

Postpartum Recovery, A Personal Journey of
Pelvic Floor, Abdominal Awareness & Strength

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12/27/2018 (Start)
Winter/ Spring 2015
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Abstract:

After childbirth it is often a long journey to tighten up the pelvic floor and abdominal muscles. The body can become elongated or stretched in some areas, tighter in others, creating a significant imbalance and pain. New mothers can experience, urinary incontinence, pelvic floor and abdominal conditions that can impair daily function; These conditions can take a significant time to heal and it is important to utilize correct breathing patterns and recruitment of muscles with exercise and activity.

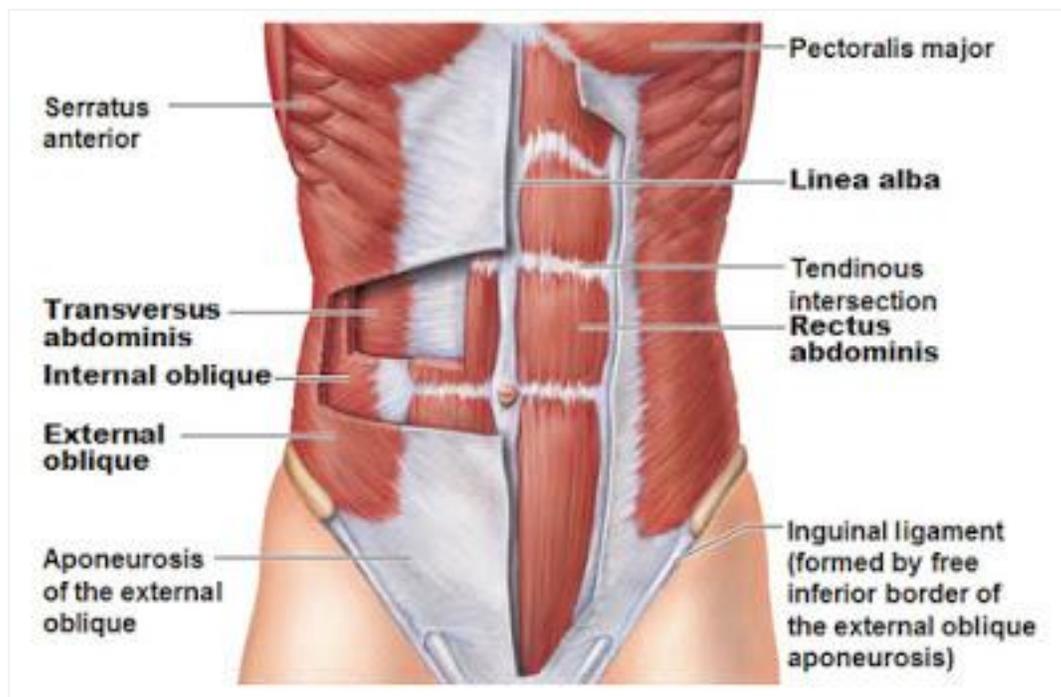
This information will outline the anatomy and explain the mechanisms that can exacerbate or help to heal the postpartum body, followed by a progressive Pilates program. Childbirth is life changing in so many ways; we give our whole being to our child. It is possible, however to get strength and function back. With time and knowledge, we come back together and stronger for it!

Table of Contents:

Abstract	2
Anatomical Review	4
Postpartum Conditions Explained	7
Case Study Information	9
Conditioning Program	10
Conclusion	11

Abdominal wall and pelvic floor muscle dysfunction is common in pregnancy as well as in the postpartum stage. As many women can attest to, problems with these muscles can cause pelvic girdle and low back pain, pelvic organ prolapse, urinary incontinence, and rectus diastasis abdominis.

To have a better understanding of postpartum barriers for safely returning to exercise, let's first review our anatomy.



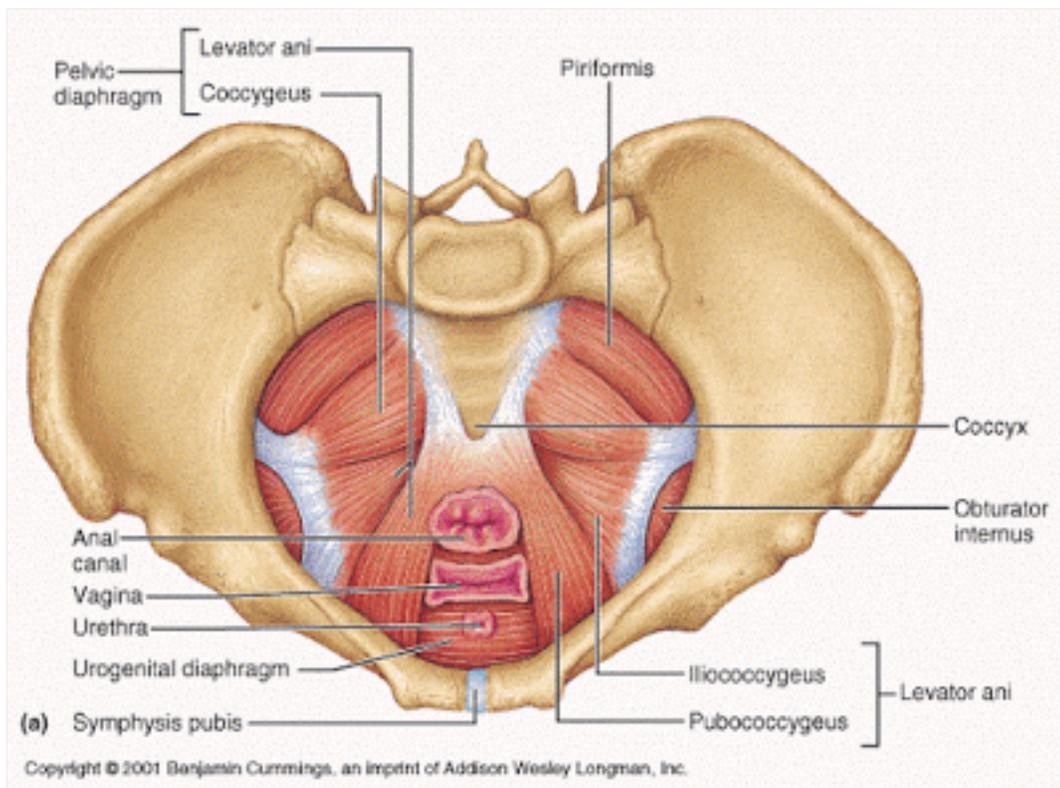
<http://abmachinesguide.com/abdominal-muscles-anatomy/>

The most superficial layer of muscle is called the **rectus abdominis**. This is also known as the “6 pack muscle.” There is a left and a right rectus abdominis. It helps to flex our spine and posteriorly tilt our pelvis. Deep to it are the right and left **external obliques**, which work together to flex our spine. Unilaterally, the external oblique rotates our spine in the opposite direction. The **internal obliques** (right and left) are found deep to the external oblique muscles. Besides flexing the spine, they rotate the spine to the same side. If stiff, both the internal and

external obliques can cause twists in our upper and lower back and pelvis. The deepest of the abdominal group is the **transversus abdominis**, which provides trunk stability and helps with trunk rotation. The **linea alba**, a fibrous structure that consists mostly of connective tissue, runs down the middle of the abdomen and separates the left and right rectus abdominis muscle. The internal and external obliques have attachments into the linea alba.

The **diaphragm and pelvic floor muscles** are not part of the abdominal wall muscles, but function closely with them. The **pelvic floor** has several layers of muscles; some run front to back, connecting the tailbone to the pubic bone, while others run outward from the sacrum, coccyx, and midline to the pelvic bones. Thoracolumbar fascia connects these muscles to the low back. The deeper layer of muscles functions as a sling and supports the vagina, bladder, uterus, and rectum. The outer, or more superficial layer, surrounds the bladder, vagina, and anal openings.

This is our pelvic floor looking from above:

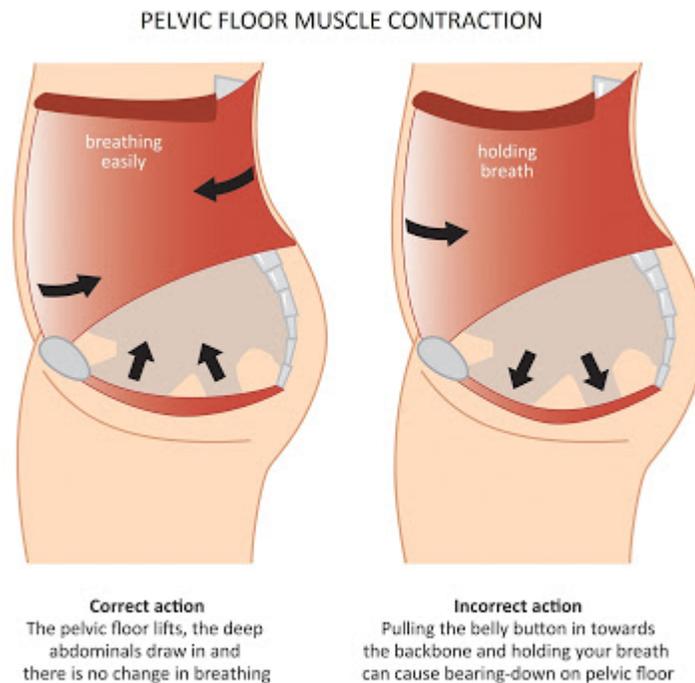


<http://provenancerehab.com/the-significance-of-pelvic-floor-muscle-dysfunction/>

The **diaphragm** muscle contracts and shortens when we **breathe in** and the pelvic floor muscles lengthen. During **exhalation**, the diaphragm lengthens while the pelvic floor muscles contract.

The coordination of these muscles with exercise and exertion is often out of synch. We commonly breathe in or hold our breath while exercising or performing activities such as lifting a baby when we should actually be breathing out. When we breathe incorrectly like this, the increase in intra-abdominal pressure pushes out against the abdominal wall and pelvic floor muscles. Over time, this pressure can predispose pelvic organs to prolapse, cause urinary incontinence and pelvic pain, and worsen a rectus diastasis abdominis. Recruitment strategies for the diaphragm, pelvic floor, and transversus abdominis muscles often need to be retrained so that they contract and relax in a coordinated manner for normal breathing patterns, trunk function, pelvic organ support, continence, and transfer of loads to occur.

The picture on the left depicts a normal breath out. Note the rise of the pelvic floor. On the right, the pelvic floor is pushed out when holding your breath, a common, but incorrect, breathing strategy with exercise and exertion:



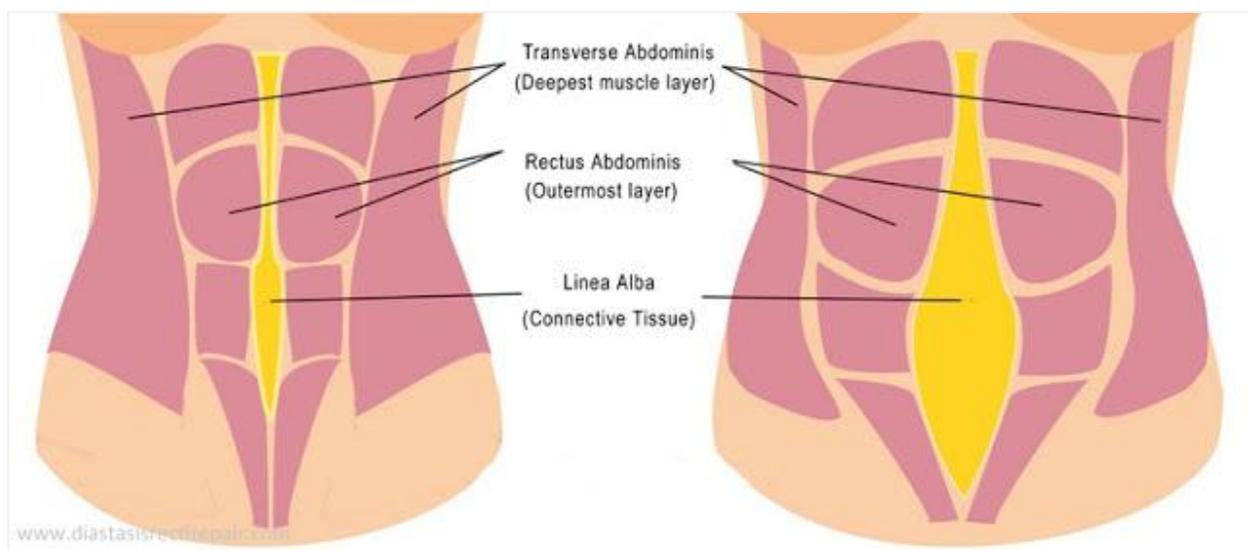
© Continence Foundation of Australia 2011

Obstetricians often allow new moms to begin exercising at the 6 to 8-week checkup, but don't offer much, if any advice on how to safely begin an exercise program. Not only does pregnancy

and childbirth lengthen some muscles and shorten others, but it also can weaken and injure them. Hormones from pregnancy that persist for several months after delivery, especially in breast-feeding mothers, may further loosen ligaments and joints in the back and pelvis, two areas that are already stressed from pregnancy-related structural and postural changes. These changes may cause the new mom to be vulnerable to injury and incontinence when she attempts to begin postpartum exercise.

A **diastasis rectus abdominis (DRA)** is a separation between the right and left rectus abdominis muscle. It may worsen if exercise is performed too soon after childbirth or performed incorrectly.

Here is a schematic of the abdomen. The picture on the left shows a normal abdominal wall while the one on the right has a diastasis rectus abdominis:



DRA generally occurs because of impaired myofascial connection and worsened with non-optimal strategies of movement and abdominal wall function. Activities that lead to DRA include those that increase the intra-abdominal pressure, such as exercises performed with poor technique, and breathing patterns. The increase in intra-abdominal pressure increases the stress on the linea alba which may stretch and weaken it, causing the rectus abdominis to split in the middle.

Urinary incontinence, Pelvic Organ Prolapse, and pelvic and low back pain are common complaints during and after pregnancy. These conditions affect many women suffering pelvic floor muscle weakness, injuries, and perineal tearing, which may occur during pregnancy and childbirth. Urine leaks out with exercise, coughing, laughing, sneezing, and even when running or jumping on a trampoline with kids. Proper pelvic floor and abdominal muscle training under the guidance of physician has been found to be approximately 80% effective in improving or resolving bladder control problems.

One of the roles of the pelvic floor muscles is to support the pelvic organs. When weakened or torn in a vaginal birth, the muscles' ability to support these organs in their normal position is compromised and may cause them to descend into or through the vagina (**Pelvic Organ Prolapse**). Other common causes of a weakened pelvic floor leading to prolapse include heavy lifting, poor exercise technique, chronic coughing, constipation and chronic straining, protruding abdomen, prolonged second stage of labor, surgery, and women with more than one child. Proper pelvic floor muscle training in combination with abdominal wall training has been found to be helpful to limit progression of prolapse.

Low back, pelvic, and pelvic girdle pain Relaxin the birth hormone and other hormonal changes cause the ligaments and tendons to be hypermobile causing muscle imbalances. Pain can occur when muscles stiffen or shorten while others lengthen as a result of postural changes during pregnancy. These postural changes can weaken abdominal and other muscles as well as impair their ability to activate properly, which may lead to non-optimal movement patterns, poor pelvic stability, and pain with activities such as lifting a baby and walking. Proper exercise training of the abdominal wall and pelvic floor muscles is often beneficial in reducing or eliminating low back and pelvic girdle pain.

Case Study:

At the time I started this journey with Pilates, I am a 38 year old woman, postpartum approximately one year; mother of a three year old and a one year old. Prior to my pregnancies, I am an avid runner and athletic in many different sports. After my children, I would walk, run, and bike occasionally for the first year.

My symptoms were urinary incontinence with so much as a sneeze, poor recruitment and awareness of my pelvic floor and abdominal muscles, and though not confirmed, I believe I had a mild DRA as my muscles took a significant time to respond to activity.

As I became interested in Pilates teacher training, I began taking the coursework and practicing the Pilates Method. Unbeknownst to me, I was re-training my pelvic floor, abdominal muscles and diaphragm muscles; Developing good practices and correct recruitment patterns. At the start, I could not find the deep “c-curve” that is so important, and had significant difficulty with lower abdominal, pelvic exercises such as the Roll up, and Stomach Massage Series.

Slowly I started gaining strength in my deep stabilizing muscles of the pelvic floor and transversus abdominis. I learned how to breathe comfortably and effectively decreasing the pressure on the pelvic floor; I learned the correct and safe recruitment patterns for my muscles. It has taken a few years to get to a place where I can say I no longer experience urinary Incontinence regularly and I can resume the activities I love.

Conditioning Program:

***The information in this program is not given by a doctor and cannot be recommended without individual clearance from your MD.**

***Exhalation during abdominal engagement is emphasized to lower the Intra-abdominal pressure and thus pressure on the pelvic floor muscles.**

***If severe DRA is present, please take great caution as these exercises may not be appropriate and MD consultation is recommended.**

***A neutral pelvis is essential and should be found and maintained prior to exercises requiring a neutral pelvis and pelvic lumbar stability.**

Warm Up: Fundamental warm up, emphasis on correct breathing patterns, progressing to Intermediate warm up after several months of successfully holding a neutral pelvis with movement and feeling the lower abdominal muscles and pelvic floor muscles contracting upon command.

Foot Work: Start with Reformer series and progress to Cadillac and Wunda chair series once the pelvis gains control and stability.

Abdominal Work: Standing Pike, Standing Pike reverse, and Pelvic Lift with RUBar. Progression to Hundred Prep; Short Box Series; Bottom Lift with RUBar; After developing deep abdominal muscle strength then progress to the remainder of the repertoire.

Hip Work: Hip work can be performed in any series by practicing strong Pelvic lumbar stability, starting with small circles and progressing into a more pronounced range of motion as strength increases.

Spinal Articulation: Pelvic Curl, Monkey Original and Tower Prep with good use of the breath to keep the intra-abdominal pressure very low. Progression to the remainder of the Spinal Articulation block after several months of strengthening.

Stretches: Be cautious with stretches at the start of activity after childbirth as the ligaments and joints can be hypermobile; Stretches should be practiced in a very controlled manner or considered after significant strength is achieved and breastfeeding is ceased.

Full Body Integration: Knee Stretch Group, Stomach Massage Series and Kneeling Cat Stretch; Progressing to the more plank like exercises such as the Up Stretch Group after many months of conditioning as the pressure on the pelvic floor can be great.

Arm Work: Arm Supine Series, Ped-A-Pul; Progressing to Arm Standing Series, Shoulder Push Single and Double Arm, and Arm Sitting Series. Moving to the remainder of the repertoire after several months of strengthening.

Full Body Integration Advanced: No repertoire should be attempted in this block for several months; after all the other work has been mastered.

Lateral Flexion/Rotation: Mermaid, Side Stretch, butterfly; Progressing to the remainder of the repertoire after significant strengthening has been achieved.

Back Extension: Swan Basic, Breaststroke Prep; Given the nature of the back extension exercises, there is a lot of intra-abdominal pressure; the breath pattern can be changed to eradicate some of this pressure but this block should be avoided at the start of conditioning.

Conclusion:

My hope is that this information can reach some mothers who have been inflicted with some or all of the complications of pelvic floor weakness, abdominal wall stretching and the loosening of the joints of the body. Remember that it takes a long time for the body to change and form a little human, and it will not be a fast recovery. However, it can be a successful recovery if you give yourself enough time to heal and practice safe and correct muscle recruitment and breathing patterns with all activity- including lifting that baby! Pilates can be significant in your recovery if practiced correctly and with guidance from your physician. It has changed my life, and I hope to change the lives of others through careful and thoughtful teaching.

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