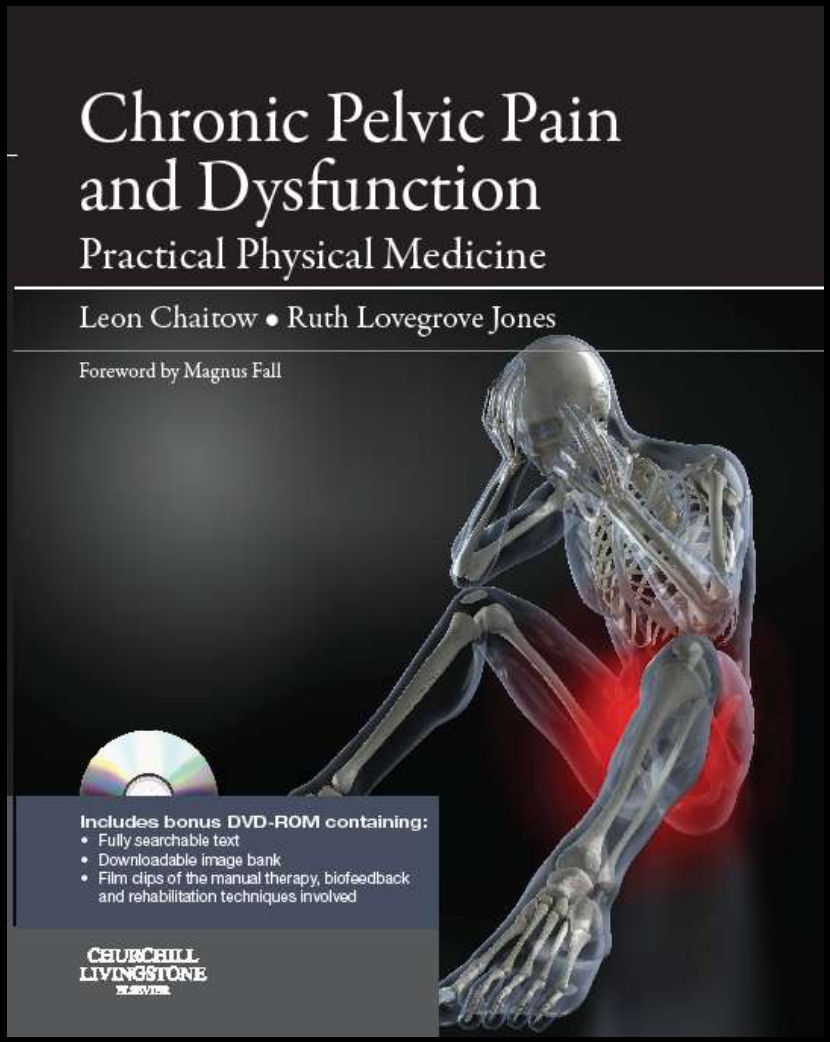
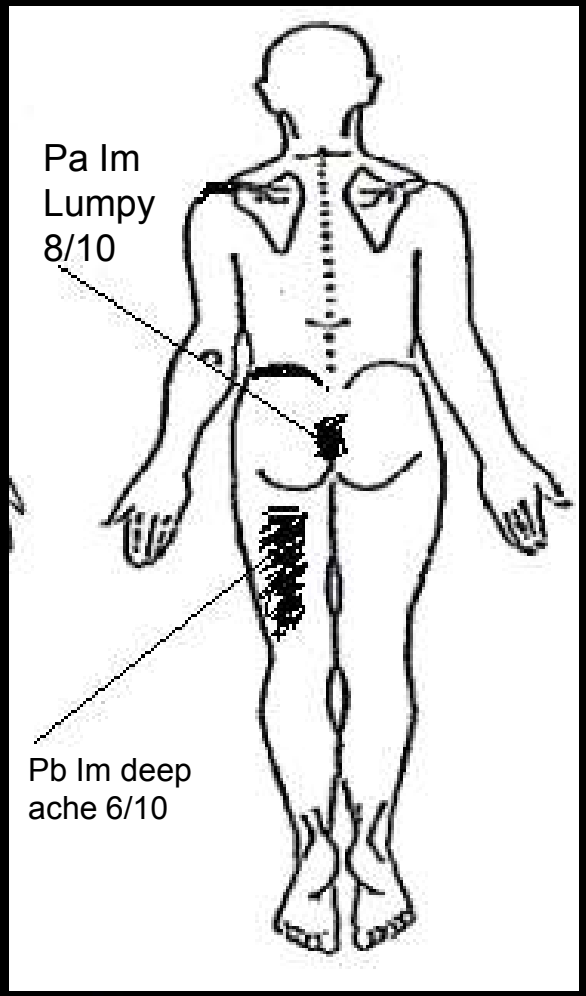
The Private Detective
…A Closer Look at Chronic Pelvic Pain



Dr Ruth Lovegrove Jones PhD MCSP

Chronic Pelvic Pain: Case History 1



- C/O 5 year history of pelvic pain; lumpy intravaginal pain & posterior thigh pain
- Dyspareunia: avoided sexual intercourse due to pain
- ASLR negative- during test holds breath
- L5-S1 pain provocation Pa
- Abnormal SLR structurally differentiated for Pb
- Poor coordination Lumbo-pelvic cylinder
- Muscle Balance Ext/Rot "give"

A: L5/S1 joint dysfunction, no sign of instability with concurrent neural involvement

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Treatment Plan

- Manual therapy: mobilised Thoracic, Lumbar & SI joints
- Neural Tissue Mobilisation
- Muscle Balance & Dynamic Stability
- Lots of chat!

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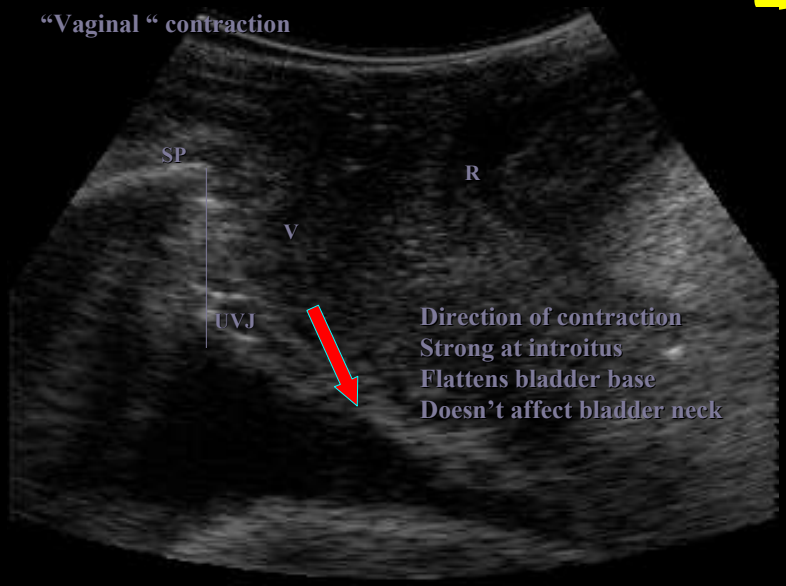
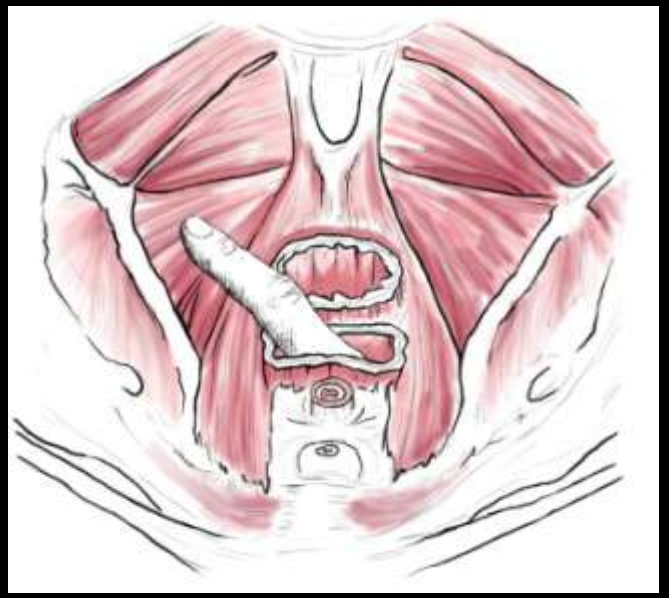
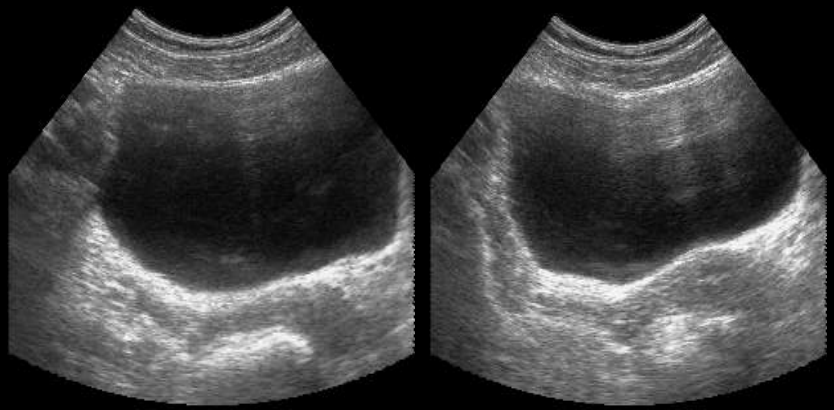
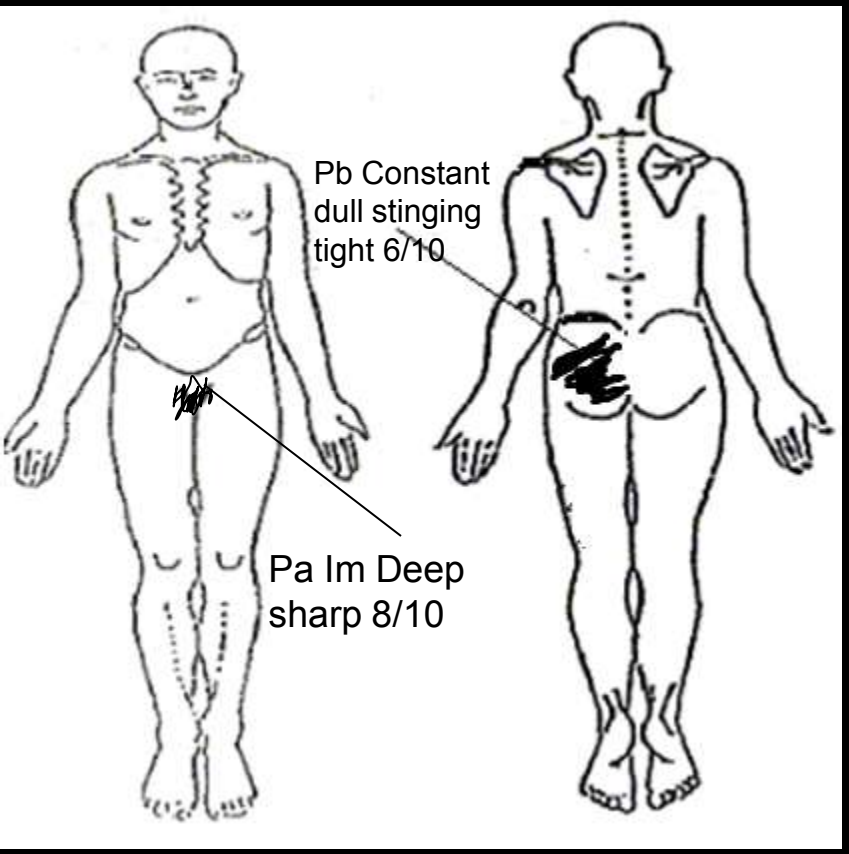
Treatment Plan 2 Years Later







Chronic Pelvic Pain: Case History 2



- Diagnosed vulvodynia; pudendal nerve entrapment
- Aggravating factors : walking up hill; Walking > 1 mile; Bending
- Eases: ice pack; (R) side lying
- A: Physiotherapy assessment: Symphysis pubis dysfunction (SPD)

Case History 3

- 35 yr male SAS army captain, out of action for 5 years, unable to run without disabling (L) groin pain. Diagnosed inguinal hernia, osteitis pubis, labral hip tear and treated surgically with no effect
- NIH chronic prostatitis symptom index form revealed signs of urinary dysfunction which he attributed to "getting old"
- PFM TP release (reproduced L hip pain) and further physio including LxSp pelvis/hip, (neural clear), with movement system re=education . 4 treatments and rehab, army fit 3 months later & back to running with loaded backpack. All urinary symptoms gone.

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The Hard Part

- The role of the therapist is to identify and correct the movement dysfunction
- Easy to find dysfunction BUT does it relate to the presenting condition?

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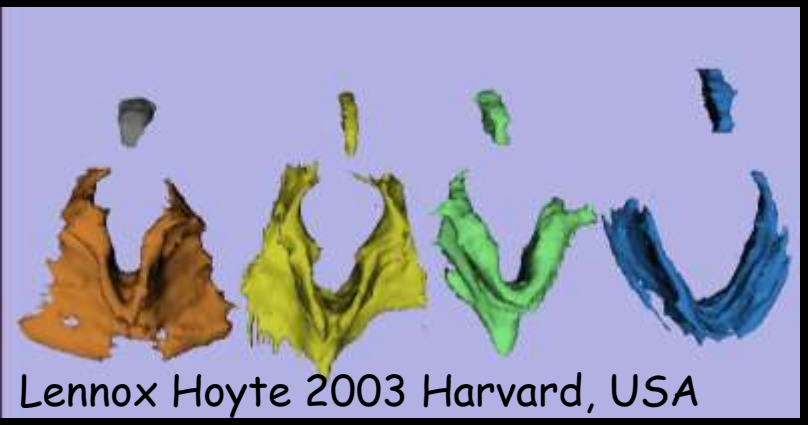
Pelvic Floor Muscle Dysfunction


Lennox Hoyte 2003 Harvard, USA

- For certain encompasses both urinary and faecal incontinence, POP & pelvic pain Martins et al., 2007.
- Spinal Stability & IAP Hemborg et al., 1985; Hodges & Gandevias 2000; Pool-Goudzwaard et al., 2004;Smith et al., 2008
- Increased odds of PFDC following LBP during pregnancy Pool-Goudwaard 2003
- Disorders of breathing & continence have a stronger association with back pain than obesity and physical activity Smith, Russell ,Hodges 2005
- Altered motor control strategies in patients with SIJ pain O'Sullivan et al 2002

Pelvic Floor and Back Pain

- Symptoms of Pelvic Floor dysfunction occurred significantly more in the group with Pregnancy related low back pain (PLBP)
- Especially if they had a *negative* active straight leg raise (ASLR)
- In PLBP pelvic floor activity had **higher rest tone** & shorter endurance time

  Pool-Goudzwaard 2003

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Pelvic Girdle Pain

- Functional test: active straight leg raise (ASLR)
- 6-point scale:
- not difficult at all = 0
- minimally difficult = 1
- somewhat difficult = 2
- fairly difficult = 3
- Very difficult = 4
- unable to do = 5

The scores on both sides are added so that the sum score can range from 0 to 10

Pelvic Floor Muscles and Back Pain

- 52% had combination of low back pain (LBP) and pelvic floor dysfunction
- 82% of these stated their complaints started with LBP **prior** to the PF dysfunction

Pool-Goudzwaard 2003

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Diaphragm Compensation Mechanisms

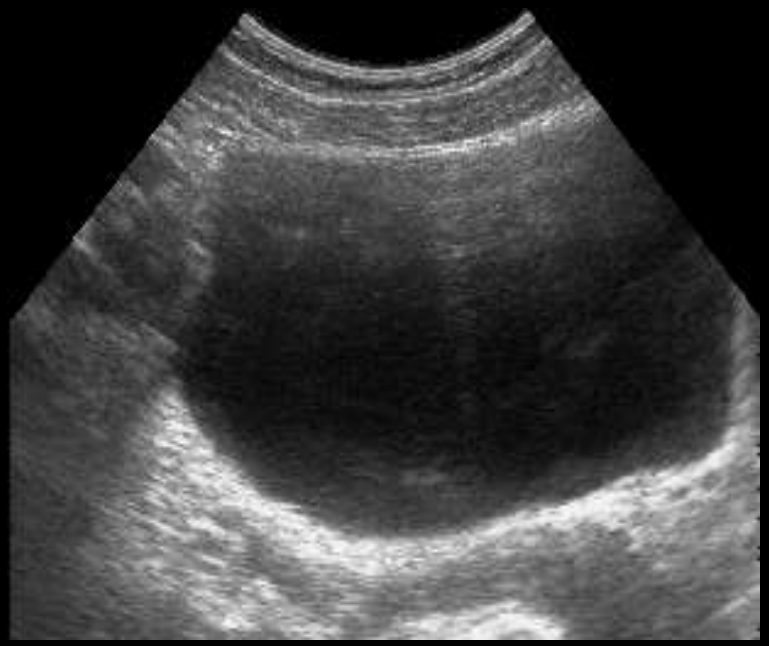
- Absence of diaphragmatic motion in all PLBP patients with positive ALSR
- A negative ASLR in PLBP could be a sign of successful compensation mechanism (increased pelvic floor activity) for compromised pelvic instability

Pool-Goudwaard 2003

Diaphragm Compensation Mechanisms

- Significant differences in diaphragm excursion at rest in normals cf SIJP
- Decreased diaphragmatic excursion during ASLR in patients with SIJP
- With compression of ilia comparable to normals
  O'Sullivan 2002

Pelvic Floor and SIJ Dysfunction



- Patients with chronic sacro-iliac joint pain have significantly different PFM and respiratory patterns than normals

  (Avery & O'Sullivan 2000, O'Sullivan & Beetham,2001)

(ASLR) Raise straight leg 20cm off ground

Mens 1999

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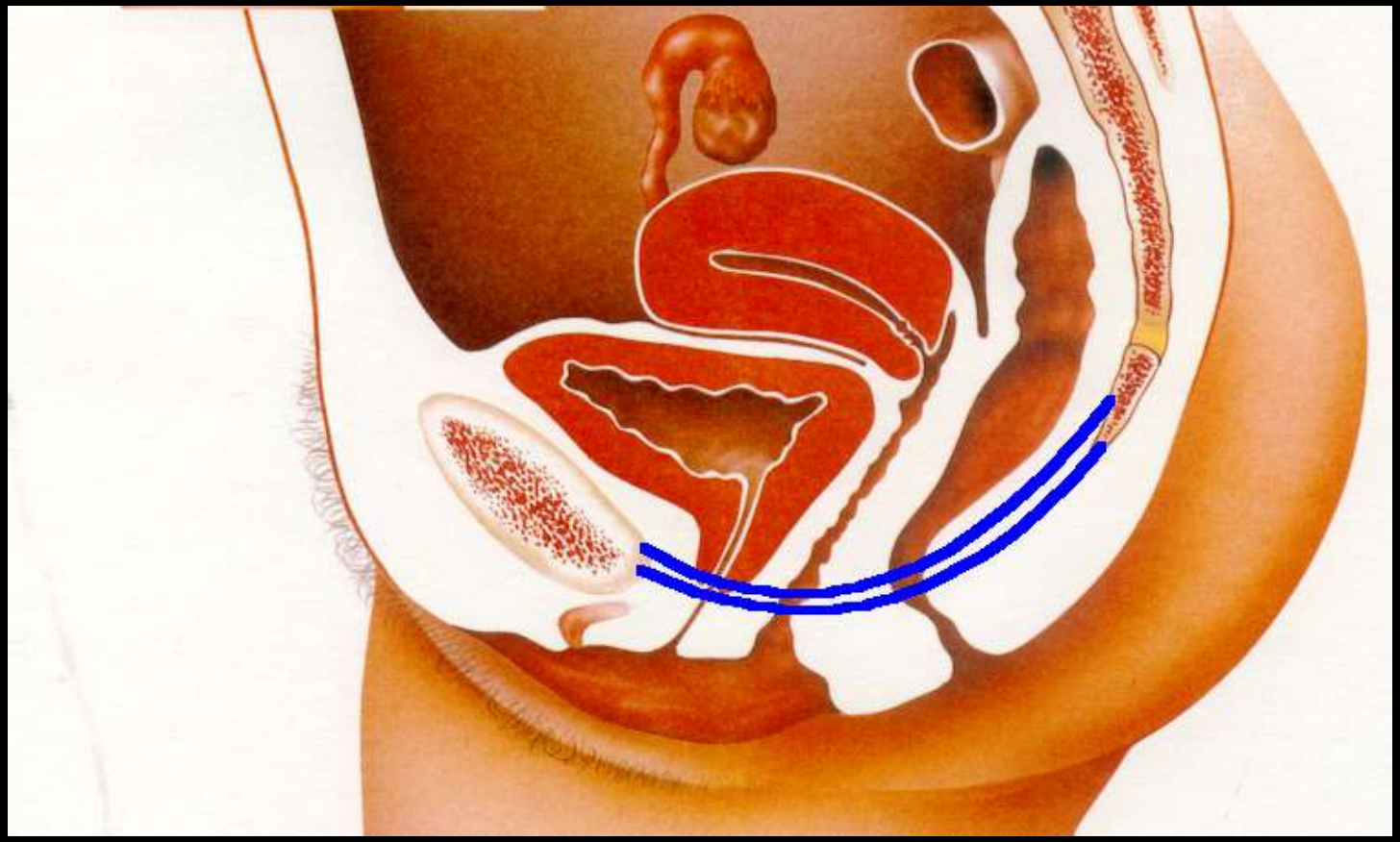
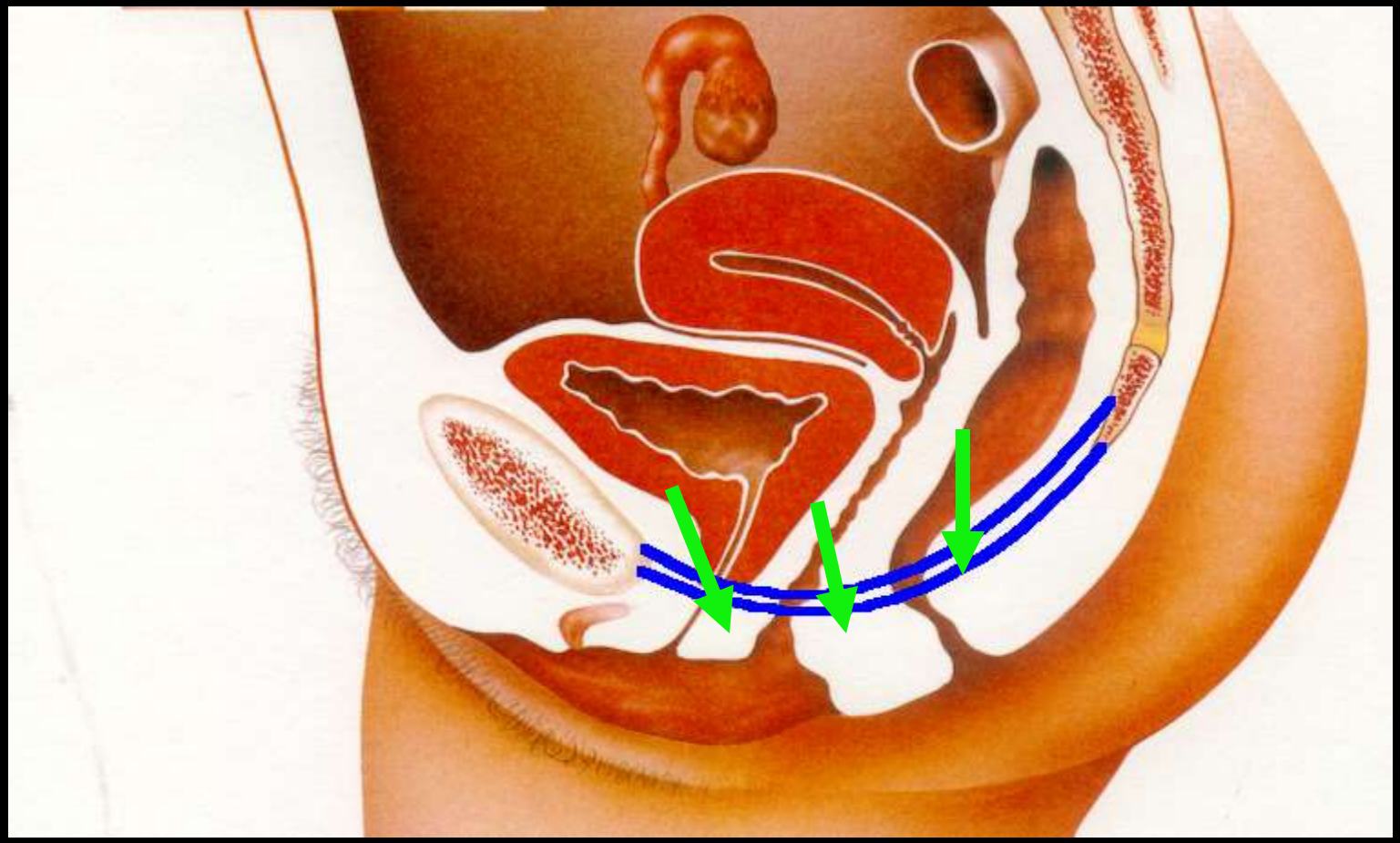
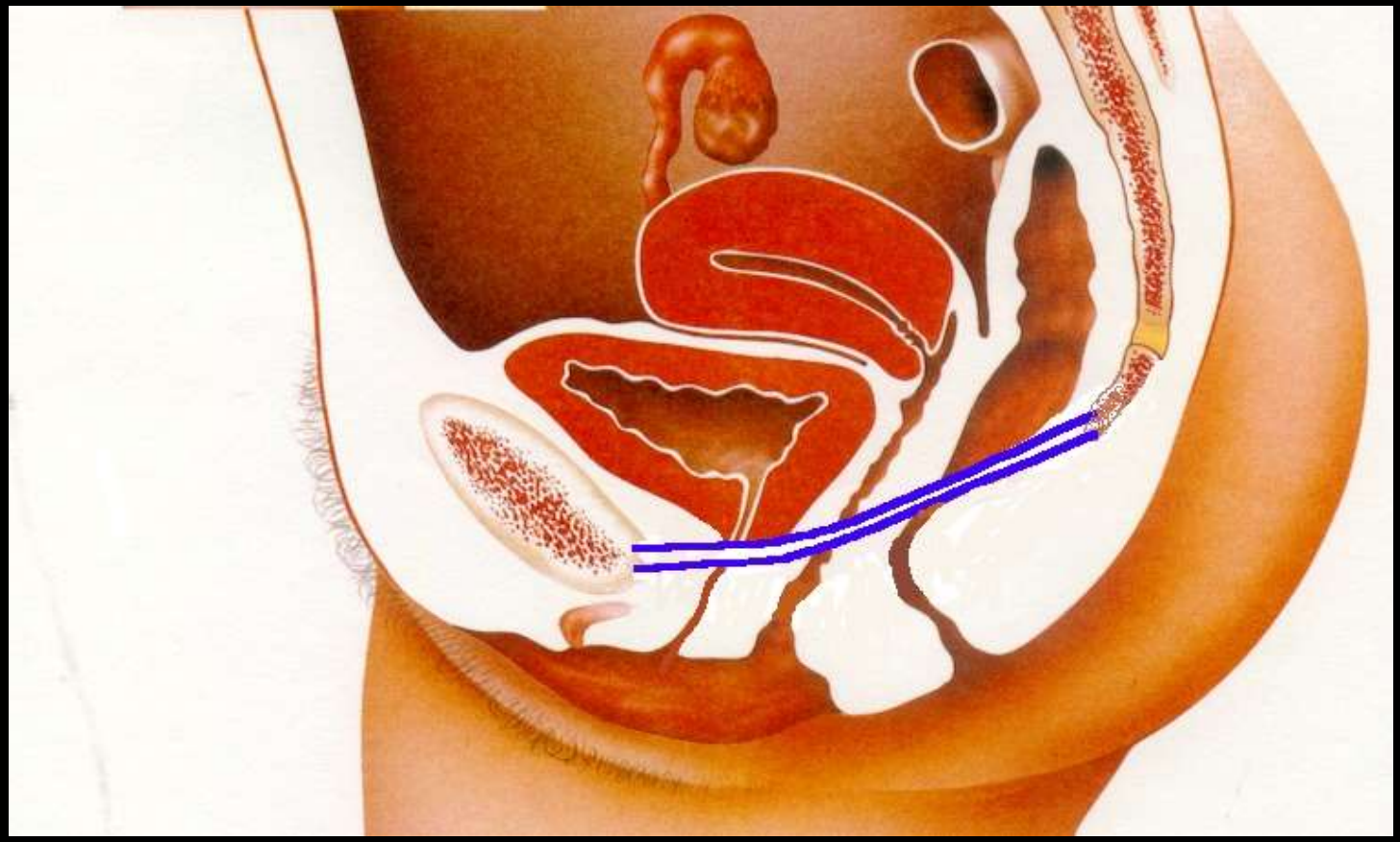
Compensation Strategy?





O´Sullivan 2002



Pool- Goudzwaard 2000

My Journey…
So does size really matter?

- Although issues of motor control have more recently been considered; studies of PFM function have mainly concentrated on the evaluation of the strength and endurance of voluntarily initiated contractions (Laycock & Jerwood, 2001; Dumoulin et al., 2003;Bo & Finckenhagen, 2003)
- Strengthening PFM can improve continence status however it is unclear why strengthening is effective in some women and not others(Berghmans 1998 Hay-Smith Dumoulin2004/08)
- While many measurement tools for PFM function have qualified strength; strength of PFM contraction does not always correlate to continence state or action on the urethra (Theofrastous 2002)

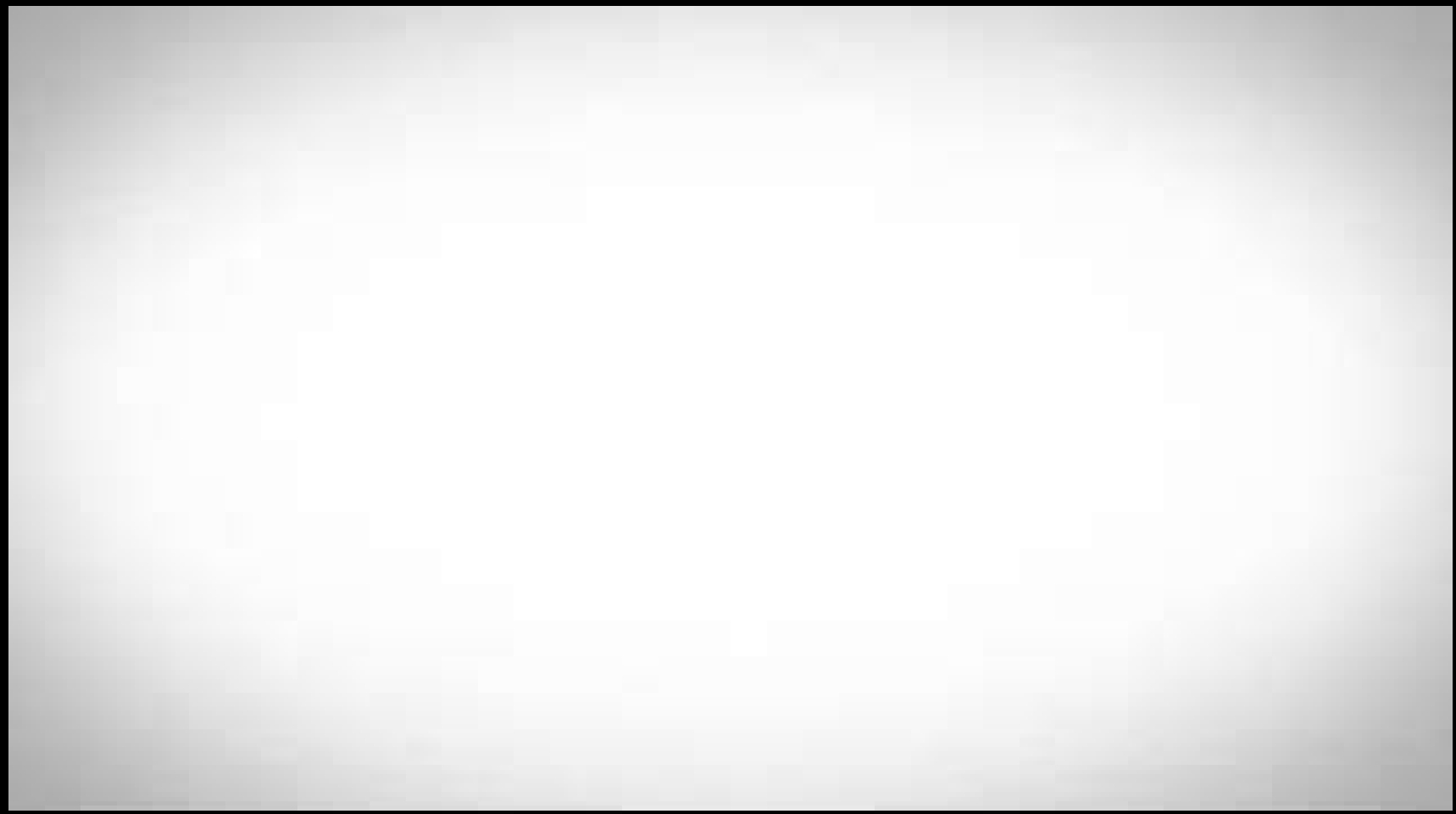
Seeing is believing?

Californian Effect

Definitions of Pain

- Pain is an unpleasant sensory & emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
- In the case of documented nociceptive pain that becomes chronic, pain must have been continuous or recurrent for at least 6 months.
- If non-acute and central sensitization pain mechanisms are well documented, then the pain may be regarded as chronic, irrespective of the time period (IASP 2009)

bodyinmind.org/check-this-out

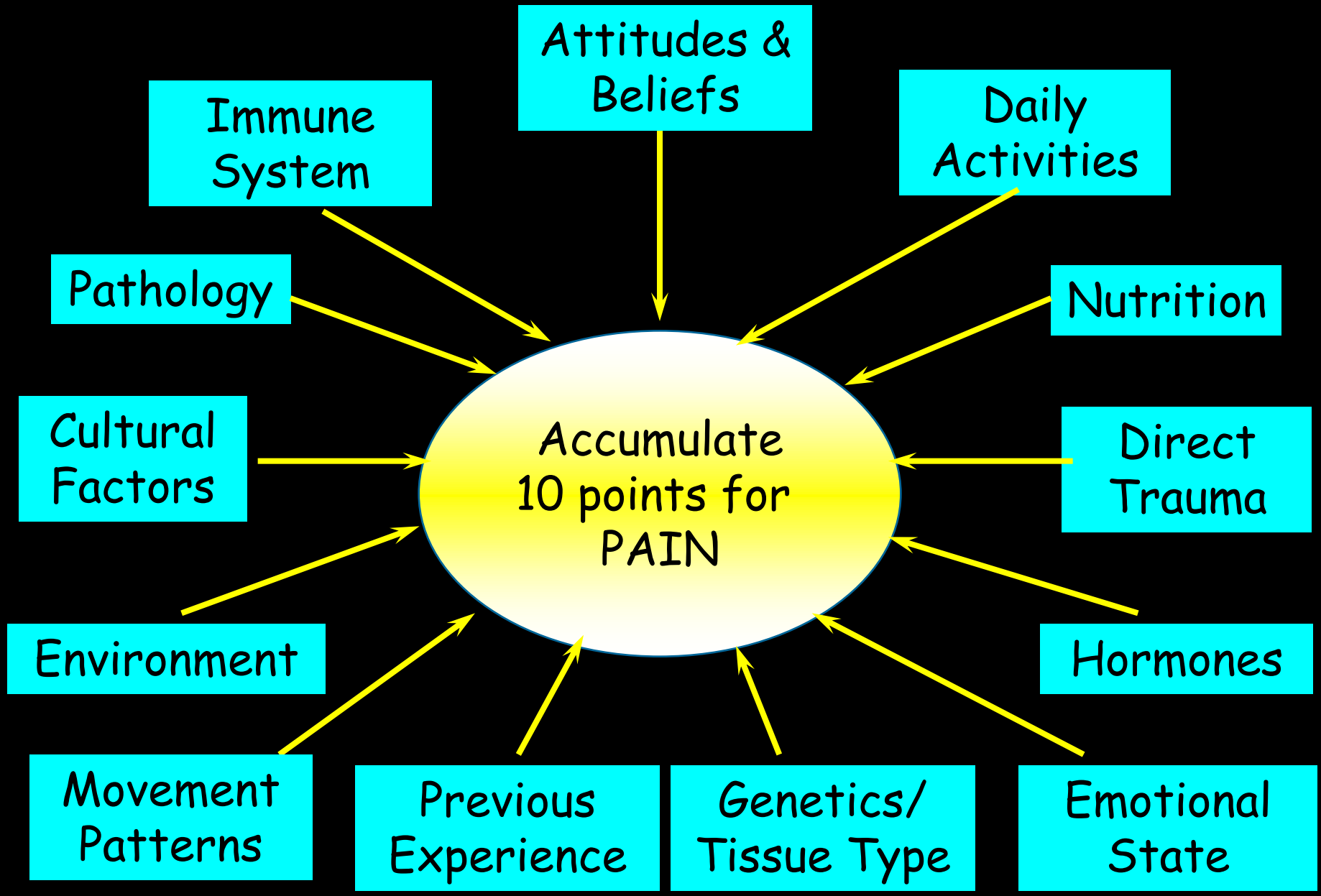


Pain Physiology

EXPLAIN PAIN

Butler & Moseley 2003

- All pain experiences are a normal response to what your brain thinks is a threat .....No brain no pain!
- The amount of pain you experience does not necessarily relate to the amount of tissue damage....Your hurts won't harm you
- Pain is determined by the brain's answer to the question 'How dangerous is this?' and relies on context
- Pain relief is determined by the brain's answer to the question 'How dangerous is this NOW?'



Pain is an unpleasant sensory & emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP 2009)

Definition CPP

- Chronic Pelvic Pain (CPP) is non-malignant pain perceived in structures related to the pelvis of either men or women
- Chronic Pelvic Pain Syndrome (CPPS) is the occurrence of CPP where there is no proven infection or other obvious local pathology that may account for the pain.
- Often associated with symptoms suggestive of lower urinary tract, sexual, bowel or gynaecological dysfunction
- Often has negative cognitive, behavioural, sexual and emotional consequences (Fall et al 2010).

Prevalence of Chronic Pelvic Pain Syndromes (CPPS)

- 15% to 20% of women, aged 18 to 50 years, have experienced CPP lasting for more than one year (Howard 2004)
- Prevalence of 8% CPPS is estimated in the US male population (Anderson 2008).
- Overall prevalence rates of CPP are likely to be under-diagnosed, in part due to the lack of agreed-upon definitions and subsequent difficulty in categorizing CPP (Clemens et al 2005, Fall et al 2010).

Management of CPPS

- Symptoms of CP/CPPS appear to result from interplay between psychological factors and dysfunction in the immune, neurological and endocrine systems Pontari & Ruggieri (2008)
- Therapeutic approaches should adopt strategies that take account of these multiple interacting factors.

EAU Classification of CPP (Fall et al 2010).

Region	System	End Organ	Referral	Temporal	Character	Associated Symptoms	Psychological Symptoms
Chronic Pelvic Pain: PPS	Urologic Gynaecol	Bladder Pain Urethral Prostate:Type A/B Scrotal: Testicular Penile: Epididymal/ post-Vasectomy Endometriosis Vaginal Vulvar: Generalised Localised: Vestibular/Clitoral	Suprapubic Inguinal Urethal Penile/ Clitoral Perineal Rectal Back Buttocks	ONSET Acute Chronic ONGOING Sporadic Cyclical Continuous TIME Filling Emptying Immediate Late post	Aching Burning Stabbing Electric Other	URINARY Frequency Nocturia Hesitance Poor flow Doble void Urge Urgency Incont GYNAE Eg menstrual SEXUAL Eg dyspareunia Impotence GI MUSCULAR Hyperalgesisa CUTANEOUS Allodynia	ANXIETY About pain or cause of pain Other DEPRESSION Attributed to pain or impact of pain Attributed to other causes or unattributed SHAME, GUILT related to disclosed or undisclosed sexual experiences PTSD SYMPTOMS Re-experiencing Avoidance Hyperarousal
	Anorectal						
	Neurologic	Eg Pudendal					
	Muscular						
Non PPS	Eg Neurologic	Eg Pudendal neuralgia					

NIH-Chronic Prostatitis Symptom Index (NIH-CPSI)

- NIH-CPSI.pdf
- NIH-CPSI.pdf (women)
- PPSS

APPENDIX: PPSS FOR MEN

Over the past month or so, including today, how much were you bothered by the following:

	Not at All	A Little Bit	Moderately	Quite a Bit	Extremely
Pain in the lower back	0	1	2	3	4
Pain in the lower abdomen or pubic area	0	1	2	3	4
Pain during urination	0	1	2	3	4
Pain with bowel movement	0	1	2	3	4
Pain in the rectum	0	1	2	3	4
Pain in the prostate gland	0	1	2	3	4
Pain in the testicles	0	1	2	3	4
Pain in the penis	0	1	2	3	4
Number of days pain experienced in the last month*	0	6	15	24	30
How bad is the pain on average? (Put an X on the line from 0 to 10)†	0				10
	no pain				most painful

Total Pain Score _____

Difficulty postponing urination, hard to hold (urgency)	0	1	2	3	4
Need to urinate again less than 2 hr after urinating (frequency)	0	1	2	3	4
Number of times urinating at night	0	1	2	3	4
Bladder does not feel completely right after urinating	0	1	2	3	4
Stopping and starting several times while urinating (intermittence)	0	1	2	3	4
Weak urinary stream	0	1	2	3	4
Having to push or strain to begin urination	0	1	2	3	4

Total Urinary Score _____

Lack of interest in sexual activity	0	1	2	3	4
Difficulty getting an erection	0	1	2	3	4
Difficulty maintaining an erection	0	1	2	3	4
Difficulty reaching an ejaculation	0	1	2	3	4
Pain with ejaculation	0	1	2	3	4

Total Sexual Score _____

Physiotherapy for Pelvic Pain

- One RCT designed to assess the feasibility of conducting a full-scale trial of physical therapy methods in 48 patients with urological CPPS
- 2 methods of manual therapy; myofascial physical therapy and global therapeutic massage.
- The global response assessment response rate of 57% in the myofascial physical therapy group was significantly higher than the rate of 21% in the global therapeutic massage treatment group ($p = 0.03$) suggesting a beneficial effect of myofascial physical therapy (Fitzgerald et al 2009).

results

	GTM	MPT	Total
Number Randomized	24	23	47
Total (p=0.03)			
Responders	5 (21%)	13 (57%)	18 (38%)
Non-responders	19 (79%)	10 (43%)	29 (62%)
Female (p=0.02)			
Responders	0 (0%)	5 (45%)	5 (21%)
Non-responders	13 (100%)	6 (55%)	19 (79%)
Male (p=0.45)			
Responders	5 (45%)	8 (67%)	13 (57%)
Non-responders	6 (55%)	4 (33%)	10 (43%)

Treatment of Trigger Points

- Improvement in symptoms of interstitial cystitis using MF TrP release (Weiss, 2001)
- Treatment of TrPs in PFM, piriformis and gluts improved symptoms in pts with CPP, IC and irritative voiding symptoms (Doggweiler-Wiygul &Wiygul, 2002)
- Treatment of TrP significant improvements in urinary symptoms, libido, ejaculatory, penile and erectile pain and ejaculatory dysfunction in men with CPP (Anderson 2006)
- TrP inactivation of levator ani by injection in management of patients with CPP 72% improvement and 33% painfree (Langford 2007)

Weiss (2001) J Urol. Dec;166(6):2226-31.
Doggweiler-Wigul & Wiygul 2002
Anderson R, Wise D, Sawyer T,(2006) J Urol. Oct;176(4 Pt1):1534-8
Langford C (2007) Neurourol. Urodynam. 26:59-62, 2007

Trigger point treatment

- Identify central trigger points
- Identify attachment trigger points
- Apply sustained pressure to TP with sufficient force and for long enough time to inactivate it (Travell & Simons 1999)
- 20 secs to 1 minute (Travell & Simons, 1999)
- 30-90 secs (Wise 2006)
- Compress for 60-90 sec (Rummer 2009)
- Compress, contract muscle very gently 10-15x or until you feel release of MTrP (Rummer 2009)

Connective Tissue Manipulation

Elizabeth Rummer & Stephanie Prendergast www.pelvicrehab.com

Recent Research in CPPS (in press)

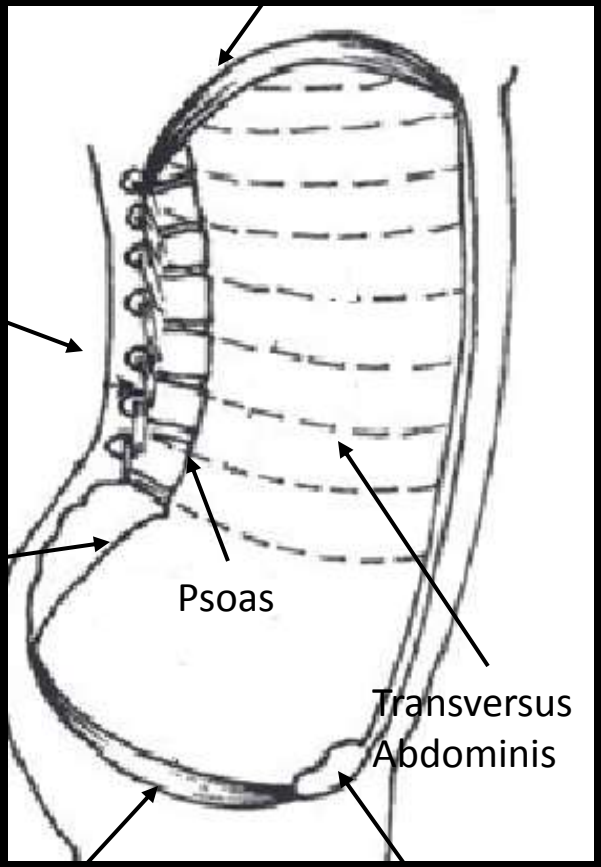
Ultrasound

- PFM dysfunction measured by ultrasound is present in men suffering from UCPPS, and is correlated with pain, sexual dysfunction and anxiety.
- ARA at rest was more acute in UCPPS than controls
- Less upward movement of the PFM during contraction and more acute LP angle at contraction in UCPPS men
- Reduced contractile endurance in UCPPS men

Musculoskeletal Disorders

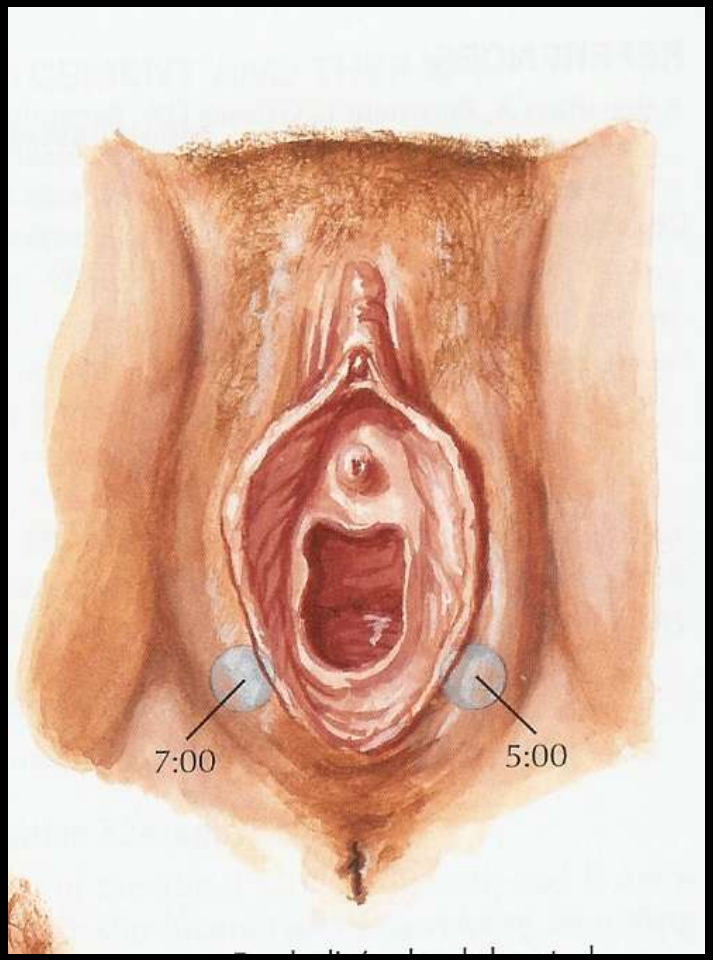
- Abnormal findings on musculoskeletal exam are more common in women with self-reported CPP
- By using two examination maneuvers, (Pelvic Floor Muscle Tenderness & Faber) examiners correctly classified women with self-reported CPP from pain-free women 85% of the time

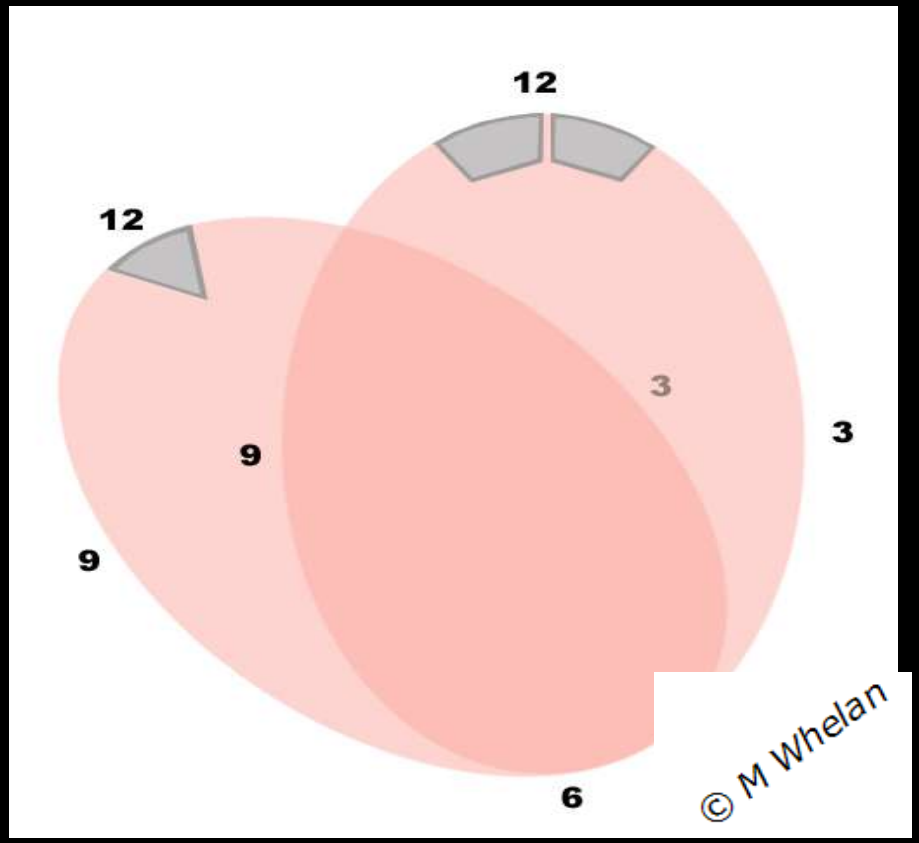
Gross PFM Anatomy
Lumbo-pelvic cylinder



- Bony pelvis: sacrum, coccyx & innominates
- Joined posteriorly by strong ligamentous at SIJ, anteriorly at SP
- Respiratory diaphragm
- PFM
- TrA & abdominals
- Spinal column
- Segmental multifidus and psoas

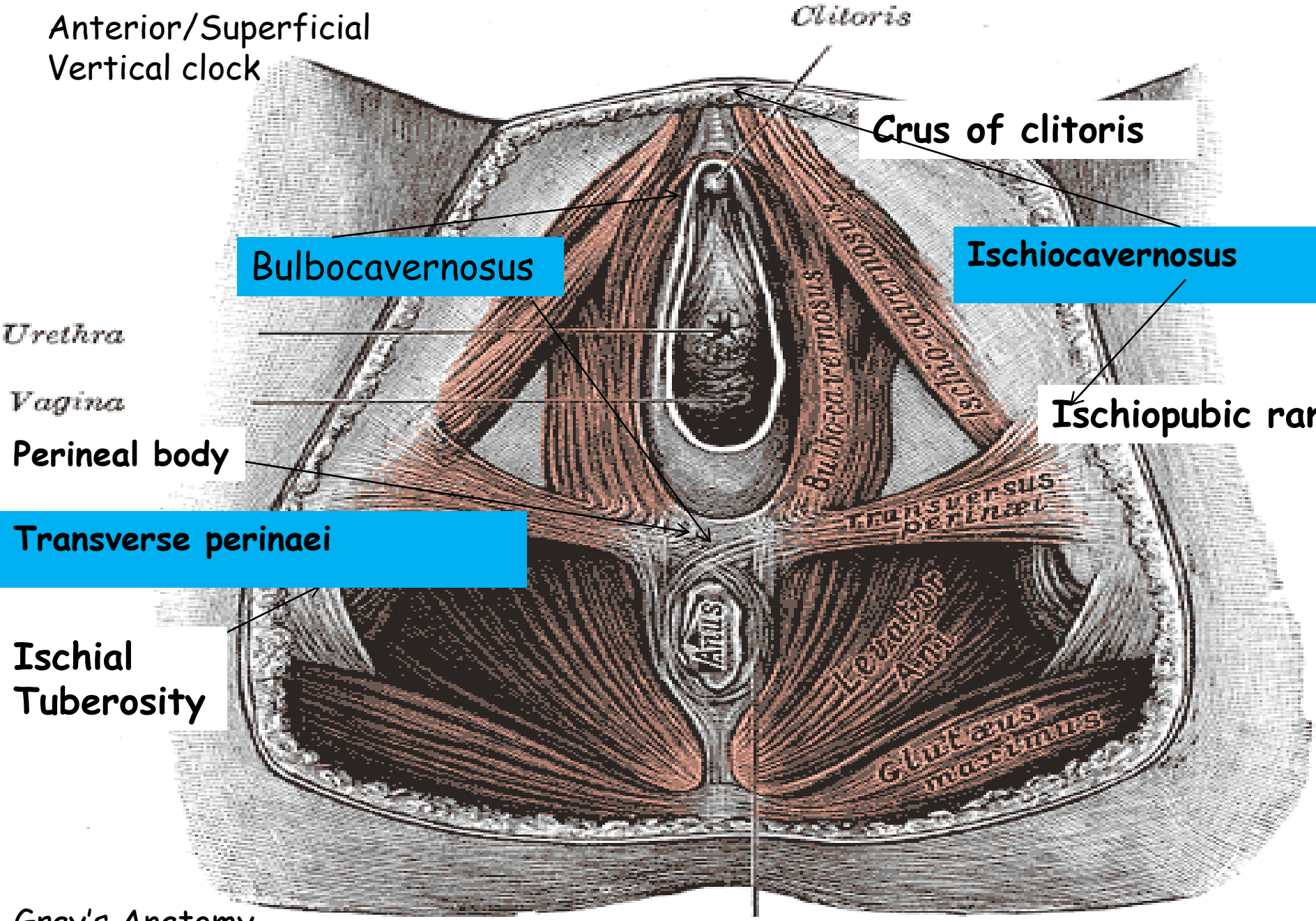
Anterior / Superficial Pelvic Floor
Vertical Clock





- Pubic symphysis at 12 o'clock, perineal body at 6
- Pubococcygeus at 4/5 o'clock and 7/8 o'clock

Anterior/Superficial
Vertical clock



Crus of clitoris

Bulbocavernosus

Ischiocavernosus

Ischiopubic ramu

Perineal body

Transverse perinaei

Ischial Tuberosity

Gray's Anatomy

External anal sphincter

Vertical Plane Techniques

Stretch Posterolateral/vertical

Stretch / pincer grip/Skin roll

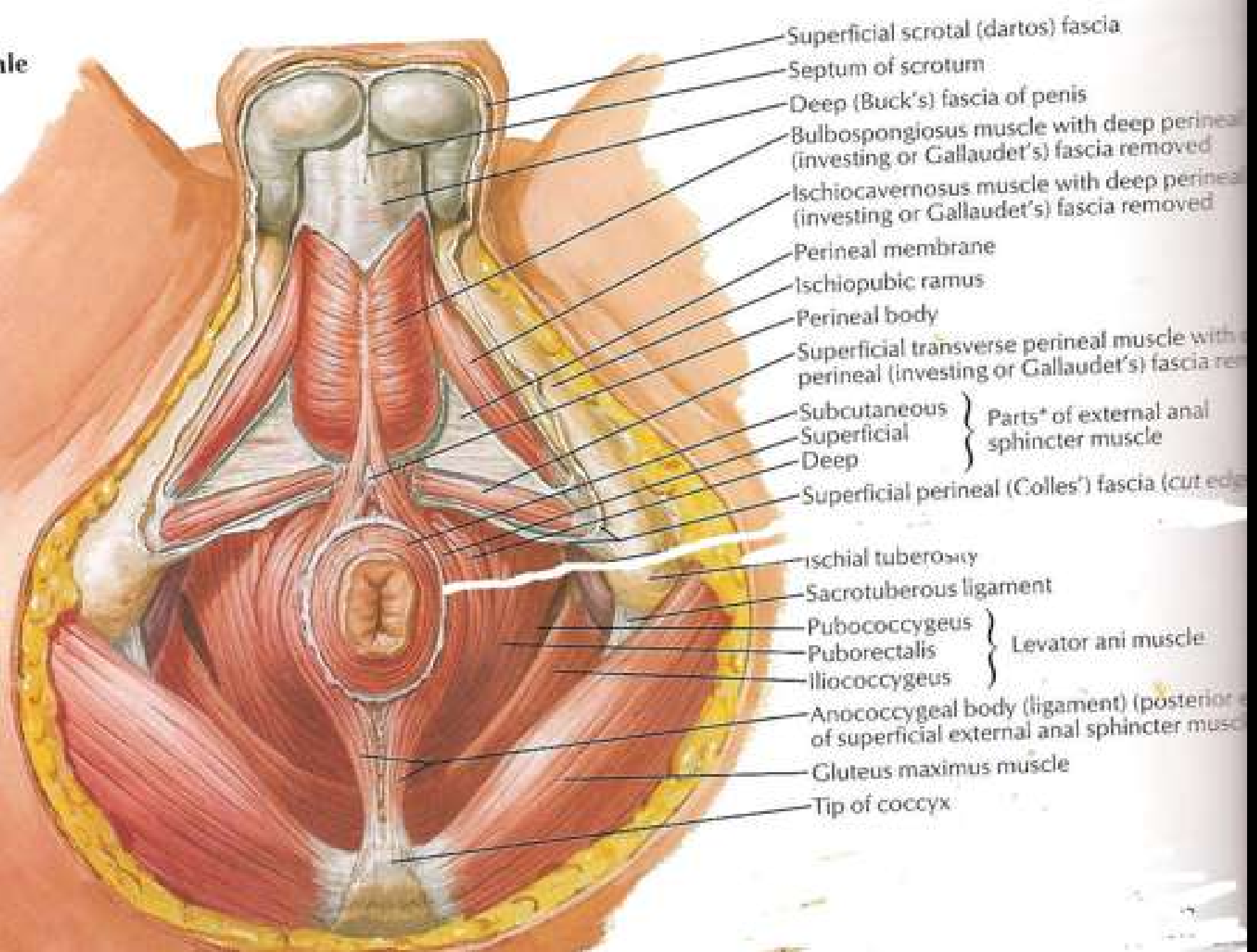
Weiss 2001

- Gentle flicking action inferior to superior tractioning the urethra feeling for restriction

Are TrPs symptomatic ?

- 88% of men with CPPS had tender points MF palpation (Zermann et al 2001)
- 51% of men with CPPS reported tenderness to palpation of PF muscles at 11 sites V 7% controls (Shoskes 2008)
- 72 men, 7 pelvic pain sites, PC and PR and RA TrPs reproduced pain in the penis more than 75% of the time. EO elicited suprapubic, testicular and groin pain in 80% or patients

ZermannDH, Ischigooka M, Doggweiler-Wigul R et al (2001): World J Urol 19: 173
Shoskes DA, Berger R, Elmi A et al (2008) J Urol 179:556
Anderson R, Sawyer T, Wise D et al (2009) J Urol Vol 182 2753-2758 December


Superficial scrotal (dartos) fascia
Septum of scrotum
Deep (Buck's) fascia of penis
Bulbospongiosus muscle with deep perineal (investing or Gallaudet's) fascia removed
Ischiocavernosus muscle with deep perineal (investing or Gallaudet's) fascia removed
Perineal membrane
Ischiopubic ramus
Perineal body
Superficial transverse perineal muscle with perineal (investing or Gallaudet's) fascia re
Subcutaneous
Superficial
Deep
Parts* of external anal sphincter muscle
Superficial perineal (Colles') fascia (cut edg
Ischial tuberosity
Sacrotuberous ligament
Pubococcygeus
Puborectalis
Iliococcygeus
Levator ani muscle
Anococcygeal body (ligament) (posterior of superficial external anal sphincter musc
Gluteus maximus muscle
Tip of coccyx

Male perineum / penile pain

•Perineum, scrotum, everything up to base of penis (suprapubic-ischial tuberosity)

• MTrPs: perineal body, IC/BS

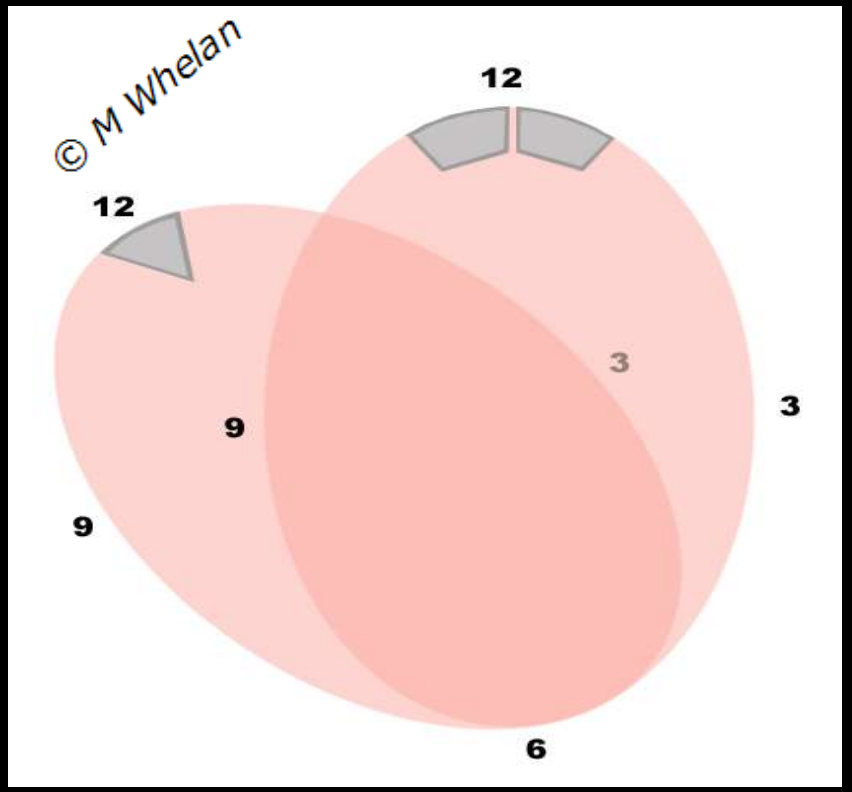
• Internal CT mob lateral to prostate/MFR at PS attachment

• Dry needling/lidocaine TPI

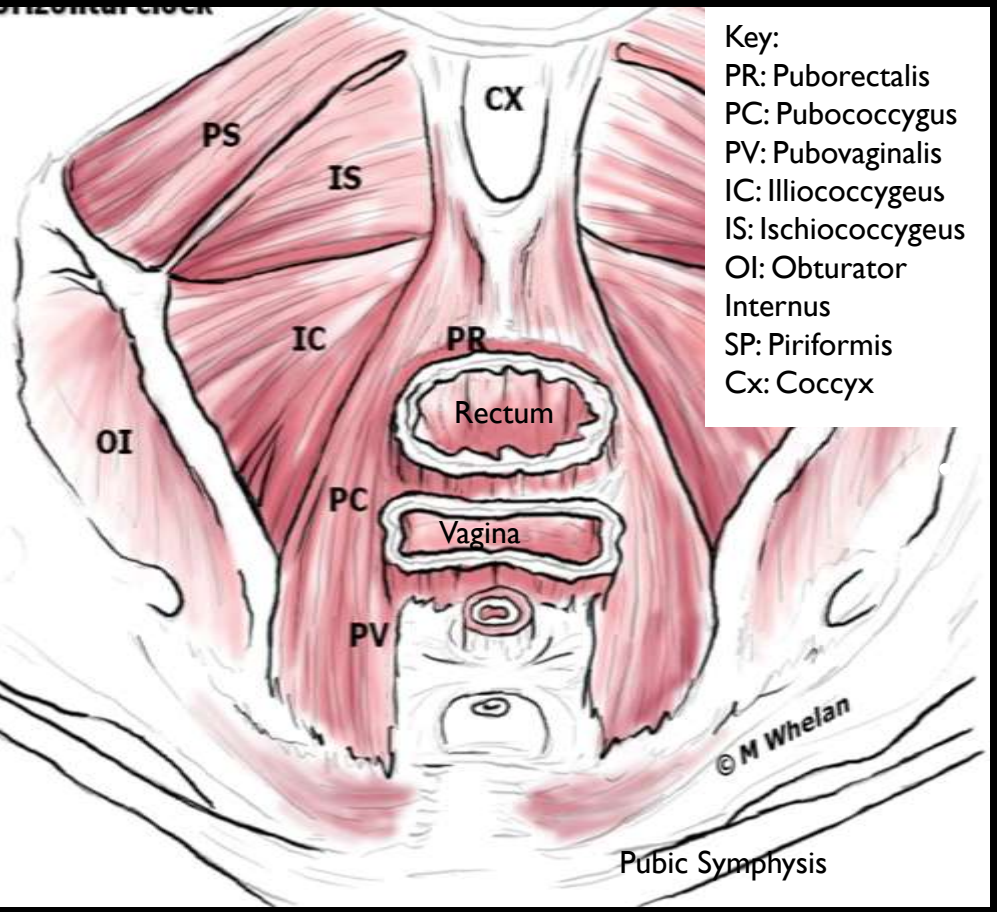
Posterior / Deep
Horizontal clock

- Coccyx at 12 o'clock, perineal body at 6 o'clock

- Pubococcygeus at PIP joint, iliococcygeus at 10 o'clock and 2 o'clock under the finger pad



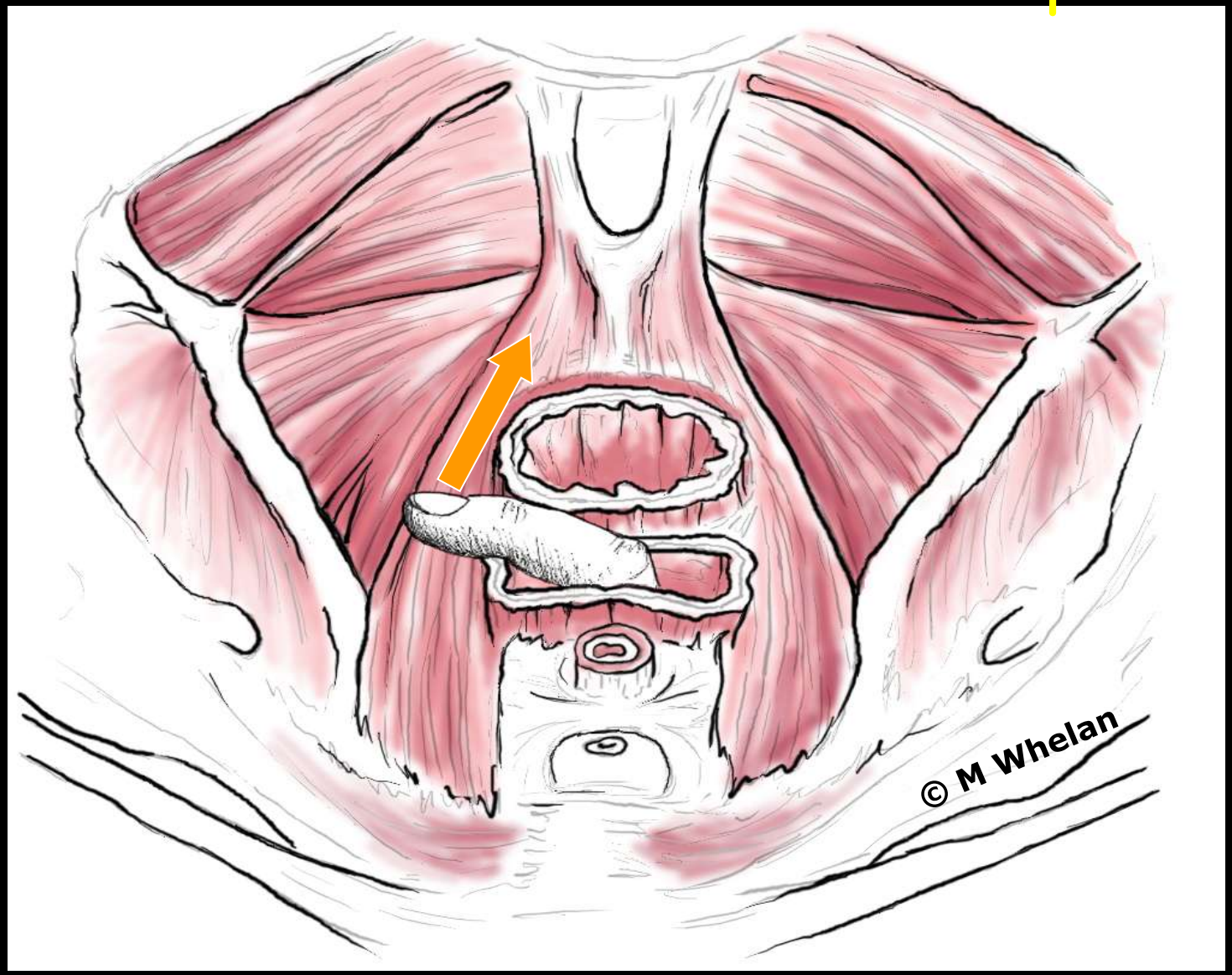
Perpendicular clock – horizontal



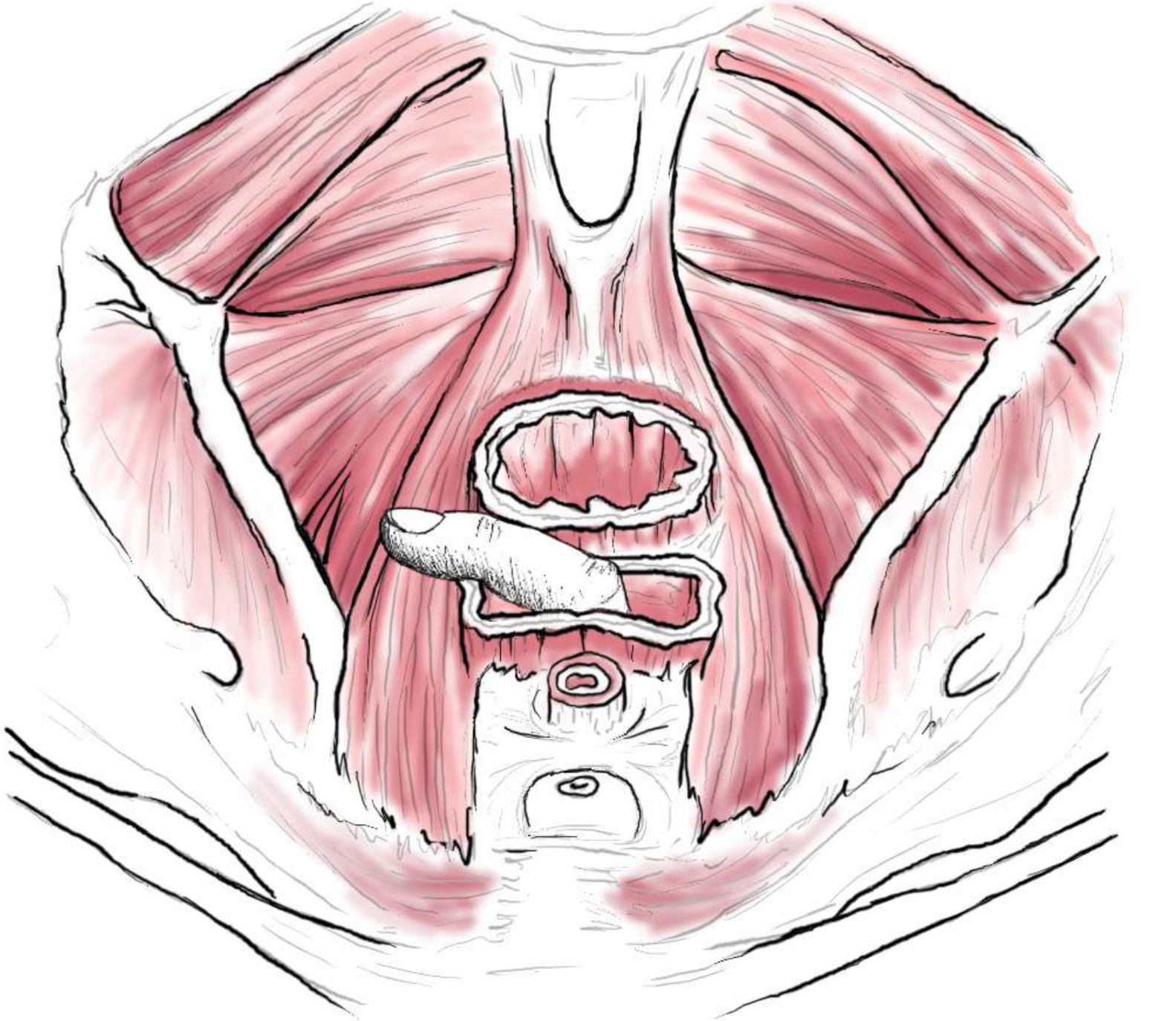
- Palpate posterior vaginal wall, bowel, posterolateral wall, tone, end feel, bulk, fibrous bands, ridges, valleys, gaps
- Anterior to posterior: puborectalis sling, pubococcygeus
- Identify coccyx, levator plate, ischial spine
- Iliococcygeus at 10 o'clock and 2 o'clock
- Ischiococcygeus
- Tendinous Arch of levator ani from ischial spine to pubic bone
- Obturator internus

Schematic of the Pelvic Floor illustrating the orientation of the horizontal clock, coccyx at 12 o'clock, and perineal body at 6 o'clock. Pictures courtesy of Maeve Whelan, Specialist Womens Health Physiotherapist, Dublin, Ireland.

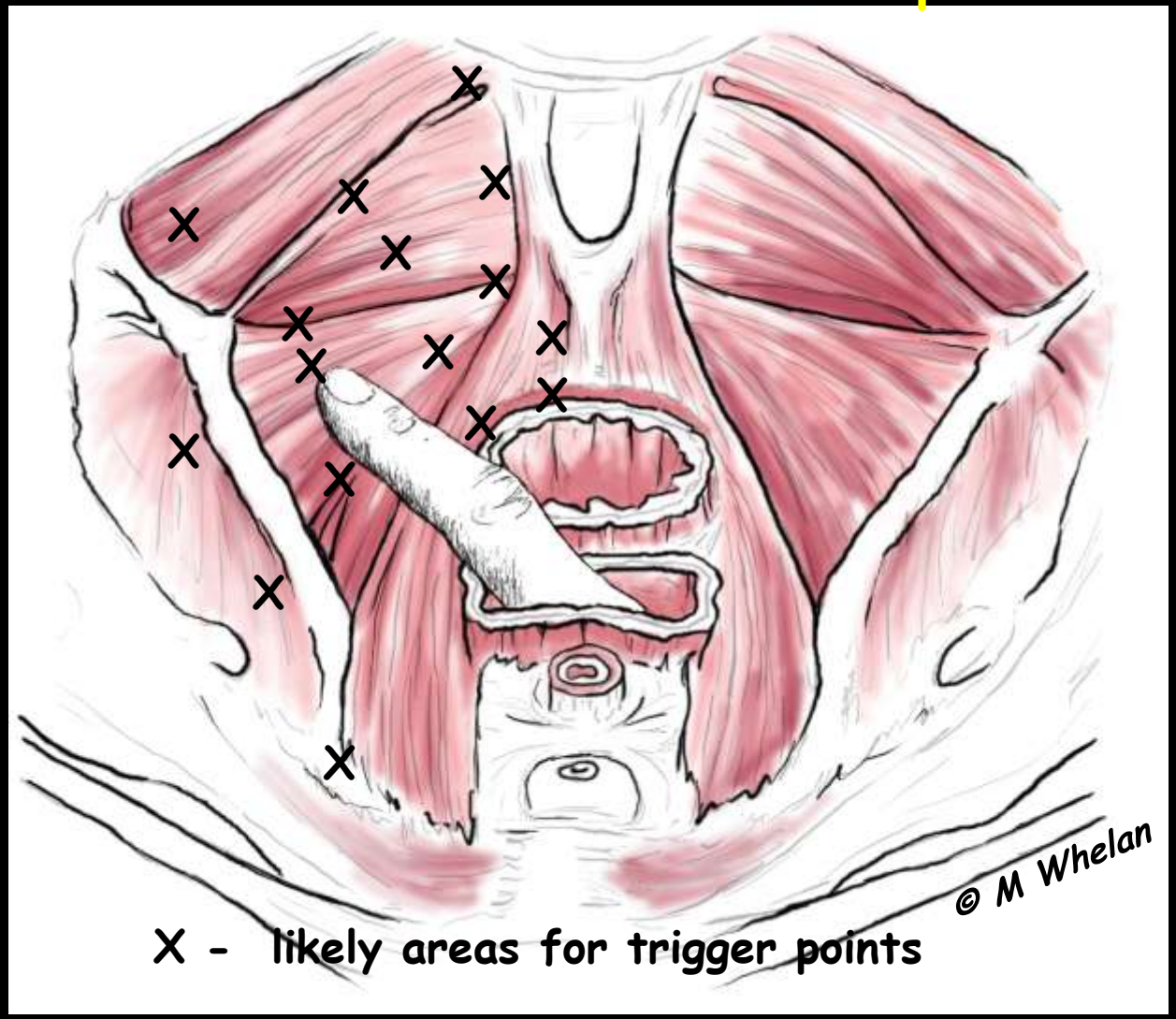
Pubovisceralis stretch – Vertical to horizontal plane



Stretch Pubococcygeus & Puborectalis from anterior to posterior



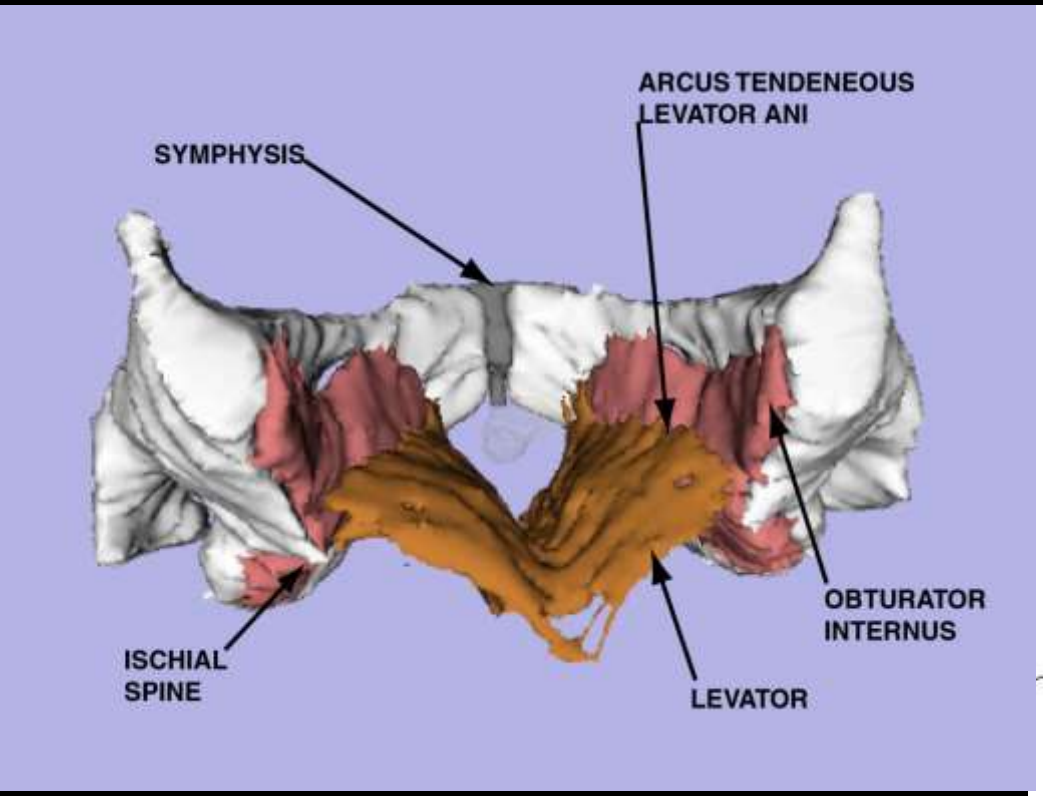
Posterolateral release & facilitation – on horizontal plane

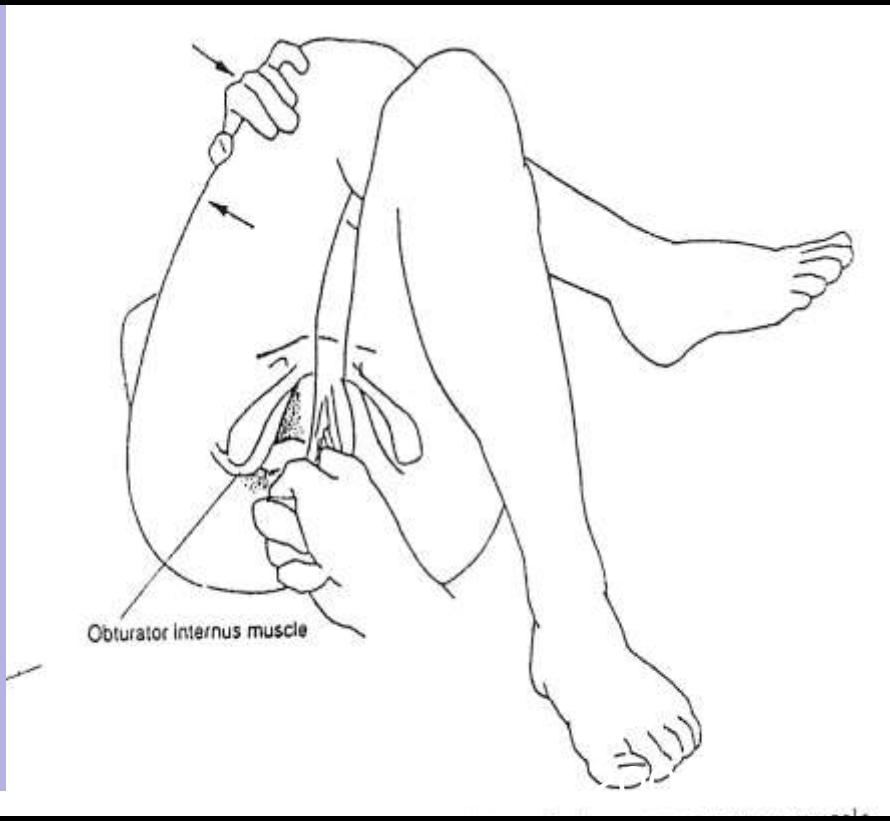


Pubococcygeus
Puborectalis
Iliococcygeus
Ischiococcygeus
Obturator internus

- Stretch
- Treat TPs
- Facilitate

Obturator Internus

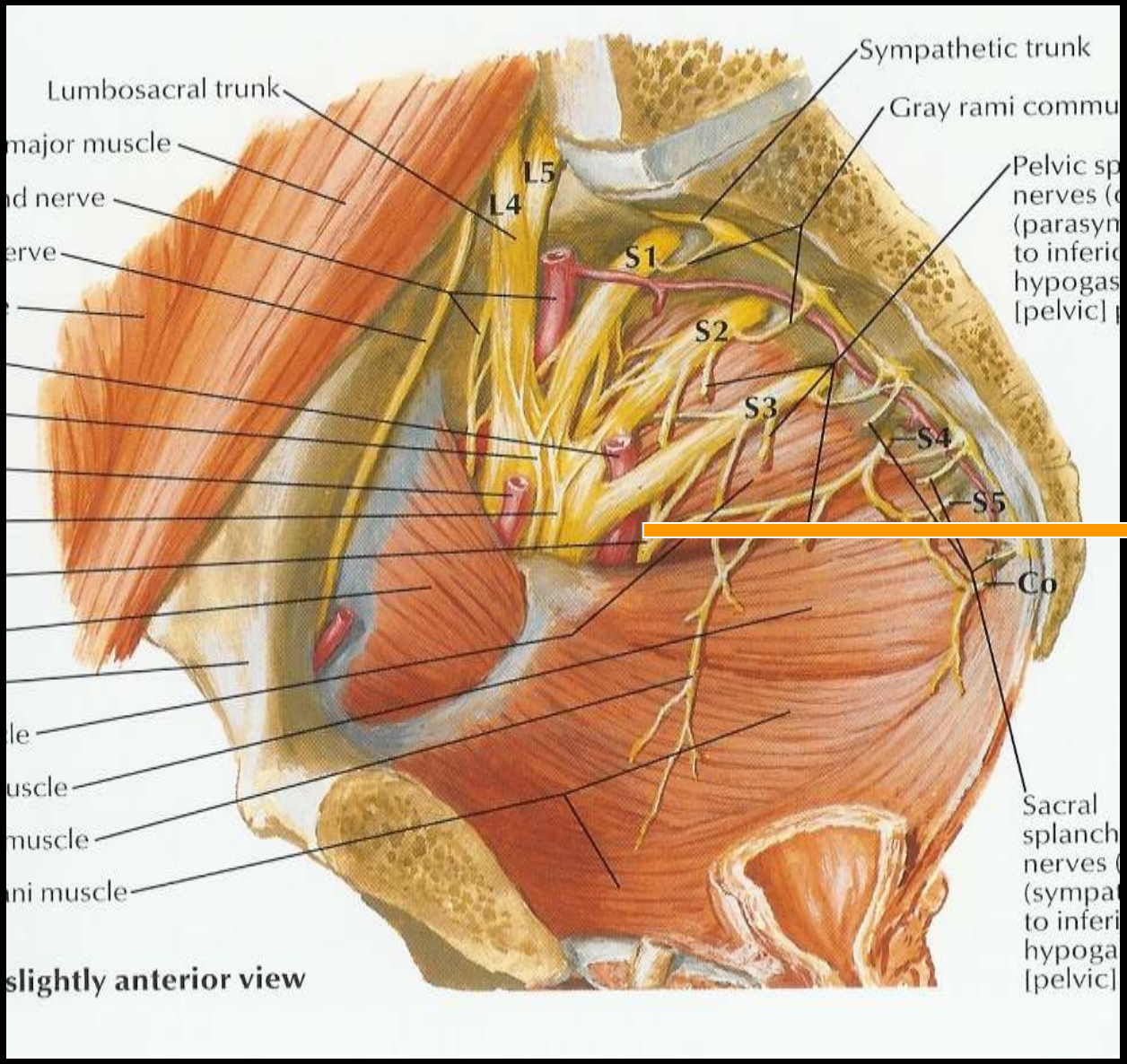




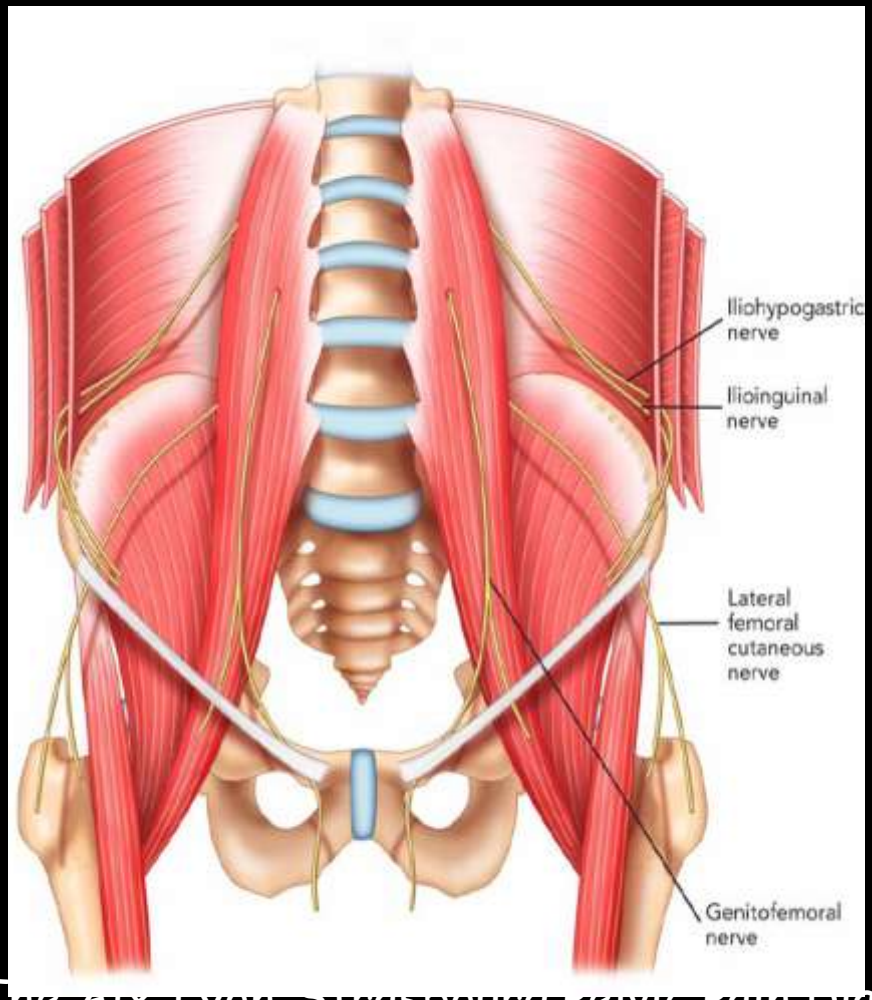
Test by abducting the flexed leg against therapists chest or laterally rotating in any degree of flexion to extension

icrelief.com

Netter Plate 481



Pudendal N Anteroinf to Ischial spine



Bladder nerve syndrome (Peng P.,2009)

- Ilioinguinal nerve
- Iliohypogastric nerve
- Genitofemoral nerve

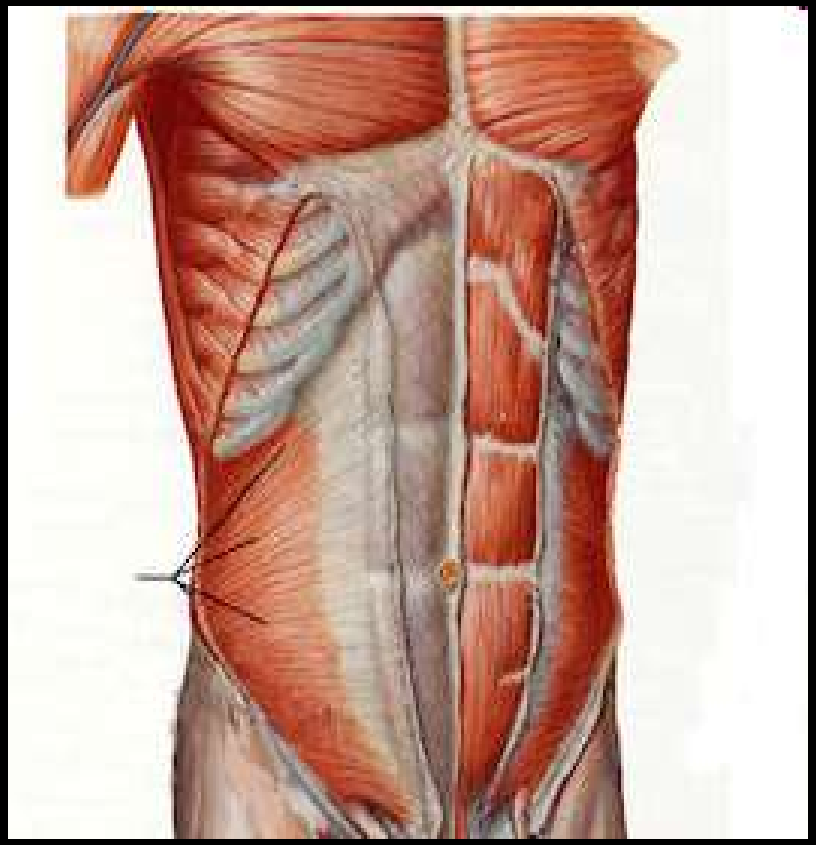
The Aix-Lyon-Strasbourg Pelvic Pain Diagnostics and Procedures Meeting, Aix-en Provence, France Jan 8-9, 2009

Abdominal TrPs

- 90% of a sample of 55 patients with CPP with visceral symptoms had abdominal TrPs
- Abdominal MF syndrome should be considered in differential diagnosis of CPP (Montenegro 2009)
- Slocumb JC (1984) Neurological factors in chronic pelvic pain: trigger points and the abdominal pelvic pain syndrome Am J Obstet Gynecol. 1984 Jul 1;149(5):536-43.

Montenegro M, Gomide L, Mateus-Vasconcelos E (2009) Abdominal myofascial pain syndrome must be considered in the differential diagnosis of chronic pelvic pain. European Lournal of Obstetrics & Gynaecology Reproductive Biology 147 21-24

Abdomen



Netter 2003 plate 255

Physical findings in patients with urologic chronic pelvic pain

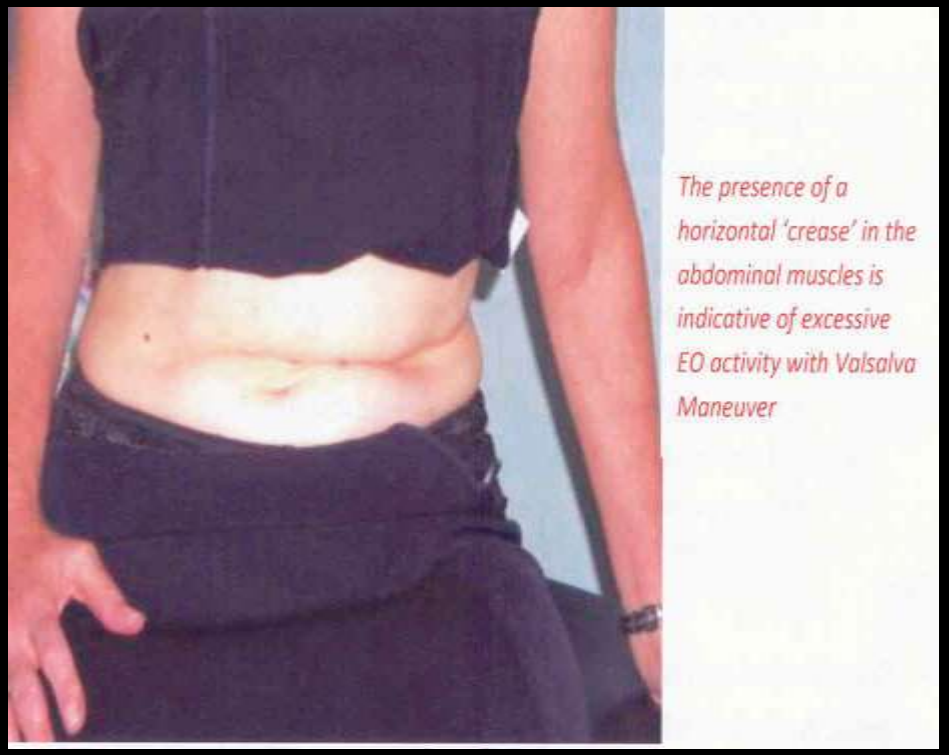
Abdominal wall musculature	
Rectus abdominis	67%
Internal obliques	35%
Transversus	35%
External obliques	33%

Non muscular CT restrictions	
Lower abd. wall	93%
Inf. to umbilicus	93%
Upper abd. wall	89%

Kotarinos R et al (2009), Proceedings of ICS 264, Neurourology & Urodynamics

Abdominal Holding Patterns

Courtesy of Marguerite Hogan MISCP



Mary O'Dwyer, Hold it Sister

Abdominal Connective Tissue Manipulation

- Palpation & recognition of tension. Deep palpation perpendicular to Rectus Abdominis

www.pelvicphysiotherapy.com

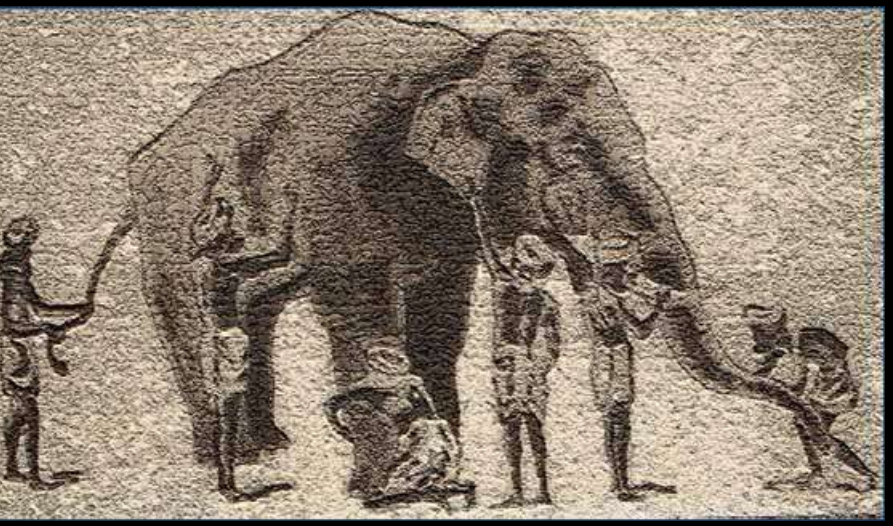
Medical Intervention

- Pudendal Nerve Block
- Pulsed Radio Frequency
- MTrP Dry needling/Injections
- Botulinum toxin injections
- Neuromodulation
- Pharmaceuticals
- Psychological management
- Surgical Decompression Procedures

Other Management Options

- Cognitive Behavioural Therapy
- Lifestyle modifications: Get off the internet!!
- Stress reduction: paradoxical relaxation
  - Headache in the Pelvis by Rodney Anderson, David Wise, PhD
  - Teach us to sit still Tim Parks

Models of Management



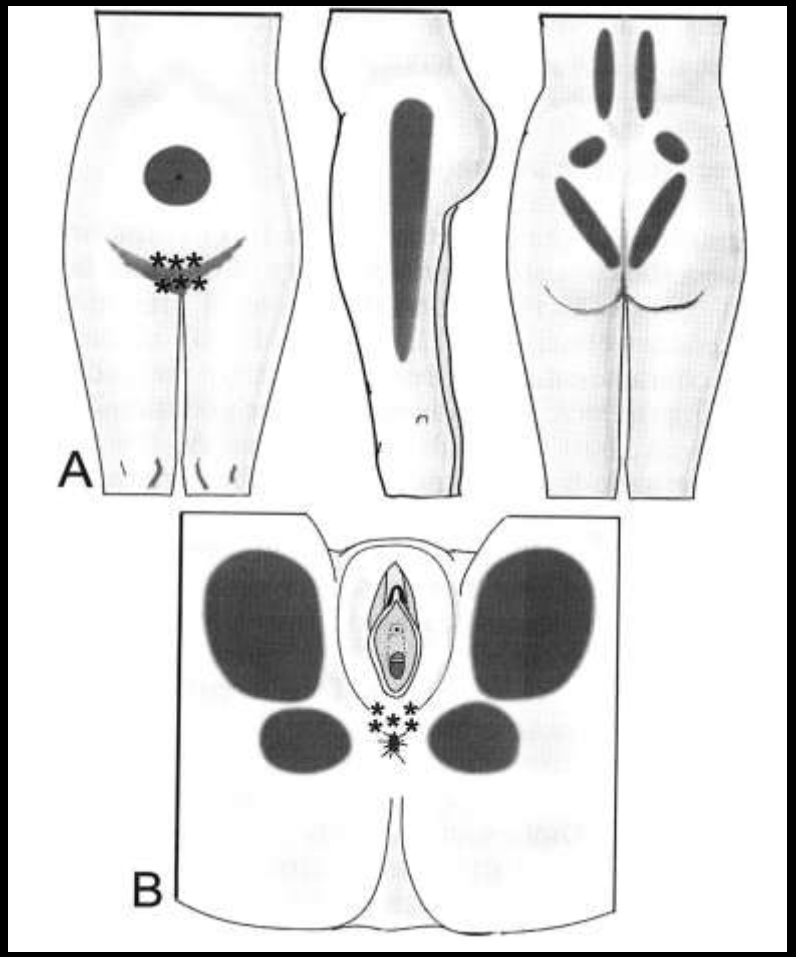
- Jointheads
- Diskheads
- Muscleheads
- Fasciaheads
- Brainheads
- Pelvicfloorheads
- Level Scepticalheads

Private Detective

Adapted Somatasimple.com & BIM.com

Physiotherapy for Pelvic Pain

- Pelvic floor & cylinder
- Abdominal, RA, OI, OE, Psoas, Gluteals, Piriformis
- Adductors, Lumbar, QL
- Pelvic asymmetry
- Pelvic movement dysfunction
- Thoracolumbar dysfunction
- Lumsosacral dysfunction
- Biomechanical (pronation++, Weiss '09)
- Neural components Sciatic, Pudendal & cluneal nerves
- Connective Tissue Mobilisation



Resources

pelvicphysiotherapy.com

- Therapeutic Management of Incontinence and Pelvic Pain Laycock & Haslam
- EAU Classification of CPP Fall et al 2010
- Explain Pain: Butler & Moseley
- Headache in the Pelvis: Wise & Anderson
- Chronic Pelvic Pain Dysfunction: Chaitow & Lovegrove Jones
- bodyinmind.org/check-this-out

Thank you

Qiyu Peng
Chris Constantinou
Maria Stokes
Victor Humphries,
Chris Payne

Jo Laycock
Jeanette Haslam

Judith Lee

Maeve Whelan