

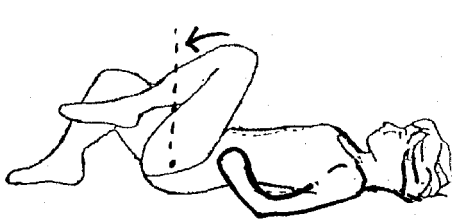
Core Stabilization Exercises

Purpose: These exercises will strengthen and improve coordination of the trunk muscles which is needed to help maintain active balanced posture and lumbar stability. Core strength helps decrease strain on the spine and ultimately helps to decrease back pain.

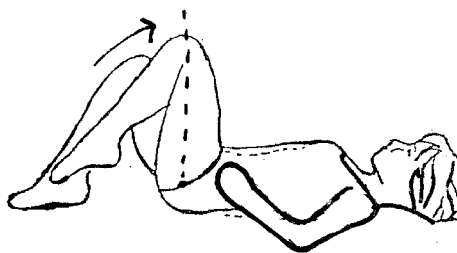
- Instructions:**
1. Do only the exercises indicated and instructed by your therapists.
 2. Remember to hold **Deep Layer Contraction Muscles (DLC)** then start the stabilization exercise.
 3. Exercise 3 times per week, not 2 days in a row, performing instructions of your therapist.
 4. Stop if pain symptoms significantly worsen or radiate and consult your therapist.
 5. **Slowly repeat each exercise for a maximum of 2 minutes.**
 6. _____
 7. **Progress to the next level of exercise when able to complete 2 minutes without maximal fatigue.**

1. Lower Abdominal Exercise: Maintain DLC

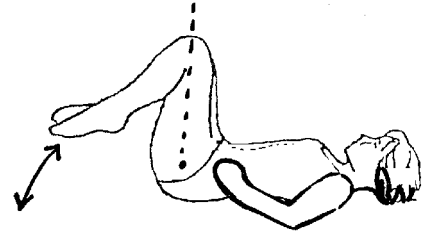
Position on your back with knees bent. Maintain a deep core contraction, and **neutral, balanced low back curve throughout; do not arch or move your back while moving the legs.** Repeat each exercise for **20 repetitions or up to 2 minutes.**



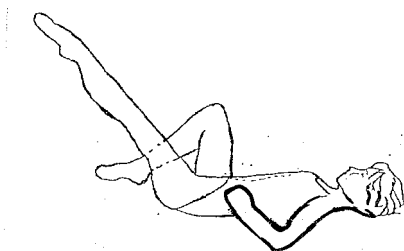
Level 1: Either bring one leg up past 90 degrees (easier), or stop at 90 degrees (harder). Lower it slowly back down to the floor. Alternate and repeat.



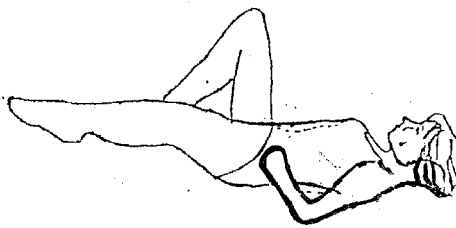
Level 2: Bring one leg up to 90 degrees, and then bring the other one up to meet it. Lower one leg down to the floor. Lower the other leg down to the floor. Alternate lead leg and repeat.



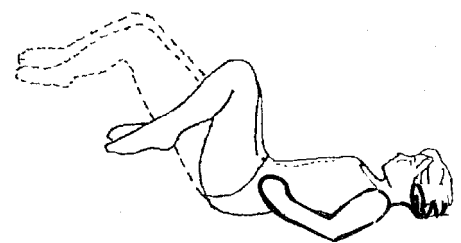
Level 3: Bring one leg up to 90 degrees, and then bring the other one up to meet it. Lower one leg down and just tap your toe on the floor, and return back up to 90 degrees. Alternate and repeat.



Level 4: Bring one leg up to 90 degrees, and then bring the other one up to meet it. Straighten one leg out and drop slightly (less than 45 degree angle). Return to starting position. Alternate and repeat.

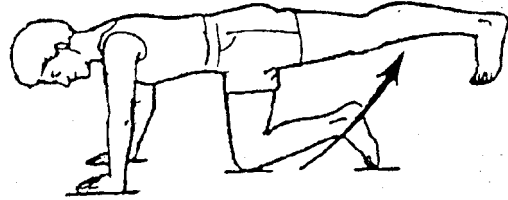
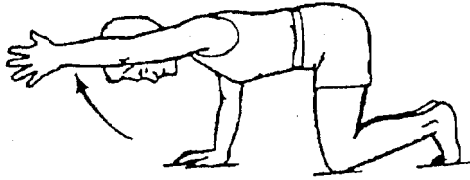


Level 5: Bring one leg up to 90 degrees, and then bring the other one up to meet it. Straighten one leg out and drop down to just above floor. Return to starting position. Alternate and repeat.



Level 6: Bring one leg up to 90 degrees, and then bring the other one up to meet it. Straighten both legs and drop slightly (less than 45 degree angle). Return to starting position and repeat.

2. Level 1: Alternate Arm or Leg Lift: Maintain DLC

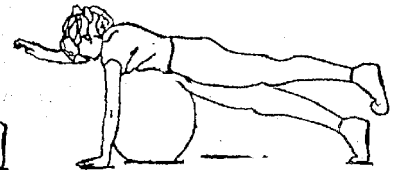
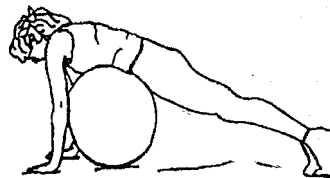
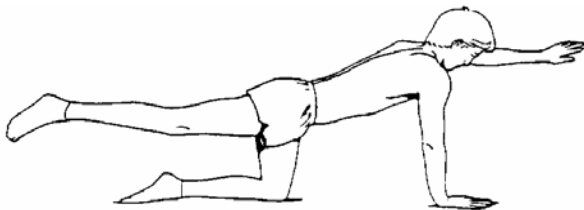


Position on hands and knees. Maintaining a deep core contraction, lift one arm out in front of you. Hold this position for **10 seconds**. Repeat with the other arm. Return arm to floor and lift one leg behind you, keeping a level pelvis and tight core. Hold this position for **10 seconds** and then repeat with the other leg. **Repeat up to 12 repetitions (2 minutes)**.

MODIFICATION: This exercise can also be performed on your stomach if you have a wrist, shoulder or knee problem.



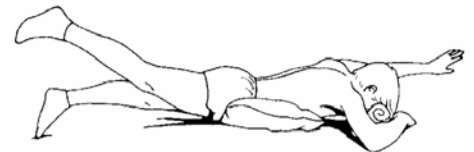
Level 2: Alternate Arm and Leg Lift: Maintain DLC



Maintaining a deep core contraction, simultaneously raise one arm out in front of you, and raise the opposite leg. Hold this position for **10 seconds**. Alternate sides, and keep your pelvis level. **Repeat up to 12 repetitions (2 minutes)**.

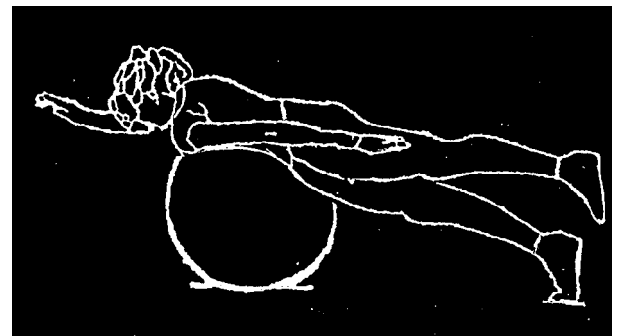
ALTERNATE: Perform on ball, placing ball under abdomen and help balance on toes and hands (don't put all of your weight through your hands and toes).

MODIFICATION: This exercise can also be performed on your stomach if you have a wrist, shoulder or knee problem.

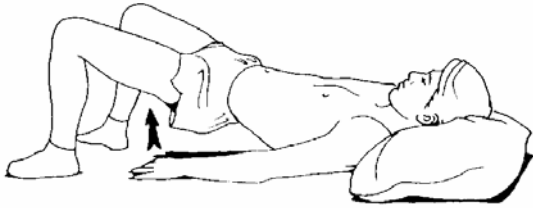


Level 3: Alternate Arm and Leg Lift: Maintain DLC

Perform on ball, balancing on toes and abdomen. Perform a swimming motion with arms, i.e. as right arm is out in front of you, left arm is at your side and your left leg is raised behind you. Repeat on the other side. **Hold each position for 10 seconds, repeat up to 12 repetitions (2 minutes)**.



3. Level 1 Bridge: Maintain DLC

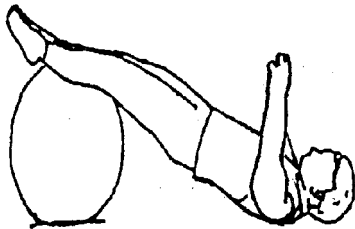


Position lying on back with legs bent, and arms at sides. Placing palms up aids in facilitation, so do this if able.

- **1st Set:** Lift hips off of floor using abdominal muscles (not buttocks), rolling up one vertebra at a time. **Hold 10 seconds.** Lower hips slightly and lift again focusing on abdominals to do the work. **Repeat up to 6-12 repetitions (1-2 minutes).**
- **2nd Set:** Lift hips off floor using hips and buttock muscles this time, rolling up one vertebra at a time. **Hold 10 seconds.** Lower hips slightly and lift again using buttocks to push hips up. **Repeat up to 6-12 repetitions (1-2 minutes).**

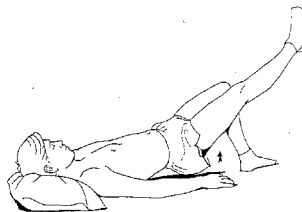
ALTERNATE: Perform on ball, placing ball under legs below the knee.

Level 2 Bridge: Maintain DLC



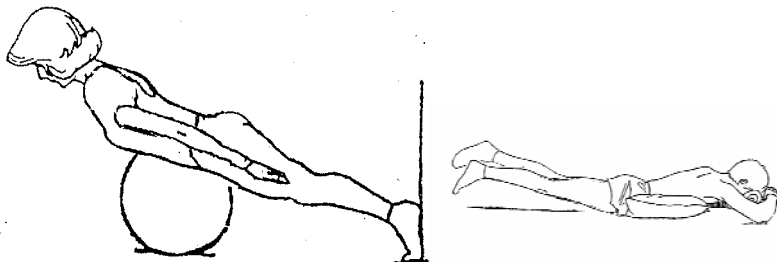
Hold arms to the ceiling and complete as in level one. Complete the two sets described in level 1.

Level 3 Bridge: Maintain DLC



In an extended bridge, lift one leg off the floor or ball and **hold for 10 seconds**, while maintaining a level pelvis. Repeat with the other leg, keeping hips up from the floor. **Continue for up to 12 reps (2 minutes).**

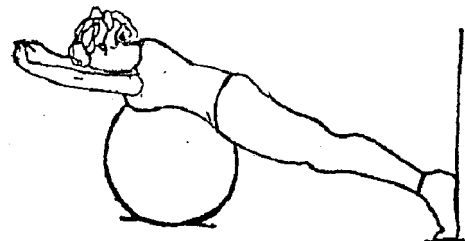
4. Level 1 Trunk Extension: Maintain DLC



Lie on stomach over the ball with your feet against the wall, arms at your side or behind you. Lift your trunk or chest off the ball. Maintain spine in a neutral position, careful not to arch your back. **Hold for 10 seconds**, lower slowly and repeat up to **12 repetitions (2 minutes).**

ALTERNATE: Perform exercise on the floor, lifting both legs.

Level 2 Trunk Extension: Maintain DLC



Progress By:

- Positioning arms out in front of you
- Holding weights in your hands as arms are out in front of you
- Increase hold time

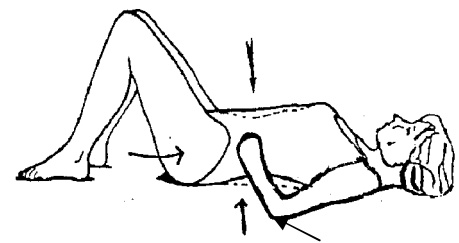
Active Balanced Posture: 4-Step Deep Layer Core Contraction

Purpose: The core is where the body's center of gravity is located and where all movement begins. A strong, efficient core is necessary for building and maintaining proper muscle balance and posture throughout the entire body.

- Instructions:**
1. These exercises should be pain-free. You will feel a deep sense of fatigue after completion.
 2. Hold all 4 contractions for **10 seconds, and repeat 10 times**. Once you can perform this easily, you will be ready to progress to performing movements while you hold the contractions, but you must master the 4-step deep layer contraction first.
 3. **Goal is to hold 5 minutes, 3-5x/day** while incorporating into daily, functional activities, such as sitting, standing, lifting your child or laundry basket, vacuuming, etc.
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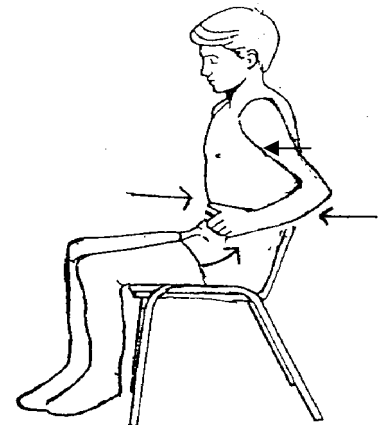
Step 1: Pelvic Floor Contraction (Kegel Exercise)

- Performed in sitting, supine (lying on back) with knees bent, quadruped (on hands and knees), & standing.
- Lightly contract the muscle as if you were going to cut off the flow of urine midstream.
- Do not perform a maximal contraction, only contract at 50% – pretend your pelvic floor is an elevator, contract slightly for the first floor, and a little harder for the second floor, and a maximal contraction for the third floor. For the exercise, stop at the second floor (or 50%) contraction and hold, then move to step #2.
 - Avoid squeezing your buttocks together, squeezing your legs, tilting your pelvis, or holding breath.



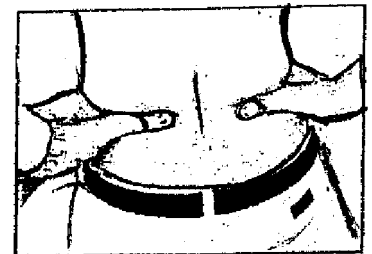
Step 2: Lower Abdominal (Transversus Abdominis) Contraction

- Can best be performed in quadruped (on hands and knees); but can also be performed in standing, sitting, and supine with knees bent.
- While maintaining your pelvic floor contraction, draw in or pull your lower abdomen in and up toward your spine (bringing your belly button toward your spine), or think of drawing your abs in and away from the elastic of your pants.
- You can feel this contraction by pressing your fingers just inside of your front hip bones.
 - Avoid tilting your pelvis, holding your breath, using your upper abs, or sucking in your stomach.



Step 3: Spinal (Multifidus) Contraction

- Can best be performed in prone (lying on stomach); but can also be performed in sitting and quadruped (on hands and knees).
- While maintaining your pelvic floor contraction **and** your lower abdominal contraction, swell your back muscles by squeezing them together.
- Imagine the muscles along your spine are your buttocks. Gently squeeze your “back buttocks” together.
- You can feel this contraction by wrapping your hands around your rib cage with your thumbs placed on either side of your spine.
- If you are having difficulty, you can lightly push your fingertips into your thighs to assist.
 - Avoid extending your back (leaning back), tilting pelvis, or holding your breath.



Step 4: Scapular Retraction

- Can be performed sitting, standing, supine and prone.
- Bring your ears over your shoulders into balanced posture.
- While maintaining your pelvic floor, lower abdominal and spinal contractions, squeeze your shoulder blades down and together.
 - Avoid holding your breath or shrugging your shoulders.

