



## Diagonal Arch & Curl

The **Diagonal Arch & Curl** involves arching and curling while holding one knee up. The Diagonal Arch & Curl allows you to release and regain control of the lower back, abdominal, and oblique muscles, and to focus on your right and left sides individually. The exercise helps to relieve back pain, disc problems, sciatica, scoliosis, lordosis, kyphosis, hip pain, and functional leg length discrepancy.

### EXERCISE DESCRIPTION

**Starting Position:** Lie on your back with your knees bent, feet on the floor, and arms lying by your sides. Bring your left knee in toward your chest and hold the front of your left knee with your left hand. Relax your left arm, and keep the front of your left hip as soft and relaxed as possible throughout the exercise. Bring your right hand up behind your head and let your elbow relax out to the side.

**Arching Movement:** Inhale into your lower belly and gently roll your pelvis forward, arching your lower back and sticking out your belly. Notice the muscles on the left side of your lower back contracting, and notice your left hip pressing into the floor. When you're ready, exhale and release your lower back muscles as slowly as you can, coming back to the neutral starting position without engaging your abdominal muscles.

**Curling Movement:** Inhale into your lower belly, then exhale and flatten your lower back down into the floor. Try to get the feeling of hollowing out your belly. Bring your right elbow in toward your face, tuck your chin, and curl up, bringing your right elbow diagonally toward your left knee. Keep pressing your lower back down into the floor. When you're ready, release your abdominal muscles as slowly as you can to come back to the starting position, and let your right elbow slowly relax out to the side.

**Practice this between 1-5 times on this side. Then, practice the exercise on the other side, with your right knee bent in toward your chest, your right hand holding the front of your right knee, and your left hand behind your head.**

## ANATOMY OF THE DIAGONAL ARCH & CURL

**Arching Movement:** The extensor muscles of the lower back contract to roll the pelvis forward and arch the lower back. These muscles include:

Erector spinae group  
Transversospinalis group  
Intertransversarii  
Interspinalis  
Quadratus lumborum  
Latissimus dorsi  
Iliopsoas

The student's focus should be on gently contracting the muscles of the lower back as they roll their pelvis forward, and on becoming aware of the sensation of these muscles contracting. They should feel that the arching movement is happening more with the side on which their knee is held up; they should feel that side of their lower back working more than their other side.

After rolling the pelvis forward into the arched position, the student then slowly releases the lower back muscles to allow the pelvis to roll back to the neutral starting position. The student should not engage their abdominal muscles or any other muscles in order to come out of the arch. The pelvis should return to the neutral starting position only as a result of the student slowly, consciously releasing their lower back muscles.

**Curling Movement:** The abdominal muscles contract to roll the pelvis backward, pressing the lower back down into the floor. Most students will automatically use the superficial abdominal muscles (*rectus abdominus* and *internal and external obliques*) to do this action. It is beneficial for the student to sometimes focus on using their *transverse abdominus*, a deep abdominal muscle, to hollow out the belly as they flatten their back into the floor. Once the student has flattened their back down into the floor, they will engage their *rectus abdominus* and *obliques* to curl up diagonally to the opposite side. When they've curled up as high as they want to, they should release their abdominals as slowly as possible to return to their neutral starting position.

**Breathing in the Diagonal Arch & Curl:** Arching the lower back is a natural extension of inhaling and allowing the lower belly to expand outward. Flattening the lower back, hollowing out the belly, and curling up is a natural extension of exhaling. Inhaling down into the lower belly while arching and exhaling while flattening and curling up should feel natural and will enhance both movements. Attempting to do the opposite will restrict both movements.

Students should inhale as they arch, letting their lower belly expand. After

coming into the arched position, they can breathe as needed until they have returned to their neutral starting position.

Students should begin the Curl by inhaling down into their lower belly, then exhaling completely as they flatten and curl up. After exhaling and coming into the fully curled up position, they can breathe as needed until they have returned to their neutral starting position.

In the Diagonal Arch & Curl and all Clinical Somatics exercises, students are instructed to inhale and exhale at certain times when these actions enhance or play a role in the movement. However, students should never hold their breath in order to complete a movement as instructed.

## CONDITIONS HELPED BY THE DIAGONAL ARCH & CURL

The Diagonal Arch & Curl addresses the following conditions by releasing involuntary muscle contraction in the lower back, abdominals, and obliques, and by working with one side at a time to even out muscular imbalances.

Muscle tightness in the lower back, abdominals, and obliques

Lower back pain

Disc problems in the lumbar spine

Sciatica

Hyperlordosis

Postural kyphosis

Sway back posture

Flat lower back (tucking pelvis under)

Scoliosis

Hip pain

Functional leg length discrepancy

## HOW TO TEACH THE DIAGONAL ARCH & CURL

**Get the student in their starting position.** The student should lie on their back with their knees bent and feet on the floor. Knees and feet should be a comfortable hip width distance apart. The student can rest their arms on the floor.

**Invite the student to close their eyes.** Closing their eyes removes all the visual information that their brain would otherwise have to process. Keeping the eyes closed allows the student to focus completely on their internal sensations.

**First teach the Arch.** Instruct the student to lift up their left knee and bring it in toward their chest, and hold the front of their left knee with their left hand. They

should then bring their right hand up behind their head, and let their elbow relax out to the side. They should keep both arms and their left hip and leg as relaxed as possible.

Instruct the student to inhale down into their lower belly and gently roll their pelvis forward. They should relax their abdominal muscles and let their belly stick out as they fully inhale and arch. Ask the student to be aware of a gentle contraction of their lower back muscles while they are in the arched position, and to notice if they feel a difference between their right and left sides as they do the movement. They should feel their left hip pressing down into the floor more than their right, and their left lower back muscles working more than their right.

When the student is ready, they should focus on releasing their lower back muscles *as slowly as possible* to return to their neutral starting position. They should not engage their abdominal muscles or any other muscles to help them release out of the arch. They should return to their starting position only as a result of slowly, consciously releasing their lower back.

**Then teach the Curl as a separate movement.** While the student is resting in their neutral starting position, instruct them to take a full inhale down into their belly (no arching this time!). Then as they slowly exhale, the student should gently flatten their back down into the floor and try to hollow out their belly. Then they should bring their right elbow in toward their face, tuck their chin, and curl up diagonally toward their left knee. Ask them to notice if they feel their muscles contracting along the diagonal from the front of their right shoulder down to their left hip. Once the student is comfortable with the movement, encourage them to press their lower back down into the floor when they curl up; this will allow them to curl up a little farther. When they have curled up as high as they want to, the student should release their abdominals as slowly as possible to come back down to their starting position. They can visualize the diagonal from the front of their right shoulder down to their left hip very slowly releasing and getting longer as they lower down.

**Talk the student through the full exercise.** Tell the student why it is so important to release completely to their neutral position before doing the next movement: The slow, conscious release back to neutral is what releases the involuntary muscle contraction and allows the student to regain voluntary control of the muscles. After explaining this, talk the student through an Arch, rest in neutral for a few seconds, then talk them through a full Curl (remember to start with an inhale!). After returning to their neutral starting position, have the student do the full exercise one or two times on their own to make sure they understand it.

**Repeat on the other side, with the student's right knee bent in toward their chest, their right hand holding the front of their right knee, and their left hand behind their head.**

## Notes:

The benefit of practicing this exercise in addition to the Arch & Curl is that this version allows the student to explore the differences between how the right and left sides of their lower back, abdominals, and obliques feel when arching and curling diagonally. This movement is a gentle way for them to begin regaining control of their obliques before doing bigger movements like the Diagonal Curl, Washcloth, and Steeple Movement.

## Common mistakes:

The most common mistake is not releasing completely to neutral in between the Arch and the Curl. Students like to roll forward into the arched position, then immediately engage their abdominals to come into the flattened position or into the Curl. Explain the importance of slowly, consciously releasing to neutral after each Arch and each Curl.

Students may hold their breath in an effort to breathe as you have instructed them to. Tell them it is important to keep breathing as much as they need to. They should inhale as they roll their pelvis forward into the Arch, then breathe as needed as they release to neutral and rest in neutral. They should inhale before they begin the Curl, then exhale fully as they flatten their back down into the floor and curl up. Then they can breathe as needed as they release to neutral and rest in neutral.

In the Diagonal Arch & Curl, students may hold unnecessary tension in their arms and in the hip and leg that is being held up. Remind them several times as you teach the exercise to keep their hip and leg as relaxed as possible; to keep the arm that is holding the leg up as relaxed as possible; and to fully relax the elbow of the other arm out to the side after each curl.

When students practice this exercise (and any of the exercises) on their own at home, it is common for them to move too quickly. Explain the importance of releasing to neutral as slowly as they possibly can, using all their mental focus. If they ever feel that they are not getting benefit from an exercise, tell them to practice it even more slowly. Counting can help students to pace themselves; you can suggest counting to eight (or more) as they release back to neutral to make sure they are moving slowly enough.

## **The following is an example of how I teach the Diagonal Arch & Curl:**

Come down to the floor, and lie down on your back. Bend your knees and put your feet on the floor, a comfortable hip width distance apart. Bring your left knee in toward your chest, and hold the front of your left knee with your left hand. Bring your right hand up behind your head and let your elbow fall out to the side. Be as relaxed as you can be in this position. Relax your left hip, and relax your left arm. Use as little effort as possible to be in this position.

Inhale into your belly and roll your pelvis forward toward your feet, arching your lower back. Feel the gentle contraction of your lower back muscles on your left side, and when you're ready, slowly and smoothly release them to let your lower back come back down to the floor. Then inhale down into your belly again, and as you exhale, begin to flatten your back into the floor and hollow out your belly. Bring your right elbow up, tuck your chin, and curl up diagonally toward your left knee. Notice what muscles are contracting to help you curl up. When you're ready, release as slowly and with as much control as you possibly can to come back down to your starting position. Relax your right elbow out to the side.

Let's do this two more times. Inhale into your belly and roll your pelvis forward, arching your lower back. Feel the gentle contraction of your lower back muscles on your left side, and then release them as slowly as you can to come back to your neutral starting position. Now inhale again, filling up your belly, and as you exhale, begin to flatten your back down into the floor. Bring your right elbow up, tuck your chin, and curl up, bringing your right elbow diagonally toward your left knee. Notice if you feel muscles contracting along the diagonal from the front of your right shoulder down to your left hip. Curl up as much as you can comfortably, then release as slowly and with as much control as you can back down to the floor. Feel the right side of your chest opening up as you lower down and release.

One more time, inhale into your belly and gently roll your pelvis down toward your feet, arching your lower back. Feel your lower back muscles on your left side gently contracting, then release them as slowly and with as much control as you possibly can to come back to neutral. Then inhale again, filling up your belly, and as you exhale, begin to flatten your back into the floor. Bring your right elbow up, tuck your chin, and curl up diagonally toward your left knee. The more you press your back down into the floor, the more you'll be able to curl up. Then when you're ready, release back down toward the floor as slowly and as smoothly as you possibly can.

Now you can take your right hand out from behind your head, and slowly and gently lower your left foot down to the floor.

Let's do the same series on the other side. Bring your right knee in toward your chest, and hold the front of your right knee with your right hand. Bring your left hand up behind your head. Relax your right hip, and relax your right arm.

Inhale into your belly and roll your pelvis forward toward your feet, arching your lower back. Feel the gentle contraction of your lower back muscles on your right side, and when you're ready, slowly and smoothly release them to let your lower back come back down to the floor. Then inhale down into your belly again, and as you exhale, begin to flatten your back down into the floor and hollow out your belly. Bring your left elbow up, tuck your chin, and curl up diagonally toward your right knee. Notice what muscles are contracting to help you curl up. When you're ready, release as slowly and with as much control as you possibly can. Relax your left elbow out to the side.

Let's do this two more times. Inhale into your belly and roll your pelvis forward, arching your lower back. Feel the gentle contraction of your lower back muscles on your right side, and then release them as slowly as you can to come back to neutral. Now inhale again, filling up your belly, and as you exhale begin to flatten your back into the floor. Bring your left elbow up, tuck your chin, and curl up, bringing your left elbow diagonally toward your right knee. Notice if you feel muscles contracting along the diagonal from the front of your left shoulder down to your right hip. Curl up as much as you can comfortably, then release as slowly and with as much control as you can back down to the floor. Feel the left side of your chest opening up as you lower down and release.

One more time, inhale into your belly and gently roll your pelvis down toward your feet, arching your lower back. Feel your lower back muscles on your right side gently contract, then release them as slowly and with as much control as you possibly can to come back to neutral. Then inhale again, filling up your belly, and as you exhale, begin to flatten your back down into the floor. Bring your left elbow up, tuck your chin, and curl up diagonally toward your right knee. The more you press your back into the floor, the more you'll be able to curl up. Then when you're ready, release back down to the floor as slowly and as smoothly as you possibly can.

Now you can take your left hand out from behind your head, and slowly and gently lower your right foot down to the floor.