

A Pilates Prescription

FOR LOW-BACK PAIN

World-renowned as an expert in Pilates for rehabilitation, Brent Anderson, the founder of Polestar Pilates Education, shares the most effective exercises for safely working with lower-back issues.

by Brent Anderson, PT, PhD, OCS, PMA®-CPT, Modeled by Kim Gibilisco



KISS: Keep it Simple and Successful.

While this is not your normal definition of the KISS principle, it's one that I have learned to respect. When working with the low-back-care client, the idea of keeping the exercise program simple becomes imperative, with the objective of shifting the belief from "movement equals pain" to "movement equals happiness."

Two key objectives here: First, make it a successful movement experience without pain—or without increasing pain. When clients have successful movement experiences without pain, this can shift their perception of their ability and provide hope to get better. And an individual who has associated movement with pain cannot continue with that perception if they are having successful movement experiences without pain. The Pilates environment provides many unique advantages toward achieving that goal, including:

variable spring tension, orientation to gravity and base of support; assisted range of motion; and the ability to work in an environment that is both foreign and familiar.

Second is creating movements that improve segmental movement in the spine. Segmental movement wakes up the deep, local stabilizing muscles to do their jobs subconsciously while inhibiting the global muscles from over-recruiting.

This set of exercises has been demonstrated over the years to successfully benefit our clients who suffer from low-back pain. I have chosen two pieces of equipment to help me show how we can restore movement in the spine with nondestructive forces.

The Reformer is the most common piece of equipment found throughout the Pilates world. I have chosen to use Balanced Body's, with their Infinity Footbar, to optimize my objective of working with clients with

low-back pain. If you do not have an Infinity Footbar, that's okay; I have used Towers behind the Reformers and even my hands as the teacher to create a fixed object like the Infinity Footbar. Learn the concept and create the environment. I have also selected the Spine Corrector, a less expensive piece that takes up very little space and can be used in any fitness studio or rehabilitation clinic. I love the Spine Corrector because it guides the spine into segmental movement in all directions.

Lastly, use good judgment when working with clients who have injuries. If you feel uncomfortable, that is usually a good indicator that you should seek some guidance from a health-care professional. You can always check in with us at Polestar Pilates, and we would be glad to help you with those special-population questions. Let's KISS back pain good-bye!

On the Reformer

Bridging

SPRING SETTING: very heavy

PROP: none

PURPOSE: increases segmental movement of the thoracic and lumbar spine to decrease unwanted spasms and wake up the deep muscles that, often, due to low-back pain or surgery, are shut down; increases control and stability of lumbar movement

SETUP: Lie on your back on the carriage, with your arms by your sides, and place your heels parallel and sit bone-width apart on the footbar, knees and hips in as close to a 90 degree angle as possible. Focus on keeping your shoulders soft and wide, and your ribs softening into the carriage. Allow your spinal curves to be in a more natural and neutral position.

1. Initiate the articulation of your spine by peeling your pelvis, lumbar spine and ribs off the carriage. Imagine that you are on the beach and the tide is approaching; as the wave comes in, it gently floats your pelvis, lifting your sacrum, then lumbar and thoracic spine off the sand one vertebra at a time.

2. Initiate your descent by softening your sternum and allowing your ribs to move individually toward the carriage. Do 6–8 reps, with greater ease in each repetition.

MODIFICATION: Clients with flexion restrictions in the spine can still do this exercise—just have them do it with 50 percent less effort and range. Think of each of the spinal segments as a small cup of water that is half full—only tilt the cup until the water comes to the edge.

ADVANCED: Typewriter: Repeat step 1, and once up in the Bridge position, soften your sternum and your spine down about 1 centimeter, imagining that your bottom is a typewriter sliding from side to side; lower 1 more centimeter and repeat. The goal is 4–5 levels of lateral translation.

Rotational-Aided Bridge: Place the teacher's left knee under the client's right knee, and right hand on the client's foot on the footbar. Ask the client to lower the left hip until the spine is in rotation to the left, then articulate the left hip back up until the pelvis is parallel again. Repeat on both sides until the decent and ascent of the pelvis is fluid.

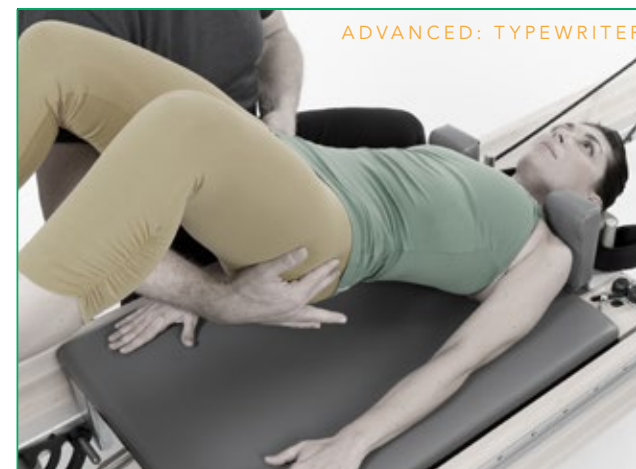
Doctor's Notes:

- Avoid lifting from your chest or hinging at your hips and upper thoracic.
- Movement should be smooth and effortless like a string of pearls, lifting one pearl or one vertebra at a time.
- Facilitate as many segments of the spine as possible in the ascent and descent. The average is 2–3 segments—experts can do 7. Where do you fall?
- Create the combination of axial elongation and spinal articulation by expanding on the beach cue, imagining that your sit bones are reaching toward the ocean (back of the knees) or that your knees are over a coat hanger.

STEP 1.1



STEP 1.2

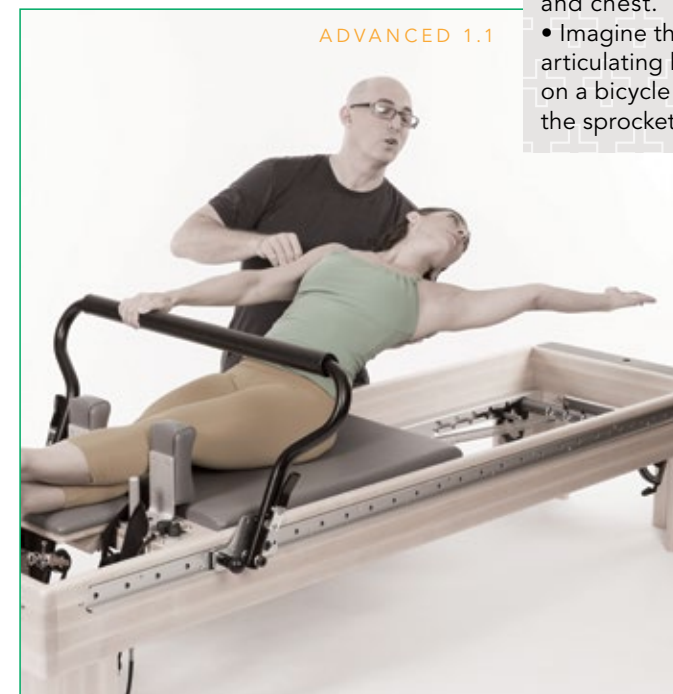
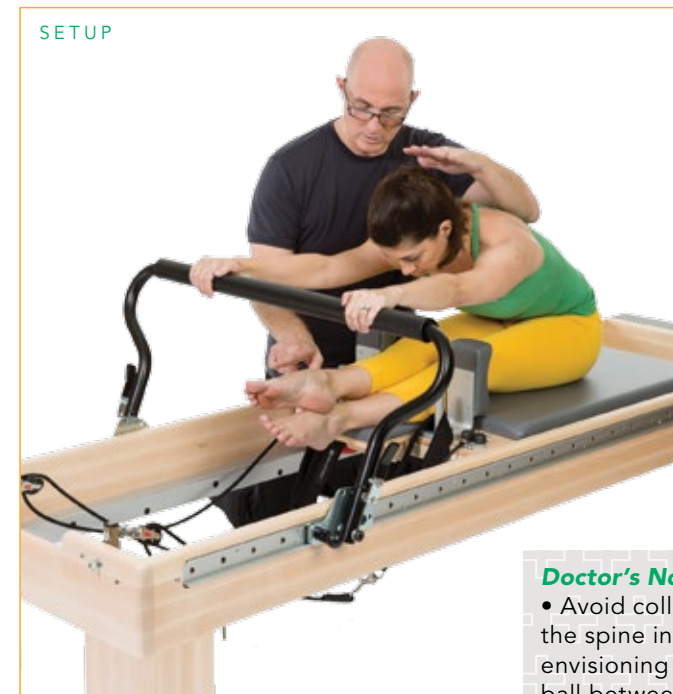


ADVANCED: ROTATIONAL-AIDED BRIDGE

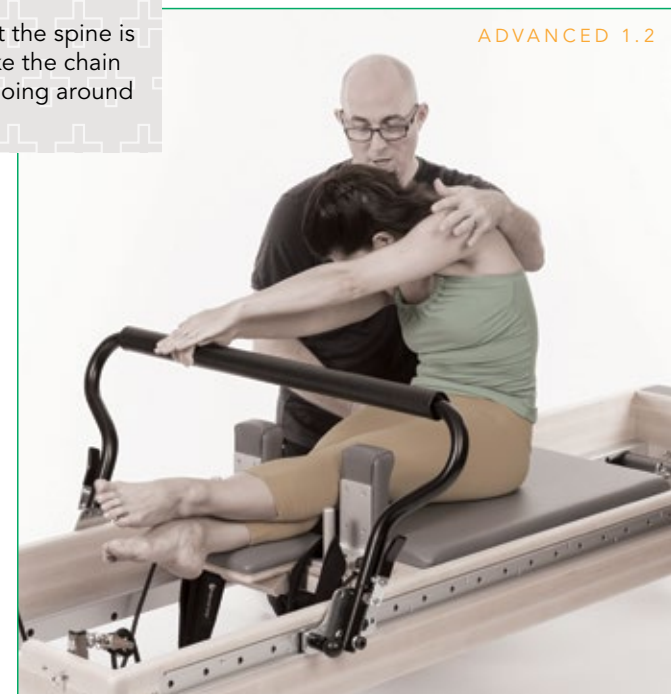


Rowing with Circumduction on Infinity Bar

SPRING SETTING: medium
PROP: Infinity Footbar, set on the highest notch 2–3 notches from the head of the Reformer
PURPOSE: flexes the spine with a closed kinetic chain of the upper extremities; allows for a fixed hand hold while moving the body into flexion; similar to Push-Through position on the Trapeze Table
SETUP: Sit on the carriage with your ankles crossed on the headrest; make sure there is ample room to move the carriage under the footbar. Place your hands shoulder-width apart on the footbar, allowing the springs to draw the carriage toward the foot of the Reformer, placing the body in a long, seated flexion.



1. With minimal head and back elevation, direct your feet under the footbar, gradually moving your entire body under the footbar.
2. Return to the starting position. Do 6–8 reps.
MODIFICATION: Omit if you have flexion precautions of the spine—just do a hinge without articulating the spine.
ADVANCED: Circumduction: Perform Circumduction, similar to what we do on the Trapeze Bar on the Trapeze Table, in this orientation.

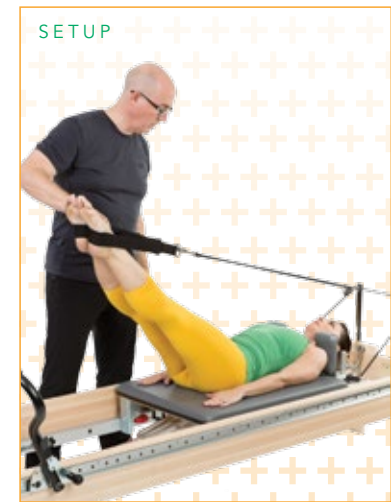


Doctor's Notes:

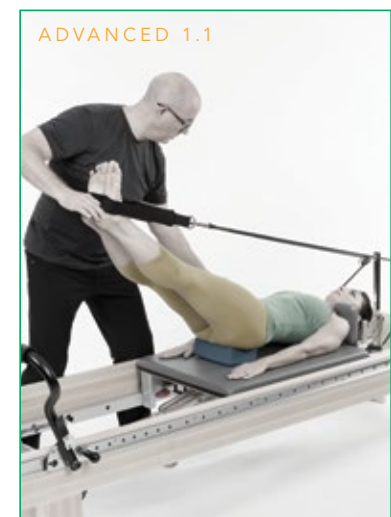
- Avoid collapsing the spine in flexion by envisioning a large soft ball between your legs and chest.
- Imagine that the spine is articulating like the chain on a bicycle going around the sprocket.

Feet in Straps

SPRING SETTING: medium
PROP: yoga block
PURPOSE: increases awareness of the disassociation of the hip and pelvis
SETUP: Lie on your back on the carriage, with your arms by your sides, and feet together and in the straps at 45 degrees. Allow your spinal curves to be in a natural and neutral position.



1. Keeping your pelvis and ribs in neutral, allow your legs to rise and lower, hinging at your hips. Do 8–10 reps.
2. Repeat step 1 with your legs turned out, then do circles in both directions.
MODIFICATION: For clients with shortened hamstrings or neural tension, place the straps on the backs of the thighs, knees bent at 90 degrees. Springs will have to be made heavier to support the weight of the legs and the shorter lever.
ADVANCED: Place the yoga block under your sacrum, sending your lower rib cage down toward the carriage. Maintaining a quiet pelvis, adduct and abduct the lower extremities, and continue to do 4–5 reps, lowering your legs a bit until they can't lower anymore. Remove the block and repeat Feet in Straps, noticing the ease in the movement.

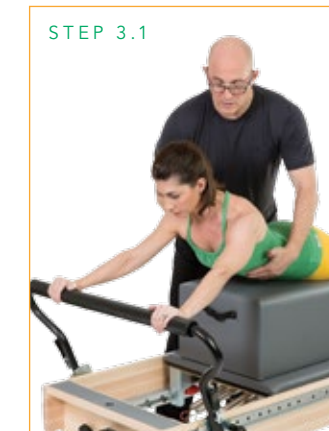
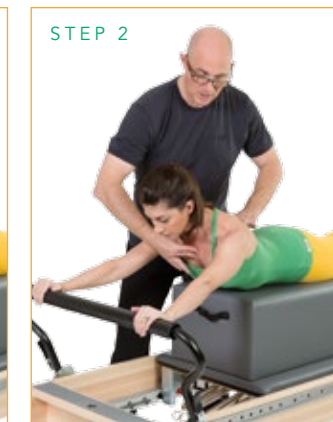
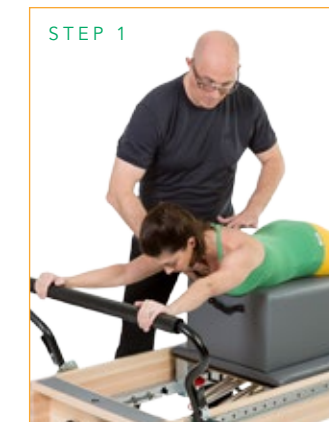


Doctor's Notes:

- To determine if you have set the correct spring tension, check that the body is at rest and there's little-to-no effort to keep the legs at 45 degrees. If the legs seem too heavy, increase the springs; if the pull lifting the legs seems too strong, decrease the tension.
- Use the breath to facilitate the movement: Inhale as the legs rise and exhale as they lower.
- Imagine that your legs are a door, your hips are the hinge and your pelvis is the frame—open and close the door effortlessly. As I tell my children, please do not slam the door.

Prone Swan on Long Box

SPRING SETTING: light to medium
PROP: Long Box
PURPOSE: facilitates thoracic mobility, one of the most common restrictions in human movement (secondary to the sitting epidemic)
SETUP: Lie on your stomach with your chest off the Box, legs long and together, hands shoulder-width apart on the footbar and elbows reaching down toward the floor.
1. Lengthen your body as long as possible.
2. Press your hands into the bar, lengthening through your elbows. Do 6–8 reps.
3. On the last rep, keep your arms extended and progress into the Swan: Allow your head, neck and shoulders to move into extension while keeping your lower ribs in contact with the Box. Do 6–8 reps.
MODIFICATION: Lower the footbar if you feel discomfort in your shoulders.
ADVANCED: Come up onto your thighs into full Swan, maintaining the relationship between the lower rib cage and pelvis.



Doctor's Note:

- Inhale anteriorly into your sternum to facilitate thoracic extension; exhale if the extension goes into your lumbar spine to mitigate any collapse in the lumbar.

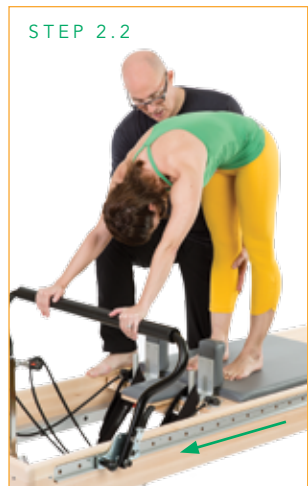
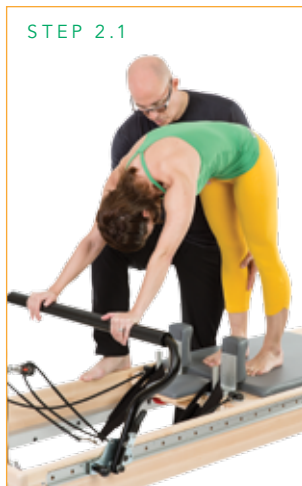
Elephant Facing the Reformer Head

SPRING SETTING: light
PROP: Infinity Footbar, set on the highest notch (or lower, for flexible clients) toward the head of the Reformer
PURPOSE: creates a direct resistance to the springs, rather than pretending to create resistance in the traditional orientation of Elephant
SETUP: Facing the footbar, stand in front of the shoulder blocks, with your hands shoulder-width apart on the bar. Attempt to get your arms vertical over your hands.

1. Arch your spine into an “angry cat” pose while lifting the undersurface of your body toward the ceiling through your spine.
2. Keeping your upper body and trunk flexed, draw your feet with your knees extended toward the head of the Reformer. Do 8–10 short pulses with exhalation.

MODIFICATIONS: For clients with flexion precautions, do the exercise with a neutral spine, where your body is in a hinge position at the hips. Bend your knees to accommodate short hamstrings.

ADVANCED: Do the exercise by disengaging a hand or a foot. You can also do an oblique version by taking both hands over to one side.



Doctor’s Notes:

- Imagine that your arms and body are like a suspension bridge as your legs move toward the head of the Reformer.
- Imagine that there is wind blowing from underneath the Reformer and your body is a parachute. Allow your body to lift toward the ceiling.
- Avoid drawing the carriage so far in that your feet go under the footbar.

Reverse Lunge Facing the Reformer Head



SPRING SETTING: very light
PROPS: Infinity Footbar, set on the highest notch toward the head of the Reformer; large dowel or teacher’s hand for balance
PURPOSE: challenges core stability against hip flexion and extension
SETUP: Using the teacher or a dowel for balance, stand on the carriage facing the footbar. Place your right foot on the footbar, extending your arms to a T, palms facing forward.

1. Keeping your spine and pelvis axially elongated, draw your standing leg underneath your pelvis until your leg is vertical with your body.
2. Return to the starting position. Do 6–8 reps, then repeat on your other leg.

MODIFICATIONS: Learn the lunge with normal orientation on the Reformer first. If a client is concerned about the height standing on the Reformer, lower the footbar 1–2 notches. Use a dowel to help with balance.

ADVANCED: Turn to face the side in a lunge, pulling the carriage under the standing leg.

Doctor’s Notes:

- Keep your body squared to the head or side of the Reformer.
- Begin with a very small range of movement.
- The connection between the rib cage and pelvis is crucial to maintaining control and stability of the pelvis and spine while drawing the extended leg underneath the body.

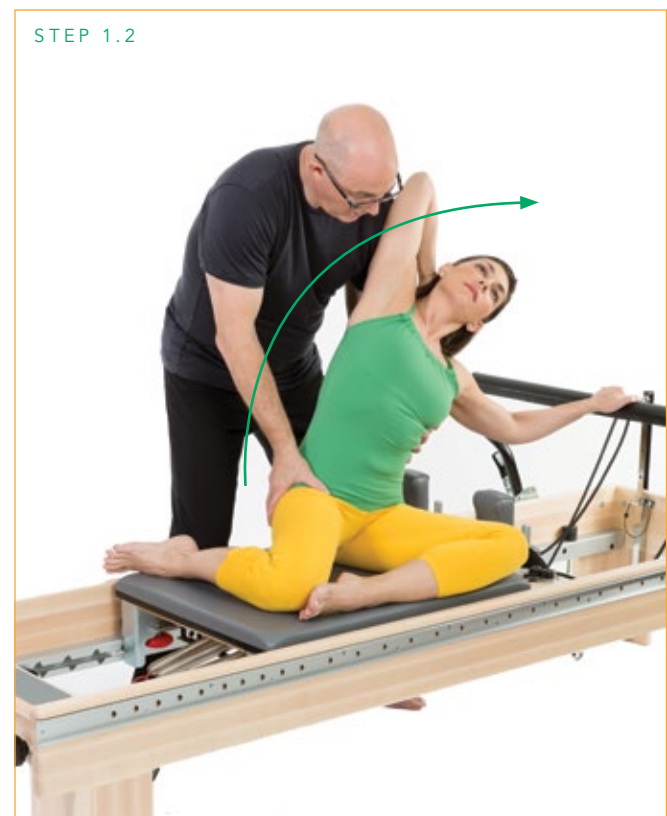
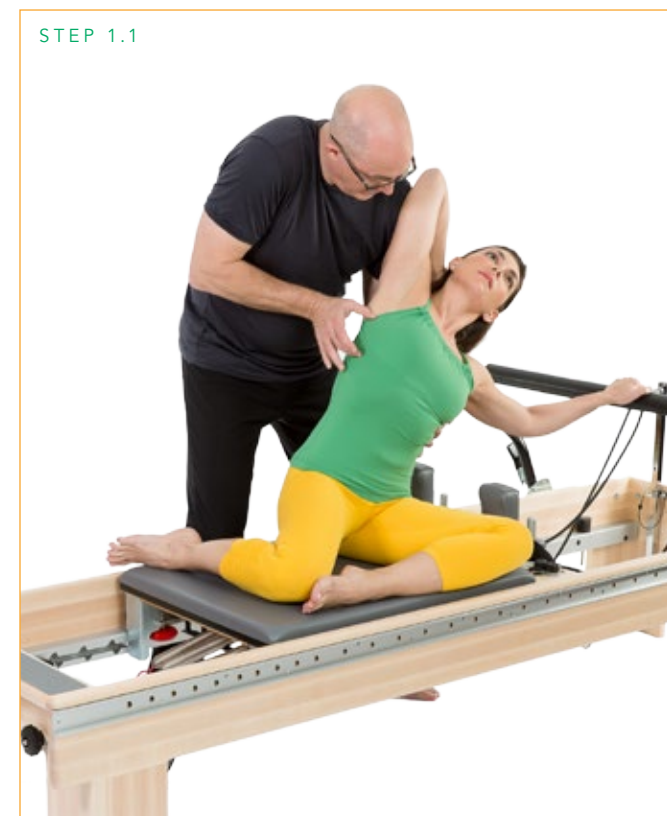
Mermaid with Infinity Bar

SPRING SETTING: light
PROP: Infinity Footbar, placed toward the head of the Reformer
PURPOSE: increases mobility in the thoracic spine in the coronal (frontal) plane
SETUP: Sit in the Mermaid position, with your left thigh against the shoulder pads. Place your left hand on the footbar in line with your shoulder, and your right hand behind your head, elbow wide.

1. Side-bend toward the footbar, allowing the carriage to move home.
2. Return to the starting position, allowing the carriage to roll under the body so the torso is vertical. Do 6–8 reps.

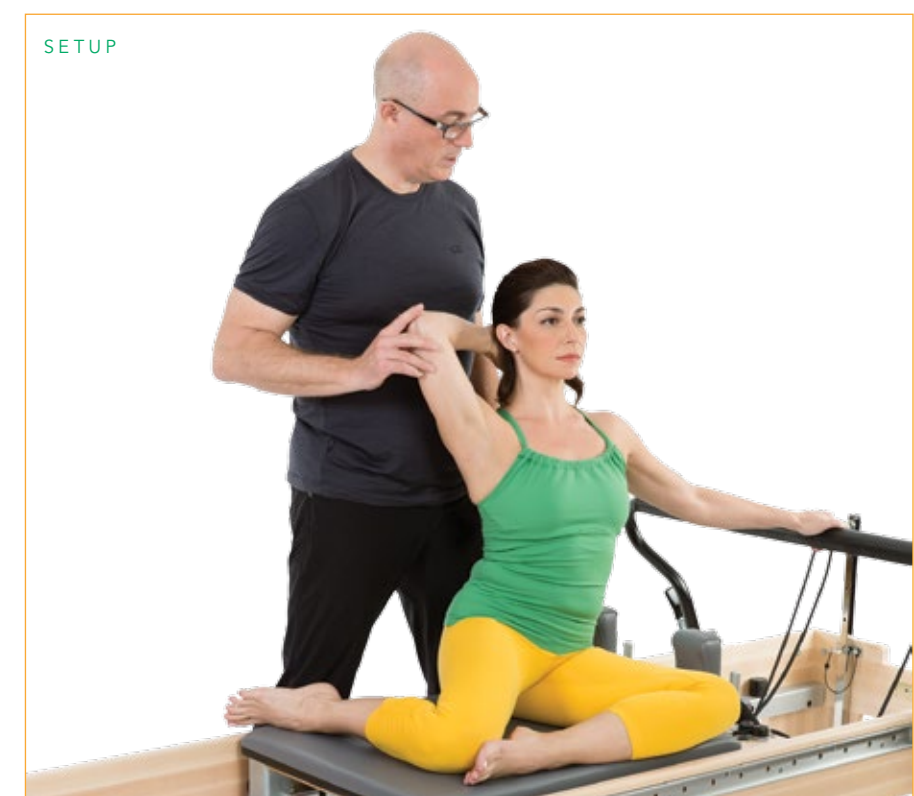
MODIFICATION: For clients with poor hip and knee flexibility, place your legs off the side of the Reformer.

ADVANCED: Add rotation and place both hands on the footbar, accentuating flexion with rotation and extension with rotation. Use the breath to add direction to the movement of the spine.



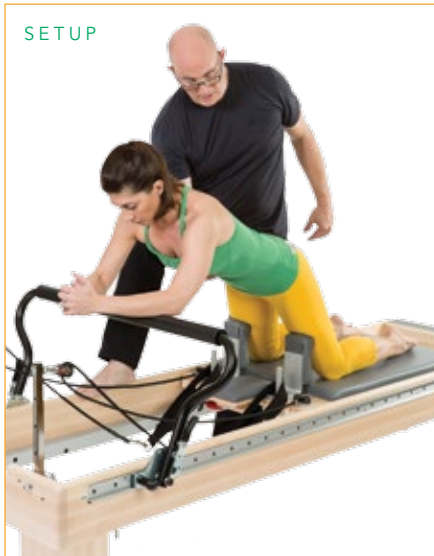
Doctor’s Notes:

- Avoid translation (lateral sliding rather than side bending) or hinging in the lower back.
- Emphasize breath into the side of the chest, opening up toward the ceiling. You can also use an exhalation emphasis from below to lift the flexed side up and through the spine.



Quadruped Facing the Reformer

SETUP



STEP 1



SPRING SETTING: light

PROP: Infinity Footbar, set on the highest notch toward the head of the Reformer

PURPOSE: challenges abdominal control over the pelvis during hip flexion

SETUP: Get on all fours on the carriage, with your knees slightly in front of the shoulder rests. Rest your forearms on the footbar, hands clasped, with your spine in neutral. Your body should be leaning forward slightly at the hips and shoulders.

1. Maintaining the forward lean of the upper body, draw your knees forward without moving your pelvis or flexing your low back.

2. Return to the starting position. Do as many as 10–20 reps.

MODIFICATION: If you have sensitive knees, place pads underneath them.

ADVANCED: Take both arms to your right or left, for an oblique variation. Or, for an even bigger challenge, with your arms to the right, lift your right leg, maintaining your neutral spine curves as much as possible.

Doctor's Notes:

- When performing this exercise correctly, the relationship between the rib cage and the pelvis is in neutral throughout the entire range of hip flexion and extension.
- By facing the head of the Reformer, the resistance to the exercise is direct; the more resistance, the more difficult the exercise becomes.
- Imagine that your legs are a door and your hips are the hinges; your pelvis is the wall and should not move.
- Envision a cup of tea on your sacrum and keep it from spilling as you move your legs underneath you.

Gear Guide

Balanced Body Clinical Reformer®, **Clara Step Barrel®** and **Foam Block** (\$4,795, \$350 and \$9, respectively; www.pilates.com)

Achin' for more? Don't miss our e-newsletter for bonus back-mending moves from Brent. **Sign up for free at www.pilatesstyle.com.**

On the Spine Corrector

Supine Stretch

PROP: none

PURPOSE: improves thoracic mobility

SETUP: Sit in the crevice of the Spine Corrector, with your knees bent and together, spine axially elongated. Cross your arms in front of your chest.

1. Roll your spine down onto the arc of the Spine Corrector, beginning with your sacrum and lumbar spine.

2. Continue to roll down until your spine is in extension over the arc.

3. Open your arms to your sides, emphasizing the widening of your anterior chest wall, as if you could reach your collarbones to opposite walls.

4. Roll your head, neck, shoulders and spine back up to return to the starting position. Do 4–6 reps, allowing a pause with 2–3 deep breaths when extended over the arc.

MODIFICATIONS: If working with a tall person like me or someone with poor extension mobility, allow the pelvis to come away from the arc and the knees to extend when rolling back over the Spine Corrector. You can also add a mat to the Spine Corrector to increase the width of the arc. Use a pillow or deflated ball to support the head, if needed.

Doctor's Notes:

- Remember there are many different sizes of Spine Correctors on the market. It is important to have a few different types to have the greatest number of options for the diverse bodies that come into our studios.
- Notice my hand placement to emphasize the opening of the anterior chest wall, clavicles and shoulder girdle.

SETUP



STEP 1



STEP 3.1



STEP 3.2



A licensed physical therapist and orthopedic certified specialist, **Brent Anderson**, PT, PhD, OCS, PMA®-CPT, is a leading authority in performing arts medicine, Pilates for rehabilitation, pain management through movement and spine health. He lectures widely at national and international symposia, and consults with physical therapy companies, universities and other educational bodies throughout the world. In addition, he owns and operates one of the most comprehensive Pilates conditioning and physical therapy centers, a model for many other Pilates studios worldwide. Brent is the founder of Polestar Pilates Education, which currently operates in more than 40 countries and 12 languages.

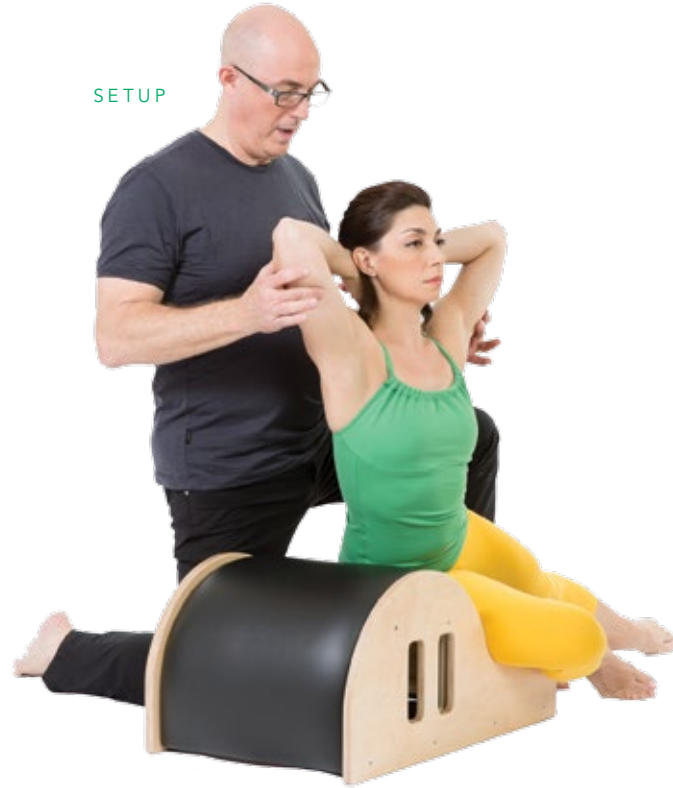
Brent received his degree in physical therapy at the University of California, San Francisco in 1989, and his PhD in physical therapy at the University of Miami in 2005. He currently serves as adjunct faculty at the University of Miami, Department of Physical Therapy. His doctoral thesis explored the impact of Pilates rehabilitation on chronic low-back pain using psycho-emotional wellness and quality of life measures. Brent has been a member of the American Physical Therapy Association since 1987 and formerly served as President of the Performing Arts Special Interest Group in the Orthopedic Section. He is also a longtime member of the International Association for Dance Medicine and Science and the Pilates Method Alliance.

Since 1996, **Kim Gibilisco**, MFA, MA, PMA-CPT, has been teaching Pilates in academic settings and studios in NYC, NJ and VA. She received her Pilates training through Polestar Pilates Education and STOTT PILATES®. In the first wave of instructors to sit for the exam, she became a board-certified Pilates teacher through the Pilates Method Alliance in 2005. Kim served her professional organization as Vice Chair/Secretary of the Certification Commission for six years. She has also served on the Item Review and Item Writing Committees. In 2005, Kim designed and implemented Shenandoah University's first Pilates mat teacher-training program. August 2013 marked the launch of the Polestar Pilates Comprehensive Teacher Training curriculum at Mason Gross School of the Arts – Extension Division, for which Kim is the primary instructor. This is the first 450-hour, evidence-based, comprehensive teacher-training program to be offered in a university setting. Kim offers private, duet, trio and group Pilates lessons at Movements Afoot in NYC. For more information, visit www.kgdances.org.

Get the next exercise on page 90!

Side Sit-Up

SETUP



PROP: none

PURPOSE: focuses on movement in the coronal plane; improves the ability to breathe with ease, side-bend and rotate the spine and distribute movement, which, in turn, helps to distribute forces and reduce stress to the lumbar and cervical spine

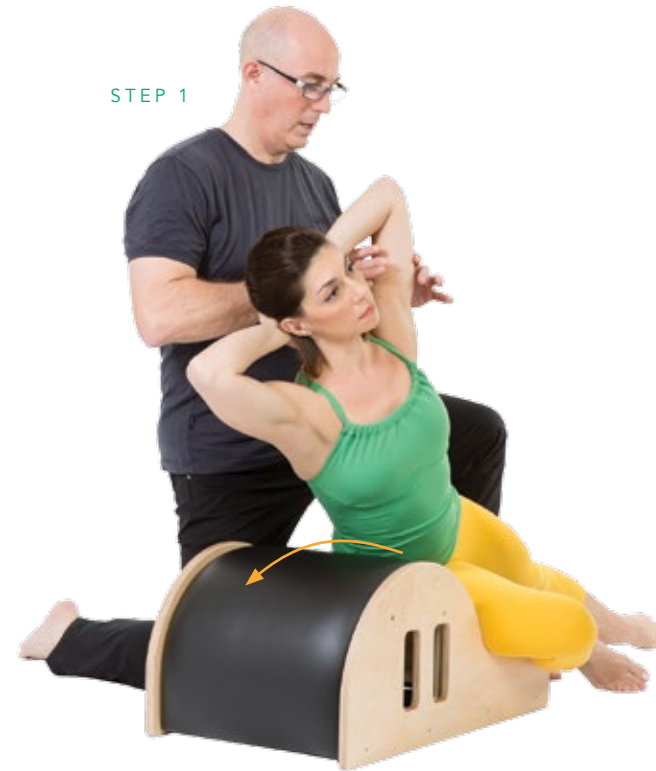
SETUP: Sit sideways on the Spine Corrector, with an axially elongated spine and your bottom knee bent and top leg straight. Place your hands behind your head, elbows wide.

1. Side-bend segmentally over the arc, beginning with your hip, waist, ribs and shoulder.
2. When your body reaches the arc, take 2–3 deep breaths with an emphasis on lateral expansion on the side of your chest that's toward the ceiling.
3. Use an exhalation to peel away from the Spine Corrector, beginning with your head, ribs, waist and pelvis, until in a tall seated position. Do 3–4 reps, then repeat to your other side.

MODIFICATIONS: Add bolsters, mats or pillows to make the lateral flexion more comfortable for individuals with increased spine rigidity. Be careful with clients with bone health issues. Bend the outstretched leg slightly if your outer hip muscles cramp in seated position. Elongate your leg when rolling down.

ADVANCED: Extend your arms overhead to create a longer lever.

STEP 1



STEP 2



Doctor's Notes:

- You will notice that this Mermaid variation is easier than those on the Reformer and mat. This is due to the support of the arc and the top hip not in end-range internal rotation.
- Use your hand under your client's top elbow to provide direction and assistance as needed to ensure a comfortable lateral flexion and a safe re-stacking of the vertebrae. You can also use a tactile cue to facilitate breath expansion into the ribs and lung toward the ceiling.