



PRE AND POST NATAL EXERCISE GUIDELINES

GENERAL GUIDELINES

Doctor consent –
PARmed-X

Stay hydrated – if
thirsty, you are
already 10%
dehydrated

Avoid lying on back
after 4th month of
pregnancy

Adequate ventilation
and avoid hot and
humid environments

Balance will be a
challenge

Listen to your body

Take the time to
relax and rest your
body

BENEFITS OF PHYSICAL ACTIVITY

Improves strength and stamina (needed for pregnancy and birthing)

Reduces and helps cope with stress, improves mood, helps you sleep and lessens mood swings

Helps manage some discomforts of pregnancy (swelling, leg cramps, shortness of breath, backaches, varicose veins and constipation)

BENEFITS OF PHYSICAL ACTIVITY

Gets heart pumping and improves blood flow to all areas of the body

Gives you more energy

Helps you gain a healthy amount of weight during pregnancy

Lowers risk of developing diabetes or helps manage diabetes

SIGNS YOU SHOULD STOP PHYSICAL ACTIVITY

Call your health care provider right away if you:

- Have blurred vision, dizziness or feel very tired
- Have severe nausea, shortness of breath or chest pain
- Have unexplained abdominal pain, contractions or bleeding from the vagina
- Have any gush of fluid from the vagina
- Have new or increased back or pelvic pain
- Have sudden swelling of the ankles, hands or face

SIGNS YOU SHOULD STOP PHYSICAL ACTIVITY CON'T

Call your health care provider right away if you:

- Have pain, redness and swelling in the calf of one leg
- Have headaches that won't go away
- Are unable to gain enough weight based on your pre-pregnancy BMI
- Feel that your baby is moving less or stops moving
- Have a fast heart rate or high blood pressure more than one hour after you've been physically active

FIRST TRIMESTER

- If not previously active, not best time to start physical activity other than general walking
- If already active, then can continue your activity. Listen to your body, if you are fatigued or nauseous, slow down
- Relaxin – hormone that loosens joints. Does not target pelvic joints. All joints are more vulnerable due to injury. Limit the amount of weight you lift since your joint will not be as stable. Relaxin can be found in your system from the 1st trimester until 3 – 6 months postpartum. Watch stretching and lifting heavy weights.

SECOND TRIMESTER

- Can progress your exercise, so if not active, now is a good time to start.
- You may have slowed down in your first trimester from what you were used to doing, if you have regained energy, then you can increase your intensity.
- It is not recommended to lie on your back after the 4th month (weight of fetus may decrease blood flow back to the heart). If you wake up and find yourself on your back, it is fine, roll onto your side, or place a pillow under your right hip. Your body will let you know if there is a REAL issue.
- Roll onto side to get up instead of performing a sit up.

THIRD TRIMESTER

- Posture
- Diastasis Recti

POSTURE

Baby grows and breast size increases =

Chin juts out

Shoulders
round forward

Pelvis tilts
forward

Knees tend to
lock

This can cause pain and muscle tension in the low back, neck and knees

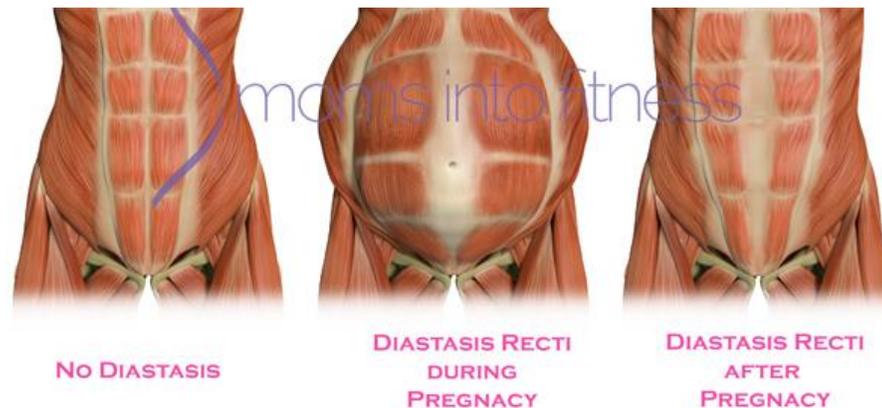
A healthy posture will increase your chance at having a more comfortable pregnancy where you are less likely to experience the above painful symptoms

POSTURE

- Due to growth of baby, the centre of gravity also shifts
- This could mean balance issues for mom
- Make sure you perform activities that would not put you off balance
- As well, make sure you avoid contact (eg. Basketball) or high impact activities where you can be hit in the abdominal area or cause you to fall

DIASTASIS RECTI

- Occurs in about 60% of pregnancies
- Most common in the 3rd trimester and postpartum
- May first notice “tenting” or “bulging” along the midline when you try to sit up
- If you notice this, roll onto your side to get up. Flexion exercises should be AVOIDED



CHECKING FOR DIASTASIS RECTI

- Lie on back with knees bent and feet flat on floor
- Place fingertips just above the belly button.
- Perform an abdominal curl and press firmly with fingers feeling for any separation between vertical bands of rectus abdominus (RA)
- May notice a “tenting” along centre of abdomen
- As you sit up, you should feel 2 straps of RA come toward each other
- Repeat with your finger tips just below the belly button.

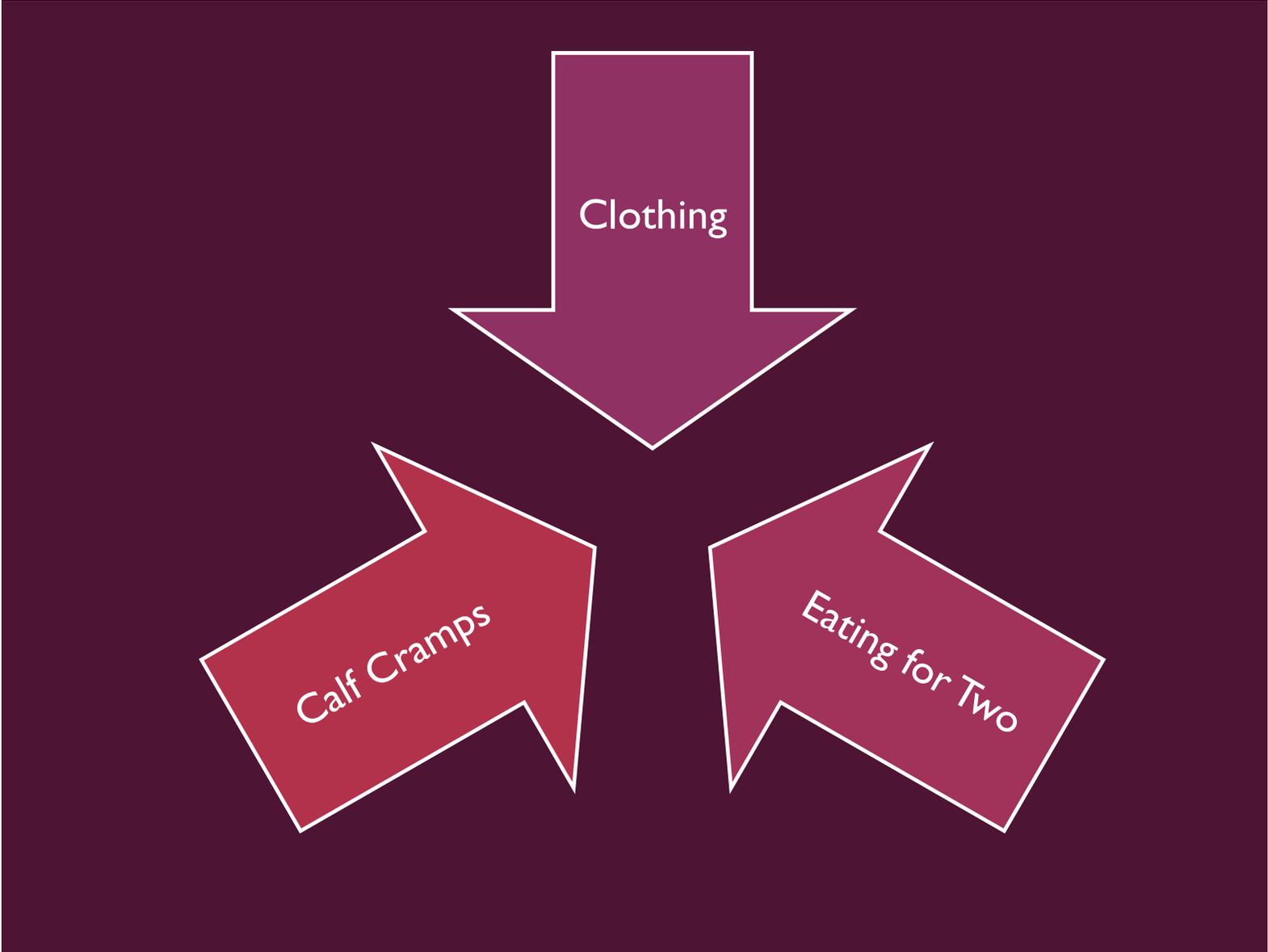
CHECKING FOR DIASTASIS RECTI CON'T

- If separation remains the same as you sit up or widens consult a physiotherapist
- Use width of finger tips to measure the area between separation
- It is normal to have 1 finger width between bands
- If you have 2 or more, you have diastasis recti
- 4 – 5 finger widths are an extreme case

WHAT IF I HAVE DIASTASIS RECTI?

- Avoid spinal flexion
- Avoid prone (face down positions) where weight of belly is pushing on abdominals, if doctor recommends
- Work on strengthening the Transversus Abdominus (TVA) muscles
- Work on strengthening and relaxing the pelvic floor muscles

OTHER
CONCERNS



CLOTHING

Wear supportive clothing

- For supporting belly
- For supporting breasts

Post Partum

- Nursing bras that fit properly (don't get fitted too early)
- Breast pads

EATING FOR TWO

First Trimester = no extra calories



Second Trimester = about 350 extra calories per day (eg. $\frac{3}{4}$ cup plain yogurt, $\frac{1}{2}$ cup unsweetened berries & $\frac{1}{2}$ cup granola)



Third Trimester = about 450 extra calories per day



Breastfeeding = 350 – 400 extra calories per day

CALF CRAMPS

- [Resource](#) (American Pregnancy Organization)
- Causes:
 - Additional weight gain and changes in circulation
 - Pressure from the growing baby may also be placed on the nerves and blood vessels that go to your legs

CALF CRAMPS

Prevention

Exercise regularly,
and include
stretches that target
your calves.

Rest with your legs
elevated.

Wear supportive
stockings.

Massage your calves
and feet.

Apply local heat.

CALF CRAMPS

Treatment

Contract the opposite
muscle

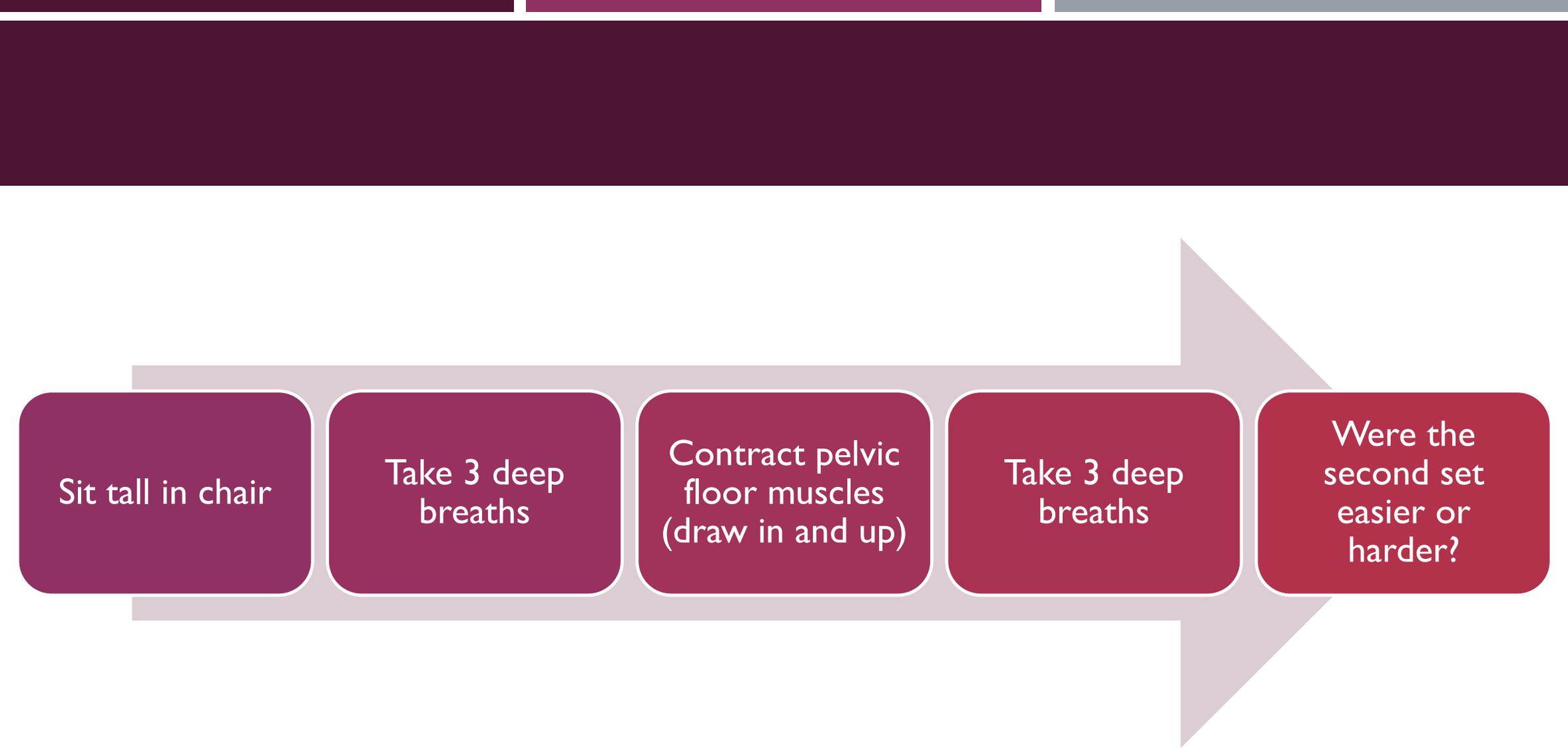
Have someone lift your
toes to your shins and
then contract the shin
muscles to hold toes up

This will force the calf
muscles to relax

CORE TRAINING

Helps reduce/prevent:

- Urine leakage
- Pelvic pain and instability
- Low back pain
- Sciatic pain
- Hemorrhoids
- Diastasis Recti
- Upper back pain due to postural changes



Sit tall in chair

Take 3 deep
breaths

Contract pelvic
floor muscles
(draw in and up)

Take 3 deep
breaths

Were the
second set
easier or
harder?

TESTING THE PELVIC FLOOR MUSCLES

Inhale = both diaphragm and pelvic floor expands

Exhale = should return to original position

If you contract pelvic floor muscles while deep breathing, it restricts your breath due to diaphragm moving but not the pelvic floor

If no difference was felt = pelvic floor muscles may not function properly

ISOLATING THE PELVIC FLOOR – WHICH WAY WORKS FOR YOU

Small ball between thighs. Sometimes contracting the inner thigh muscles help you connect to the deep core muscles

Tighten and squeeze your “pee muscles” – stop the pee flow (not actually)

Lift your vagina

Draw line from tail bone to pelvic bone and create gentle tension along that line

Draw a line from your right sitz bone to your left sitz bone. Create gentle tension along that line

If having difficulty, many need to practice relaxing the pelvic floor. In a seated position imagine relaxing the muscles you would as you urinate or defecate

DIAPHRAGMATIC BREATHING

1. Lie on back, knees bent and feet flat on floor or sit in chair with feet flat on floor
2. Place one hand on chest and one on belly
3. Inhale deeply allowing belly to expand (slow 4 count)
4. Exhale fully allowing belly to return toward your body (slow 5 count)
5. On each inhale begin to allow your lower ribs to expand out as well as your belly
6. On each exhale allow your ribs and belly to return in toward the body
7. Gradually inhale and allow pelvic floor muscles to expand down and out along with your belly and ribs, returning your pelvic floor, ribs and belly in on your exhale
 - Once you attain step 7, repeat for 10 – 20 breaths daily

ACTIVATION OF THE TRANSVERSUS ABDOMINIS (TVA)

Stand, lie or kneel and relax your back, abdominals and buttocks

Place 2 fingertips just inside the iliac crest of the pelvis

Breathe using your diaphragm

On the end of the exhale, gently create light tension in the area of your lower abdomen using your TVA. Like gently tightening up a seatbelt between the right and left pelvic bones

ACTIVATION OF THE TRANSVERSUS ABDOMINIS (TVA) CON'T

- Should feel a deep and light tensioning under your fingers
- If it pushes fingertips up and out, you are contracting too hard and using the internal obliques
- Contraction should be 25% of maximum
- Should feel gentle and subtle

OTHER WAYS TO FIND YOUR TVA

1. Cough

- Feel with your fingers. Then try to contract the TVA without coughing

2. Dead bug

- Lie on back with knees bent to a 90 degree angle. Place your hands on your thighs. Press your thighs to your hands.
- Sitting in chair. Place hands on thighs and press your thigh to hand
- Also engage your anterior pelvic floor muscles
- Perform 1 – 2 times, holding 10 – 20 seconds to start. Gradually increase time to max of 60 seconds

OTHER WAYS TO FIND YOUR TVA CON'T

3. Four Point Kneel

- 4 point kneel with hands under shoulders and knees under hips
- Contract TVA while maintaining neutral spine
- Also engage your anterior pelvic floor muscles
- Perform 1 – 2 times, holding 10 – 20 seconds to start. Gradually increase time to max of 60 seconds

KEGELS WILL:

- Provide support for the pelvis and abdominal organs
- Enhance sphincter control
- Increase circulation
- Aid in having a controlled birth
- Prevent and/or treat urinary incontinence (80% effective)

KEGEL EXERCISES – BEFORE, DURING AND AFTER PREGNANCY

Basic Kegels to Super Kegels

1. Draw up and in with anterior pelvic floor (pee muscle). Be sure to relax the posterior pelvic floor (fart muscle). Hold the contraction for 2 – 5 seconds and repeat 20 times
2. Once comfortable with short contractions, hold the contraction for longer durations (Super Kegels). Hold for up to 20 seconds, renewing the contraction if it fades

KEGEL EXERCISES – BEFORE, DURING AND AFTER PREGNANCY

Elevator Kegels

1. Draw up and in with the anterior pelvic floor. Start the contraction at a lower level and gradually increase by lifting the pelvic floor muscles up and in. Think of starting the contraction at the first floor, and move up to the 2nd and 3rd floor. Be sure to relax the posterior pelvic floor.
2. Control the contractions as you go from the 3rd floor back down to the 1st floor and gently release the contraction. Repeat 5 times

KEGEL EXERCISES – BEFORE, DURING AND AFTER PREGNANCY

Front to Back Kegels –

- You want to have separate control over the “pee” and “fart” muscles. You want to be able to contract one while relaxing the other
 - Isolating the posterior pelvic floor can enhance sphincter control, increase circulation and reduce the risk of hemorrhoids
1. Contract the “pee muscle” while relaxing the “fart muscle” 10 times
 2. Contract the “fart muscle” while relaxing the “pee muscle” 10 times
 3. Begin to alternate front to back. Once you gain more control, change the speed of your contractions, speeding up and slowing down again.

KEGELS POSTPARTUM

Start as soon as possible, 24 –
48 hours postpartum

If you have any internal tearing
or other complications,
consult your health care
provider prior to starting any
exercises including kegels

BENEFITS OF KEGELS POSTPARTUM

- Decrease risk of urine leakage
- Decrease swelling or pain in the perineum (area between vagina and anus) by increasing circulation
- Increase rate of recovery
- Improve sex life
- Reduce incidence of hemorrhoids

POSTPARTUM FITNESS

- Can begin walking when you feel ready
- The body needs 2 – 4 weeks to heal from a vaginal birth prior to starting physical activity
- The body needs 6 – 8 weeks to heal from a c-section prior to starting physical activity
- Can begin kegels 24 – 48 hours postpartum
- Start with basic core isolation before moving to deep core exercises

SETTING YOUR CORE

- Lie on your back with knees bent, or sit upright in chair
- Place a small ball or cushion between your thighs, just above the knees
- Maintain neutral spine
- Place fingers inside iliac crests of pelvis to monitor TVAs (should feel a gentle tension, not a bulging)

SETTING YOUR CORE

- Gently press the knees into the ball/cushion and feel the inner thigh muscles turn on
- Gently draw the “pee muscle” up and in
- At the same time create light tension in the TVA (use the breathing technique we previously discussed)
- Set the tension to 25% of max. You may have to find 100% and then back off to 25% in order to feel the right contraction

SETTING YOUR CORE

- Hold the 25% contraction for 15 – 20 seconds
- Renew the contraction if it fades
- **If you can keep the contraction of the TVA and anterior pelvic floor muscles for 20 – 30 seconds, you are ready to challenge your core by adding movement (Deep Core Exercises) that are in the following slides**

THE FOLLOWING EXERCISES

Can be modified for 1st trimester or if you do not have diastasis recti by doing the exercises while lying on the floor

- Maintain activation of TVA and anterior pelvic floor muscles throughout and decrease range of motion if your hip shifts

The following chair exercises can be done in 1st, 2nd, 3rd trimester, if you have diastasis and postpartum

DEEP CORE EXERCISES – MODIFIED FOR 2ND AND 3RD TRIMESTERS

Dead Bug in a chair

Place your right hand onto your right thigh

Gently lift and press your right thigh into your hands and connect to your core by contracting the TVA and anterior pelvic floor muscles

Hold 10 – 20 seconds to start, gradually increase to 1 minute

Repeat with the left side

DEEP CORE EXERCISES – MODIFIED FOR 2ND AND 3RD TRIMESTERS

Leg Fall Out

- Sit in a chair, knees at 90 degrees and feet flat on floor
- Set core by contracting your TVA and anterior pelvic floor muscles
- Place hands behind you and lean back on the chair
- Maintain neutral spine. Keep your buttock relaxed
- Place right heel on the floor and slowly drop the right knee out to the side and back while maintaining the core contraction throughout the entire movement
- Ensure the opposite hip does not shift. If it does, shorten your range of motion
- Perform 4 per leg

DEEP CORE EXERCISES – MODIFIED FOR 2ND AND 3RD TRIMESTERS

Heel Drag

- Sit in a chair, knees at 90 degrees and feet flat on floor
- Set core by contracting your TVA and anterior pelvic floor muscles
- Place hands behind you and lean back on the chair
- Maintain neutral spine. Keep your buttock relaxed
- Slowly slide one heel along floor increasing intensity as you extend the leg away from the body. Slowly return to the start position while maintaining the core contraction throughout the entire movement
- Ensure the opposite hip does not shift. If it does, shorten your range of motion
- Perform 4 per leg

DEEP CORE EXERCISES – MODIFIED FOR 2ND AND 3RD TRIMESTERS

Single Heel Lift

- Sit in a chair, knees at 90 degrees and feet flat on floor
- Set core by contracting your TVA and anterior pelvic floor muscles
- Place hands behind you and lean back on the chair
- Maintain neutral spine. Keep your buttock relaxed
- Slowly lift one foot about 2 -3 inches off the floor. Slowly return to the start position and switch to the other leg while maintaining the core contraction throughout the entire movement
- Ensure the opposite hip does not shift. If it does, shorten your range of motion
- Perform 10 – 12 reps

DEEP CORE EXERCISES –

From Sit to Stand

- Sit in a chair, knees at 90 degrees and feet flat on floor
- Set core by contracting your TVA and anterior pelvic floor muscles
- Maintain neutral spine.
- Slowly lift your buttocks off the chair into a standing position without losing the contraction in the TVA and anterior pelvic floor
- Placing a small ball between the legs just above the knees and squeeze gently as you set your core may help you connect with the deep core muscles

CORE TRAINING FOR PREGNANCY

- **Once you can successfully complete the deep core exercises from the previous slides, you are ready for more of a challenge, you can try the next exercises**
- Not every exercise will feel comfortable during each stage of pregnancy
- If you feel discomfort or pain, discontinue the exercise immediately
- Focus on **quality not quantity**

CORE TRAINING FOR PREGNANCY

Four Point Kneel

- Hands under shoulders and knees under hips, set core by contracting TVA and anterior pelvic floor muscles, and maintain neutral spine
- Hold contraction while continuing to breathe
- Hold 10 – 20 seconds gradually increasing to 1 minute
- If discomfort in the wrists, place foam blocks under hands or go onto elbows on 2-3 foam blocks
- Do 1 – 2 times

CORE TRAINING FOR PREGNANCY

Cat

- Hands under shoulders and knees under hips, set core by contracting TVA and anterior pelvic floor muscles & maintain neutral spine
- Round spine toward the ceiling and tucking your tailbone under while dropping your head down
- Exhale as you round your spine forming a “c” shape from head to tailbone
- Hold for a few seconds and return to neutral on your inhale and allow belly to drop and relax abdominals (AVOID COW POSE – arching back)
- If discomfort in the wrists, place foam blocks under hands or go onto elbows on 2-3 foam blocks
- Perform 10 – 12 reps
- Increase intensity by lifting opposite arm and leg

CORE TRAINING FOR PREGNANCY

Opposite Arm & Leg (Bird Dog)

- Hands under shoulders and knees under hips, set core by contracting TVA and anterior pelvic floor muscles & maintain neutral spine
- Slowly lift your right arm and left leg while maintaining neutral spine. Briefly hold, then return to start
- Modifications: Extend just the arm or just the leg before doing both.
Increase intensity by not resting hand and knee on the ground between lifts.
- If discomfort in the wrists, place foam blocks under hands or go onto elbows on 2-3 foam blocks
- Level 1: Perform 1 – 2 times holding 10 – 20 seconds, gradually increase duration up to 1 minute
- Level 2: Perform 4 per side

CORE TRAINING FOR PREGNANCY

Yoga Boat

- Sit up tall onto your sitz bones, set core by contracting TVA and anterior pelvic floor muscles & maintain neutral spine
- Level 1: Lean back slightly placing your hands behind your knees
- Level 2: Keep your knees bent and bring your feet off the floor. Keep your toes together and let your knees fall out slightly. Keep your hands behind your knees for support
- * If difficult to keep proper form, perform previous level or take a break
- Perform 1 – 2 times holding 10 – 20 seconds, gradually increase duration up to 1 minute

CORE TRAINING FOR PREGNANCY

Side Plank – ***Not to be done if you have diastasis recti***

- Position yourself on your side, elbow under shoulder and onto your knee, set core by contracting TVA and anterior pelvic floor muscles & maintain neutral spine
- Level 1: Lift your thighs and keep the bottom knee on the mat
- Level 2: Keep the bottom knee on the mat and lift the top leg off the floor
- * If difficult to keep proper form, perform previous level or take a break
- Perform 1 – 2 times holding 10 – 20 seconds, gradually increase duration up to 1 minute

CORE TRAINING FOR PREGNANCY

Plank – ***Not to be done if you are in the 2nd, 3rd trimester or if you have diastasis recti***

- Position yourself on your elbows with your thighs in contact with the mat, set core by contracting TVA and anterior pelvic floor muscles & maintain neutral spine
- Level 1: Leave your thighs in contact with the mat
- Level 2: Come up onto your knees
- Level 3: Come up onto your toes
- Level 4: Plank with leg lifts
- * If difficult to keep proper form, perform previous level or take a break
- Perform 1 – 2 times holding 10 – 20 seconds, gradually increase duration up to 1 minute

RESOURCES

- The Sensible Guide to a Healthy Pregnancy (Government of Canada resource)
- <http://americanpregnancy.org/pregnancy-health/leg-cramps-during-pregnancy/>
- Pregnancy and Birth – Healthy Parents Healthy Children. Alberta Health Services (2014)
- A Strong Core for Life. Sue Dumais (2007)
- PARmed-X (2015). Canadian Society for Exercise Physiology.