



Osteoporosis: the silent thief



GUEST CORNER

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Osteoporosis is a progressive bone disease that is characterized by a decrease in bone quality and density, and which leads to about 8.9 million fractures annually. It is also considered to be a “silent disease” because it typically does not cause any noticeable symptoms until a bone fracture occurs, which underscores the importance of creating awareness and taking preventive measures.

UNDERSTANDING OSTEOPOROSIS AND BONE LOSS

Healthy bones are made up of living, growing tissue, and include the following components:

- Bone cells:**
 - Osteoblasts:** Responsible for bone formation and facilitate the mineralization process.
 - Osteoclasts:** Involves bone resorption and releasing minerals, primarily calcium, into the bloodstream.
 - Osteocytes:** Mature bone cells that play a critical role in maintaining bone health and regulating bone remodeling.
- Bone matrix:**
 - Composed primarily of collagen fibers which provide tensile strength and flexibility.
 - Non-collagenous proteins and other organic materials, which help the mineralization and overall structure.
- Minerals:**
 - The primary mineral in bone is hydroxyapatite (mainly calcium and phosphate). This mineral component gives bones their hardness and strength.

OSTEOPOROSIS RISK GROUPS

If you are in one of the following groups of individuals, you have a higher risk of developing Osteoporosis:

- Older adults;
- Post-menopausal women due to hormonal changes, especially reduced estrogen;
- Experience deficiencies in calcium or vitamin D;
- Have a family history of osteoporosis or broken bones;
- Have smaller body frames due to less body mass;
- Live a sedentary lifestyle; or
- Are excessive smokers or alcohol consumers.

OSTEOPOROTIC BONE

As old bone tissue dies, our bodies constantly make new, strong bone tissue. In osteoporosis, the balance between bone resorption and bone formation is disrupted: old bone is not replaced by new bone fast enough, causing a decrease in bone mass and bone density. Bones affected by osteoporosis are made up of the same basic components as healthy bones (cells, matrix, and minerals), but they have significantly reduced density and compromised structural integrity due to the imbalance in bone remodeling. Over time, bones become porous and

brittle and may fracture easily, even from bending, coughing, lifting light objects or a minor fall.

SYMPTOMS OF OSTEOPOROSIS

Osteoporosis is often asymptomatic until a fracture occurs. Potential initial signs may include:

- Height loss;
- A stooped over posture;
- Sudden severe back pain due to compression fractures;
- Brittle nails due to lack of calcium; and/or
- Receding gums.

STAGES OF OSTEOPOROSIS

Medical imaging measuring bone mineral density and body composition (DEXA scan) is measured in T-scores: T-score is the difference between your bone mineral density and 0 (bone mineral density in a healthy young adult):

- Age 20-40 normal bone: the balance between bone breaking down and new tissue forming – T-score 0 to -1.00.
- Osteopenia: none loss begins to outpace bone growth. Bones are weaker than average but not fragile. May be asymptomatic and only diagnosed with bone density screening test – T-scores vary -1 to -2.5.
- Osteoporosis: may still be asymptomatic but symptoms of height loss, brittle nails, easy fractures may show - T-scores -2.5 or lower.
- Severe osteoporosis: severe bone loss may cause spinal deformities stooped over posture (Kyphosis) and pain with daily activities.

Osteoporosis may sound like a daunting diagnosis, but it doesn't have to dictate the quality of life for those affected. With proactive management, individuals can take significant strides in enhancing their bone health and overall well-being.

PREVENTION AND MANAGEMENT OF OSTEOPOROSIS

- Diet:** a balanced diet rich in calcium and vitamin D can fortify bone health.
- Exercise:** weight-bearing, strength-training, flexibility and balance exercises can help build bone density and prevent falls.
- Lifestyle choices:** avoiding tobacco and limiting alcohol can reduce risks.
- Bone density testing:** regular screening can help in early detection and management.

The roll of physical therapy in preventing and managing osteoporosis

Physical therapy assists in rehabilitation after a fracture, but also focuses on preventive strategies and offers a dynamic approach to build strength, improve balance, and promote overall bone health.

Physical therapists will evaluate your overall fitness, strength, range of motion and flexibility levels and create a customized program that targets strengthening the support muscles of the spine, hips, core, diaphragm, and pelvic floor area, such as:

- Weight-bearing aerobic exercises which involve doing aerobic exercises on your feet, with your bones supporting your weight to encourage bone strengthening.

- Strength training programs that include the use of free weights, resistance bands or your own body weight to strengthen muscles, tendons and bones. Strength training is helpful to build postural muscles, support bone density, and promote muscle stability for joint support.

- Balance training programs to prevent falls are especially important for people with osteoporosis. Stability and balance exercises improve muscle memory which makes falls less likely.

- Flexibility exercise programs to move joints through their full range of motion which help muscles use their full length in daily activities. Stretches should be done gently and slowly, without bouncing.

- Instruction in breathing exercises because osteoporosis can contribute to postural problems that could compromise lung functions. The exercise program targets the intercostals and diaphragm muscles to stabilize the back which, in turn, supports breathing and lung functions.

- Postural training and education programs for safe moving techniques. Good posture is essential in minimizing the risk of spinal fractures.

- Functional mobility training programs to enhance day-to-day mobility to maintain independence while reducing fall risks.

EMPOWERING HEALTHY LIVING THROUGH MOVEMENT

Osteoporosis may be a challenging diagnosis, but it's not insurmountable. You can reclaim your strength and confidence, and make strides toward a healthier, more active life.

Don't wait for a fracture to take action. Consult with a physical therapist to get started on your journey to stronger bones and a more robust life. Remember, when it comes to osteoporosis, every step counts!

Please contact your healthcare provider or physical therapist for any advice.

* <https://pubmed.ncbi.nlm.nih.gov/29184511> and <https://www.healthline.com/health/fitness/explosive-workouts>

** <https://pubmed.ncbi.nlm.nih.gov/7825481>

*** <https://humanperformancealliance.org/playbook/how-to-maintain-muscle-power-as-we-age>

Lize Lubbe is the owner of Lize Lubbe Physical Therapy with its main practice located at 892 Route 35 in Cross River and a PT Studio in the premises of Apex Fitness (where her team focus on the rehabilitation of sports-related injuries). Learn more by calling 914-875-9430, emailing contact@lizeclubbept.com or visiting www.lizeclubbept.com.

We are moving our practice from 892 NY-35, Cross River to **190 Goldens Bridge Road, Suite 5, effective October 1, 2025.**
It is an easily accessible location with ample parking.



We are hands on PTs!

The professional services of the team at **Lize Lubbe Physical Therapy** provides a wide range of PT rehabilitation services to patients young & old, including:

- Pre & Post Surgery Rehabilitation
- Sports Injury Rehabilitation
- Neurological Rehabilitation
- Treatment of Musculoskeletal & Orthopedic Conditions
- Postural, Balance & Gait Training
- Pain & Headache Management
- Body Rebalancing Through Diaphragm Breathing & Pelvic Stability



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