

An anatomical model of the human pelvis, viewed from an anterior-inferior perspective. The model shows the bony structures of the pelvis in a light beige color. The pelvic floor muscles are highlighted in a reddish-orange color, including the levator ani and levator ani muscle. The ligaments are shown in a light purple color. The model is used to illustrate the anatomy of the pelvic floor.

Advanced Pelvic Floor Class

October 2023

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Why learn pelvic floor Acupuncture?

- The “WHY?” of it all
- Learning that your pelvic floor is literally the foundation of your physical body, within itself is an amazing insight. That you can treat the actual ROOT of so many issues, wherein most practitioners will only see the BRANCHES.
- Does this sound familiar?

Why Learn Pelvic Floor Acupuncture

There are limitless possibilities for you to help your patients, and finally addressing the physical root may be exactly what it takes.

A recent statistic shows that 32% of women will have “at least one pelvic floor disorder at one time in their life...and that 16% of men have also been identified with pelvic floor disorders”. Mayo Clinic March 2023



In reality though...

We know that women are more likely to seek medical treatment over men, so I personally see an equal split in my clinic of men to women.

The lament of ALL of my male patients is that NO ONE IS TREATING MEN for PFD.

An important
takeaway this
weekend is...

- You will learn how to quickly help your patients, and how they can help themselves



Clinical aspects of treating pelvic floor

- **Comprehensive pelvic floor physical therapy program for men with idiopathic chronic pelvic pain syndrome: a prospective study**
- [Thomas A Masterson 1](#), [John M Masterson 1](#), [Jessica Azzinaro 2](#), [Lattoya Manderson 2](#), [Sanjaya Swain 1](#), [Ranjith Ramasamy 1](#)
- Affiliations expand
 - PMID: 29184791
 - PMCID: [PMC5673826](#)
 - DOI: [10.21037/tau.2017.08.17](#)

Study Abstract

Background: Male chronic pelvic pain syndrome (CPPS) is a heterogeneous constellation of symptoms that causes significant impairment and is often challenging to treat. In this prospective study, we evaluated men with CPPS who underwent comprehensive pelvic floor physical therapy (PFPT) program. We used the previously validated Genitourinary Pain Index (GUPI) to measure outcomes.

Methods: We included 14 men who underwent physical therapy for idiopathic CPPS from October 2015 to October 2016. Men with clearly identifiable causes of pelvic pain, such as previous surgery, chronic infection, trauma, prostatitis and epididymitis were excluded. Treatment included: (I) manual therapy (internal and external) of pelvic floor and abdominal musculature to facilitate relaxation of muscles; (II) therapeutic exercises to promote range of motion, improve mobility/flexibility and strengthen weak muscles; (III) biofeedback to facilitate strengthening and relaxation of pelvic floor musculature; (IV) neuromodulation for pelvic floor muscle relaxation and pain relief. GUPI questionnaires were collected at initial evaluation and after the 10th visit. Higher scores reflect worse symptoms. Previous validation of the GUPI calculated a reduction of 7 points to robustly predict being a treatment responder (sensitivity 100%, specificity 76%) and a change in 4 points to predict modest response. Data are presented as medians (ranges).

Results

•A total of 10 patients completed 10 visits, and the remaining four patients completed between 5 and 9 visits. The median National Institute of Health-Chronic Prostatitis Symptom Index (NIH-CPSI) score at initial evaluation was 30.8 [16-39] and decreased to 22.2 [7-37] at the tenth visit. Five of the 10 patients (50%) in the study had a reduction of greater than 7 points indicating a robust treatment response, and two (20%) had a change of greater than 4 indicating moderate response. Three patients (30%) did not have any meaningful change in NIH-CPSI and the remaining four are in the process of completing 10 sessions. Duration of therapy appears to predict treatment response. Longer duration has better response.

Conclusion

•**Conclusions:** Male CPPS is difficult to treat and often requires a multimodal approach. Based on the results of our pilot study, pelvic floor rehabilitation may be an effective treatment option for select patients. A larger study with a control group is needed to validate the routine use of pelvic floor rehabilitation in men with CPPS and predict characteristics of men who would respond to therapy.

Barriers to Getting Treatment

- As you are treating in clinic, your patients may or may not have mentioned that they have a “problem down there”.
- Some barriers for your patients may present thusly:
 - General attitudes and emotions around symptoms: Embarrassment, shame, fear, anxiety
 - Lack of understanding of their body and natural functions (what do the organs and glands do to help me/them be healthy)
 - Not understanding the WHY of symptoms (why am I constipated/bloated all of the time)
 - Lack of support and not knowing where to go for help

I didn't even know I had a pelvic floor!

- So how do you find out if there really could be a problem with the PF?
- Phone screening: How did you hear about us? And how can we help you?
- Intake form: Visual models they may mark on, written or provided boxes to check
- Visual charts in your treatment room: Providing visual cues to patient that they can easily point to
- Interview: Provider asks “Are you experiencing any other symptoms or pain down there that I should know about?”
- Also provide a lot of opportunity to encourage your patient to paint the whole picture.
- It often isn't as easy as it sounds.



Establishing Patient Rapport

- Once you have learned that there is a possible need for PF treatment, the next step is making sure that your patient is comfortable with, and understands what your treatment protocols look like, as well as manage their expectations.
- If you ever feel that this is over your head, refer out.



Treatment considerations – What to do 1st

•As we have learned from the foundations class, PF is a niche and much needed specialty that comes with multiple layers of treating that you must consider always:

- You start screening and treating as soon as they make initial contact (make sure you establish an acceptable dialogue with your front desk staff)
- You must establish CLEAR boundaries immediately around ethics and safety of treatment for them and FOR YOU.
- Remember you are always seeking consent/permission (there is no difference from gender to gender)
- What you say ABSOLUTELY matters

Treatment considerations

- You start screening and treating as soon as they make initial contact (make sure you establish a set acceptable dialogue with your front desk staff)
- Things you need to collect : Referring physician info
- If YES: Great, you can thank the physician/PT/DO/DC etc. and build rapport, and collect the “working diagnosis”
- If NO: Ask them WHEN they were diagnosed (this usually results in a Dr. Google search). If THIS scenario happens, have a list of providers available for them to get checked out, while you schedule them. They may see you before they get an appointment to see your referral, you can still help them, but they absolutely need to be seen by a uro/gyn, gi, uro etc.

Treatment Do's and Dont's

- You must establish CLEAR boundaries right away around ethics and safety of treatment for them AND for you.
- What this could look like is:
 - Non-triggering language: I don't like to use words like assault or rape, instead use SURVIVOR, other language to avoid is non-neutral language and slang or informal words.
 - Example: glutes or gluteus maximus and not "butt".
 - Use medical terms as much as possible

Treatment Do's and Dont's

- ALWAYS map out your treatment: Provide visual cues, and ask them if that sounds “ok”, they may say no, respect that. If yes, then let them know they may stop at any time.



Communication

- When you establish physical contact:
 - Make contact in a NEUTRAL and GENTLE manner
 - Points of initial contact: wrist, hand, ankle
 - Then say, “I am going to PALPATE your abs, glutes”, etc. “is this ok?”
 - If yes: “Ok, I’m going to put my LEFT hand on your abs”
 - NO SURPRISES.

Communication

Remember you are
always seeking
consent/permission
no matter the gender

Make sure to chart
this as well:
Permission granted

Communication & Dialogue

- What you say ABSOLUTELY matters
- Patients are looking for validation and help.
- Never promise that you can cure or “fix them”. This is unrealistic and can lead to disappointment.

Communication & Dialogue

- Instead, be honest and candid, but offer hope and other referral sources such as meditation (nervous system is ALWAYS engaged with PF patients), PT, yoga, Chiro etc. Make it clear that there are other modalities that are necessary for them to achieve maximum therapeutic benefit.
- This shouldn't be a hard "sell" for them, since the average patient it takes YEARS to get a proper diagnosis of PFD. In fact, it is motivating for them.

Treating Pelvic Floor Pain from Outside the PF

Adductors

Pectineus

Obliques

Rectus
Abdominus

Obturator

Pyramidalis

Treating Pain

•We as practitioners can really broaden our treatments by effectively working on all these various forms of tissues:

•Tendon needling

•Neuropuncture

•Scar tissue work

•Fascial needling

•Motor Point

•Trigger Point

•EA/Spinal Segments

•Electroacupuncture

The Acupuncture Needle is Very Powerful!

- Can accomplish a lot with needles, but...
- We may also need to address other causes of pain, and that often requires referring out and working WITH other providers
- Addressing the fascia and soft tissue work is also VERY important as you will learn on Sunday

Pain – What are we Treating?

- Our aim with Acupuncture is to Relieve Pain and improve function at the peripheral and central levels
 - Reduce inflammation
 - Increase natural pain killers; endorphin, enkephalins
 - Physically change/stimulate tissue to promote healing
 - Increase circulation
- Improve function via motor points
 - Reduce hypertonicity/spasm
 - Promote proper firing of the muscle
 - With electroacupuncture, can treat trigger points below/near them

Treating Pain

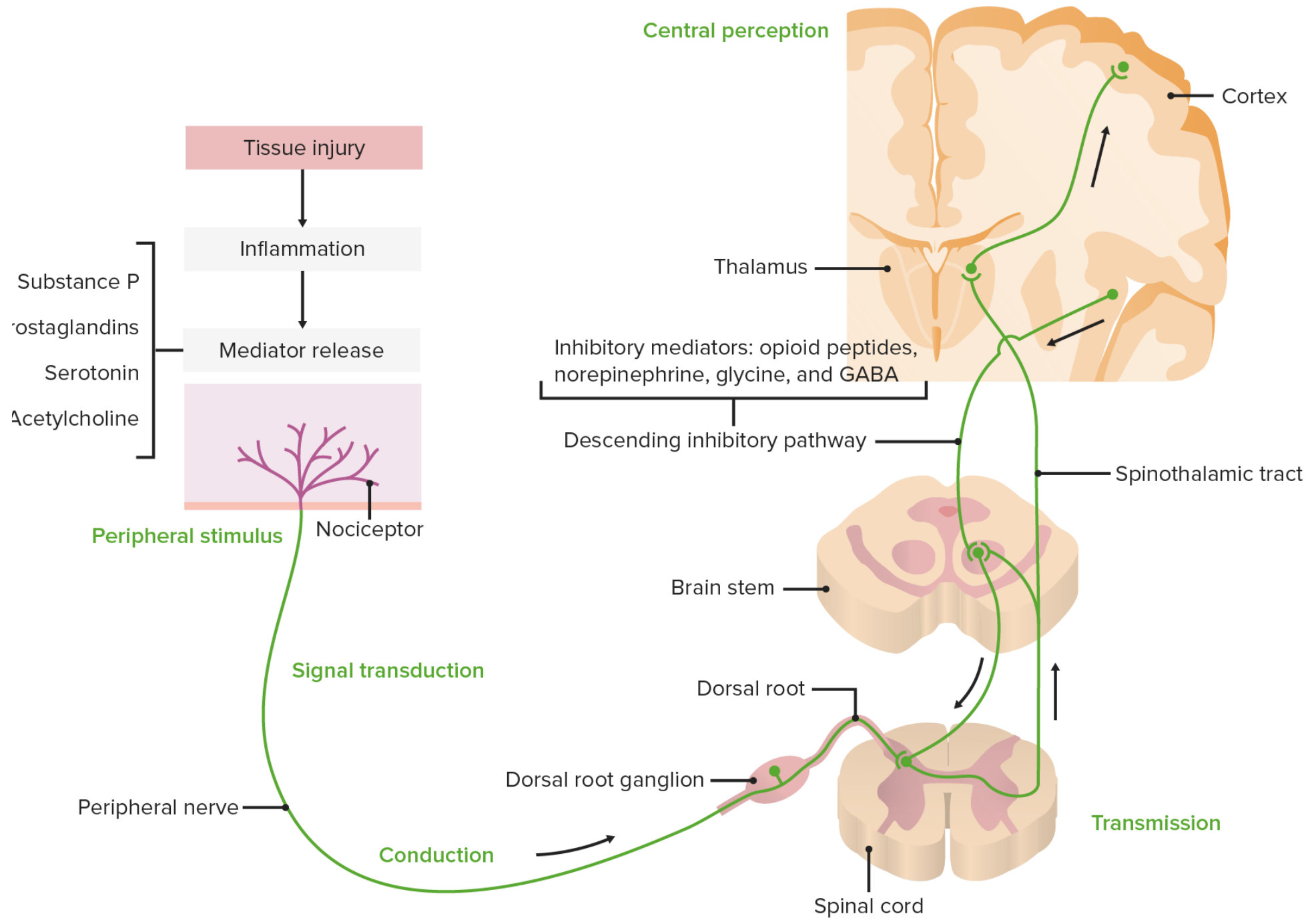
- Pain can be from damaged or injured neuropraxias at a variety of locations such as the CEREBRAL CORTEX, SPINAL CORD, SPINAL SEGMENTS, SACRAL PLEXUS and/or peripheral nerves.
- There can be multiple tissue involvement: ligament, muscle tissue (smooth and skeletal), fascia, tendon and/or inflammation

Treating Pain

- Pain is not linear, and always frustrating. We may not have answers for our patients, and that's ok, but we certainly have an opportunity to always help them feel better.
- As has been said before YOU MUST manage patient expectations appropriately

Review of Pain

- PAIN is COMPLEX
- Understanding nociception and causes of pain can make it easier
- Pain can be broken up into 2 very specific categories: Peripheral and Central Pain
- We must be able to address both



Nociception

- Nociception is your body's "danger scout"
- Nociceptors report intense MECHANICAL, CHEMICAL OR THERMAL stimuli (through primary AFFERENT neurons)
- REMEMBER A-FFERNET GO TO BRAIN E-FFERENT AWAY
- It is mediated by BOTH central and peripheral nervous system, thoughts, beliefs, expectations and behaviors

Nociception

- Unpleasant sensory or emotional experience associated with actual or potential tissue damage
- And it is mediated by EVERYTHING (internal and external)
- And then there is this IDEA of CATEGORIZING PAIN rather than blanket lumping PAIN patients all together in a slurry.
- In any scenario, if any cause is left untreated, typically non-noxious stimuli may then become noxious.

Pain Sensitization

- Inflammatory Pain
- Gives brain/tissue input on TISSUES HEALING
- BROUGHT ON by pro-inflammatory markers and chemical with the tissue injury, pathogens, nutritional issues and microbiome
- PERPETUATED BY CONTINUOUS NOXIOUS STIMULI
- INFLAMMATIONS REMAINS as long as tissue hypersensitivity lasts which can be swelling, redness, pain and itching

EASY BREAKDOWN

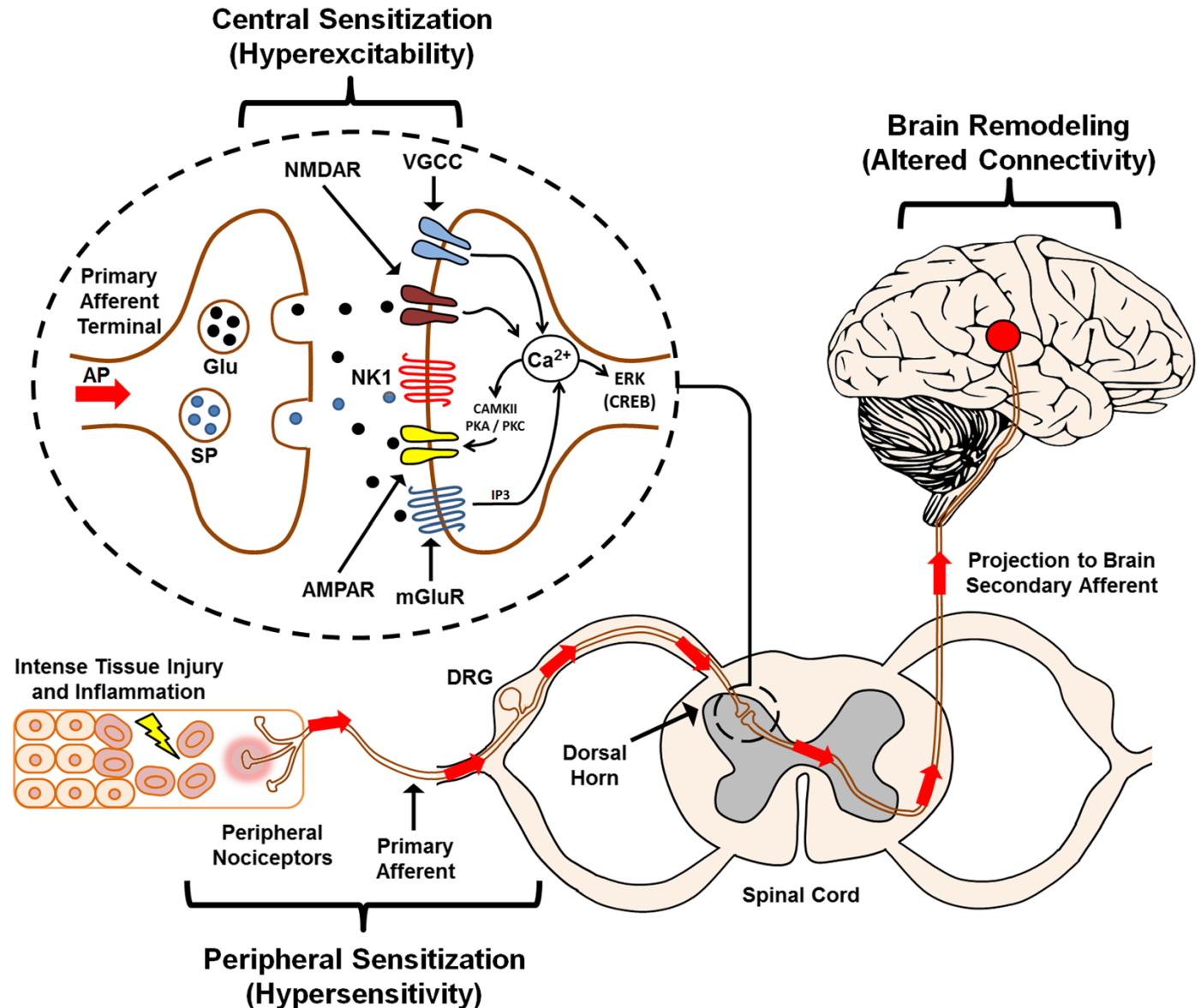
- Nociception
- Brought on by POTENTIAL TISSUE insult
- The cause is NOXIOUS STIMULI in peripheries
- MAINTAINED by noxious stimuli
- Can result in peripheral and/or central sensitization: Chronic pain and worsening of pain
- And it is TRANSIENT

Peripheral sensitization caused by a TrP

- TrP forms in the muscle (for a variety of reasons)
- Trigger points cause:
 - Continuous stimulation of a nociceptor
 - This results in hyperalgesia
- Peripheral sensitization then results:
 - Threshold for delivering pain signals drops
 - Typically non-noxious stimuli becomes noxious
 - Cycle continues to worsen and is unable to self-resolve
- Central sensitization results

Prevailing theory for cause of referred pain – Central Sensitization

•Bazzari, A.H., Bazzari, F.H. Advances in targeting central sensitization and brain plasticity in chronic pain. *Egypt J Neurol Psychiatry Neurosurg* **58**, 38 (2022). <https://doi.org/10.1186/s41983-022-00472-y>



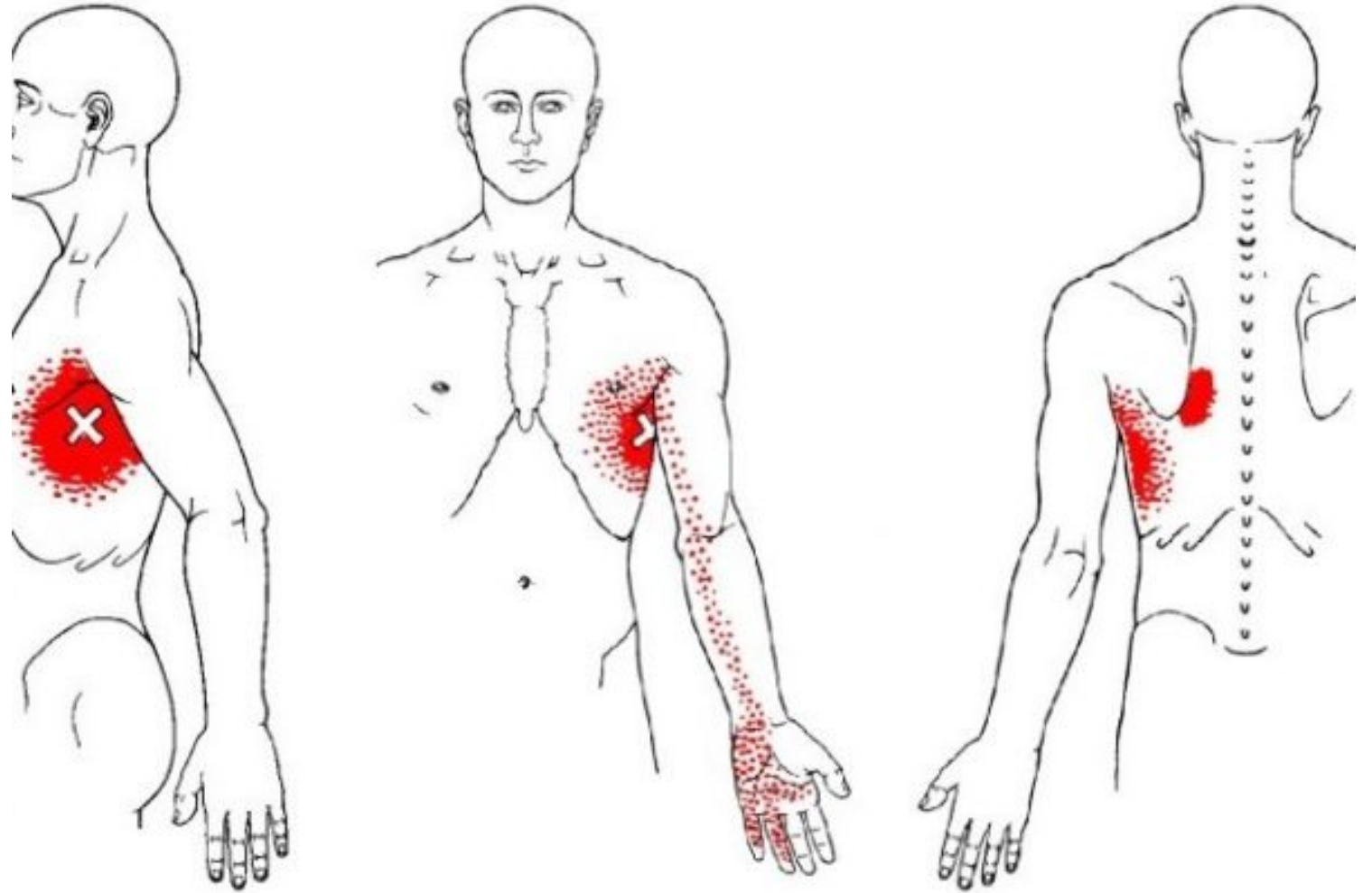
Central Sensitization

Recruitment of second order neurons in DH and CNS

Neuroplastic changes in the DH

[Click here to watch video](#)

Referred pain from TrPs

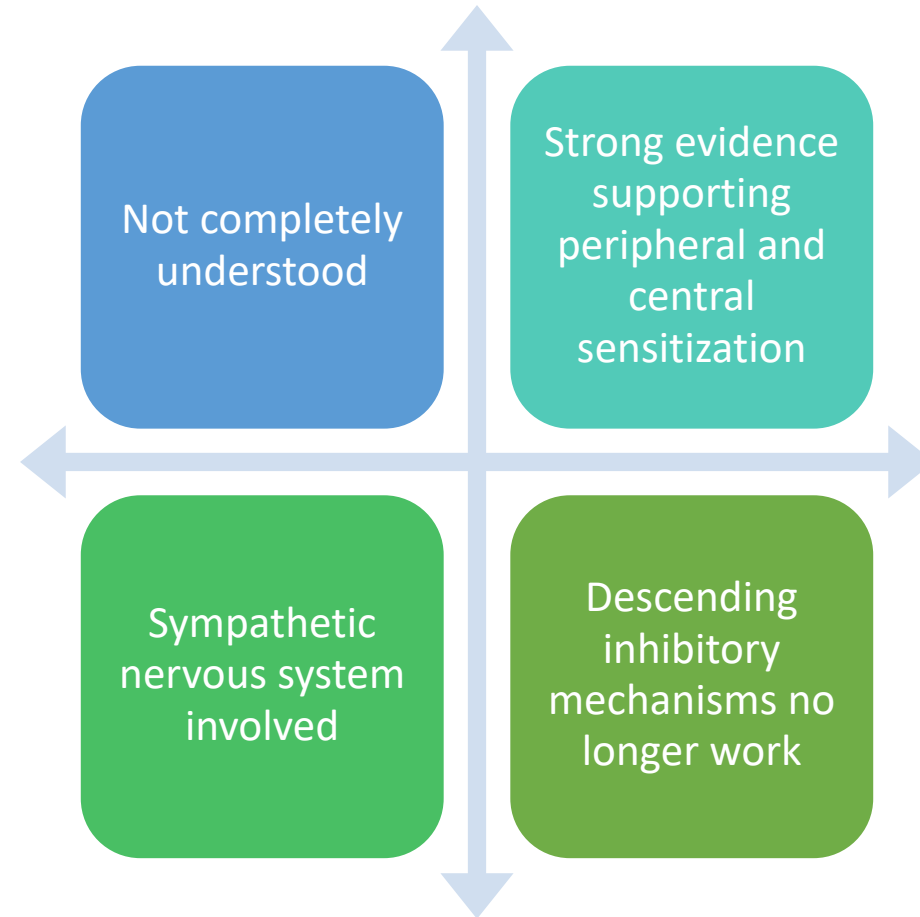


Referred pain

Definition: Pain experienced in a region other than the source of pain

Typically the referred area is distal to the site causing the pain

Theories and hypotheses on pain referral, summary



Referred pain/sensations

- Pain can be achy, sharp, intense, & mimic other conditions
 - CRPS, Dysmenorrhea, Migraine headache, Scoliosis
- Always double check history and refer out as needed
- More than just pain can be experienced in the referral zones
 - Neuro/tingling, temperature changes, skin changes, tenderness

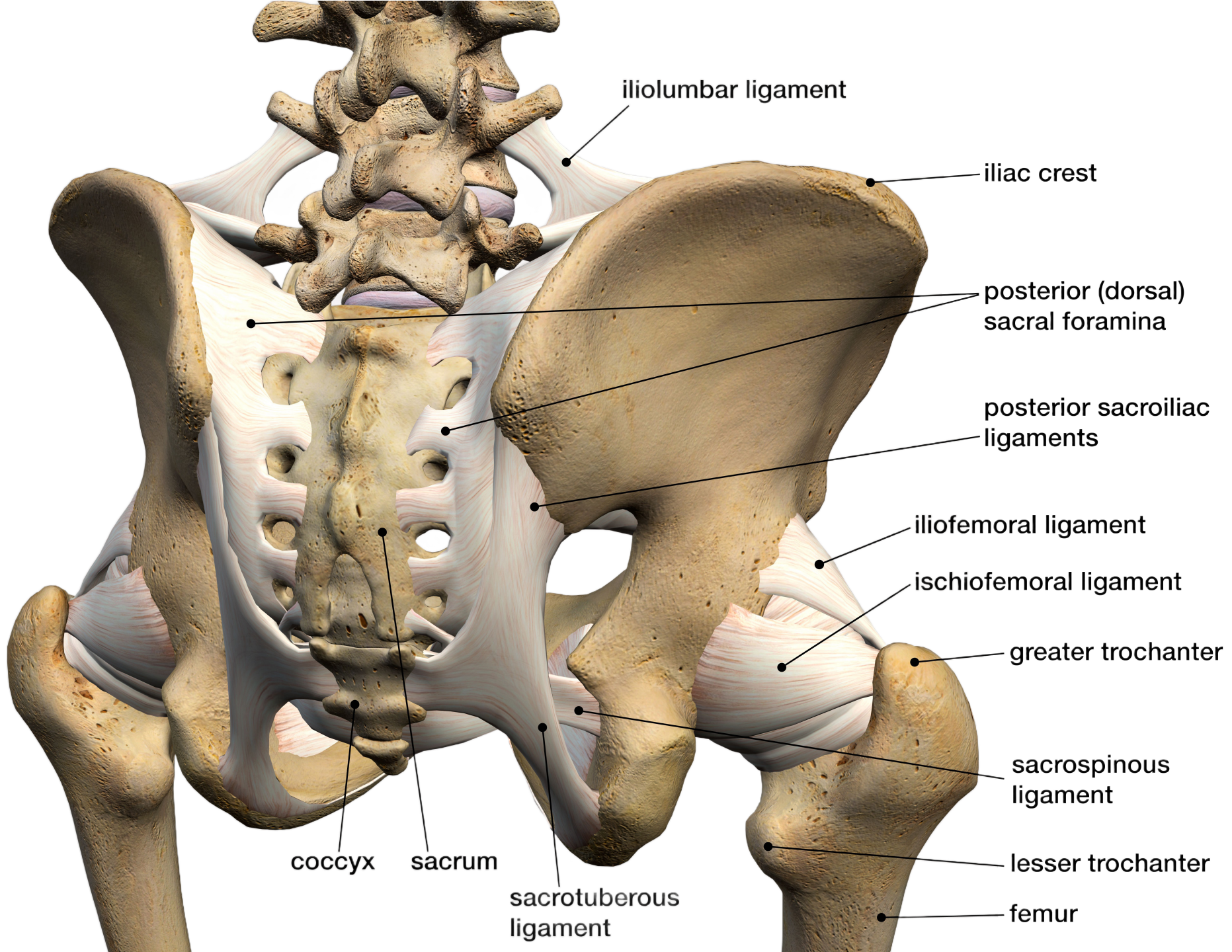
Basic Anatomy Review

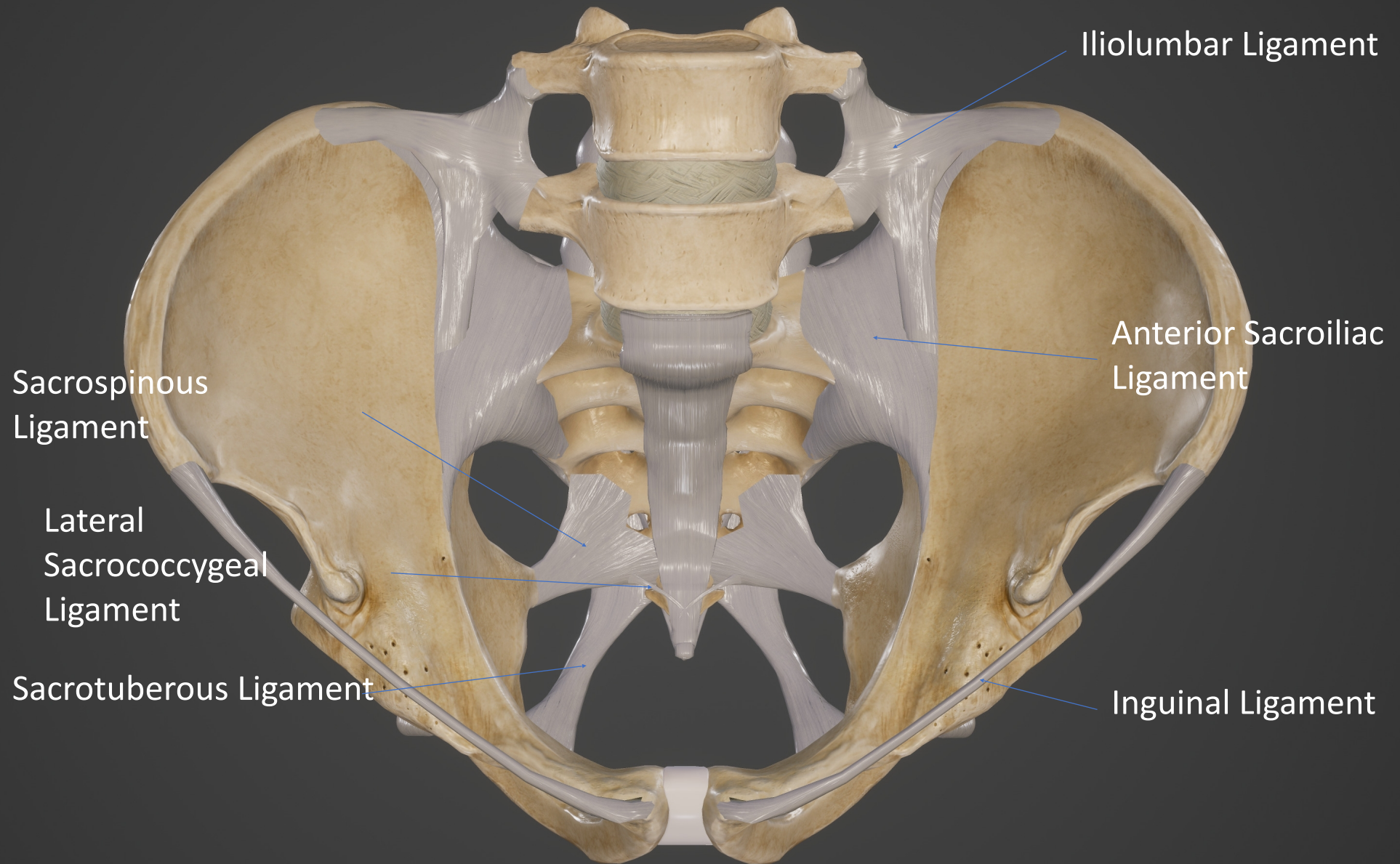
Pelvis

Ligaments

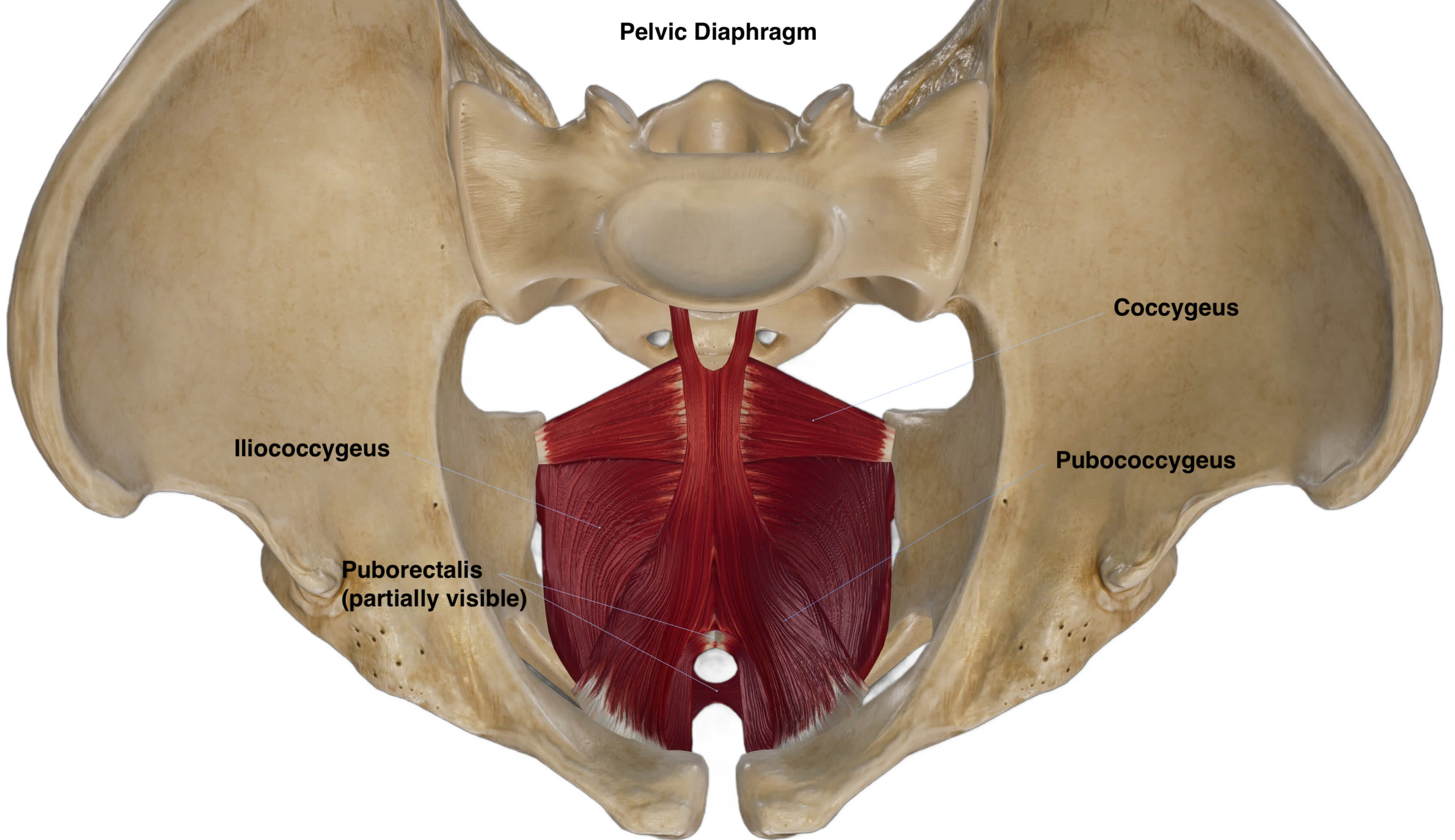
Nerve Plexus

Pelvic Diaphragm





Pelvic Diaphragm

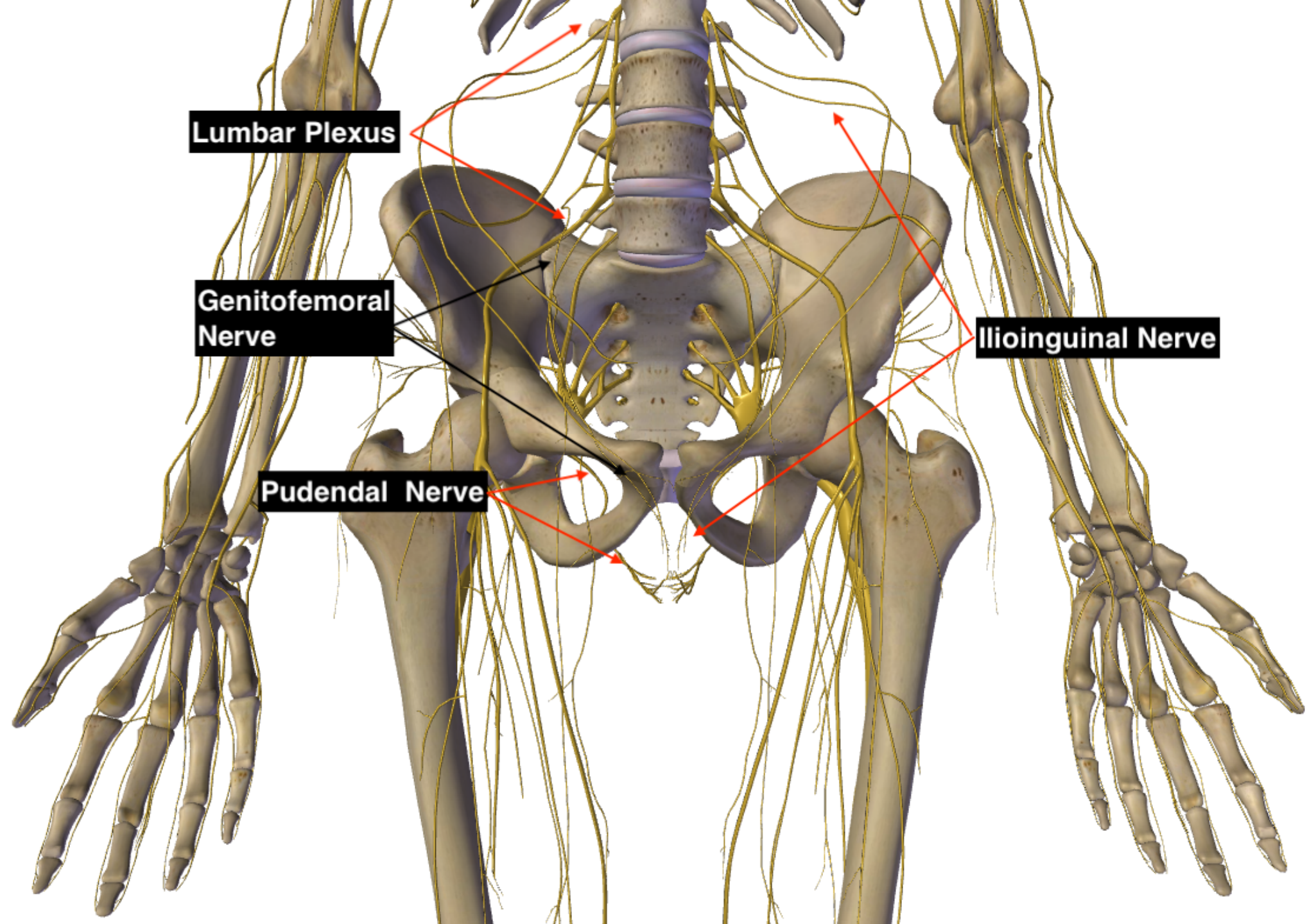


Coccygeus

Iliococcygeus

Pubococcygeus

**Puborectalis
(partially visible)**



Lumbar Plexus

Genitofemoral Nerve

Pudendal Nerve

Ilioinguinal Nerve

The Lumbar Plexus

- Anterior divisions
- Posterior divisions

Iliohypogastric nerve

Ilioinguinal nerve

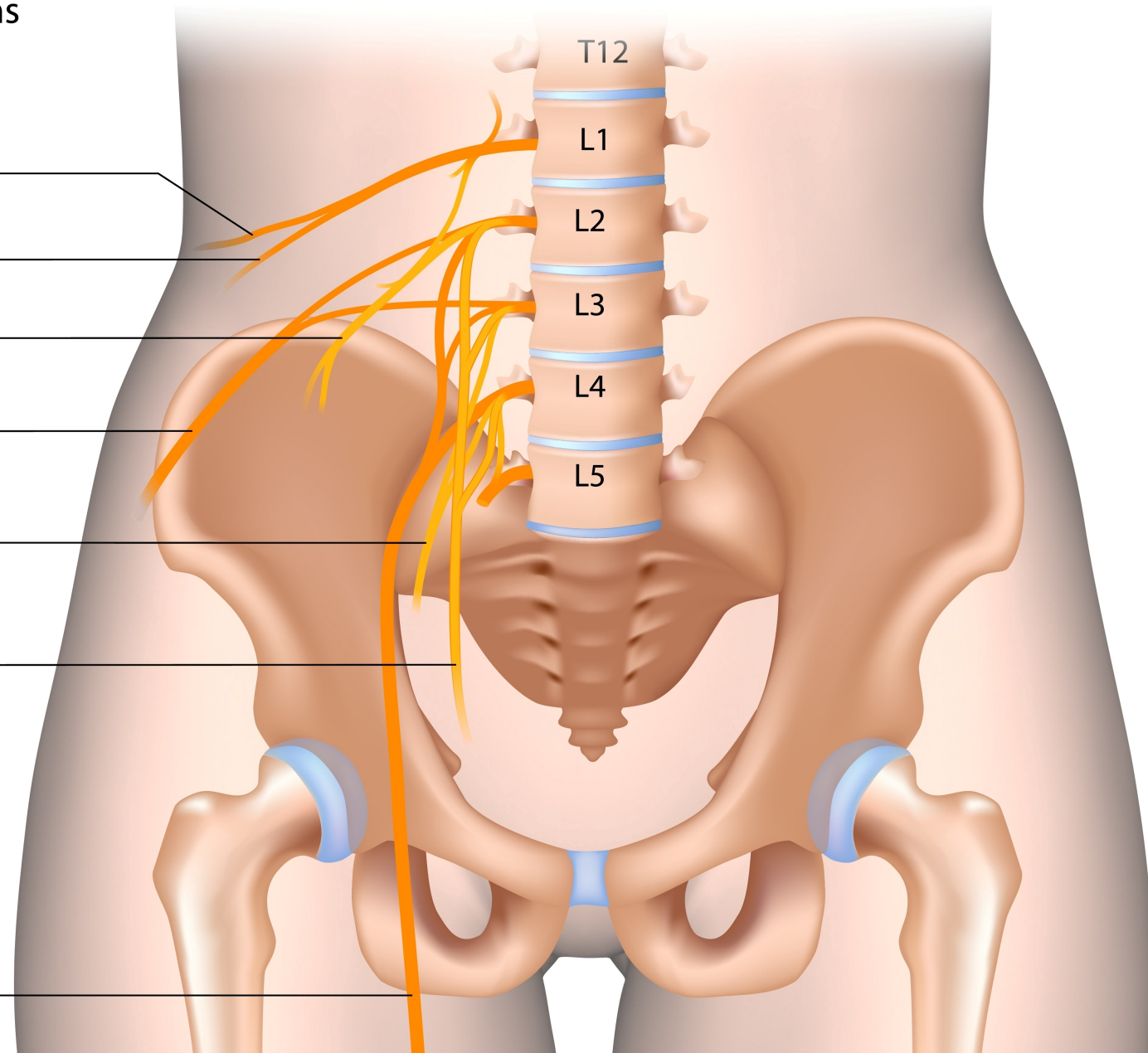
Genitofemoral nerve

Lateral femoral cutaneous nerve

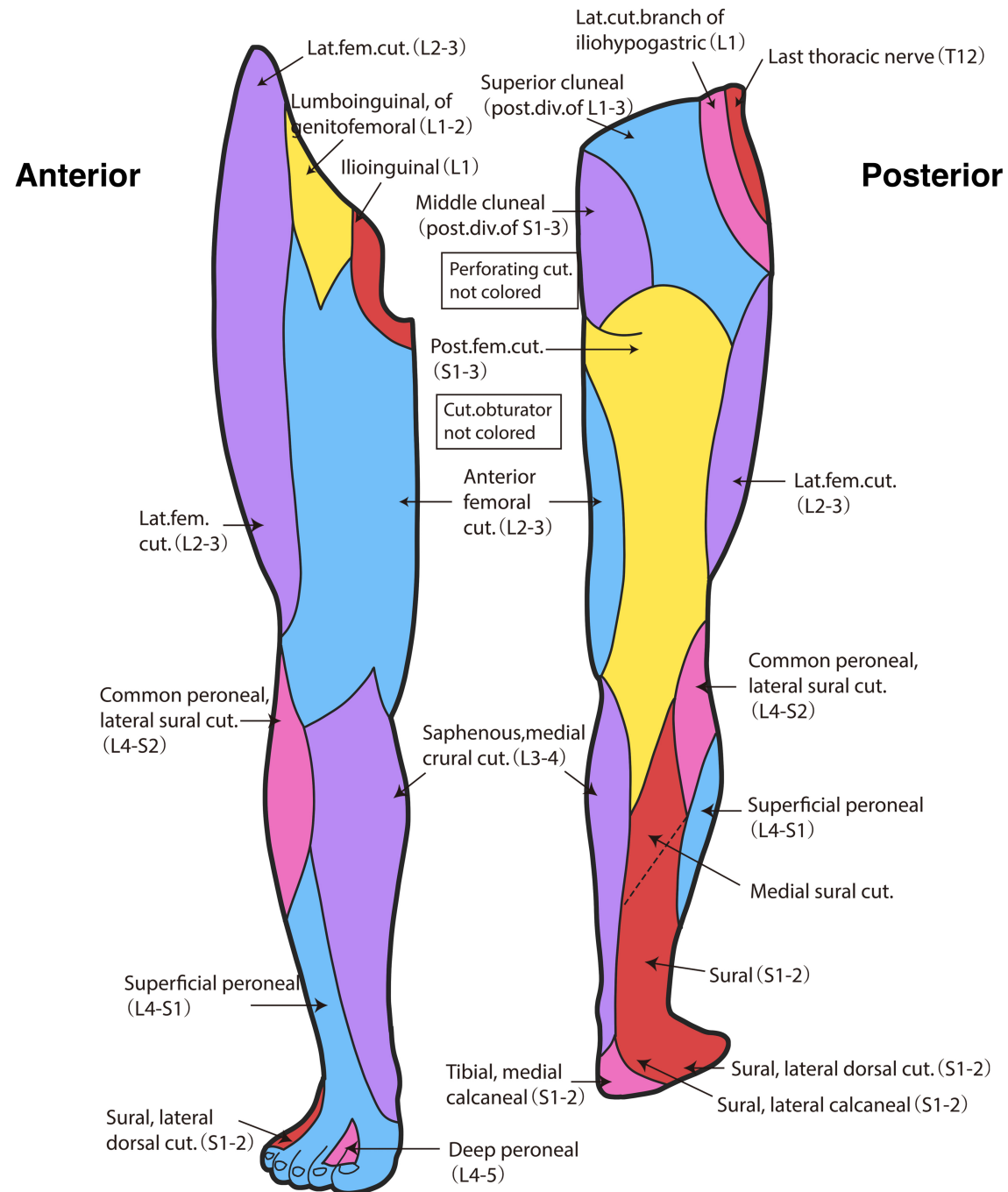
Saphenous nerve

Obturator nerve

Femoral nerve



Dermatomes



Dermatomes

Ilioinguinal nerve

Pudendal nerve

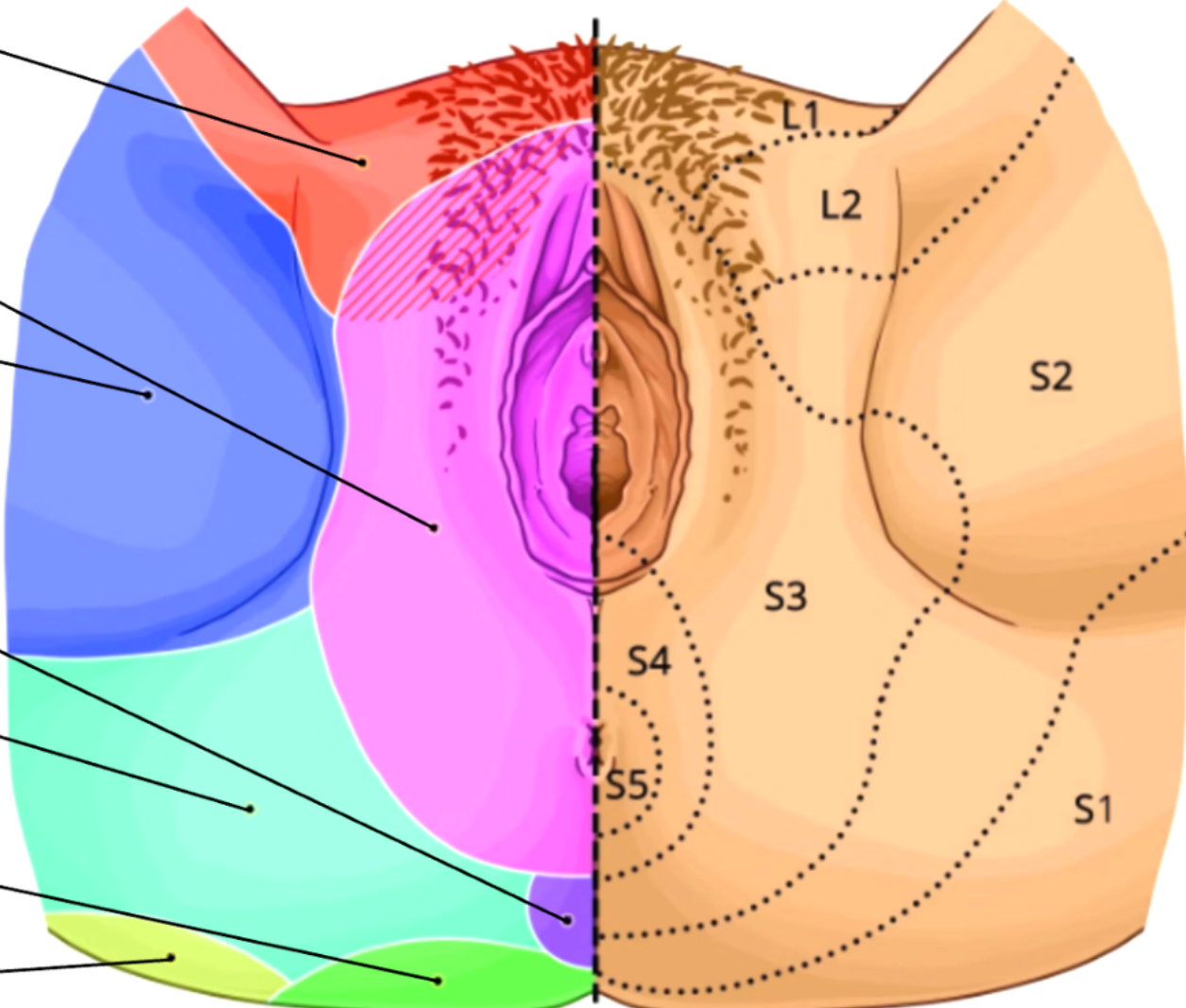
Posterior femoral cutaneous nerve

Anococcygeal nerve

Perforating cutaneous nerve

Middle gluteal cutaneous nerves

Inferior gluteal cutaneous nerves



L1

L2

S2

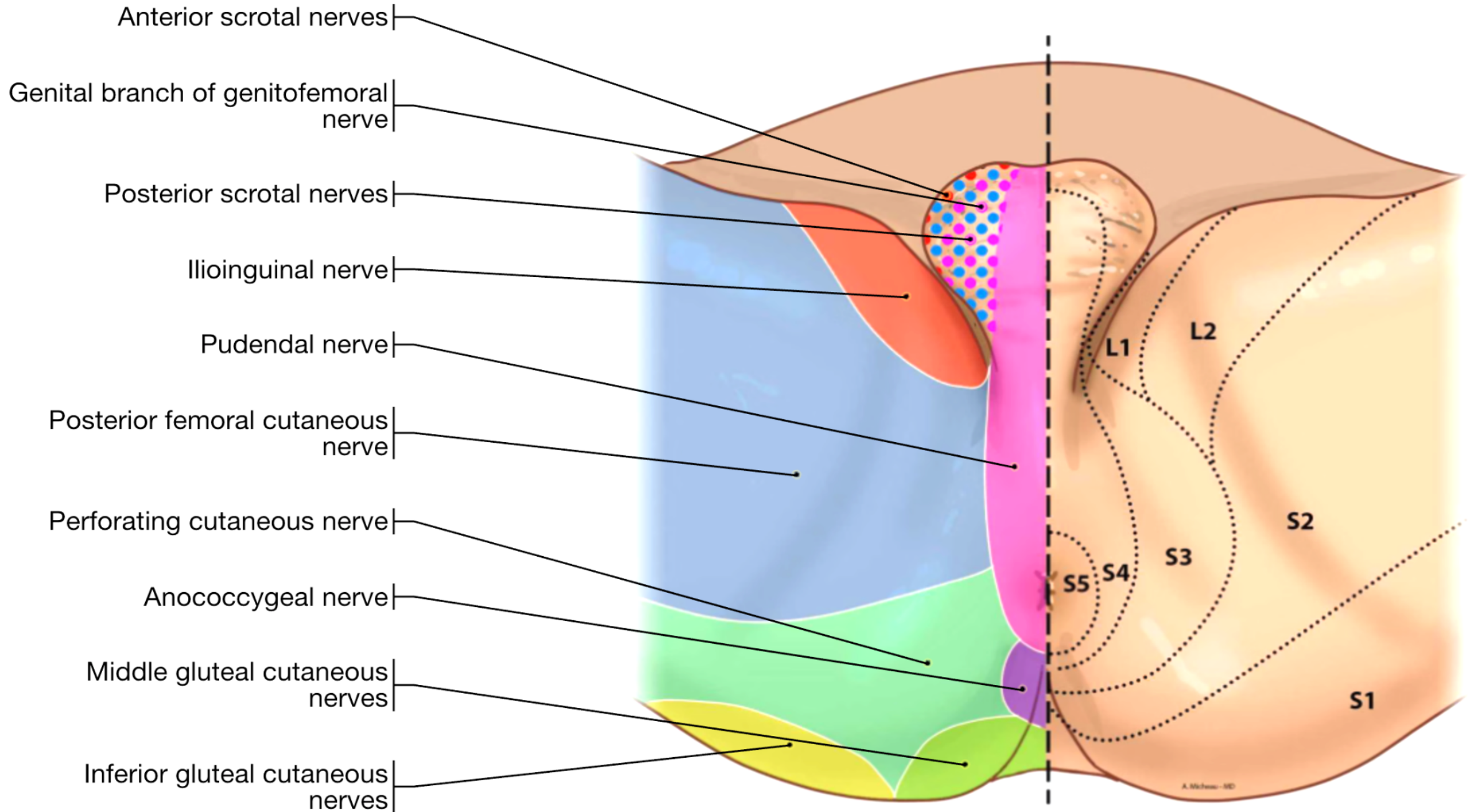
S3

S4

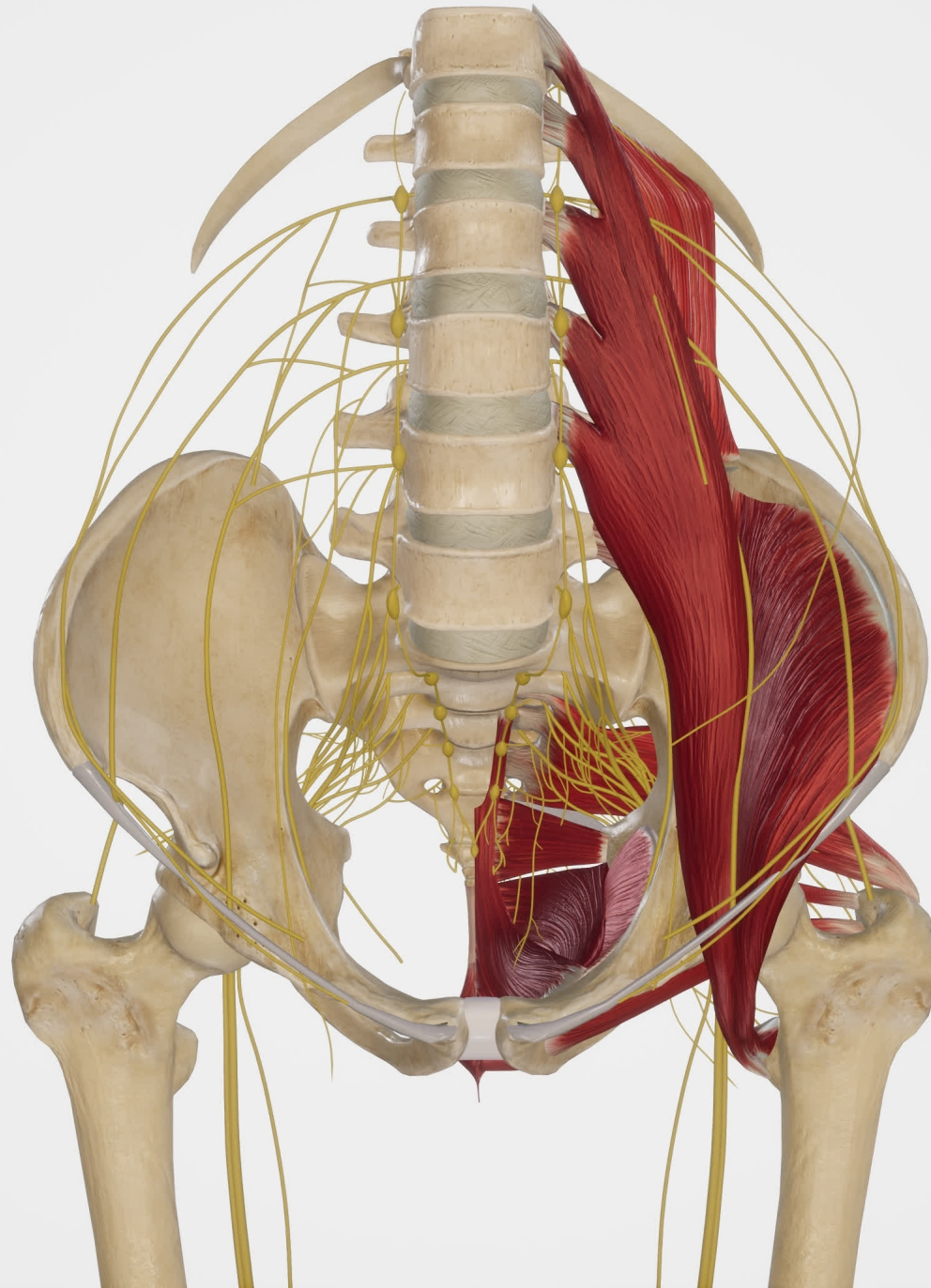
S5

S1

Nerve supply of perineum - Dermatomes (Caudal view)



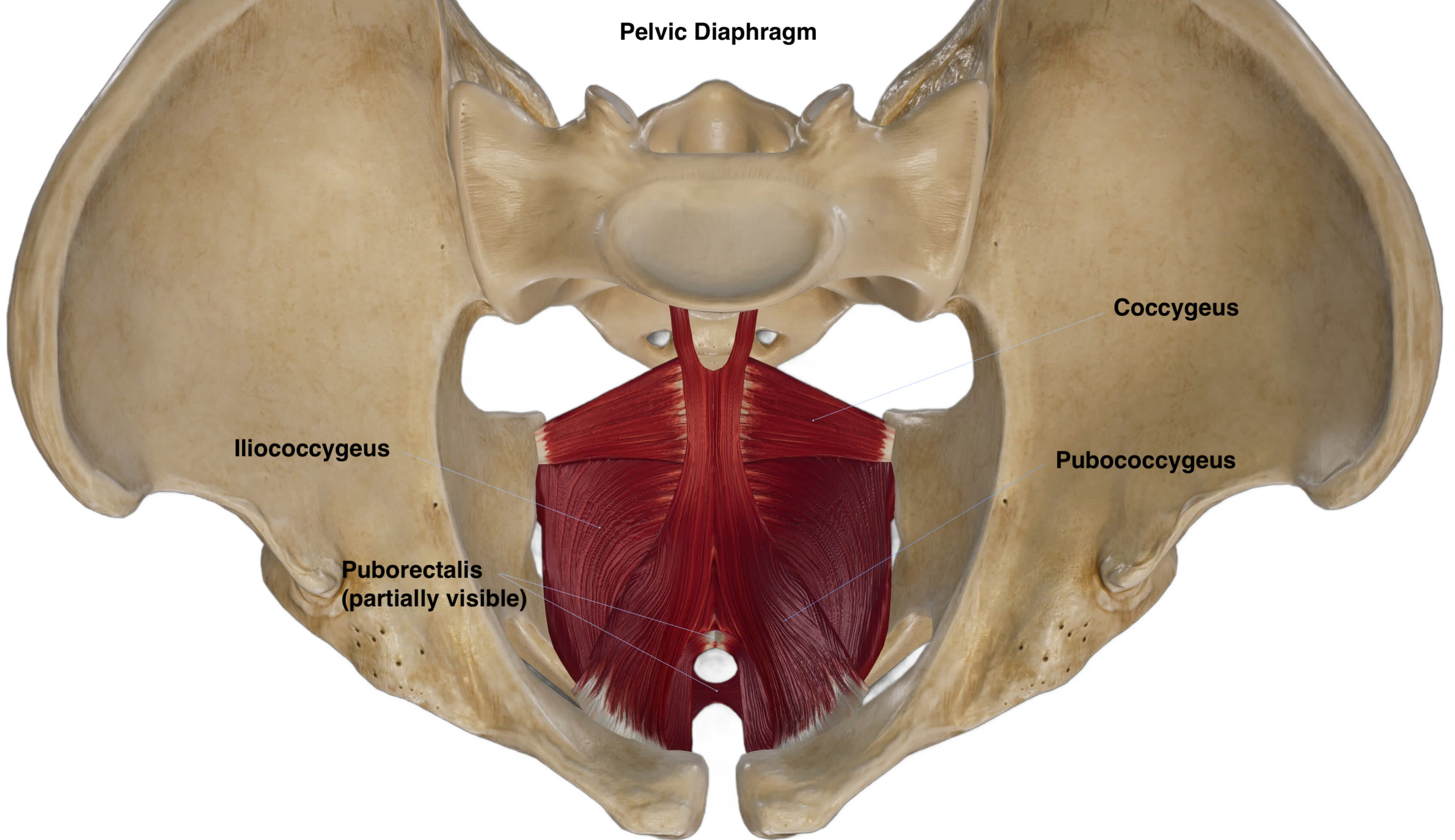
Sacrococcygea
I Plexus



The Pelvic Diaphragm – 4 Muscles

- Levator Ani (3) and Coccygeus (our tail-wagging muscle)
- This “hammock/sling” acts as a shelf to support pelvic organs.
- This is the broad hammock like structure
- Levator Ani: 3 muscles
 - Pubococcygeus
 - Iliococcygeus
 - Puborectalis

Pelvic Diaphragm

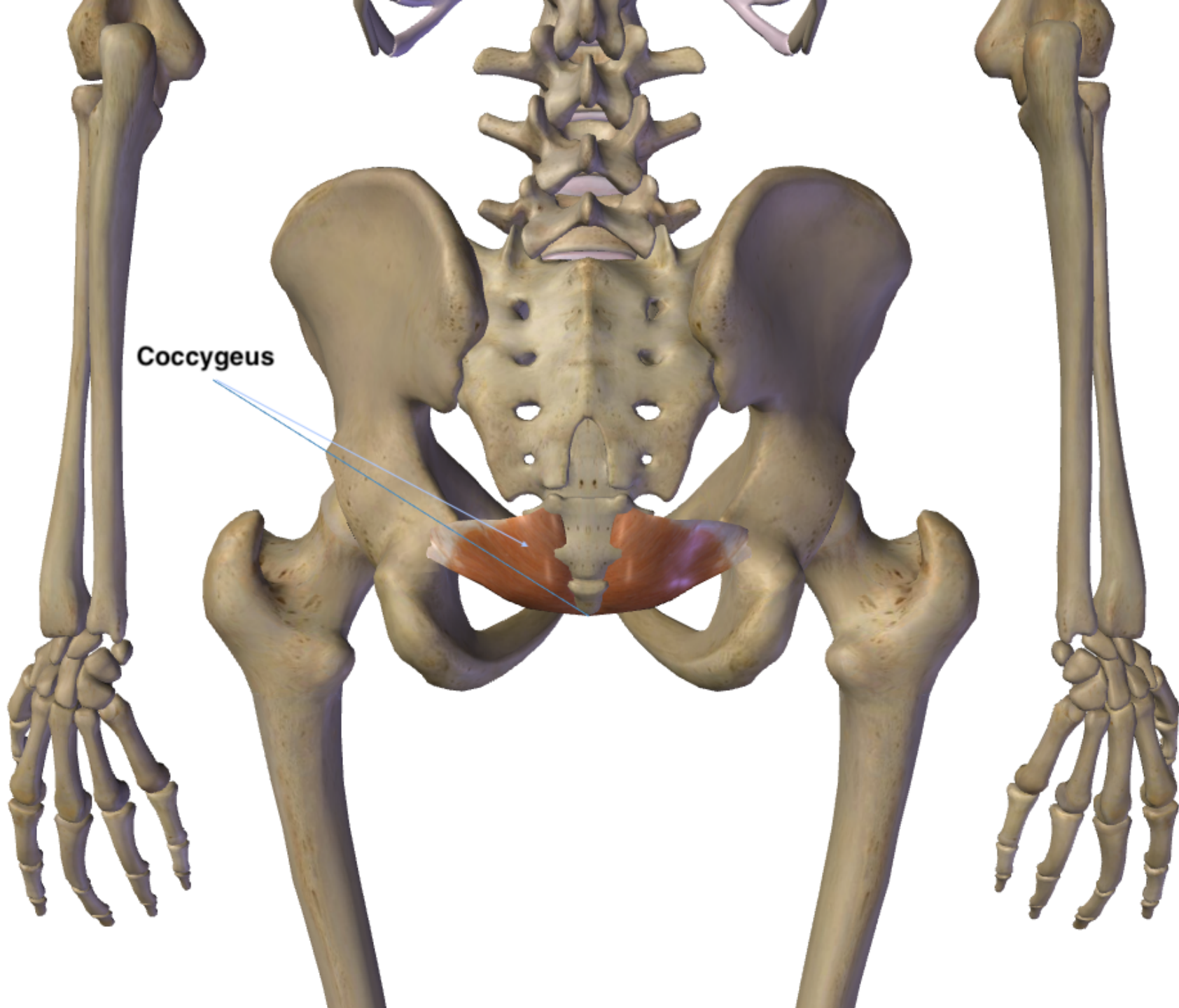


Coccygeus

Iliococcygeus

Pubococcygeus

**Puborectalis
(partially visible)**



Coccygeus

Coccygeus

- Coccygeus also known as ischiococcygeus, is a triangular-shaped sheet of muscle located posterior to the levator ani muscles in the pelvic floor. The coccygeus, together with the levator ani, forms the pelvic diaphragm
 - Origin: Ischial spine
 - Insertion: Lateral coccyx and sacrum, with the sacrotuberous ligament
 - Actions: Supports pelvic viscera, flexes the coccyx
 - Weakly controls defecation and urination with the puborectalis
- Source: physio-pedia.com

Pelvic Diaphragm

- Short video to watch before the seminar: Click [HERE](#)





Levator Ani

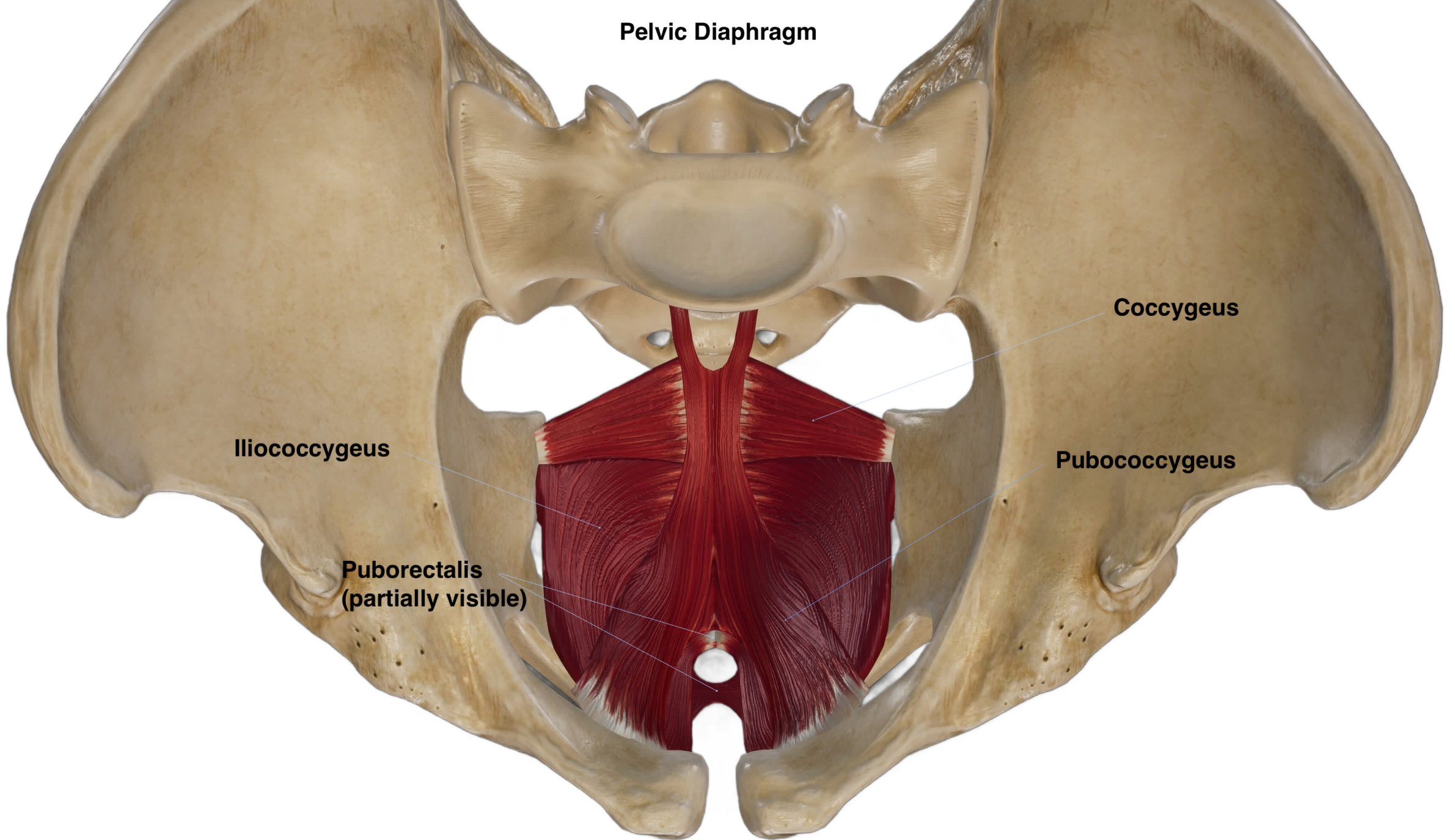
- The three muscles that make up the levator ani group are:

- Iliococcygeus
- Pubococcygeus
- Puborectalis

Levator Ani

- Levator ani muscle is the largest component of the pelvic floor. It is a broad muscular sheet that attaches to the bodies of the pubic bones anteriorly, ischial spines posteriorly and to a thickened fascia of the [obturator internus](#) muscle. The levator ani muscle provides support to the pelvic visceral structures and play an important role in urinary voiding, defecation and sexual function.

Pelvic Diaphragm



Coccygeus

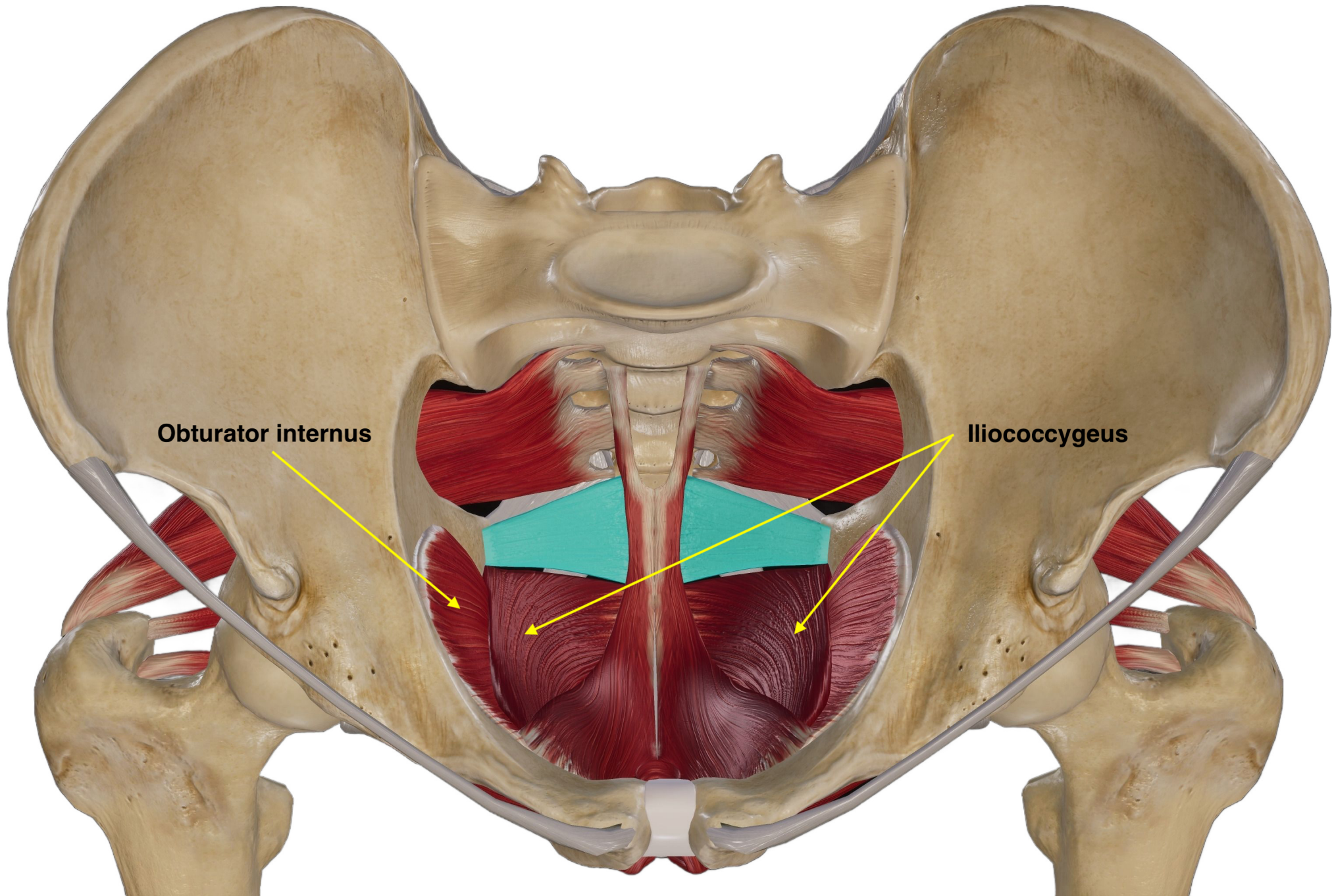
Iliococcygeus

Pubococcygeus

**Puborectalis
(partially visible)**

Iliococcygeus muscle

- Arises from fascia overlying obturator internus
- Inserts onto lateral aspect of coccyx, overlapping with fibers of [pubococcygeus muscle](#) in staggered arrangement
- Muscle is active even at rest, and contracts as needed to maintain proper vaginal axis
- Functions:



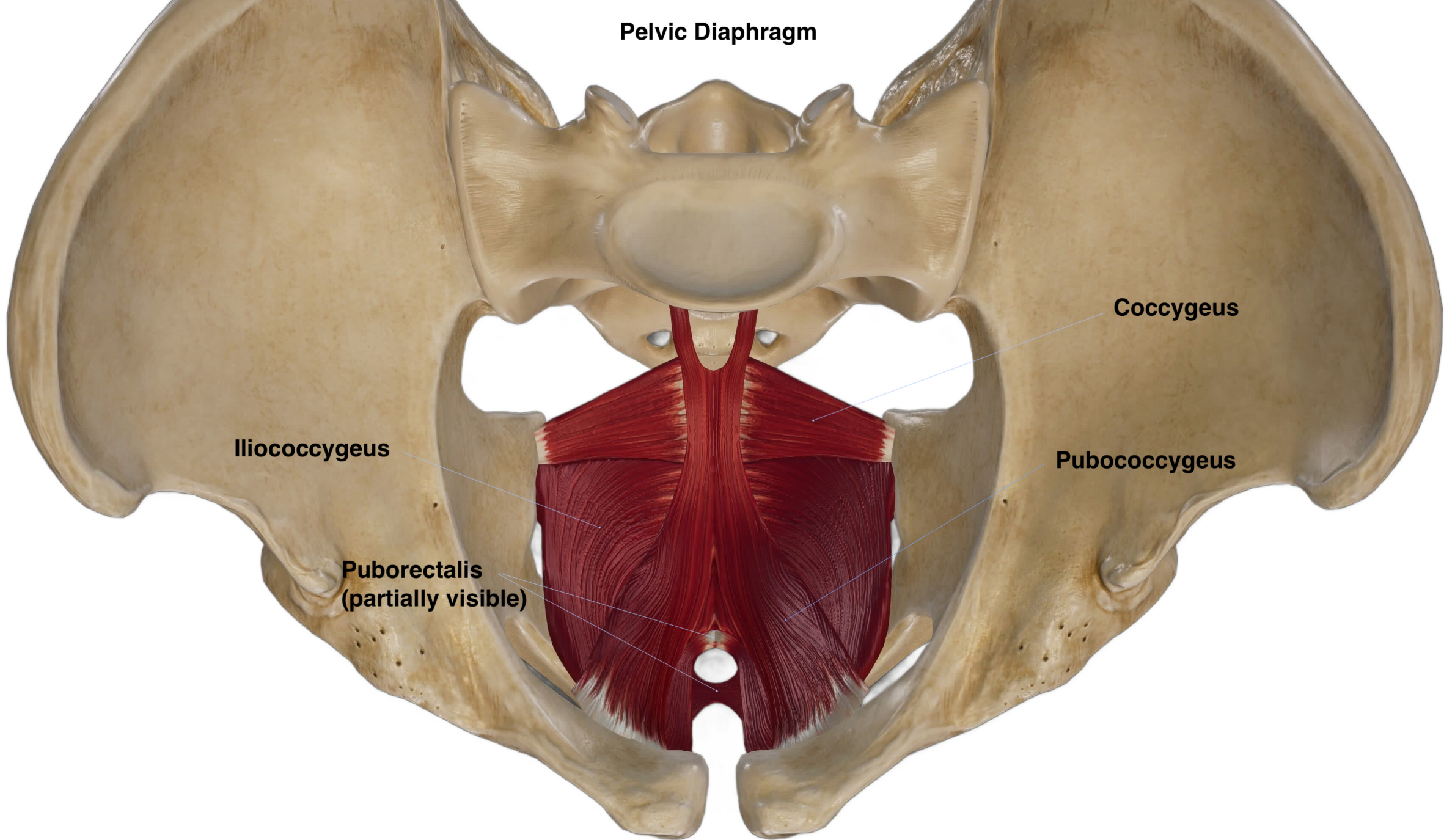
Obturator internus

Iliococcygeus

Pubococcygeus

- Origin: Arises from back of [pubic bone](#) and anterior part of obturator [fascia](#)
- Insertion: inserts onto lateral aspect of [coccyx](#)
- Functions: Provide support to the pelvic viscera resist increases in intra-abdominal pressure
- Act in association with the internal and external anal sphincter during the process of defecation
- Supports the vagina and prostate
- Aids in ejaculation and assists in proper positioning of the fetus head.

Pelvic Diaphragm



Coccygeus

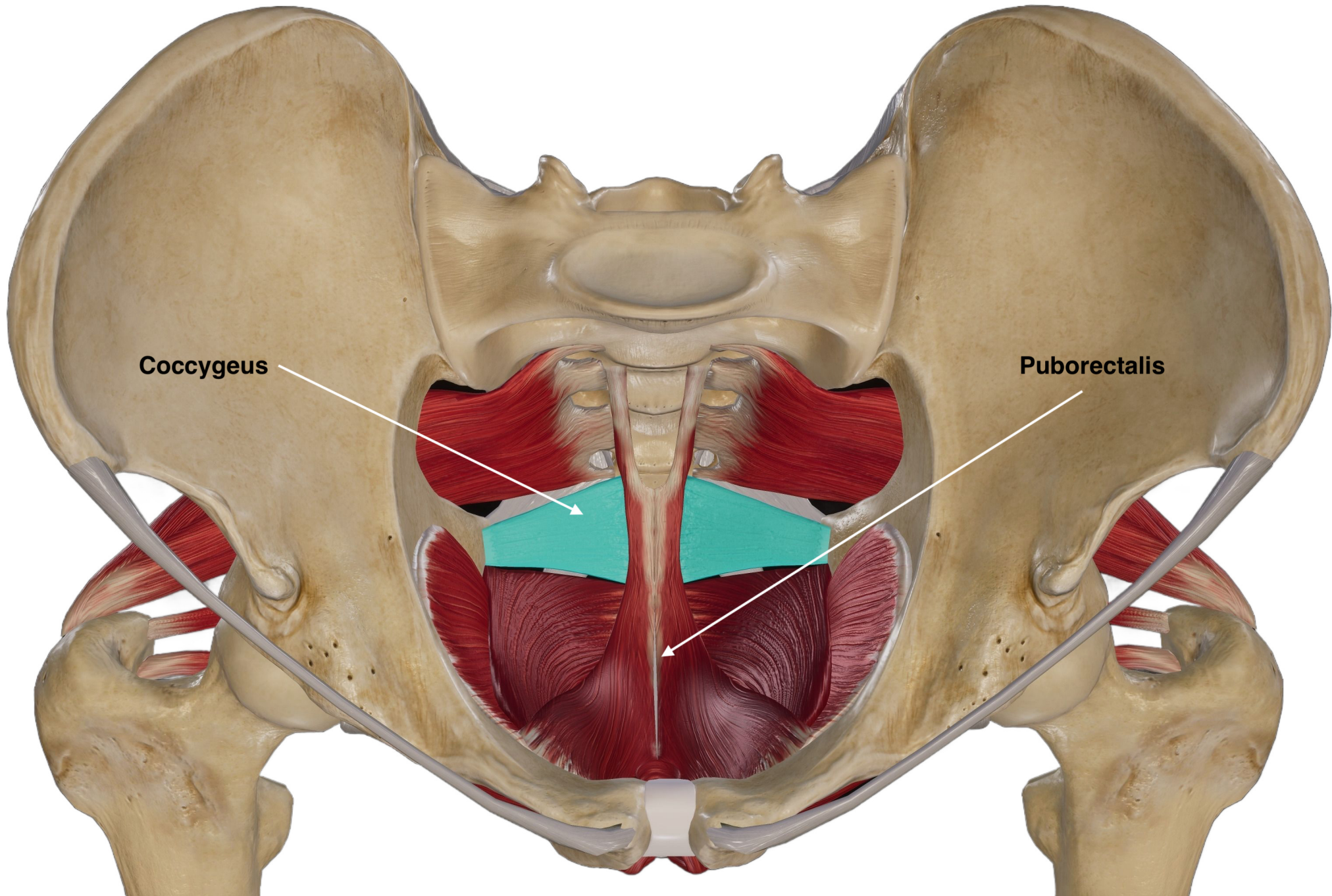
Iliococcygeus

Pubococcygeus

**Puborectalis
(partially visible)**

Puborectalis

- Origin: Arises from superior and inferior pubic rami
- Insertion: Unites with contralateral puborectalis muscle posterior to [rectum](#), forming a sling
- Function: Muscle provides direct support for rectum AND Indirect support to vagina, [bladder](#), and [urethra](#), by drawing these structures ventrally toward pubic bone



Coccygeus

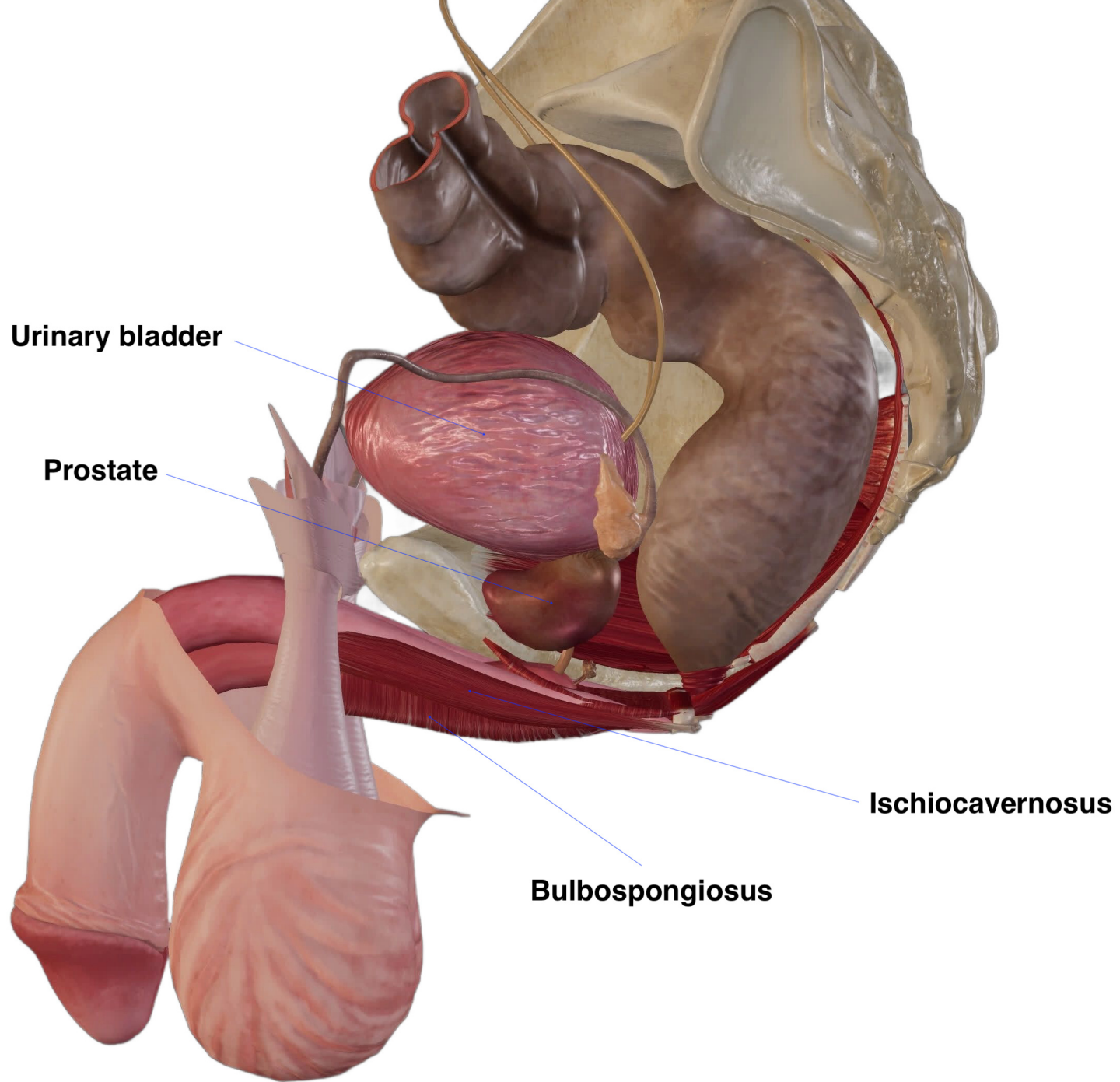
Puborectalis

Ischiocavernosus

- Ischiocavernosus is a bilateral, perineal muscle located in the superficial perineal space of the urogenital triangle. It is a part of the superficial group of perineal muscles, together with bulbospongiosus and superficial transverse perineal muscles
- Function: Pushes blood from clitoris/penis

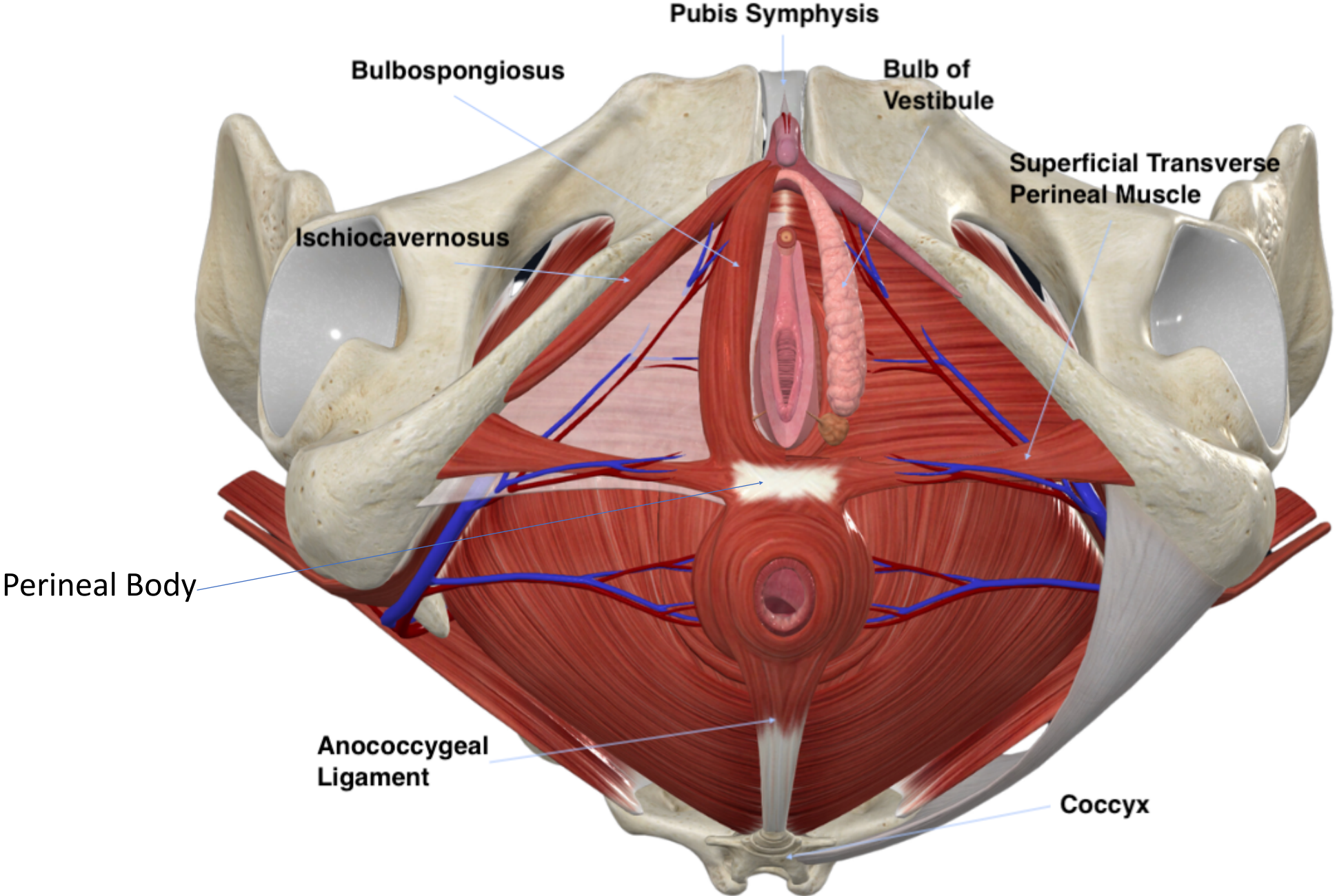
Bulbospongiosus

- Bulbospongiosus is a **paired muscle of the pelvic floor**. It is found in the superficial perineal space (pouch), together with the ischiocavernosus and superficial transverse perineal muscles. ... In both sexes, the function of this muscle is based on its compressive actions upon the erectile tissues which it surrounds.
- Function: The bulbospongiosus muscle **acts to expel remaining urine from the urethra after the bladder has completed its emptying**. In males it also aids in the final stages of erection by compressing the veins within the bulb of the penis to maintain tumescence. Sexual function in females In females it contributes **to clitoral erection and the contractions of orgasm, and closes the vagina**.



The Perineum & Transverse Perineum

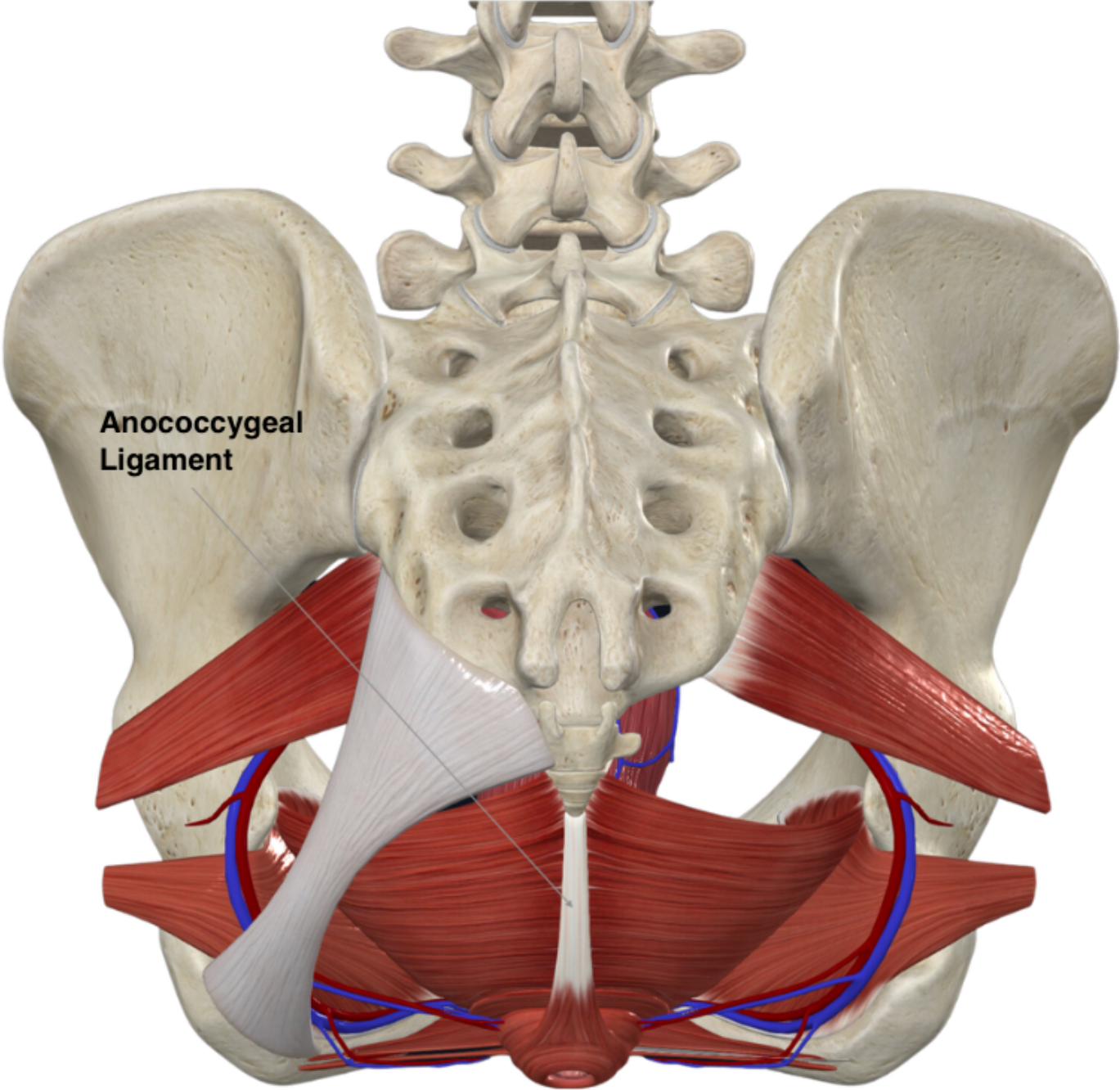
- Perineal Body
- Superficial transverse perineum muscle
- Deep transverse perineal muscle: (transversus perinei profundus)
 - lies in the perineum and is a part of the pelvic floor. It arises from the inferior rami of the ischium and runs to the median plane, where it interlaces in a tendinous raphe with the other deep transverse perineal muscle of the opposite side



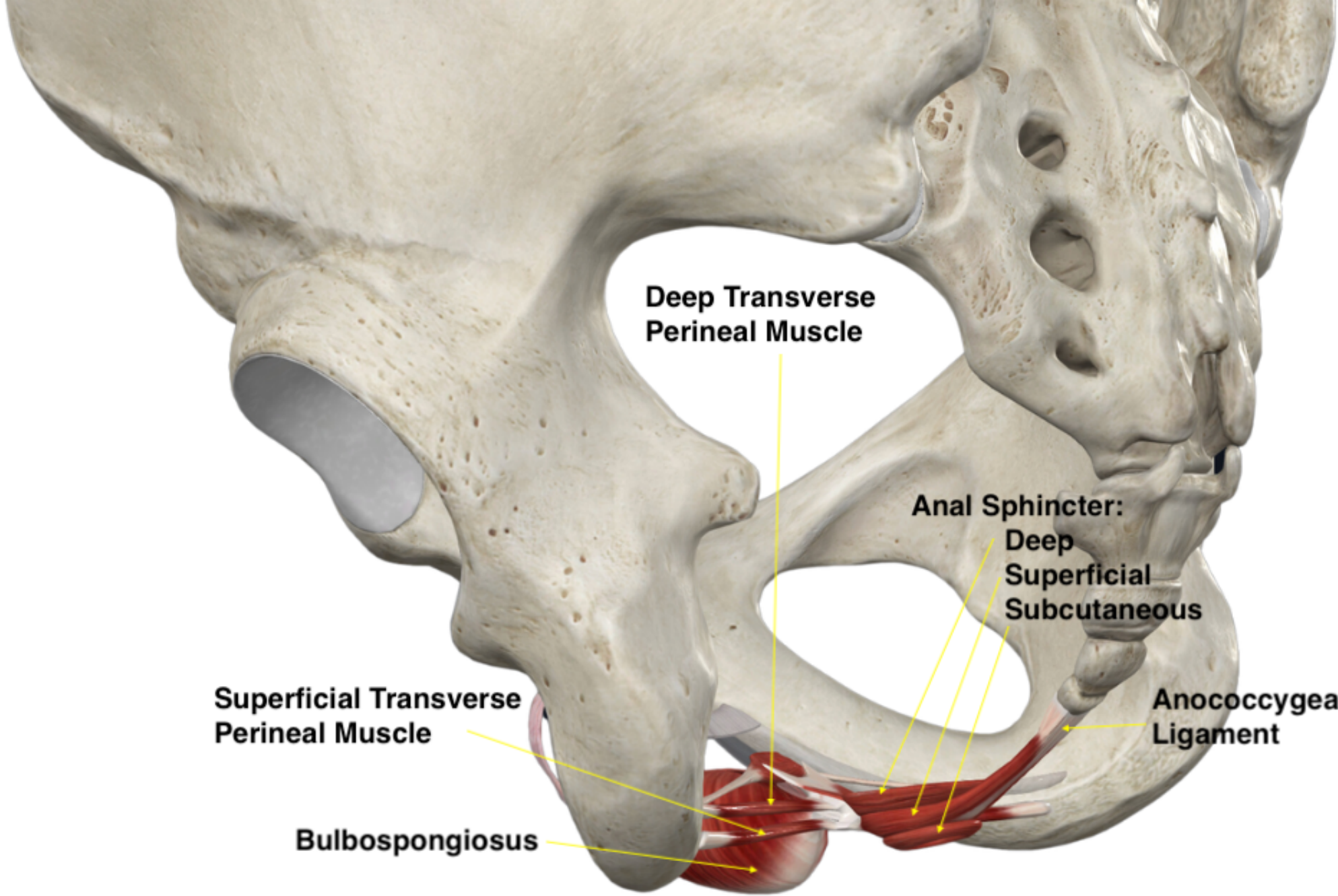
Anococcygeal Ligament

- The anococcygeal ligament (a.k.a. anococcygeal body a.k.a. anococcygeal raphe) is a midline musculotendinous structure between the coccyx and the anus.





**Anococcygeal
Ligament**



Deep Transverse Perineal Muscle

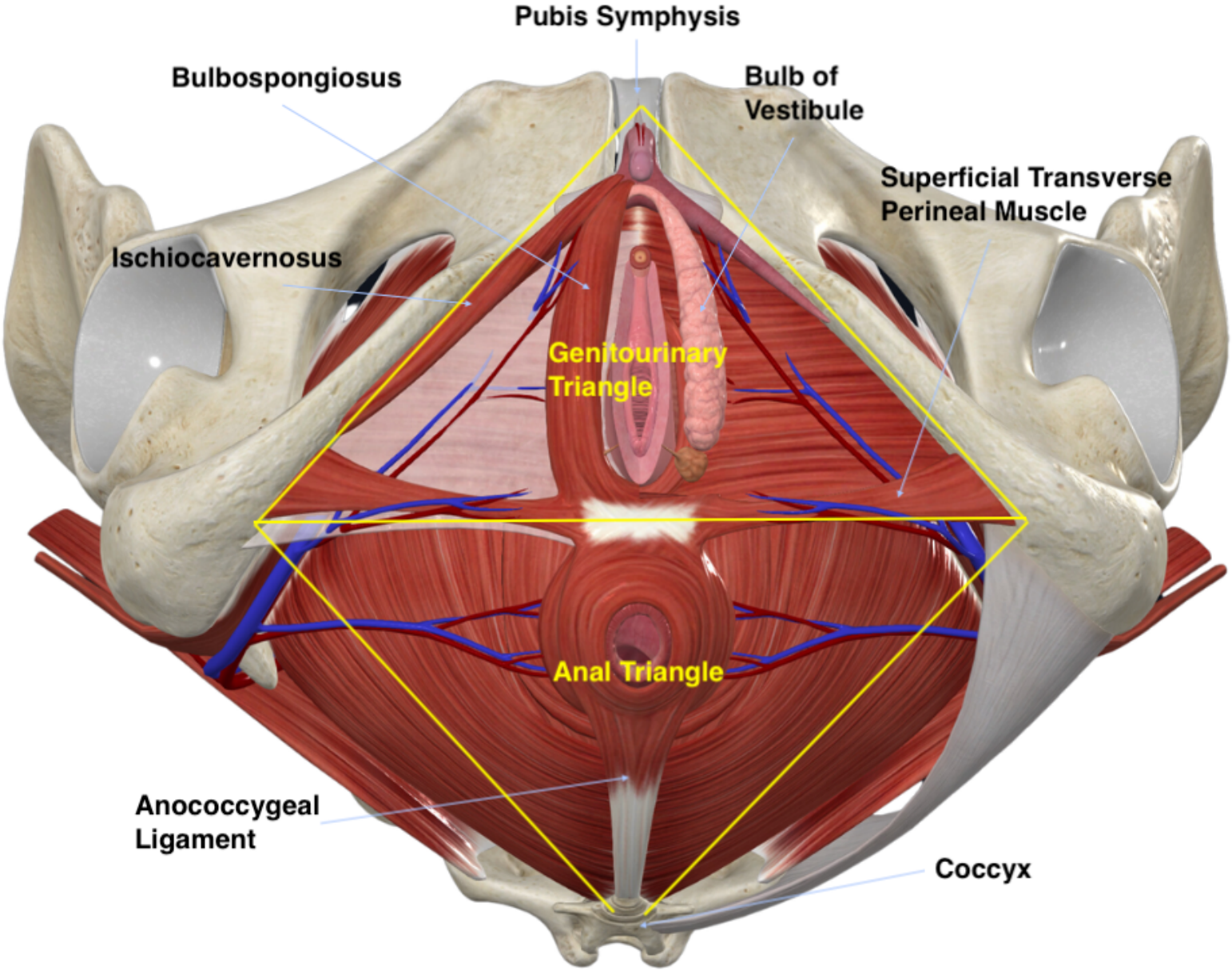
**Anal Sphincter:
Deep Superficial Subcutaneous**

Anococcygeal Ligament

Superficial Transverse Perineal Muscle

Bulbospongiosus

The Pelvic Triangles



Treating Pelvic Pain from Outside the Pelvic Floor

- Adductors – covered before, will not practice here
- Obturators – will review + practice again
- Pectineus – will review + practice again
- Pyramidalis
- Rectus Abdominis
- External and Internal Obliques

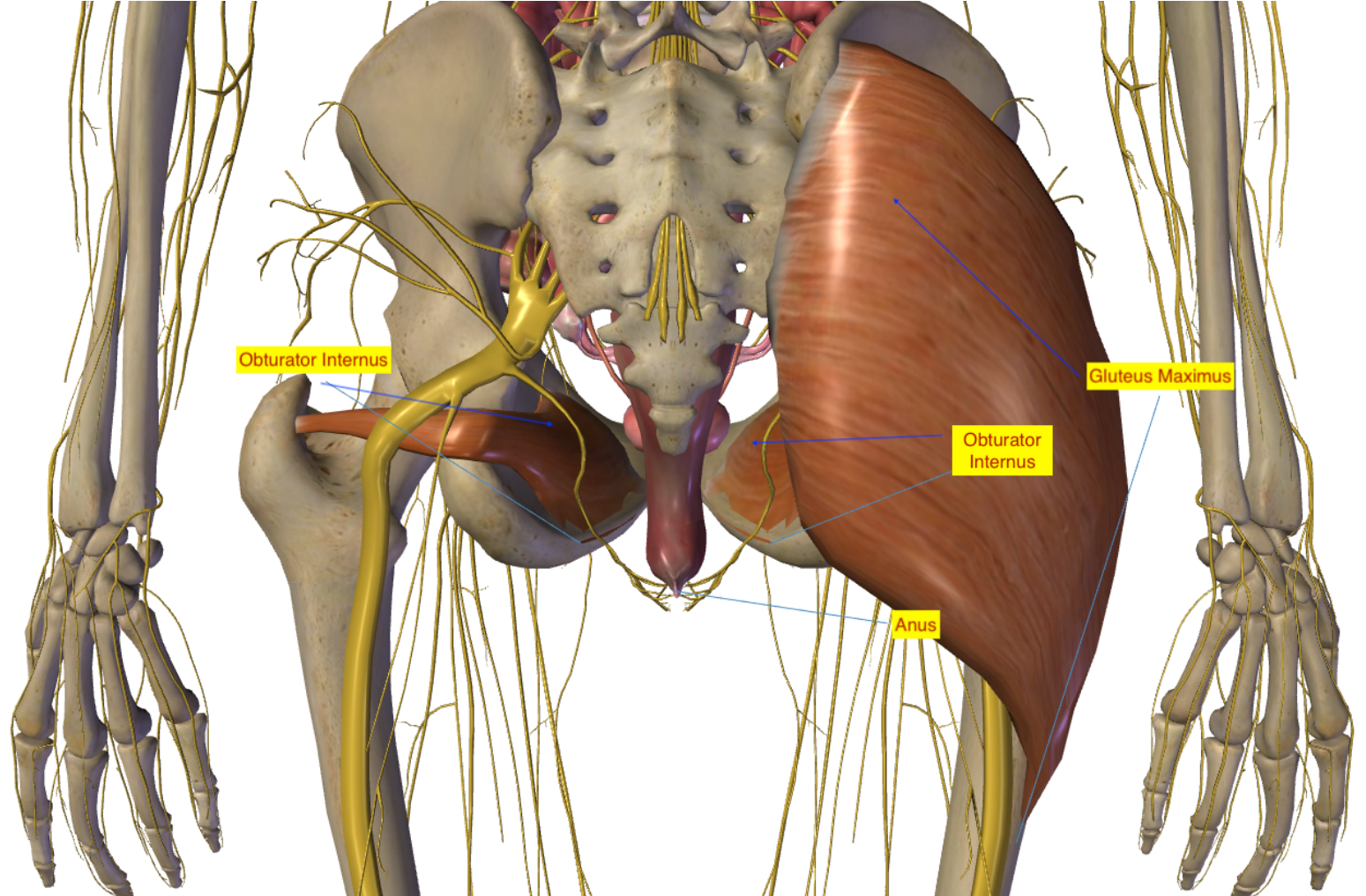
Treating Pelvic Pain from Outside the Pelvic Floor

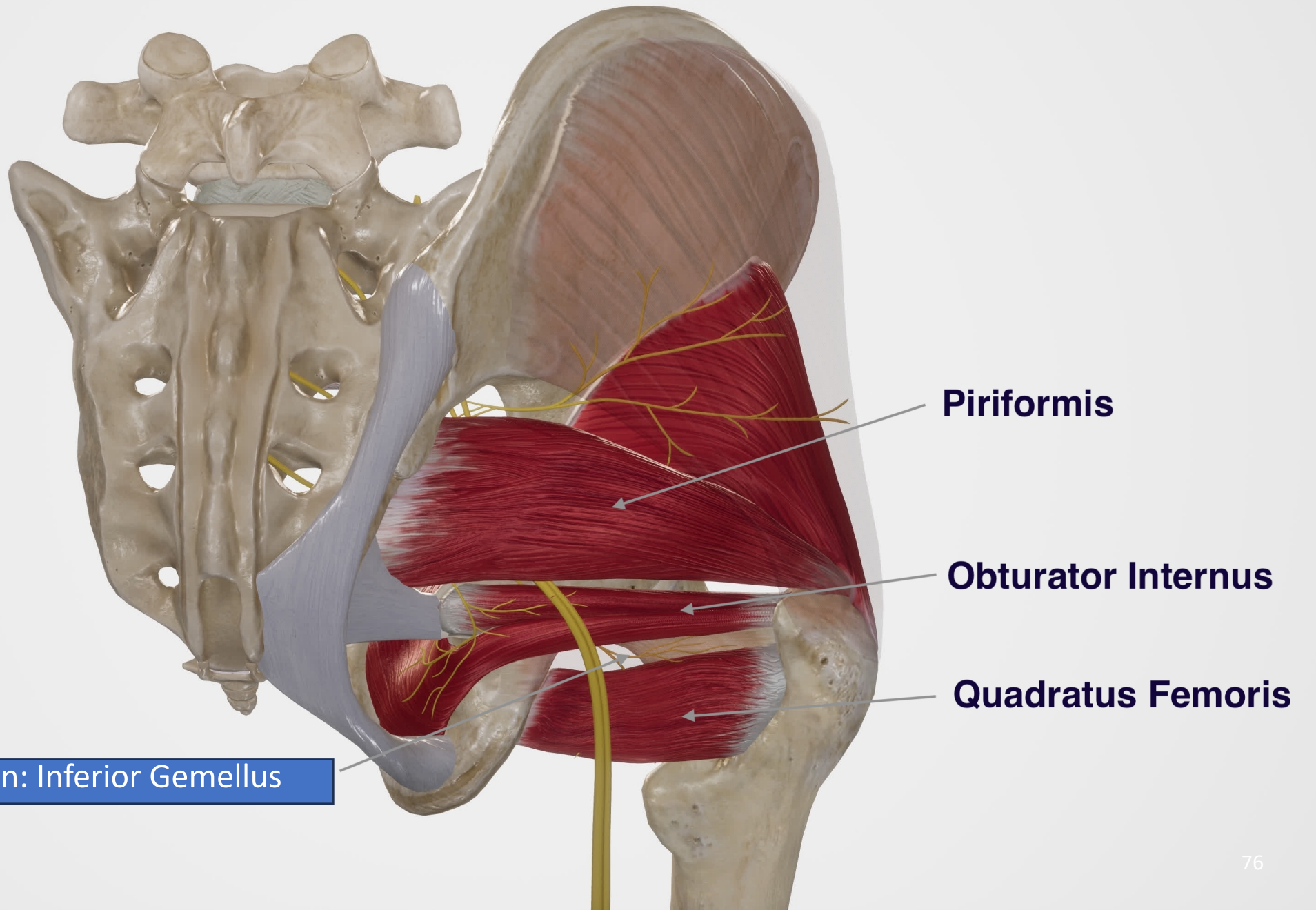
- Usually accomplished through trigger points
- Trigger points refer pain to the pelvic floor and surrounding areas



Obturator Internus

- Origin: Obturator foramen
- Insertion: Gr. Trochanter
- Actions: Externally rotates hip ~30 degrees;
- Stabilizer - helps keep head of femur in acetabulum





Piriformis

Obturator Internus

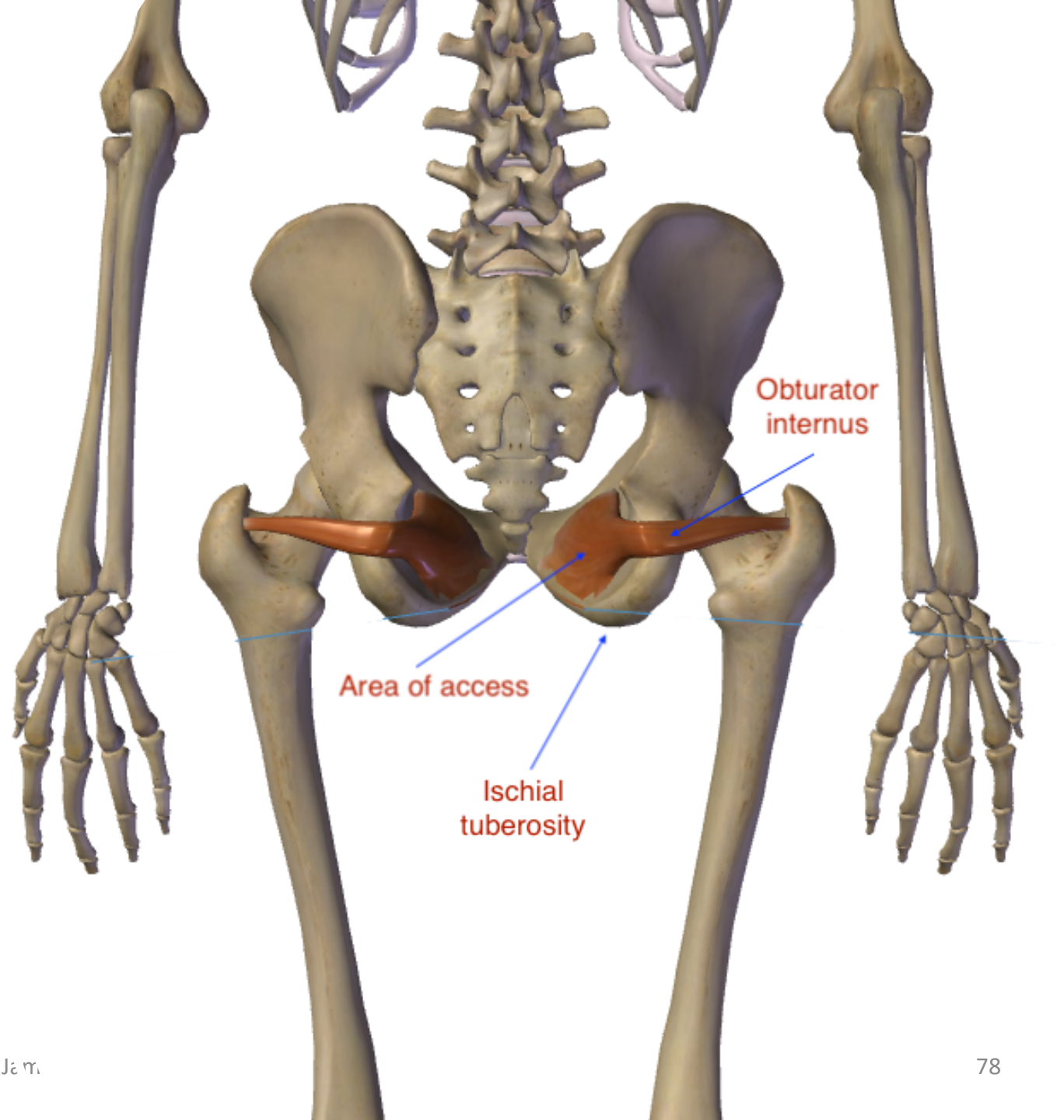
Quadratus Femoris

Not shown: Inferior Gemellus

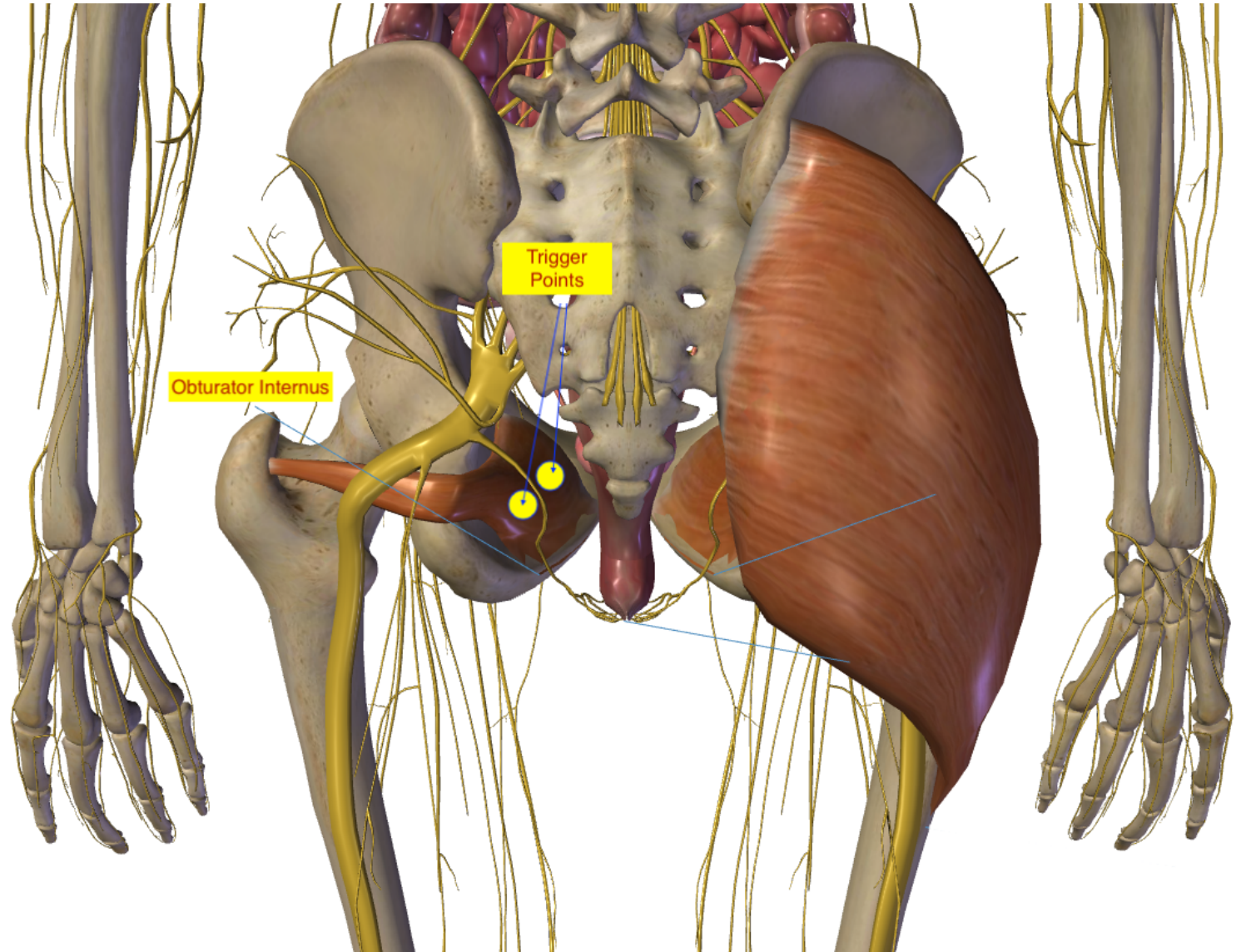
Finding the Obturator Internus + Trigger Pt.

- This is a sensitive area. Keep communication and get consent
- In the clinic, palpate enough to find where to needle
- Patient prone
- Find the ischial tuberosity
- Palpate on medial side of ischial tuberosity deep, hooking your fingers towards the ischial tuberosity
- Then travel up (superior) to the ischial spine (bone) while palpating deep
- You are pressing in towards the obturator foramen

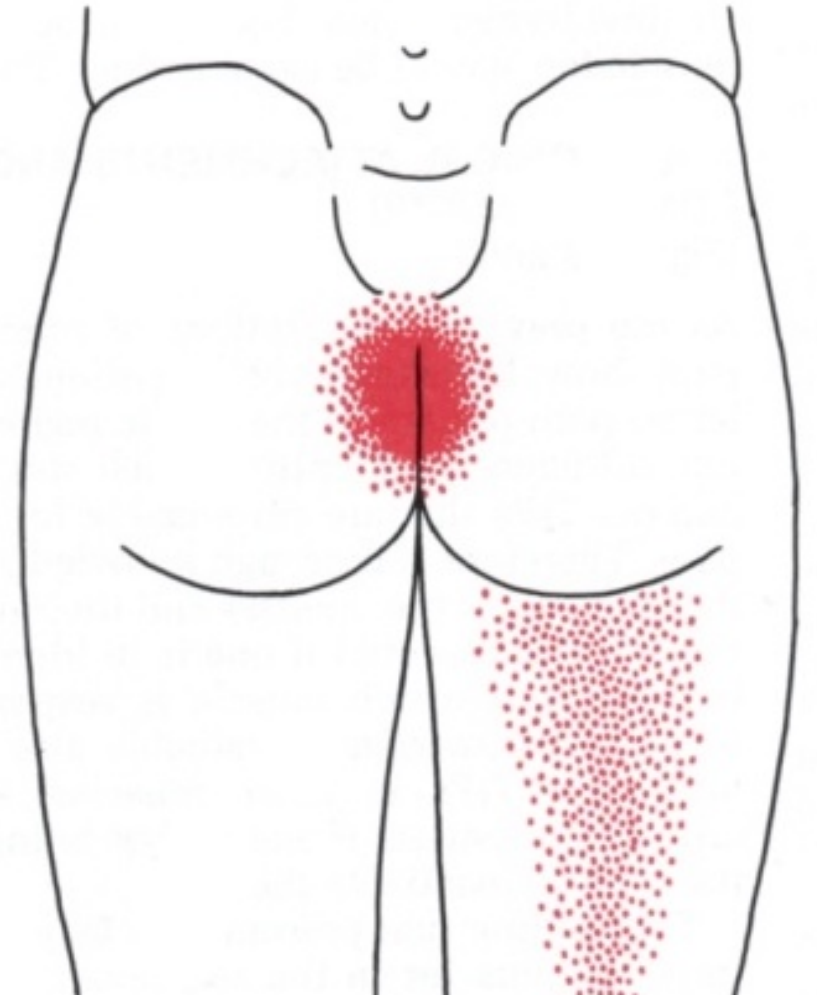
Finding the Obturator Internus



Obturator Internus Trigger Points

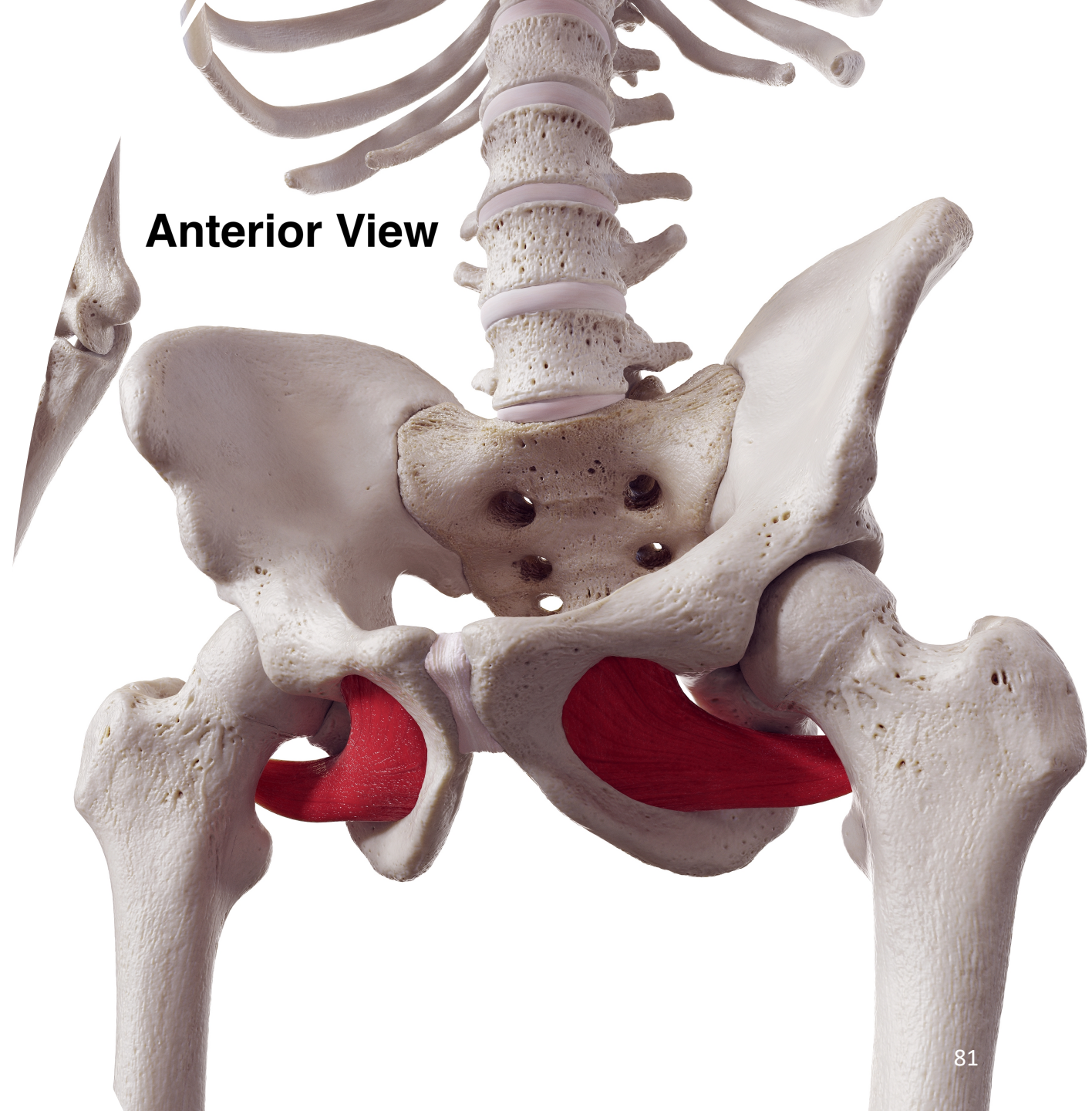


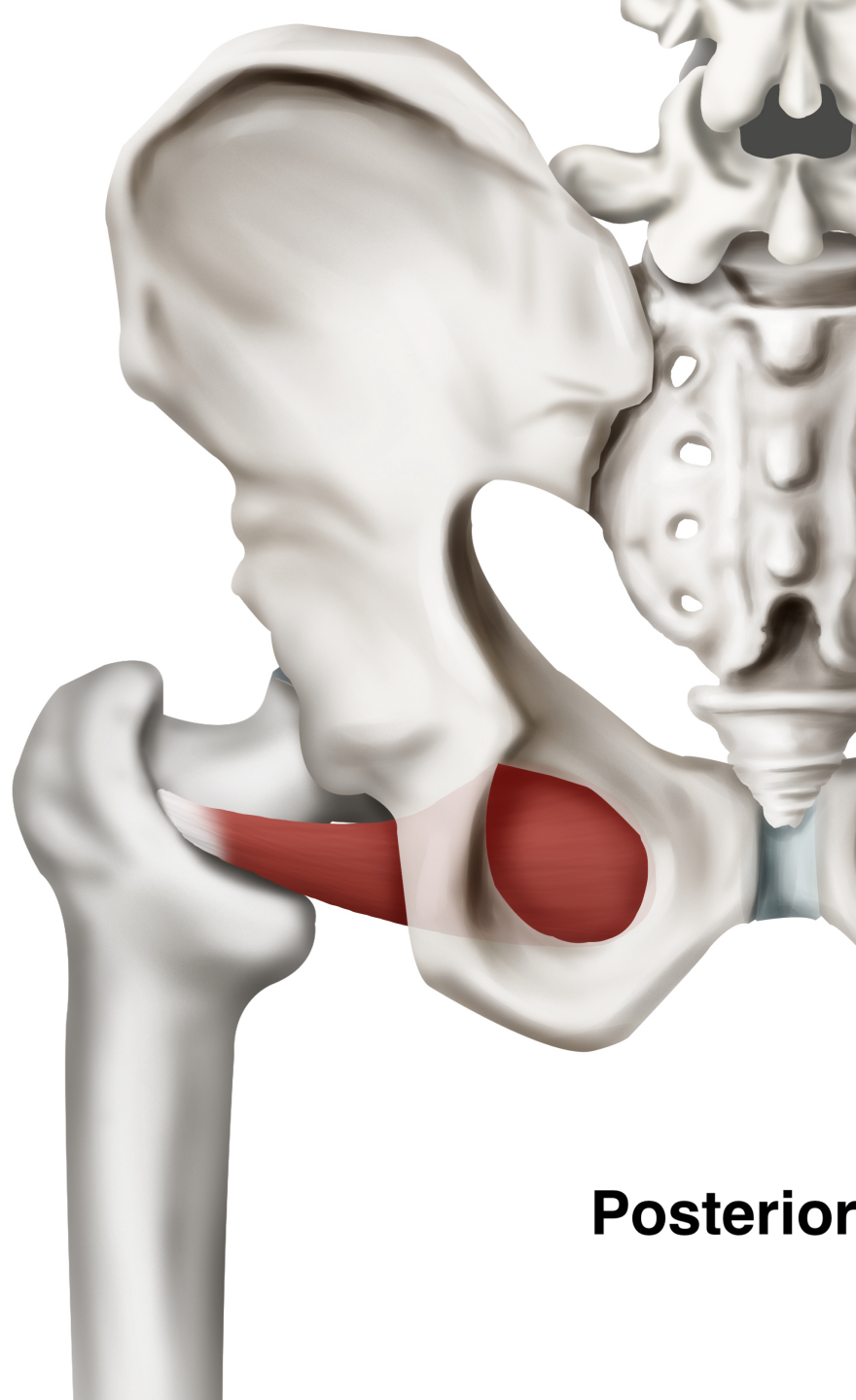
Obturator Internus Trigger Point Referral



Obturator Externus

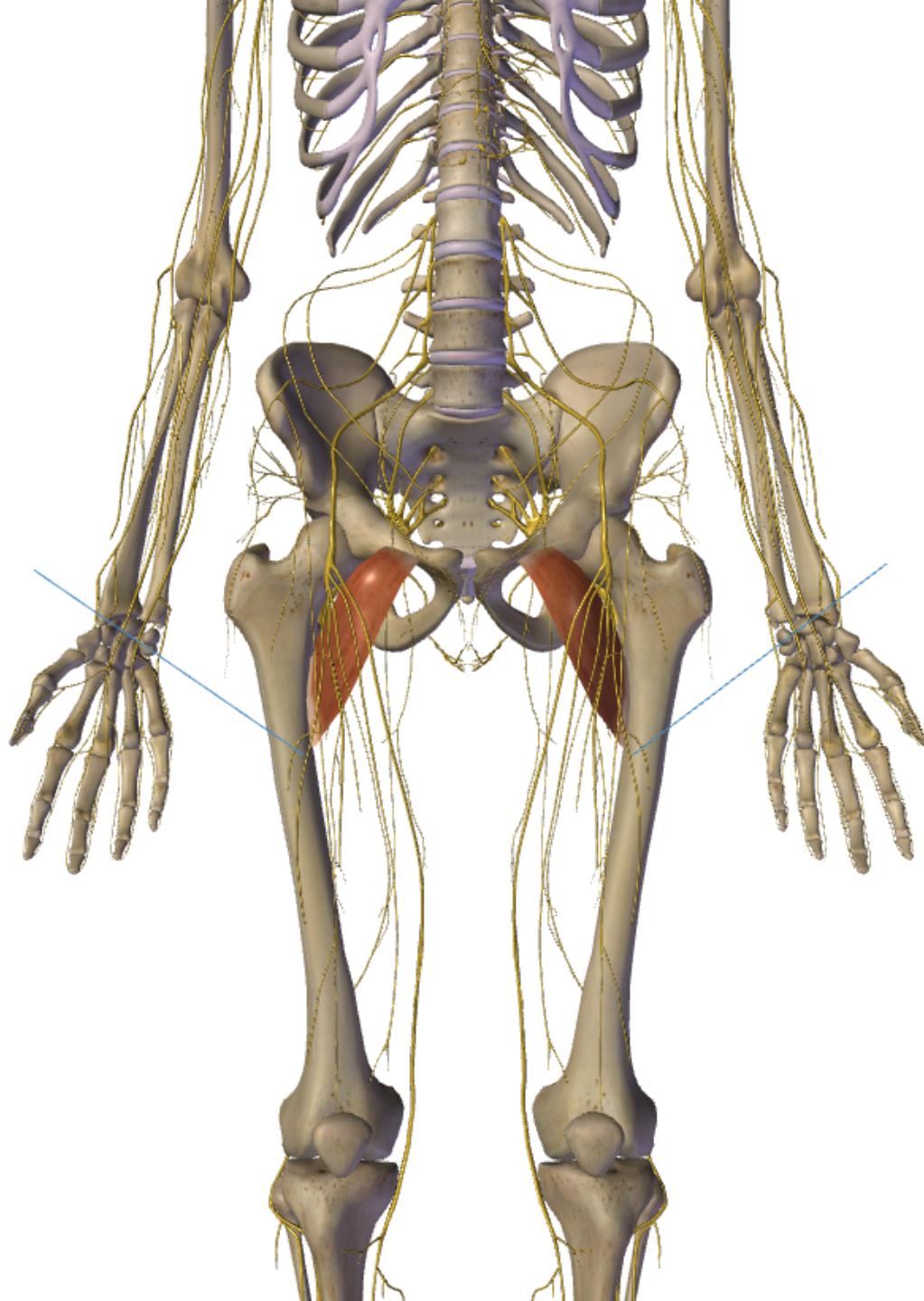
- Origin: Bony margin of the obturator foramen and obturator membrane
- Insertion: Greater trochanter
- Actions: Depending on position of the thigh, it abducts or externally rotates the thigh





Obturator Externus

- Trp Pain referral: Groin, anteromedial thigh, or hip pain.
- You do not need to focus on a specific trigger point here, just go for the belly of the muscle
- The muscle is triangle shaped, has a broad base and tapers to its attachment



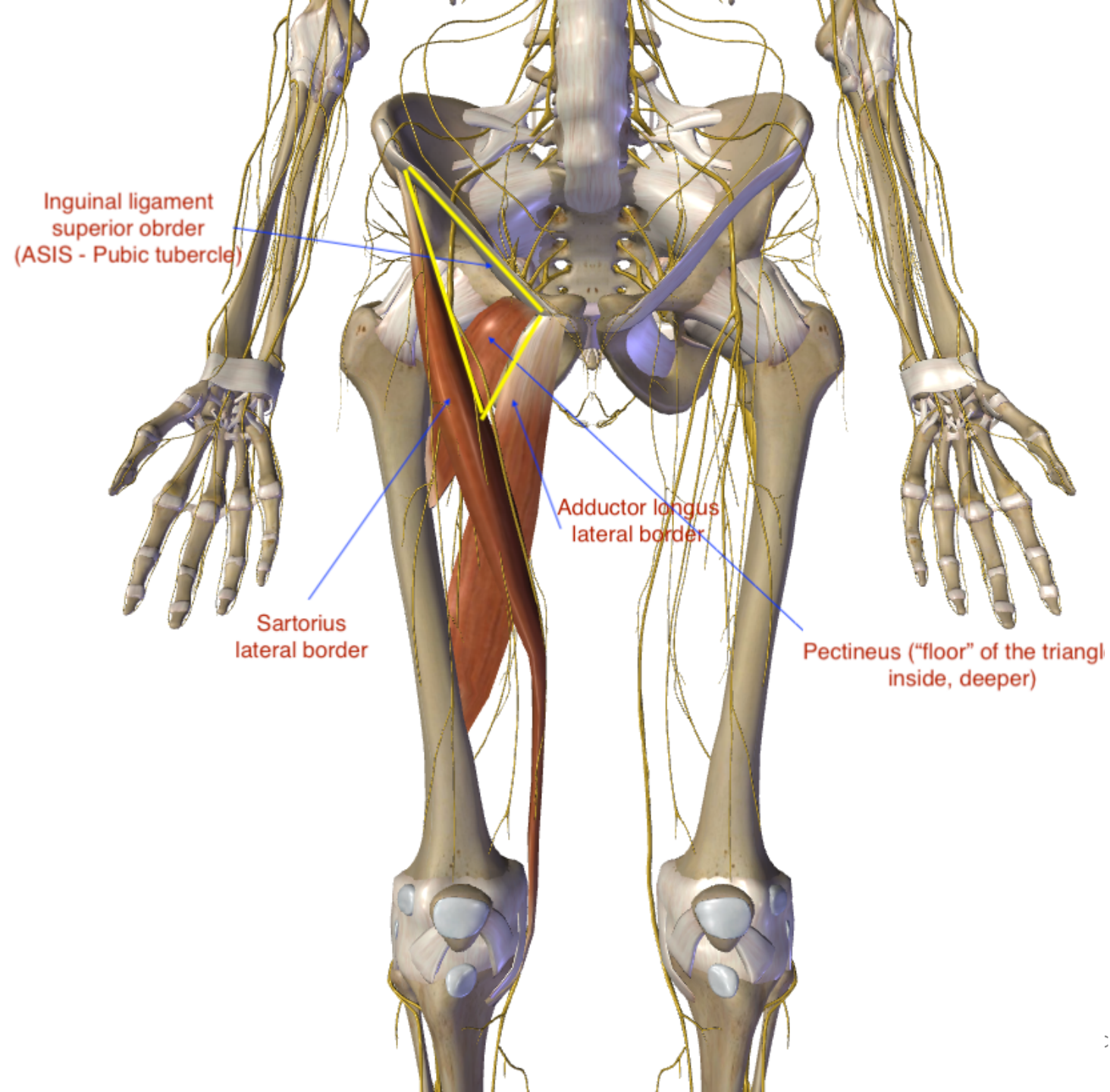
Pectineus

- In the femoral triangle
- Origin: Superior pubic ramus
- Insertion: Linea aspera femur
- Actions: flex and adduct the thigh

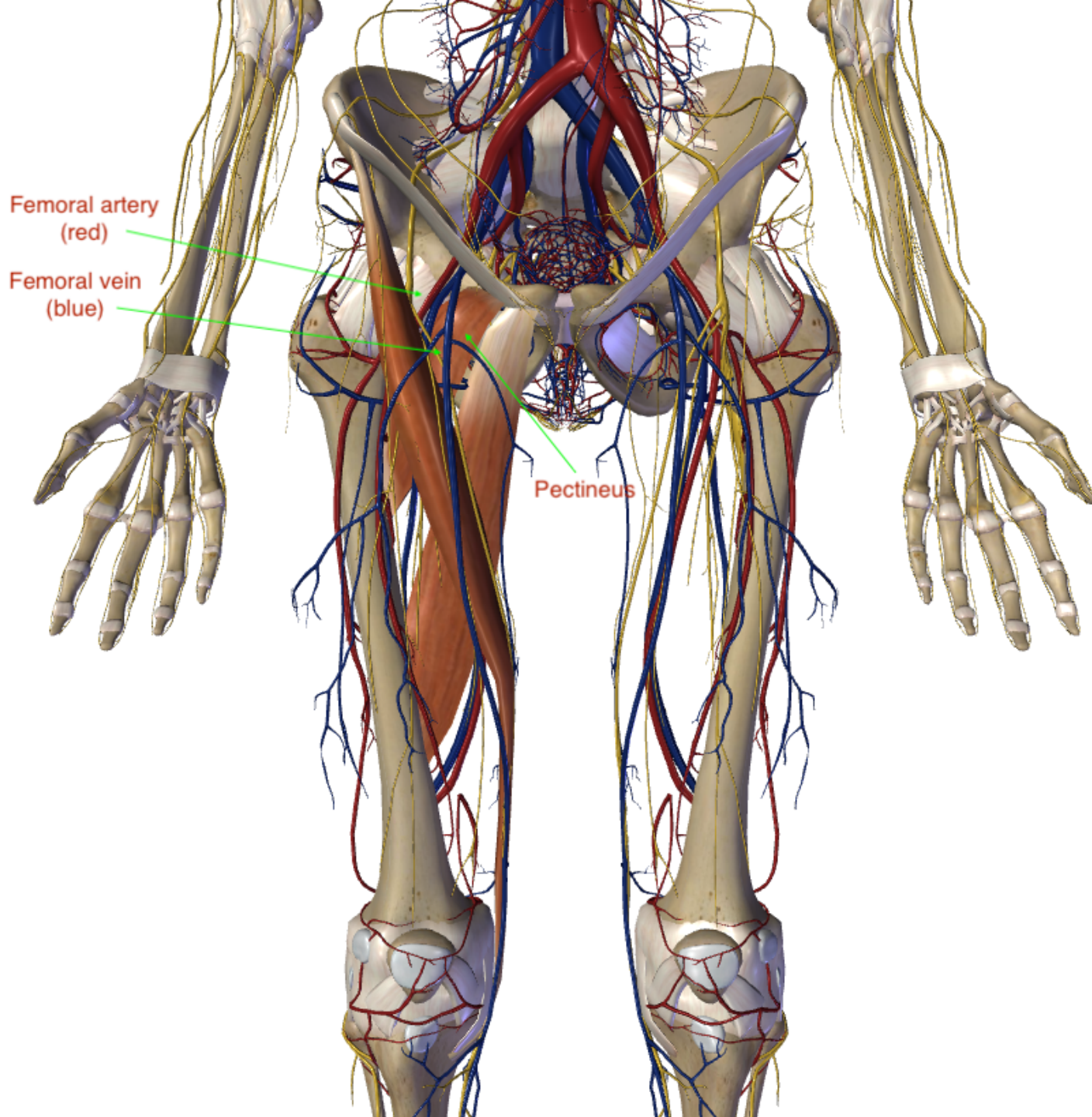
The femoral triangle

- Superior border: inguinal ligament (ASIS-Pubis symphysis)
- Medial border: Adductor longus
- Lateral border: Sartorius
- Inside the triangle:
 - Femoral vein, artery, and nerve
 - Iliopsoas, near insertion site
 - Pectineus (covered later)

Finding the Pectineus in the femoral triangle



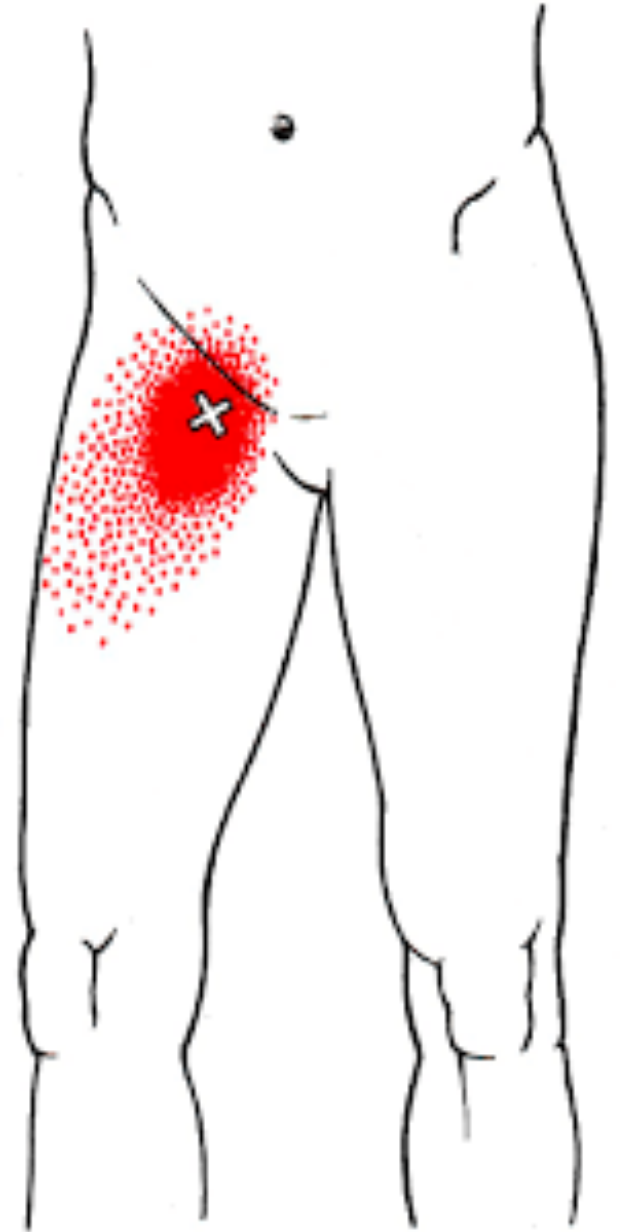
- Patient supine, leg flexed and externally rotated
- Can bolster with pillow at the knee
- Palpate deep and have patient perform adduction against resistance



Needling the Pectineus

- Find the femoral artery
- Find adductor longus (medial border of triangle)
- Pectineus is medial to the artery and lateral to the adductor longus border
- Can palpate deep and have patient resist to contract the muscle

Pectineus Trigger Point Referral



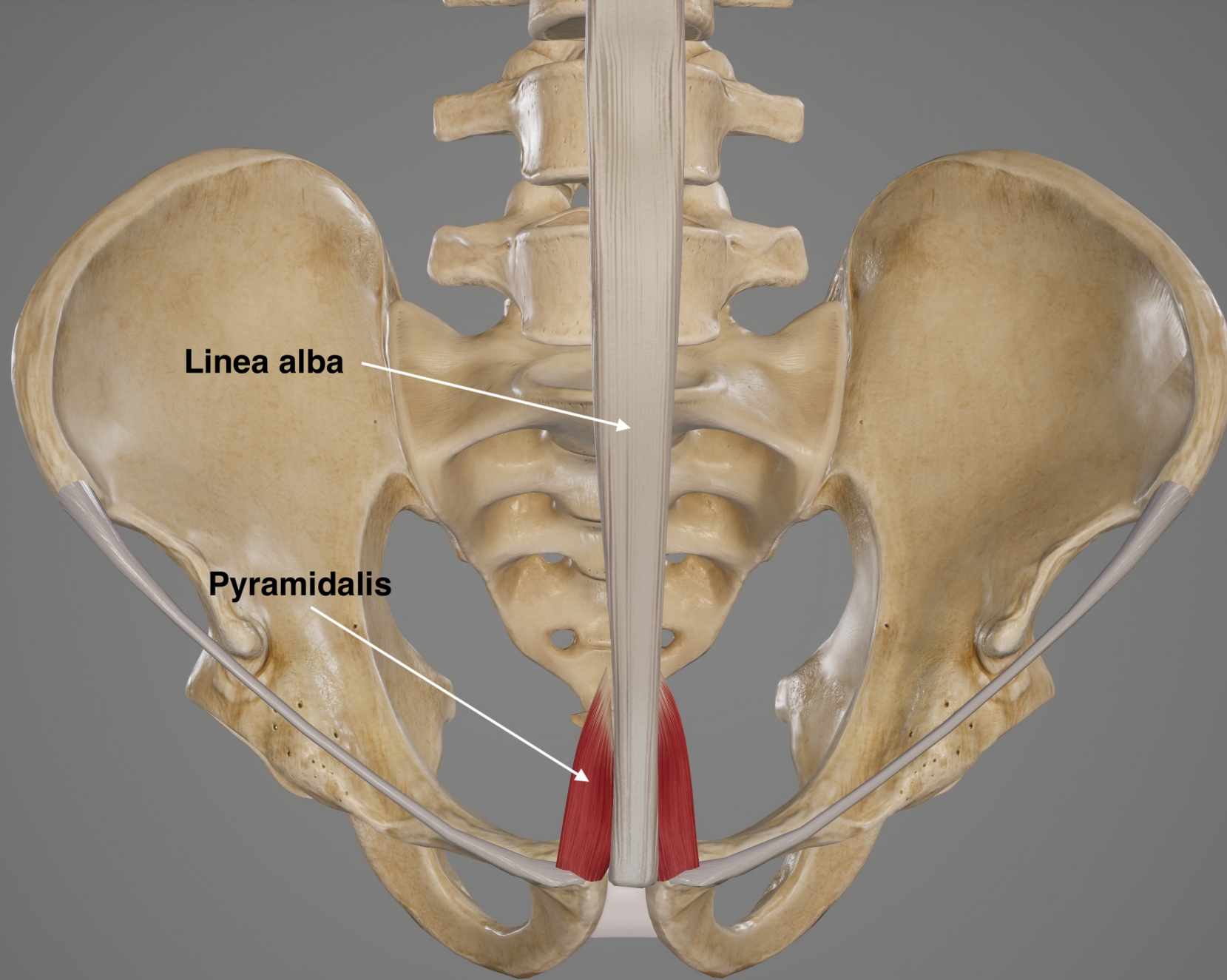
Abdominal Muscles

- Trigger points in these can refer pain to, and mimic, pelvic floor conditions
- Layers from most superficial to deepest:
 - Pyramidalis
 - Rectus abdominus
 - External obliques
 - Internal obliques
 - Transversus abdominis
- Transverse abdominis is the deepest and not covered in this class. It is especially a back support muscle (All can be, but particularly TA is)

Pyramidalis

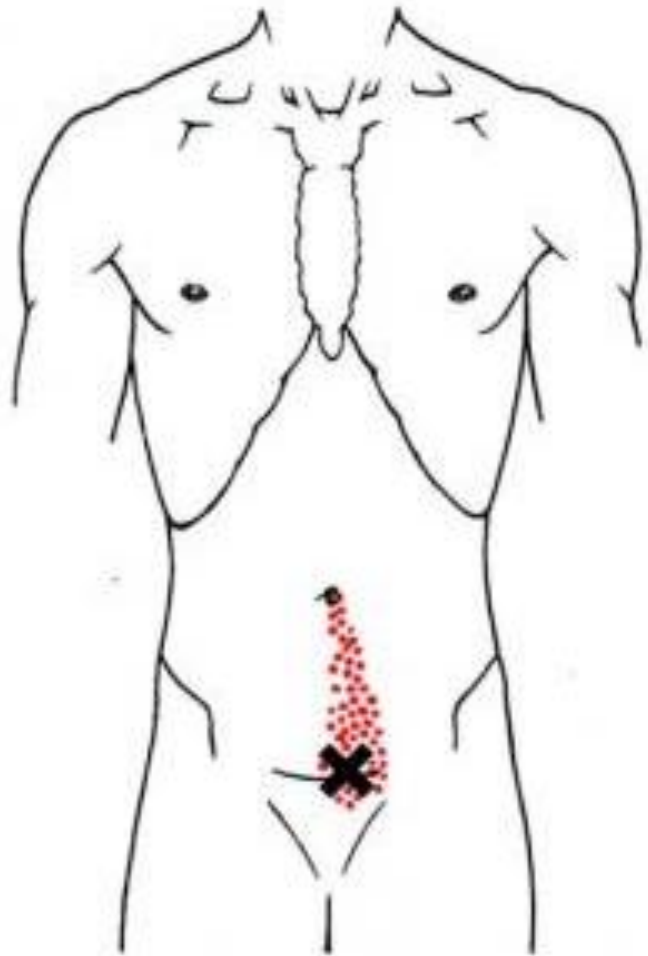
- The pyramidalis muscle is an abdominal muscle. It is a short, triangular, convergent type of skeletal muscle that is absent in some individuals (Tubbs, Shoja and Loukas, 2016).
- Location: Anterior to the rectus abdominis muscle, posterior to the the rectus sheath; on either side of the Linea alba
- Origin: Body of pubis and anterior pubic ligament.
- Insertion: Linea alba
- Action: Tenses Linea alba

References: Standring, S. (2016) Gray's Anatomy: The Anatomical Basis of Clinical Practice. Gray's Anatomy Series 41st edn.: Elsevier Limited. Tubbs, R. S., Shoja, M. M. and Loukas, M. (2016) Bergman's Comprehensive Encyclopedia of Human Anatomic Variation. Wiley.

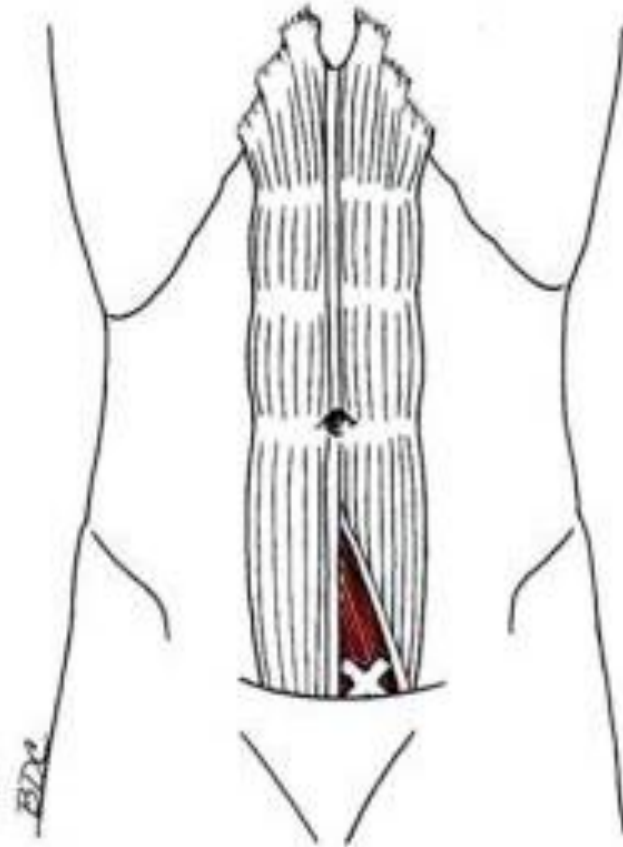


Linea alba

Pyramidalis



Pyramidalis



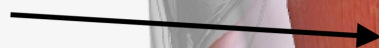
Trigger Point Referral Pyramidalis

Source: <http://www.triggerpoints.net/muscle/rectus-abdominis>

Rectus Abdominis

- Origin: Pubic crest and symphysis
- Insertion: Xiphoid process and costal cartilages of fifth to seventh ribs
- Actions: Flexes trunk; compresses and provides structural support to adjacent abdominal structures
- Has several trigger points, but for the purpose of this seminar, we will focus on the lower ones which cause pain that can be confused with dysmenorrhea
- Location determined by palpation; can also use motor point location to get in the area and then palpate to find the trigger point. 2.5" below and 2.5" lateral, each side

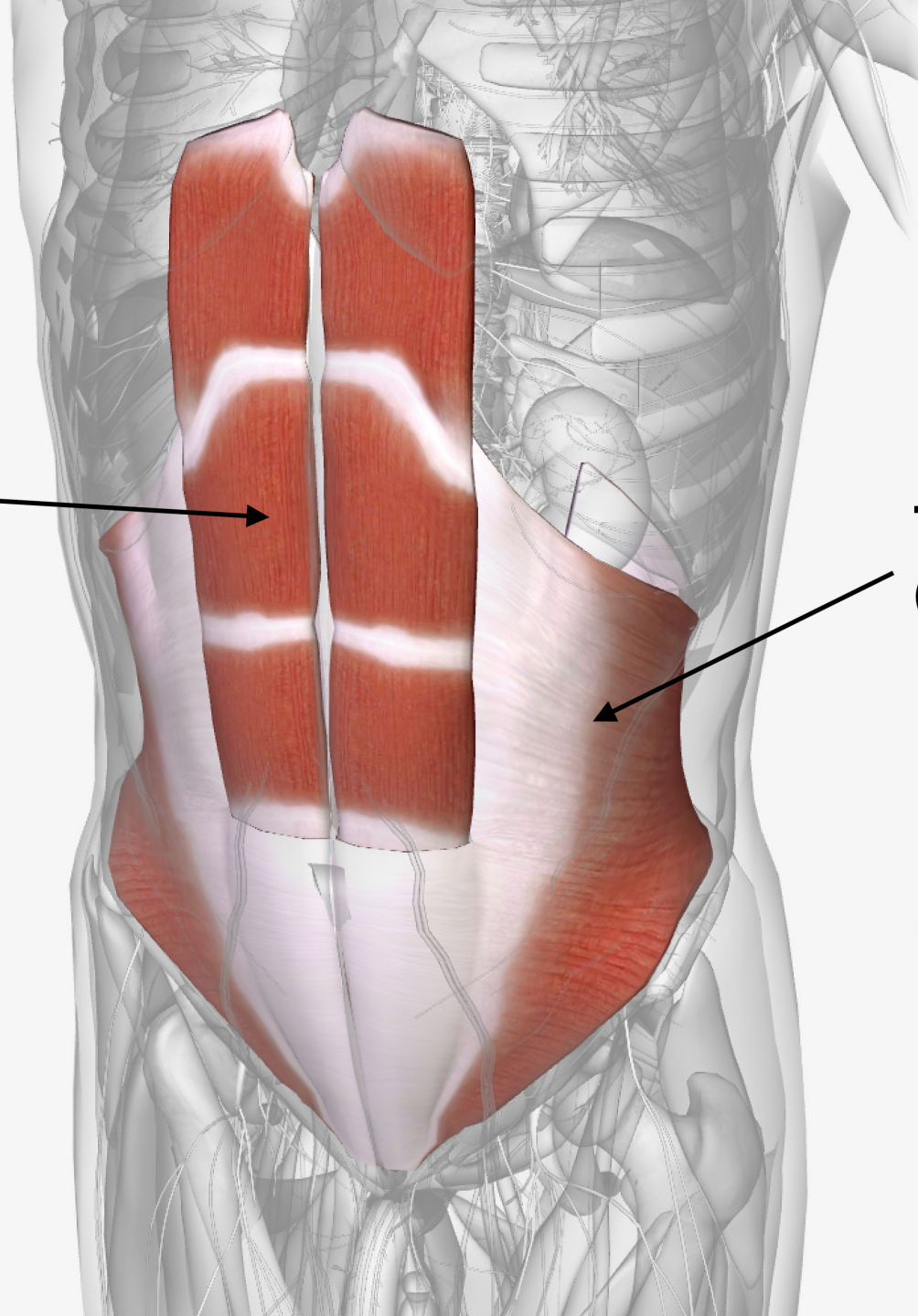
Rectus Abdominis



**Transversus Abdominis
(deepest)**

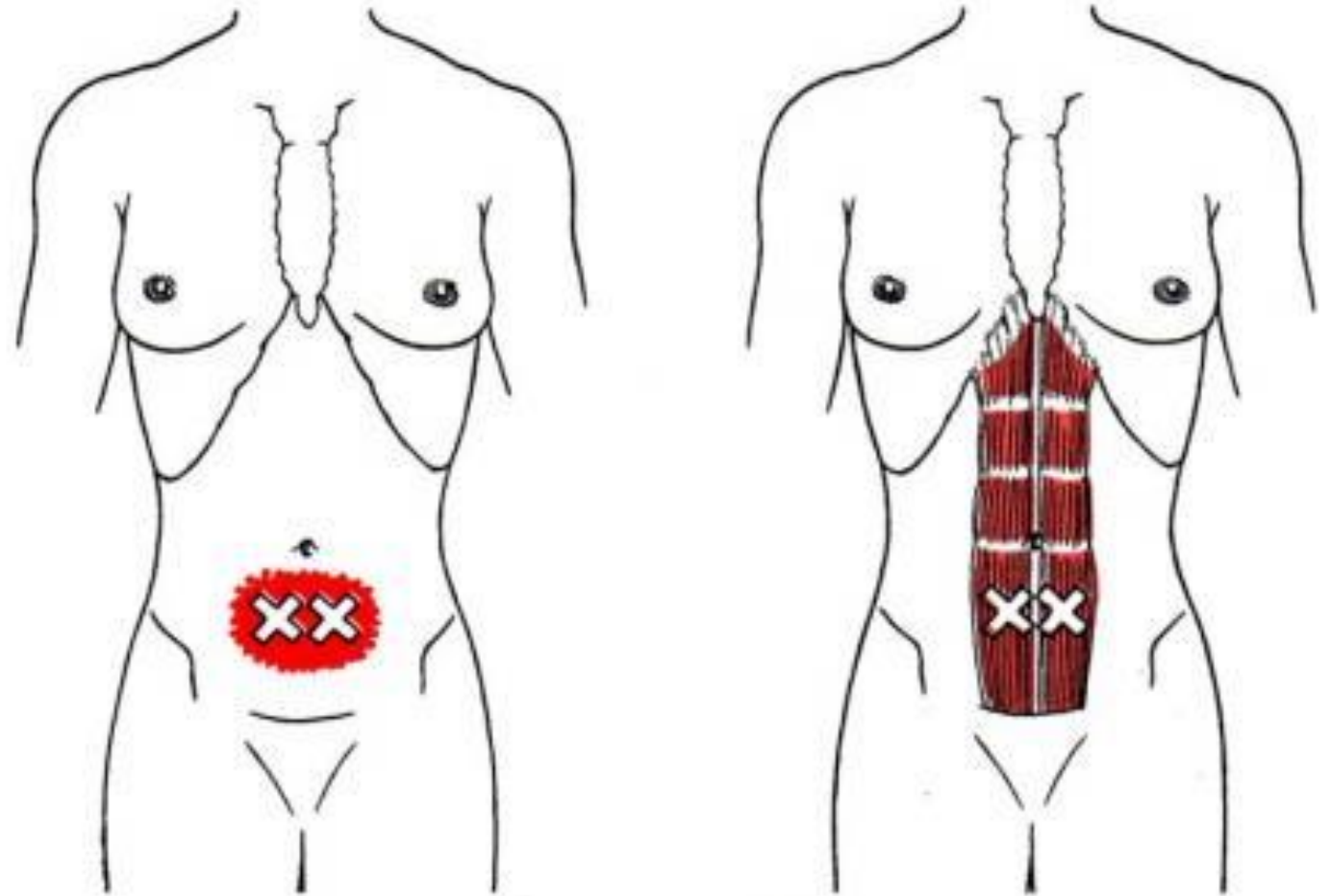


**Not shown: External or
Internal Abdominal
Obliques**



Rectus Abdominis Trigger Point Referral

Source: <http://www.triggerpoints.net/muscle/rectus-abdominis>



Dysmenorrhea

External Oblique

- Most superficial of the obliques
- Use locations to get into the ballpark and then palpate to get right on it
- Origin: External surfaces and inferior borders of fifth to twelfth ribs
- Insertion: Anterior superior iliac spine, anterior half of iliac crest, pubic crest, pubic tubercle, Linea alba
- Action: Flexes, laterally flexes, and rotates trunk; compresses and provides structural support to adjacent abdominal structures

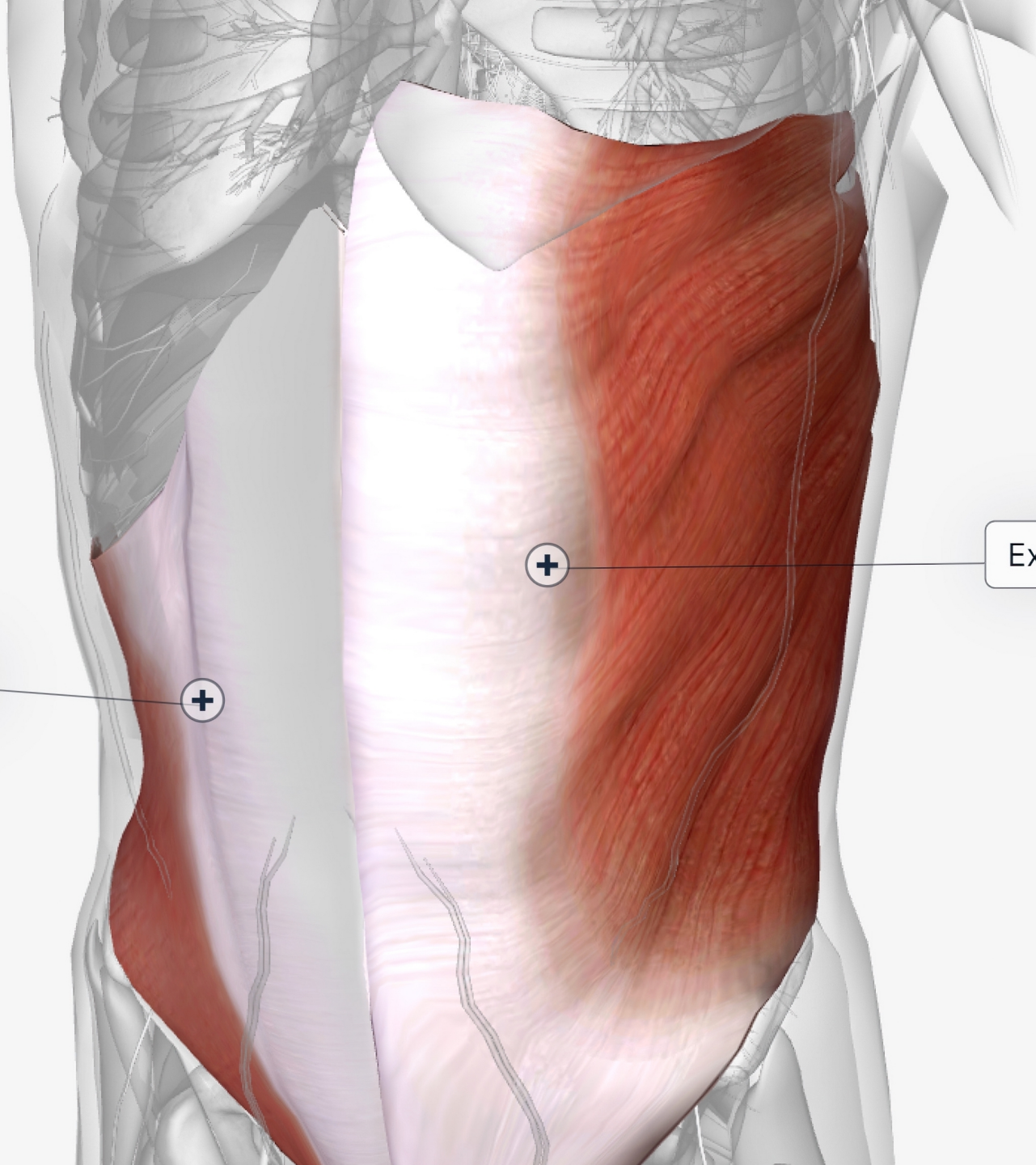
Internal Oblique

- Under/deeper to the external oblique
- Origin: Thoracolumbar fascia, iliac crest, inguinal ligament
- Insertion: Inferior margins of tenth to twelfth ribs and adjacent costal cartilages, Linea alba, pecten pubis
- Action: Flexes, laterally flexes, and rotates trunk; compresses and provides structural support to adjacent abdominal structures.

Internal oblique



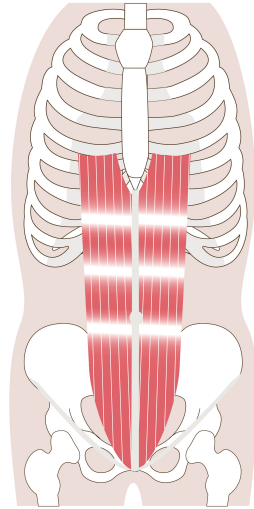
External oblique



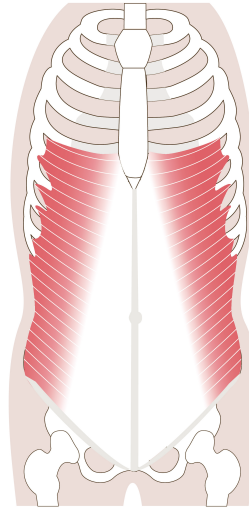
Obliques

- Trigger points can refer to the pelvic area and mimic certain conditions
- Depth of needling depends on
- Diagram gets you in the general area, palpation determines more exact location
- For external oblique, can use motor point location and then palpate
- Trigger points often lie near motor points

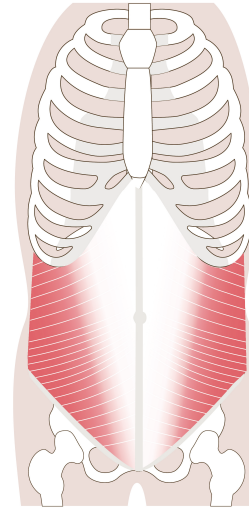
① Rectus Abdominis



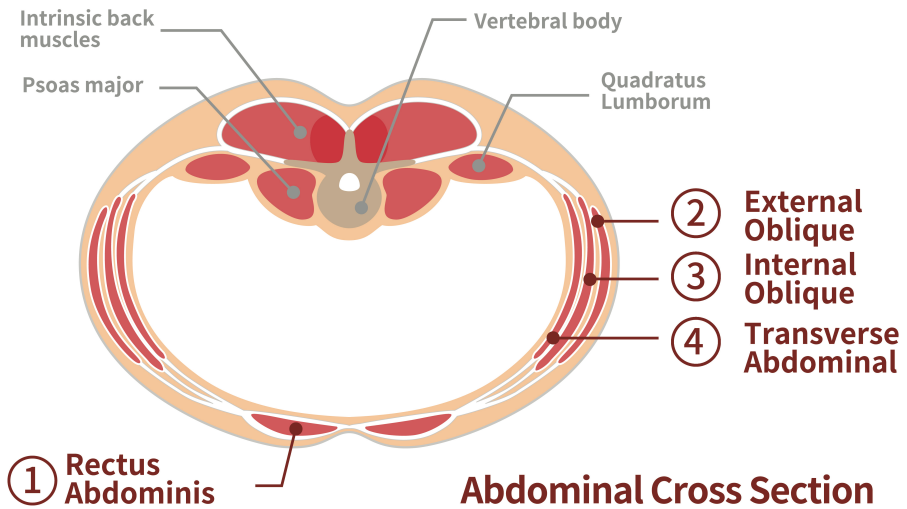
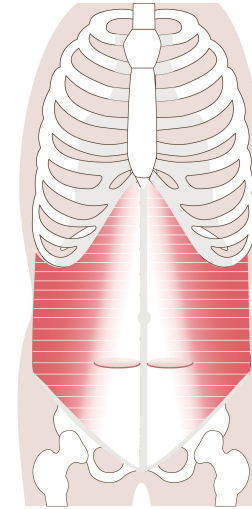
② External Oblique



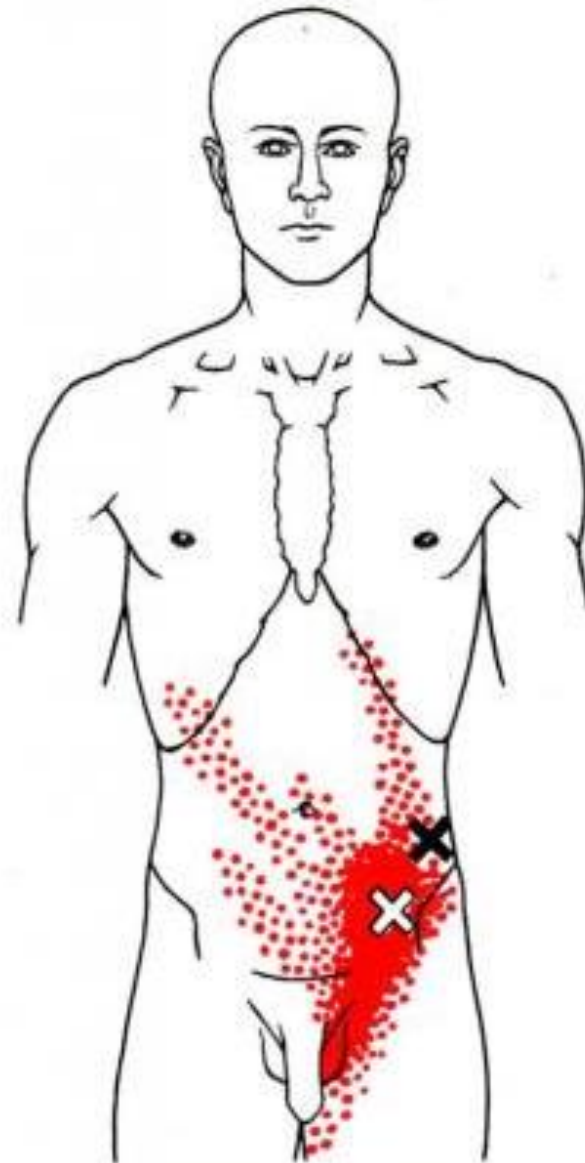
③ Internal Oblique



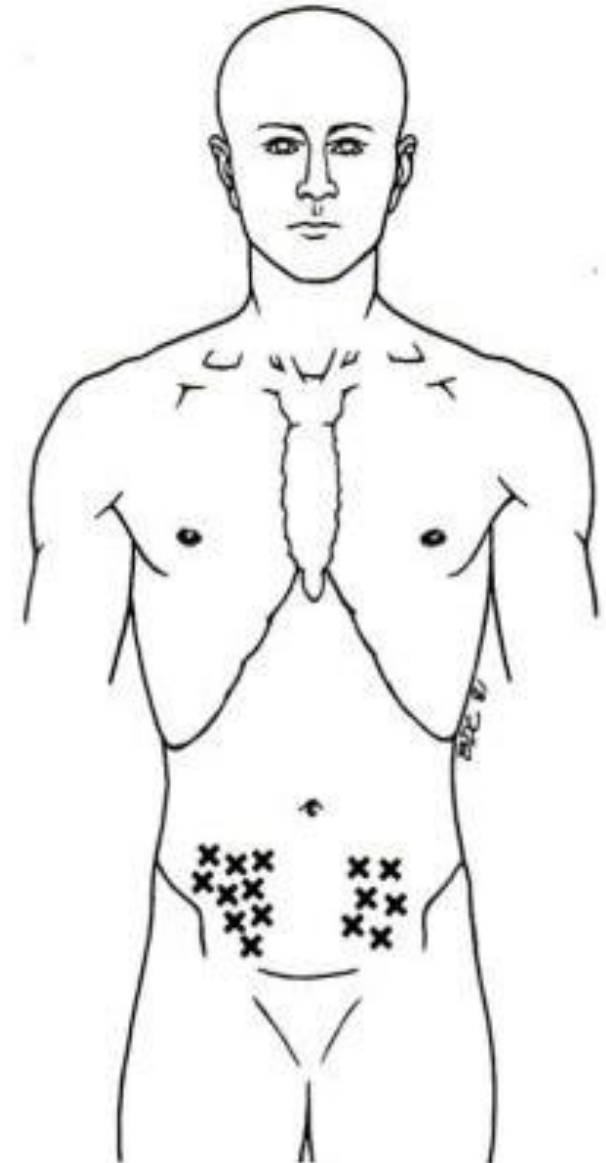
④ Transverse Abdominal



Trigger Point Referrals



Lateral Abdominals

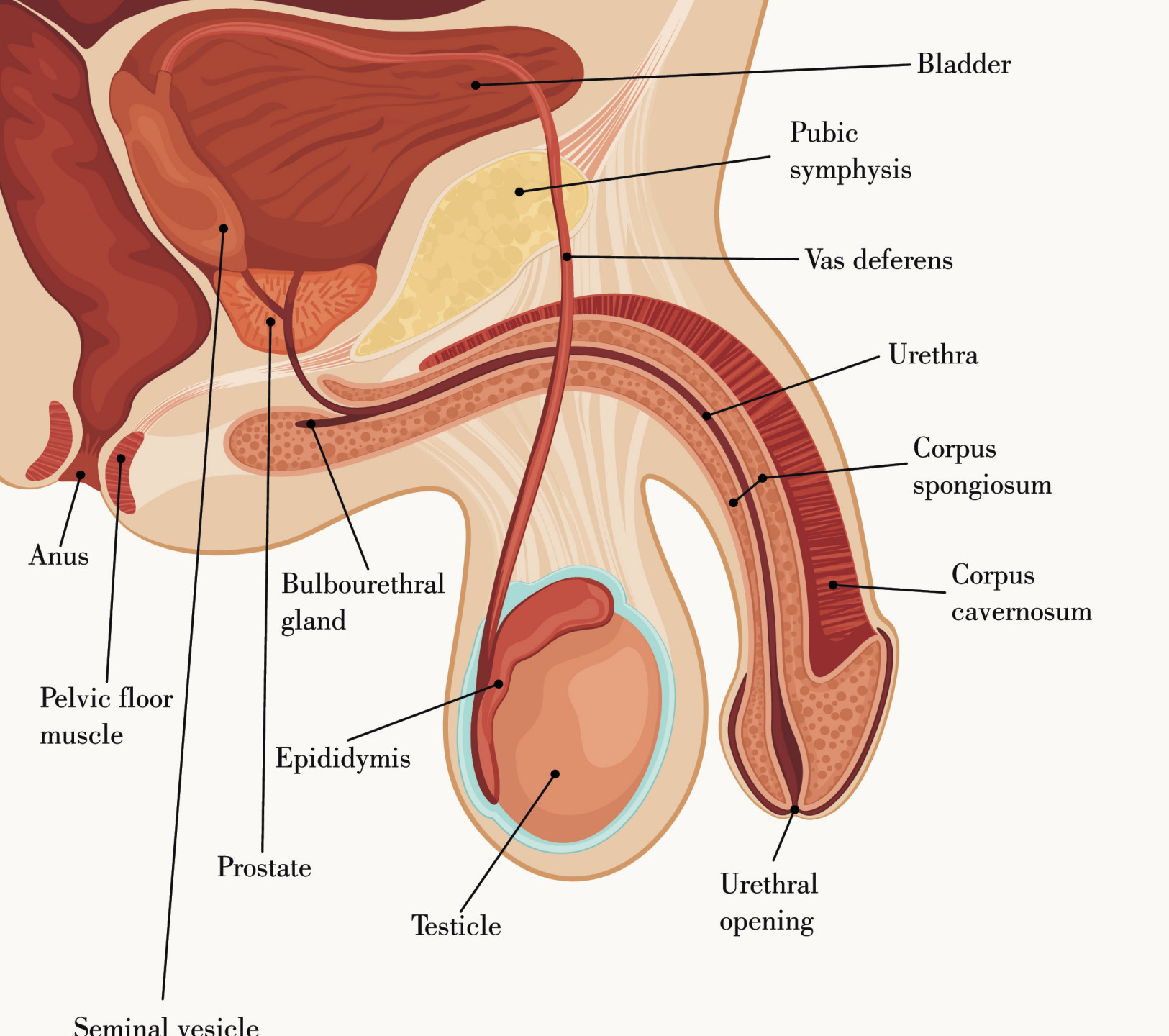


Causes diarrhea

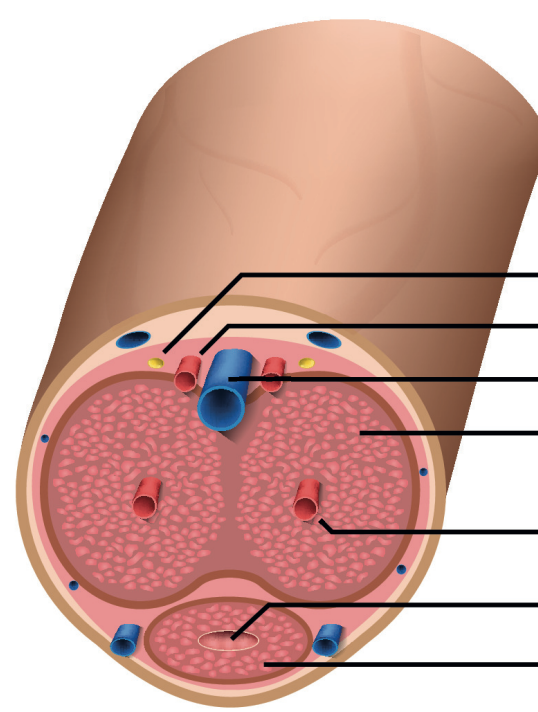
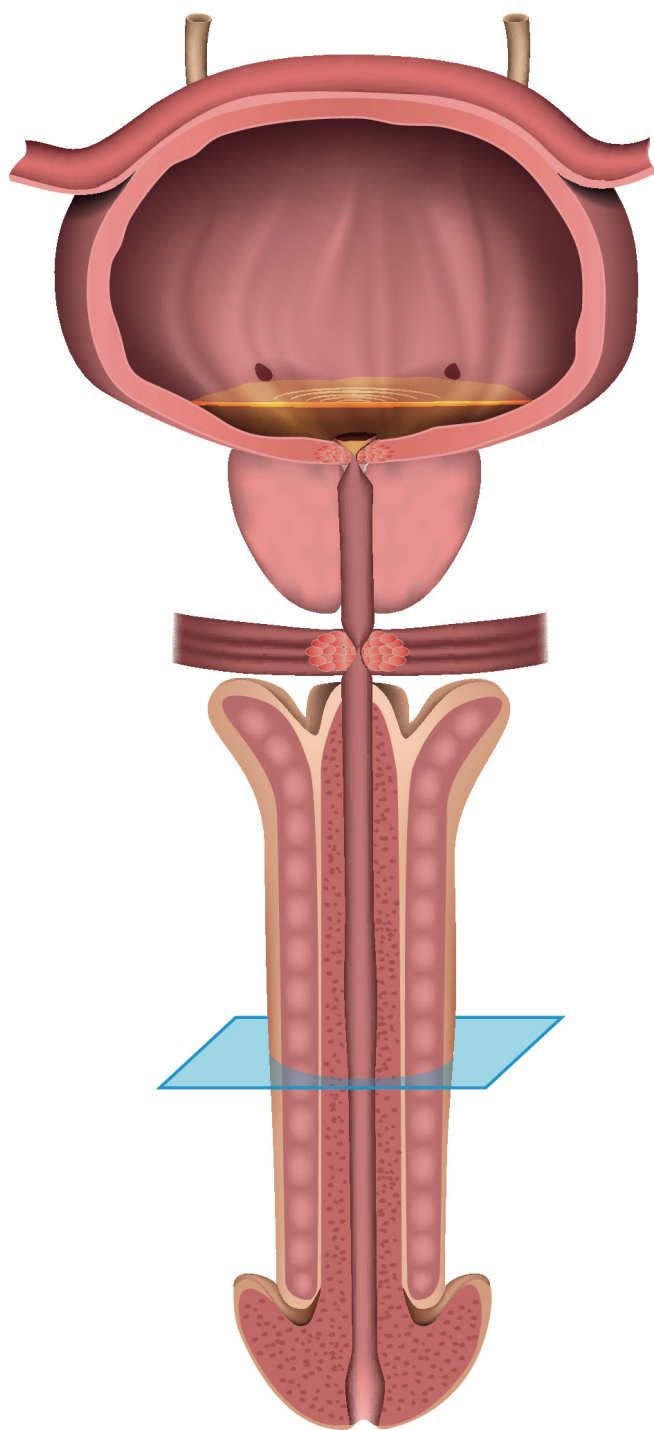
MALE
ANATOMY
REVIEW

Reproductive
Anatomy

Muscle/Fascia

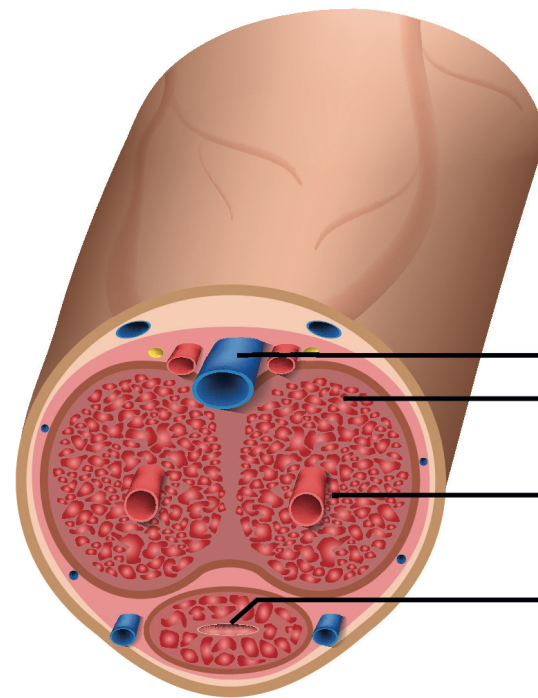


Male reproductive - basics



Flaccid penis

- Dorsal nerve
- Dorsal artery
- Deep dorsal vein
- Corpus cavernosum (not filled with blood)
- Deep artery
- Urethra
- Corpus spongiosum



Erect penis

- Dilated dorsal vein
- Corpus cavernosum filled with blood
- Arteries are increased
- Compressed urethra

Ischiocavernosus

ORIGIN: ischial tuberosity and ramus (HELLO HAMSTRINGS)

INSERTION: Crus of the penis and clitoris

Innervation: PN S2-4

Moves blood into body or clitoris and penis

Bulbospongiosus

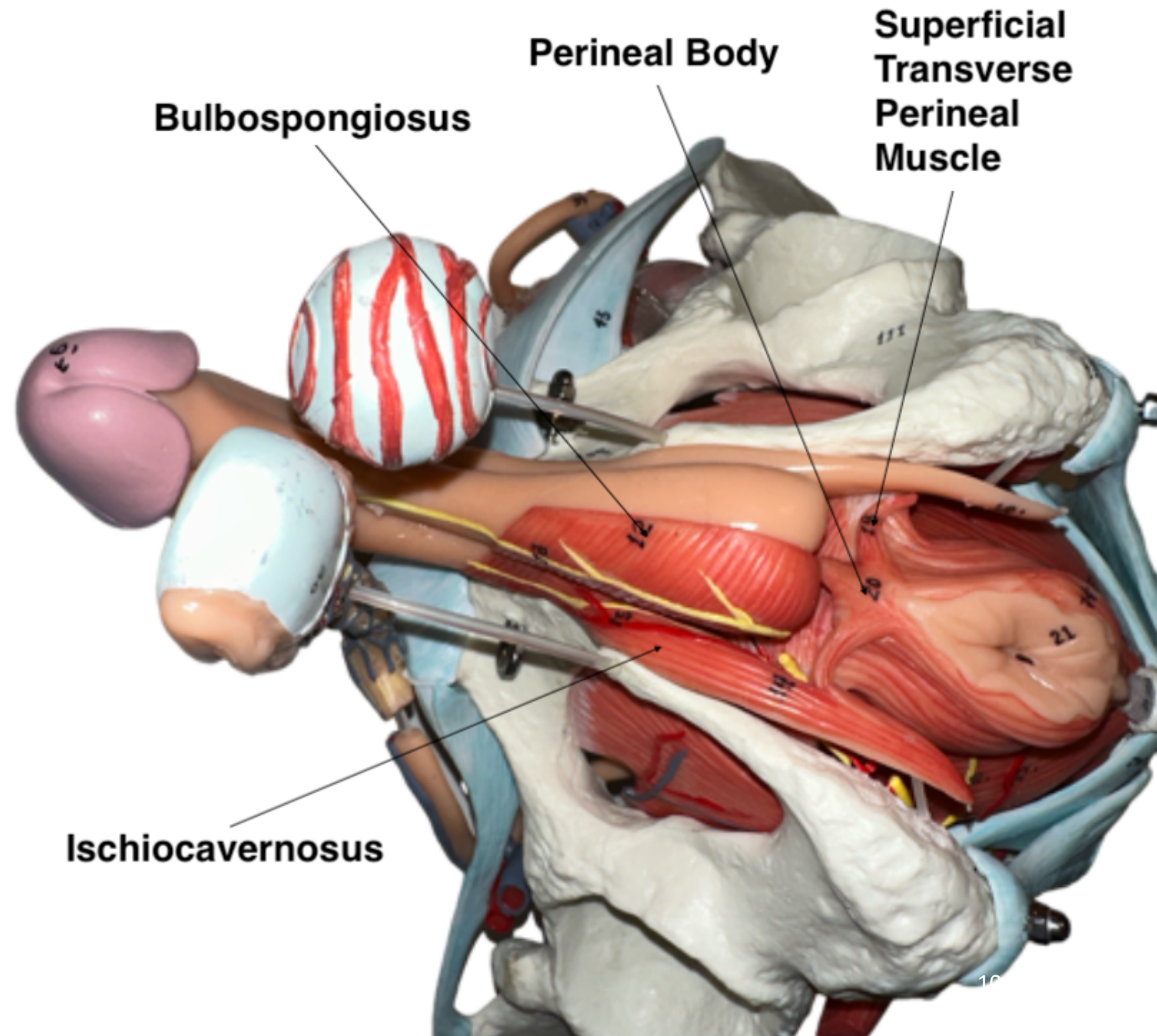
Main function is to empty the canal of the urethra, assists in erection and by compressing erectile tissue.

Origin: Median raphe

Insertion: Perineal membrane and fascia of the bulb of the penis as well as corpus spongiosum

Pudendal Nerve PN S2-S4

Bulbospongiosus Ischiocavernosus



Cremaster Muscle

- “Cremaster muscle (Musculus cremaster) Cremaster is a paired muscle of the pelvis and perineum that is fully developed only in the external genitalia of males. Being located between the internal and external layers of spermatic fascia, cremaster covers the testes and spermatic cord.”

- Kenhub.com

- It is a POUCH LIKE MUSCLE

- Genitofemoral nerve that innervates at L1-L2

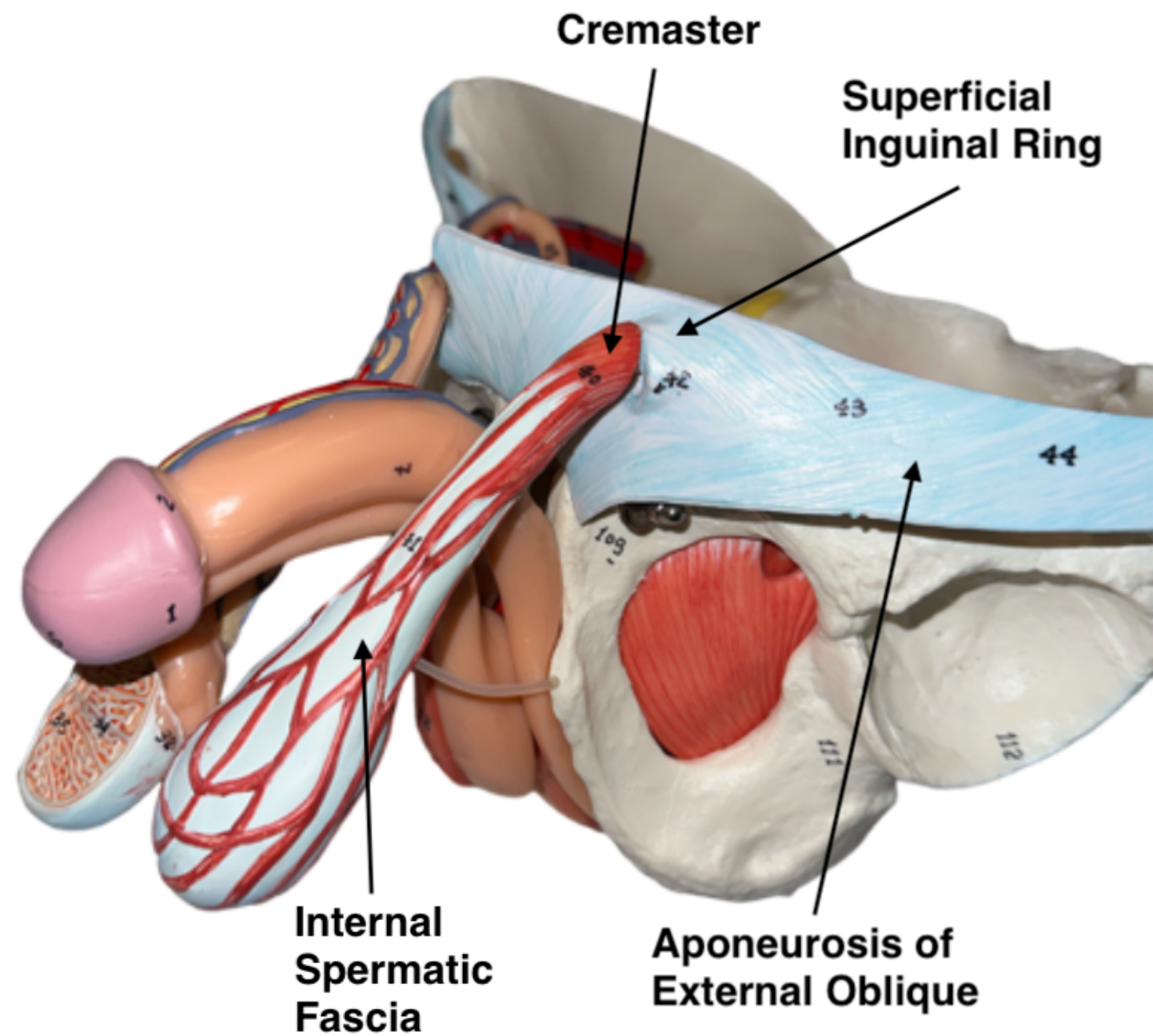
Cremaster Muscle

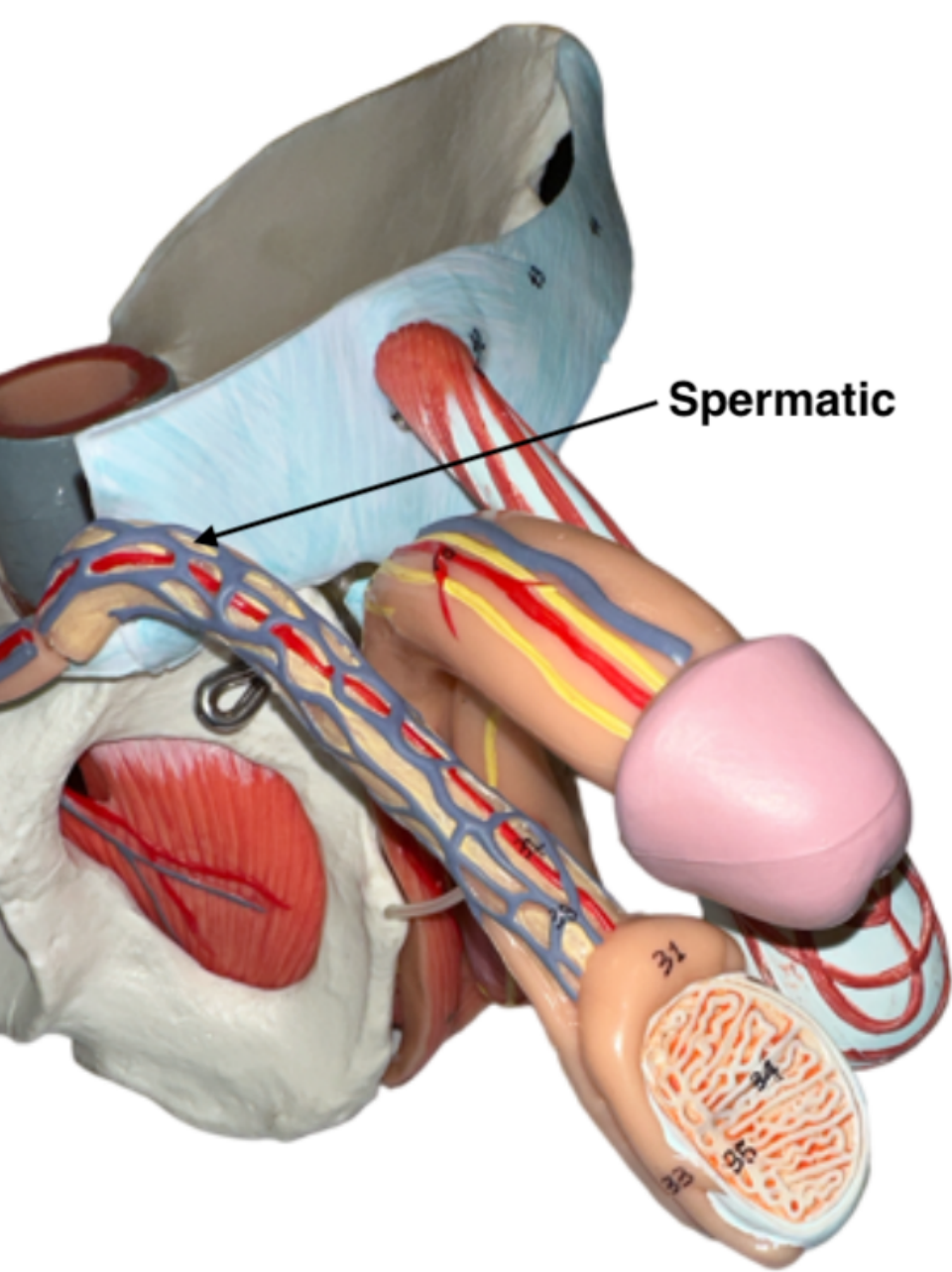
- Origin: Internal abdominal oblique muscle and inguinal ligament
- Insertion: Tunica vaginalis of testis
- Actions: Elevation and depression of the scrotum to regulate the temperature of the testes
- Nerve Supply: Genital branch of genitofemoral nerve

Cremaster Muscle

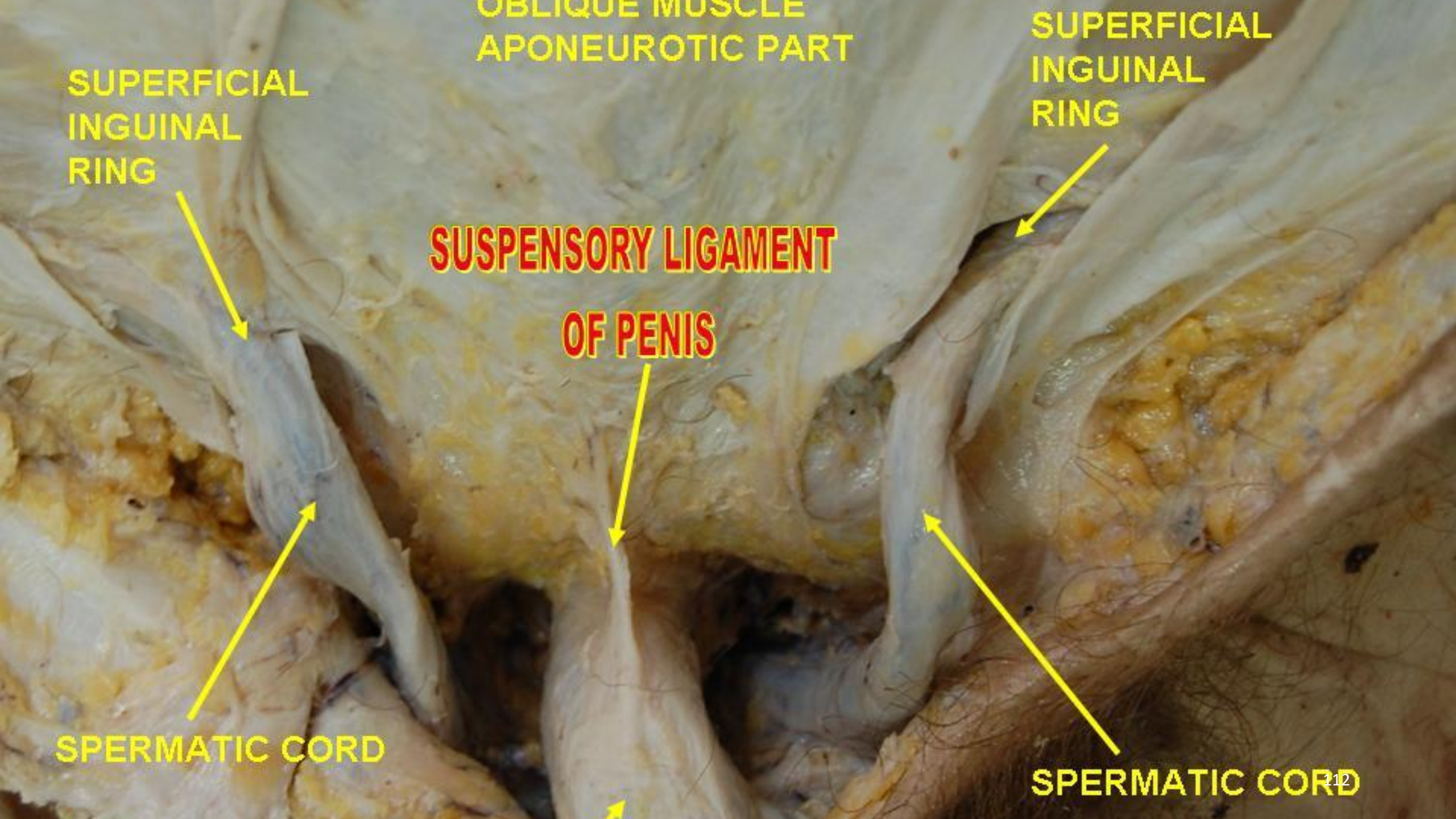
- Cremaster muscle function is to promote motility of sperm, move the testis up into the body if cold, and lower for cooling to keep temperature of sperm optimal.
- Cremaster contracts due to :
- Cold, touch, ANXIETY, FEAR and LAUGHTER.

Cremaster





Spermatic Cord



OBLIQUE MUSCLE
APONEUROTIC PART

SUPERFICIAL
INGUINAL
RING

SUPERFICIAL
INGUINAL
RING

SUSPENSORY LIGAMENT
OF PENIS

SPERMATIC CORD

SPERMATIC CORD

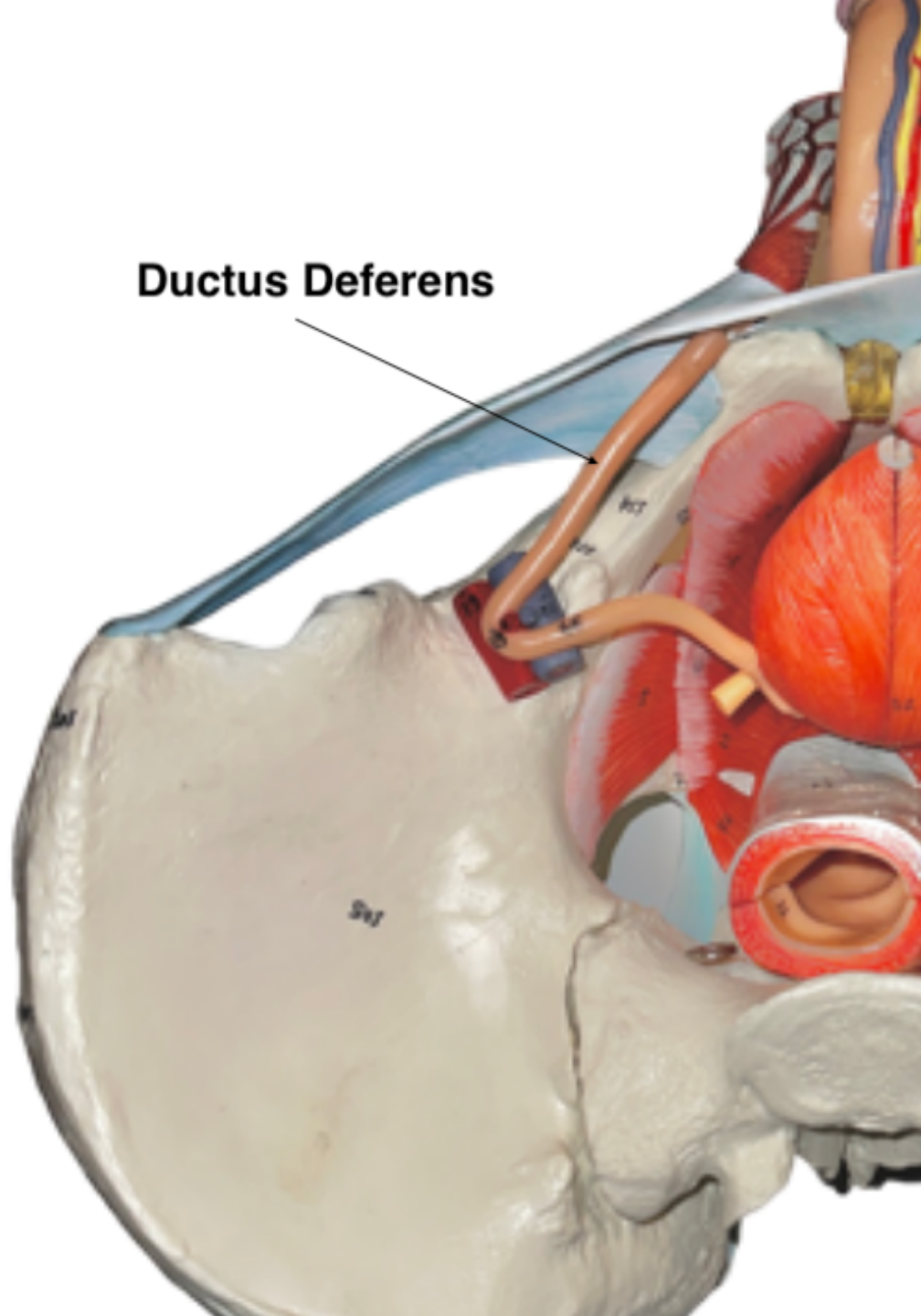
Spermatic cord

“The spermatic cord is a soft and round cable-like structure suspending the testis and epididymis, which originates from the deep inguinal ring, passing through the superficial inguinal ring, descending into the scrotum and ending in the posterior margin of the testicle.” Scrotoscopic Surgery, 2019.

It includes the fascial layers, cremaster muscle, ductus deferens, arterial and venous blood vessels, lymphatic vessels, and nerves for the testis.

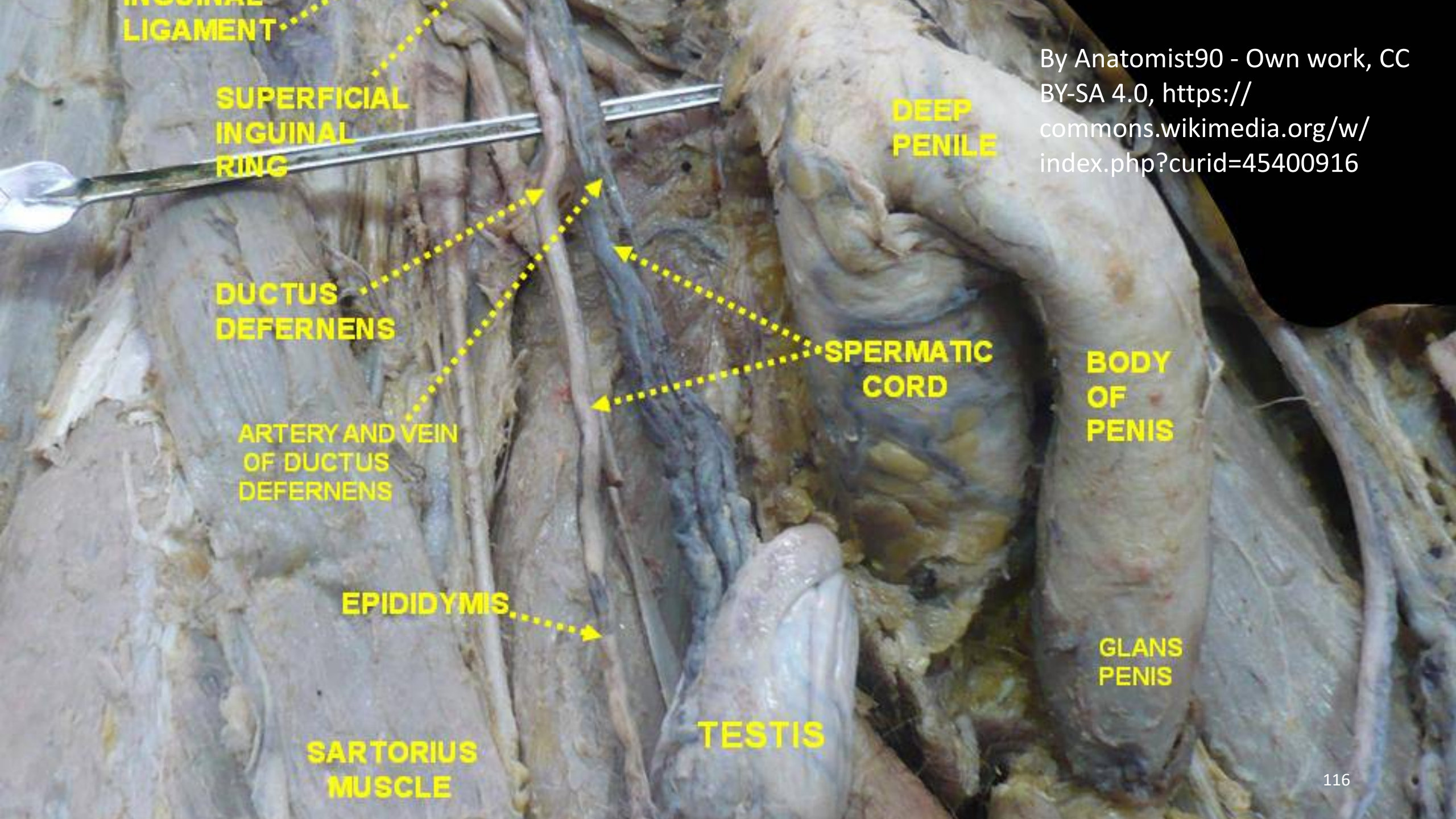
Ductus Deferens

- Location: Scrotum, spermatic cord, and pelvis. Arterial Supply: Artery to ductus deferens. Venous Drainage: Pelvic venous plexus. Innervation: Autonomic: Autonomic: Inferior hypogastric plexus. Lymphatic Drainage: External and internal iliac lymph nodes.
- **STRUCTURE:** The ductus deferens is a tube-like structure derived from the mesonephric duct. It is approximately 30 cm long and is lined by multiple layers of smooth muscle (Standring, 2016). There are four parts of the ductus deferens, including the scrotal, funicular, inguinal, and pelvic part.



Ductus deferens

- Travels through the superficial inguinal ring and into the spermatic cord
- Long muscular tube
- Runs from the epididymis into the pelvic cavity behind the bladder and connects to the urethra through the ejaculatory duct.
- Transports mature sperm to the urethra before ejaculation



By Anatomist90 - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=45400916>

INGUINAL LIGAMENT

SUPERFICIAL INGUINAL RING

DEEP PENILE

DUCTUS DEFERNENS

SPERMATIC CORD

BODY OF PENIS

ARTERY AND VEIN OF DUCTUS DEFERNENS

EPIDIDYMIS

GLANS PENIS

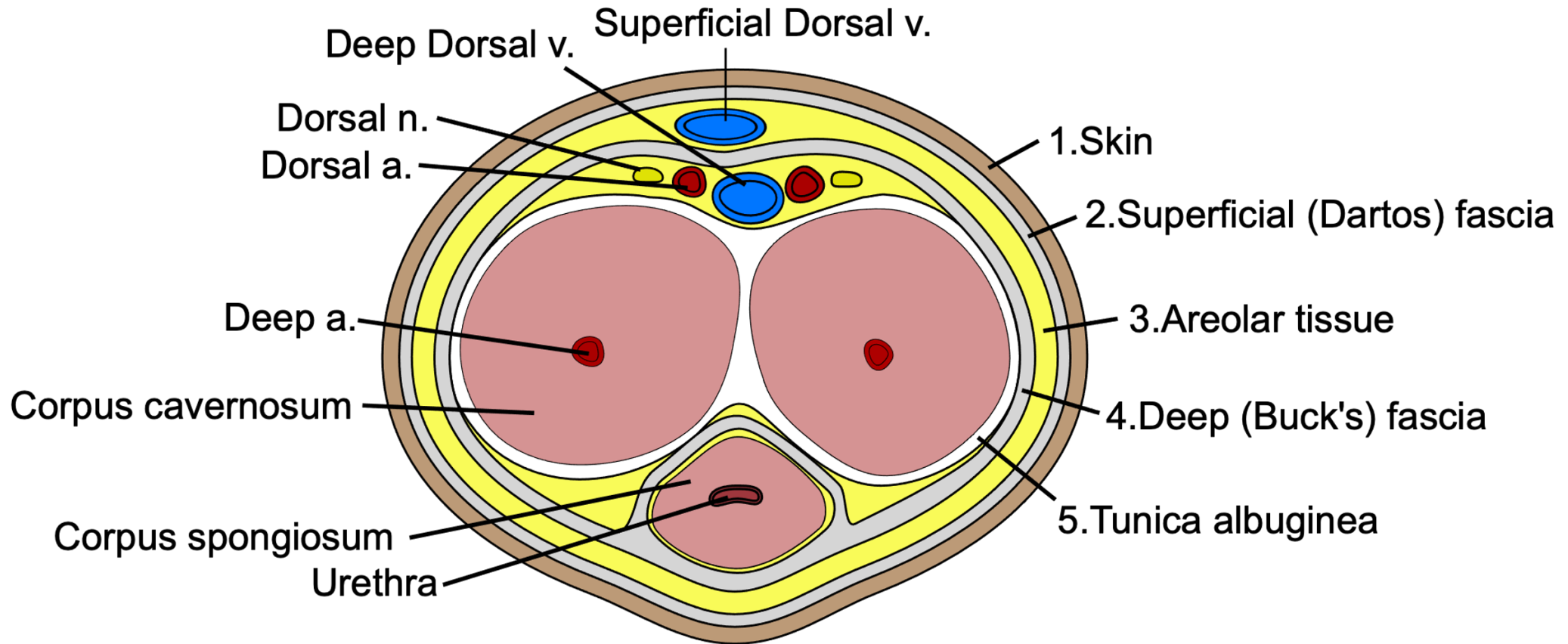
SARTORIUS MUSCLE

TESTIS

Tunica Albuginea

- The tunica albuginea is directly involved in maintaining an erection; that is due to [Buck's fascia](#) constricting the erection veins of the penis, preventing blood from leaving and thus sustaining the erect state
- Source: [https://en.wikipedia.org/wiki/Tunica_albuginea_\(penis\)](https://en.wikipedia.org/wiki/Tunica_albuginea_(penis))

Tunica Albuginea



Source: By Mcstrother - Template:Town, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=35171231>

Buck's Fascia

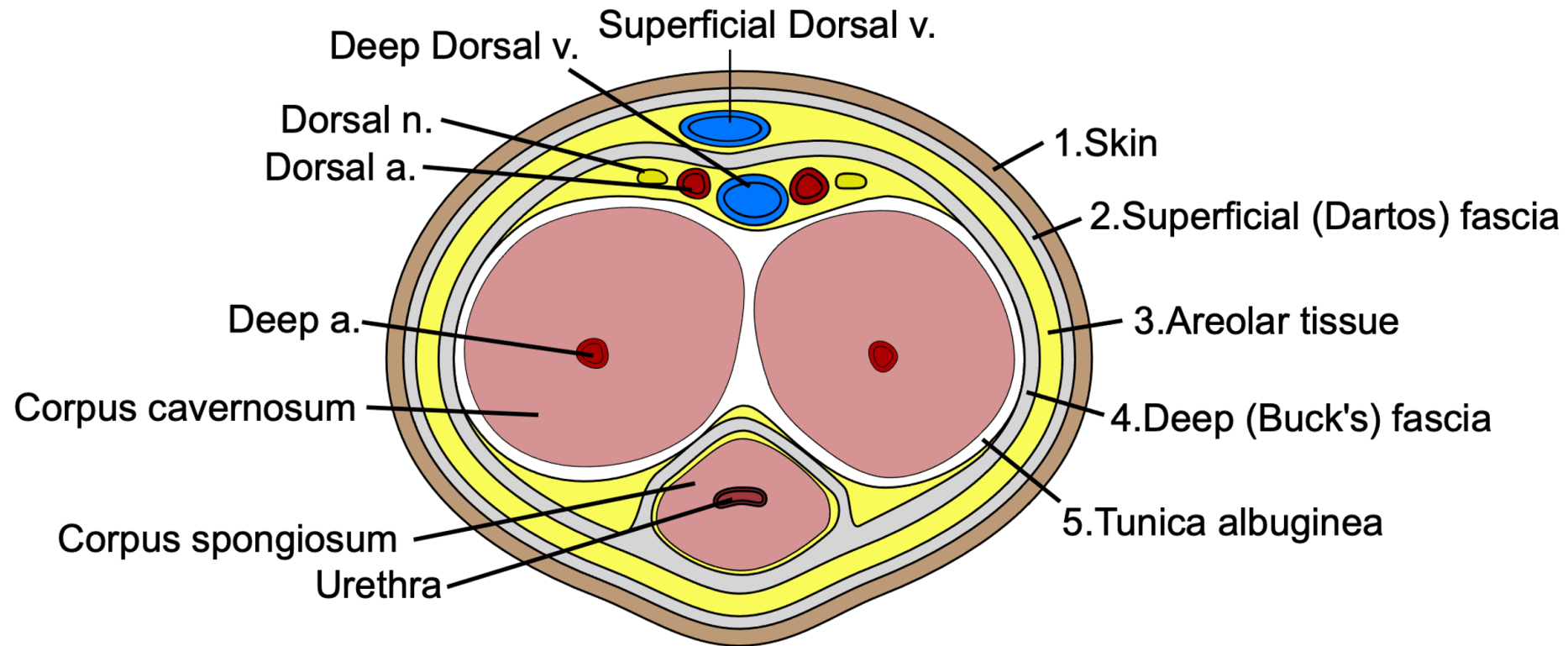
A man in a military uniform and cap is sitting in the driver's seat of a vehicle. He is looking towards the camera with a slight smile. The background shows a blurred landscape through the vehicle's windows.

Deep fascia of the penis covering the three erectile bodies of the penis.

It is CONTINUOUS with the SUSPENSORY LIGAMENT (SL attaches at the pubis) and the SPERMATIC FASCIA (the fascia around the spermatic cord and testes) and has a possible continual relationship with the DEEP PERINEAL FASCIA (bulbo, ischio and transverse perineum are all here and share fascia)

Buck's Fascia

Source: By Mcstrother - Template:Town, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=35171231>



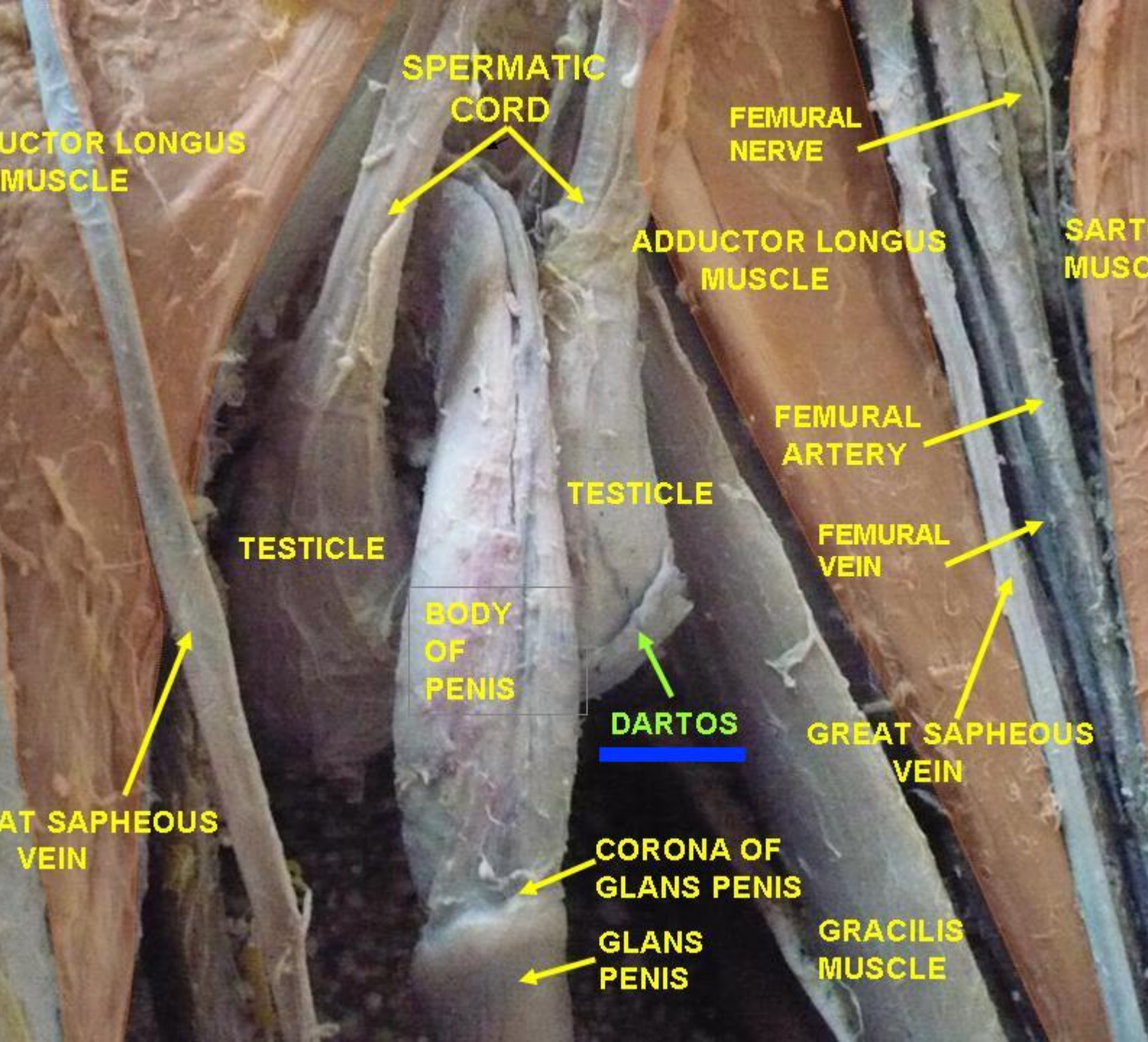
Dartos Fascia

A layer of connective tissue found in the penile shaft, foreskin, scrotum and labia.

Dartos Fascia

FUNCTION

- The dartos fascia of scrotum is responsible for temperature control in the testes. The contraction of the smooth muscle brings the scrotum and testes closer to the body (increasing temperature). Relaxation of the muscle allows the scrotum and testes to move further from the body (decreasing temperature).



Dartos Fascia

Covers spermatic cord & scrotum

Source: By Anatomist90 - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=19475126>

Dartos Fascia

- The dartos fascia of scrotum is a motile sheath of fibrous connective tissue that is continuous with the superficial fascia of the penis. It contains smooth muscle, which is responsible for giving the scrotum a wrinkled appearance.

ANATOMICAL RELATIONS

- The dartos fascia of the scrotum lies superficial to the external spermatic fascia of the scrotum.

Dartos Fascia & Cremaster Muscle

Dartos fascia: Scrotal part of the fascia that acts to help regulate the temperature in the testicles which promotes spermatogenesis.

Contraction of the cremaster muscle moves the testes closer to the body so that it can absorb heat from the body. - Contraction of the dartos muscle keeps the scrotum tight to reduce heat loss. - The above actions get reversed when the temperature becomes warm.

Needling practice

- Bulbospongiosus
- Ischiocavernosus
- Fascia
- Spermatic cord

Penile Pain

Causes may include:

- Peyronie's
- Priapism
- Infections of the foreskin/DERM
- Injuries (msk, nerve, pharm)
- STIs/UTIs (abacterial prostatitis)

Symptoms that may occur

- Burning
- Nerve
- Stabbing
- Throbbing
- Discoloration
- Discharge
- Sores
- Swelling
- Pain with erection,
- Pain with urination
- Pain with ejaculation



Common treatments

Steroids

Antibiotics

Antivirals

Antifungals

TCA's/SSRI's

Paxil and Prozac

Icing/NSAIDS

Physical

Therapy (pelvic
floor)

Meditation

Breath work

PF ACU

PEYRONIES

Usually starts from an “insult/ injury” to the penis, causing adhesions/plaque/scar tissue to form under the skin, causing the penis to BEND with erection resulting in pain.

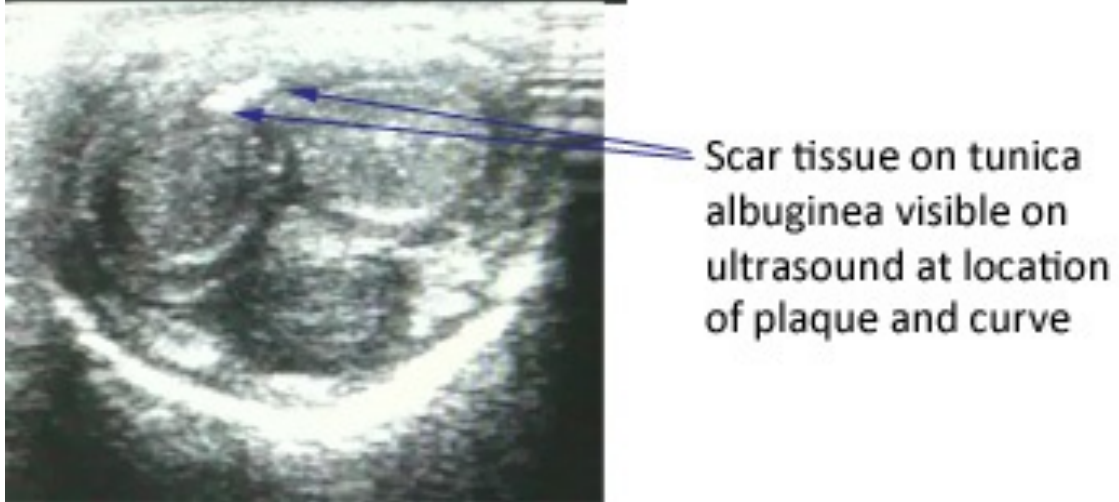
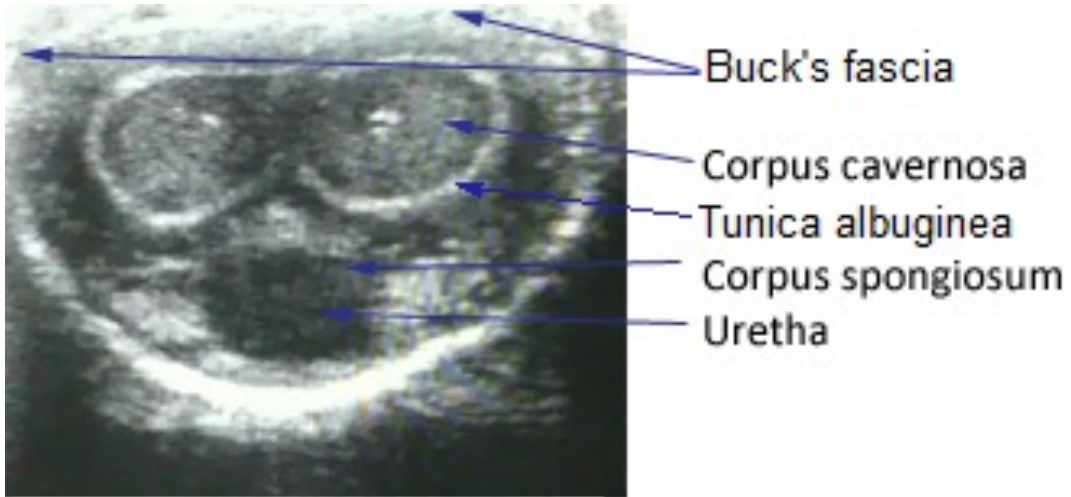
Peyronie’s can also be of unknown etiology, OR hereditary.

Causes: Accidents, sports, vigorous sex, traumatic sexual assault on penis



By SugarMaple - Own work, CC BY-SA 3.0,
<https://commons.wikimedia.org/w/index.php?curid=17128004>

Scar Tissue & Plaque



- Source: By SugarMaple - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=17128004>

Corpus cavernosum calcification



By Article authors: Maitê Aline Vieira Fernandes, Luis Ronan Marquez, Ferreira de Souza and Luciano Pousa Cartafina3 - (2018). "Ultrasound evaluation of the penis". Radiologia Brasileira 51 (4): 257–261. DOI:10.1590/0100-3984.2016.0152. ISSN 1678-7099. CC-BY license, CC BY 4.0, <https://commons.wikimedia.org/w/index.php?curid=77309497>

1 cm



Treatment for Peyronie's

- NSAIDS
- Pentoxifylline (combination of vitamin E and colchicine, or carnitine to reduce scarring.)
- Injections directly in to scar tissue (interferon, collagenase)

Acupuncture Treatment for Peyronie's

WITH or WITHOUT ERECTION: manual releases

You must locate area of plaque

Adductors, pectineus

BULBO/ISCHIO

REC ABS/OBLIQUES at Symphysis PUBIS

Electroacupuncture

PERINEUM TOPICALS: **ARNICA GEL MASSAGED AND TRACTIONED INTO PENIS
(PATIENT'S HOMEWORK)**

Other treatments for Peyronie's

- Diaphragmatic breathing
- Exercise
- Home stretching
- Hot baths
- Self massage

TCM: BLOOD MOVERS/QI MOVERS/
CONSTITUTIONAL diagnosis

Priapism

- Ischemic
- Pelvic tumors, pelvic infections, drug use, spinal cord trauma, genital trauma Hemoglobinopathies, sickle cell, thalassemia and hypercoagulation affecting the arterial flow and venous drainage. THIS WILL RESULT IN TISSUE DEATH.

- MEDICAL EMERGENCY
- SHUNT SURGERY

Priapism

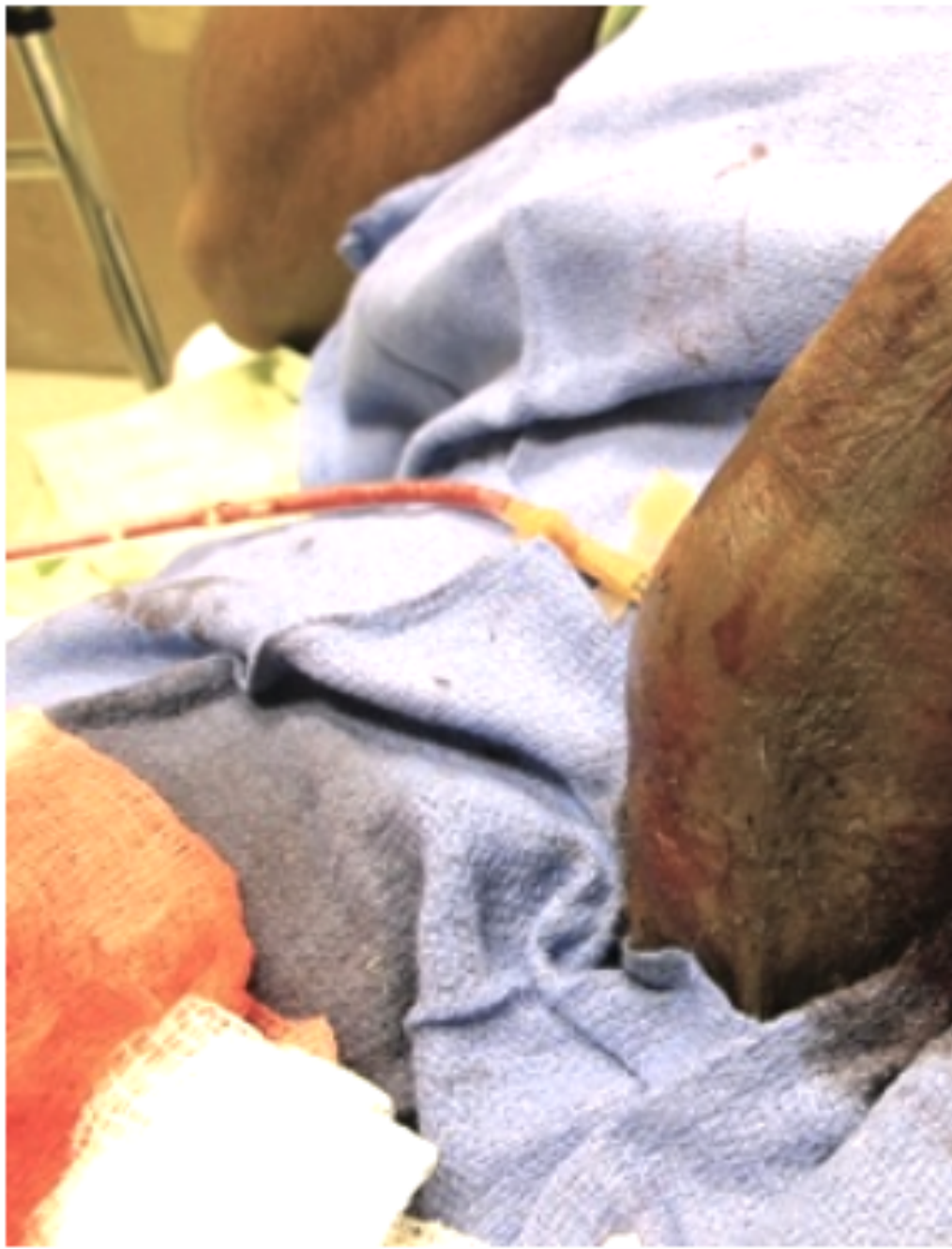
- Non-Ischemic
- Blood will not drain from the penis, unknown causes, pharm induced, trauma to genitals and/or perineum
- **MEDICAL EMERGENCY**

Priapism

- IMMEDIATE treatment until ER: ICE PACKS or COLD SHOWER until

- WARNING SURGICAL PHOTO**





Priapism

Priapism in your clinic

Not very common, does require immediate medical intervention

TCM: BLOOD MOVERS, QI MOVERS check for CONTRAINDICATIONS

ACU: FASCIA around BASE OF PENIS, PERINEUM, TP, LA, ADductors, Sacral plexus, electro, OI, ABductors, rectus abs and pyramidalis

AT HOME: SELF MASSAGE, exercise, stretching, Diaphragmatic breathing

Priapism Common Pain Complaints

Pain at the TIP of the Penis

(nerve, MSK injuries or overuse, dermatological issues, glands, infections like STI's and UTIs)

STI's to consider AND RULE OUT:
Chlamydia, Gonorrhea, Genital Herpes,
Syphilis

Priapism

- STI's/UTI's
- These people that you see in clinic, have already been diagnosed and you usually treat them for side effects of the medications etc.
- MOST COMMON: NON UTI's: ABACTERIAL PROSTATITIS**

Priapism

- What does that look like?
- Typical patient presents to PCP for burning in the urethra/tip of penis.
- Cultures may or may not be positive, either way, patient is put on several weeks (at least 4-6 weeks) of antibiotics/antifungals
- After the course is complete, they still have the SAME SYMPTOMS.
Now what?

Priapism

- I see this ALL OF THE TIME in clinic.
- Intervention here is: PF PT and you.
- These patients get better/completely better with your help.
- TCM: ZANG FU diagnosis, stealth pathogen treatments, VIT C, echinacea, St. Johns Wort
- Multi vitamin, managing STRESS, meditation, etc.

Dermatological Issues

Just want to add here also, you will likely see
DERMATOLOGICAL ISSUES

We treat the surrounding areas.

BALANITIS foreskin infection, glans penis,
dermatitis allergy to perfumed soaps, creams,
STI's, yeast

TYSON'S GLAND: Sebaceous glands located
around the corona of the penile body. They aid
in production of lubricant.

FORDYCE SPOTS

Visible sebaceous glands throughout the shaft of the penis

May occur on vermillion border of labia

Normal variants do not require medical treatment.

Folliculitis

Scabies

Cancer



Hard Flaccid Syndrome

HARD FLACCID SYNDROME is characterized by a semi-rigid penis in a flaccid state. This too can be a symptom of PGAD/S

Possible causes: Excessive masturbation, rough sexual trauma, intense prolonged exercising, penile trauma, pelvic floor trauma, coccyx trauma, STRESS

Hard Flaccid Syndrome

Patients report feeling temperature changes in the penis as well as numbness.

They may also say the penis feels different (like a plastic or rubbery sensation)

May also experience: DECREASED SENSITIVITY, Weak urine stream, painful erections and with pain ejaculation. PERINEAL PAIN.

HFS can cause pelvic floor spasms and vice versa, so you must address entire pelvic girdle.

Hard Flaccid Syndrome

This is a relatively new diagnosis in the medical world, but I have seen it surprisingly enough in clinic to say that I think it is more common than what it is reported.

YOU MUST MANAGE ANXIETY and STRESS here. These patients are very distressed and like most of your pelvic floor patients, they need to be seen by pelvic floor PTs

Other Western Interventions

- Focused shockwave therapy
- Anti-anxiety meds, SSRIs, Gabapentin
- TCAs, wands
- Psychotherapists (to help with stress and relationships)
- Meditation
- Stretching
- You must help them learn to manage their expectations (very typical personality type here)

What they need: A multi-modality approach

- DOWN-REGULATE their poor nervous systems: Diaphragmatic breathing, meditation, yoga, rest
- Exercises that wont cause spasms in PF like walking, swimming, stretching journaling, podcasts on relaxation techniques, talk-therapy.
- St. Johns Wort, Chamomile (have them make teas that they drink throughout the day) other anti-anxiety approaches, warm baths before bed, and stop googling!
- You will hear this throughout my presentation as it applies to other conditions

What does your treatment look like?

Acupuncture is one of the best treatment options based on your diagnosis.

Areas to work on: Perineum, transverse perineal, Levator ani, fascia including around coccyx, ACL, adductors; everything that anchors at the pubis.

Trigger Points

Electroacupuncture

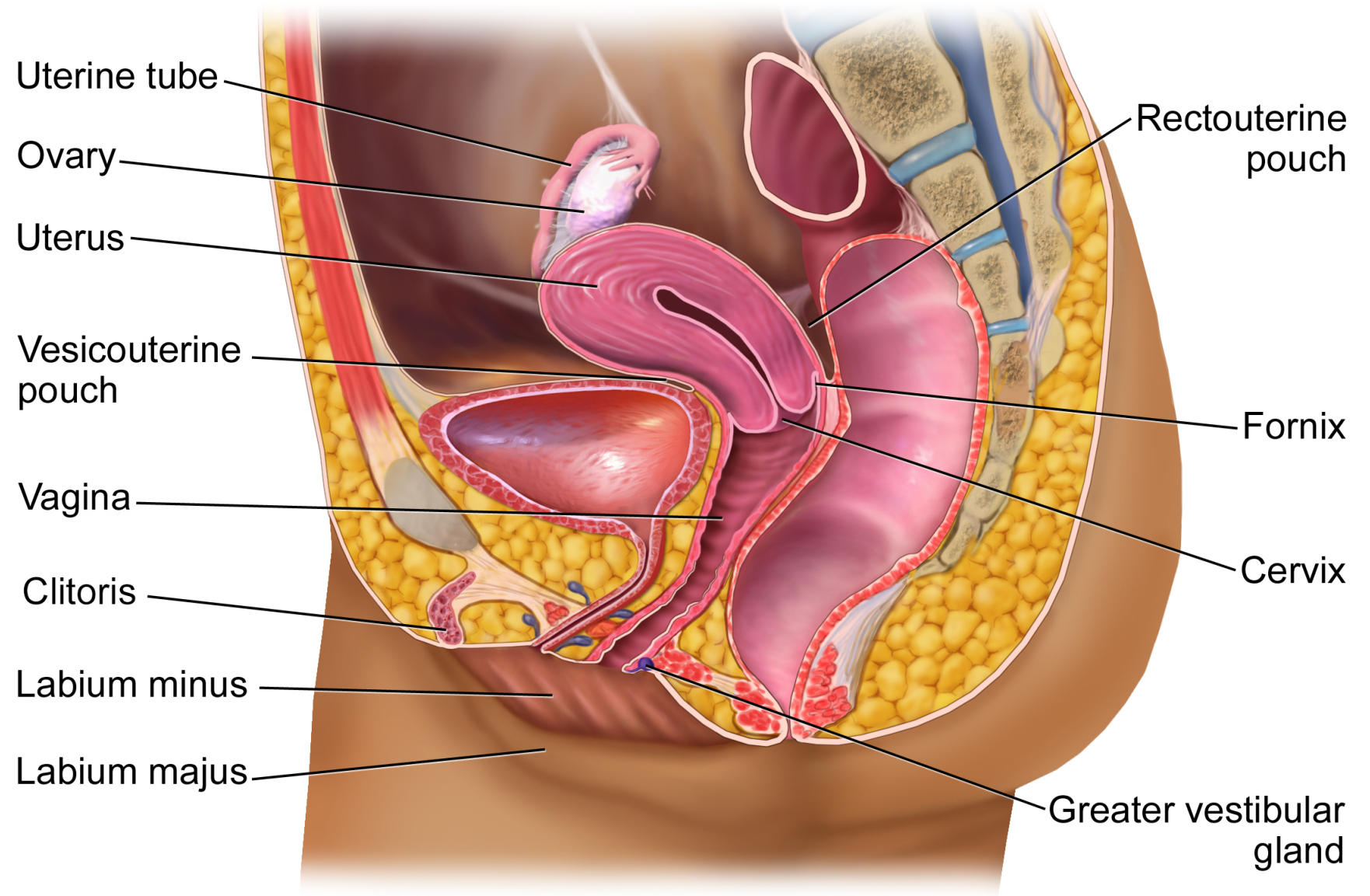
Needling Practice

- Bulbospongiosus
- Ischiocavernosus
- Fascia
- Refer to slide 126, 116, 117

ANATOMY REVIEW PART 2

- Female Reproductive Anatomy
- Muscles
- Labia

Basic Reproductive Anatomy



By BruceBlas. When using this image in external sources it ca cited as:Blausen.com staff (2014). "Medical gallery of Bl Medical 2014" . WikiJournal of Medicine 1 (2). DOI:10.1! wjm/2014.010. ISSN 2002-4436. - Own work, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=29600451>

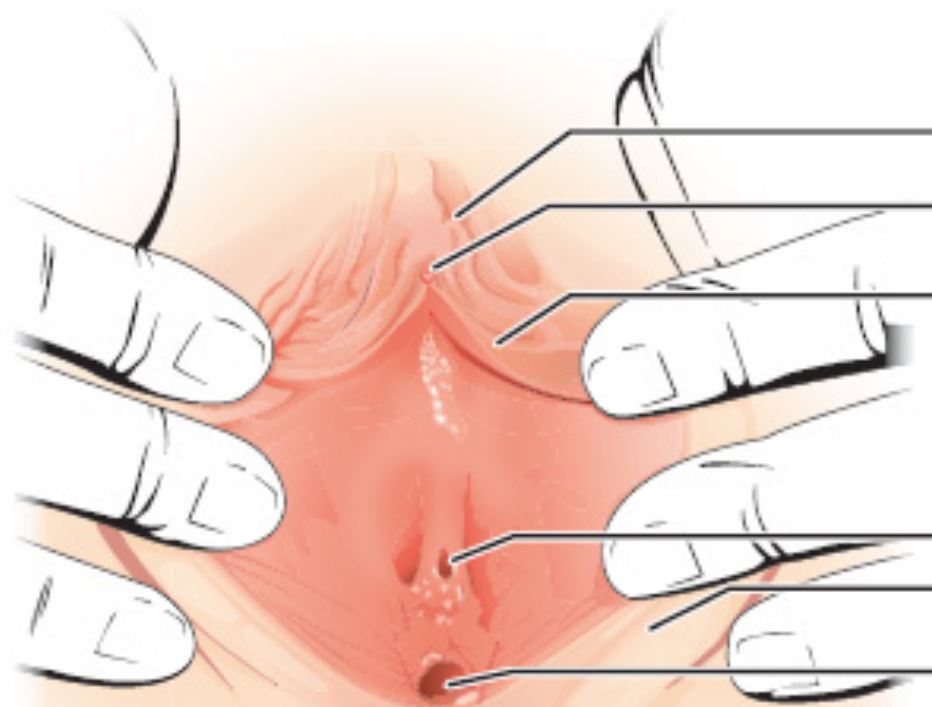
The Female Reproductive System



Sagittal MRI

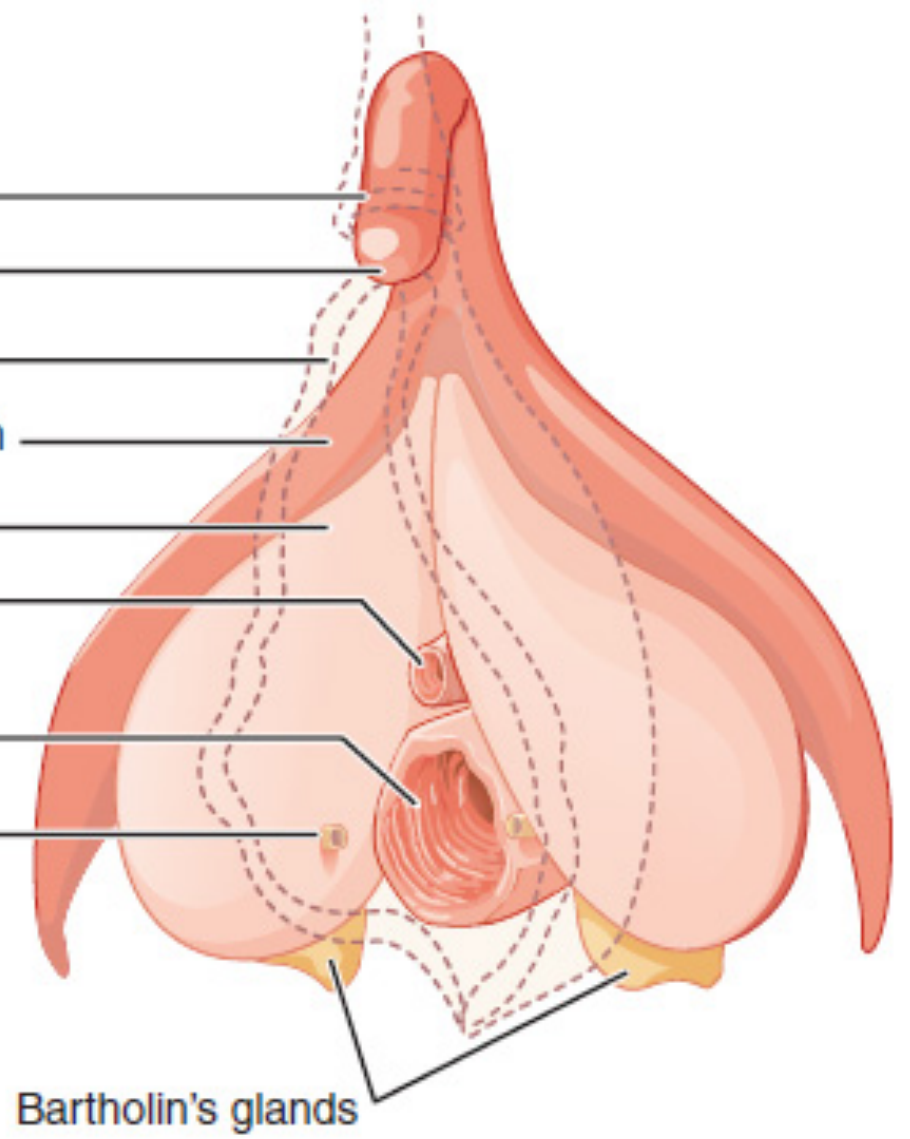
- Label the anatomy
- Source: By © Nevit Dilmen, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=18879657>

Vulva



Vulva: External anterior view

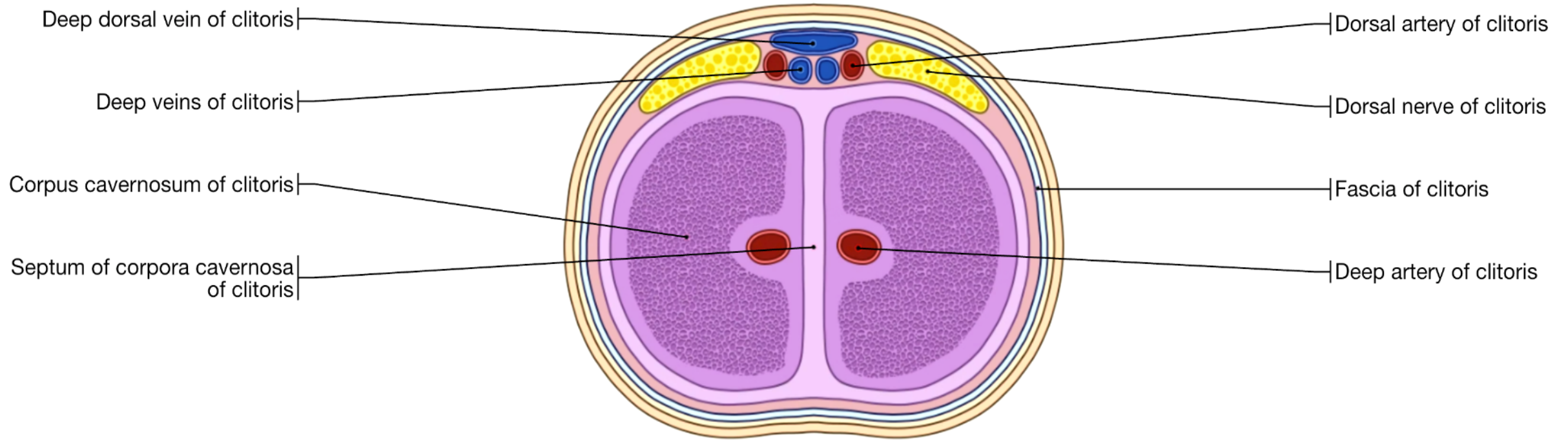
- Prepuce
- Glans clitoris
- Labia minora
- Corpus cavernosum
- Bulb of vestibule
- Urethral opening
- Labia majora
- Vaginal opening
- Opening of right Bartholin's gland



Bartholin's glands

Vulva: Internal anteriolateral view

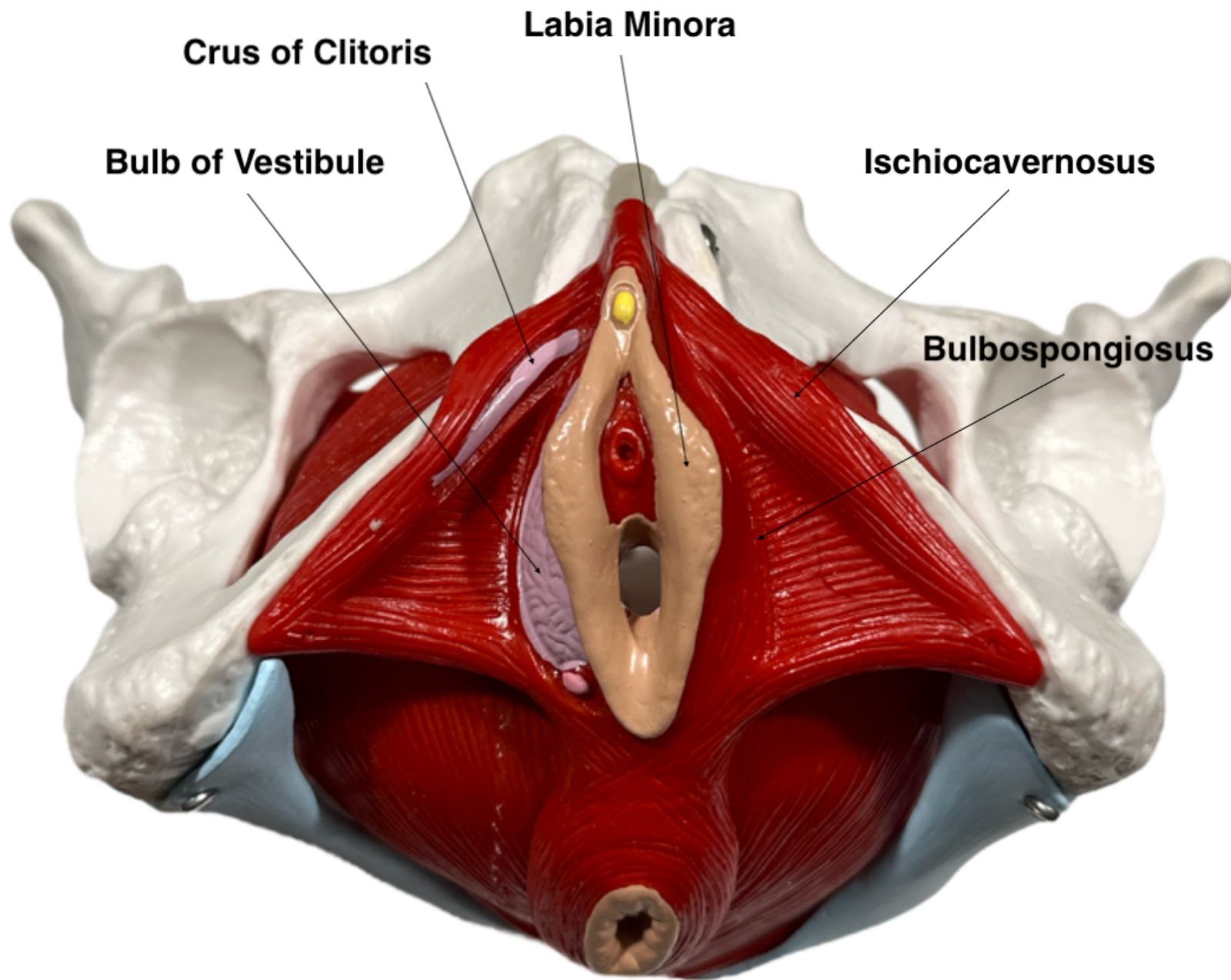
Cross Section of Clitoris

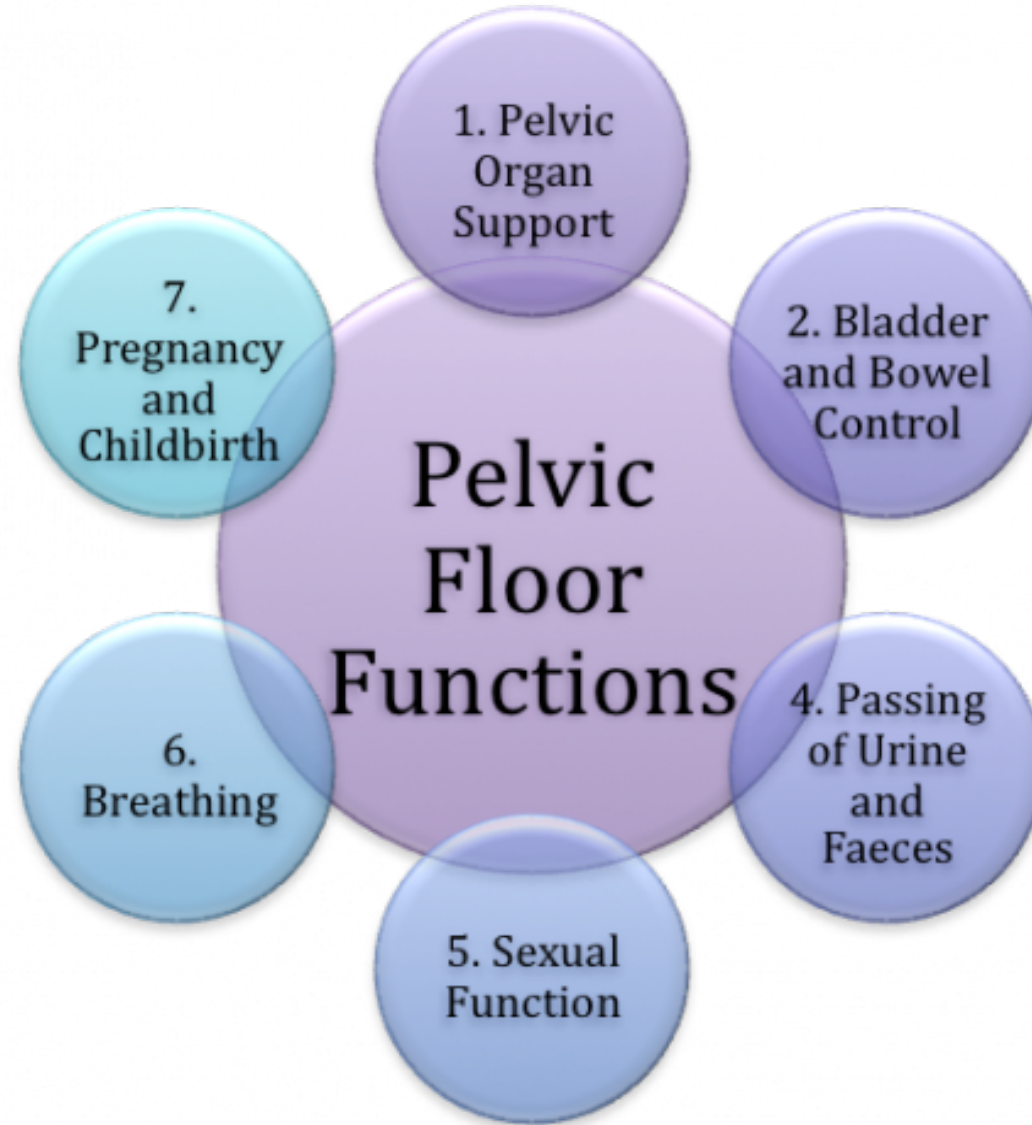


Labia Minora

- Labia minora protects the vaginal introitus, clitoris and urethra. The inner most set of labial folds.
- Histologically comprised of dense connective tissue (erectile and elastic fibers as well).

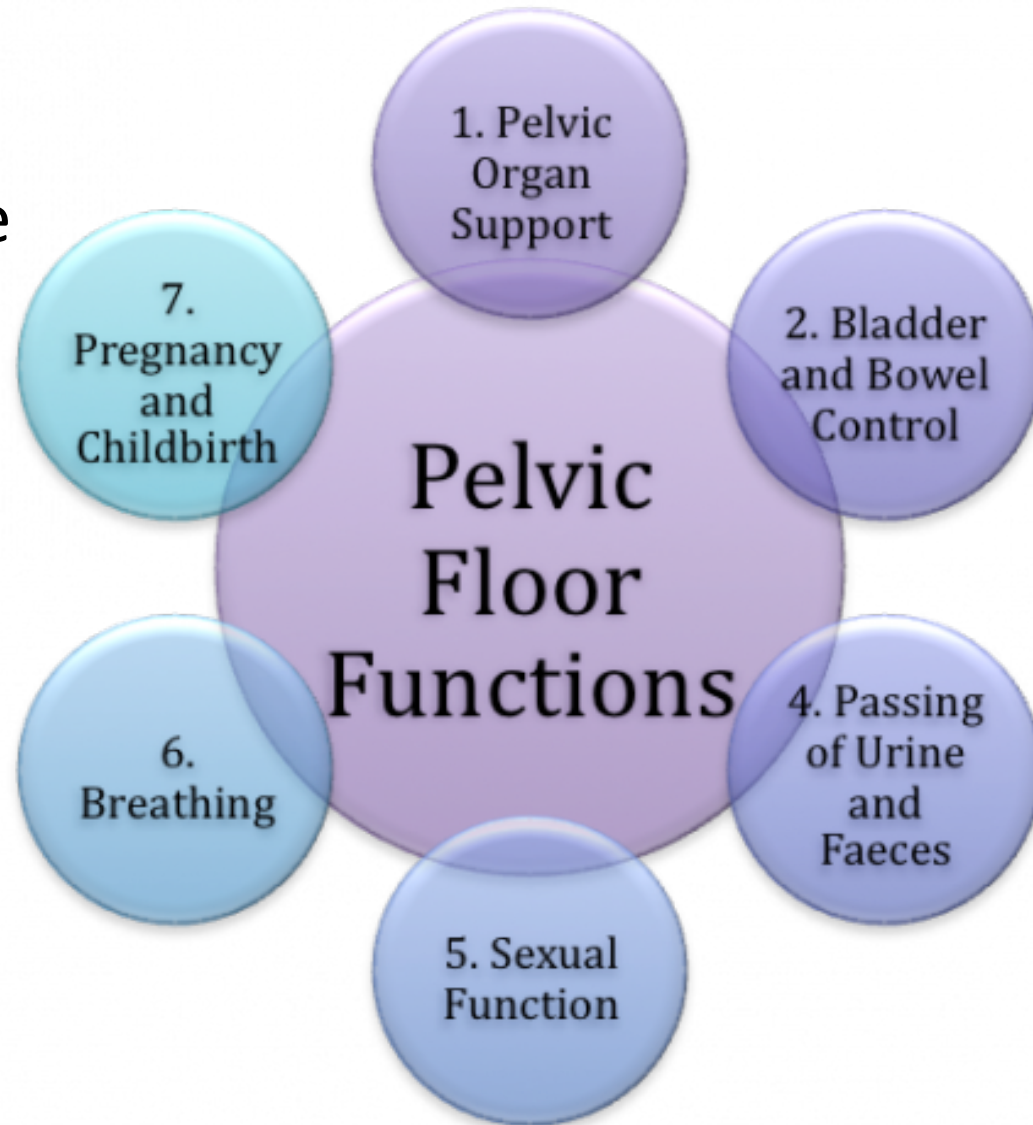
-





Just a quick note, you can see here
How some of these bubbles can
Relate to individual medical
specialties, including:

1. Urology
2. Gastroenterology
3. Gynecology
4. Obstetrics

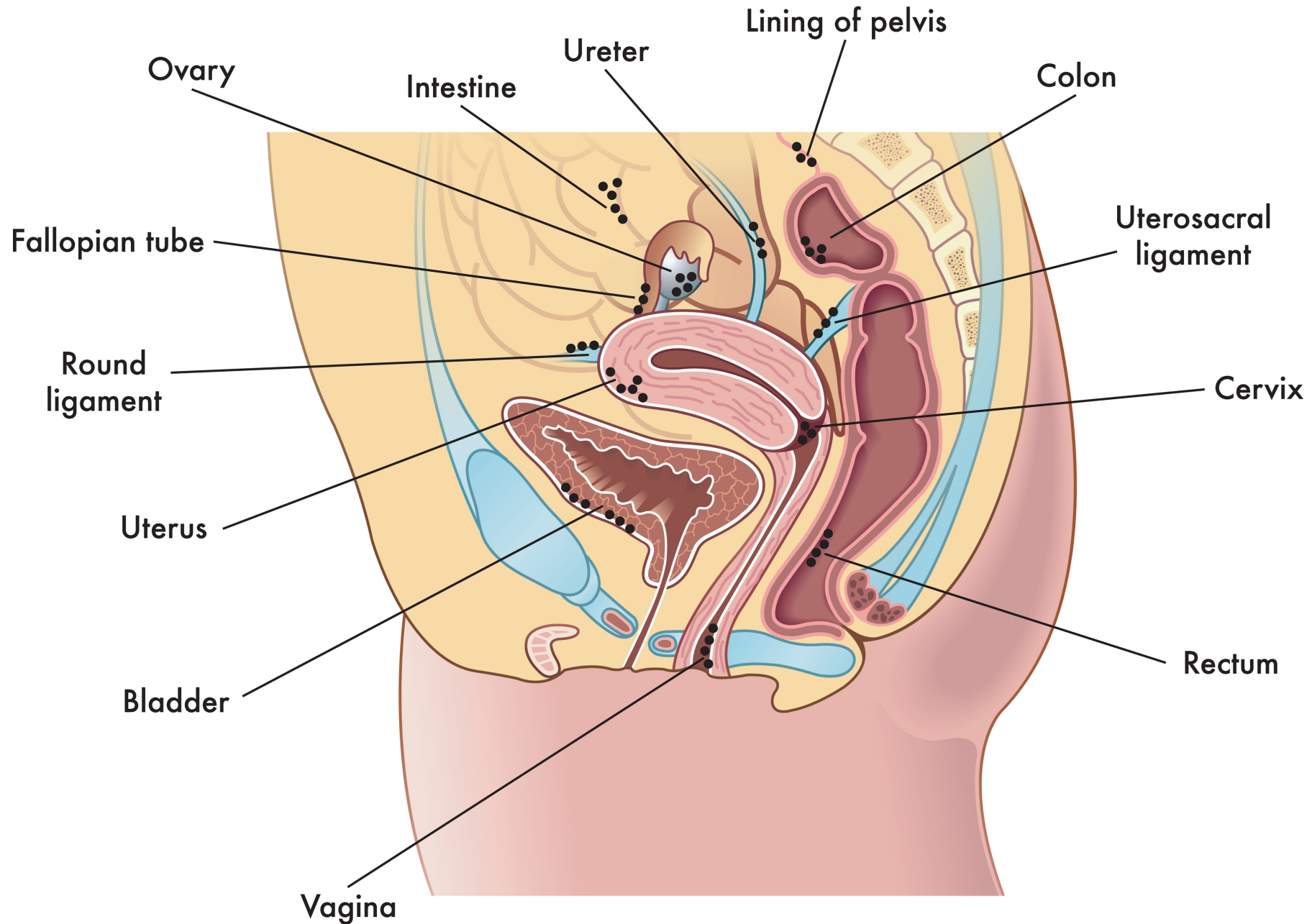


ENDOMETRIOSIS

Presence of endometrial glands or stroma outside of the endometrial cavity.

It has a wide spectrum of presentations ranging from disease found during laparoscopy, to extensive MALIGNANT disease that can spread outside of the pelvis and into the abdominal cavity.

Possible Sites of Endometriosis



Endometriosis

- Affects up to ~ 5% of reproductive age patients. Peaking between 25-35 years old.
- Pain can be managed via pharmacological inhibition of ovulation and menstruation, lesions however are not eradicated; surgery is associated with pain relief, but its temporary in nature, and patient will likely require future surgeries.
- ALSO if TTC, surgery increases chances.

Endometriosis

- Classic presentations are adrenal masses, infertility and pelvic pain.
- Up to 70% of endo patients have some type of pain syndrome or other.
- ETIOLOGY: we need to consider genetic and environmental possibilities but it is still poorly understood.

Endometriosis

- Plausible etiological hypotheses:
 - Retrograde menstruation (although 90% of menstruating individuals with/without have had this at some point or another)
 - Imagine menstrual blood flowing through the fallopian tubes back into the abdominal cavity
 - Immune system disorders: The patient's immune system doesn't recognize its own body's cells growing unchecked outside of the uterus.

Endometriosis

- Surgical scars: The endometrial cells attach to surgical incisions.
 - So, if you have the surgery, aren't you possibly setting up for the development of more scars?
- Embryonic cell transformation: Estrogen may transform embryonic cells into endometrial cells
- Endometrial cell transport through lymph and blood

Endometriosis

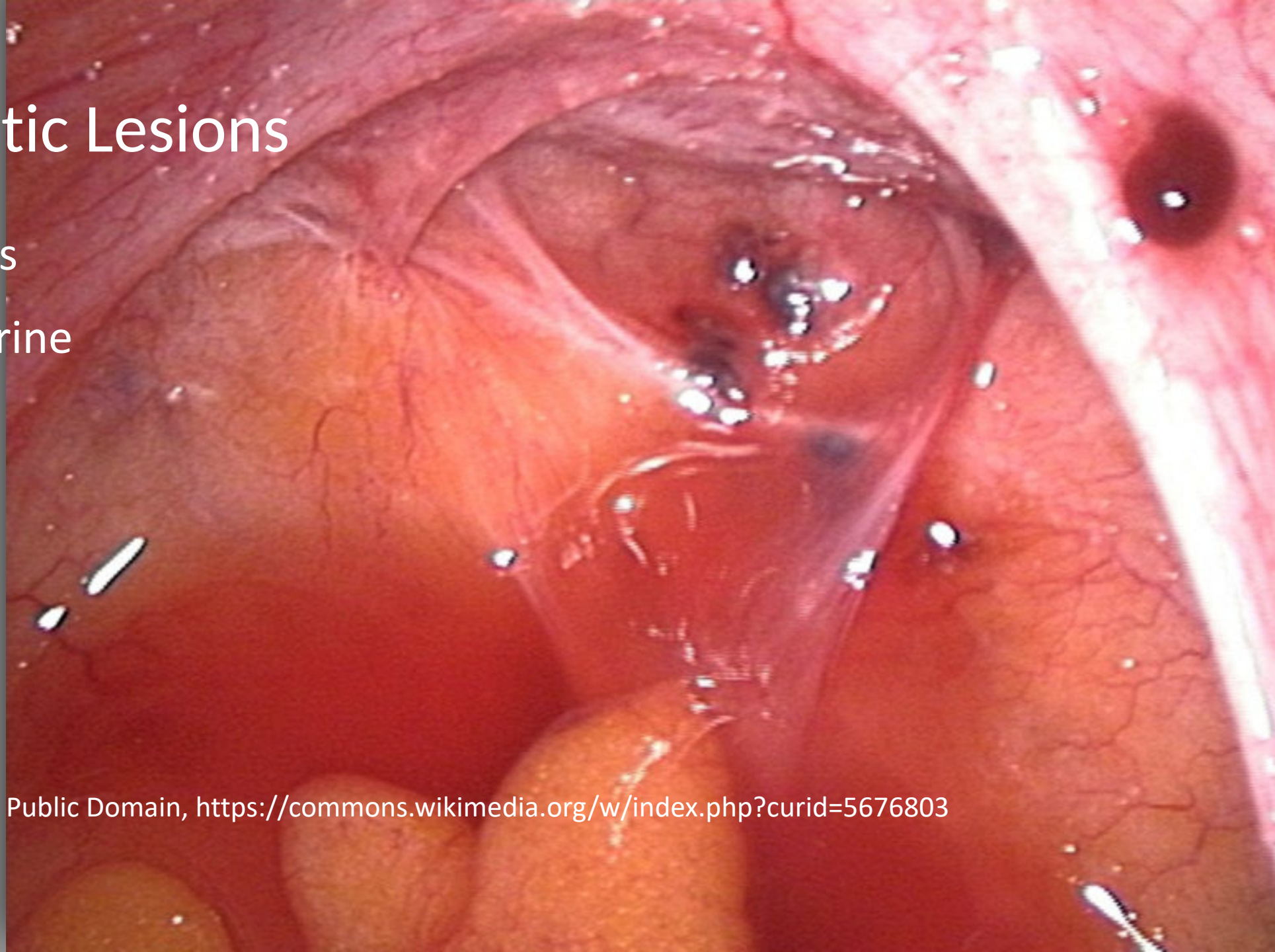
- The most common locations for peritoneal endometriosis is the uterosacral ligament, ovaries, and the vesico-uterine fold.
- We also will see endometrial lesions in the GUT, abdomen and vagina, bladder, ureters, kidney and urethra.
- But it can concur throughout the body.

Endometriosis

- COMMON SYMPTOMS: DYSMENORHEA, dyspareunia, pain with bowel movements and urination, heavy menses or bleeding in between cycles, GI issues
- The pain can progress from cyclical to constant/chronic

Endometriotic Lesions

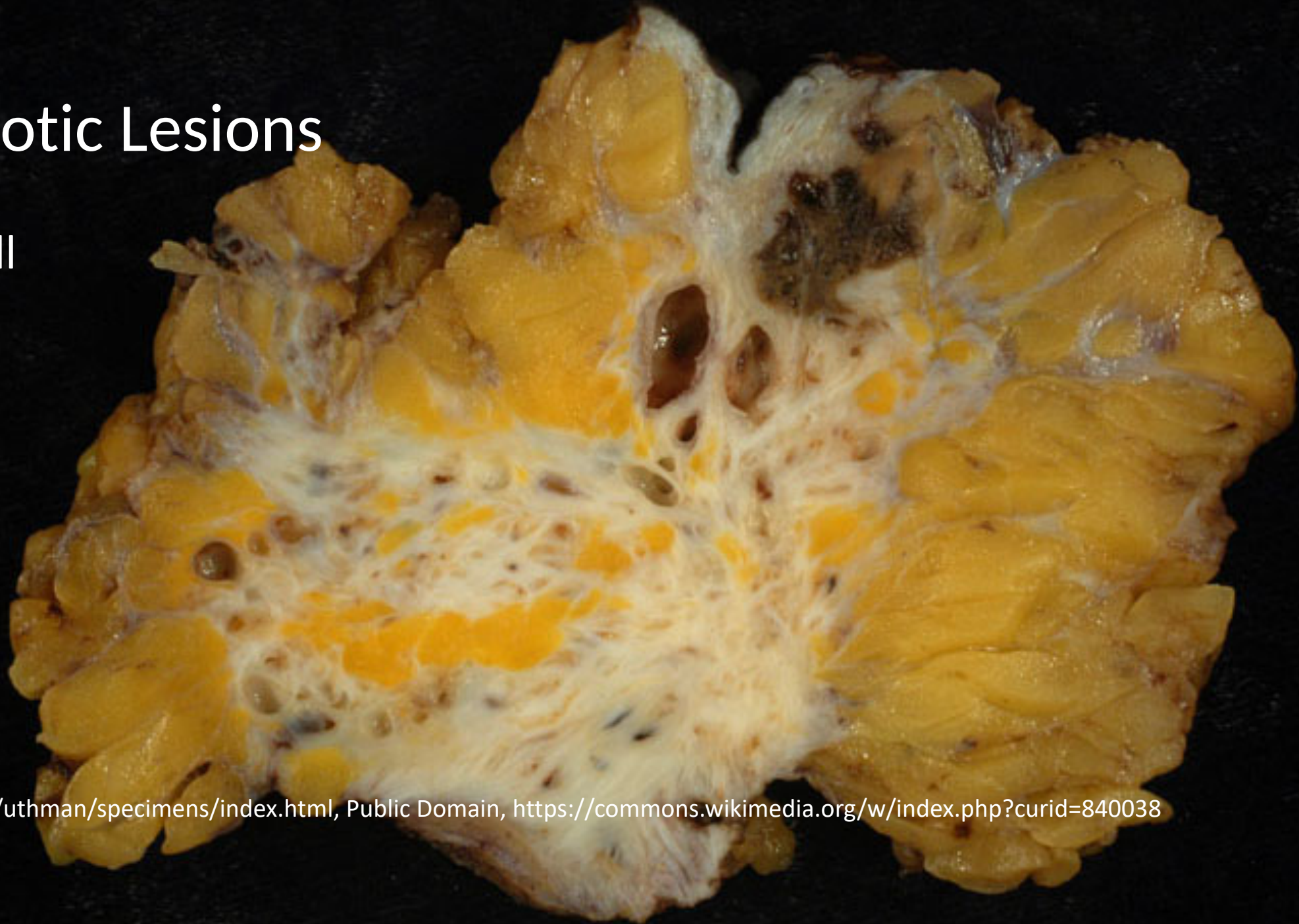
Pouch of Douglas
& right sacrouterine
Ligament



By Hic et nunc - Own work, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=5676803>

Endometriotic Lesions

Abdominal wall



By <http://web2.airmail.net/uthman/specimens/index.html>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=840038>

Endometriosis Risk Factors

- Age of menarche (early onset)
- Shortened menstrual cycle
- Higher estrogen level
- Genetics (mother, sister, aunts)
- No pregnancies

Endometriosis Treatments

- TCM pattern diagnosis for herbal medicine (blood/qi movers as well)
- Trigger points in surrounding areas (mainly abdominal region)
- Electroacupuncture
- Stress reduction
- Clean diet
- Heat therapy (moxa, infrared, saunas, hot baths, moist heat)
- Meditation
- Arvigo therapy
- Craniosacral therapy etc.

Endometriosis Herbal Medicine

Treatments here are truly individualized and worked into fitting the needs of each of your patients.

- TCM formulas are very helpful here:
- Gui Zhi Fu Ling Wan
- Tao Hong Si Wu Tang
- Xue Fu Zhu Yu Tang/Shao Fu Zhu Yu Tang
- YOU MUST MOVE here.

Chronic Pelvic Pain Syndrome (CPPS)

- Pain in the pelvic region, varying greatly in intensity from person to person, and can be constant or intermittent and can be caused by many things from stones to inflammation, bowel changes to bladder issues
- CPPS will easily spread if left untreated to areas such as glutes, lower back, upper hamstrings, upper quads, and adductors to the abdomen

CPPS

Symptoms of CPPS include genital pain, pain while sitting (varicosities in pelvic floor and viscera) pain with and after coitus, pain with urination and defecation also abdominal pain.



CPPS – Who is at risk?

- Hip impingement/labral tears
- IC/BPS
- STI'S/UTI'S
- Prostatitis/infections
- Postpartum
- Hernia
- Prolapse
- Rectus Diastasis
- Cysts/tumors/cancer
- ED/HFS
- TRAUMA/scars

CPPS treatments

- TCM: Pattern diagnosis
 - You see a lot of stagnation and damp here (I'll explain physically as well)
 - You really DO need to move qi/blood stagnation and drain damp here
 - Areas of consideration: 4 doors, ren channel
 - Rec Abs, Obliques, perineum
 - TA, hip flexors, quads, ELECTRO
 - PF PT, Arvigo, osteopathic visceral manipulations

CPPS

- If you think about it like this: (I realized this on my own in a bout of insomnia)
- DU 20 is the top of the corporeal capsule, and Ren 1 is the bottom
- As the roller coaster inches its way up the mountain (Du channel), it barrels down the Ren channel(gravity and subsequently TIME is faster on the summit of the mountain Du20,and with gravity, Ren 1 it is slower, these are the forces that are working in our microcosm and the Theory of Relativity) So we see the slowness and bogginess here of the Ren, and need that forward momentum to propel it appropriately and with ease up the mountain once again, completing the cycle.

CPPS

- This is why you need to move it. Keep it vital
- Most patients get much better with dynamic treatments, and multimodal therapies with CPPS.
- Manage their expectations here, it can be a slow process.

Persistent Genital Arousal Disorder

- PGAD As the name implies, it is a painful syndrome where the genitals are in a persistent state of arousal/erection.
- This is a rare disorder, and I have seen it in men and women.
- We treat this the same as we would a hypertonic pelvic floor.

-

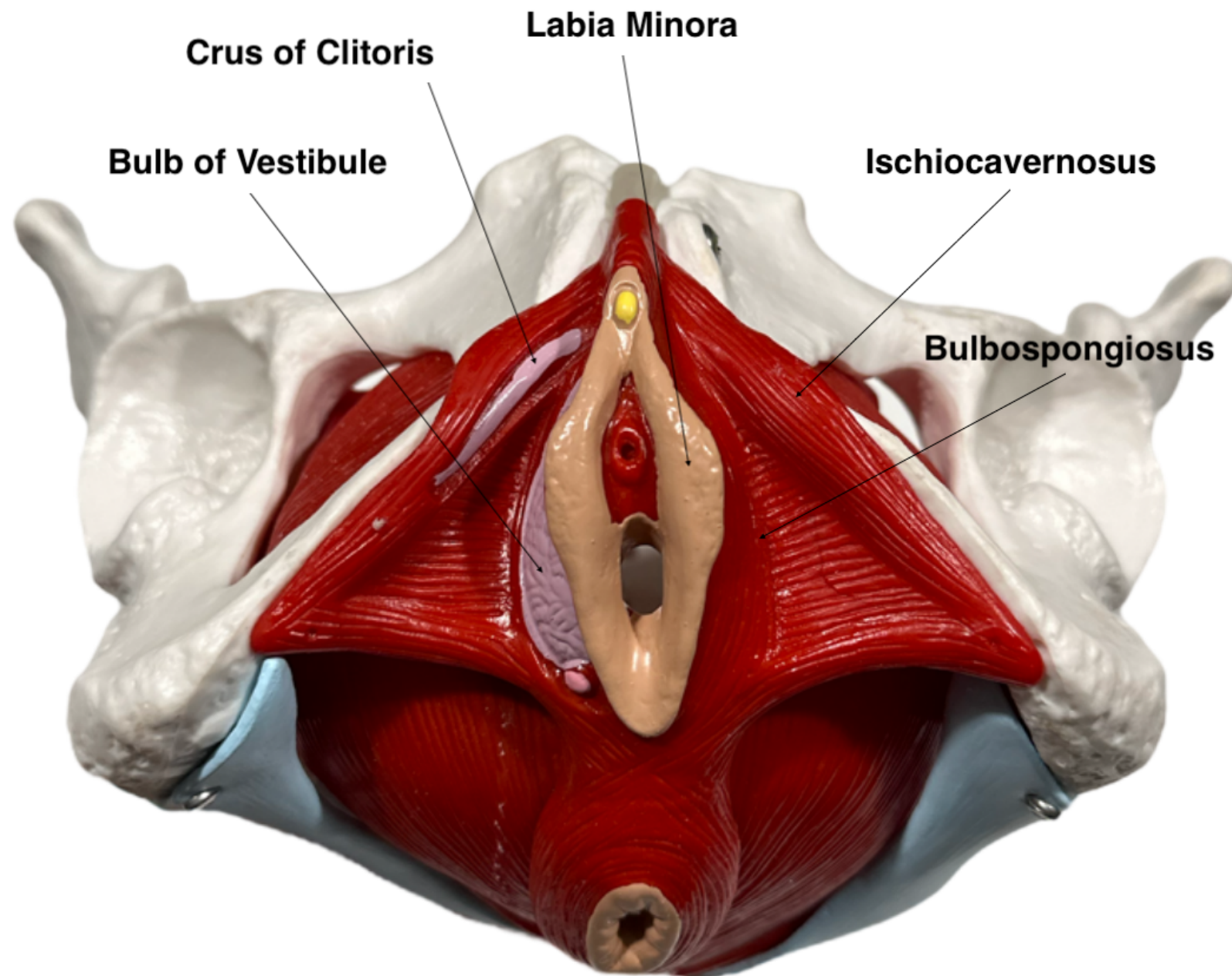
Persistent Genital Arousal Disorder

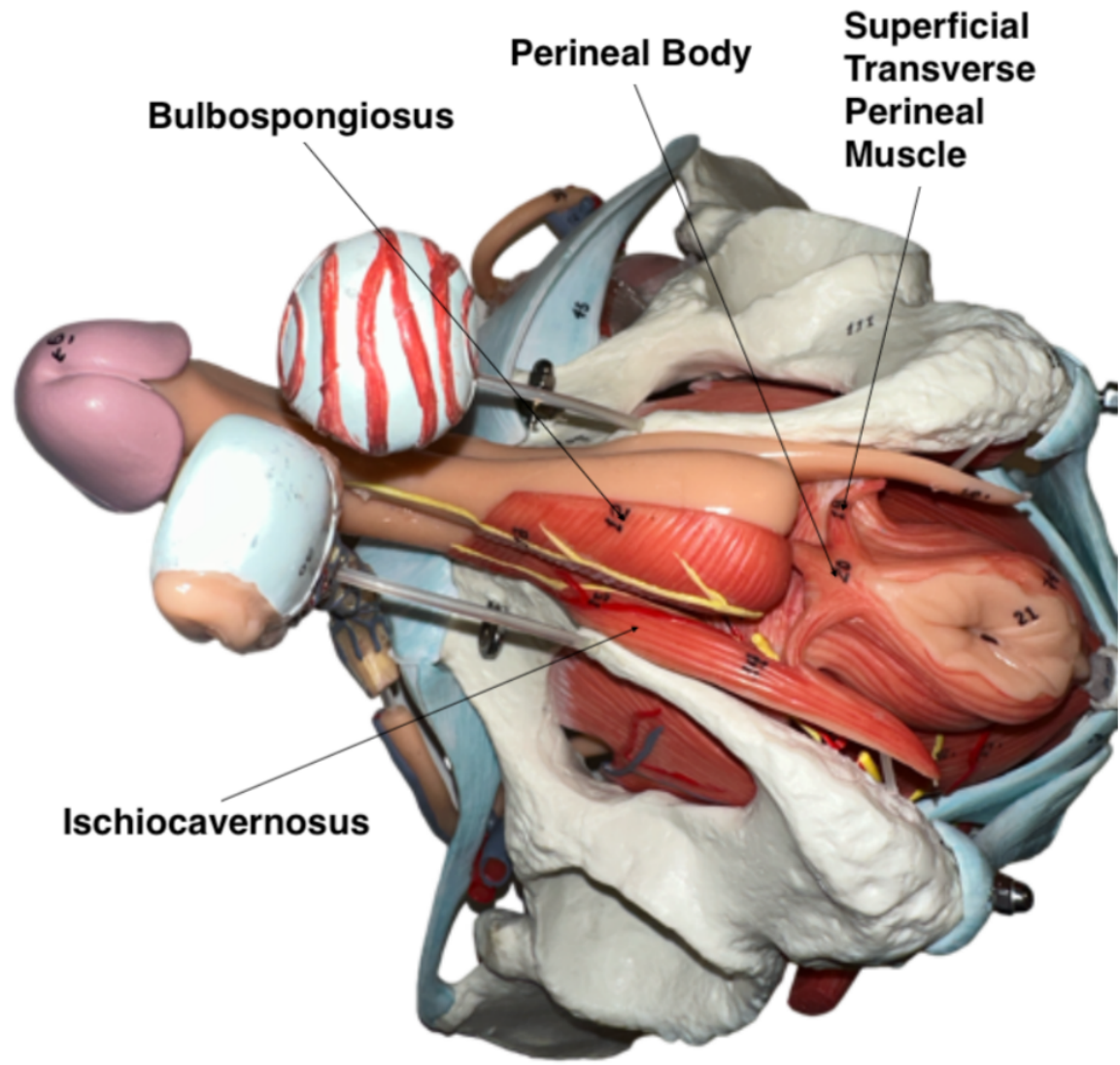
- ADductors, ABductors
- Lower abs, obliques, umbilicus
- Glutes, Piriformis
- Perineum, OI
- TA, QUADS
- Electro

Needling Practice

- Bulbospongiosus
- Ischocavernosus
- Labia







Bulbospongiosus

Perineal Body

**Superficial
Transverse
Perineal
Muscle**

Ischiocavernosus

Bulbospongiosus

- Vulvodynia
- Vestibulodynia
- Vaginismus
- ED
- Hard Flaccid
- Neuralgias
- Prostate
- Surgeries

Needling Bulbospongiosus

- Needling:

- #1 most important thing here is consent

- Gloved up

- Origin: Superficial perineal membrane and dorsal penile/clitoral aponeurosis, attaches to the perineum in women and the corpus spongiosum in men. The muscle is connected also to the dorsal external anal sphincter.

- Increases vascular engorgement, of both the penis and clitoris and aids in expelling ejaculate and urine in men and constricts the vaginal introitus in women.

Innervation: perineal branch of the pudendal nerve S2-S4

Bulbospongiosus

- Palpate: in a lithotomy position
- Confirm with patients once you have found a tender spot.
- You do not need to do intravaginal palpation here. You will ask permission to palpate next to the vaginal introitus, and in men we ask them to move the scrotum out of the way.
- QUICK insertion and slow advancing here with Shallow needling, perpendicular into the muscle here.
- This muscle is thin.
- CAUTION: perineal artery and vein.

Ischiocavernosus

- Inferior aponeurosis over the crus of the clitoris (or penis) to the medial aspect of the pubic ramus and ischium.
- Together with the bulbo the ischio contracts for vaginal distention which enhances erection in the clitoris and penis.
- Innervation Perineal branch of the pudendal nerve S2-4

Ischiocavernosus

- Again, always ask for permission to palpate here.
- Lithotomy position, perpendicular to the muscle needling into the ischiopubic ramus.
- Use towel/cover to have patient move scrotum out of the way. You do not need to palpate intravaginally here.
- Quick shallow insertion here, slow advance just like with BULBO
- Cautions: PN, artery, vein and the posterior femoral cutaneous nerve.

Conditions that may warrant needling the labia

- Vulvodynia
- Vestibulodynia
- Dyspareunia
- Clitorodynia
- PGAD/S
- Dermatitis
- Bartholin's Gland Cysts
- Lichen Sclerosis/Planus
- Genitourinary Syndrome
- Menopause



Labia Contraindications/Red Flags

- If your patient has itching, burning, inflammation at the vulvar and labial region, always refer them to a OBGYN/GYN to rule out neoplasms and serious dis infections.

Discuss with your patient

- Patient education for appropriate labial / vulvar care:
 - Avoid tight, and synthetic fabrics (like panty hose and thongs etc.)
 - Avoid ANY SCENTED products such as: sanitary pads, douches, creams, perfumed soaps and oils, scented toilet paper
 - Avoid rubbing dry, or hard friction wiping of area. Instead, pat dry.
 - Use Bidets frequently
 - Avoid anything marketed as for “odor down there” (we see this a lot in clinic, patient thinks that since its marketed that its safe)

Needling the labia

- Make sure that after your thorough intake, you:

1. Decide if this is an area that should or shouldn't be needled for your treatment. This can be initial treatment or follow-up.

- I personally, almost never needle this area on the first visit as it can be anxiety provoking and scary for your patient.

Needling the labia

2. Once you have established that it IS an area that warrants further investigating, engage your patient in a discussion on your devised treatment plan for that visit, and your reasoning behind it. You will get better at this with practice. Also always let them know that they may change their mind and STOP treatment at ANY TIME.

- Be assured in your discussion, use medical terminology and neutral language, and make sure you have been granted consent, by asking them if they are “alright with your plan?” and allow them a graceful decline if in fact, they are not.

Needling the labia

3. Once consent has been granted, and you have mapped out the treatment with them, and you have provided visual charts and clear explanations, and have charted their consent, next you provide them with their appropriate drapes and give them simple instructions on disrobing, covering and positioning on the treatment table

Needling the labia

4. Once you have re-entered the room, again, make neutral non-threatening contact by placing your hand somewhere like a wrist, upper arm, ankle etc.

- I start with letting them know the first area where we will be treating, like ABductors, abs etc.:
- Then work your way to THE MOST sensitive, anxiety provoking area last. By then, your patient will have had a chance to see they are safe and in a nonthreatening situation (remember interoception?) You as the practitioner only need to make an initial preliminary contact here (with consent from your patient of course).

Needling the labia

5. Once you have done the non-threatening larger muscles, ask them if it is ok to proceed to the vulvar region.

6. With consent, ask them again if you may move the drape over slightly (do a modest drape here, we will demonstrate). Next, examine the vulvar region visually for any thing that looks out of the ordinary. Cuts, abrasions, swelling, bruising, discoloration, etc.

Needling the labia

7. Ask if you may palpate the vulvar/labial area, and if they can “touch in the area” where they feel “symptoms” (words matter here, and I avoid words like “hurt, burning, stabbing etc.”) let them know you are looking for any textural changes in the fascia (a lot of times you’ll find tiny rice like fascial bundles throughout that can be treated)
8. Treat what you see (remember our foundations class)

Needling the labia

9. Next alerting them that you will be looking and palpating the skin inside of the Labia, and again, ask “if they are comfortable with this”. Once you have been granted further consent you verbalize that you will be gently palpating the labia and the inside of the labia (minora). Begin by spreading the labia majora with your palpating hand and have your needle kit and wipes ready and close by, or you may also use your palpating hand to gently hold the one majora out of the way, so you may then palpate. **FIRSTLY**, examine for any lesions, discolorations, anomalies/abnormalities. **THIS CAN BE TRIGGERING.**

- CHECK IN WITH THEM, “Are you doing ok?”

Needling the labia

10. Once they have confirmed that they are doing alright, make gentle contact with your gloved hand in the vermilion skin and let them know to tell you if there are any areas of discomfort.

- Once you have located areas of discomfort: we often use the clock analogy to convey where we are palpating/where the symptoms are occurring
- Clitoris=12 o'clock, 6 o'clock= fourchette, and all the surrounding areas

Needling the labia

11. Use a water-based wipe (have them handy in your washrooms for your PF patients, and also have them in your kit to clean the area: Ask them if its ok to use a wipe before you start treatment

12. NEEDLE SIZE MATTERS HERE:

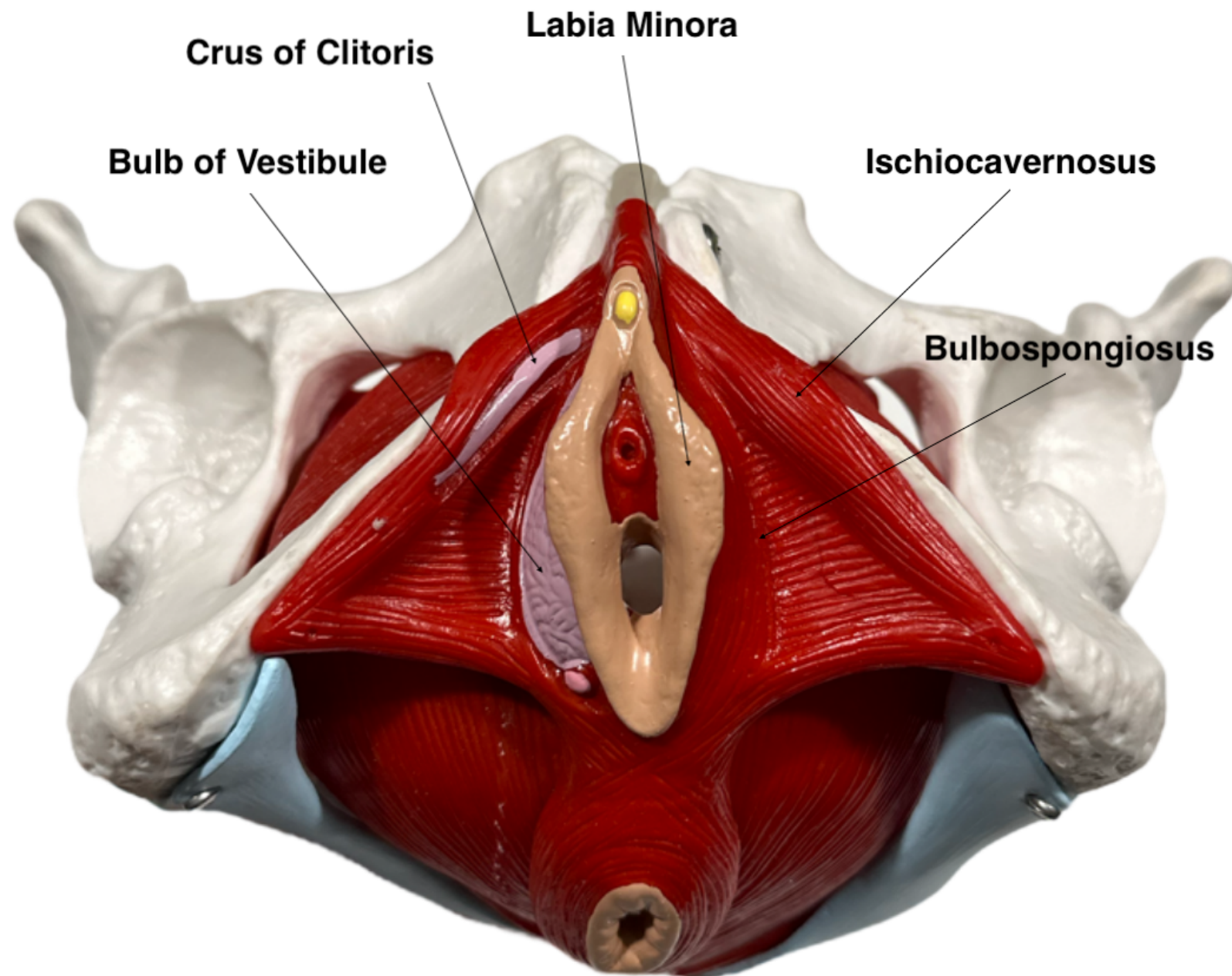
.18X30mm -.20X30mm NO LARGER

(do not depress guide tube hard into this delicate tissue, you can cut and irritate the tissue)



Needling the labia

- Only superficial needling here: You are not seeking out trigger points.
- Only a few insertions will be plenty to patient tolerance.
- Give words of encouragement and support: “Well Done!”



Organizing Patients and Their Pain



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Some baskets of pain:

Emotional stress: External circumstances such as going through divorce

Psychological stress: Patient shame or guilt; cued verbal or visual triggers

TRAUMA eg physical to the area or ASSAULT

Autoimmune

MSK DYSFUNCTION

COMORBIDITY (patient has diagnosed Crohns/ IBS/endo)

THERE ARE A LOT OF BASKETS



Understanding the baskets

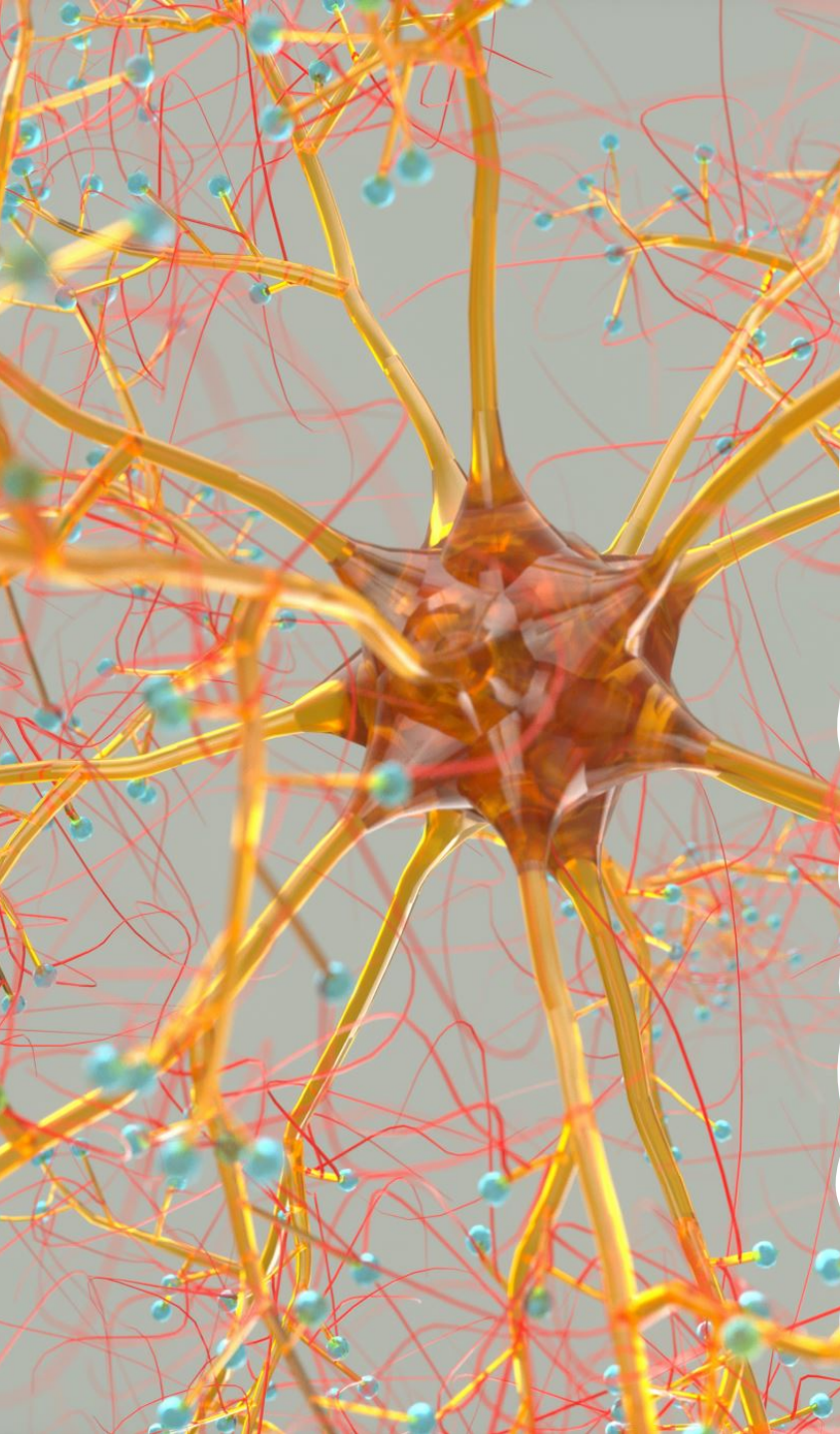
- When you are able to get your patient in the right basket/baskets, you will deepen your trust and your relationship with your patient, all the while building a stellar referral network to manage patient care and expectations.
- WHO HERE FEELS LIKE OUR PATIENTS' THERAPISTS?

Neuropathic Pain

- Spontaneous pain, electrical shock, dysesthesia, numbness and tingling
- Presumed NERVE injury
- Maintained by increased excitability of NOCICEPTORS and/or the DORSAL HORN

Neuropathic Pain

- Creates limited activity due to fear of pain
- Could have relationships with recurrent infections, diet, sex, heightened nervous system from trauma (current or past)
- Increased excitability of nociceptors, DORSAL HORN NEURONS, organ cross talk
- Pain with bladder or bowel filling, emptying, digestion and intercourse
- Now there will CERTAINLY be overlap between these categories, BUT when we are able to change how we view our patients pain, we may be able to better serve them.



Neuralgias

- At its simplest definition : Pain along the nerve pathway
- Merriam-Webster defines it as
- “ acute paroxysmal pain radiating along the course of one or more nerves usually without demonstrable changes in the nerve structure”

Neuralgia

- And Medical Dictionary defines it as
- “ an intense burning or stabbing pain caused by irritation of or damage to a nerve. The pain is usually brief but may be severe. It often feels as if it is shooting along the course of the affected nerve.

Neuralgia Causes

- Infection
- Pharmacological
- Surgery
- Trauma
- Pressure on nerves by nearby bone, ligaments, blood vessels, or tumors or other soft tissue (scars etc.)
- Diabetes
- Kidney Disease
- MS/ALS
- And some forms of chemical irritations

Neuralgia Causes

- In many cases the cause is simply unknown.
- Sounds frustrating AND painful for your patients. Doesn't it?
- The truth with neuralgias, there are just so many different types of neuralgias AND they are extremely difficult to treat.

It is estimated...

- A study published recently in the Journal of Pain Research reported the prevalence of neuropathic pain/neuralgias at **10%** in the US population.
- The National Institute of Neurological Disorders and Stroke (NINDS) reported that 20 million Americans have some type of peripheral neuropathy/neuralgia. Mar 20, 2018

Neuralgias

But today though, I will introduce you to more specifically, the lesser known PELVIC NEURALGIAS as well as what we have all heard and know...PUDENDAL NEURALGIA

But First...

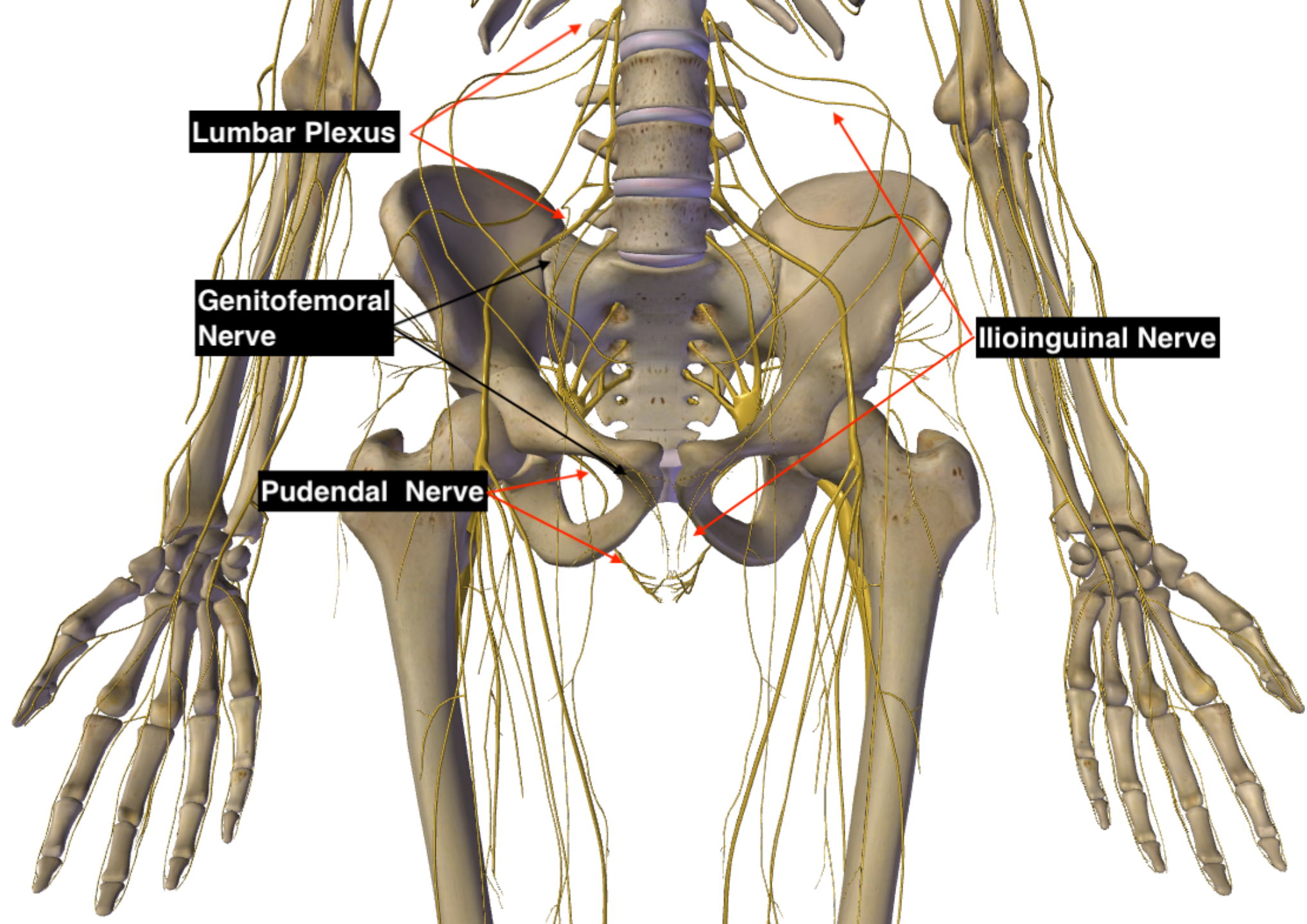
Here are some BASIC functions of the pelvic floor and the anatomy so that we may better understand PELVIC NEURALGIAS and how to treat them

Pudendal Neuralgia

- The pudendal nerve provides most of the movement and sensations for the pelvic region, including the external genitalia and anus.
- It plays a critical role in the ability to regulate urination and defecation
- Damage to the pudendal nerve can lead to pain and affect one's ability to have or enjoy sex

Pudendal Neuralgia

- This **disjointedness** is a valid frustration for your patients.
- It not only costs MONEY but it also costs their TIME
- And the average *pelvic floor patient* experience a major lapse in time of years from ONSET of the symptoms to diagnosis, then treatment.
- On average 4.5-7 years for “general” pelvic pain issues
- This is one of the most difficult things to treat in clinic.

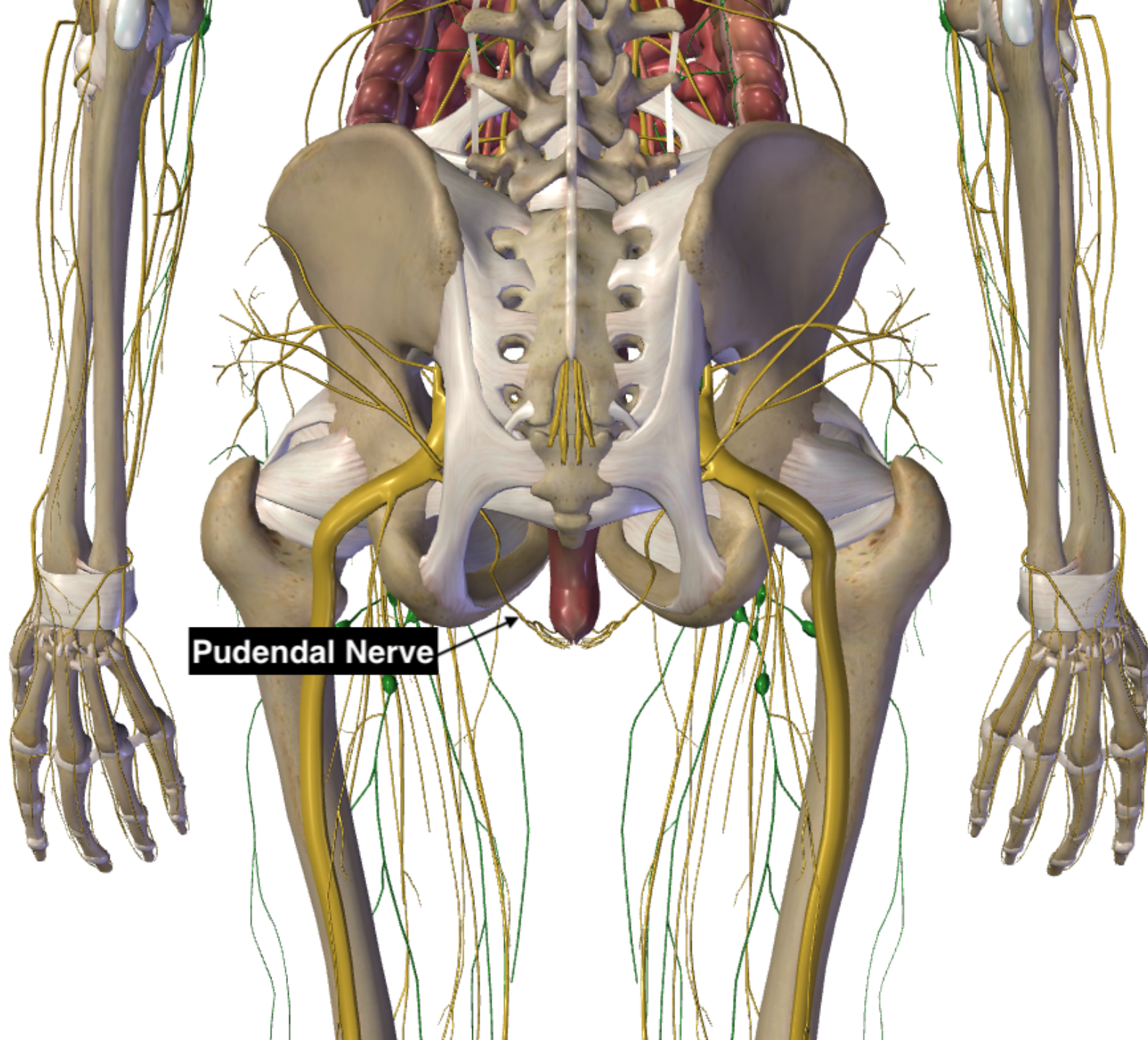


Lumbar Plexus

Genitofemoral Nerve

Pudendal Nerve

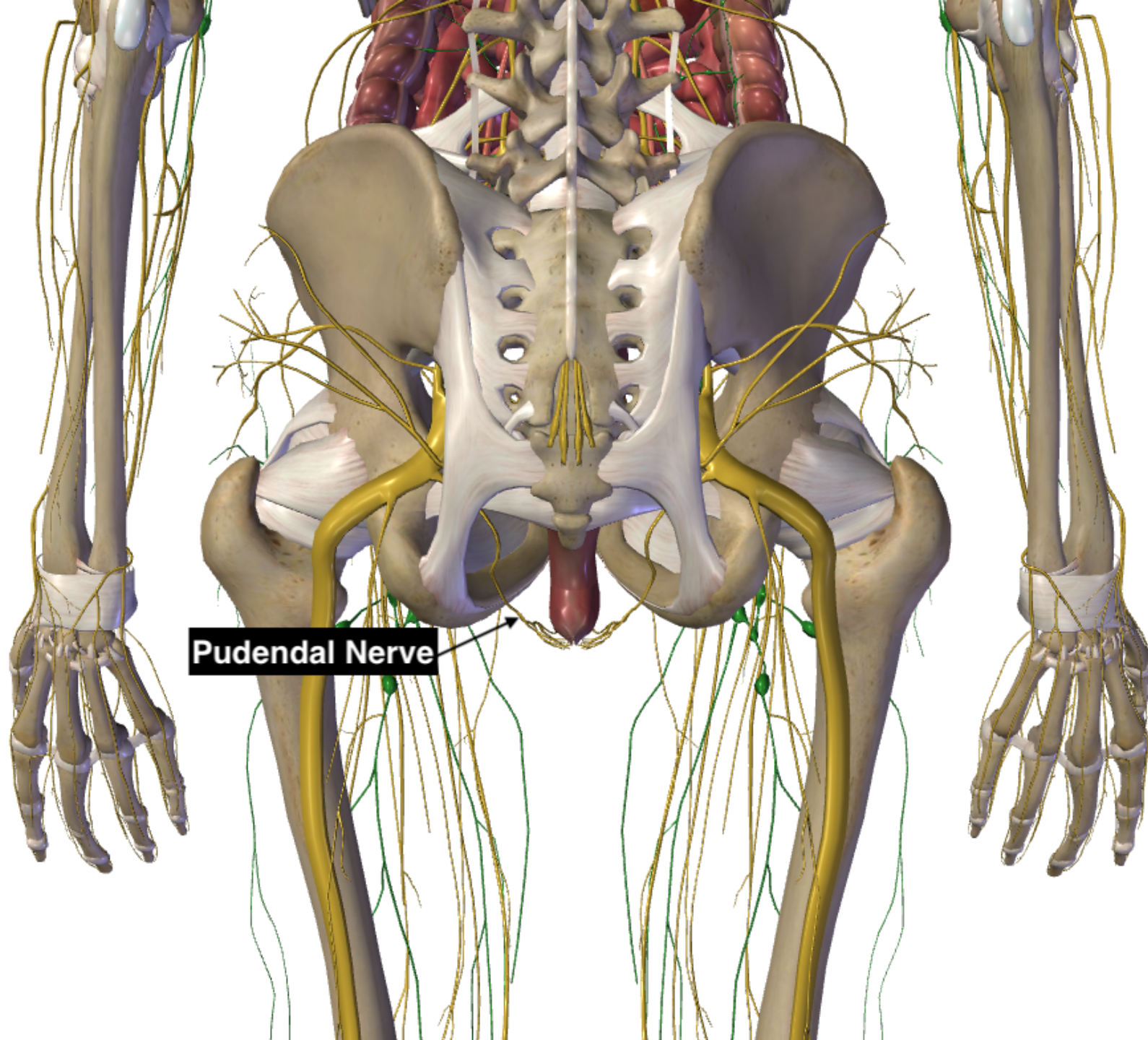
Ilioinguinal Nerve



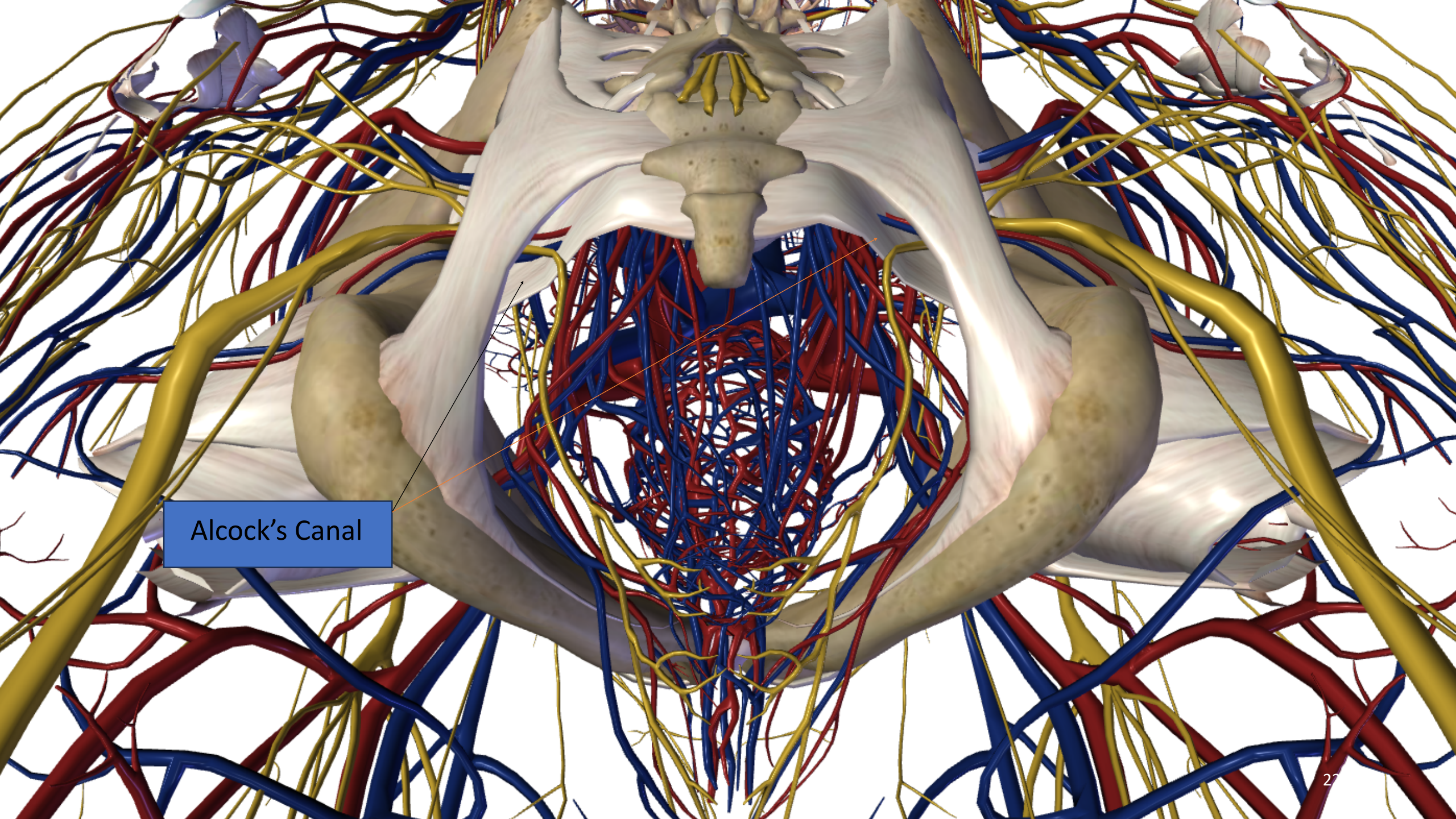
Pudendal Nerve

Pudendal Neuralgia

- This could be its very own CEU, we will be touching on it here
- Highest risk factor: CYCLING PROLONGED SITTING etc. (Alcock's Syndrome)
- Originates from the sacral plexus, S2-4
- Has three branches: RECTAL, PERINEAL, GENITAL (although NOT testicle=L1)
- Pain can be anywhere along the Pudendal Nerve itself, but we see A LOT of cases where the pain is situated in the PERINEUM. Can go into gluteal cleft, ischium, pubis, internal/external anal sphincters



Pudendal Nerve



Alcock's Canal

Alcock's Video

- Click [HERE](#) to watch

Pudendal Neuralgia

- Pain is often described as burning, pinching, stabbing, crushing or shooting in nature. Also classic NUMBNESS and TINGLING
- In 80% of case, pain is alleviated upon standing.
- If the rectal branch is involved patients will feel like their descending colon is full and has a foreign body in it.
- Perineal Branch, “like there is a golf ball there” (Levator Ani syndrome)
- Genital branch: Pain with erection and ejaculation in males, clitoral pain, vestibular pain and general pain AFTER intercourse in females.

Pudendal Neuralgia

- Some other issues with ejaculation and erection are that there is a **SIGNIFICANT** loss of sensation in the penis, or shaft only, and that pain occurs **POST** ejaculation.
- Patients oftentimes can't wear under garments or jeans, stockings or other tight-fitting articles of clothing.

Pudendal Neuralgia

- There is a definite predisposition to childbearing and repeated ABDOMINAL straining (think constipation causing “bulging in pelvic floor” as well).
- SACROSPINOUS LIGAMENT and ISCHIAL SPINE geographically can predispose one to Pudendal Neuralgia as well as STL

Pudendal Neuralgia (PN)

- Pelvic pain syndromes like PN, pelvic neuralgias, BPS, Vestibulitis, IBS, myofascial pain, urethral pain, testicular pain, Vulvodynia, share very similar events: Infection
- Inflammatory in nature
- Characteristics of allodynia (pain that is produced by a stimulus that normally does not produce pain).
- ARE ASSOCIATED with one another (diagnosed/not diagnosed comorbidity)

Pudendal Neuralgia

- This chronic (PERSISTENT) PELVIC PAIN (whatever that may be), is considered due to a series of sequential reactions
- Stimulation of AFFERENT NOCICEPTORS
- SECRETION OF INFLAMMATORY SUBSTANCES= NEUROGENIC INFLAMM
- WHICH CAN LEAD TO:
 - Dysregulation of autonomic nervous system
 - Possible predisposition of autoimmune issues (chronic stress somatic and sympathetic hypertonia)

Pudendal Neuralgia

- This makes treating the singular diagnosis IMPOSSIBLE.
- This is for PN etc., and we MUST take into account the multifaceted approach to management for these patients.
- Pudendal Neuralgia is one of THE MOST difficult diagnoses to treat in clinic.
- It can take months to even years to alleviate symptoms.
- One must consider a multifaceted approach to patient care:
- What does this look like?



Psychosocial

- *****ESSENTIAL*****
- Recognition and validation of symptoms
- Developing a treatment plan that recognizes and validates
- Pathophysiological hypothesis
- Possibilities AND limitations
- Pudendal neuralgia and bladder pain syndrome
-

Pudendal Neuralgia

- Treatment objectives
- SOCIAL LIFE
- SEXUAL LIFE
- BLADDER/BOWEL

Pudendal Neuralgia

- ABSOLUTELY NO ONE MIRACLE CURE
- One thing may work for one patient and not for another
- Compliance: are your patients following the map?

Recognition Of Triggers of Pudendal Neuralgia

- Sexual Abuse
- Personal relationships
- Stress
- Sitting
- CYCLING (believe it or not, I've had patients who refuse to accept they can no longer cycle)

Keys to progress Pudendal Neuralgia



Pudendal Neuralgia

- Physical medicine (ACU/CHIRO/PT/DO etc.)
- Drug therapies (antidepressants/antiepileptics like gabapentin)
- Blocks (PN, CT, Ultrasound, Alcock's Canal, Muscle(even botox here) GANGLION IMPAR, S3
- PAIN Psychologists
- EMDR
- HYPNOSIS

At Home Care

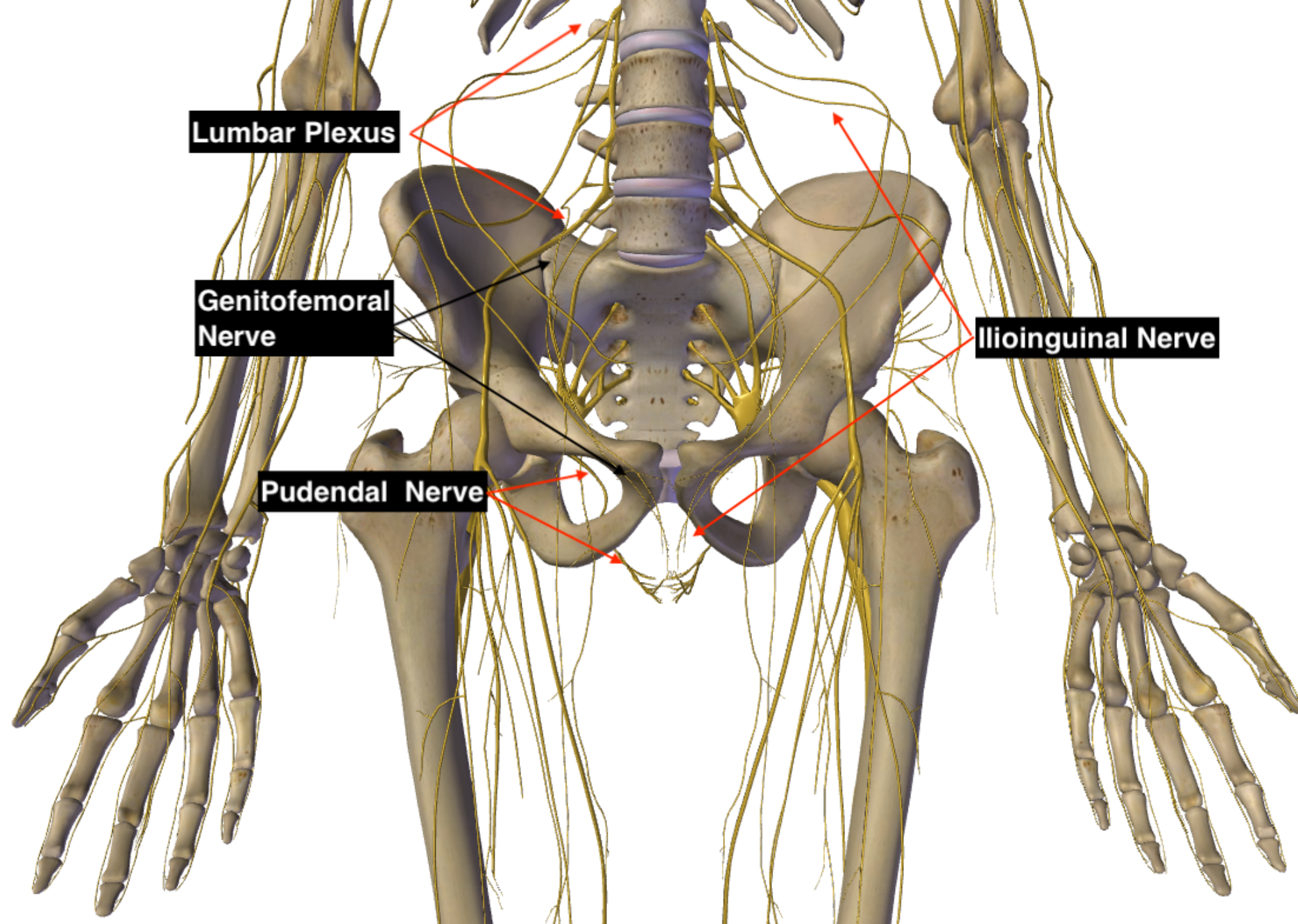
- STRETCHING
- DIAPHRAGMATIC BREATHING
- HOMECARE/PT/WANDS/dilators.
- PELVIC FLOOR DROPS
- RESTORATIVE YOGA
- HYPNOSIS exercises
- STRETCHING
- TOPICAL ANALGESICS
- THERAPEUTIC BATHING
- CBD/THC
- TENS
- PSILOCYBIN etc.
- FOAM ROLLING
- THERABANDS
- MEDITATION/QI GONG

Pudendal Neuralgia treatment options

- Obturator internus deep through to the rotators, through posterior femoral head, through obturator internus outlet
- Perineum + Fascia around it
- Sacral foramen S2-S4
- Glutes: Adhesions at the sacrum and trigger points max primarily
- Hamstrings
- Adductor magnus

Genitofemoral Nerve

- Is a branch of the Lumbar Plexus from the anterior rami of the spinal nerves L1-2
- Passes through the PSOAS MAJOR muscle
- Bifurcates into two branches as it is descending towards the inguinal ligament: Femoral and Genital branches
- **The genital branch** of the genitofemoral nerve provides motor innervation to the cremaster muscle and sensory innervation to the upper anterior part of the scrotum, spermatic fascia, and tunica vaginalis of testis or the skin of the mons pubis and labium majus.



Lumbar Plexus

Genitofemoral Nerve

Pudendal Nerve

Ilioinguinal Nerve

Genitofemoral Neuralgia

- Genitofemoral neuralgia is a cause of neuropathic pain that is often debilitating in nature. It is characterized by chronic neuropathic groin pain that is localized along the distribution of the genitofemoral nerve.
- The issue here, and with the other pelvic neuralgias is that the nerve has been damaged in some sort of manner, such as compression, entrapment or its been cut.

Genitofemoral Nerve

- It is something that one must suspect if there has been surgical interventions such as:
 - Inguinal hernia repair or cesarean surgeries. Laparoscopy also needs to be considered in the region (endo, oophorectomies, salpingo-oophorectomies)
 - Damage to the genitofemoral nerve when pelvic lymph nodes are dissected (as with ovarian, uterine, bladder, or prostate cancer surgery) or when a large pelvic mass is removed during pelvic surgery
 - Also consider PSOAS MAJOR strains
 - Local anesthetic is used as a diagnostic tool to confirm involvement and diagnosis

Genitofemoral Neuralgia

- “Primary symptoms include: groin pain, paresthesia, and burning sensation spreading from the lower abdomen to the medial aspect of the thigh. It may present with scrotal pain in male, while females experience symptoms radiating to the labia majora and mons pubis.”
- [Alper Cesmehasi 1](#), [Abhishek Yadav](#), [Jerzy Gielecki](#), [R Shane Tubbs](#), [Marios Loukas](#)
- Also due to the pathway of the GF Nerve, you may also see pain in the lower back, as well (PSOAS, QL involvement)

Genitofemoral Nerve Treatment

All through the same kind of outlet

Assessing the fascia, skin rolling, feeling for abnormalities in the fascia

Mention: Can also do estim rec

Superficial fascia

Assessment, skin rolling, searching for trigger points

Motor points adductors, obliques, pectineus, rec abdominus, pyramidalis

Genitofemoral Neuralgia Txt Approaches

- L1-L3 HTJJ (EA)
- Motor points of Rec Abs, Obliques (internal and external)
- SCAR TISSUE threading (pecking, EA, castor oil packs)
- Active Trigger Points
- Inguinal ligament?
- GUA SHA/ MOXA
- PSOAS MAJOR RELEASE (posterior approach, anterior ab approach,)
- QL Releases
- AND referring trigger points into thigh (quads, aDductors, iliacus, etc.)

Other Genitofemoral Neuralgia Treatments

- NERVE BLOCKS/ablations
- STEROID INJECTIONS
- SSNRI'S (SEROTONIN NOREPINEPHRINE REUPTAKE INHIBITORS =CYMBALTA)
- GABAPENTIN
- Topical Lidocaine
- TENS
- NSAIDS

Ilioinguinal Neuralgia

- Caused by entrapments or after lower abdominal surgeries
- SYMPTOMS VERY SIMILAR to GFN:
 - Pain in the groin, suprapubic pain
 - Lower Abdominal pain
 - Labia Major/Mons
 - Base of penis

Ilioinguinal Nerve

- INNERVATES Transverse Abdominus and Internal Oblique
- This is a common “sports type” entrapment due to use of TA and IO and tightening of the INGUINAL LIGAMENT: twisting motions, kicking across the midline

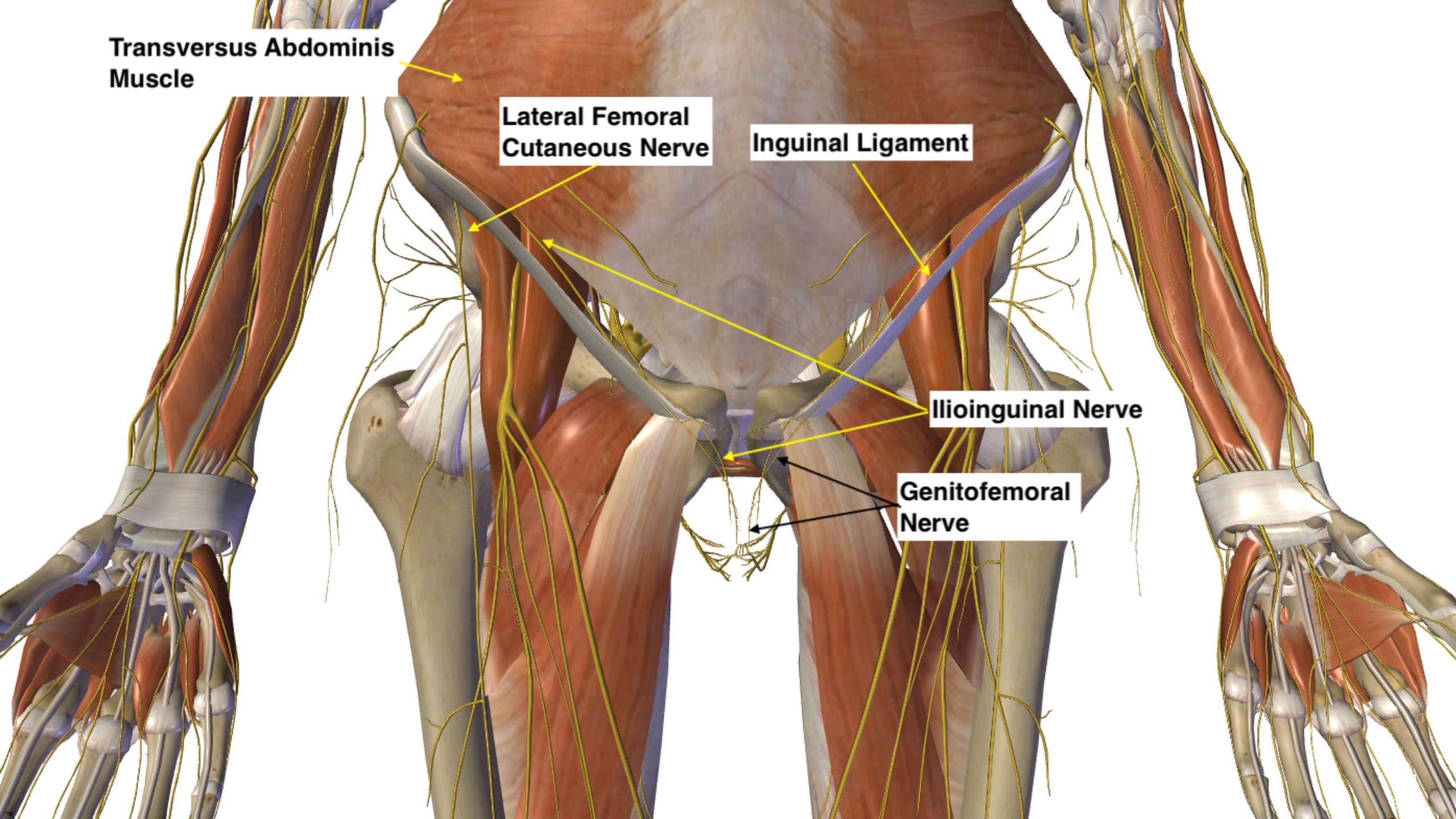
**Transversus Abdominis
Muscle**

**Lateral Femoral
Cutaneous Nerve**

Inguinal Ligament

Ilioinguinal Nerve

**Genitofemoral
Nerve**

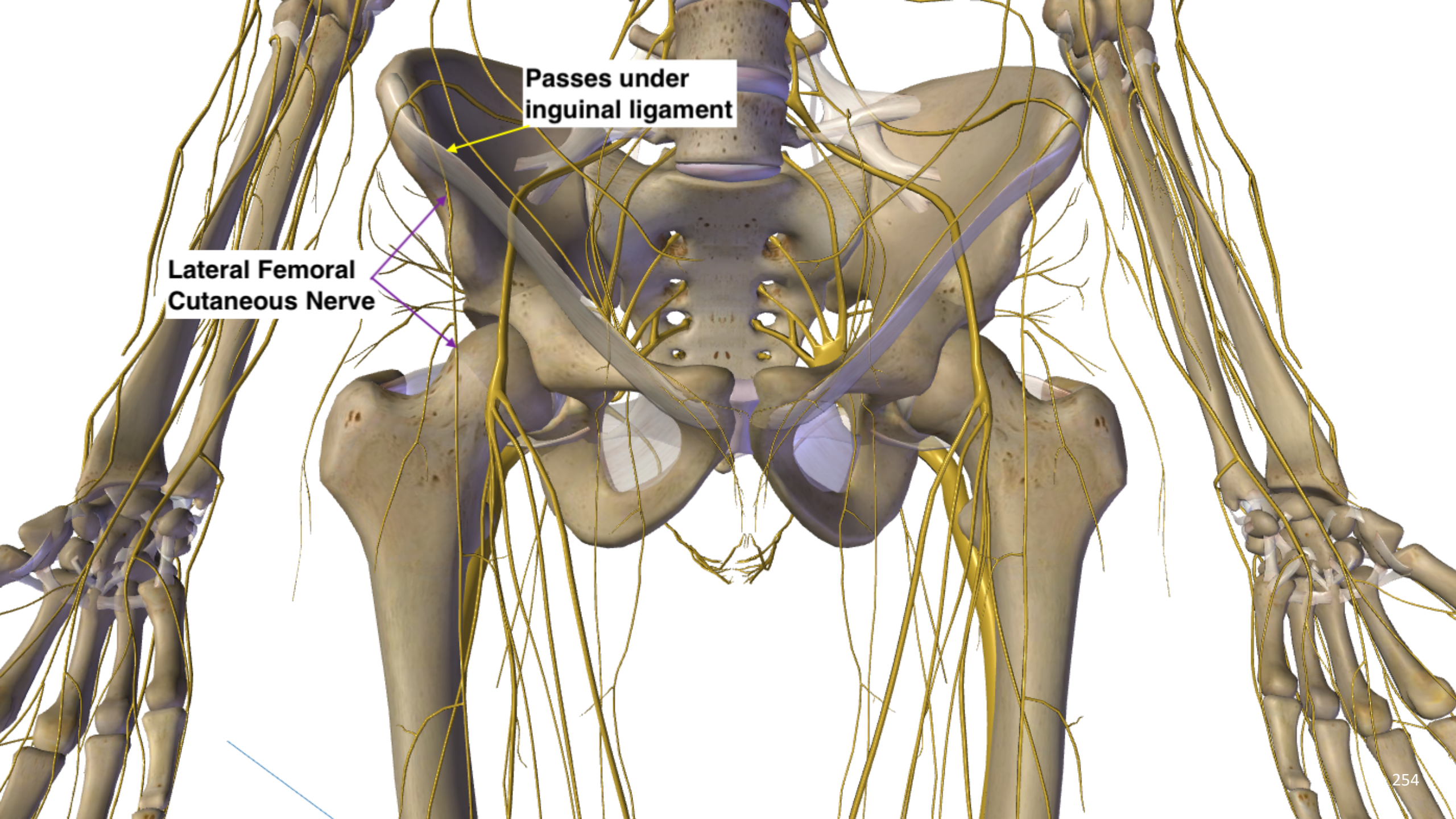


Ilioinguinal Neuralgia Treatments

- Similar to GFN
- L1-L3 HTJJ (EA)
- Motor points of Rec Abs, Obliques (internal and external)
- Scar tissue treatments
- Active Trigger Points
- Inguinal ligament?
- GUA SHA/ MOXA
- PSOAS MAJOR RELEASE
- Referring trigger points into thigh
- SAME WESTERN TREATMENT as GFN

Meralgia Parasthetica

- Also known as Lateral Femoral Cutaneous Nerve Entrapment
- Here we see:
 - Pain in the lateral THIGH
 - Burning
 - Tingling
 - Partial Loss of Sensation
 - Aching and referral to the groin area



Passes under
inguinal ligament

Lateral Femoral
Cutaneous Nerve

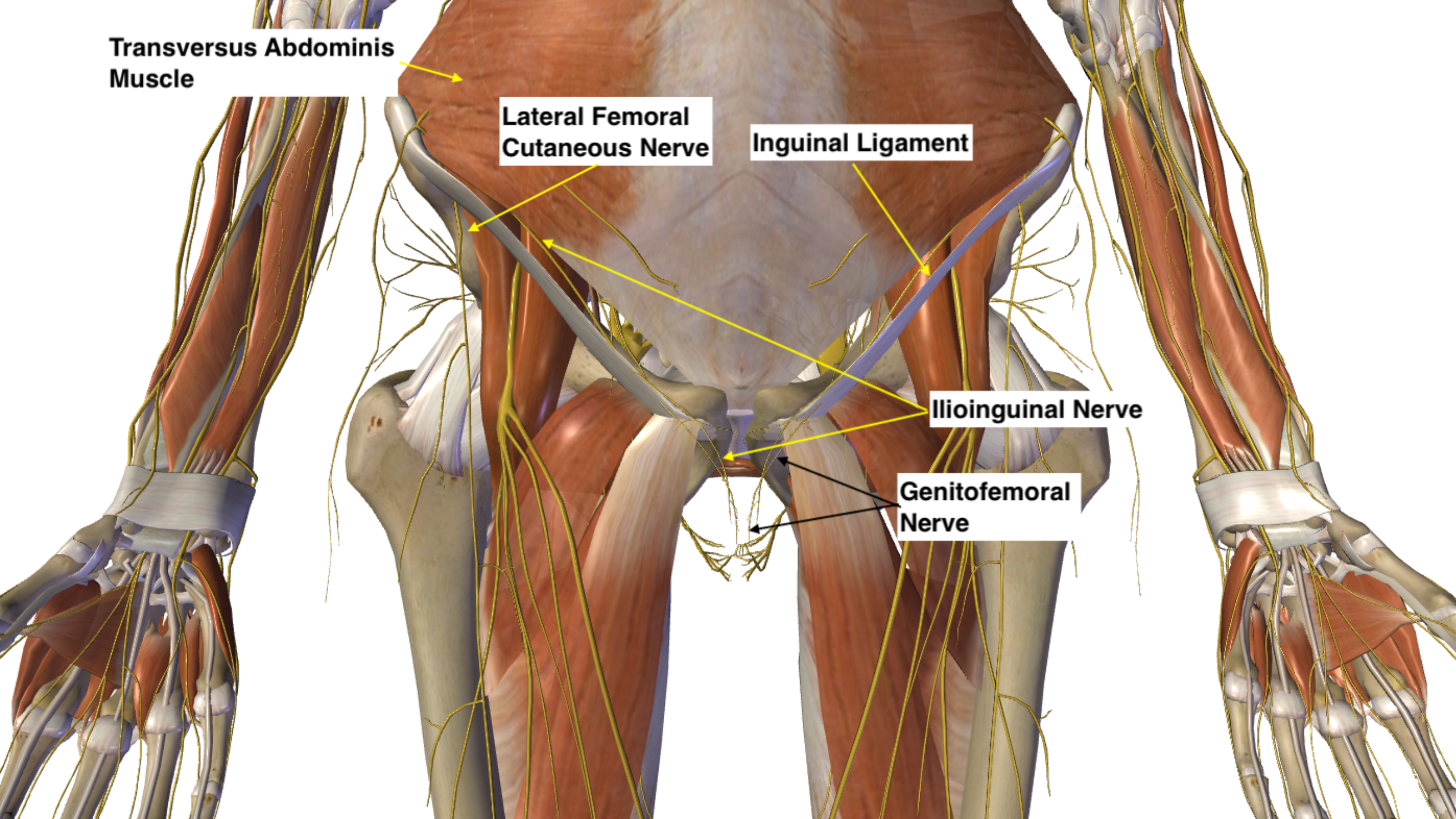
**Transversus Abdominis
Muscle**

**Lateral Femoral
Cutaneous Nerve**

Inguinal Ligament

Ilioinguinal Nerve

**Genitofemoral
Nerve**



Meralgia Parasthetica

- This pathway also descends UNDER the INGUINAL ligament
- L2-L3
- Has posterior and Anterior divisions at the spinal nerve roots
- Can also be caused by tight clothing and belts (think utility belts)
- Surgery or trauma to the hip and back
- Obesity
- Pregnancy
- Walking, running, biking standing = PROLONGED

Meralgia Parasthetica Treatment

- Soft Tissue works very well
- There is also a short video of this on the AcuVids YouTube channel
- We will learn the technique today

Posterior Femoral Cutaneous Nerve – Honorable Mention

- S1-3 deep in pelvic cavity
- This is a SENSORY nerve from the SACRAL PLEXUS exits through the greater SCIATIC foramen
- So, we see it supplying sensation to the POSTERIOR: thigh, buttock, scrotum and labia and the PERINEUM. Coccyx may be involved and hamstrings
- PAIN WITH SITTING and all the above regions
- Also could be mistaken for PN or even some patients will say “sciatica”

Posterior Femoral Cutaneous Nerve

- The nerve pathway is then further divided up to gluteal branch (see inferior CLUNEAL nerves)
- The perineal branch skin of the superomedial thigh and GENITALS
- Cutaneous branches reaching through Biceps Femoris down to popliteal fossa

Posterior Femoral Cutaneous Nerve

Symptoms here again are similar in nature:

Pain with sitting, alleviated by standing

Numbness and tingling in the area or referred

Paresthesia etc.

Posterior Femoral Cutaneous Nerve

- We approach this again, with the above tools:
- EA
- Motor points
- Segmental Acupuncture
- Fascial manipulation etc.
- NERVE BLOCKS/ablations
- STEROID INJECTIONS
- SSNRI'S (SEROTONIN NOREPINEPHRINE REUPTAKE INHIBITORS =CYMBALTA)
- GABAPENTIN
- Topical Lidocaine
- TENS
- ACU/PT osteo

Obturator Neuralgia

- L2-L4
- Motor AND sensory innervation to medial thigh
- ADduction
- Articular branches to HIP and KNEE

Obturator Neuralgia

- OI/OE is oftentimes injured in sports activities
- Cycling
- Equestrian Sport
- Snowboarding/skiing
- Ice skating
- Surgery, compression
- Responds well to soft tissue OI release work and EA, and trigger point work



BLADDER PAIN

Bladder Pain Syndrome

- Bladder pain syndrome, or here in the US “Painful Bladder Syndrome” is:
- Pelvic pain, pressure or discomfort lasting >6 weeks or months
- Worsens with bladder filling,
- eases with emptying
- persistent urge or increased urinary frequency without identified bladder or urethral infection
- (ESSIC 2008, Fall et al. 2010; Engeler et al. 2014, Hanno et al, 2015)

Bladder Pain Syndrome

- Sensations of BPS can be: ANY PAIN located in the pelvis: stabbing, cramping, burning, throbbing spasming, etc.
- PLEASE KEEP IN MIND the complexity of the PELVIS and the viscera/tendon/ligament/fascia that is found within the pelvic girdle.
- This can seem overwhelming, but it is foundational to treating BPS.

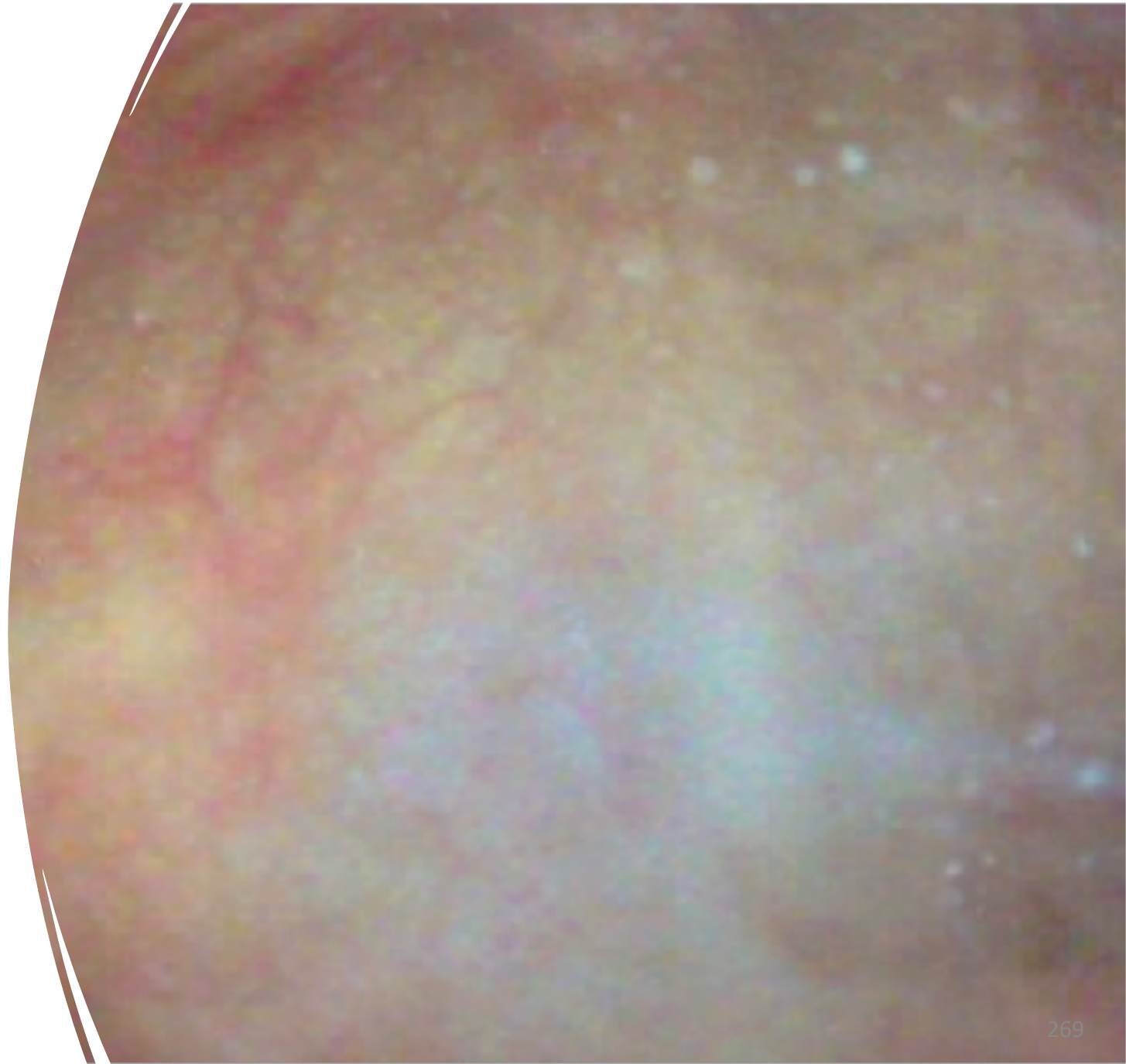
Bladder Pain Syndrome

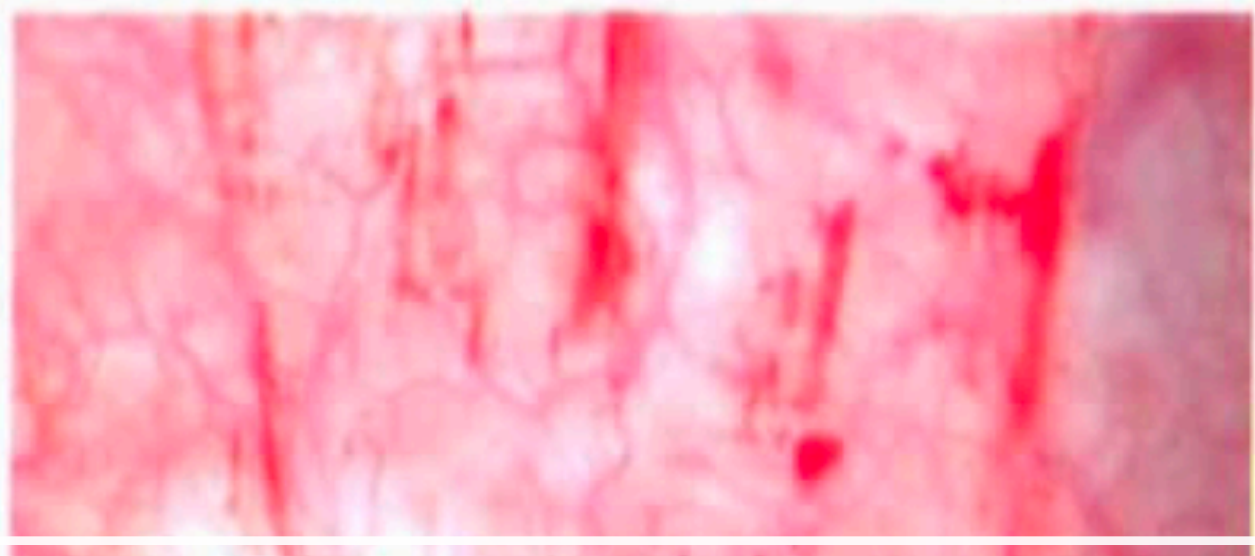
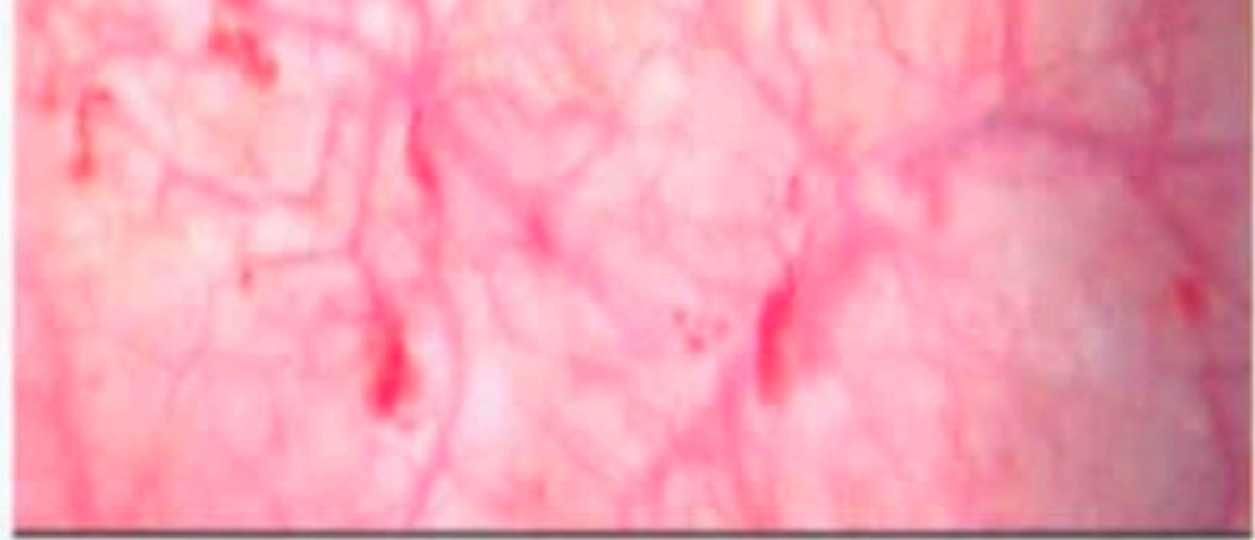
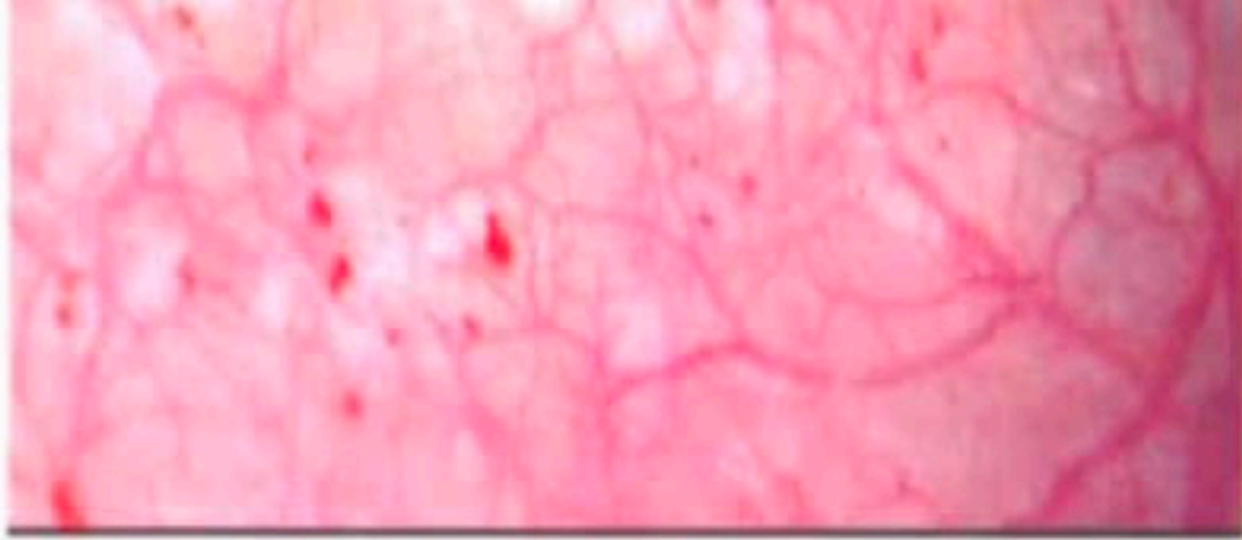
- Bladder Pain Syndrome is the name that has most recently been recommended INSTEAD of IC
- The diagnosis of Interstitial Cystitis is for those who have diagnosed HUNNER'S LESIONS and are SYMPTOMATIC
- Now you will be seeing IC/BPS as research has been coming out, all research is being lumped together

Bladder Pain Syndrome

- Originally for years, pain in the bladder was given that somewhat generic diagnosis of IC. We know now that bladders can have or cannot have HUNNER'S LESIONS and can be possibly non infected or INFECTED, and symptomatic.
- So NO HUNNERS LESIONS=SYMPTOMATIC
- ACTIVE HUNNERS LESIONS= ASYMPTOMATIC OR SYMPTOMATIC

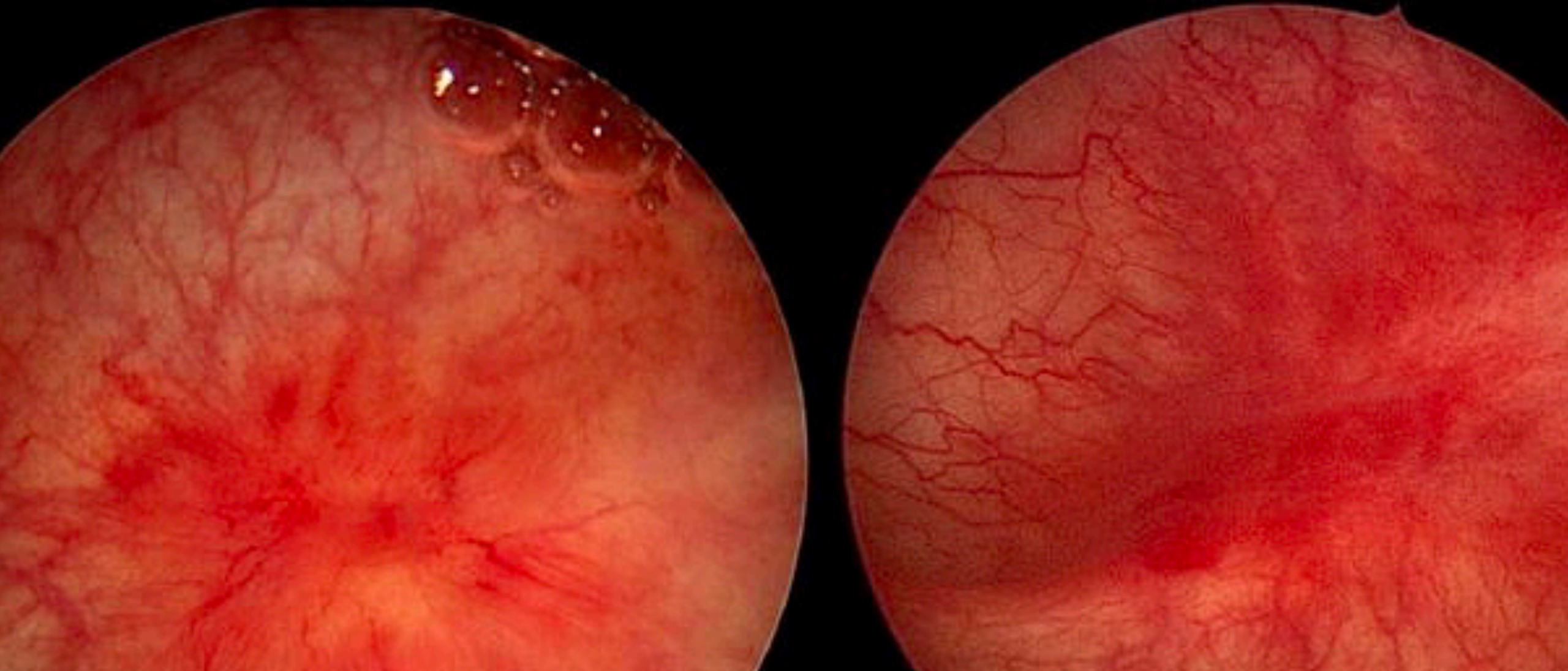
Healthy





Pathological





Pathological

A large orange circle contains the text 'Bladder Pain Syndrome Pathophysiology'. A smaller blue circle is positioned at the bottom-left edge of the orange circle. In the top right corner of the slide, there are several yellow curved lines of varying lengths, resembling a stylized smile or a decorative element.

Bladder Pain Syndrome Pathophysiology

- There is an initial insult to the area: can be the bladder or not
- As a result to the initial insult, we see a developing CENTRAL Sensitization
- INFLAMMATORY NEUROLOGICAL AND ENDOCRINE CHANGES
- AUTOIMMUNE DISORDERS



Bladder Pain Syndrome

- Bladder Pain Syndrome is more than infection
- As I have noted before, Hunners Lesions are not something that is seen regularly in urological clinic, but they can also be seen in ASYMPTOMATIC bladders.
- When we see BPS in clinic, it is very RARE that they are diagnosed with IC/BPS but what we DO see in clinic, based on this criteria:

Bladder Pain Syndrome

- Pelvic pain, pressure or discomfort lasting >6 weeks or months
- Worsens with bladder filling, eases with emptying, persistent urge or increased urinary frequency without identified bladder or urethral infection (ESSIC 2008, Fall et al. 2010; Engeler et al. 2014, Hanno et al, 2015)

Bladder Pain Syndrome

- So based on the most recent criteria, that leaves a HUGE field of patients that could potentially fall into the BPS diagnosis

-

Bladder Pain Syndrome – Common Chief Complaints

- Vulvodynia
- URGENCY
- PROLAPSE
- Complex Pelvic Pain
- IC
- Vaginismus
- Persistent Genital Arousal Disorder
- Levator Ani Syndrome

Bladder Pain Syndrome – Common Chief Complaints

- Clitorodynia
- Urgency-Frequency Syndrome
- Vestibulodynia
- Dyspareunia
- Hard Flaccid Syndrome
- Chronic Prostatitis
- Penile/Testicular Pain Syndrome

Bladder Pain Syndrome

- Many, if not all of these patients that have BPS, have a MECHANICAL/MSK component to them.
- The first thing to think about : It is a diagnosis of EXCLUSION. (e.g. like FIBRO) Nickel et al. 2005
- What does that mean? The urologist/uro-gyn/GI must RULE EVERYTHING ELSE OUT.
- this takes ON AVERAGE 7 years to get the diagnosis of BPS.
- The patient has been through the pipeline of PCP's, GYN's , Urologists, DERMATOLOGISTS, PAIN doctors etc.....HOW FRUSTRATING for them!

So who gets BPS?

- We know:
- Patients in their 20's through 60's
- Ties into visceral issues (also possible reproductive issues, sexual encounters, UTIS) etc.
- You are more likely to get it if you are a woman
- 10:1 F:M
- 0.5-30% Can get it, or better yet have “reported urinary pain/pelvic pain”

Bladder Pain Syndrome

- This is a HUGE issue
- and where are these patients?
- Why aren't we seeing these patients in and out every day in our clinics?
- Let me explain...
- We want to make sure that we are treating appropriately and based on the ENTIRE person.

Bladder Pain Syndrome Pathophysiology

- There is an initial insult to the area: can be the bladder or not
- As a result to the initial insult we see a developing: CENTRAL Sensitization
- INFLAMMATORY NEUROLOGICAL AND ENDOCRINE CHANGES
- AUTOIMMUNE DISORDERS

Bladder Pain Syndrome

- Actual changes to the Glycosaminoglycan layer (GAG) which is chronically inflamed and contributing to urine changes (actually turning the urine TOXIC)
- This GAG layer is like a slippery surface (like your intestines)
- ALSO GLOMULATIONS (also HUNNERS Lesions)

Bladder Pain Syndrome

- We also see an Upregulation of C-FIBER AFFERENTS when the GAG layer is impacted
- WIKI: **Group C nerve fibers** are one of three classes of [nerve fiber](#) in the [central nervous system](#) (CNS) and [peripheral nervous system](#) (PNS). The C group fibers are [unmyelinated](#) and have a small diameter and low conduction velocity, whereas [Groups A](#) and [B](#) are myelinated. Group C fibers include [postganglionic fibers](#) in the [autonomic nervous system](#) (ANS), and nerve fibers at the [dorsal roots](#) (IV fiber). These fibers carry sensory information.
- Damage or injury to nerve fibers causes [neuropathic pain](#).
- PATHWAY FROM THE PERIPHERAL TO CENTRAL

Bladder Pain Syndrome

- SO THE SACRAL plexus is insulted as well
- Some cases PERSISTENT infection that is resistant (these are your patients who have been on loads of antibiotics- but it isn't enough!)
- Pelvic FLOOR MUSCLE Dysfunction

Bladder Pain Syndrome

- When the GAG Layer (glycosaminoglycan layer) is assaulted by pathogens and inflammation, you can start to see the lining gets worn and holes in it allowing this toxic urine to irritate the actually deeper layers of the urothelium and SUB/urothelium which in turn ACTIVATE C-fibers....= EXTREME PAIN nagging and stabbing pain

Bladder Pain Syndrome

- And if you think about the bladder like a water balloon, there are MORE of these receptors (TRPV 1 sensory receptors) that stimulate the C-fibers found near the urethral aperture (trigone) than at the dome of the bladder (this makes sense)
- Transient receptor potential vanilloid

Transient Receptors Potential Vanilloid

- TRPV1 acts as a multisensory receptor for potential injury signals and can be activated by a variety of exogenous and endogenous mediators, such as capsaicin, temperature (43–52°C), acidic environments (H⁺), and leukotriene B4 (LTB4). The activation of TRPV1 primarily permits an influx of extracellular Ca²⁺, which is involved in a number of essential physiological functions, such as neurotransmitter release, membrane excitability, and muscle cell contraction ([Jordt and Ehrlich, 2007](#)).

Bladder Pain Syndrome

- If you have an inflammatory ANGRY insult to the INSIDE of the bladder (the lining) then it is ALSO sending feed back to the “outside of the bladder” involving the detrusor.
- The bladder, when filling WITHOUT lining inflammation, will in a healthy manner fill and expanding hit a critical point where it signals to the brain that it needs to empty. Thus, engaging the detrusor to help assist in a “ gentle squeezing” of the bladder itself to ensure that the urine is entirely expelled out through the urethra.

Bladder Pain Syndrome

- Now let's pretend that you have a patient with an angry THICK INFLAMMED inner bladder wall
- (in a persistent state) the detrusor gets activated prematurely and thus applies OUTSIDE forces (and a constant squeezing) on the bladder itself. So TWO opposing forces: one acting pushes inward and constricting the organ, one acting as swollen angry irritated on the inside to outside force. This is an extremely ANXIOUS and unhappy bladder.

Bladder Pain Syndrome

- We also know that people who produce more cortisol and adrenaline, SYMPATHETICALLY driven nervous system there will be a CONCURRENT INCREASE in the level of inflammation at the bladder.

Bladder Pain Syndrome

- Autonomic Issues:
- Myofascial Pelvic Pain - Autonomic Neuropathy (we see this in CRPS!)
- Sympathetic Vascular Dysfunction creating LOCAL muscle disorders (swelling and edema since cannot achieve full ROM)
-

Bladder Pain Syndrome

- BPS- Diminished Vagal Nerve Function (Vagus nerve = main nerve provides Parasympathetic activity to organs)
- Small PAG (periaqueductal gray area in the brain= organizing descending inhibition response) If it was working effectively it would be BIGGER
- Visceral Overflow (localized nerves share organ function/actual viscera with muscles of local area and local area in THE BRAIN) e.g. constipation (Peter Chelimsky,2017)

Bladder Pain Syndrome

- WHY?
- Unclear actually
- Imbedded infection
- SUGGESTION could be correlated with PANIC/ANXIETY disorders
- Chronic Pelvic Pain, Depression, Migraine = MORE LIKELY
- What do these have in common? IMMUNE function. There is thought that it may be AUTOIMMUNE? (Clemens 2012, chelminsky 2017)

Bladder Pain Syndrome

- TREATMENT: PERIPHERAL
- Work at the BIG picture and:
 - Assess the entire abdomen (fascia/muscle)
 - Assess Pubic region, Pyramidalis, Rectus Abs, Obliques, TA, ADductors
 - Deep palpation to trigger pain/urgency
 - Treat what you see

Bladder Pain Syndrome

- PERIPHERAL vs. CENTRAL
- The first rule to consider is that the “PAIN” may or may not be coming from “SAID SOURCE”
- One thing you want to establish with your patients (and you’ll get a really great look inside their pain) is that they maintain a Bladder Diary

Bladder Diary

- We need information about individual bladders
- With functioning scales with urgency/ frequency columns and PAIN intensity as well as VOLUME if they are able to provide that as well.
- BOTH qualitative and quantitative info

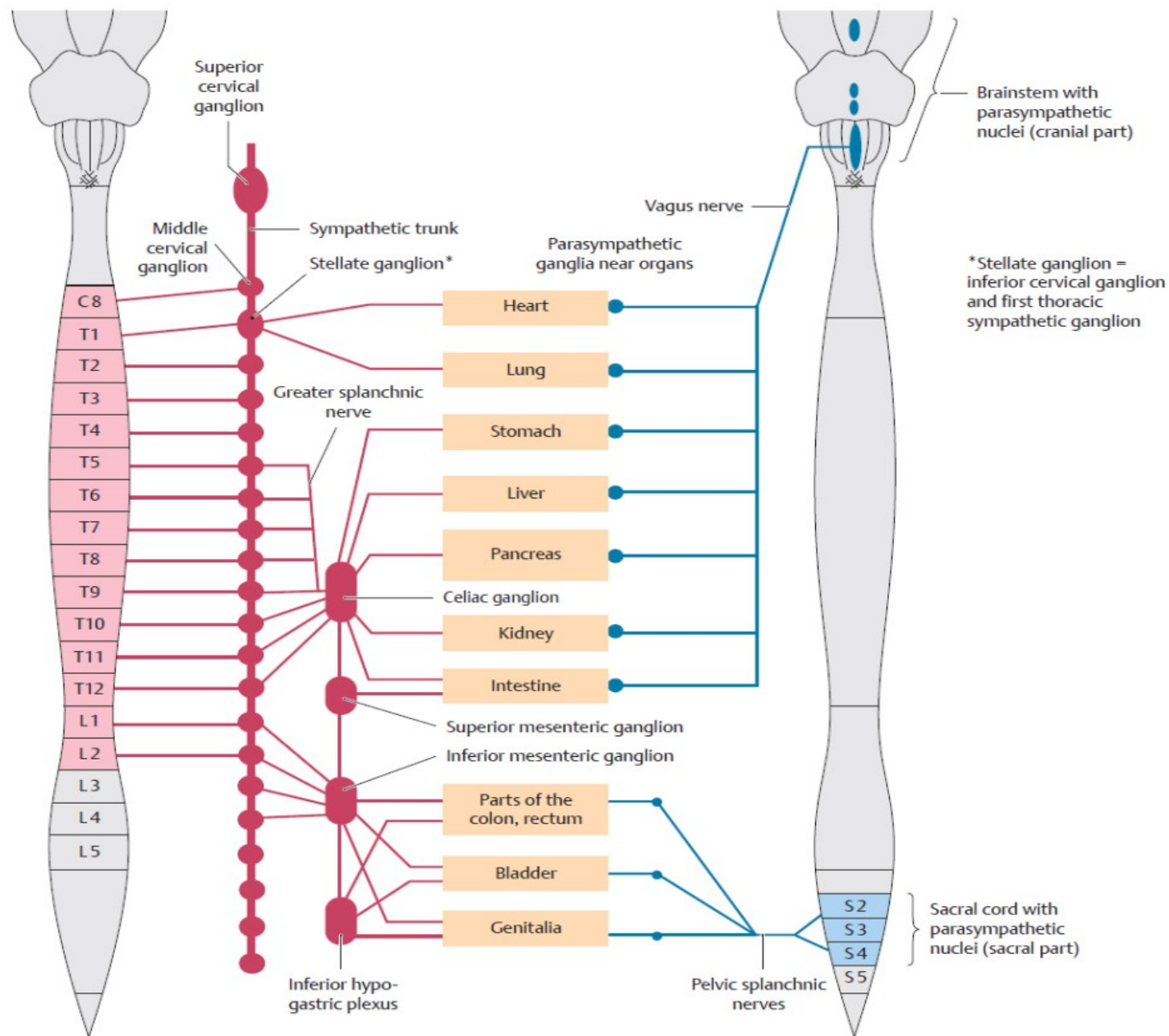
Bladder Pain Syndrome

- Now we know that with BPS we are working with CENTRAL SENSITIZATION
- We also know that EA is extremely effective working on the dorsal root ganglion/ afferent nerve fibers that are also contributing to the BPS.
- HTJJ or modified HTJJ location for the Perfusion Treatment, EA 2Hz Cont.
 - Just lateral to midline of spinous processes
 - T10-L2 for lower body
 - Don't add levels as any lower and you'll be off the sympathetic chain
- Perfusion Treatment raises parasympathetic tone, improves blood flow

Sympathetic nervous system

Parasympathetic nervous system

Sympathetic/
Parasympathetic



Bladder Pain Syndrome

- You can help vagal tone by moist heat on the sternum for 15 minutes at a time
- Valium Analogue Point in the ear, with needles, tacks or ear seeds
- Spleen 6 (San Yin Jiao) for:
 - PTNS: Posterior Tibial Nerve Stimulation/Percutaneous Nerve Stimulation
- Urachus, rec abs, pyramidalis, perineum

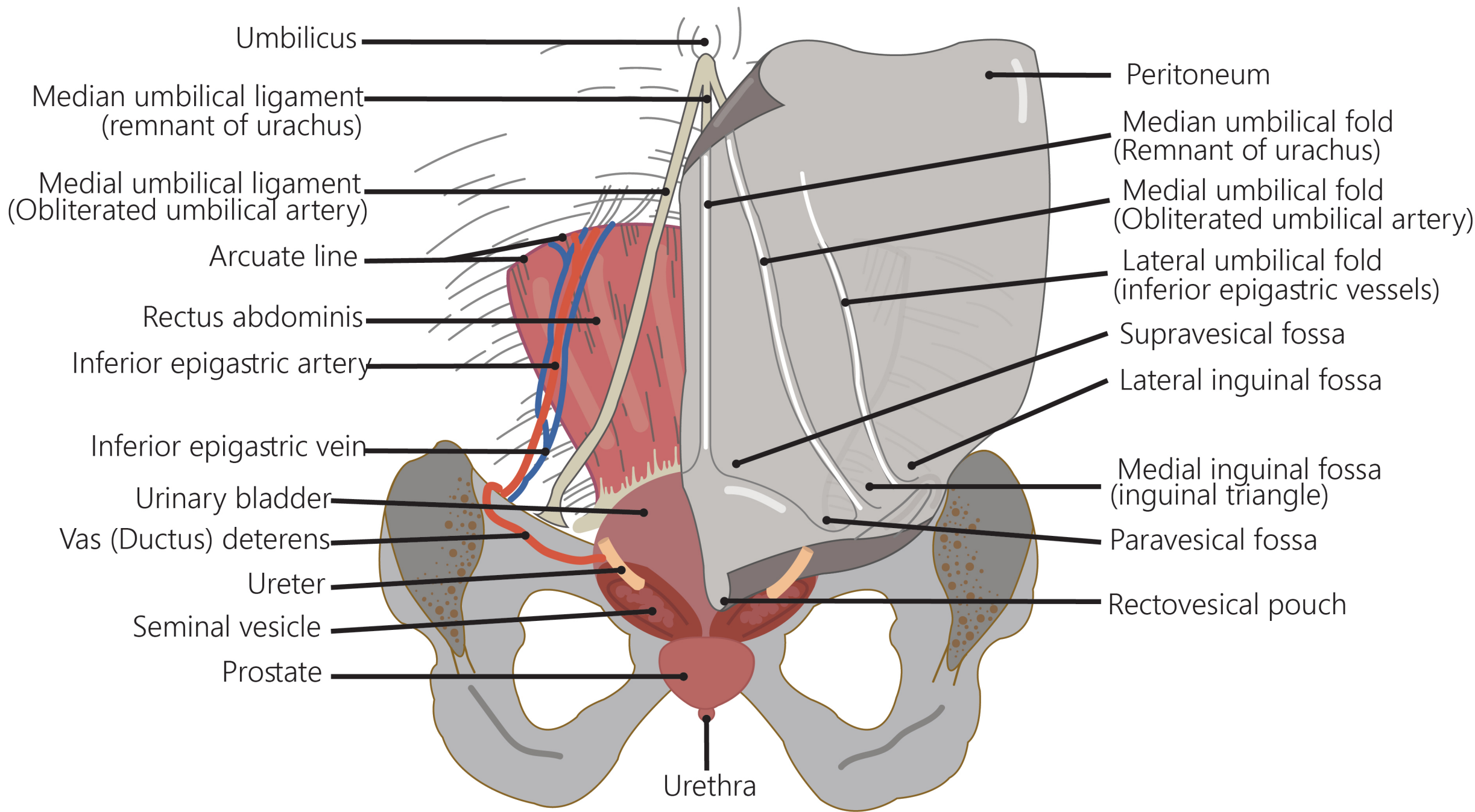
Urachus (fetus)/Median Umbilical Ligament (adult)

- Composed of smooth muscle fibers close to the bladder
- It becomes more fibrous as it approaches the umbilicus.
- Attaches to the apex of the bladder and travels superiorly to the umbilicus. This structure is also known as the urachus.



Urachus (fetus)/Median Umbilical Ligament (adult)

- Function: The median umbilical ligament is a remnant of the allantois, a canal that ran from the apex of the bladder to the umbilical cord in the developing fetus. Its function was to allow for the exchange of gases and removal of liquid waste (Dorland, 2011). The allantois largely closes and is referred to as the urachus or median umbilical ligament after birth. As an adult this structure serves no function.



Umbilicus

Median umbilical ligament
(remnant of urachus)

Medial umbilical ligament
(Obliterated umbilical artery)

Arcuate line

Rectus abdominis

Inferior epigastric artery

Inferior epigastric vein

Urinary bladder

Vas (Ductus) deferens

Ureter

Seminal vesicle

Prostate

Urethra

Peritoneum

Median umbilical fold
(Remnant of urachus)

Medial umbilical fold
(Obliterated umbilical artery)

Lateral umbilical fold
(inferior epigastric vessels)

Supravesical fossa

Lateral inguinal fossa

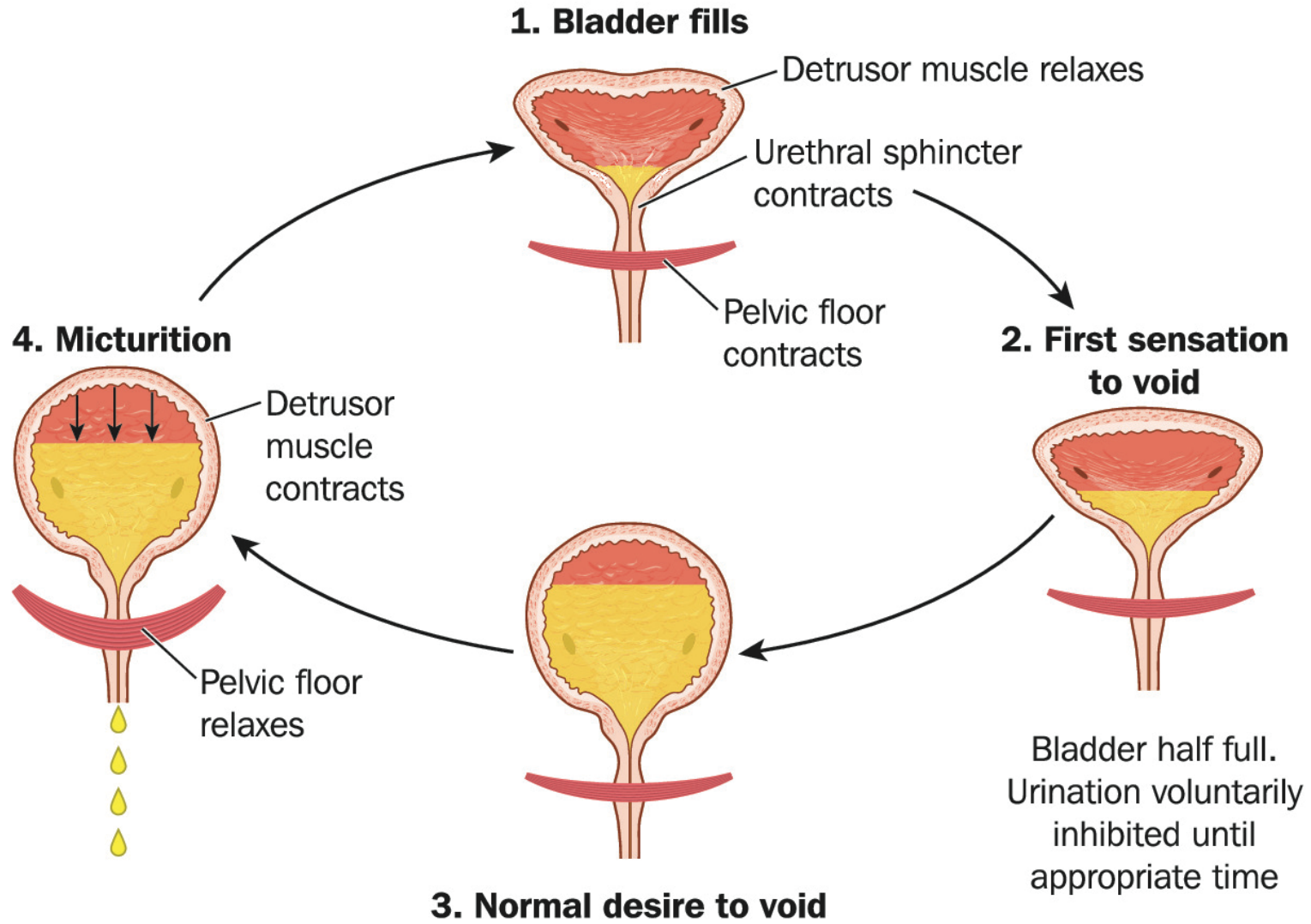
Medial inguinal fossa
(inguinal triangle)

Paravesical fossa

Rectovesical pouch

Urinary Incontinence

- stress urinary incontinence
- urge urinary incontinence
- overflow urinary incontinence.



Stress Incontinence & Urge Incontinence

- Stress incontinence: Involuntary loss of urine due to an increase in intra-abdominal pressure.
 - Seen in coughing and sneezing
 - Urethral sphincter deficiency is the cause
- Urge and overflow incontinence: large amount of urine leaks when the patient experiences a sudden urge to urinate.
 - Bladder abnormalities
 - Detrusor instability, or
 - Damage to the nervous system supplying the urinary bladder
 - multiple sclerosis, stroke, pelvic injury

Overflow Incontinence

- In overflow incontinence, a small amount of urine leaks when the urinary bladder is overdistended because of weakness of the bladder muscles in a neurogenic bladder or in chronic bladder outlet obstruction.
- Overflow incontinence is less common in women than in men.

Incontinence Treatments

- PTNS: Posterior Tibial Nerve Stimulation
 - Percutaneous Nerve Stimulation
- Anococcygeal ligament
- Sacral Plexus
- Muscles:
 - Urachus
 - Rectus Abdominis
 - Pyramidalis
 - Adductors
 - Levator Ani
 - Perineum

Posterior Tibial Nerve Stimulation (PTNS)

- Used primarily for OAB for URGENCY, FREQUENCY and INCONTINENCE
- But is also applicable for BPS
- The most important thing to keep in mind here is that you needle posterior to the tibia and deeply enough that when hooked up to EA you get the foot inversion
- You can test this by taking a POINTER PLUS and stimulating the point before hook up

PTNS

- Flexor digitorum longus
- I like to ground with Kid3 with the red lead
- I use ITO-ES 130; any estim unit will do
- “M” at FREQ “2” (~25hz) continuous
- For 15 minutes
- And at home for patient: moist heat locally

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