Pilates for Diastasis Recti

Lauren Milan
January 15, 2015
2014/2015
West Caldwell, NJ/New York, NY
Abstract

Diastasis recti is the separation of the rectus abdominis muscles along the linea alba. Diastasis commonly occurs in pregnant women due to the stretching of the linea alba which connects the right and left sides of the rectus abdominis. When due to pregnancy, sometimes the separated muscles heal on their own, however, a year after giving birth to a nearly 10 pound baby, I was diagnosed with diastasis recti after suffering from back and hip pain. I will discuss in this paper the exercise routine I have developed using my training in pilates along with the supervision of a physical therapist to heal my diastasis.
Table of Contents

Abstract.......................................................................................................................................Page 2
Table of Contents.........................................................................................................................Page 3
Anatomical Description of Diastasis Recti..............................................................................Page 4-6
Case Study....................................................................................................................................Page 6-7
BASI Block System Conditioning Program....................................................................... Page 7-11
Conclusion....................................................................................................................................Page 11
Bibliography.................................................................................................................................Page 12
Anatomical Description of Diastasis Recti

The separation of the right and left rectus abdominis muscles along the linea alba is called diastasis recti. The rectus abdominis muscle runs vertically in the center of the “stomach” region. The rectus abdominis are actually two muscles separated along the linea alba, which is a fibrous structure made up of mostly collagen connective tissue. The rectus abdominis muscle is the most anterior abdominal muscle and it originates at the pubic crest and pubic symphysis and inserts at the 5th through 7th costal cartilages and xiphoid process.

![Diagram of abdominal muscles]

Figure 1

The function of this muscle is to flex the spine, tense the anterior abdominal wall, assist in compressing the abdominal contents, and provide support to the back and organs. In pregnant women, diastasis recti is caused by the growing uterus pushing against these muscles and separating them. Hormones during pregnancy can also cause the connective
tissue that holds these muscles together to weaken, aggravating the problem even more. Separated muscles can not function properly, creating unwanted symptoms. Symptoms of a separated rectus abdominis are a football like dome appearing along the torso mid-line during upper ab curls, low back pain, a pregnant like belly, organ pulsing and incontinence.

To test for diastasis rectus, one can lie on their back with their knees bent. Place your fingers on your belly button, facing down towards your feet. Relax the abdominal muscles, lift your head off the mat and press 2-5 fingers horizontally at the belly button, 3 inches above the belly button and then 3 inches below the belly button. A two to three finger gap is considered mild, while a four to five finger gap is considered severe.

Figure 2

Although it usually heals on its own, pregnancy related diastasis may remain long after the woman gives birth. Women are more susceptible to develop diastasis recti when they have a high birth weight child, a multiple birth pregnancy, multiple pregnancies or are over the age of 35. Additional causes can be attributed to excessive abdominal exercises after the first
trimester of pregnancy. Diastasis recti can weaken the abdominal muscles, causing lower back pain and making it difficult to lift objects or do other routine daily activities.

Many abdominal exercises, such as crunches or exercises involving trunk flexion, can actually make the separation worse. Instead, women should opt for isometric contraction of the transverse abdominis. The transverse abdominis acts like an internal corset bringing the rectus abdominis in and back together. Pilates is a fantastic way to strengthen the transverse abdominis, however there are some exercises that are contraindicated for diastasis, such as ones that involve flexion, rotation and back extension. Once the diastasis has been healed, exercises involving flexion, rotation and back extension can be done, as long as the transverse abdominis can be held in and there is no doming of the rectus abdominis, which can cause the diastasis to return.

Case Study

Name: Lauren Milan (self)

Age: 34

Limitations: No flexion, rotation or extreme back extension, no flaring of the ribs, no exercises that could stretch the diastasis recti

Symptoms: Low back pain that radiates to the front of the right ASIS, rotated right pelvis.

Rehabilitation Treatments: Physical therapy, Tupler Technique, pilates

Job: Stay at home mom to 1 year old

One year after giving birth to my daughter, I was diagnosed with diastasis recti after seeking physical therapy treatment for low back pain that also radiated to my right ASIS. My physical therapist recommended following the Tupler Technique, which involves using an abdominal split, doing isometric exercises such as elevators (holding the transverse in for 30
seconds and then pulsing 10 times) and contractions (squeezing the transverse abdominis for sets of 100 pulses), holding in the transverse during daily activities, and getting up in a way that does not put pressure on the diastasis. In addition, I developed the following postnatal pilates program based on exercises the physical therapist recommended.

**Phase I Exercises**

**Warm Up**

Pelvic Curl - start with just a tilt of the pelvis, pulling the abs in to press the lower back into the mat and then return to neutral. Then, do the fully curl modified by hinging at the hips to go up and down keeping the back in neutral instead of articulating the spine one vertebrae at a time to promote pelvic lumbar stabilization more than spinal flexibility.

Leg Lifts

**Footwork on the Wunda Chair**

- Parallel Heels
- Parallel Toes
- V Position Toes
- Open V Heels
- Open V Toes
- Calf Raises
- Single Leg Heels
- Single Leg Toes

Foot work on the Wunda Chair is fantastic for diastasis because work in the seated/upright position puts the least amount of stress on the diastasis. Working in the seated position on the Wunda Chair also promotes co-contraction of the abs and back which is helpful in healing diastasis.
**Abdominal Work**

For the first six weeks, it is recommended to only do the elevators and contractions of the Tupler Technique. Most of the pilates abdominal exercises will put too much pressure on the linea alba for a client that is trying to heal a diastasis so it is recommended to avoid these until the transverse abdominis is strong enough to hold the rectus abdominis together. Fortunately, all pilates exercises involve the contracting of the transverse abdominis, so even though they might not be considered part of the “Abdominal Work” block, you are strengthening your transverse abdominis.

**Hip Work**

Wait until phase 2 to do hip work or until the person can hold the transverse without any ridging of the rectus abdominis while doing hip work exercises.

**Spinal Articulation**

Bottom Lift - Reformer

Bottom Lift with Extensions - Reformer

**Stretches**

Standing Lunge - Reformer

Side Split - Reformer

Gluteals - Ladder Barrel

Hip Flexors - Ladder Barrel

Hamstrings - Ladder Barrel

**Full Body Integration**

Stomach Massage Flat Back - Reformer

Stomach Massage Reaching - Reformer

Thigh Stretch with Rollup Bar - Cadillac
Arm Work

Chest Expansion (Arms Sitting Series)
Biceps (Arms Sitting Series)
Rhomboids (Arms Sitting Series)
Hug a Tree (Arms Sitting Series)
Salute (Arms Sitting Series)
Circles Up (Arms Kneeling Series) - careful to not flare ribs
Circles Down (Arms Kneeling Series) - careful to not flare ribs

Full Body Integration Advanced/Master

Do not do Full Body Integration Advanced/Master until the diastasis is healed.

Leg Work

Ankles (Sitting Series) - Magic Circle
Below Knees (Sitting Series) - Magic Circle
Above Knees (Sitting Series) - Magic Circle
Adductor Squeeze - Magic Circle
Side Leg Lift - Ankle Weights
Forward and Lift - Ankle Weights
Forward with Drops - Ankle Weights
Adductor Lift - Ankle Weights
Forward Lunge - Wunda Chair
Backward step down - Wunda Chair
Hamstring curl - Wunda Chair
Hip Opener - Wunda Chair

Lateral Flexion/Rotation
Wait until phase 2 to do lateral or until the person can hold the transverse without any ridging of the rectus abdominis while doing lateral flexion flexion exercises. Do not do rotation until the diastasis is healed. Rotation can shear the connective tissue between the rectus abdominis when there is a diastasis present.

**Back Extension**

Avoid back extension until the diastasis heals. The ribs tend to flare in back extension which makes diastasis worse.

**Phase II**

The following exercises can be integrated into the conditioning program after the client has built up enough strength in the transverse abdominis so that no pressure is being put on the diastasis and they are able to hold the rectus abdominus together while performing these exercises.

**Warm up** - Leg Changes (Mat)

**Abdominals** - Bottom Lift with Rollup Bar

**Hip Work** - Frog, Circles Down, Circles Up, Openings

**Full Body Integration** - Stomach Massage Round Back, Elephant, Up Stretch 1, Scooter, Round Back, Flat Back, Reverse Knee Stretch (Reformer)

**Arm Work** - Chest Expansion, Circles Up, Circles Down, Triceps, Biceps (Arms Kneeling Series - Reformer)

**Leg Work** - Single Leg Skating (Reformer), Squats (Cadillac), Frog Front & Leg Press Standing (Wunda Chair)

**Lateral Flexion/Rotation** - Side Kick, Side Kick Kneeling (Mat), Side Kneeling Stretch & Side Stretch (Wunda Chair)
After 18 weeks of combining physical therapy, the pilates program described above and the Tuppler Technique, I was able to close my diastasis and relieve my back pain. It is a long road, but persistence and precise work lead to great results.

Conclusion

Pilates can be a wonderful form of exercise for clients with diastasis rectus because the isometric contraction of the transverse abdominis used in every exercise. It is important to note that certain exercises are contraindicated so the client with diastasis recti should initially avoid flexion, rotation and back extension which can all increase diastasis. One can resume these exercises once the diastasis is healed and the client can hold their transverse abdominis in while doing these exercises. Many new mothers are eager to resume their pre-pregnancy workouts soon after giving birth to get back in shape. Diastasis is a very common, yet little known and diagnosed condition and many women engage in post pregnancy workouts that actually make their diastasis worse, causing back pain, poor posture, hernia or pelvic floor issues. If the diastasis goes untreated and continues to be stressed (by in many cases the wrong type of exercises) the tissue of the linea alba can tear, which requires surgery. It is important for the client with diastasis recti to be patient and consistent with this post-natal workout so they can avoid the possible problems associated with diastasis.
Bibliography


Images:
Figure 1

Figure 2