to engage in weight-bearing, moderate-impact activities (like walking or jogging), and strength training. Exercises that help with balance and coordination are also an important aspect of preventing falls, and thus, preventing fractures. Smoking cessation and drinking alcohol only in moderation also helps prevent additional bone loss.

**Return to Play**
In general, there are no restrictions to athletic participation in patients with osteoporosis. Weightbearing exercises are encouraged as treatment. For patients who had a fracture, complete healing, and likely some rehabilitation, is needed before returning to their usual activities.

**References:**


**STAGES OF OSTEOPOROSIS**

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AMSSM is a multi-disciplinary organization of sports medicine physicians dedicated to education, research, advocacy and the care of athletes of all ages. The majority of AMSSM members are primary care physicians with fellowship training and added qualification in sports medicine who then combine their practice of sports medicine with their primary specialty. AMSSM includes members who specialize solely in non-surgical sports medicine and serve as team physicians at the youth level, NCAA, NFL, MLB, NBA, WNBA, MLS and NHL, as well as with Olympic teams. By nature of their training and experience, sports medicine physicians are ideally suited to provide comprehensive medical care for athletes, sports teams or active individuals who are simply looking to maintain a healthy lifestyle. Find a sports medicine physician in your area at www.amssm.org.