

BODY PREPARATION FOR BIRTH



by Pathways Prenatal

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INTRO

Most of us live our lives doing habitual or repetitive motions all day long. This isn't necessarily a bad thing, but it can put our bodies out of balance by over-engaging or over-stretching certain muscles over others. Depending on how we move throughout the day can also lead to a lack of mobility or muscle tone, which during pregnancy can lead to pain, and during labour, lead to a longer and harder labour.

The stretches at the end of this guide are meant to help lengthen and balance core muscles and ligaments that may become over-engaged or imbalanced from daily habits, posture, past injuries, etc.

If done properly at least every other day in the last few weeks or months of pregnancy as well as during early labour, these stretches can help alleviate back or hip pain and other common pregnancy discomforts. They also allow better mobility and more room in your pelvis for baby to work its way through, during labour.

It's best to warm up your muscles before stretching, so that you get the most out of your stretch and don't pull or injure anything. Remember to do both sides of every stretch, to maintain balance. It's also good to be aware of your limitations and careful not to over-stretch, so stay within your comfortable range. However, if you have a hard time getting into any of the stretches, then it's likely because it's addressing an imbalance or area that's over-engaged, which may mean that you should spend a bit more time focusing on that particular area.

You do not need to do all of the prenatal stretches every day, unless your body needs it. They also don't need to be done in any particular order, just remember that anything done on your back, needs to be followed with hands and knees, like cat cow stretches.

The activities that you struggle with the most, are probably the ones you should be focusing on, however if any of the activities cause severe or sharp pain, do not do them!

Disclaimer:

- Please consult your health care provider before doing any of these stretches and activities.
- Do these activities with caution, and if any of these make you feel light headed, come out of it slowly, and avoid doing that particular activity.
- Do not do these activities alone, the first time you do them.
- Try to familiarize yourself with pelvic and uterine muscles, so that you have a better understanding of why it's important to do prenatal body work.
- Please do not redistribute or sell this guide.

BODY PREPARATION

Preparing our bodies for birth is not only about minimizing common pregnancy pains, it's also about simply giving baby more room.

The hormone relaxin helps to loosen muscles and ligaments so that the body can adapt to a growing baby and help baby work its way through the pelvis during labour, by relaxing the pubic symphysis, sacrum, and sacroiliac joints. However, if the muscles surrounding the pelvis are just too tight or over-engaged, then even relaxin can only help so much.

The body and everything that helps hold it up and keep it all in line - muscles, ligaments, fascia, bones, etc., are all connected and are in constant motion. For our bodies to have proper mobility, we should try to keep these things supple, balanced, mobile (lengthened and strengthened), and functioning to the best of their ability.

If we don't pay attention to how our bodies move, where we hold tension, or fix past injuries, then our muscles and fascia can shorten and thicken, which can pull organs and bones out of alignment or symmetry, including the uterus. The uterus is supported by a series of ligaments and fascia. If these are tighter on one side than the other, then our uterus can lean too much to one side, shifting baby out of optimal positioning. So symmetry of the uterus is also ideal, for an easier birth.

It's important to have stretched, toned, and balanced muscles and ligaments for labour, because **IMBALANCED** muscles and ligaments may not allow your pelvis to shift and move the way it needs to, in order to yield to baby as it descends through the pelvis.

All that to say, it's also not healthy to hyperfocus on all of these things. Just do what you are able to.

What causes our bodies to go out of alignment or limit movement?

- Poor posture
- Trauma or injury
- Compensating with some muscles over others
- Repetitive motions
- Stress and tension
- Some athletic activities

What are some ways to correct these issues?

- Walking
- Working on mobility
- Changing your habits, or countering with opposite motions
- Focusing on correcting posture
- Chiropractor adjustments
- Physiotherapy
- Occupational therapy
- Working on past injuries
- De-stressing



BIRTH AND CORE ANATOMY

What happens to our bodies during labour and how does a baby come out?

Most of us know that during labour, a baby simply needs to come out of our bodies, but most people don't actually know how that happens. We need to start with anatomy and the knowledge of where things are and what they do. Birth doesn't necessarily affect much of our upper bodies, besides our diaphragm and how we breathe. It also doesn't really affect our legs, besides the need to stay upright and moving.

That leaves the majority of birthing anatomy to our core.

Our mid and lower core in relation to birth, is comprised of the uterus, the cervix, the pelvic floor, our abdominal muscles, psoas muscles, glutes, the pelvis, and the vagina & perineum. If you take a look at each of these areas, they all have a separate task for helping get baby out, but they also have to work in unison. If one part is under performing, it can throw the whole system off. So let's look at the role of each of these systems.

The Respiratory Diaphragm

The respiratory diaphragm is at the top of the core and for it to function properly, it's important to breathe through the diaphragm (rib cage), rather than the abdomen (belly) or chest.

By breathing through the diaphragm, this will not only allow more oxygen to fill the lungs, it will also widen the ribs in order to allow more room for the uterus, baby, and stomach, at the top of the core.

Abdominal Muscles

Say the abdominal muscles are weak and allow the belly to hang pendulously, this can make it more difficult for baby to engage into the pelvis, because it's almost cradled into the belly, rather than held directly over the pelvis.

On the other hand, if the abdominal muscles are too tight, this may not allow baby enough room to move into proper engagement, or they may also "hold baby up".

It's important for our abdominal muscles to neither be too weak nor too strong.

Uterus

The uterus is what contracts when we are in labour. It's an incredibly strong muscle that has to "clamp down" in order to push baby through the cervix, pelvis, pelvic floor, and out through the vagina. This isn't something that can be done manually with force, it has to come from the uterus. If the uterus is imbalanced however, it can put baby into a less than ideal position, making labour longer and harder.

Uterine Ligaments

The uterus is suspended in place by a series of ligaments, including the round and broad ligaments to the sides, and the uterosacral ligaments which attach from the bottom of the uterus to the sacrum.

As the uterus grows, the round ligaments get stretched and grow with the uterus. Many pregnant people may feel tight pulling pain in their front lower sides during pregnancy - this is often caused by the round ligament. If a person experiences constipation during pregnancy, that can be caused by tight uterosacral ligaments.

Having these ligaments balanced and lengthened can play a big part in the length and ease of labour. For example, if the round and broad ligaments are imbalanced - say one side is tighter than the other, it can tilt or twist the uterus slightly, which can put baby out of alignment with the pelvis.

Or if the uterosacral ligaments are too tight, then they can hold the cervix back toward the sacrum, which makes it more difficult for baby's head to put even pressure on the cervix to dilate, or line up with the pelvis. Tight uterosacral ligaments can also prevent the sacrum from moving as freely, as baby descends, which can result in lower back pain or a more difficult pushing phase. ***A forward leaning inversion every day, can help balance these ligaments.**

Cervix

The cervix is at the bottom of the uterus and on top of the vagina. The cervix needs certain hormones and pressure in order to soften, thin out, dilate, and move forward. So the majority of labour, simply consists of the cervix doing all of these things, in order for baby to pass through it.

Vagina & Perineum

The baby passes through the vagina (birth canal) after it passes through the cervix. The birth canal will open enough for a baby to pass through, as this area is a muscle in itself, and can stretch and contract. Once the baby passes through the birth canal, it will then reach the perineum. The perineum has to stretch enough to allow baby's head to come through. If this area is tight or simply doesn't have enough time to stretch, then it can result in tearing.

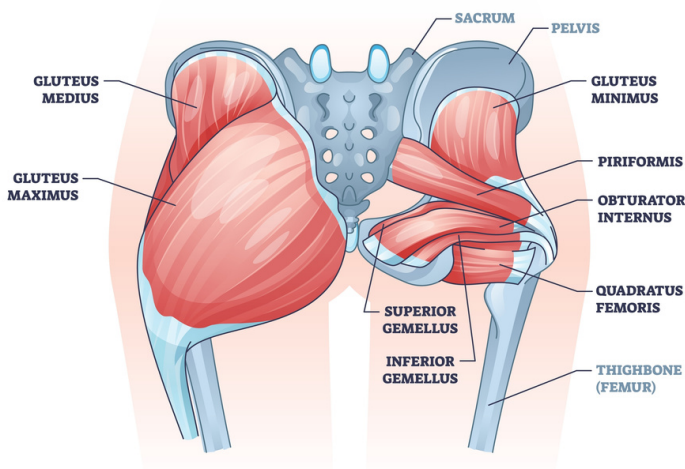
BIRTH AND CORE ANATOMY

The core is made up of the respiratory diaphragm at the top, the abdominal muscles in the center, and the pelvic floor at the bottom. By having this system balanced and toned (lengthened and strengthened), it should allow for optimal space for baby to move freely and eventually turn head down (between the 28th and 35th week) and then engage into the pelvis in an ideal way.

Many of the muscles and ligaments in our core need to yield to baby as it grows and then passes through the pelvis and birth canal. One of the reasons "experienced" birthers often have quicker labours, is because of their muscle memory. Their muscles remember what to do, from their last birth.

Glute Muscles

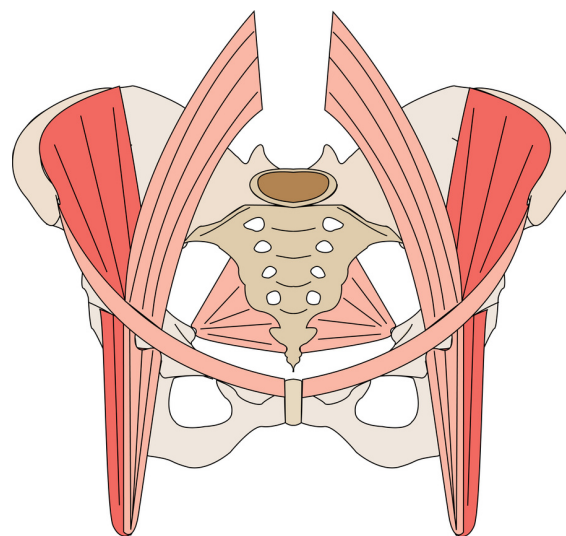
Glute muscles can aid in labour stalls, if they are too tight, by not allowing the pelvis and sacrum to move as freely and yield to baby. Common causes of tight glutes are similar to a hypertonic (tight) pelvic floor, including; stress and tension, constant external rotation of the femur, and various athletic activities like horseback riding, weight lifting, yoga, etc. ***Side lying release every other day, can help release the glute muscles.**



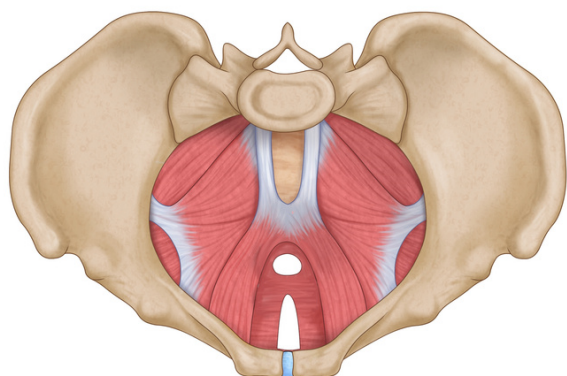
Psoas Muscles

The psoas muscles are responsible for holding us upright and they are also the first to react to the fight or flight response. They are the "fillet mignon" of muscles and are meant to be "juicy" and tender, so that they can respond well to the body's movements.

If the psoas muscles are imbalanced or shortened (out of stress or fear, or even from sitting lots), then they can literally hold a baby up from properly engaging and descending into the pelvis, making for a longer labour. ***These muscles are not to be touched, released, or massaged directly. They can be released through movement or leg swings.**



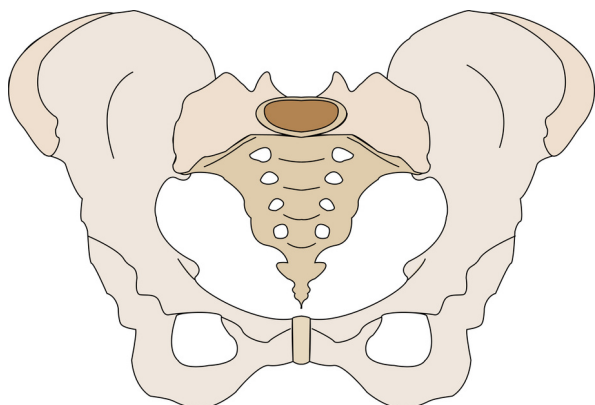
BIRTH AND CORE ANATOMY



Pelvis

The pelvis is one of the more important anatomical structures of labour. The pelvis can vary in shape and size from person to person. The pelvis is not a single fixed bony structure, it's divided and moveable at 4 joints - the pubis symphysis in the front, the two sacroiliac joints at the back on either side of the sacrum, and another between the sacrum and coccyx (tail bone). This allows the pelvis to move and widen in order to give baby more room as it navigates its way into the top of the pelvis and out through the bottom of the pelvis.

The pelvis is also held together by a series of ligaments and muscles (for example, the glutes), and if they are too tight, then the pelvis won't move as freely in order for baby to descend through it. However, there are ways to prepare the body prenatally to allow for optimal pelvic mobility. There are also positions during labour that can help widen the pelvis in different areas, depending on where baby is located (inlet, midpelvis, or outlet).



The Pelvic Floor

The pelvic floor is a group of muscles at the mid-pelvis. It holds up the organs within our pelvis (bladder, bowel, and uterus).

During labour, once baby is in midpelvis (around active labour or transition), baby's head is now resting on the pelvic floor. Balance and mobility of the pelvic floor is very important during labour. It is also very much affected by stress and tension, so it's important to be aware of where tension is being held, during and in between contractions.

Pelvic Floor issues

Imbalanced pelvic floor - This can cause baby to deflex their chin, causing a wider space (their forehead or face rather than the crown of their head) to come first down the birth canal.

Hypertonic (tight) pelvic floor - This can restrict mobility of the sacrum and the outlet of the pelvis, which minimizes space for baby.

Fear - Say a birther starts to feel more and more pressure on their pelvic floor or bum and they suddenly become afraid of the pushing stage. Or a doctor walks into the room and they go into a fight or flight response, they can subconsciously hold baby up for hours, if their pelvic floor becomes over engaged (think of a kegel that won't release).

This is often where you'll see contractions spacing out, or stopping all together (usually around the 7 or 8 cm mark). It is often labeled as non-progression and can end in cesarean section or the use of synthetic oxytocin to cause stronger contractions.

Hypotonic (loose) pelvic floor - It may end in a quicker labour, but you could risk prolapse or have a greater risk of tearing, if baby descends too quickly. This is often why subsequent babies come quicker than first babies - muscle memory! Postpartum, a hypotonic pelvic floor can be the cause of a prolapse.

It's so important to make sure that your pelvic floor is neither too tight or too relaxed, but that it's balanced and toned with good mobility.

THE BODY AND BIRTH

The Mind

Tells the body what to do.

The Uterus

Contracts and pushes baby down.

The Cervix

Softens and opens for baby to pass through

Psoas Muscles

Guide for baby going into the pelvic inlet

Glute and Piriformis Muscles

Assist the pelvic floor, sacrum, and pelvis to yield to baby

The Pelvic Floor

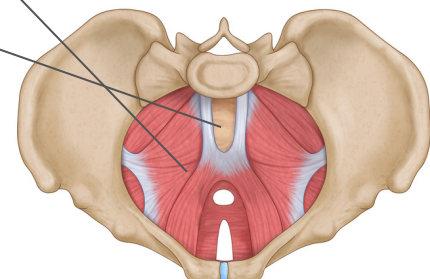
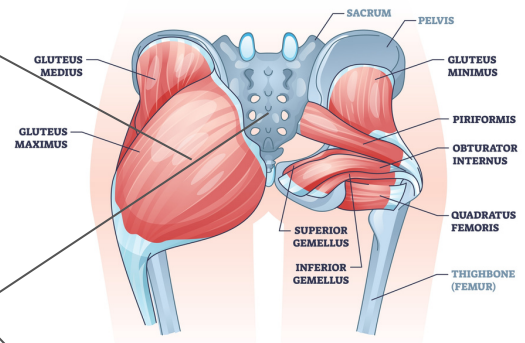
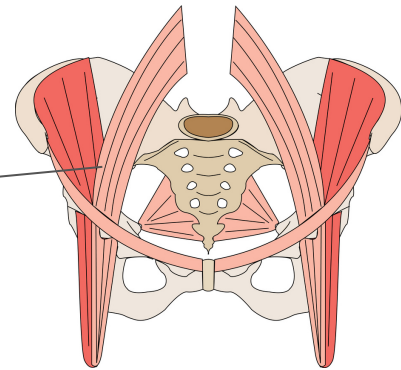
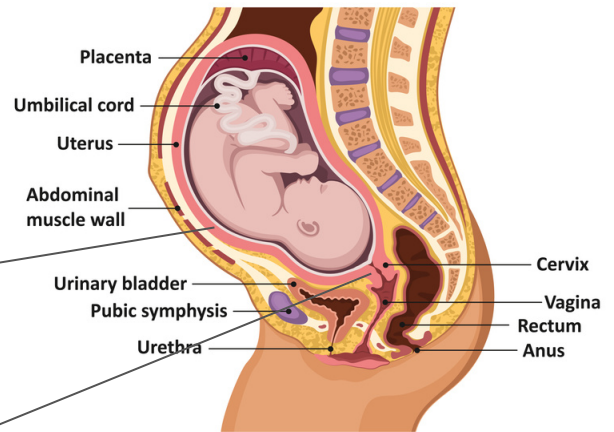
Yields to baby as it passes through mid-pelvis

The Sacrum

Nutates and counternutates as baby descends

The Pelvis

Shifts and moves for baby



CAN MY BODY GIVE BIRTH?

- "My mom had cesarean sections"
- "I'm told my pelvis is too small"
- "I'm told my baby is too big"

These are all things that can trick us into believing that our bodies can't give birth. The reality is that (almost) everyone's body can give birth vaginally, with the exception of some cases where the pelvic shape isn't compatible with baby's size, or a birther has had excessive damage and scar tissue to the surrounding tissues of their pelvis.

In most other cases, a pelvis can be on the "small" side or a less than ideal shape for giving birth, but that doesn't mean that it's impossible. Keeping in mind that the pelvis isn't a fixed structure and can widen at the pubis symphysis in the front and the sacroiliac joints at the back, which means that it will shift and move as baby grows and descends through it. So long as the tissues surrounding and within the pelvis are soft enough to allow it to do so.

This shows us that it's not necessarily the pelvis itself that hinders progression, but the soft tissues - the psoas muscles, glute muscles, pelvic floor, and the sacro-spinus and sacrotuberous ligaments at the sacrum. These all allow baby to come into the pelvis and then allow the pelvis the ability to shift as baby descends.

In this case, it shouldn't matter what size or shape the pelvis is, or what size baby is, as long as the surrounding tissues of the pelvis are soft, flexible and lengthened, the chances of a vaginal birth are much higher.



It may take some bodies longer to help baby get through the pelvis, than others, but most women's bodies are certainly capable of doing so, with a bit of work.

ACTIVITY & MOBILITY

Keeping your body active and mobile is a great way to keep all of your joints and muscles healthy, which will in turn reduce pain, encourage proper organ function, and stimulate the nervous system.

Pregnancy

First & Second Trimester - Keep on with usual activities and exercises, while paying close attention to your body and not overdoing it. Reduce hard impact workouts and activities, or find ways to modify.

6-9 months - Slow down on usual activity and focus more on body balancing and tension releasing stretches and exercises, especially in the pelvic floor, core, and psoas muscles. This is especially important for those who do core strengthening activities - cross fit/weight lifting, horseback riding, figure skating, skiing/snowboarding, etc.



Labour

Early Labour - Work on body balancing and tension releasing stretches and activities. Focus on pelvic inlet opening activities.

Active Labour - Find positions or activities that allow for gravity to help. Try to keep your pelvis rocking or rotating in circular motions during contractions. Lay on your side if you need a rest, try to stay off your back.

Pushing - Try to stay upright if possible. Find positions to open the outlet of the pelvis. Try pulling on something during pushing.



Postpartum

Return to Activity

- **0-6 weeks** - Rest & Relaxation
- **6-8 weeks** - Safe to return to normal functional life
- **8-12 weeks** - Can start light intentional activity
- **12-16 weeks** - Focus on core recovery and strengthening
- **16+ weeks** - Gradual return to impact

FETAL POSITIONING

Fetal Positioning

Fetal positioning plays a very important role to the duration, intensity, and overall success of vaginal births. Figuring out where your baby is lying before you go into labour or even during labour, will help you have a good idea of whether or not you need to do more activities to help to get baby into a more ideal position.

Head down (cephalic) is the most ideal position to birth a baby, but if your baby happens to still be in a transverse (sideways) or breech (head up) position past approximately the 33-35 week mark, then it would be a good idea to work on activities and exercises to try to turn your baby into a head down position (there are some fantastic resources out there, on how to turn your baby).

When baby is head down - how the head is positioned in the pelvis, is defined as Left Occiput Anterior (LOA), Right Occiput Anterior (ROA), Occiput Posterior (OP), etc. This just describes which direction in the inlet of the pelvis, the crown of baby's head is facing.

Baby should fit in a way that best fits the shape of a birther's pelvis, with their chin tucked to their chest. Even if a baby starts out in a position that's acynclitic (tilted), facing the "wrong way", or with their chin untucked, they will often rotate on their own into that ideal position before the head fully engages.

Sometimes however, the head may engage in a less than ideal position and remain that way, so it's important to pay attention to signs of a mal-positioned baby in early labour so that it can be more easily corrected before baby lodges further into the pelvis.

Causes of a mal-positioned singleton baby is often attributed to imbalanced or tight pelvic muscles and ligaments, which can and should be corrected prenatally, by balancing, stretching, and toning the pelvic and uterine muscles and ligaments (glutes, psoas, round ligaments, broad ligaments, pelvic floor, etc.).

Signs of a malpositioned or acynclitic baby, during labour;

- Sharp lower back pain (back labour)
- Sharp pain in the pubic bone
- Sharp pain in one hip
- Strong or unmanageable contractions before active labour
- Irregular contraction pattern well into active labour
- Baby not descending into the pelvis as labour progresses
- Slow progression, stalled labour, or "failure to progress"

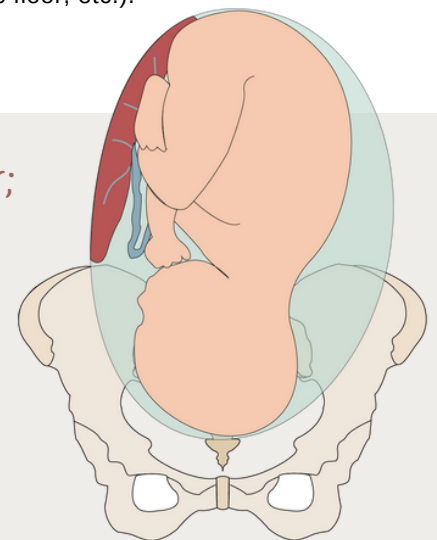
Ways to correct baby's position during labour

No epidural: Movement is the best way to help correct baby's position during labour - Wide hip rotations, hip dips, squats, forward pelvic tilts, chair lunges, side lying release, inversion. ***All of these things are meant to give baby more room in the pelvis.** If baby is lodged in the pelvis, a forward inversion may help bring baby back out of the pelvis (back baby up), so that you can try to correct baby's positioning, this activity will also help bring balance to the uterine ligaments.

There are different labour positions to try depending on where baby is in the pelvis (baby's station), however if you do not have a birth professional with you during labour who can guide you, just remember to move your hips. Dancing also helps!

With an epidural in place: Frequent position changes in bed, can include;

- Side lying forward pelvic tuck with peanut ball between legs (high flying cowgirl position)
- Side lying glute massage and release (side lysing release).
- "Around the world" - moving from left side lay, to hands and knees, to right side lay, to butterfly sit in the bed.
- Rolling up two wash cloths or towels and placing them under the sit bones, to allow for sacral mobility, when sitting.



BODY BALANCING

STANDING PSOAS RELEASE

- Standing on a stool or stair with one foot, allow your other leg to drop.
- Swing the dropped leg back and forth for 1 minute, then switch sides. Do this 5 times on each side.



FORWARD LEANING INVERSION

- This is one of the best stretches a person can do prenatally, by helping bring balance to the uterus.
- To do this, find a sturdy piece of furniture that is about knee height.
- Kneel on the furniture with knees near the edge, then slowly go down to your hands, then down to your elbows.
- Completely relax your belly and pelvic floor and take 3-4 long deep breaths or count up to 30. Do this for 30 seconds once a day or every other day.
- Gently come out of this stretch and then sit upright for a minute.



SIDE LYING RELEASE

- Lay on your side, on a firm bed or couch, as close to the edge as possible.
- You should have a straight spine and bottom leg and then drop your top leg over the bed or couch. If you have someone around to support you, they can stand right between your belly and top leg, to keep you from falling off the bed, or if you are on your own, you can have something to hold on to, to keep from rolling off the bed.
- Do this for 10-15 minutes on either side, every few days.



EXERCISE BALL

- The exercise ball should be blown up enough that your bent knees are at a 90 degree angle or wider.
- If sitting on a ball, try doing wide hip rotations while keeping the upper body stationary and mostly moving the lower body.
- You can do this while watching tv or reading a book.
- If you sit at a desk most of the day, try replacing your chair with a ball.



PELVIC FLOOR EXERCISES & RELEASES

- If you are aware of how balanced and mobile your pelvic floor is, you can continue to do the releases and exercises that you already know to to.
- If you are not aware of how balanced and mobile your pelvic floor is, then it could be a good idea to visit a pelvic floor therapist to learn about ways to bring balance and mobility to your pelvic floor.
- This photo represents getting into a pelvic floor release, by putting a lacrosse ball directly under the pelvic floor and then relaxing the muscles into the ball.



BUTTERFLY SIT

- Sit with your heels together and legs butterflyed out to the sides.
- You will get a bit of a different stretch depending on how far your heels are to your groin.
- Lean forward slightly to go deeper into the stretch.
- Hold this stretch for 1.5-2 minutes if leaning forward, otherwise this is a great position to sit in while watching tv or working. You can put a pillow or bolster under your tailbone to help with posture.



OPEN SIT

- Sit with legs open as wide as they will go.
- You will get a different stretch between keeping your feet flat on the floor or rolling them onto the outsides of your foot.
- Hold this stretch for 1.5-2 min.



90 & 90

- Sit with one leg forward, bent at a 90 degree angle. The other leg should be out to the side at another 90 degree angle.
- You can lean forward over the front leg, then turn your body slightly and lean forward in the space between both legs. Go back and forth leaning forward.
- Hold this position for 1.5-2 minutes, then switch sides and do the same thing again.



LEG STRETCHES

- Stretch your legs while sitting, in the way that you prefer.
- Make sure you stretch both legs evenly.
- With legs wide and stretched outward, you can lean forward and sweep across from one leg to the other.



PIGEON

- Bend one knee and extend the other leg behind you.
- Try to keep your hips stacked as you actively push both glutes toward the ground.
- Hold this position for 1.5-2 min. then switch sides.



DOUBLE PIGEON

- Sit cross legged with one ankle over the opposite knee, and keep your heels away from your hips.
- Actively try to push your top knee to your heel below it.
- Hold this position for 1.5-2 min. then switch sides.

*If you have a hard time getting into this position, then you can sit on a chair and bring one ankle over the opposite knee.



HAPPY BABY

- Laying on your back, actively push your lower back to the ground, then widen your legs.
- There are a few ways to get a stretch in this position, which depend on your flexibility. One way is to reach between your legs and grab your calves as you hold your legs open. Another way is to reach on the outside of your legs and grab your heels and pull your feet wide apart.
- You can rock gently back and forth in this position.
- Hold this position for 1.5-2 min.



HALF BRIDGE

- Lay on your back and lift your pelvis upward as far as you can go. Then go back down slowly.
- Breathe as you go up and down.
- Do this 10 times.



THREAD & NEEDLE

- On your back, bend one knee keeping your foot on the floor. Bring your other foot over top of the bent knee. Using both hands, try to reach behind your bent knee and bring your legs toward your belly.
- Hold this position for 1.5-2 min. then switch sides.

*If it's too difficult to grab behind your knee, you can rest your bent foot on the wall, as you scoot your bum as close to it as you can.



LEGS UP THE WALL

- Lay on your back against an empty wall, scooting your bum as close to the wall as possible.
- Lay with your legs going straight up the wall.
- Stay here for 5 to 10 minutes.

*If you have a hard time with this, try putting a bolster under your bum, or a half foam roller.



CAT COW

- Always follow anything on your back, with hands and knees (so that baby maintains an anterior facing position).
- With your knees stacked under your hips, slowly arch your back in, as you breathe in (cat), then round your back out, as you breathe out (cow).
- Do this 10 times.
- If you want to add in another element of movement, you can rock your hips back and forth as you go into cat cow.



WINDMILL

- Facing toward a chair or other knee height hard object, with knees a little wider than your hips, place your hand in the middle of the chair.
- Reach as far back as possible with the opposite hand, while keeping your feet in the same position (hips can move with the stretch).
- Do this 10 times on each side.
- If you are more flexible, you can use a yoga block instead of a chair.



HIGH LUNGE

- Using the back of a chair or counter, grab onto it, step one foot back and bend the front knee. Lowering into your legs, bring your chest high and lean your upper body backward.
- Hold this for 30 seconds, then do the other side. Try to keep a little bit of movement throughout this stretch, by gently rocking your hips.
- Do this stretch 2 or 3 times on each side.
- If you are more flexible, then you can do a low lunge using yoga blocks.



CHAIR LUNGE

- Put one foot up on a chair or high stool. Turn your body to around a 45 degree angle from your bent knee.
- Lean in and out slowly toward your knee.
- Do this 10 to 15 times on each side.
- This will help loosen and slightly tone the glutes and inner thigh muscles.



HALF OR FULL SQUAT

- Holding onto a counter, try to go down into a full squat with flat foot.
- If you can not go into a full squat, then you can go into a half squat, by holding onto a counter and with a flat back, lean back like you are going to sit down onto a chair.
- Hold that position for a minute, then come out. For 30 seconds, then go back into that position for another minute. Do this 5 times.
- This will help bring mobility to the sacrum.

