

## Yoga to Reverse Osteoporosis and Osteopenia: Evening Sequence

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### 3 Guidelines for an effective Yoga for Osteoporosis practice

1. Consistency: Do all poses each day.
2. Mindfulness: Don't round your back.
3. Effort: Vigorously try to make each pose better, each time. Better means more challenging, more neutrally aligned, and more spacious, with more core engagement.

### Strong muscular engagement for 30+ seconds is essential for increasing bone mass

To build bone mass it is important that all the poses are being held for at least 30 seconds, and ideally for 45-60 seconds. If that seems too long right now, work your way up to that duration gradually.

It is also crucial that there is significant muscular engagement in all the poses, because strong muscular engagement dramatically increases the physical forces on the bones that are necessary to trigger the increase in bone mineral density. In particular, the engagement of the core muscles is very beneficial for osteoporosis, as it increases the pressure on the bones whose bone mineral density we want to improve the most: the spine, the hip girdle, and the femoral necks.

One way this engagement can be created is through a “hugging in to the midline from the sides of the hips”. Such an engagement tends to result in a feeling of spinal lengthening, so a focus on lengthening the spine will also help create this beneficial core engagement. If you feel like you are “taking a vacation in your hip joints,” then you are not engaging your core enough!

Another way to ensure strong core engagement is to emphasize a free and spacious breath in each pose. The main technique for freeing your breath in virtually all yoga poses (as well as in daily life) is to create more neutral hip and spinal alignment. To do this, you have to engage your core muscles intentionally and intelligently, which again will put more pressure on the hip bones, femoral necks, and spine.

### The right level of effort

How do you know what level of effort is appropriate? One way to think of this balanced effort is to “challenge your enjoyment of your breath without overwhelming it.” Another way to think of it is that you want to create “therapeutic discomfort” while avoiding actual pain.

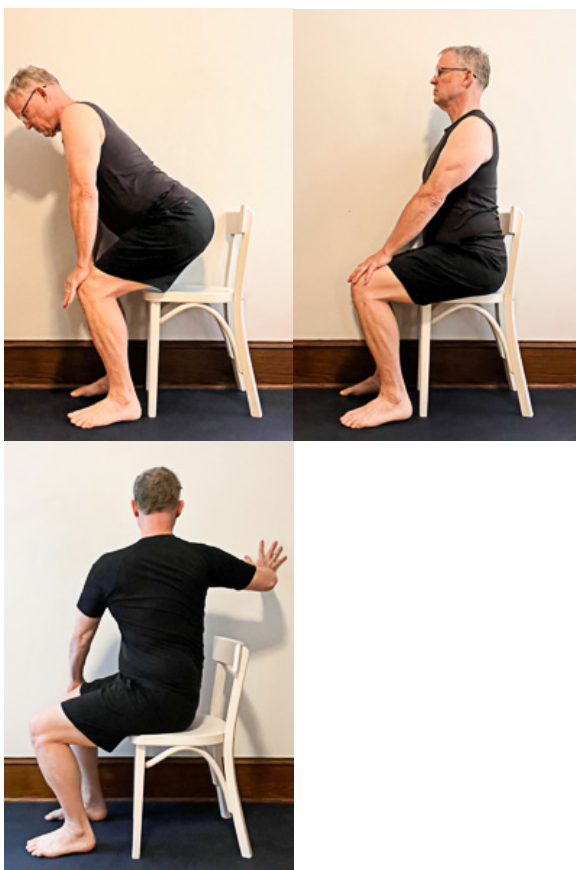
### Avoid forward bends to prevent vertebral fractures

Also essential for staying safe with osteoporosis is to avoid forward bending the spine. Vertebral fractures are a common side effect of osteoporosis, and are virtually always the result of forward bends. Avoid forward bending your spine, and learn how to get down to and up from a chair or the floor without forward bending (see instructions for the latter on page 7). Use your arms for support on a chair back or a wall to get down on your knees, and then come to the floor sideways, supporting your weight on your arms.

There also is a common tendency in many yoga poses to add a forward bend in the torso because it allows us to go farther with less effort. There are three important reasons for not giving in to this pattern:

1. Forward bends can cause vertebral fractures.
2. Countering unintentional forward bends requires the engagement of core muscles that almost certainly will increase the beneficial forces on the hip bones, spine, and femoral necks.
3. Maintaining more neutral hip and spinal alignment also keeps your breath free and spacious, supports a sense of ease and joy in each pose, and thus allows you to hold each pose for longer and to create a more vigorous effort without feeling overwhelmed.

*The importance of learning to listen to your body and your breath cannot be overstated.* Learning to listen to your body and breath helps prevent injuries, makes your practice more enjoyable (which means you are more likely to keep it up), and teaches you to reduce your ego's dominance over your true self. Listening to your body and breath is also an effective way to quiet the puppy mind and become more present in the here and now. 😊



**1. Ardha Matsyendrasana** with osteoporosis emphasis: 30-45 seconds, each side.

Place a chair on your mat next to a wall, facing sideways, leaving some room between the chair and the wall. Support your hands on your thighs, and stick your butt out to sit on the chair without rounding your back. Check your lower back with your hand. If it is rounding, move your sit bones farther back behind you. Inhale lengthen through the crown of your head by engaging your core and hugging the sides of your hips towards the midline of your body. Exhale twist towards the wall and place your leading hand on the wall at shoulder height, and your trailing hand on the outer thigh that is closer to the wall. If you find this hand position awkward, you can place both hands on the wall at shoulder height, somewhat wider than your shoulders. However, pressing your hand into the outer thigh will allow you to use both arms to increase the forces acting on the spine, as well as add bending forces in the femoral neck of the leading leg, and tensile forces in the wrist.

Inhale lengthen again through the crown of your head. Exhale deepen the twist pressing the leading hand into the wall, and the trailing hand into the outer thigh, while resisting with your outer thigh muscles so that the hand doesn't move the thigh. As you press with your hands, focus on moving the trailing side ribs closer to



Not enough twisting    Much better.  
In the torso.

the wall, while moving the leading shoulder blade farther away from the wall (compare 4<sup>th</sup> and 5<sup>th</sup> photos). You can press the leading hand into the wall to deepen the twist, but engage your core as well. Keep your neck relaxed and your chin centered between your collar bones. If you are twisting your neck to feel like you are twisting farther, you will actually be twisting less where it matters, namely in the torso.



Getting down to the floor and back up without rounding your lower back (to prevent vertebral fractures):

*NOTE: Do this every time you get down to the floor and back up from the floor.*

*NOTE: To have enough space for all the floor poses, move your mat about 2 feet (60 cm) away from the wall before coming down to the floor, or place it perpendicular to the wall.*

*Place a strap, two yoga blocks and optionally a blanket or a hand towel next to you.*

Place a chair against a wall, next to your mat. If you are not next to a wall, place two chair legs on the mat to keep the chair from moving.

Place a hand on the back of the chair for stability. If your right hand is on the chair back, step your right foot back and place your left hand on your left thigh for additional stability as you begin bending your knees. Stick your butt out behind you to keep your spine from rounding forward and slide your left hand down your left thigh as you bend your knees farther (1<sup>st</sup> photo). Place the right knee on the mat, bracing yourself with your right hand on the chair back and your left hand on your left knee.

Once you are on one knee, you can place your left hand on the chair seat to bring your other knee to the floor. If your knees are sensitive, you can place a folded blanket where you will place your knees.

Sit on your heels, bring one hand out to the side, slide your hips off your heels and lower yourself onto your side body, again to avoid rounding your spine forward.

*NOTE: If you can't sit on your heels, see the following variation.*

Once your whole side body is on the ground, you can then roll onto your back or your belly, depending on what pose you are doing.

To come back up, reverse the steps exactly.



Getting down to the floor and back up without rounding your lower back (*if you can't sit on your heels*):

*NOTE: If you can sit on your heels, do the version described above. It is easier to avoid forward bending if you come down onto your side.*

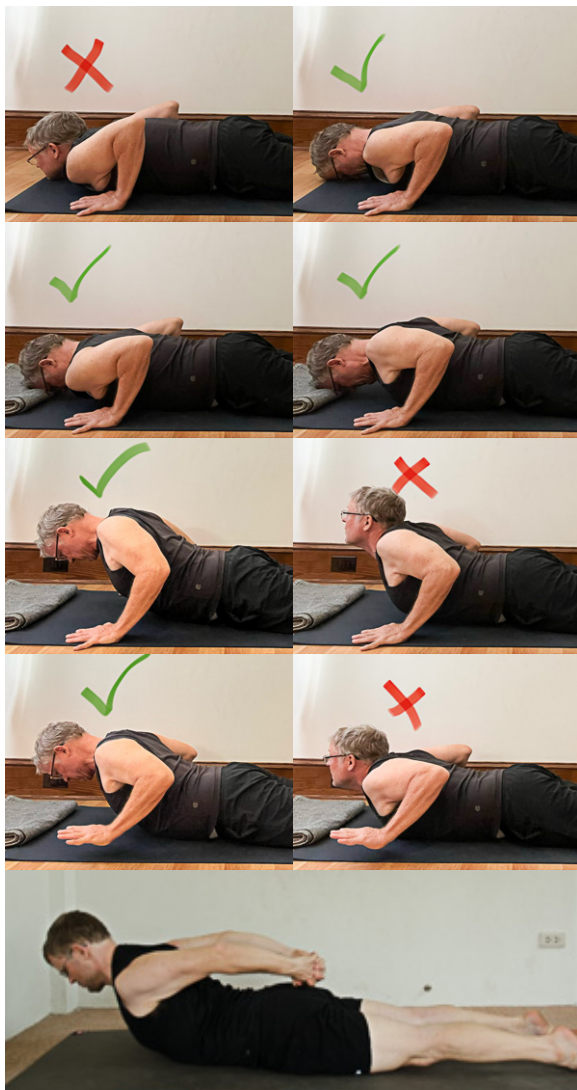
*NOTE: To have enough space for all the floor poses, move your mat about 2 feet (60 cm) away from the wall before coming down to the floor, or place it perpendicular to the wall. Place a strap, two yoga blocks and optionally a blanket or a hand towel next to you.*

Place your hand on the back of a chair or your thigh for stability. Bend your back knee and lower it to the mat, bracing yourself with your hand and keeping your whole torso vertical. Once you are on one knee, bring your other knee to the floor. If your knees are sensitive, you can place a folded blanket where you will place your knees.

Engage your core through a “sniff” (rapid short inhale) and place your hands on your upper thighs. Rotate your tail bone up behind you (anterior hip tilt) as you move your hips back behind you and slide your hands down your thighs through increased flexion in your hip joints, NOT through a rounding of your lower back (compare the 4<sup>th</sup> and 5<sup>th</sup> photos). Bring your hands to the floor and walk them forward with a neutral spine (anterior hip tilt) until your hips, belly and chest come to the floor.

Once your whole body is on the ground, you can then roll onto your side or back, depending on what pose you are doing. When you roll on the floor, start by bracing your core with a “sniff”.

To come back up from the floor reverse the steps exactly.



## 2. Salambasana (Locust/Baby Cobra) with osteoporosis emphasis: 30-45 seconds, 2 repetitions.

Lie on your belly, with your hands near your shoulders or interlaced behind your back. Note if you are resting your chin on the floor instead of your forehead (compare photos 1 & 2). If you are resting on your chin, you are already reinforcing neck tension, and inhibiting your ability to engage your back muscles. If resting on your forehead squashes your nose, place a folded blanket or towel on the mat under your forehead (photo 3). On an exhale, roll your shoulder blades down your back to engage the middle back muscles, which are the muscles we need to strengthen (photo 4). Keep the back of your neck relaxed and long. Inhale press your hands into the floor to lift your breastbone up and away from your belly button. Do not lead with your chin or your gaze. Instead, let your head follow the motion of the upper torso (compare photos 5 & 6). Only come up halfway, keeping your lowest front ribs on the floor to concentrate the work in the middle back rather than the lower back. To increase the benefit of the pose, gradually reduce the pressure in your hands and increase the engagement of your middle back muscles to hold you off the floor. Eventually you may be able to take your hands off the floor completely while keeping your breastbone off the floor. If you can interlace your hands behind your back and your back muscles are strong enough, you can do the version shown in the last photo. However, it is still essential that you keep the back of the neck relaxed.



### 3. Setu Bandha Sarvangasana (Bridge)

with osteoporosis emphasis: 30-45 seconds, 2 repetitions. If 30 seconds is too long for now, stay as long as you can enjoy your breath, and gradually increase the duration. Optionally have 1-2 yoga blocks next to you. Lie on your back and bring your heels close enough that your middle fingers can just brush your heels. Place your feet hip distance and parallel to each other.

*NOTE: If bridge pose feels uncomfortable in your neck (perhaps due to an old neck injury) place a folded blanket on your mat under your upper back, shoulders, and elbows. Make sure your head is NOT on the blanket or your mat. Instead, place your head on the smooth floor. The blanket under the shoulders will reduce the amount of flexion required near the base of the neck once you are in the pose. Having the head on the smooth floor will make it easier and safer to move your head to further minimize unpleasant sensations in the neck.*

Lift your hips slightly and place the block under your buttocks. Exhale tone your abs to lengthen your lower back. Inhale your hips and middle back away from the floor. Move your shoulder blades down your back one at a time to rest more on the tops of the shoulders.

Notice whether your focus is on lifting the hips as high as possible. If so, the pose will be less effective for osteoporosis of the spine, because the front of the chest will be lifting less if the hips are lifting higher (see 3<sup>rd</sup> photo), and thus there will be less force acting on the vertebrae. Instead, let your hips settle towards the floor slightly, then lift your breast bone higher by pressing your elbows into the floor to get your middle back involved in the backbend (2<sup>nd</sup> photo). If the lifting of the breast bone constricts your throat, float your chin gently away from your breast bone to keep the throat spacious. Press the back of your head, your shoulders and elbows into the floor to lift as many of your vertebrae off the floor as you can without straining, until eventually all your vertebrae are off the floor. In other words, there will eventually be a tunnel that

extends from your skull to your middle back, running between your shoulder blades. Once bridge feels comfortable, you can do it without the block and blanket. Without the block in the way, you can interlace your fingers, lifting your chest even higher (see 4<sup>th</sup> photo). Optionally place a block between your thighs and squeeze the block with your thighs in order to increase the bone-strengthening benefits for the hips and femoral necks.



**4., 5. & 6. Supta Padangusthasana (Reclining straight leg hip stretch) I, II, & III**, with osteoporosis emphasis: 30-45 seconds each version, each side. Lie on your back. Keep both shoulder blades on the floor throughout. Bend your right leg to place the strap around the middle of the right foot. If you can't get the foot close enough, place the right ankle on the left thigh and bring the left thigh towards you to place the strap around the right foot. Do NOT lift your shoulder blades off the floor to place the strap.

**Version I:** Straighten both legs along the floor again before lifting the right leg with the strap. Bending the lifted knee reduces the stretch and allows you to feel more accomplished while actually accomplishing less. Walk your hands along the strap to gradually increase the stretch intensity. When you get to a juicy intensity, hold the strap with your right hand only, and if possible, hold it without wrapping the strap around the hand twice, to challenge your grip strength. Keep both shoulder blades on the floor to free your breath and prevent your spine from rounding forward. Keep pulling on the strap with your hand while actively engaging your right-side hamstrings as if to bring the heel back to the floor, without actually moving the leg in either direction. This isometric engagement will increase the beneficial forces on the bones.

*NOTE: If you get to a juicy stretch long before the leg is vertical (2<sup>nd</sup> photo), then you can bend the other leg to place the sole of the foot on the floor (3<sup>rd</sup> photo). This will allow you to get an appropriate stretch with the leg in a more vertical position, which will require less grip strength and may make the pose less awkward.*



*However, if you are fine with holding the leg more diagonally, then keeping the other leg flat on the floor is fine. After all, increased grip strength is also very helpful for fall prevention.*

**Version II:** Place your left hand on your left hip point. On an exhale, release the right leg to the right side, while monitoring your hip position. If the left hip lifts, engage your core to move it back towards neutral. This core engagement will increase the beneficial forces on the bones. However, if keeping your hips level means you can't get the right leg out to the side very far, prioritize moving the leg farther over getting the left hip back down. The farther out the leg goes, the greater the forces on the bones. If you can get the right leg to the floor, lift it again and shorten the strap so the foot comes closer to your shoulder and the leg hovers just off the floor. If the leg rests on the floor, the forces on the bones are reduced significantly and the pose will be less beneficial for osteoporosis.

**Version III:** Inhale the right leg back to center, switch the strap into your left hand, and then exhale the right leg across your body. Allow your right hip to lift and your spine to twist to deepen the pose.

If you can get the right leg to the floor, lift it again and shorten the strap so the foot comes closer to your shoulder and the leg hovers just off the floor. If the leg rests on the floor, the forces on the bones are reduced significantly and the pose will be less beneficial for osteoporosis. Notice if the right shoulder blade has come off the floor. If so, focus on releasing (not forcing) the right shoulder blade back to the floor through an act of surrender, which will deepen the spinal twist further.

Repeat all 3 versions on the left side.

*(NOTE: Version III is not part of Dr. Fishman's original sequence. However, it is very probably a good pose for osteoporosis. In addition, doing the first two versions without the third feels incomplete to me, as they are almost always done together, so I have decided to add it. That also gives both sequences 6 poses (plus Savasana), without any repeats.*



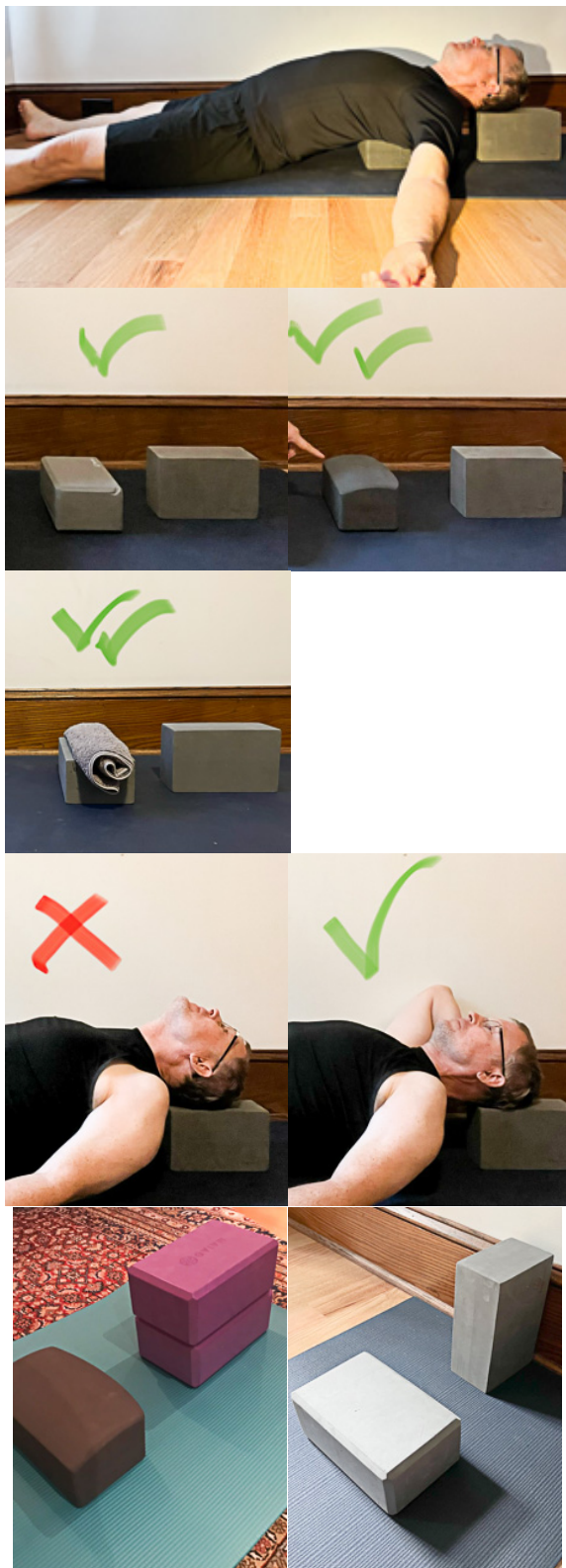
**7. Savasana** with osteoporosis emphasis: 2 minutes (or more).

Lie on your back on the floor or drape yourself over two blocks (see below) to reduce hyperkyphosis. Hyperkyphosis lowers quality of life and increases the risk of vertebral fractures. Significant hyperkyphosis also makes it much more challenging to practice the other yoga for osteoporosis poses effectively.

**Without props:** Snuggle your shoulder blades a few millimeters towards the spine and down the back to create a slight expansion in the front of the chest, but don't move your shoulder blades so far that your spine or back ribs lift off the floor. If it feels like your head is falling back, using your hands, lift your head a millimeter and guide the back of your head away from your shoulder blades, gently lengthening the back of the neck without hardening it. If your head still feels like it is falling back, place a folded towel or blanket under the head, but make sure the support is as thin as it can be while still allowing your head to feel neutral (Goldilocks principle: Not too much, nor too little).

Place your hands off the mat, with your arms at a 30-45 degree angle to the torso. Rotate your arms so your palms are facing up. Bring your feet slightly wider than your hips, and allow your feet to rotate out as you relax into the pose.

**Savasana variation (to address hyperkyphosis):** Hyperkyphosis (“dowager’s hump”, “hunch back”) has many negative effects on long-term health. Furthermore, if you have osteoporosis of the spine, hyperkyphosis significantly increases your risk of vertebral fractures, which you really want to avoid. Doing the following chest stretch instead of a standard Savasana can dramatically improve your posture in a matter of months.



### A) Reclining Chest Stretch (Savasana

**variation):** 2-5 minutes, once or twice a day, or as often as feels beneficial.

Use 2 thick (3.5-4", 9-10 cm) yoga blocks. One block sideways on its lowest setting under your shoulder blades (bottom edge of block near the bottom tips of your shoulder blades), the other block on the middle setting under your head. The distance between the blocks is a bit more than a hand-width. If one block is softer than the other, use the softer one under the back.

*NOTE: If you are buying yoga blocks for this purpose, I highly recommend getting one Manduka unBLOK to place under the back. It's curved and thus more comfortable and more effective (3<sup>rd</sup> photo. Alternatively you can place a rolled-up hand towel on a regular block to create a curved surface for your back (4<sup>th</sup> photo). The head can be on a regular block..*

Once you have placed your head on the support, lift it again just one millimeter using your hands, and guide the back of the head farther away from your shoulder blades with your finger tips. This will dramatically increase the effectiveness of the pose, as hyperextending the neck allows you to minimize the chest stretch (compare 5<sup>th</sup> and 6<sup>th</sup> photos). When your neck is in its neutral position, there will be a soft space in the back of the neck big enough for three fingers. If there is not enough space for 3 fingers, your neck is still hyperextending. If the back of the neck feels hard and long, you have lengthened the back of the neck too much.

If your hyperkyphosis is more pronounced (5 or more fingers of space between head and wall in the "Wall Test" above), then you may want to stack two blocks on their lowest setting under your head (7<sup>th</sup> photo), or place a folded towel on one block on its middle setting. You can also place the block that supports your head on its highest setting, but with this arrangement it is easy to knock the block over when you lie down on it. To avoid the block falling over, you can place it against a wall (see 8<sup>th</sup> photo). **The key is to make the head support high enough that the head does not feel like it is falling back, but not so high that it is being pushed forward.**



Adjust the position of the support under the back until you feel the biggest opening in the front of the chest. The greatest stretch in the front of the rib cage tends to happen when the lower edge of the block is right under the bottom tips of the shoulder blades, just above your bra strap (if you are wearing one). It is surprisingly easy to put the support either too low or too high on the back. Compare the 3 photos with my hands by my head (so that my arm isn't obscuring the block). Experiment and observe! Don't stress over the block placement too much. ☺ There is a range of at least 2 inches (5 cm) where the block placement is truly effective. Even the 2 relatively extreme block placements in the photos are still somewhat beneficial, as you can see from the curvature of the chest, but they are less comfortable.



Straighten your legs along the floor. If you are tempted to bend your knees and plant your feet, notice if you are doing that to subconsciously reduce the chest stretch. If that's the case, then straighten your legs. However, if you need to bend your knees to allow your lower back to be comfortable, then it is okay to bend your knees. Rotate your arms so your palms are facing up, because palms down also reduces the stretch. **IMPORTANT:** When you are ready to come out, roll down onto the floor and onto your side, then support your weight with your arms to come up sideways, as shown above. Sitting straight up with momentum has the tendency to immediately re-tighten what you just stretched.



Do the Wall Test at least occasionally to observe if your neutral head placement has changed. Stand in a way that feels truly neutral before walking backwards to the wall. With your buttocks and upper back touching the wall, measure how many fingers fit between the wall and the back of the head. Remember that forcing the head back will not help.