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## **Yoga for Supporting Students with Osteoporosis and Osteopenia (while strengthening and toning muscles too!)**

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### **Understanding Osteopenia and Osteoporosis**

Welcome to our journey into understanding how yoga can support those with osteoporosis and osteopenia. First, let's break down these terms: "Osteo" refers to bones, "Porosis" means porous, and "Penia" signifies poverty. Essentially, we're talking about a loss of bone density, which makes bones more fragile and susceptible to fractures.

- **Osteopenia** is an early stage of bone loss, often without symptoms, but still important to address.
- **Osteoporosis** is a more advanced form of bone loss, where bones become significantly weaker.

Our bones are living tissues, constantly renewing themselves. When we're young, our bones are busy growing and strengthening. By around age 30, we reach peak bone density, but after 35, our bodies start to break down bone faster than they rebuild it. This is why maintaining bone health becomes crucial as we age.

### **Osteoblasts and Osteoclasts: The Bone Remodeling Dance**

Two types of bone cells work in constant balance: osteoblasts, which build new bone, and osteoclasts, which break down old bone, in part being reabsorbed into new bone formation: osteoclasts are responsible for bone resorption. This remodeling process keeps our bones strong and adaptable. Some osteoporosis medications slow down osteoclast activity to prevent bone loss. While this can be helpful in the short term, over many years the lack of bone turnover may lead to brittle bones that don't repair well, increasing the risk of fractures or even rare conditions like osteonecrosis of the jaw. This is why medication should be used under close medical supervision; nutrition and movement practices like yoga can play a supportive role in maintaining healthy bone turnover.

### **Signs of Osteoporosis**

Many people don't realize they have osteoporosis until a fracture occurs. However, there are signs to be aware of:

- Pain in bones, especially in the spine, hips, or wrists
- A hunched posture (kyphosis)
- Loss of height over time, which can be also due to compression of the intervertebral discs.

- Fractures occurring from minor falls or even everyday movements

## Understanding Bone Density Tests

Bone density tests, such as the DEXA (Dual-Energy X-ray Absorptiometry) scan, measure how much calcium and other minerals are packed into a segment of bone—usually at the hip and spine. The results are given as a T-score, which compares your bone density to that of a healthy young adult. A T-score between -1.0 and -2.5 indicates osteopenia, while a score below -2.5 signals osteoporosis. Knowing these numbers helps guide safe yoga practice, ensuring that movements are appropriate for your current bone health status.

## Why Does Bone Loss Happen?

There are several factors that contribute to osteoporosis and osteopenia:

- **Genetics:** Women are four times more likely than men to develop osteoporosis.
- **Hormonal Changes:** Numerous hormones are involved in the regulation of bone formation and resorption. For instance, parathyroid hormone (PTH) and vitamin D increase bone resorption by stimulating osteoclast activity and proliferation (Martin and Udagawa, 1998). Estrogen plays a role in bone health by inducing osteoclast apoptosis, thereby limiting bone resorption. Estrogen levels drop after menopause in women, and testosterone decreases in men, particularly after age 70.
- **Lifestyle Factors:** A sedentary lifestyle, smoking, excessive alcohol use, and poor nutrition all contribute to bone loss. Astronauts who spend time in zero-gravity space experience bone loss... not so glamorous!
- **Medical Conditions** like hyperthyroidism, [gastrointestinal diseases](#) (like [celiac disease](#) and [inflammatory bowel disease \[IBD\]](#)). [Autoimmune disorders](#) that affect your bones (like [rheumatoid arthritis](#) or [ankylosing spondylitis](#) — arthritis that affects your spine). [Blood disorders](#) (or cancers that affect your blood like [multiple myeloma](#)).
- **Medications** such as steroids, [SSRI antidepressants](#), Proton Pump Inhibitors (PPIs), and certain cancer treatments can weaken bones over time:  
[Diuretics](#), [Corticosteroids](#); medications used to treat [seizures](#); [bariatric \(weight loss\) surgery](#); [hormone therapy for cancer](#) (including to treat [breast cancer](#) or [prostate cancer](#)); [anticoagulants](#).

## How Can Yoga Help?

Yoga is a fantastic tool to support bone health. Through weight-bearing poses, breathing while engaging the core, and movement, we stimulate osteoblasts—the cells that build bone. Yoga also improves:

- **Balance and coordination**, helping to prevent falls

- **Muscle strength**, which supports proper posture and spinal alignment
- **Body awareness**, which helps us move with mindfulness and avoid injuries

### **Osteoporosis Exercise Guidelines**

Studies have shown that effective osteoporosis exercise programs incorporate the following four principles:

- Exercise needs to target each specific area. In order to increase bone density in the arms, poses and movements need to target and stress the arms.
- The weight needs to be gradually increased to be heavy enough to feel the challenge. Passive exercise is not effective.
- Weight-bearing exercises are more effective than non-weight-bearing exercises for building bones. Stomping in place uses your own body weight and gravity to activate breathing and muscles, mildly stress bones, and challenge balance.
- Change and novelty are important. Keep changing exercise patterns to challenge your bones and your awareness.
- Breathing and activation / engagement of deep abdominals / incorporating deep abdominal muscles, which is generally called core work.

### **Yoga for Sarcopenia (muscle weakening)**

Sarcopenia—the age-related loss of muscle mass and strength—often occurs alongside osteoporosis, increasing fall and fracture risk. Yoga can be a gentle yet effective way to address it by engaging muscles through weight-bearing postures, slow controlled transitions, and isometric holds. Poses like Chair (Utkatasana), Plank variations, Warrior variations, and increasing weight-bearing movements build strength in major muscle groups, while maintaining joint safety. Over time, stronger muscles help protect bones, improve balance, and support independent living.

Let's explore yoga poses that can strengthen bones while keeping the practice safe.

### **Examples of Yoga Poses to Support Bone Health (*Fishman, et al., 2016*)**

We focus on postures that encourage weight-bearing and alignment:

- **Standing Poses:** Chair Pose (Utkatasana; static and dynamic, with or without weights, stomping), Tree Pose (Vrksasana), Triangle Pose (Utthita Trikonasana), Warrior II (Virabhadrasana II), Extended Side Angle (Parsvakonasana), Revolved Triangle (Parivrtta Trikonasana), Big Toe Pose (Padangusthasana I and II), with or without weights.
- **Backbends:** Locust Pose (Salabhasana), Bridge Pose (Setu Bandha Sarvangasana)

- **Seated & Reclined Poses:** Seated dynamic weight-lifting, Big Toe Pose (Padangusthasana I and II), Half Lord of the Fishes Pose (Ardha Matsyendrasana), Seated Twist (Marichyasana); Sunbird Pose (Chakravakasana).
- **Plank variations** (Chaturanga Dandasana with modifications)
- **Restorative:** Savasana (Corpse Pose) to integrate the practice, Vinyasa Flow.

**The LIFTMOR Study:** This groundbreaking research showed that high-intensity resistance and impact training can significantly improve bone density, functional performance, and posture in postmenopausal women with low bone mass—without increasing injury risk when properly supervised. The study reinforces the idea that bones respond best to safe, challenging, and progressively loaded activities (Watson, et al., 2017 – 2018). In yoga, this translates to intentional use of resistance (body weight, stretch bands, and light weights), strong alignment, and gradual progression, as we do in my Yoga Sculpt class.

### **Precautions in Yoga for Osteoporosis & Osteopenia**

It's important to adapt the practice based on individual needs. Here are some movements to be cautious with:

#### **What to Avoid:**

- **Uncontrolled jumping movements** that create compression forces on bones while alignment is not properly maintained.
- **Fast transitions** that can lead to imbalance and falls
- **Forward bends and spinal flexion** (e.g., seated forward folds, Uttanasana, Plow Pose, rolling up the spine from a forward bend 'one vertebrae at a time'), which can increase the risk of fractures
- **Deep backbends** that may compress the spine
- **Twists with gravitational stress**, as they may strain the vertebrae

#### **Safe Practices:**

- Open dialog between teacher and students is encouraged
- Move slowly, using props for balance
- Maintain a neutral spine with gentle elongation
- Avoid rolling up from forward folds; instead, bend the knees and press up maintaining a flat back

- Use supported inversions like Legs-Up-The-Wall (Viparita Karani) instead of Headstand (Sirsasana) or Shoulder Stand (Sarvangasana)
- Strengthen bones with mild backbends, side bends, and weight-bearing poses / movements.
- Use resistance bands / movements and light weights to gradually build bone density.

### Considering Comorbidities

Many students may also be managing neuropathy (Chemotherapy-Induced Peripheral Neuropathy / CIPN), lymphedema, high blood pressure, macular degeneration, osteoarthritis, diabetes, or other health conditions. These require additional care—such as proper warm-ups, avoiding strain, light weights, limiting certain head positions, using more props, or adjusting pacing—so that the practice is both safe and effective for the whole person, not just their bones.

Chronic inflammation may fuel declines in physical function leading to frailty and disability. If yoga dampens or limits both fatigue and inflammation, then regular practice could have substantial health benefits (Kiecolt-Glaser, et al., 2014).

### A Gentle Approach for Lifelong Bone Health

Yoga is a lifelong practice, and for those with osteoporosis or osteopenia, it's about working with the body, not against it. The goal is to create a safe, nurturing practice that builds strength, balance, and confidence. By moving mindfully and making small adjustments, we can support our bones while enjoying all the benefits yoga has to offer.

“Yoga must not be practised to control the body: it is the opposite, it must bring freedom to the body, all the freedom it needs.”

Vanda Scaravelli

### Resources

*8 Tips for Healthy Bones*, Cleveland Clinic Health Essentials. Found in:

<https://health.clevelandclinic.org/bone-health>

Kiecolt-Glaser JK, Bennett JM, Andridge R, Peng J, Shapiro CL, Malarkey WB, Emery CF, Layman R, Mrozek EE, Glaser R. *Yoga's impact on inflammation, mood, and fatigue in breast cancer survivors: a randomized controlled trial*. J Clin Oncol. 2014 Apr 1;32(10):1040-9. doi:

10.1200/JCO.2013.51.8860. Epub 2014 Jan 27. PMID: 24470004; PMCID: PMC3965259. Found in <https://pubmed.ncbi.nlm.nih.gov/24470004/>

Lu YH, Rosner B, Chang G, Fishman LM. *Twelve-Minute Daily Yoga Regimen Reverses Osteoporotic Bone Loss*. Top Geriatr Rehabil. 2016 Apr;32(2):81-87. doi:

10.1097/TGR.0000000000000085. Epub 2015 Nov 5. PMID: 27226695; PMCID: PMC4851231. Found in <https://pubmed.ncbi.nlm.nih.gov/27226695/>

Martin, T.J. et al. (1998). *Hormonal Regulation of Osteoclast Function*. Trends in Endocrinology & Metabolism, Volume 9, Issue 1, 6 – 12. Found in [https://doi.org/10.1016/S1043-2760\(98\)00005-8](https://doi.org/10.1016/S1043-2760(98)00005-8)

National Institutes of Health – National Institute on Aging:  
<https://www.nia.nih.gov/health/osteoporosis/osteoporosis>

National Osteoporosis Foundation: Phone: 800-231-4222 ~ Email: [info@nof.org](mailto:info@nof.org) ~ [www.nof.org](http://www.nof.org)  
*Osteopenia*, Cleveland Clinic <https://my.clevelandclinic.org/health/diseases/21855-osteopenia>  
*Osteoporosis*, Cleveland Clinic <https://my.clevelandclinic.org/health/diseases/4443-osteoporosis>

Watson SL, Weeks BK, Weis LJ, Harding AT, Horan SA, Beck BR. *High-Intensity Resistance and Impact Training Improves Bone Mineral Density and Physical Function in Postmenopausal Women With Osteopenia and Osteoporosis: The LIFTMOR Randomized Controlled Trial*. J Bone Miner Res. 2018 Feb;33(2):211-220. doi: 10.1002/jbmr.3284. Epub 2017 Oct 4. Erratum in: J Bone Miner Res. 2019 Mar;34(3):572. doi: 10.1002/jbmr.3659. PMID: 28975661. Found in <https://pubmed.ncbi.nlm.nih.gov/28975661/>

#### **Yoga for Cancer Recovery and Back Care classes – by donation:**

- Mondays 10 am PDT in person in Rancho Bernardo, CA, with Team Survivor San Diego [www.teamsurvivorsd.org](http://www.teamsurvivorsd.org)
- Mondays 2.30 pm PDT **Yoga Sculpt** in person at EOS Fitness Oceanside, CA, with North County Cancer Fitness / NCCF [www.NorthCountyCancerFitness.org](http://www.NorthCountyCancerFitness.org)
- Mondays 6.30 pm PDT on Zoom only
- Thursdays 3 pm PDT in person / Zoom at Yoga Branch in Vista, CA, with North County Cancer Fitness / NCCF [www.NorthCountyCancerFitness.org](http://www.NorthCountyCancerFitness.org)
- 30 min recorded Yoga for Cancer Recovery class at NCCF: <https://youtu.be/FaAiseOtYiY>
- Gentle Joy Yoga & Gentle Joy Dance with Yoga Vista TV: [Alessandra Colfi - Yoga Vista TV](#)
- Subscribe to [my YouTube Channel](#)



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Namaste,  
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