

# Yoga Physical Therapist: You need this so **MUCH!**

*Mindfulness, Understanding, Compassion, Healing*

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## 12 Yoga Poses for Bone Health

What is Osteoporosis and Osteopenia?

- Bone is a matrix of calcium; a decrease in quality and quantity of the matrix is Dx of Osteoporosis or Osteopenia
  - DEXA Scan is a form of X-Ray that measures quantity; quality assessment not usually done but also important (too expensive, i.e. MRI)
- Diagnosis by Bone Mineral Density (BMD): T scores and Z scores
  - T score compares BMD to peak bone mass of 25-30 y.o.
    - 0 is average; < -1.0 has 50% increased risk for fracture; -2.5 is Dx of Osteoporosis
  - Z score compares BMD to same age cohort

Treatment by Exercise:

- Bone responds to stress provided by: 1) gravity (weight bearing) and 2) pull of muscles
  - Typically concerned with lower spine, pelvis and hips (forearm and wrist also susceptible)
- Exercises that promote bone health and decrease risk for fracture
  - Weight bearing
  - Postural
  - Extension and Rotation
  - Balance

Posture and Positions to Avoid:

- Weakened bone is affected greatly by gravity pulling spine into flexion; i.e. decline in normal posture, bending, sitting with rounded spine
- Spine compression fractures occur due to this position when force added (examples)

Assess Seated Posture and Breathing

- Time how many breaths performed in 30 secs; each pose to be held 30 secs and progress as tolerated

Warm Up and Posture:

 <p style="text-align: center;"><i>Spine</i></p> <p style="text-align: center;"><i>Flexion          Extension</i></p>		
<p style="text-align: center;"><b>Cat/Cow in sitting</b> Gentle range of motion, Emphasize Extension</p>	<p style="text-align: center;"><b>Hip Hinge</b></p>	<p style="text-align: center;"><b>Chair Pose</b></p>

Assess strength and balance (provides protective effect against fracture):

- Functional Lower Extremity Strength: Sit to Stand Test
  - How many can you do in 30 seconds and how does that compare to age-related normative values?

Repetitions	Age
30	30
25	40
20	50
15	60

- Balance: One leg standing with eyes open and eyes closed
  - How long can you hold your balance?
    - Eyes open: 30 seconds
    - Eyes closed: 10 seconds

12 Poses for Bone Health were selected for increasing:

- 1) muscular strength around the spine and hips
- 2) balance
- 3) stress on the bones most at risk for fracture, i.e. the spine and hips, via twists and rotations.

For each Yoga Pose there are several variations from least difficult for osteoporosis, moderate difficulty for osteopenia, to most difficult for prevention. The progression is *more supported* in the pose (with a wall, chair or other prop) to *less supported* in the full traditional pose. The progression takes into account *safety* while performing the pose. If you have challenges with balance *and* a diagnosis of osteoporosis, try the least difficult pose for 1-2 weeks before progressing.

“Yoga poses were selected specifically to produce torque and bending of the proximal femur, compression of the pelvis, and twisting of the lumbar vertebral bodies.” In order to obtain stress on the spine and femur, each pose has a “pulling in and “reaching out”.

Assess Standing Posture in **Mountain Pose** against the wall



**1. Tree Pose**

*Purpose: Improve strength, balance and posture*

Osteopenia: Modification supported with back on wall  
 Osteoporosis: Modification with back supported on wall and foot on chair

Hold 30 seconds on each leg



**2. Triangle Pose**

*Purpose: stress bones of hips and spine and improve balance*

Osteopenia: Modification supported with back on wall  
 Osteoporosis: Modification hand in chair

Hold 30 seconds on each side

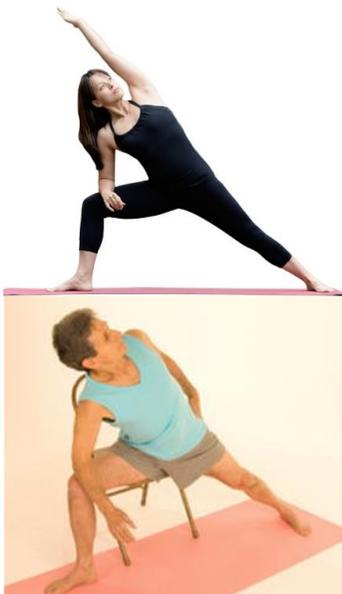


**3. Warrior 2**

*Purpose: improve balance, hip mobility and strength*

Osteopenia: Modification supported with back on wall  
 Osteoporosis: Modification supported in chair

Hold 30 seconds on each side



**4. Side Angle**

*Purpose: torsional stress on hips, pelvis and spine*

Osteopenia: Supported on chair backward, using back of chair to create twist

Osteoporosis: Supported on chair

Hold 30 seconds on each side



**5. Revolved Triangle**

*Purpose: torsional stress on hips, pelvis and spine*

Osteopenia: Standing Twist  
 Osteoporosis: Seated Twist

Hold 30 seconds on each side



**6. Locust**

*Purpose: Increase strength and stress posterior spine*

Hold 30 seconds in each position of "T" and "I"

		
<p><b>7. Bridge</b>  <i>Purpose: stress spine into extension, increase strength of gluteal muscles</i>  Modified pose: block under hips  Hold a full minute</p>	<p><b>8. Hamstring Stretch</b>  <i>Purpose: stress hips and pelvic</i>  Keep spine long  Hold 30 seconds on each side</p>	<p><b>9. Adductor Stretch</b>  <i>Purpose: resist rotational forces on hips, pelvis and spine</i>  Modified: Rest leg on wall or chair  Hold 30 seconds on each side</p>
		
<p><b>10. Seated Twist</b>  <i>Purpose: torsional stress on spine and hips</i>  Modified: Standing Twist  Hold 30 seconds on each side</p>	<p><b>11. Seated Bent Knee Twist</b>  <i>Purpose: torsional stress on spine and hips</i>  Modified: seated twist  Hold 30 seconds on each side</p>	<p><b>12. Corpse Pose</b>  Rest for a few minutes</p>

A Few More Poses for Extension:

 <p><b>Downward Dog</b></p>	 <p><b>Cobra</b></p>	 <p><b>Sphinx</b></p>
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References:

- <http://sciatica.org/yoga/12poses.html>
- **Yoga for Osteoporosis**, Loren Fishman and Ellen Saltonstall, 2009
- Yi-Hsueh Lu, PhD; Bernard Rosner, PhD; Gregory Chang, MD, PhD; Loren M. Fishman, MD, B Phil (oxon.). 2015. Twelve-Minute Daily Yoga Regimen Reverses Osteoporotic Bone Loss. Topics in Geriatric Rehabilitation,