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# LIMITLESS

Pelvic Floor Dysfunction;  
5 Key Exercises

PRESENTED BY

**Brian Richey and Helen Vanderburg**  
Balanced Body Faculty

# Integrated Movement Specialist™



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- **Gain new programming** to attract clients and grow your business
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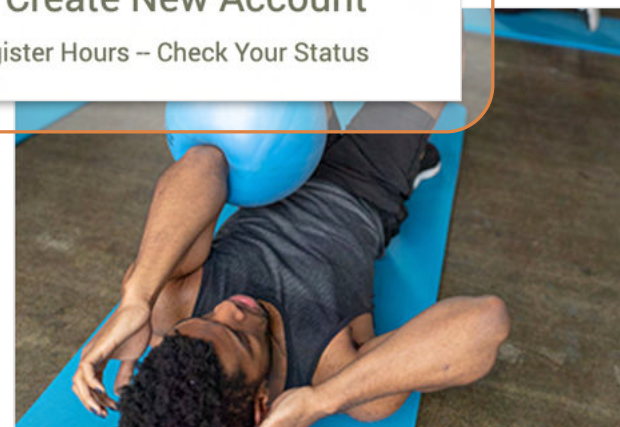
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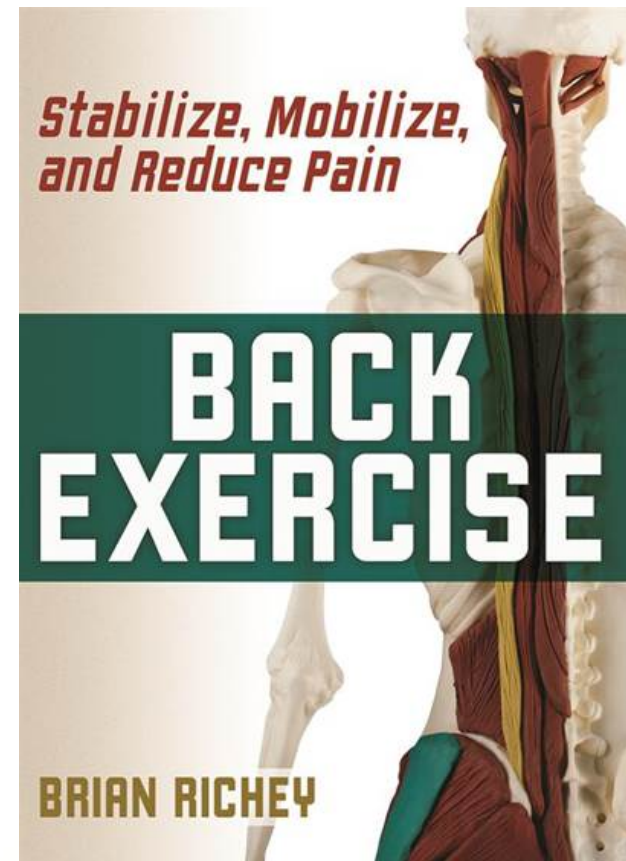
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# Back Exercise: Stabilize, Mobilize and Reduce Pain

By Brian Richey

My new book deals is for anyone who has or has a client dealing with low back pain. It goes into depth on specific spinal pathologies as well as non-specific low back pain, explaining each pathology, highlighting the contraindications and prescribing specific exercise programing to train and progress them safely.



# Purpose of the Pelvic Floor



- Support the internal organs
- Control urination and defecation
- Create sexual response in men and women
- Support Pregnancy and childbirth
- Primary connection point on the midline of the body

# Advantages of a Healthy Pelvic Floor



- Ability to control bowel and bladder function
- Decreased likelihood of organ prolapse
- Increased sexual function and satisfaction
- Ease of pregnancy, labor, delivery and post natal recovery

# Muscles Influencing the Pelvic Floor

Transverse abdominis

Internal oblique abdominals

External oblique abdominals

Rectus abdominis

Adductors

Deep external hip rotators

Gluteus maximus



# Muscles of the Pelvic Floor

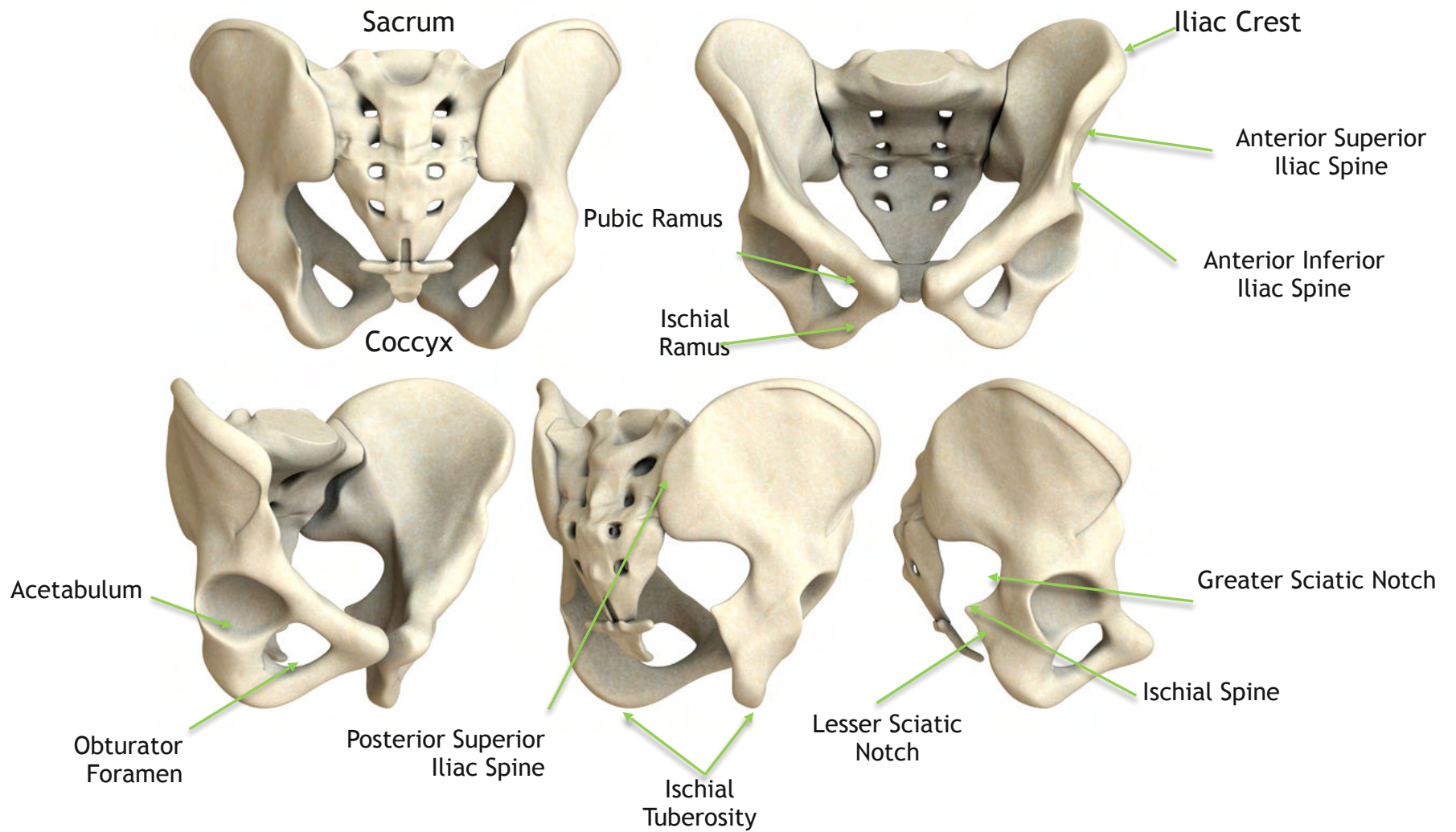
Piriformis

Obturator Internus

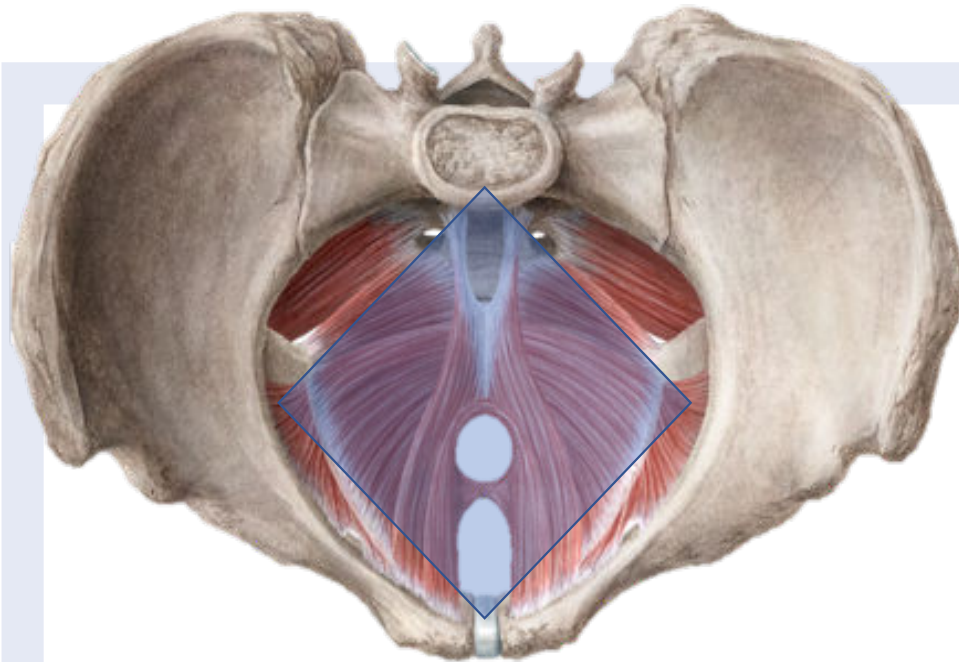
Levator Ani (Puborectalis, Pubococcygeus, Iliococcygeus)

Coccygeus

Perineum



# Pelvic Floor = Pelvic Diaphragm + Perineum

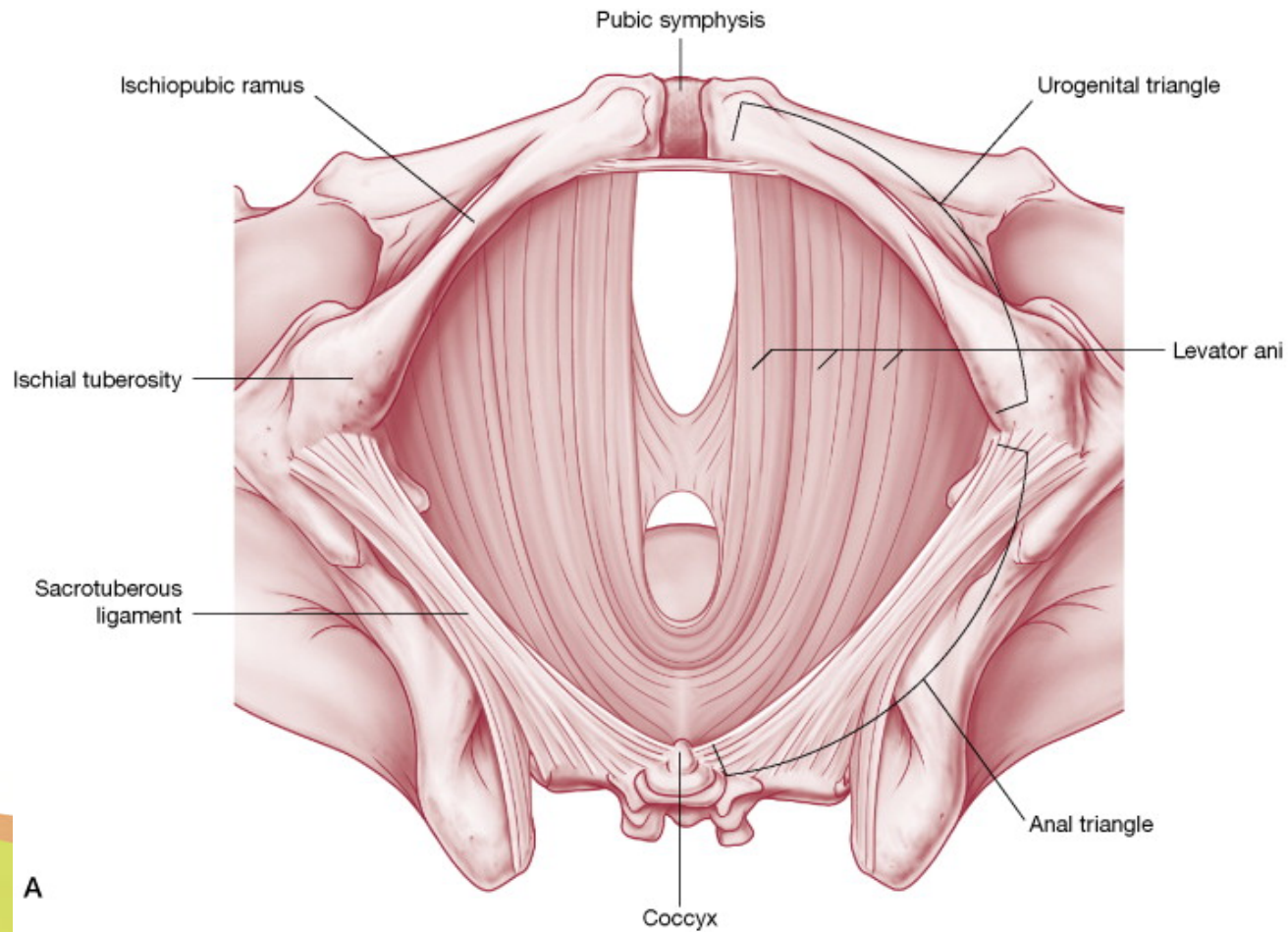


Pelvic Diaphragm

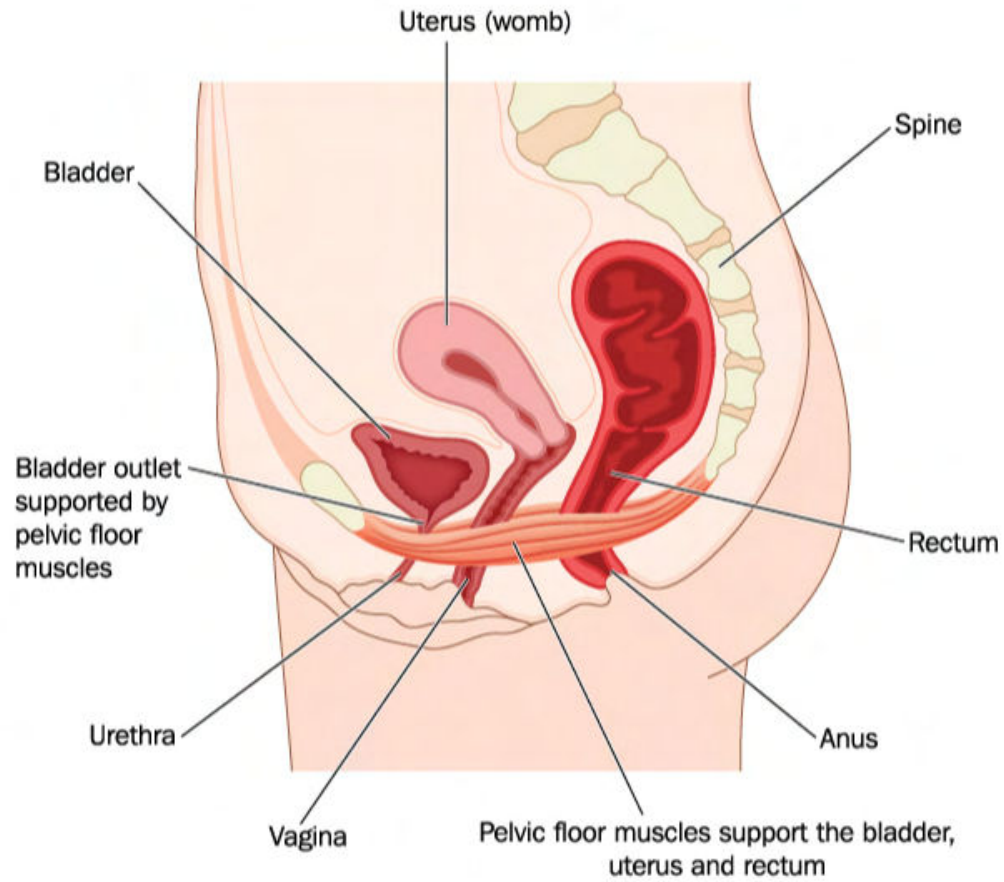
Muscles which form the broad thin muscular floor of the pelvis

Pelvic hammock, referred to as Levator ani

# Levator Ani



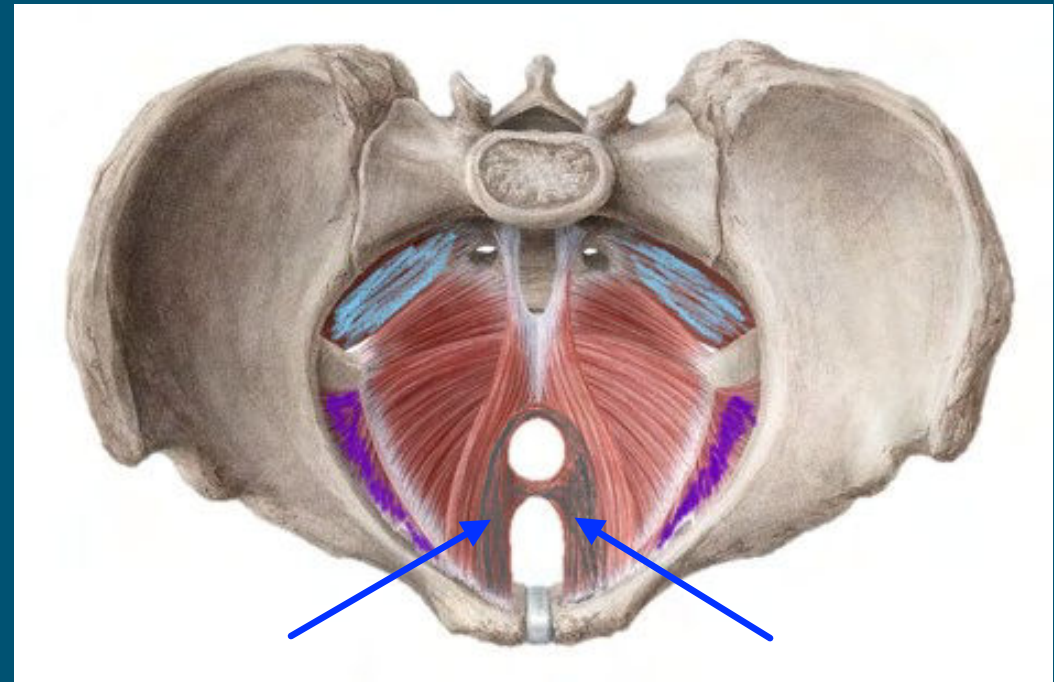
# Levator Ani



# Puborectalis

Thick U-Shaped Muscle

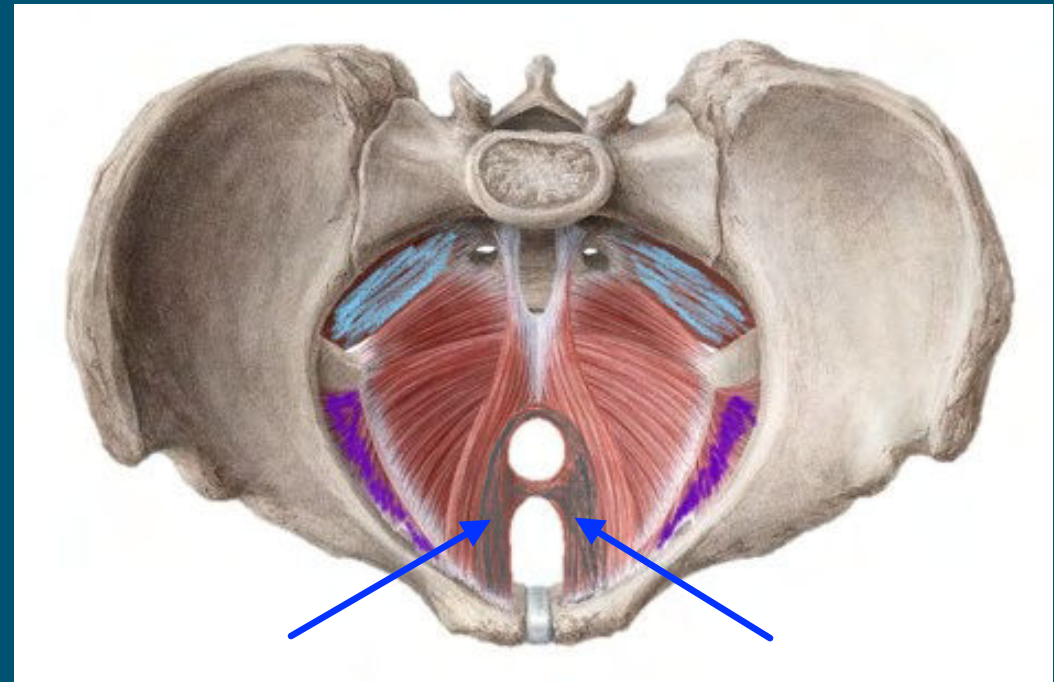
Attaches to the bodies of pubic bone, past urogenital hiatus, around anal canal. Becomes one with Pubococcygeus.



# Puborectalis

Main function is to maintain fecal continence and relax during defecation

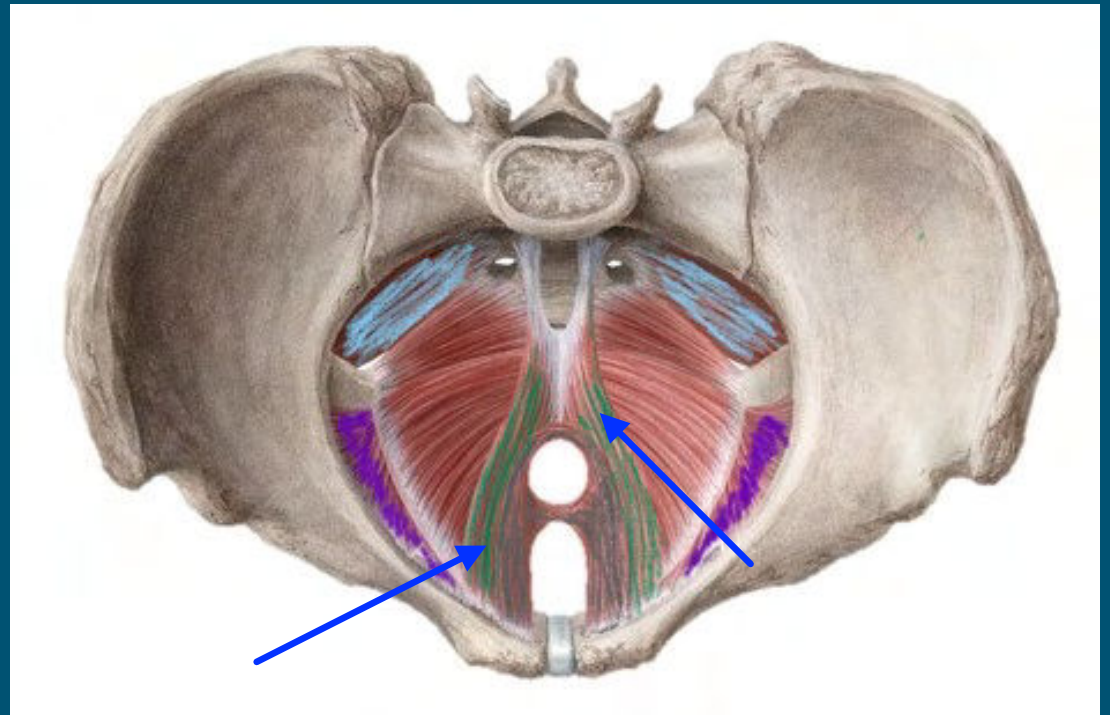
Some fibers flank the urethra in the male and vagina in the female. These fibers important for preserving urinary continence, especially with increase in intra-abdominal pressure (i.e. sneezing)



# Pubococcygeus

The pubococcygeus muscle controls urine flow and contracts during orgasm as well as assisting in male ejaculation. It also aids in childbirth as well as core stability.

A strong pubococcygeus muscle has also been linked to a reduction in urinary incontinence and proper positioning of the baby's head during childbirth.

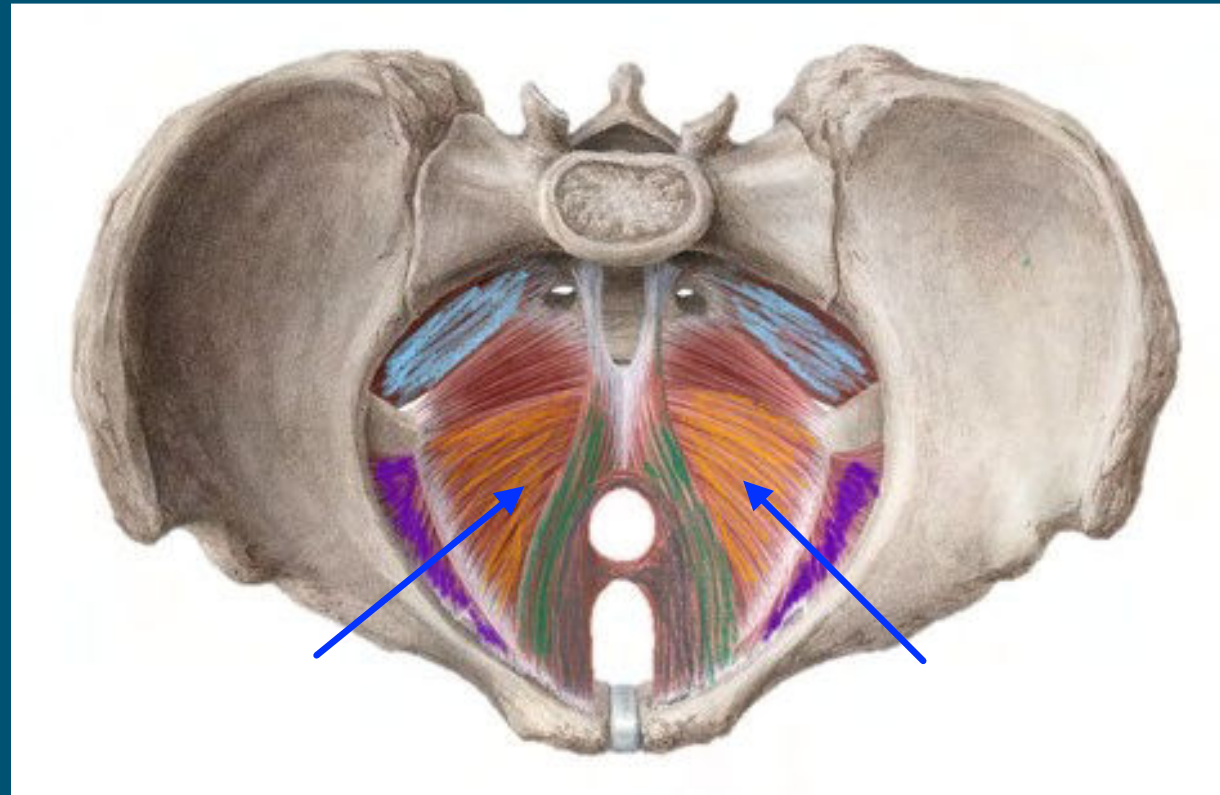




# Iliococcygeus

This muscle puts the “levator” in levator ani! Its action elevates the pelvic floor

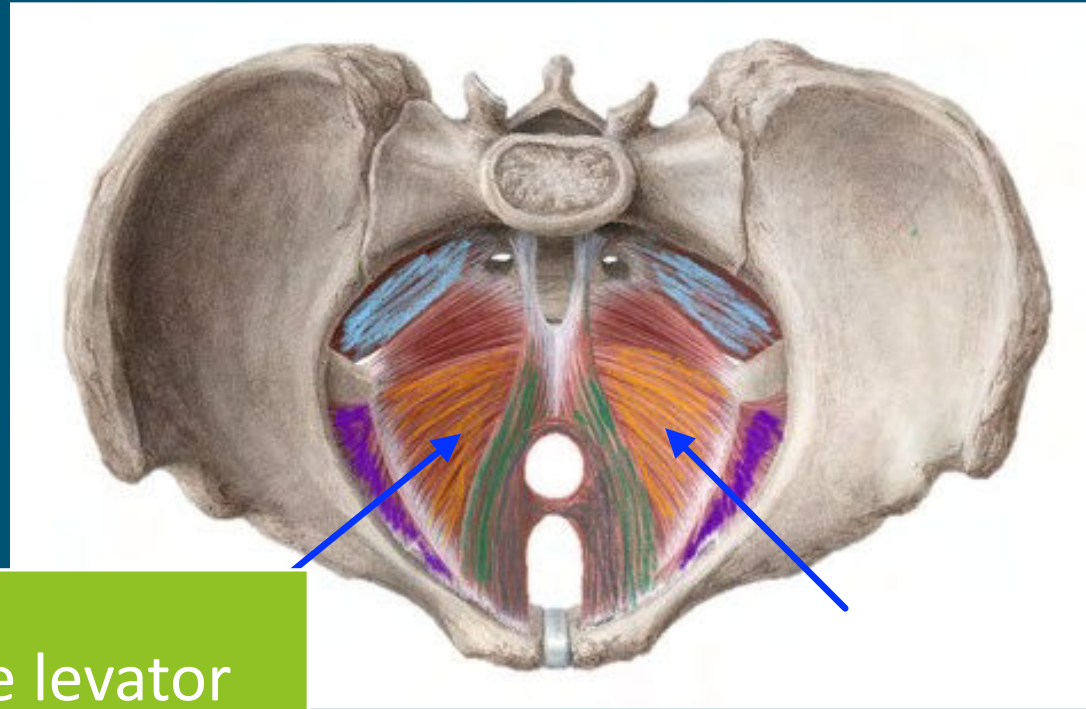
Made up of a good number of Type I muscle fibers (slow twitch, postural)



# Iliococcygeus

Thin and broad muscle, may be replaced by fibrous tissue.

The iliococcygeus portion of the levator ani attaches to the lateral walls of the pelvis via the obturator fascia through the tendinous arch of the obturator fascia.



## Puborectalis

U shaped sling; thick muscle

Bodies of pubic bone, past urogenital hiatus, around anal canal

Main function is to maintain fecal continence and relax during defecation

Some fibers flank the urethra in the male and vagina in the female. These fibers important for preserving urinary continence, especially with increase in intra-abdominal pressure (i.e. sneezing)

## Pubococcygeus

Main constituent of the levator ani

Make their attachments from body of pubic bone to coccyx and anococcygeal ligament

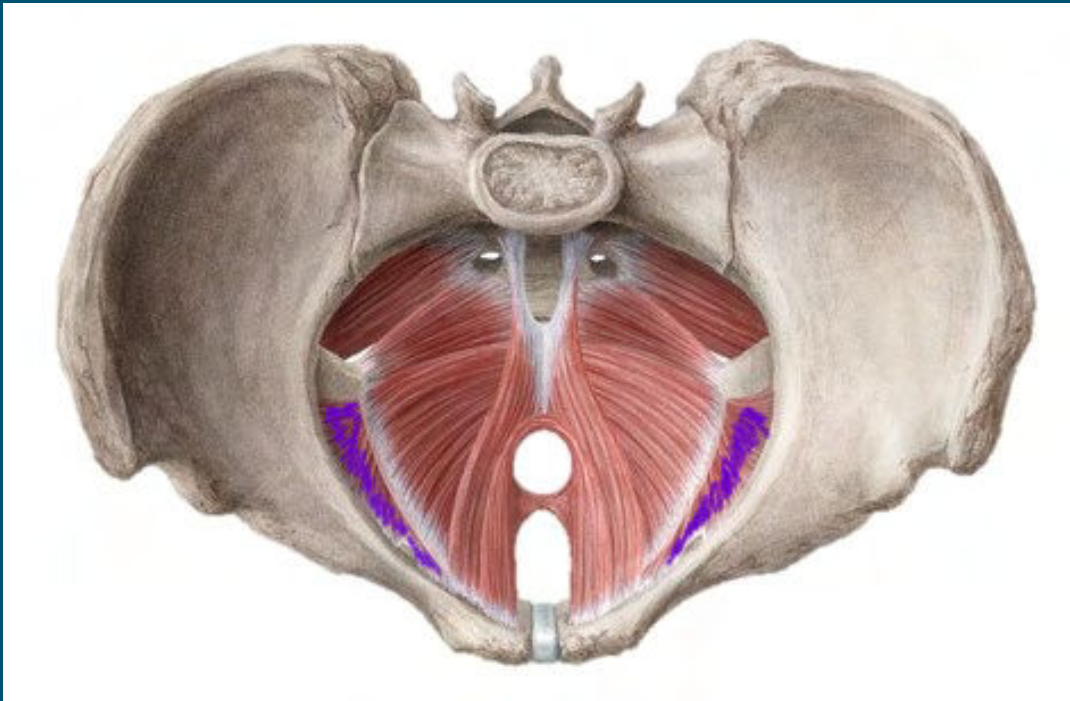
## Iliococcygeus

Has thin muscle fibers

Start at ischial spines and posteriorly attaches to the coccyx and the anococcygeal ligament

This muscle puts the “levator” in levator ani! Its action elevates the pelvic floor

# Obturator Internus



Internally within pelvis covering obturator foramen, through the lesser sciatic notch to make its attachment onto the superior/medial aspect of the greater trochanter

**Obturator fascia –  
suspensory fascia  
supporting the levator  
ani**

# Obturator Internus

Posterior  
View



## Origin:

- Fills lesser pelvis covering inferior surface of obturator membrane and goes through the lesser sciatic notch

## Insertion:

- Medial surface of greater trochanter of femur
- Proximal and superior to trochanteric fossa.

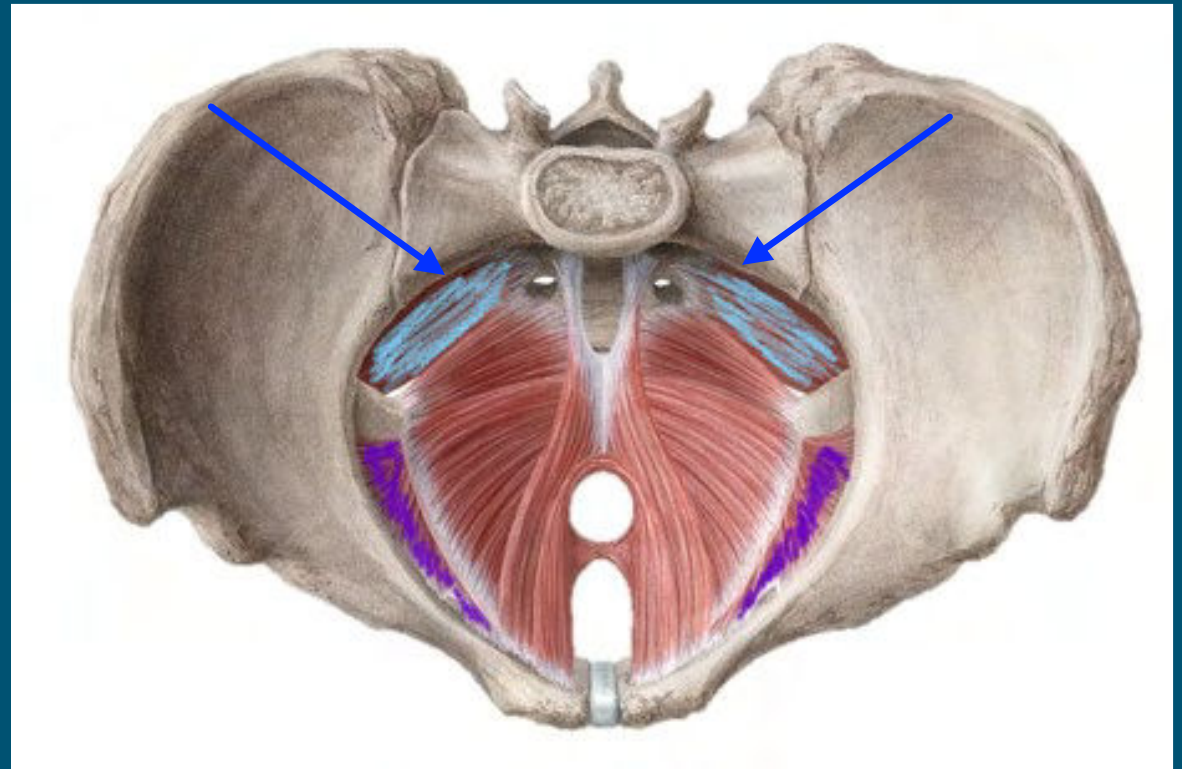
## Actions:

- Laterally rotates
- Abducts and laterally rotates extended hip
- Abducts leg when hip is neutral, flexed or extended
- Stabilizes hip during walking
- Serves as attachment point for Levator Ani

# Piriformis

Shares a tendon with Coccygeus which in counter nutation closes the posterior pelvic floor

Creates the back wall of the pelvis



# Coccygeus

## Origin:

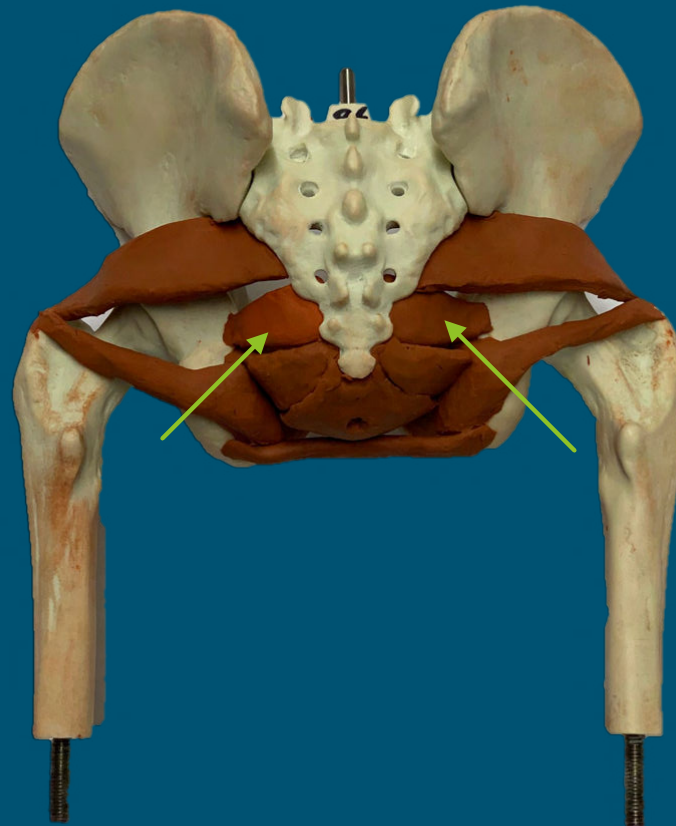
- Ischial tuberosity

## Insertion:

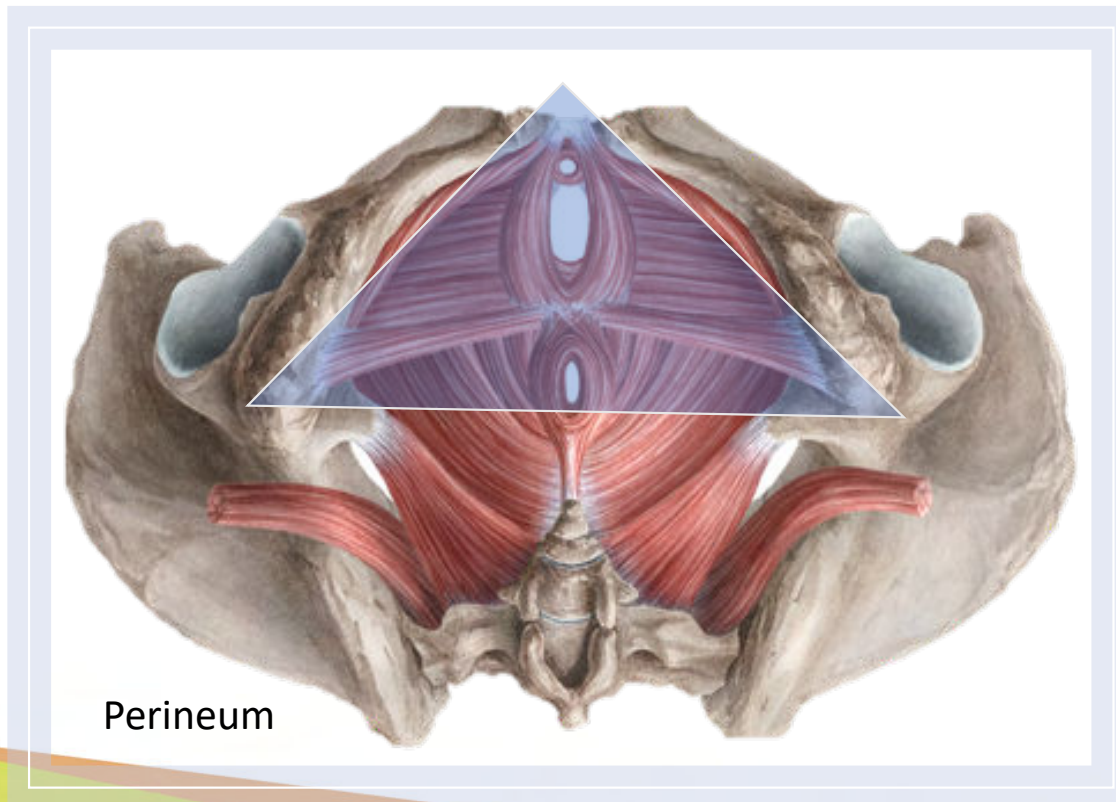
- Coccyx.

## Actions:

- Pulls coccyx forward to close the posterior part of the pelvis.

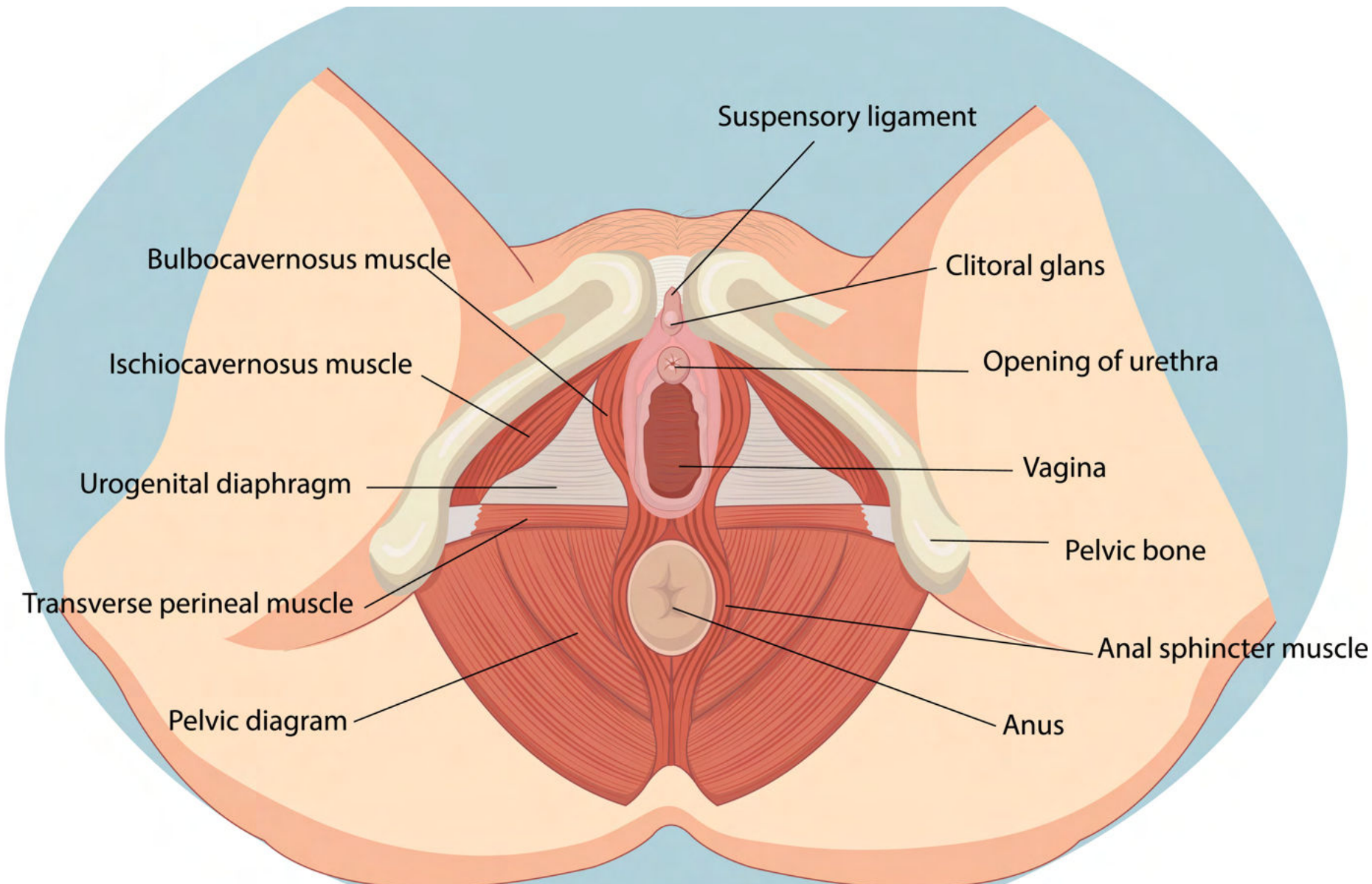


# Pelvic Floor = Pelvic Diaphragm + Perineum



Superficial the pelvic diaphragm  
Triangle of muscles which span pubic bone to sitting bones





Suspensory ligament

Bulbocavernosus muscle

Clitoral glans

Ischiocavernosus muscle

Opening of urethra

Urogenital diaphragm

Vagina

Transverse perineal muscle

Pelvic bone

Pelvic diagram

Anal sphincter muscle

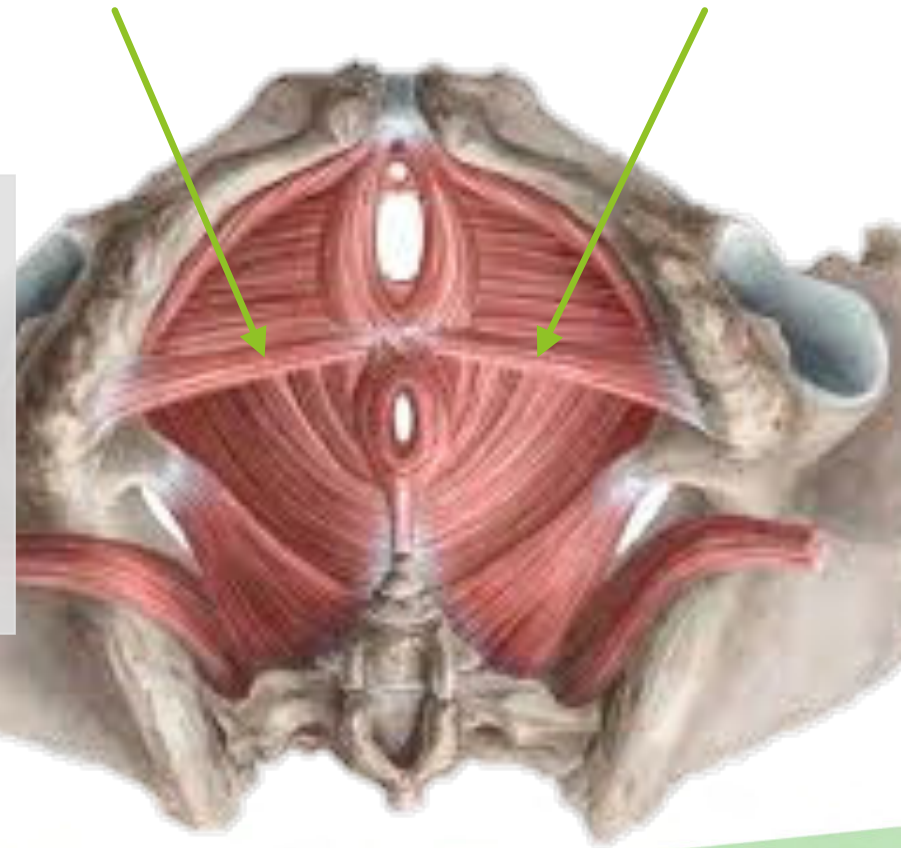
Anus

# Deep Transverse Perineal

Innervated by the pudendal nerve

Fixation of the perineal body (central tendon of perineum)

Expulsion of semen in males and last drops of urine in both sexes

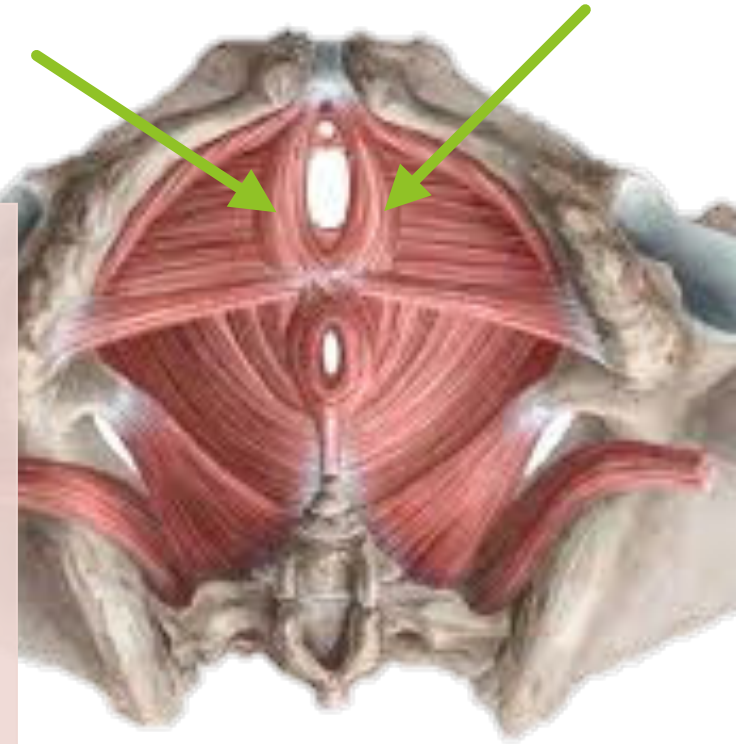


# Bulbospongiosus

In females it contributes to clitoral erection and the contractions of orgasm, and closes the vagina

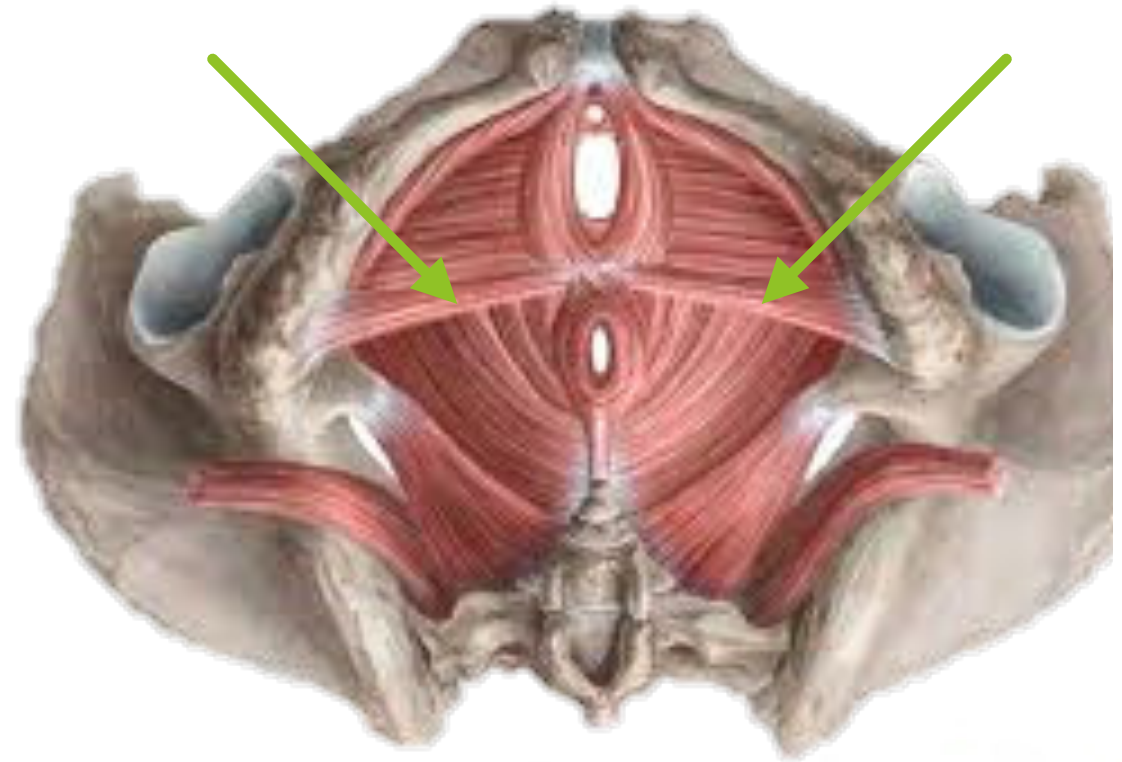
In males it contributes to erection, the contractions of orgasm, and ejaculation

This muscle serves to empty the canal of the urethra, after the bladder has expelled its contents



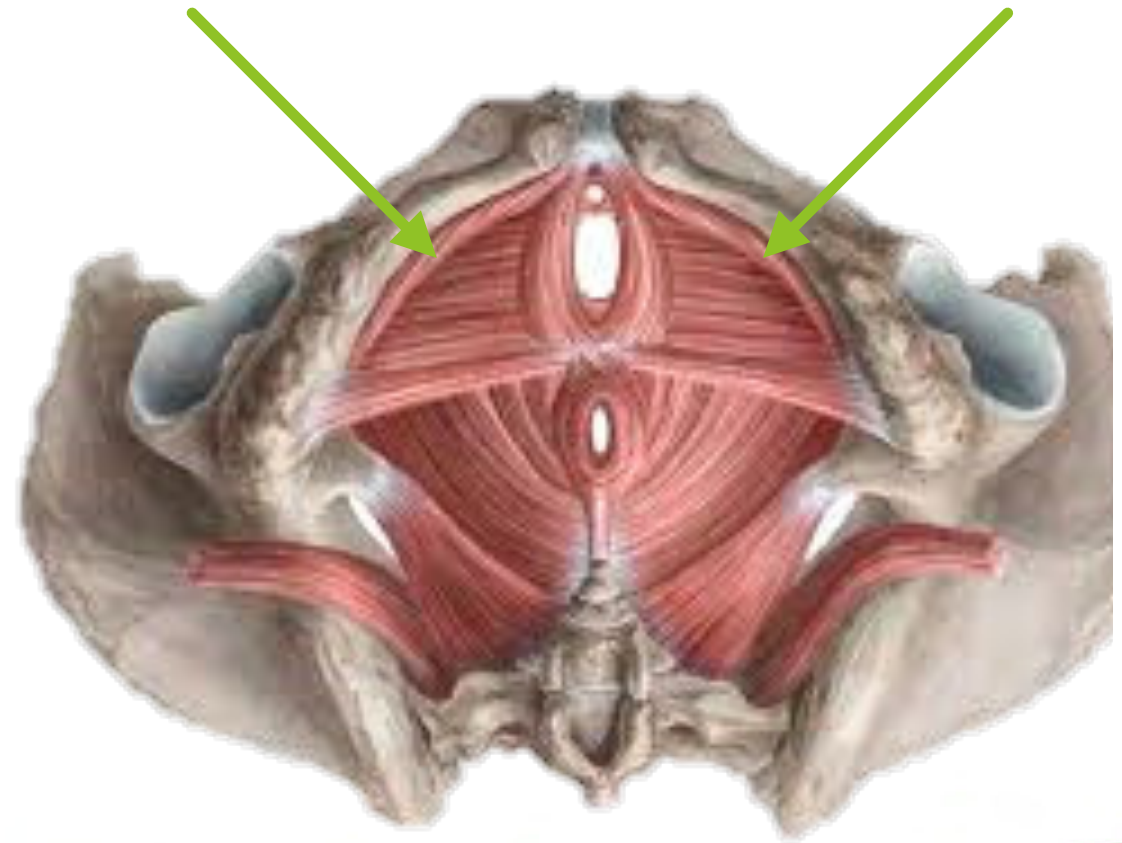
# Superficial Transverse Perineal

A **narrow muscular slip**, which passes more or less transversely across the perineal space in front of the anus



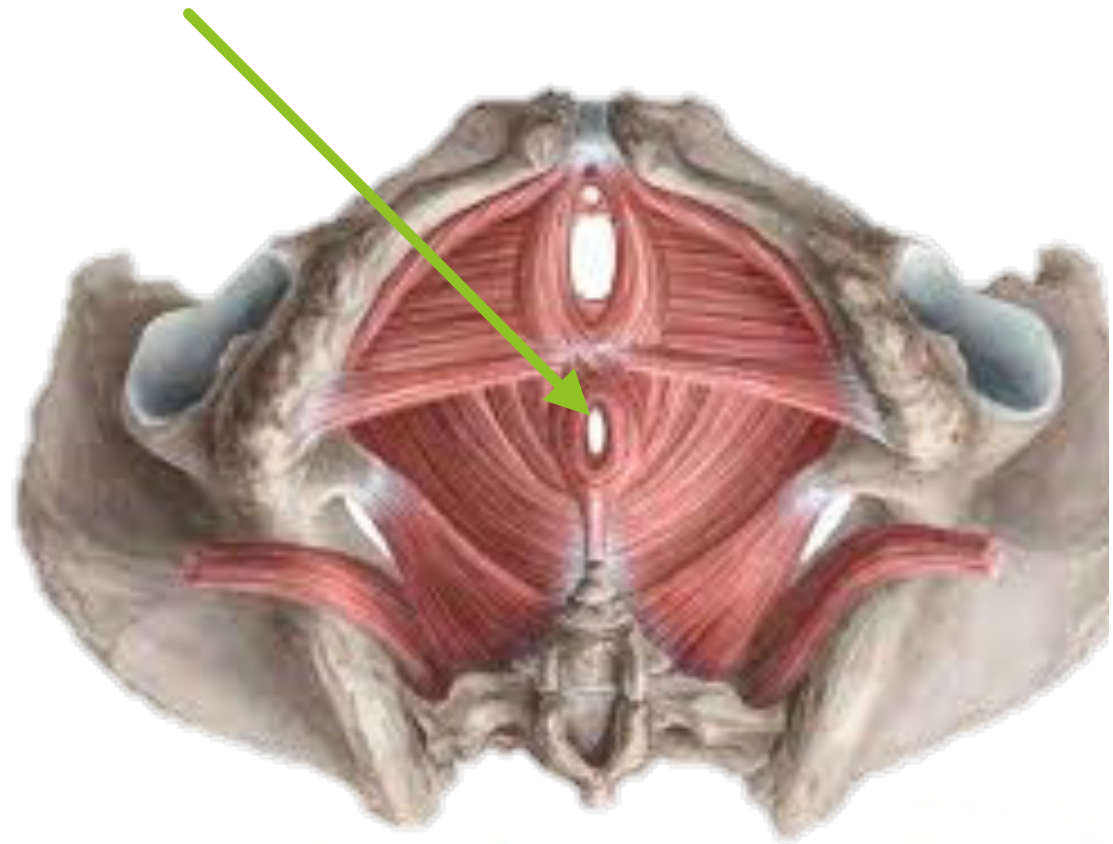
# Ishiocavernosus

- In males stabilize and maintain the erect penis
- In females tenses the vagina during orgasm. Kegel exercises (also known as pelvic floor exercises) can help tone the ischiocavernosus muscle

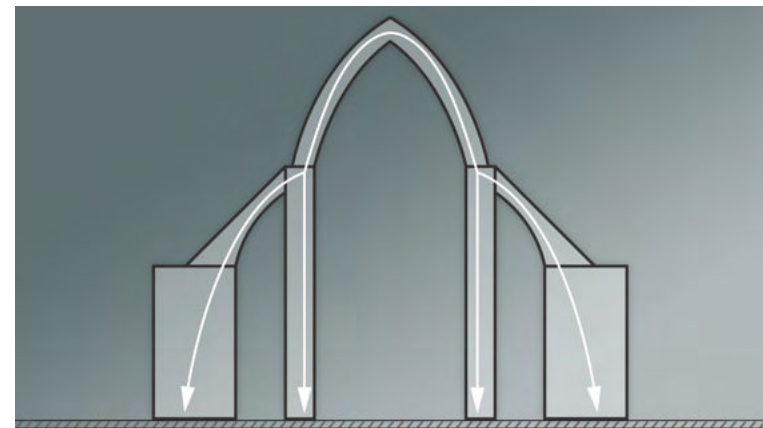
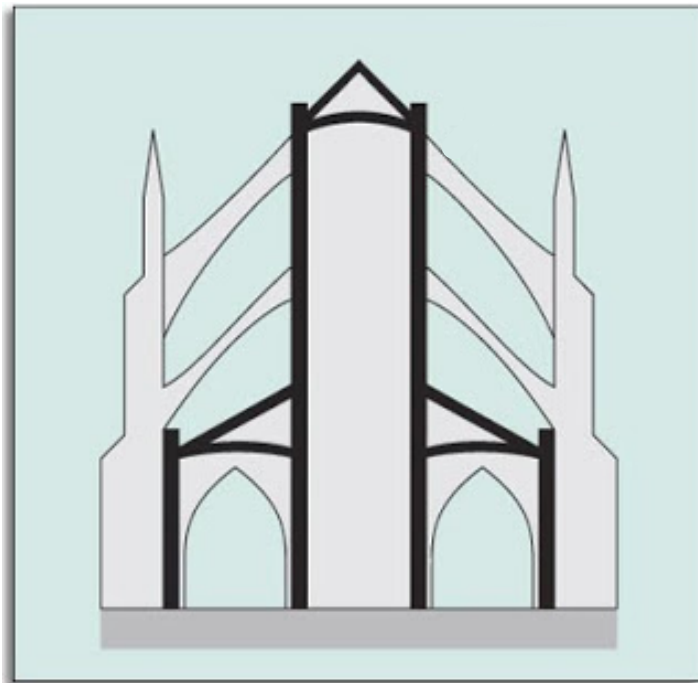


# External Anal Sphincter

The double muscular ring surrounding the anal canal that relaxes during defecation



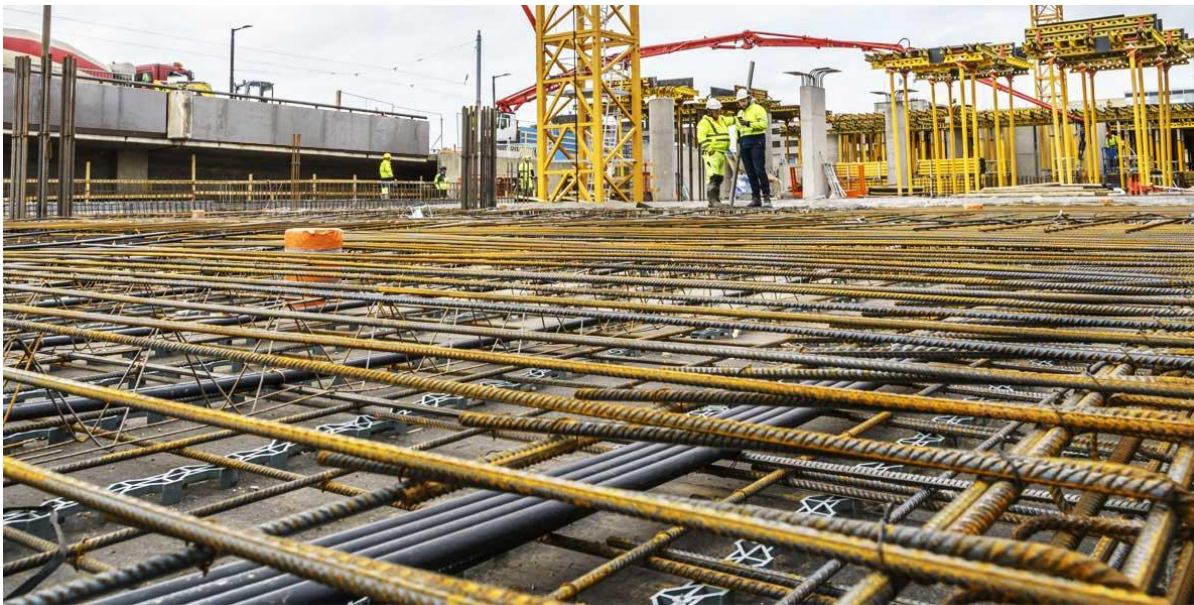
# External Support



## Flying Buttress

Support from the outside in

# Internal Support

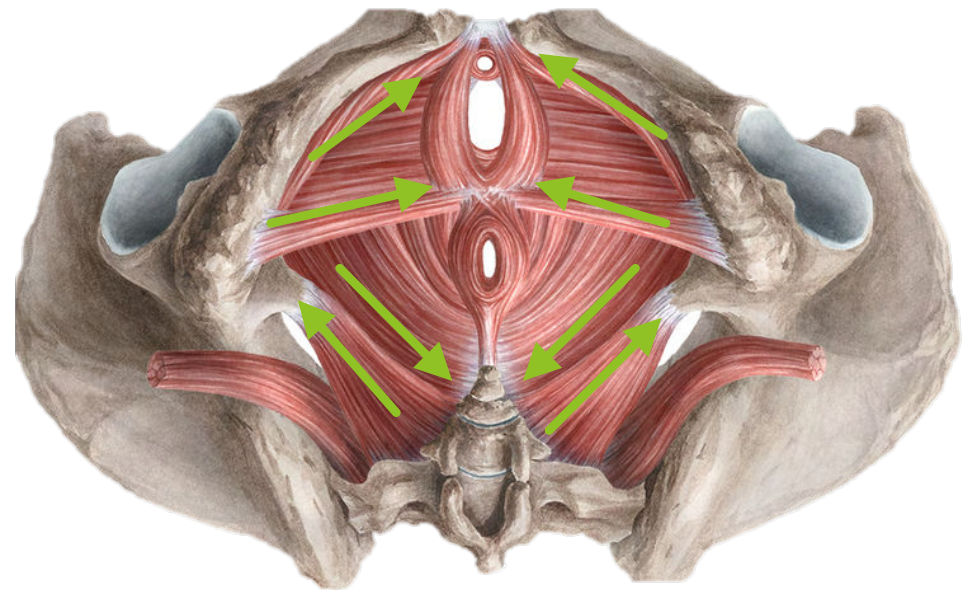
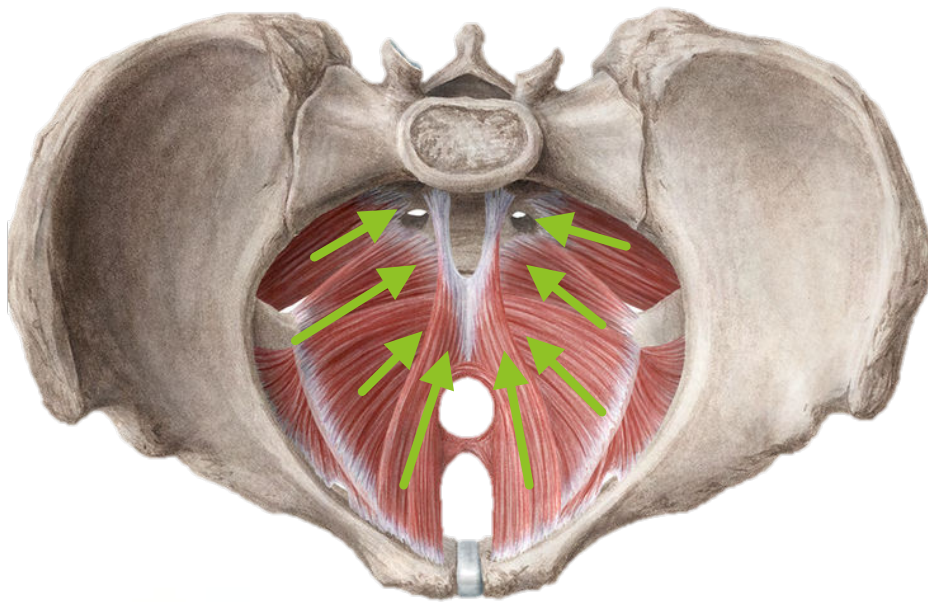


Support from the inside out

Rebar (Reinforcement Bar)



# Internal Support



# Tonicity and the Pelvic Floor

Pelvic Floor muscles work tonically and reflexively to maintain continence.  
Antigravity!

Approx 70% slow twitch to 30% fast twitch

Pelvic floor is always active except before and during voiding

Age changes muscle fiber type, diameter associated with nerve denervation.

Fascial laxity and smooth muscle dysfunction often involved

Exercise can activate latent motor units (MacLeod, 1983)

# Tonicity and the Pelvic Floor

## PFM contribute

- Stability of lumbar spine
- Continence and elimination of bladder and bowel
- Sexual pleasure and function

## To restore tonicity

- PFM have passive, neural, reflexive and active control
- Prolonged and gentle holds

# Sensation and the Pelvic Floor

Sensory feedback  
activates muscle  
spindles

Slow or rapid stretch  
generates efferent  
motor nerves to fire

Dynamic brief muscle  
activation (think sneeze  
or cough) will do the  
same

Neural stimulation  
should precede  
increase in intra-  
abdominal pressure

Pain and dysfunction  
may be a response to  
delay in timing

# Can you have too strong or tight a pelvic floor?

**Toned pelvic floor "hammock"**

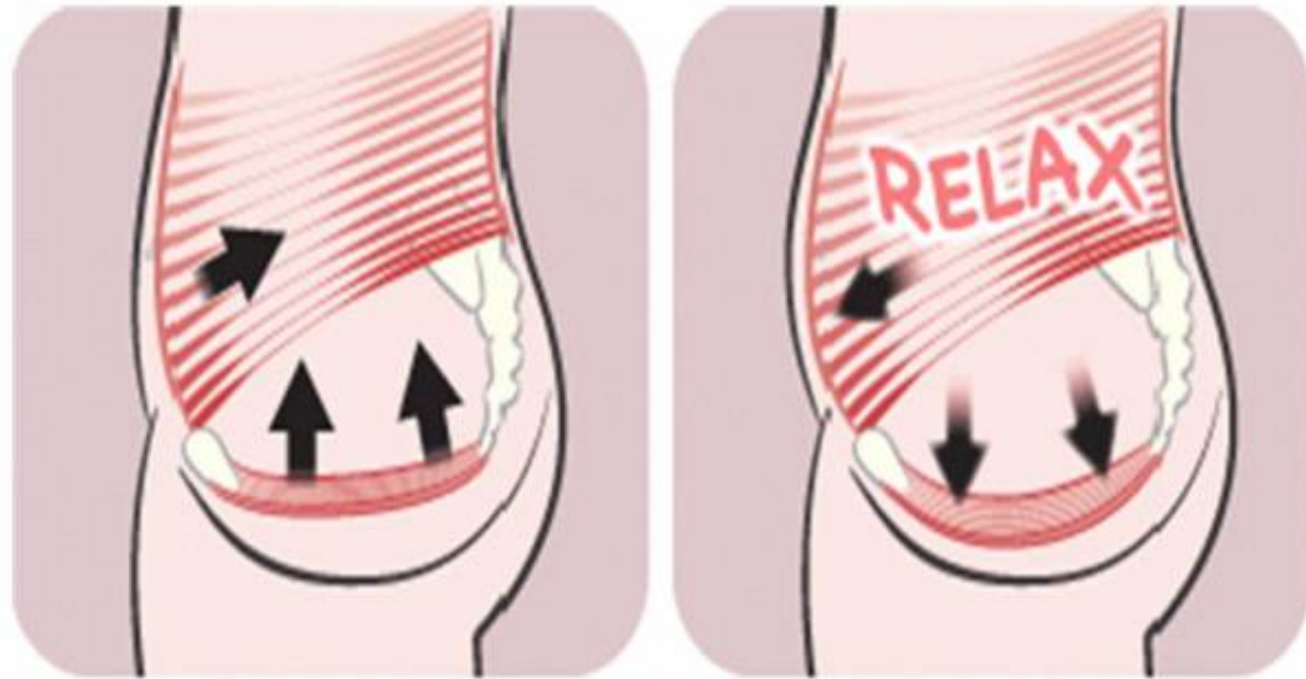


**Droopy pelvic floor "hammock"**



# Tight Pelvic Floor

- If your pelvic floor is too tight it can make it difficult to release the bowels or to urinate.
- Also if too tight intercourse can be painful to nearly impossible.
- They should see a PT that specializes in pelvic floor issues. They will probably need internal release work.
- What we can have them focus on is releasing those muscles during exercise. Don't hold them in and make sure they are breathing.



# Causes of Pelvic Floor Dysfunction

General lack of fitness and muscle tone

Being overweight.

Poor posture and excessive sitting.

Pregnancy and childbirth.

Trauma following surgery such as prostatectomy or episiotomy.

Trauma to pelvis, hip or spine

Hormonal changes

High impact physical training

# Symptoms of Pelvic Floor Dysfunction

Leaking - uncontrolled voiding

Incontinence – inability to void

Sexual dysfunction

Organ prolapse

Pelvic pain

Complications in pregnancy, delivery or post partum.





Leaking - uncontrolled voiding

Sexual dysfunction

Organ prolapse

Complications in pregnancy, delivery or post partum.



Pelvic pain

Sexual dysfunction

Incontinence – inability to void

Complications in pregnancy, delivery or post partum.

# Incontinence and Erectile Dysfunction



25% - 40% of women, 10% of men and 17% of children under 15 suffer from urinary incontinence.

Incontinence is one of the primary reasons for admitting elderly patients to nursing homes.

Performing exercises specific to the pelvic floor can decrease or eliminate symptoms of incontinence.

There are an estimated 30 million men with erectile dysfunction

70% experience improvement with a pelvic floor strengthening program

40% will achieve full resolution.

- Dorey and Feneley, British Journal of Urology, 2005 Sep; 96(4) 595-7

# Pelvic Position and Pelvic Floor Activation

## Anterior Tilt

generally shortens the anterior pelvic floor and lengthens the posterior pelvic floor.

## Posterior Tilt

generally lengthens the anterior pelvic floor and shortens the posterior pelvic floor.

## Sitting and Inactivity

lead directly to decreased activation of the pelvic floor.

# Principles of Pelvic Floor Training

Educate the client about the purpose of pelvic floor training.

Find imagery and exercises that work for the client.

Find the right balance of release work and strengthening exercises.

Encourage consistency by integrating exercises into clients daily activities or exercise routine.

# Principles of Pelvic Floor Training

Kegels Refined

Identify anterior and posterior activation

Identify levels from superficial to deep

Train endurance

Find the right balance of release work and strengthening exercises.

Encourage consistency by integrating exercises into client's daily activities or exercise routine

# Pelvic Floor Training - Creating Sensation

## Breathing and the pelvic floor

- Supine
- Seated
- Standing

## Pelvic Floor Awareness

- Rocking
- Roller
- Wagging the coccyx
- Feeling through the bones
  - Narrowing the pelvis
  - Arch and curl
  - Lateral shift
  - Seated Rotations



Pelvic floor activation on roller

The following exercises have all been tested with EMG imaging to determine:

- If the exercise increases pelvic floor muscle activation
- At what phase of the exercise the activation is optimized

These exercises are part of the Pfilates program developed by Dr. Bruce Crawford, MD.

1. Perform a number of repetitions at a normal tempo.

2. Hold the exercise at the point of maximum engagement and add an isometric contraction for a few seconds.

3. Pulse the exercise at the point of maximum engagement while consciously engaging and releasing the pelvic floor.

- High intensity short burst contractions engage fast twitch fibers
- Superficial muscles of Pelvic Floor contain a large number of fast twitch fibers & react to short and rapid increases in intra-abdominal pressure

# The Pelvic Floor 5

## Position

- Supine
- Sidelying
- All Fours
- High Kneeling
- Standing

## Exercise

- Bridge
- Clams
- Cat
- Hovering
- Squat/Lunges



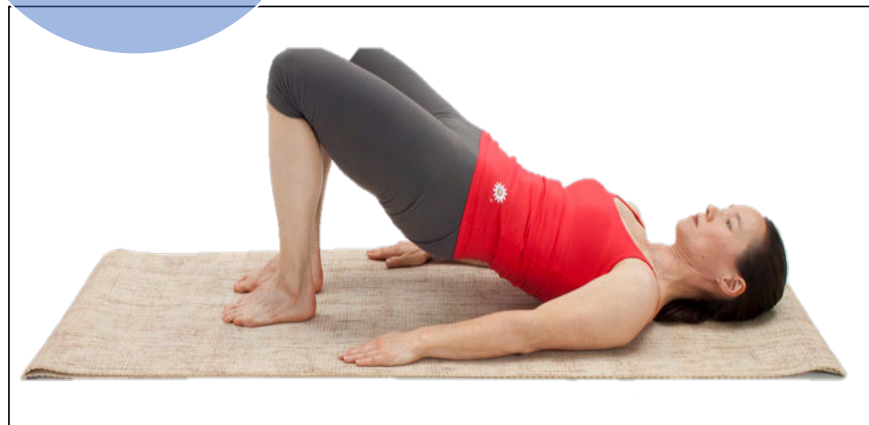
Maximum  
Exertion:  
Occurs at the  
highest point  
of the bridge

## Bridge - Articulating

Pelvic curl

Half  
Bridge

Full  
Bridge



Coactivation of the glutes and TA activate PFM

Set 1

Move

Set 2

Hold

Set 3

Pulse

Co-contraction of glutes  
and adductors stimulates  
pelvic floor muscles

Use ball between knees for adductor coactivation

## Clamshell

Raise top leg  
w. knee bent

Lower top leg  
w. knee bent

Maximum  
Exertion:  
Top leg at  
45 degree  
angle



Exhale to raise leg, inhale to lower

Set 1

Move

Set 2

Hold

Set 3

Pulse

Use band around knees for piriformis and glute coactivation

Maximum  
Exertion:  
Full Cat  
pose with  
tail curled

All 4s Cat / Cow

Cat – Curl the  
tail

Curl – Extend  
the spine



Exhale to Cat, inhale to Cow

Set 1  
**Move**

Set 2  
**Hold**

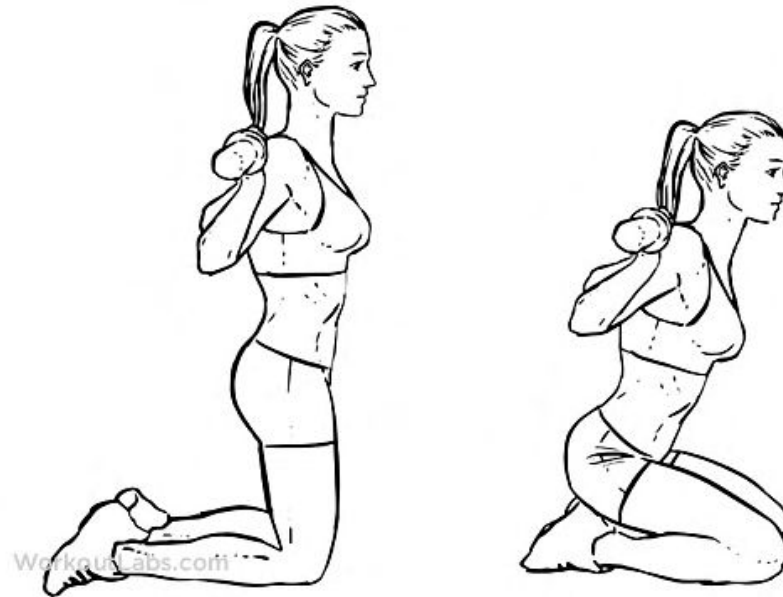
Set 3  
**Pulse**

Use ball between knees for adductor coactivation

# Kneeling Squat

Kneeling - tall

Sit back on  
heels



Maximum  
Exertion:  
Occurs at  
top of the  
lift

Set 1

Move

Set 2

Hold

Set 3

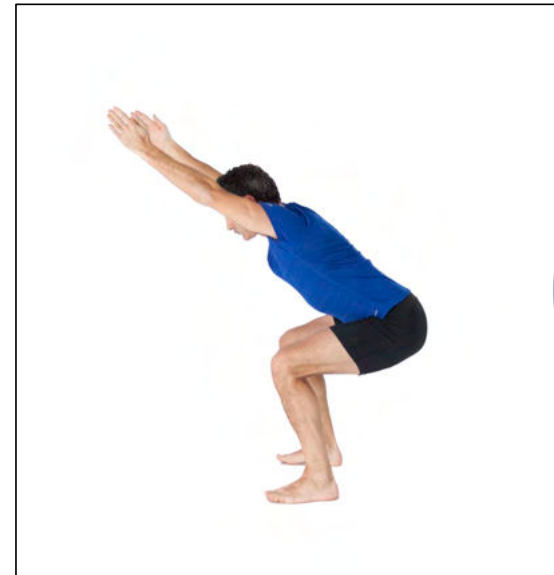
Pulse

Use ball between ankles at ME for greater PF activation

## Squats

Legs shoulder width  
apart

Lower to ME and feel  
glutes and voluntary  
PF contraction



Maximum  
Exertion:  
Occurs at  
lowest point  
of squat

Exhale as you lower down, inhale as you rise up

Set 1

**Move**

Set 2

**Hold**

Set 3

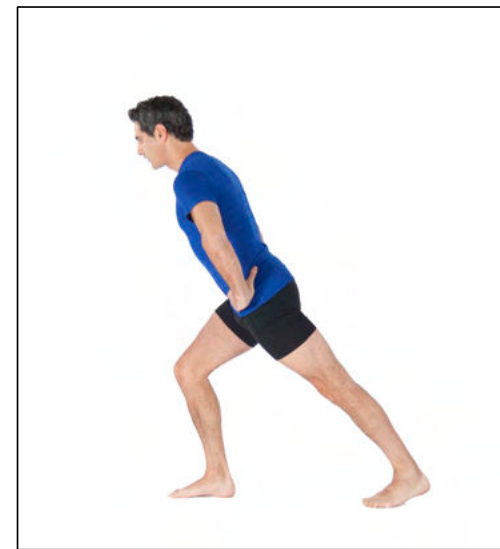
**Pulse**

Use band around knees for piriformis and glute coactivation

# Lunges

Step forward and lower into a lunge

Feel glutes contraction of back leg



Maximum Exertion:  
Occurs at lowest point of lunge

Exhale as you lower down, inhale as you rise up

Set 1

**Move**

Set 2

**Hold**

Set 3

**Pulse**

Use band around shin of front leg and calf of back leg for glute coactivation

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Brian Richey

[brian@fit4lifedc.com](mailto:brian@fit4lifedc.com)

[backexercisebook.com](http://backexercisebook.com)

Insta: fit4lifedc

Helen Vanderburg

[helen@helenvanderburg.com](mailto:helen@helenvanderburg.com)

Insta: vanderburghelen