## **COURSE MANUAL**

### DR. FISHMAN'S METHOD:

#### YOGA vs. OSTEOPOROSIS and SCOLIOSIS

Series 1 with Scoliosis Session

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#### Introduction:

Some say the best teachers show people how to teach themselves. That is what we aim to do. The outlook, strategies and poses are all quite straightforward, but the infinite variety of what you will see in your studios can only be anticipated: if the next few days prepare you to be resourceful and yet responsible in your teaching, you will have learned well.

You don't need medicines to reverse osteoporosis in the most commonly fractured areas (the spine, the hip, and the femur). Yoga works as well or better than the medicines, and has additional ways in which it is greatly more beneficial for you:

Improves posture Creates better balance Makes you stronger Increases your range of motion Refines coordination Lowers anxiety Offers opportunity for spiritual and ethical improvement

In all of these proven ways, yoga reduces your likelihood of falling, the chief cause of osteoporotic fractures. The only other significant cause of fracture is slumped posture. Yoga works to straighten that, too.

The medicines all have infamous side-effects. The only "side effects" of yoga are the seven virtues listed above. Further, all the medicines have "expiration dates." Some you can take for 5-7 years, some only for 2. After you discontinue a medicine, there is a precipitous drop in your bone mineral density. Yoga can be done lifelong.

#### Summing up the strategy: Sustained pressure strengthens bone

The lyengar yoga on which this work is based focuses on safe and physiological alignment. This means you can try quite vigorously to attain that alignment without hurting yourself. That is why it works: significant effort is necessary to build bone; as you approach the proper alignment, it simultaneously becomes safer and more effective.

Further, these practical principles apply:

Consistent practice: Do the poses every day.

Sustained pressure: Try hard and hold the poses on each side for 40 seconds. Good posture: Do NOT round your back.

Mindfulness: Put effort into these 12 minutes of yoga; use the yoga to calmly strengthen your resolve.

Additionally, there is an aspect to yoga for osteoporosis which is not yoga, but is always present when yoga is: getting down to the floor and rising up from it safely, without rounding the spine.

#### General Notes

Series 1 is the most popular of the three Yoga vs. Osteoporosis series and it was the focus of Dr. Fishman's earlier studies examining the effects of yoga on osteoporosis, and was shown to build bone in an eight year <u>study</u>.

#### Order of Poses:

The poses may be done out of order; however, the order in which they are presented here reflects B.K.S. Iyengar's approach: he taught standing poses first, then had students descend to the floor for those done seated or lying down.

<u>Changes since the publication of Yoga for Osteoporosis (W.W. Norton, 2010)</u>: Please note that in the book Yoga for Osteoporosis by Loren M. Fishman, M.D. and Ellen Saltonstall, the poses are labeled "Osteoporosis version, Osteopenia Version, or Classical Version." This nomenclature is inaccurate. It would be more appropriate to refer to the three versions as: Beginner, Intermediate, or Classical. A new edition of Yoga for Osteoporosis reflecting these changes to the pose categories and other updates is in progress with an anticipated publication date of 2024.

#### Progressing toward Classical Versions:

The practitioner should do the most advanced level of a pose that they are capable of doing safely and with good alignment. In other words, someone with osteoporosis who is capable of doing a classical version of a pose correctly should do the classical version. For that reason, in the pages that follow, the classical version of each pose is presented first, and then followed by modified versions.

The practitioner/student progresses when s/he is ready and able. Some may start with the classical poses, others may find themselves working at the beginning level for a long period of time. The teacher should strive to progress students as soon as they safely can, but achieving good alignment first is also of great importance.

Although we designate only three versions: Beginner, Intermediate and Classical, actually there are innumerable modifications that can be made to poses; we may discuss some in this workshop that are not shown here. Yoga is on a spectrum rather than on a linear point-by-point progression.

#### Hold Time

Ideally, strive to hold poses on each side for a length of time between 12 and 72 seconds. **40 seconds is a good goal.** For poses with two sides, aim to hold for **40 seconds on each side.** 

### <u>The poses:</u>

- 1. Be open to learning new ways to do familiar poses.
- 2. Be thoughtful and cautious when transitioning students (or yourself) from level to level.
- 3. Use cautious creativity when managing new student situations.
- 4. Practice Daily. Aim to hold each pose, on each side, for at least 40 seconds.
- 5. Unless otherwise noted, all the contraindications listed for each pose are relative: caution, props or workarounds will enable you and your students to perform the poses safely.

"It is only when the correct practice is followed for a long time, without interruption and with a quality of positive attitude and eagerness that it can succeed."

– Patanjali. Sutra 1.14.

# <u>Series 1.</u>

Vriksasana (Tree Pose) Classical / Advanced Version



# I. Vriksasana (Tree Pose):

- A. Purpose: laterally stress proximal femoral shaft and neck. Improve balance.
- B. Contraindications: Gross imbalance, plantar fasciitis, recent total hip replacement (anterior approach), recent ankle sprain.
- C. Props: A yoga mat, a wall and a block (for workarounds).
- D. Avoiding pitfalls: Maximally abduct bent leg for balance.
- E. Instructions:
  - 1. Stand, feet parallel and perpendicular to coronal plane.
  - 2. Exhale as you abduct the right leg, placing the right foot facing downward high up on the left medial thigh.
  - 3. Complete your inhalation as you abduct both arms until hands are pressed together, biceps behind your ears.
  - 4. Reach upward with your fingertips; bring your pubic bone forward to make yourself even longer.
  - 5. Hold this pose for several slow, even breaths.
  - 6. Complete exhalation as your arms come down again.
  - 7. Lower your right foot to the floor.
  - 8. Stand in Tadasana, the mountain pose, if you wish.
  - 9. Repeat on the other side.

This pose builds stamina and focus, as well as stretching the hips and legs. The lateral forces on the proximal femur have been measured, and are increased 60% if the foot is placed anywhere on the vertical leg. Whether it is high up at the thigh, or down at the ankle, the pressures are equally elevated. (Lu, Y-H, Rosner, B, Chang, G, Fishman, LM, 2016). This is naturally relevant in treating osteoporosis of the hip and femur.

### Vriksasana (Tree Pose) Beginner Version



To start, it is best to be safe. With a wall behind and one foot placed in a stabile position on a chair, balance is secure. For further safety, position the student in a corner with one wall behind, and one wall within one arm's reach to the side. The chair also minimizes the chore of holding one leg aloft, which can be strenuous for some. To probe the readiness for advancing the student to Intermediate, ask the student to lift the foot a slight bit off the chair. Repeat on the other side.

### Vriksasana (Tree Pose) Intermediate Version



Once a person can stand with foot lifted off the chair, but <u>with</u> the wall, the Intermediate stage reintroduces the chair without the wall. Ideally the ears, shoulders, hips and ankles are all in one plane, and the pelvic rim is level. To test for advancement, let the hand go, but keep the fingers circled around the back of the chair. For the classical (Advanced) version of the pose, do the pose a few inches in front of the wall, let go of the chair, and reach both arms up. Repeat on the other side.

Utthita Trikonasana (Triangle Pose) Classical / Advanced Version



# II. Utthita Trikonasana (Triangle Pose)

A. Purpose: Anterior-posterior stress on proximal femur. Torque at the femur, hip and lumbar spine.

B. Contraindications: Imbalance, pubic fracture, or symphysis pathology, adductor strain, recent total hip replacement (anterior approach).

- C. Props: A yoga mat, a wall and a block.
- D. Avoiding pitfalls: Keep your legs straight, your torso lined up directly above your legs and parallel to the wall behind you.

Instructions:

- 1. Stand with your back to a wall, and sidestep your feet 3 feet apart. Turn the right foot and leg parallel to the wall, but face your torso straight out from the wall. Angle the left foot 30 degrees inward.
- 2. Arms outstretched, incline your entire torso to the right.
- 3. Inhale, raise your kneecaps to keep them straight, and lengthen through the spine. Exhale, shifting your hips to the left. Extend your torso over your right leg, bending at the hips, not the waist.
- 4. Keep both sides of the torso long and parallel. Avoid collapsing down, but extend the spine horizontally as you widen your thighs. Curl your tailbone down and bring your abdomen in and up.
- 5. Place your right hand on the mat, your ankle or block. Stretch the left arm straight up. If unsteady, lean lightly against the wall.
- 6. Roll your left shoulder, left ribs and left waist back and up, remaining steady in your legs. Gaze up at your left hand. Stretch side-to-side as well as head-to-tail.
- 7. Inhale, come back up, and repeat on the other side.

#### Utthita Trikonasana (Triangle) Beginner Version



The chair and wall provide stability, but also can be used to revolve the torso: the left groin gets long, while the right groin widens as you revolve the entire torso away from the forward thigh. Revolve the back leg's knee outward without moving the foot. The arch of the back foot rises. Advise the student to anchor firmly through the outer edge of the back foot.

Balance becomes more of an issue the harder one tries. Equalizing the weight between and within each foot will help. Advise the student to counter the natural tendency to rock to the outer edge of the front foot by shifting more weight onto the ball of that foot. Lift the hand or place it on the back of the forward leg's calf or thigh to test balance.

### Utthita Trikonasana (Triangle) Intermediate Version



The hamstring and adductor stretching can destabilize the

student. The block's main function is to mitigate that. The two sides of the torso should be equal in length and parallel. You can counter the rounding of the ribs by pulling the forward arm back toward the forward leg.

### Virabhadrasana II (Warrior II) Classical / Advanced Version



### III. Virabhadrasana II (Warrior II)

A. Purpose: Torque at femur, hips and spine, leverage at femur, promotes balance.

B. Contraindications: hyperlordosis, spondylolisthesis, spondylolysis, severe lumbar stenosis.

C. Props: A yoga mat and a chair

D. Avoiding pitfalls: Don't let the back leg droop. Forward knee aligns with the second toe.

Instructions:

1. With feet approximately 4 and 1/2 feet apart, turn the right foot out to 90 degrees, and the left 30 degrees inward.

2. Bend the right knee to 90 degrees, arms horizontal, aligning toe, knee and thigh in one plane.

3. Utterly stretch your back leg, and revolve it outward from foot to hip.

4. Align the arms with each other and with the horizon.

5. Draw the lower belly in and up. Stabilize your pelvis in this position, bring your torso upright and retract your shoulders back until they are just above your hips.

6. Stretch your arms apart from the little fingers to the spine.

7. Open your thighs by pressing your pubic bones forward and stretching outward with hands and inner thighs, and getting taller and taller: expand in every direction as you inhale.

8. Repeat on the other side.

### Virabhadrasana II (Warrior II) Beginner Version



Stress alignment of foot, knee and thigh, collinear arms, and revolving the back leg outward. Make sure the back legs of the chair are braced against a wall. As the student improves, advise her to place her forward hand on the chair back and try to rise up from the seat. This strengthens the quadriceps muscles, and safely prepares the student for more advanced versions of the pose.



### Virabhadrasana II (Warrior II) Intermediate (Wall Version)

Lifting the forward leg on a block puts more weight on the back leg, enabling greater bend of the forward leg. The hand on the wall presses the shoulders back over the hips. Students have to learn to do that without the wall, so the test is gradually withdrawing the hand from the wall and bending the knee a little more.

For students with a tendency to push the knee past the ankle, place a block between the shin and the wall, thereby preventing the student from letting the knee go past the ankle.

### Parsvakonasana (Side angle pose) Classical Version



#### IV. Parsvakonasana

A. Purpose: Torsion at femur, hip and spine; improve posture and balance B. Contraindications: Recent total knee replacement or posterior approach total hip replacement, sacroiliac joint derangement, Ischial bursitis, coccygodynia, plantar fasciitis.

C. Props: A yoga mat and a chair

D. Avoiding pitfalls: Align toe, bent knee and hip; press lateral bent knee and biceps together.

The center of the classical version of parsvakonasana (side angle) pose is the mid-point of the bent thigh. A sensitive titration of contraction and stretch holds the knee at 90 degrees of flexion, while supple flexibility lets the torso revolve upward on the hip socket. Once again the biceps presses in against the outer bent knee, and the knee presses outward against the biceps. Mr. Iyengar would say "challenge and counter challenge" – in this way, the pressure is communicated to the spine, both hip and both femurs, while rotating the straight leg and hip upwards and outwards.

#### Parsvakonasana (Side angle pose) Beginner Version



Instructions for Beginner Version of Parsvakonasana (Side angle pose):

- 1. Sit close to the front of a chair with your legs wide apart.
- 2. Abduct your right knee to the side and place your foot directly under the knee.
- 3. Lean to the right, and moving from your hip. Place the elbow against the side

of the thigh.

4. Move the left leg to the left until it stretches straight, keeping the toes and the knee facing 30 degrees forward. Most of your weight will now be on your right hip and thigh.

5. With the muscles of your legs and pelvis active, curl your tailbone diagonally down toward your left foot, along the that angle that your whole body is now leaning.

6. From the core of your pelvis extend both legs our and elevate your spine.

7. Place your left hand on your left hip and roll your left shoulder back until your whole upper body faces forward.

8. For more intensity, turn your torso enough to the left to grasp the back of the chair with your left hand, and look straight ahead.

9. Repeat on the other side.

### Parsvakonasana (Side angle pose)

Seated Intermediate Version with chair and hand on block in front of ankle.

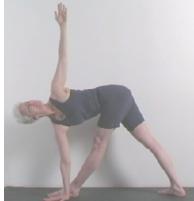


The hand on the block provides the extra support that the chair gave in the Beginner version of the pose. This pose is very similar to Warrior II, with a twist, literally: Press your biceps against the outside of the knee, and the knee out into the biceps. This is the fulcrum for the twist that defines the pose. Right and left sides should be straight and parallel.

Parsvakonasana (Side angle pose) Intermediate Version with block(s) behind. Can also be done seated in a chair.



### Parivrtta Trikonasana (Twisted or Revolved Triangle) Classical / Advanced Version



# V. Parivrtta Trikonasana (Twisted or Revolved Triangle)

*Purpose:* This may be the most effective twist: putting circumferential pressure exactly on the vertebral bodies.

*Note:* One school of thought favors keeping the hips perpendicular to the plane of the legs and torso, another encourages twisting the hips maximally and scissoring the thighs together. It is a question of whether to divide the twist into two parts and keep the sacroiliac joint out of it (perpendicular hips) or make the entire body one large twist, thereby enabling the sacrum do some of the twisting, which will take some of the pressure of the twist off the hips and lumbar spine. I believe you should endeavor to make one large full-body twist, from the back foot's heel to the nape of the neck. This will make for finer balance, and spread the twist evenly along the body, enabling one part to compensate for another and act as a "safety valve' if necessary. However, when there is sacroiliac joint derangement and/or following posterior approach hip replacement, stabilizing thighs at 90 degrees may be advisable.

*Props:* For Beginner and Intermediate versions: a chair, block and wall. *Contraindications:* Second and third trimesters of pregnancy, (absolute), posterior approach total hip replacement (absolute), herniated lumbar disc, acute sacroiliac joint derangement, severe spinal (facet) arthritis, scoliosis beyond 45 degrees, colostomy. Avoiding Pitfalls: Be sure to keep both your feet fully on the floor to prevent imbalances.

Instructions for the classical version of **Parivrtta Trikonasana** (Twisted or Revolved Triangle):

- 1. Start with your legs three feet apart.
- 2. Stretch your arms out horizontally, palms down.
- 3. Let your left foot face straight forward; turn your right foot 30 degrees to the left.

Take a breath. Exhale and twist to your left as you bend forward, pivoting your right hip forward placing your right hand on the floor or a block lateral to your left foot.
Scissor your legs together as you lengthen your spine.

4. Draw your right chest forward and your left shoulder back into the plane defined by the intersection of your legs. Make your torso narrow and long.

5. Repeat on the other side.

### Parivrtta Trikonasana (Twisted or Revolved Triangle) Beginner Version



This starts out as a balance pose; the gestalt or form of the pose only gets dynamic when the legs are further apart and the torso lower. If the hip of the back leg can swing forward bend the elbow as much as possible, possibly bringing the forearm to the seat of the chair, and redirect your weight to the insides of the feet, toward the arches. When a person can do that without collapsing against the wall, she or he can move to Intermediate.

### Parivrtta Trikonasana (Twisted or Revolved Triangle) Intermediate Version



The dynamic torsion of this pose develops in the Intermediate version of Parivrtta Trikonasana, where there is still support. The arm does some of it: the shoulder blade stays back, impelling the right chest forward, while the left shoulder goes backward toward the wall. At the same time, the thighs scissor together and the pelvis slants more than 90 degrees unless sacroiliac joint derangement or total hip replacement prohibit it.

### Salabhasana (Locust pose) Classical / Advanced Version



#### VI. Salabhasana (Locust Pose)

*Purpose:* Puts pressure on the spine's posterior elements and strengthens extensors. *Contraindications:* GERD, spinal stenosis or fusion, anterolisthesis, facet syndrome, pregnancy in second or third trimesters, recent abdominal surgery, colostomy bag. *Pitfalls:* Retain contact between the navel and the mat to avoid hyperlordosis.

Instructions:

- 1. Lie prone, arms at your sides with your palms down. Stretch out and get long.
- 2. Lift from the nape of your neck and the backs of your knees.
- 3. Gently press your ankles together, inhale and lift your arms parallel to the floor. Soften your stomach muscles. Tightening them reduces the arch. Bring your arms behind you and clasp your hands if possible. Raise your arms above, rather than resting them on, the buttocks. If you are unable to clasp your hands together, then vigorously stretch them out behind you. Bring the shoulder blades as close together as possible.

#### Salabhasana (Locust pose) Beginner version



### Salabhasana (Locust pose) Intermediate version



In the beginner and intermediate versions of salabhasana (locust) pose, your arms act like rheostats, bringing you up higher until you gradually raise your hands and let your dorsal spine's muscles do the work. In the beginning version, the elbows should be parallel and in close to the ribs. Inhale from the dorsal lower back to the ventral upper chest. Soften the abdominal

musculature. In the intermediate version, palms are down to open the shoulders. Those with spinal stenosis or anterolisthesis should keep their navels on the mat, and refrain from lifting their legs

Setu Bandhasana (Bridge) Classical / Advanced version



#### VII: Setu Bandhasana (Bridge Pose):

*Purpose:* To stimulate the posterior elements of the entire spine.

*Props:* A belt to hold the upper arms together.

*Contraindications*: (absolute) Arnold-Chiari malformations, herniated cervical disc, (relative) sacroiliac joint derangement, scoliosis beyond 40 degrees, facet syndrome, spinal stenosis, spondylolisthesis, spondylolysis.

*Avoiding pitfalls*: Keep the legs and feet parallel. Relax the back of your neck, throat and jaw as you breathe.

Instructions:

- 1. Lie on your back and place your feet hip width apart, parallel, flat on the mat.
- 2. Place your arms alongside your body, palms facing up.
- 3. Inhale, curl your sitting bones down and apart to ensure that the pelvis stays wide.
- 4. Exhale and pull your arms into the shoulder sockets.
- 5. Lift your hips and chest as you inhale. Tuck each shoulder underneath your ribs and toward the spine so that the tops of your shoulders are on the mat.
- 6. Interlace your fingers behind you. Press the arms down, propelling your torso upward.
- 7. Point your knees straight forward, lift and extend your tailbone toward your knees.
- 8. Move the buttocks away from your waist.
- 9. Stretch your sides and center from your throat out through the legs.
- 10. Isometrically push your feet away (without moving them) to impel your chest forward over your throat.
- 11. Exhale softly as you come down. Do not round the spine as you descend.

#### Setu Bandhasana (Bridge) Beginner to Intermediate versions





Place your elbows on a blanket that supports your shoulder blades and the base of your neck. Your head is resting on the floor. Bend your knees enough to have your feet flat on the mat. Following the direction of your vertical forearms, press your elbows down with sufficient force to raise your pelvis off the mat enough to slip a yoga block underneath its large, soft muscles.

Stay there, softening your abdominal muscles and intermittently raising your pelvis off the block and holding it aloft for 5-10 seconds. Breathe in as the pelvis rises; breathe out as you descend. You'll be ready to advance when you can stay up for 25-30 seconds without difficulty.

Raising your entire torso so your chest is hovering over your throat puts sensible and yet intense pressure on the bones of your spine, your pelvis and both your femurs. Focus on raising your chest and advancing it forward.

If there is a herniated disc in the lower thoracic and/or lumbar spine, place a block between your knees, and hold it there as you come up high and stay there, then come down, rest a short time (seconds) then rise again. Repeat it six or seven times several times a day to relieve back pain or sciatica.

This pose serves to strengthen the posterior parts of the spine, and stretches the parts where fractures generally occur. It directly stimulates the pelvis and femoral bones, and these are its chief virtues. It leads directly to the classical pose, which is just a tighter, more intense version of the same pose.

Supta Padangusthasana I (Reclining Hand to Big Toe Pose I or "Supta P 1" "SP1") Classical / Advanced Version



Supta Padangusthasana I (Reclining Hand to Big Toe Pose I) Intermediate Version



**VIII.** Supta Padangusthasana I: (Reclining Hand to Big Toe Pose I or "Supta P 1" or "SP1")

*Purpose:* Leveraged pressure on femur, hips and lumbar spine.

Props: A belt.

Contraindications: Ischial bursitis, hamstring tear, adductor tear.

Avoiding Pitfalls: Press your flexed hip away from its origins in the torso. Engage your quadriceps in all versions of the pose to keep the knee of the lifted leg straight; this action invokes a reflex that relaxes the hamstrings. It is particularly important to maximize sustained pressure on the femur by keeping the leg straight.

Instructions for Classical and Intermediate Versions:

- 1. Lie supine (face up), legs straight out horizontally. Don't use a pillow.
- 2. Press the right leg down; raise the left thigh up to vertical, knee bent.

- 3. Straighten the left knee, and wrap the index and ring fingers around the big toe, or place a strap around the ball of the foot.
- 4. Tighten both legs' quadriceps and draw your shoulders down to the mat.
- 5. Re-tighten your quadriceps. If possible, crawl forward with your fingers on the belt, keeping head on the mat and repeat the process.
- 6. Stay for at least 40 seconds; exhale as you bring your leg down. Repeat on the other side.

One common problem that frequently arises is when someone cannot lift their leg high enough, often due to hamstrings that are too tight. In these cases, the belt just runs along parallel to the lifted leg. This is markedly weaker than using the whole leg as a lever to increase pressure on the head and neck of the femur, the pelvis and the lower back.



Bending the other leg's knee helps somewhat by tilting the pelvis, but if that doesn't work, or the student has trouble getting up off the floor, then use the beginner version.

Supta Padangusthasana I (Reclining Hand to Big Toe Pose I) Beginner Version



The beginner version is useful when the student is unable to get up or down from the floor. However, if the student can get up and down from the floor, then start with the intermediate version. The beginner version of this pose is **more dangerous** than the classical version because of the tendency to round the spine. Do NOT reach forward to loop the belt around your foot. Bend your knee to bring your foot to you, not the other way around. Or, go "fishing" for your foot with the strap, keeping your back against the chair.

Once you have secured the belt around your foot, straighten your knee, but do this without rounding your back. As you straighten your knee, you may have to let the belt slip through your fingers. With the knee now straight, pull your shoulders back. The back must not be rounded. Repeat on the other side.

#### Supta Padangusthasana I (Reclining Hand to Big Toe Pose I) Beginner Version 2

Lift the leg a little higher; keep back straight and firmly against chair! Use the leg muscles as well as your arms to lift as far as you safely can.

This is a more intense version of the Beginner pose. To keep it safe, hold your back against the chair to maintain your spine in an upward orientation.

To leave the pose, again let the belt slip through your fingers, this time as you bend your knee, all the while, keeping your back straight and against the chair. Repeat on the other side.

### Supta Padangusthasana II (Reclining Hand to Big Toe Pose II or "Supta P2" or "SP2") Classical / Advanced Version



IX. Supta Padangusthasana II: (Reclining Hand to Big Toe Pose II)

*Purpose:* Lateral pressure on femur, hips and lumbar spine.

Props: A belt.

Contraindications: Ischial bursitis, hamstring tear, adductor tear.

Avoiding Pitfalls: Press your hip away from its origins in the torso.

Instructions:

- 1. Lie supine (face up), legs straight out horizontally. Don't use a pillow.
- 2. Press the right leg down; abduct the left thigh out to the side.
- 3. Straighten the left knee, and either grasp the big toe with the left hand, or hold a belt that wraps around the abducted foot just behind the ball of the foot.
- 4. Either abduct the leg further, walk your fingers up the belt as far as possible.
- 5. Tighten both legs' quadriceps and draw your shoulders down to the mat.
- 6. Press the left wrist and arm downward to revolve the right shoulder down to the mat.
- 7. Re-tighten three of your quadriceps, but not the rectus femoris.
- 8. Focus on making the angle between your two straightened legs as great as possible, while maintaining both legs' calves on the mat.
- 9. Repeat on the other side.

Supta Padangusthasana II Reclining Hand to Big Toe Pose II Beginner version



This Beginner version is useful when the student is unable to get up or down from the floor. However, if the student can get up and down from the floor, then start with the intermediate version. Like the beginner version of Supta Padangusthasana I, it is somewhat dangerous, since the temptation to bend forward and loop the belt around the foot is great. Once again, students should bend their knees rather than round their backs. Resting the lower back against the chair back is a sensible strategy. Some balance is required, so placing the bent leg's foot firmly on the floor is key. If the student's feet do not reach the floor, use a block on the lowest setting under the grounded foot.

Supta Padangusthasana II Supine Hand to Big Toe Pose II Intermediate version



This is the place to start with people who can get down and up from the floor.

The same precautions apply regarding looping the belt around the foot: keep the head down on the mat to maintain a straight spine. Instead, bring the foot up in order to place it in the belt. Abduct the left leg out to the side. Pressing the right elbow down will bring the left shoulder and calf closer to the mat. Stretching both legs out far from their roots in the torso assures good, safe work in this pose. Repeat on the other side. Once the student has gained an adequate amount of flexibility in the hamstrings, then It is a seamless transition from the Intermediate version to the classical pose: a question of degree, not setup.

#### Marichyasana III (Seated Twist) Classical / Advanced Version



### X. Marichyasana III (Seated twist)

*Purpose:* Twisting the neck, rib cage, and the lumbar region, this pose stimulates all the major fracture sites except the wrists.

Props: A belt for early versions.

*Contraindications:* Vulnerability to subluxation/dislocation of the shoulder or of the hip, (e.g., after shoulder or hip replacement, or severe arthritis), recently herniated disc, scoliosis beyond 40 degrees, spinal fixation with Harrington rod, Cotrel-Dubouset or fusion procedures or ankylosing spondylitis.

Avoiding Pitfalls: Each time you breathe in, focus on your posture, and remember to straighten your spine; each time you exhale, twist a little further. Use a blanket if needed to tip the pelvis forward. Avoid straining the muscles between your ribs, the intercostal muscles by increasing the intensity of the pose gradually and twisting from the lowest rib, not the shoulder.

Instructions:

1. Sit with your legs extended straight forward.

2. Inhale to expand your chest, powerfully lifting the spine up. You can press your hands down on the floor beside you to get maximal lift.

3. Bend your right knee, place the right foot flat on the mat close to the left thigh.

- 4. Press the entire left leg down firmly; stretch fully through the sole of the foot.
- 5. On inhalation, lift your spine again; on exhaling, turn toward the right.

6. Hook your left upper arm outside your right knee. Straighten the right arm.

7. Hug your solar plexus to your right thigh.

8. Move the spine in and up with your inhalation and twist more with your exhalation. Lead the twist with your left lower ribs wrapping toward the right.

9. Turn your left arm inward to wrap it in front of and around your bent right leg.
10. Wrap your right arm behind your waist and clasp your hands, if you are able to do this without rounding your spine.

11. With inhalation, lift up and roll your right *shoulder* back. With exhalation, press your left foot down and advance your left *chest* forward, twisting to the right.

12. Within the constriction of the pose, maintain steady breath and a calm, focused mind. Then repeat on the other side.

### Marichyasana III (Seated Twist) Beginner version



Both feet are parallel to the wall; the right thigh is against the wall. Maintain equal weight and balance on the feet and the hands: Press down on the chair to equalize weight; attend to the heels and balls of the feet to distribute weight evenly. In this pose the back (shown here, right) arm and hand do the twisting; the forward arm (shown here, left) is for balance and sometimes restraint.

Students should be aware right here that they are twisting from the lowest ribs in this pose. One cue is 'get tall,' which prompts people to reduce the lumbar arch and focus on the torso as opposed to the legs or arms. Pulling down on the wall with both hands is one way to accomplish this. Even here, the right shoulder goes away from the wall as the left lowest chest approaches it.



# Marichyasana III (Seated Twist) Intermediate versions



The right foot is the anchor; it should be the vertical end of a straight leg. With both ischial tuberosities on the mat, first turn without engaging your arms at all. After that effort is maximal, hug your solar plexus to your left thigh, 'get tall,' and walk your left arm counterclockwise around your hips. Then, if you can do so with a straight spine, place your right elbow on the outside of your left outer thigh.

Here the direction is explicit: Inhale and get straight, pulling the left shoulder back. Exhale to twist further, advancing the right chest. As you turn further, keep walking the hand counterclockwise behind you. The head can face either direction.

#### Ardha Matsyendrasana I (Half Lord of the Fishes) Classical / Advanced Version



# XI: Ardha Matsyendrasana I (Half Lord of the Fishes)

*Purpose:* Bending the leg that was straight in Marichyasana III relaxes the hamstrings and the tensa fascie latae, which would otherwise tighten the iliotibial band, permitting further rotation and proportionately greater stimulus to every major fracture site. *Props:* A belt and a blanket.

*Contraindications:* Rotator cuff tear, herniated lumbar disc (best to twist to the opposite side), later pregnancy, severe scoliosis, ankylosing spondylitis, vertebral fixation by rods or wires, vertebral fracture, colostomy.

Avoiding Pitfalls: Keep both ischial bones on the mat, or use a blanket under the elevated one.

Instructions:

1. Sit with your legs stretched out in front of you.

2. Bend your left knee and bring the foot outside your right hip. Bend the right knee and place the right foot flat on the floor to the outside of your left thigh, with the shin vertical. Place both hands on your right knee.

3. Inhale, lift your spine up and also press down through the pelvic bones and bring your solar plexus to your right thigh.

4. Exhale, turn to the right, cross your left elbow outside your right knee.

5. Bring your right hand to the floor behind you, raise your right to vertical.

6. As you inhale, rise and straighten your spine, become taller. As you exhale, twist more, and walk your right hand around behind you toward the left.

7. Look over your right shoulder. Vertically elongate spine and head.

8. Repeat on the other side.

### Ardha Matsyendrasana I (Half Lord of the Fishes) Beginner version

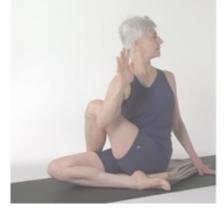


Start with examining the balance of weight on and between the sitting bones and the feet. All should be firmly and symmetrically planted. Hands should be at shoulder level on the wall.

Pull down on the wall with both hands to elevate the torso. Then use the back (in the image above, it is the left) arm and hand to revolve, the forward (shown above, right) arm to balance and resist if necessary. Inhale and get straight, exhale and twist a little further. Twist from the lowest ribs, not the shoulders. Repeat on the other side.

# Ardha Matsyendrasana I (Half Lord of the Fishes) Intermediate Versions





Bring the heel close to the buttock, but don't sit on it. Sit evenly on both sides; use the bent elbow's pressure to slide your lowest ribs past the thigh. Hug your solar plexus to your left thigh, 'get tall,' and walk your left arm counterclockwise around your hips. Then, if you can do so with a straight spine, place your right elbow on the outside of your left outer thigh.

Here the direction is explicit: Inhale and get straight, pulling the left shoulder back. Exhale to twist further, advancing the right chest. As you turn further, keep walking the hand counterclockwise behind you. The head can face either direction. Repeat on the other side.

In the case of a herniated disc, this pose can be done twisting away from the side of the herniation. Use more caution twisting toward the herniated disc. In sacroiliac derangement and facet syndrome, the appropriateness of the pose depends on the individual situation.



### XII. SAVASANA (Corpse pose)

A. Purpose: To cease effort, relax and assimilate, and consolidate gains. It also lowers cortisol, a hormone known to reduce bone mineral density, and clears the relevant parts of the thalamus to coordinate pressure with bone strengthening.

B. Contraindications: Late pregnancy.

C. Props: A yoga mat, blankets, possibly bolster and eye cover

D. Avoiding pitfalls: After the initial set-up, avoid fussing and fidgeting, become settled. Mr. Iyengar has said that this is the most difficult pose: it requires quieting the mind.

Instructions:

1. Make sure the space is quiet and safe from distractions.

2. Fold a blanket to support a slight arch of your thoracic spine, another one rolled for under your knees, and a third folded one to support your neck and head. An eye cover may help to relax your face and retreat from all outer stimuli.

3. Lie on your back with arms at your sides, palms up. If you are using a chestsupporting blanket, make sure that it allows your shoulders to be flat on the floor.

4. Turn your legs inward to widen the back of the pelvis, then let the feet roll apart as you relax.

5. Lengthen your heels away from the waist if you feel any compression in the lower back. Use a bolster under your knees if the compression in the lower back does not subside.

6. Tuck your shoulder blades gently in toward the spine to open the front of your chest.

7. Make sure that your neck is long, and your chin and forehead are level. Then guide your attention through your whole body systematically from head to toe and back again, letting each part relax thoroughly.

8. Do not fret if your mind produces thoughts; just watch them unemotionally without being drawn into the content. Be a compassionate witness. You might notice yourself reviewing an event, thinking of a person, or making a plan. Try not to follow the pull of the thoughts, but passively observe them come and go — they will go — and vigilantly await the next one. Trust in the process of letting go.

9. After five to ten minutes of quiet rest, take a few deeper breaths, stretch your arms and legs gently, bend your knees, and softly roll to the side. Take your time getting up, and rationally assess whatever effects, changes and benefits you may feel from your yoga practice. Do not lose sight of the invisible.

### **SERIES 1 Visual Aid**

The poses should be done daily. For poses with two sides, do the poses on both sides. A hold time of 40 seconds on each side is a good goal. If that time period seems too long, aim for a hold time of at least 12 seconds until you are strong enough to hold longer. 12 seconds is the minimum hold time and 72 seconds is the maximum hold time.

Caution: with all poses remember not to round the spine as you go into and out of the poses, and within the poses themselves.

#### Vriksasana (Tree Pose)

In all versions, the raised foot is above or below the knee. It is <u>NOT</u> on the knee.

### Beginner





Classical





# <u>Utthita Trikonasana (Triangle Pose)</u>

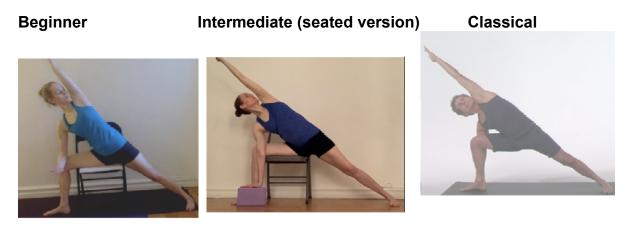


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### Virabhadrasana II (Warrior II)



# Parsvakonasana (Side angle pose)



### Parivrtta Trikonasana (Twisted or Revolved Triangle) Beginner Intermediate



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# Salabhasana (Locust pose)

### Beginner & Intermediate (lift palms for an intermediate version)



Another Intermediate version - palms are down to ensure that shoulders stay open. To advance still further, lift the legs.



Classical



# <u>Setu Bandhasana (Bridge)</u>

Beginner to Intermediate: Practice Rising up from block





### Classical



<u>Supta Padangusthasana I</u> (SP1 or Reclining Hand to Big Toe Pose I)

N.B. The seated versions have the potential to be dangerous. Keep the spine straight and against the back of the chair. Do NOT round the back. In the supine versions, keep the back straight at all times by bringing the foot to the belt. Do <u>not</u> curl up to put the belt on the foot.

Beginner



Two Intermediate Versions (A & B)



Version A



Version B (for use with tight hamstrings)



**Classical Version** 

Supta Padangusthasana II (SP2 or Reclining Hand to Big Toe Pose II)

N.B. The seated versions have the potential to be dangerous. Keep the spine straight and against the back of the chair. Do NOT round the back. In the supine versions, keep the back straight at all times by bringing the foot to the belt. Do <u>not</u> curl up to put the belt on the foot.

#### Beginner



#### Intermediate



#### Classical



<u>Marichyasana III</u> (Pose dedicated to the Sage Marichi)

### Beginner



Intermediate: Hug the leg to ensure straight spine Advanced Intermediate: Elbow goes outside knee Spine remains straight





Classical: Hands clasp. If you cannot maintain a straight spine in this version, then continue to work at one of the earlier versions above until your flexibility increases.



## <u>Ardha Matsyendrasana I</u> (Half Lord of the Fishes)

### Beginner



## Intermediate - Hug leg to ensure straight spine



## Advanced Intermediate



Classical - Hands clasp. If you cannot maintain a straight spine in this version, then continue to work at one of the earlier versions above until your flexibility increases.



## Savasana



## Suggested Six-Lesson Course: Yoga vs. Osteoporosis – Dr. Fishman's Method

The poses are just given in their classical form. Appropriate adaptations should be made for students with limited skill, strength and range of motion, and for those with herniated discs, scoliosis and or other conditions as we discussed in this training. YIP.guru (Yoga Injury Prevention) is a good resource to use to find appropriate poses for specific medical conditions.

#### Lesson 1:

Learning to try hard safely:

Motif: Mr. lyengar's yoga stresses alignment that is physiologically and anatomically safe, (and intellectually and spiritually satisfying). If you try to attain that alignment within your current capacity, you can safely try hard, you are very likely to improve your bone mineral density and bone quality, and you will advance from your current level fairly quickly.

Throughout all, be careful not to round your back.

### Pose

- 1. Trikonasana (Triangle)
- 2. Ardha Chandrasana (Half Moon)
- 3. Virabhadrasana II (Warrior 2)
- 4. Parsvakonasana (Side Angle)
- 5. Virabhadrasana I (Warrior 1)
- 6. Parivrtta Trikonasana (Revolved Triangle)
- 7. Parighasana (Gate Latch Pose)
- 8. Anantasana (Side Reclining Leg Lift)
- 9. "Windshield Wipers"
- 10. Supta Padangusthasana II (Hand to Big Toe)
- 11. Jathara Parivartanasana (Rev Abdomen Twist) bl
- 12. Savasana

### **Helpful Remediation**

chair, wall chair, wall chair wall chair wall, block wall, block belt, wall block belt block blanket

# Lesson 2:

Motif: Working with the hip joint and its muscles.

## Pose

- 1. Vriksasana (Tree)
- 2. Trikonasana (Triangle)
- 3. Ardha Chandrasana (Half Moon)
- 4. Parivrtta Ardha Chandrasana (Rev Half Moon) Wall behind horizontal foot
- 5. Virabhadrasana I (Warrior 1)
- 6. Virabhadrasana III (Warrior 3)
- 7. Plank
- 8. Setu Bandhasana (Bridge)
- 9. Bharadvajasana I (Seated Twist)
- 10. Marichyasana (Seated Twist/Marichi's Pose)
- 11. Supta Padangusthasana I (Hand to big toe) k
- 12. Savasana

## **Helpful Remediation**

Wall/mirror chair, wall chair, wall Wall behind horizontal foot block, wall wall on side, table in front wall, chair, forearms block can be done seated in chair belt belt

# Lesson 3:

Motif: The hips' and lower spine's muscles may cooperate in all of their motions.

## Pose

- 1. "Windshield Wipers."
- 2. Salabhasana (Locust)
- 3. Ustrasana (Camel)
- 4. Uttana Padasana (Raised Legs)
- 5. Supta Virasana (Supine Hero)
- 6. Utkatasana (Chair or Fierce Pose)
- 7. Malasana (Garland)
- 8. Marichyasana (Seated Twist)
- 9. Matsyendrasana (Seated Twist)
- 10. Anantasana (Reclining Side Leg Lift) b
- 11. Jathara Parivartanasana (Rev. Abdomen Twist) blocks
- 12. Savasana

# **Helpful Remediation**

blocks chair or wall chair behind sacrum blanket(s) under shoulder blades blanket(s) under haunches and back wall behind wall behind belt belt belt

## Lesson 4:

Motif: Strenuous work with the whole body

### Pose

- 1. Trikonasana (Triangle)
- 2. Parivrtta Ardha Chandrasana (Rev. Half Moon)
- 3. Virabhadrasana II (Warrior 2)
- 4. Virabhadrasana I (Warrior 1)
- 5. Virabhadrasana III (Warrior 3)
- 6. Parivrtta Trikonasana (Rev. Triangle)
- 7. Parsvakonasana (Side Angle)
- 8. Parivrtta Parsvakonasana (Rev. Side Angle)
- 9. Natarajasana (Dancer)
- 10. Dandasana (Staff)
- 11. Supta Padangusthasana I Hand to Big Toe 1) belt
- 12. Savasana

# **Helpful Remediation**

**Helpful Remediation** 

wall, chair, block, forearm

wall

chair

none

wall

belt

chair

chair, wall

block, wall

block, wall

chair, wall chair, block, wall chair, wall block, wall wall on side, table/desk in front chair, block, wall block, wall chair, block, wall belt, wall wall

# Lesson 5

Motif: The torso is a unit.

#### Pose

- 1. Tadasana (Mountain)
- 2. Utkatasana (Chair or Fierce pose)
- 3. Virabhadrasana 1 (Warrior 1)
- 4. Ardha Chandrasana (Half Moon)
- 5. Ustrasana (Camel)
- 6. Arm Threading
- 7. Vasisthasana (side plank)
- 8. Dandasana (Staff)
- 9. Urdhva Mukha Paschimottansana (Upward facing intense stretch of the west Remember to keep sacrum on mat!)
- 10. Bharadvajasana (seated twist)
- 11. Jathara Parivartansana (rev abdomen twist) blocks
- 12. Savasana

## Lesson 6

Motif: The legs influence the spine in flexion and extension.

## Pose

- 1. Supta Padangustasana 1
- 2. Supta Pandangustasana 2
- 3. Virabhadrasana 3 (Warrior 3)
- 4. Parivrtta Ardha Chandrasana (Rev. Half Moon)
- 5. Parvottanasana (Pyramid pose, do NOT round spine)
- 6. Parivrtta Parsvokanasana (Revolved Side Angle)
- 7. Salabhasana (Locust) or Bhujangasana (cobra)
- 8. Altar Pose (Reverse Grip Tabletop)
- 9. Rajakaptonasana (KING pigeon. Do NOT fold forward)
- 10. Plank
- 11. Natarajasana (Dancer)
- 12. Savasana

# Helpful Remediation belt

belt wall, desk/table block, wall

chair, block chair, wall or blanket block or bolster wall, chair, belt wall, chair, knees chair, belt

#### Sample Letter to Physicians

DATE

Dear Dr. XXXXX or Hospital Administrator XXXX,

I am writing to suggest a new beneficial program using yoga to reverse osteopenia and osteoporosis. A twelve-minute sequence of simple yoga poses has been shown to be effective, low-cost, and without significant side-effects. In the largest (741-patient) study, these 12 poses raised the mean values of spinal and femoral bone mineral density more than the accepted values for Fosamax or Boniva. Here is the URL for that peer-review study:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4851231/

A pilot study preceded it: <u>https://journals.lww.com/topicsingeriatricrehabilitation/pages/</u> articleviewer.aspx?year=2009&issue=07000&article=00009&type=Fulltext

In over 150,000 hours of using this yoga method worldwide, there are no reported fractures or other serious injuries of any kind. Several hundred patients had before and after X-rays of spine and hips, showing no abnormal progression of arthritis or other conditions. Additionally, numerous personal communications from patients show that they are very favorably disposed toward this method.

The program was originated by Dr. Loren Fishman, MD, who is on the staff at Columbia University Medical School. Apart from the cost-savings, which are prodigious, this yoga regimen, Dr. Fishman's Method, has none of the infamous side effects of the bisphosphonates and other medications currently available. Instead, its other effects improve balance and posture, coordination, strength and range-of-motion, and lower anxiety, all elements that reduce the risk of fracture.

I will be able to teach the yoga either in your facility or elsewhere. I will have patients come in once per week, but they will be doing the yoga daily at home. There is a <u>free</u> <u>version of the poses on YouTube</u>, and there is a DVD available for those that prefer it. I have been teaching yoga for XX years, and am certified in the method. For more information, see [your web site] and sciatica.org.

I will call your office next Monday, or feel free to call me at XXXXXXXX.

Very truly yours,

#### Scoliosis

#### Loren M. Fishman, M.D., B.Phil., (oxon.) Manhattan Physical Medicine and Rehabilitation Columbia University Medical School



#### **LUMBAR SCOLIOSIS**



### THORACIC SCOLIOSIS



Floating Side Plank Feet are elevated. Convex side is down.



# Ardha Chandrasana (Half Moon Pose) with Belt Convex side down.

The loop of the belt goes on the foot not the ankle. The raised arm is kept straight and is actively pulling. The raised leg is actively resisting the pulling arm. N.B. This pose is not as effective as the Floating Side Plank.

#### THORACOLUMBAR SCOLIOSIS

Floating Side Plank. Convex side is down.





**Warrior Two with a belt** encircling the bent thigh and the front wrist. Keep the belt is taut. Convex side is behind.



#### Armless Side Plank Convexity is upward.

If arm, wrist, shoulder, or hand injuries prevent a practitioner from doing the Floating Side Plank, a modification is the Armless Plank. Sit sideways on a sturdy armless chair. Hook feet under a heavy object such as a bed or sofa. Cross arms at chest to begin. As you grow stronger, try extending the arms overhead. In the Armless Plank the side that is on top is the side that is working.

<u>Curve</u>	Pose	Position
Lumbar	Side Plank	Convexity downward
Thoracic	Half Moon with Belt Floating Side Plank	Convexity downward Convexity downward
S Curve/Inverted S Curve	Side Plank Half Moon with belt Floating Side Plank	Lumbar convexity downward Thoracic convexity downward Thoracic convexity downward
Thoracolumbar	Side Plank Half Moon with belt Floating Side Plank Warrior Two Armless Side Plank	Thoracolumbar convexity downward Thoracolumbar convexity downward Thoracolumbar convexity downward Convex side is behind (on the straight- legged side) Convexity is <u>upward</u>

#### **General Notes:**

These are strengthening poses so after a few days of exploring them, hold them for as long as you can. For the first few days don't go to your limit. STOP if your heart starts to hurt, beats irregularly, or you have dizziness, etc.

An adult doing the appropriate corrective pose(s) for as long as s/he can, can expect no more than five degrees of change per month. In adolescents and people that are still growing, improvement definitely occurs; however, the spine is more vulnerable and no accurate predictions about the expected rate of improvement can be given at this time.

#### New Scoliosis Study:

To learn more about the current scoliosis study for adolescents ages 14-18, "Yoga and Xeomin ["Botox"] for adolescent idiopathic scoliosis" please see: <u>https://sciatica.org/research/</u>

#### For additional information:

Loren M. Fishman, M.D., B.Phil. (oxon). Healing Yoga. (New York: W.W. Norton, 2014).

Loren M. Fishman, M.D., B.Phil. (oxon). "Isometric Yoga-Like Maneuvers Improve Adolescent Idiopathic Scoliosis—A Nonrandomized Control Trial." *Global Advances in Health and Medicine*. February 24, 2021. <u>https://journals.sagepub.com/doi/full/10.1177/2164956120988259</u>

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## **Other Resources**

Healing Yoga. Loren Fishman MD (W.W. Norton, 2015).

Yoga for Arthritis. Loren Fishman MD and Ellen Saltonstall (W.W. Norton, 2008).

Yoga for Osteoporosis. Loren Fishman MD and Ellen Saltonstall (W.W. Norton, 2010).

Yoga for Weight Loss. Loren Fishman MD and Carol Ardman (W.W. Norton, 2020)

#### <u>Classes:</u>

<u>Dr. Fishman's Weekly Yoga vs. Osteoporosis Class on Zoom</u> (Tuesdays, 5:30 PM ET, \$35 per class). Drop-ins permitted.

iPivot-Now.com Classes: https://ipivot-now.com/yoga-vs-osteoporosis/

## Resource for Yoga Therapists & Teachers:

<u>Yoga Injury Prevention</u> (YIP.guru). This paid subscription database contains yoga poses and contraindications for their practice. If you are working with a client with multiple medical conditions, you can input their conditions and see which poses are contraindicated and which are beneficial.

## **DVDs & Streaming Services:**

There are DVDs available for Series 1, Series 2 and Series 3 available for purchase at <a href="https://sciatica.org/store/">https://sciatica.org/store/</a>

The same content for Series 1, Series 2 and Series 3 is also available for purchase to stream via Vimeo. See <u>https://sciatica.org/store/</u> for details.

The full contents of the Series 1 DVD are also available to stream for free on YouTube

#### **Current Research Studies:**

To learn more about the on-going <u>Yoga vs. Osteoporosis Dose-Response Study</u>, including the requirements to join, please see this <u>page</u> on Sciatica.org: <u>https://sciatica.org/induction-form-2/</u>. This study is anticipated to close enrollment in the very near future.

To learn more about the current scoliosis study **for adolescents ages 14-18**, "**Yoga and Xeomin ["Botox"] for adolescent idiopathic scoliosis**" please see: <u>https://sciatica.org/research/</u>

#### Website:

sciatica.org Sign up for Dr. Fishman's mailing list at the bottom of the home page.

#### Schedule an appointment with Dr. Fishman:

Loren M. Fishman, MD is a practicing physician who sees patients in-person at his office in Manhattan, and also via Zoom. To schedule an appointment with Dr. Fishman, please call his office: 212-472-0077.

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