

به نام خداوند بخشنده مهربان

(و از قرآن آنچه برای مومنان شفا و
رحمت است نازل می کنیم ، ولی
ستمکاران را جز زیان نمی افزاید)

اسرا ۸۲





Pelvic Floor & physiotherapy comment

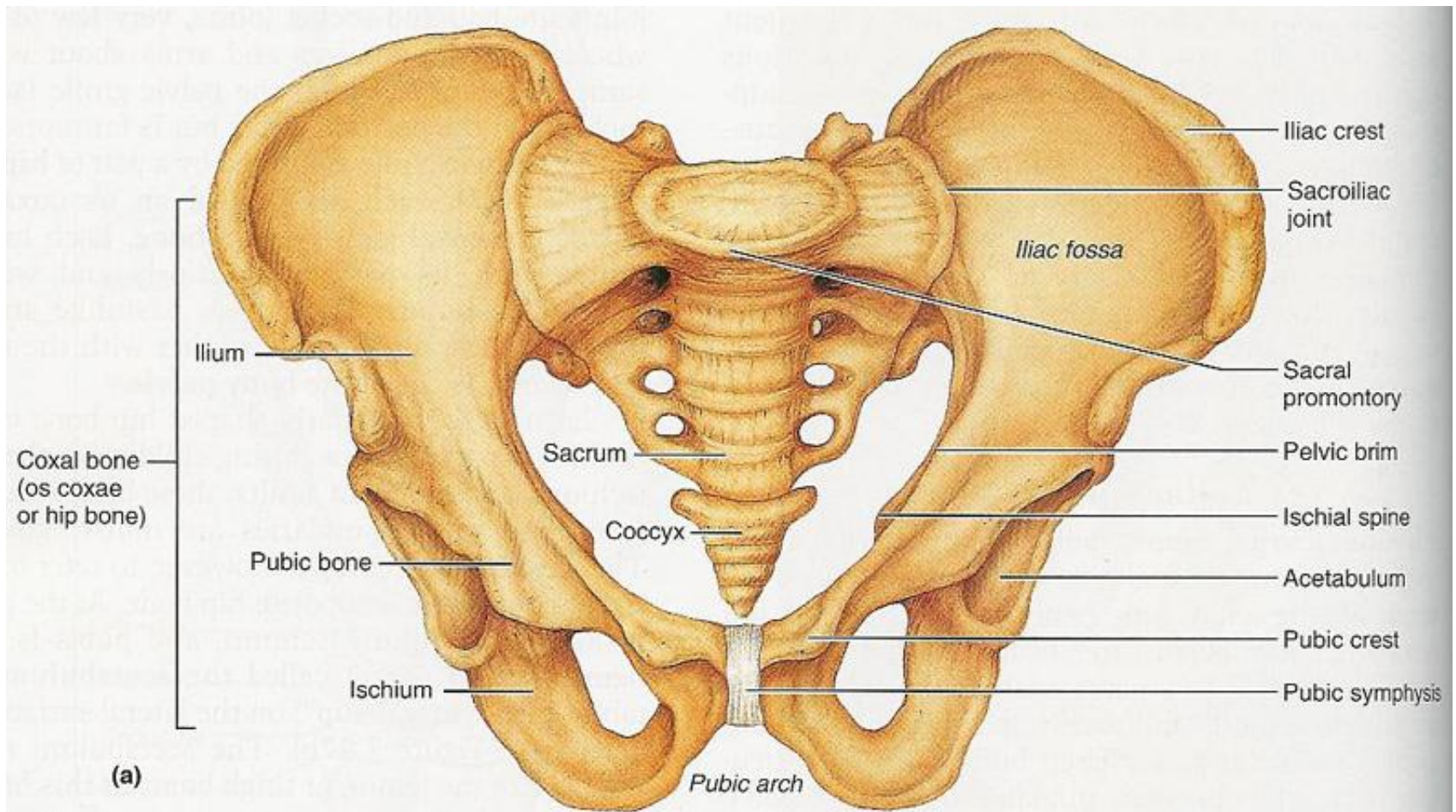
**ایلین طلیم خانی . دکترای فیزیوتراپی
پریسا رسولی . کارشناس ارشد فیزیوتراپی**

“There is no muscle in the body whose form and function is more difficult to understand than the lavator ani”

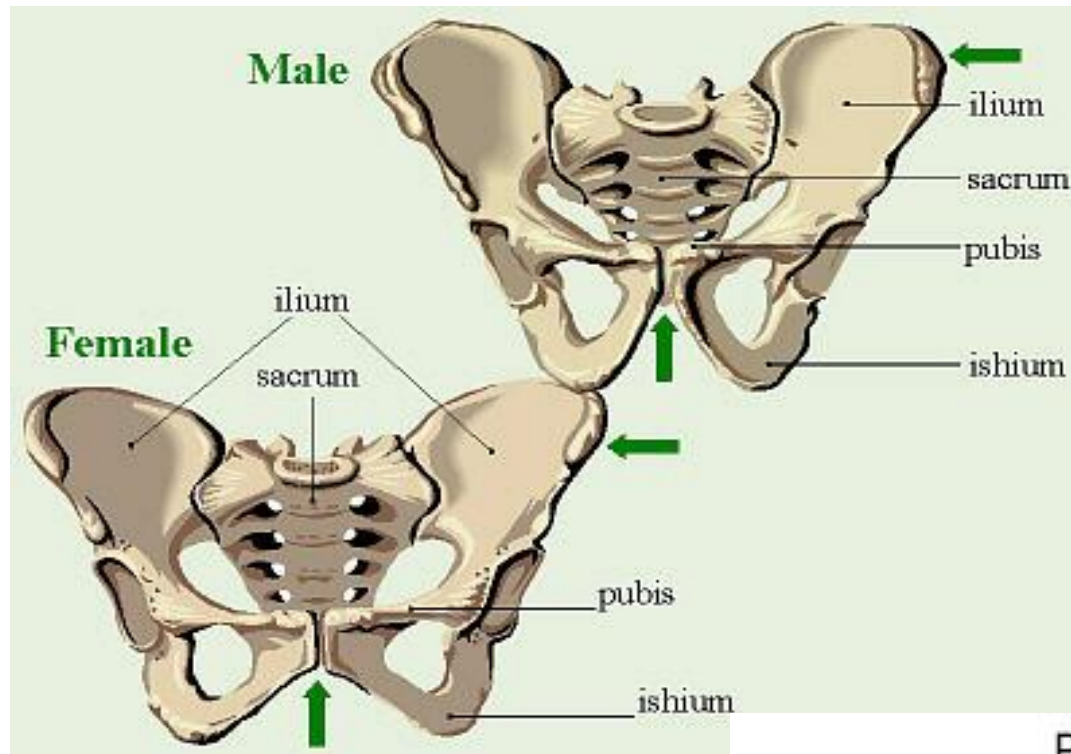
Dickinson 1889

FUNCTIONAL ANATOMY OF PFM

Bone and Motion



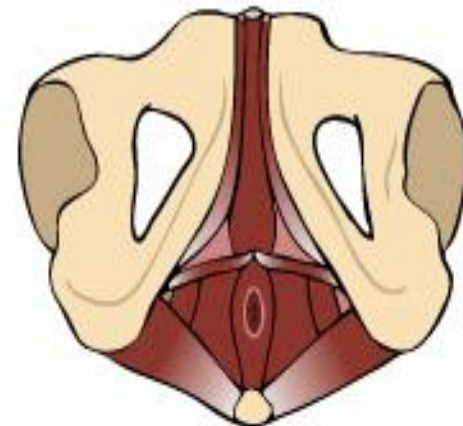
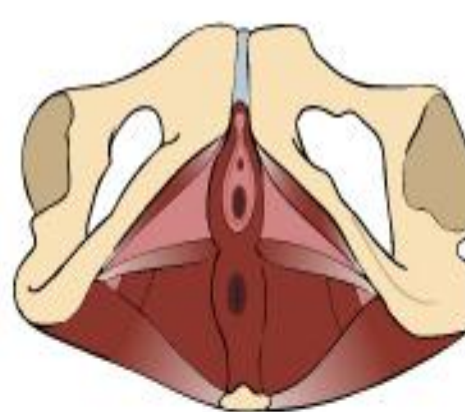
Difference of pelvic male and female



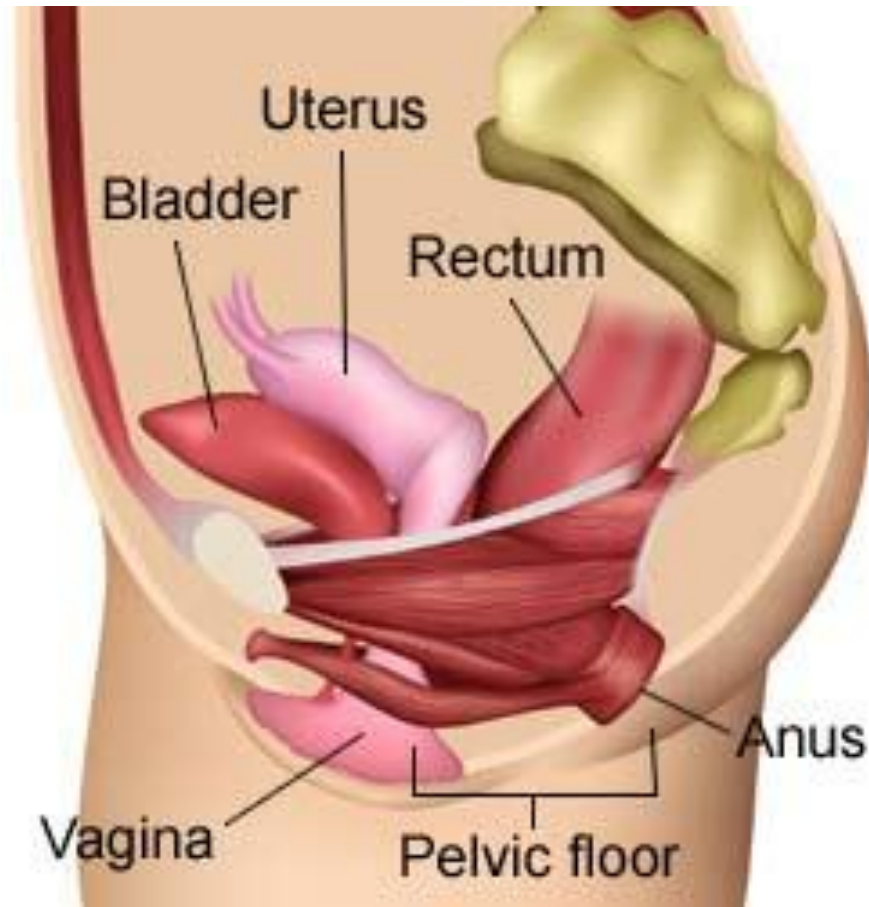
Pelvic Floor Muscles

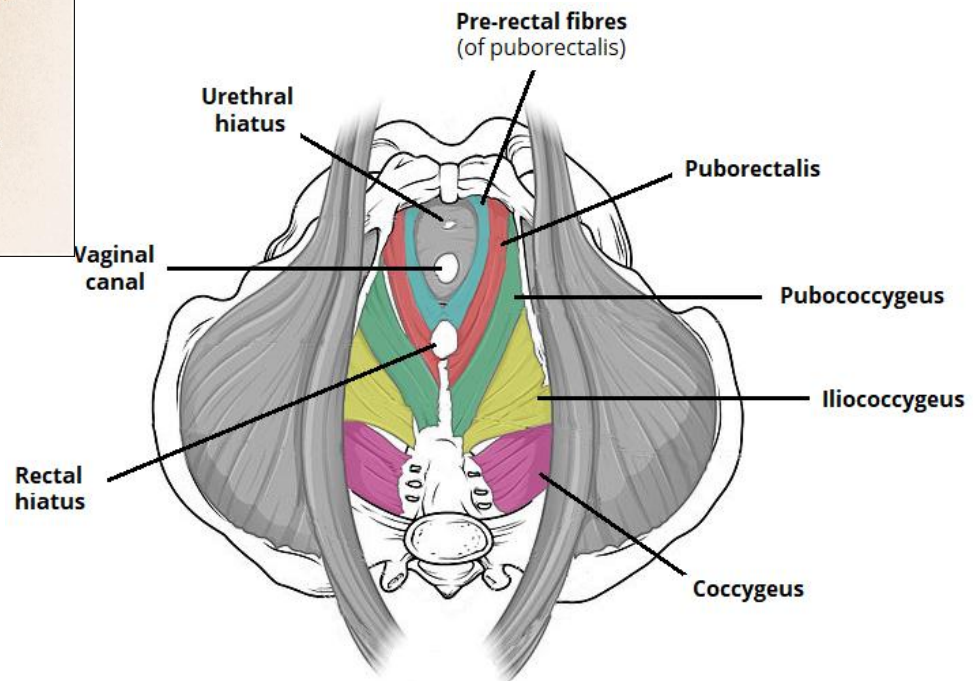
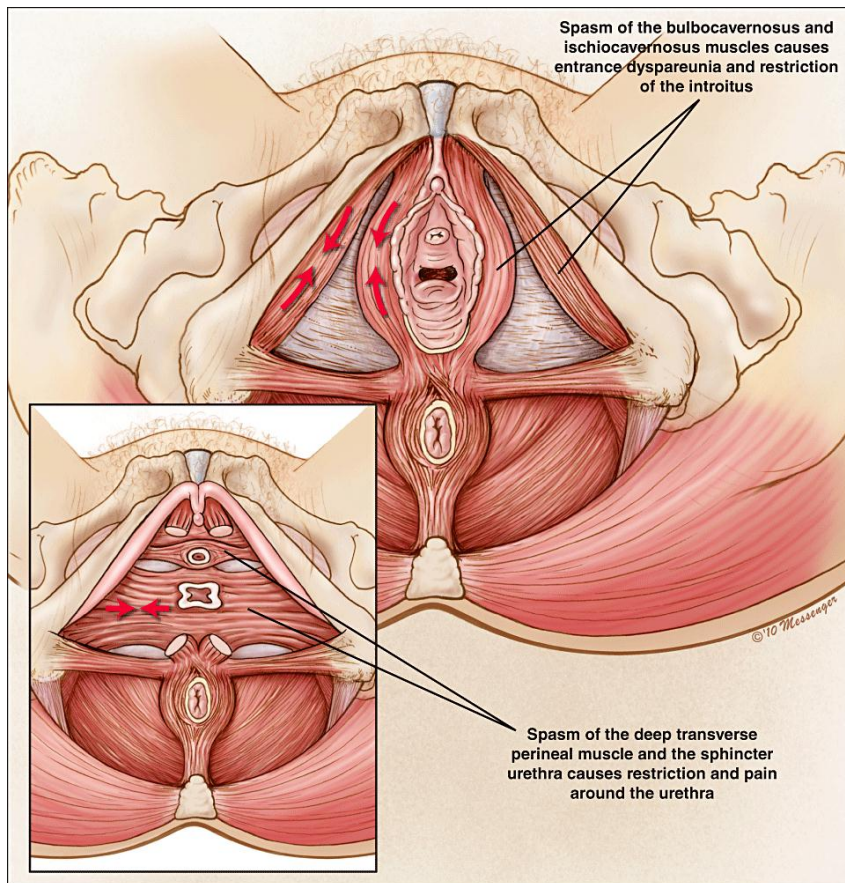
Female

Male

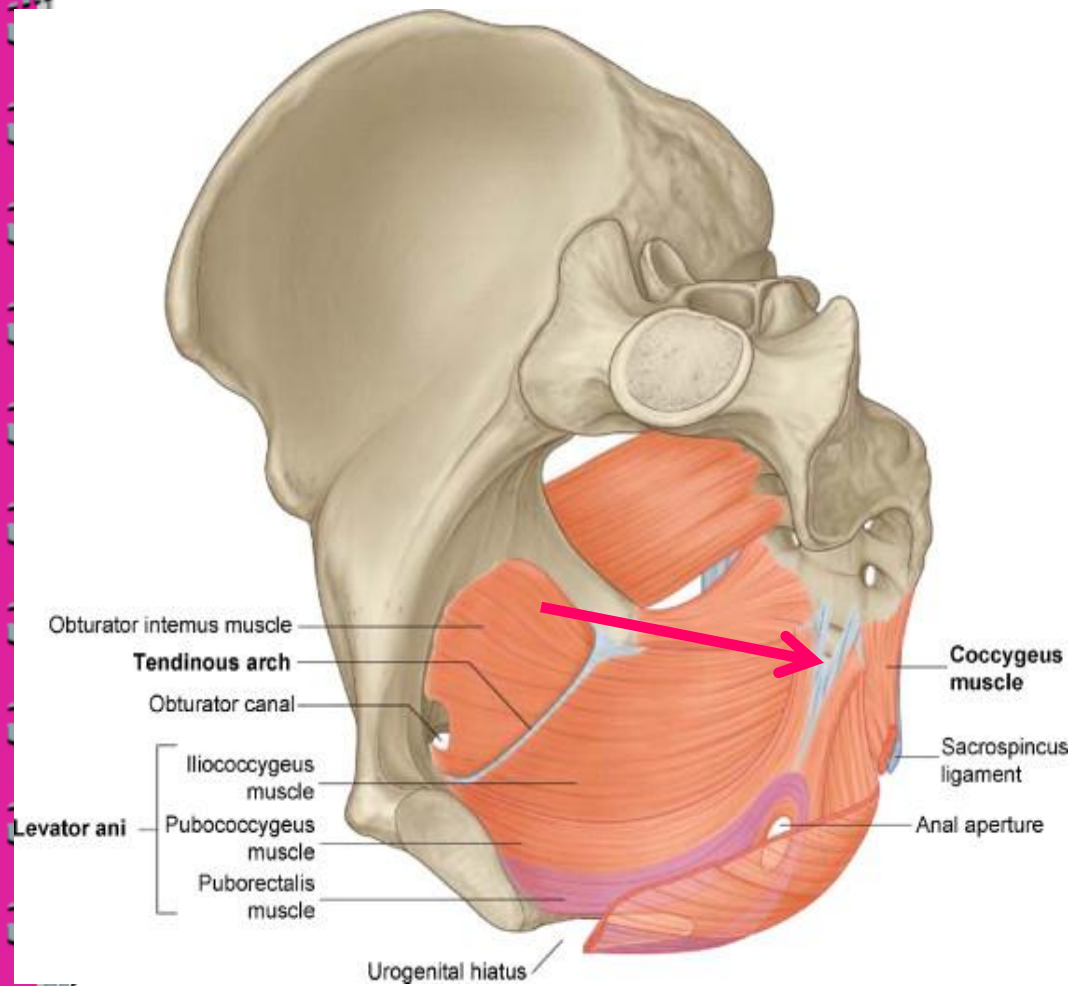


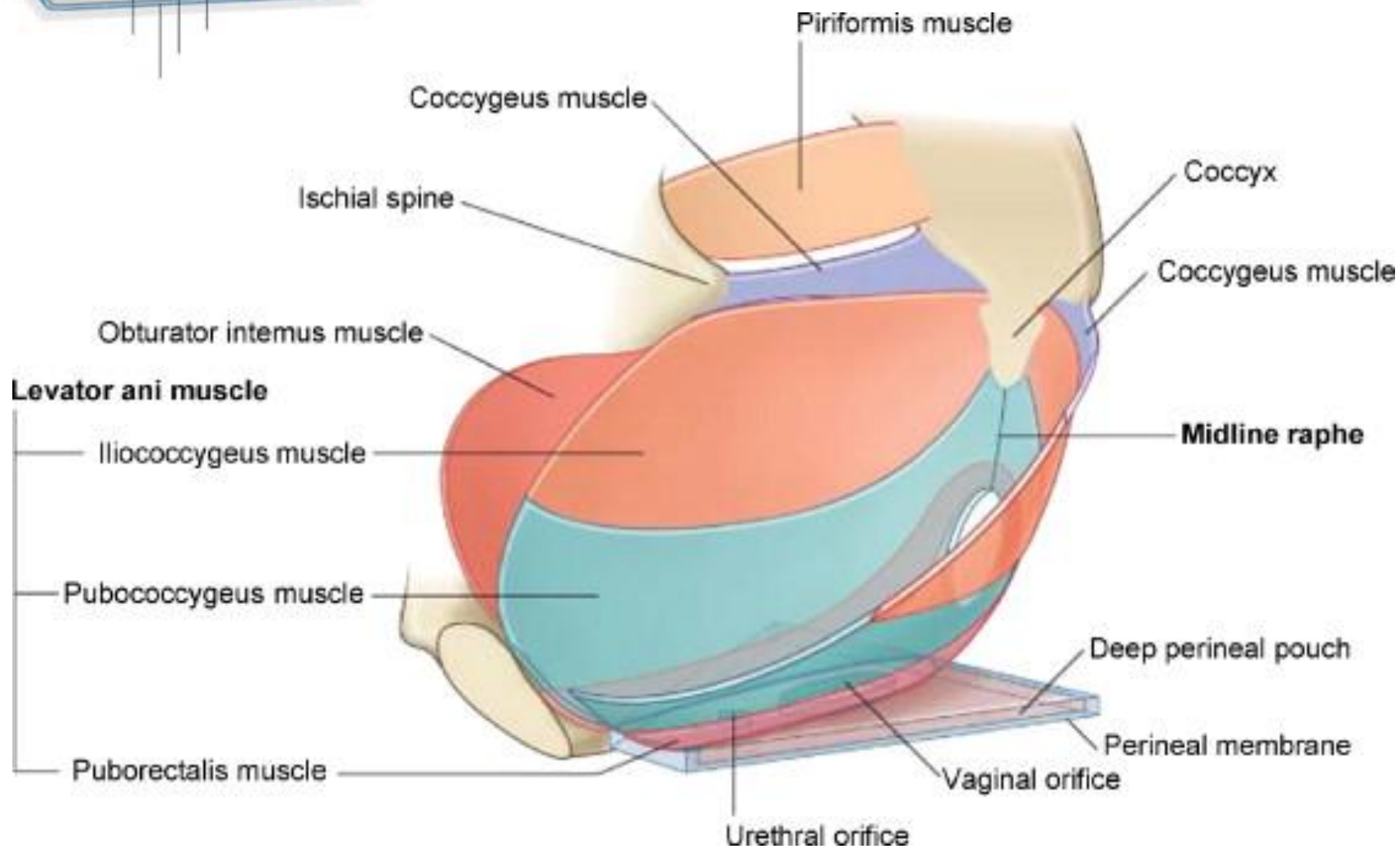
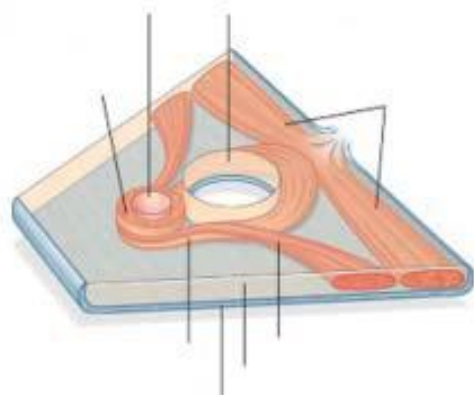
3 layers of pelvic floor muscles



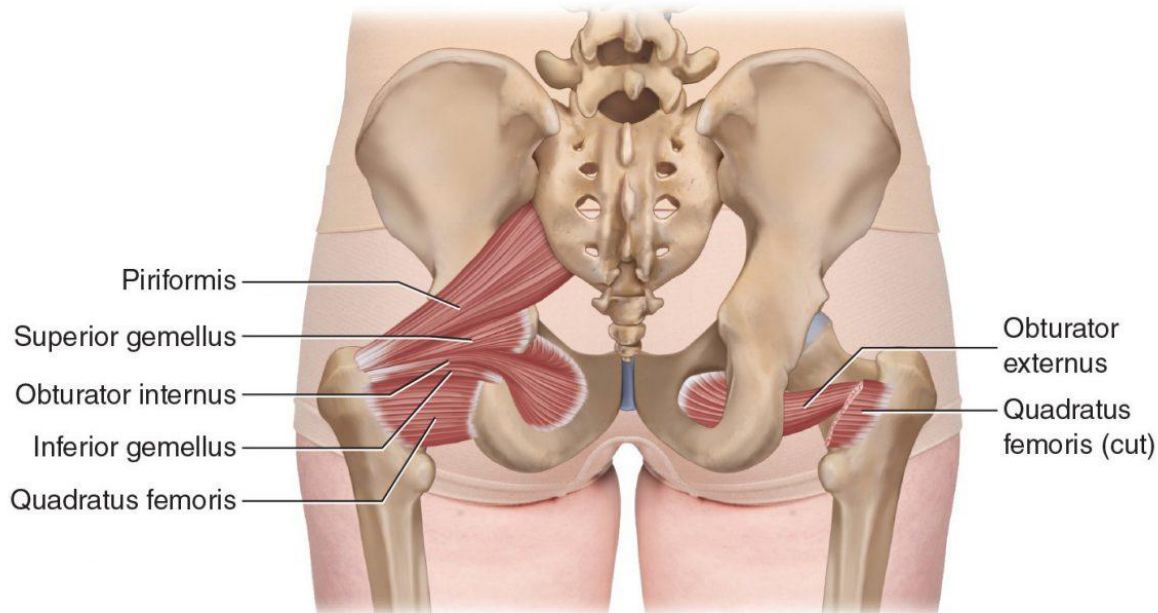
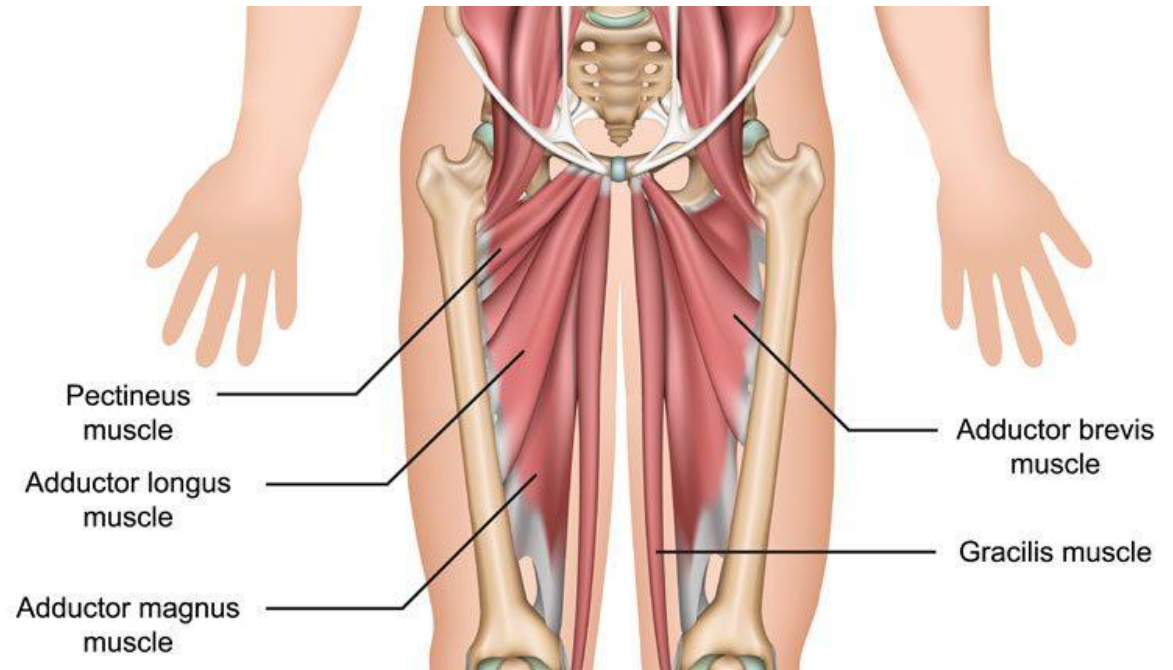


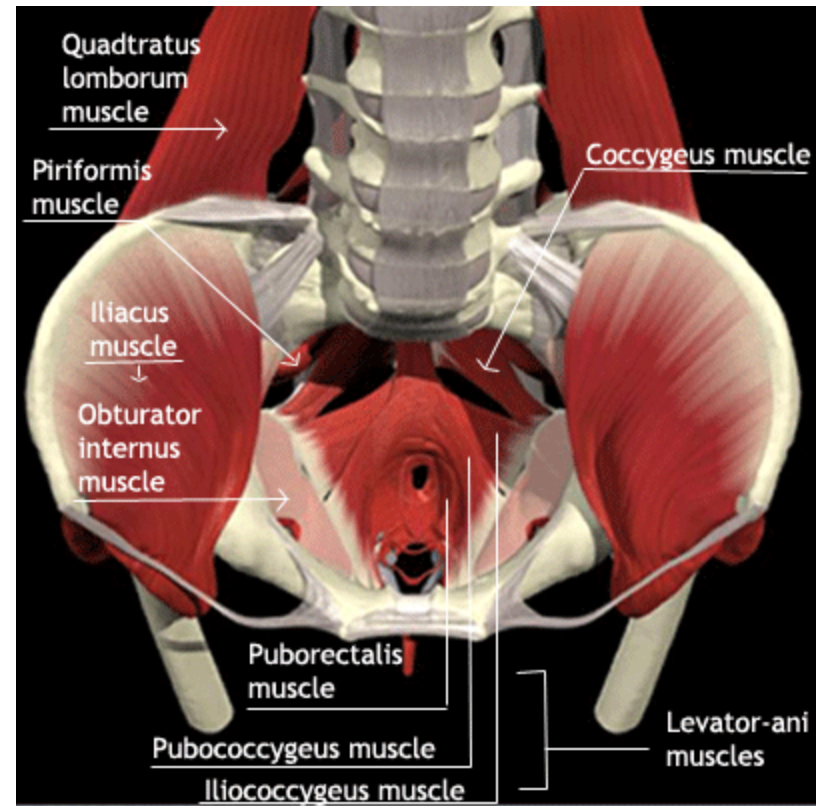
Matthew D. Barber 2005 & Delancey 2004



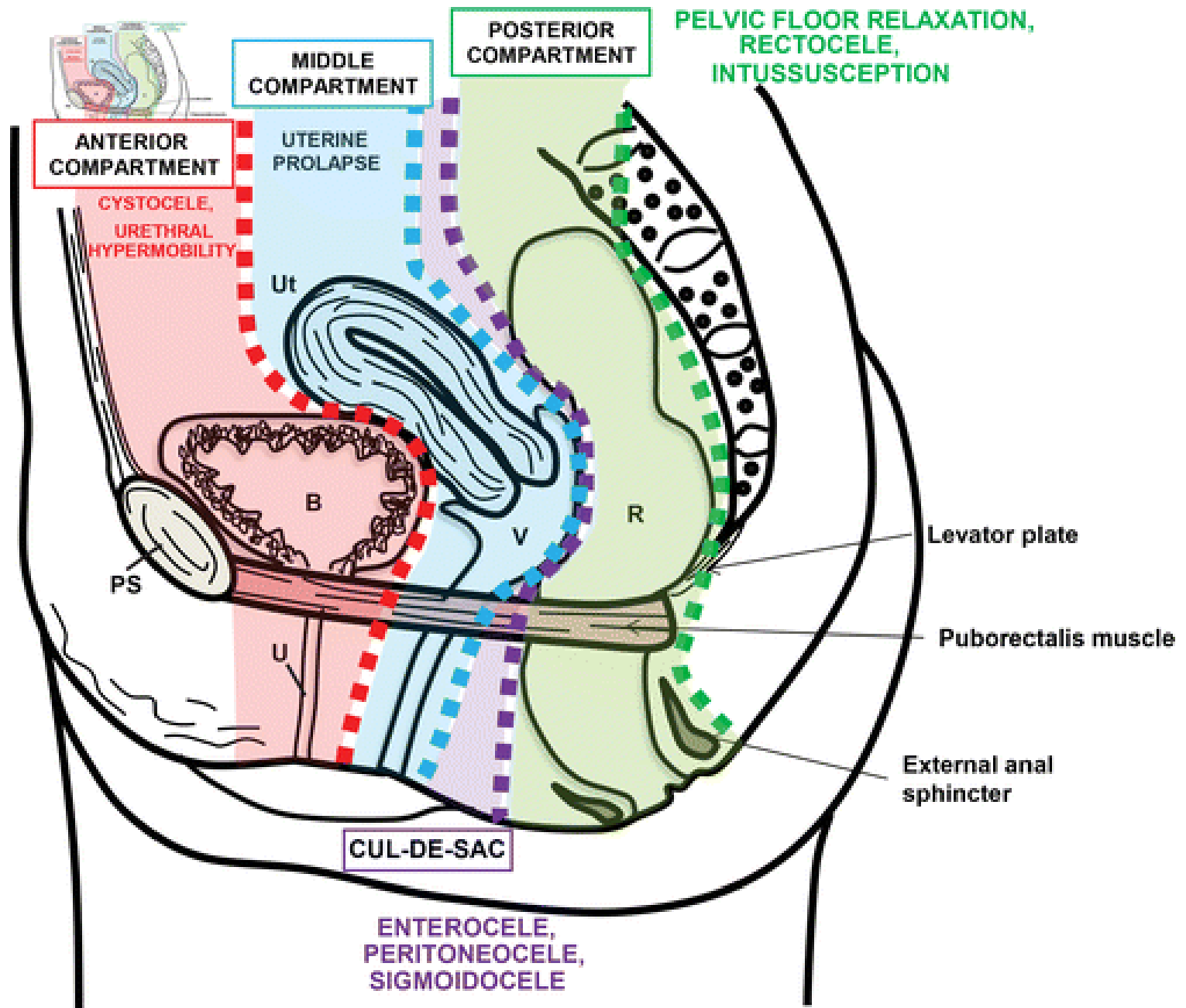


Synergy muscle of PF

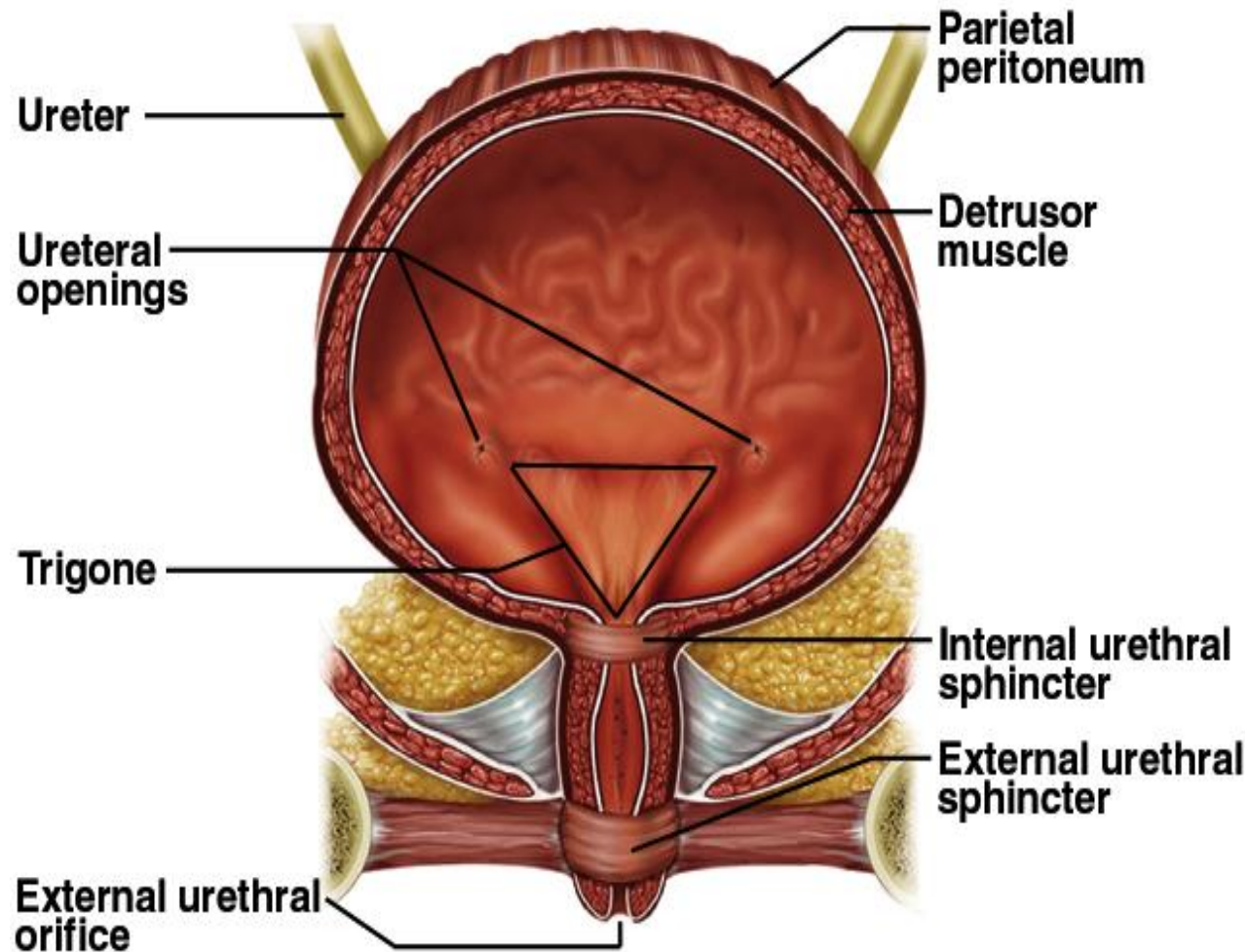


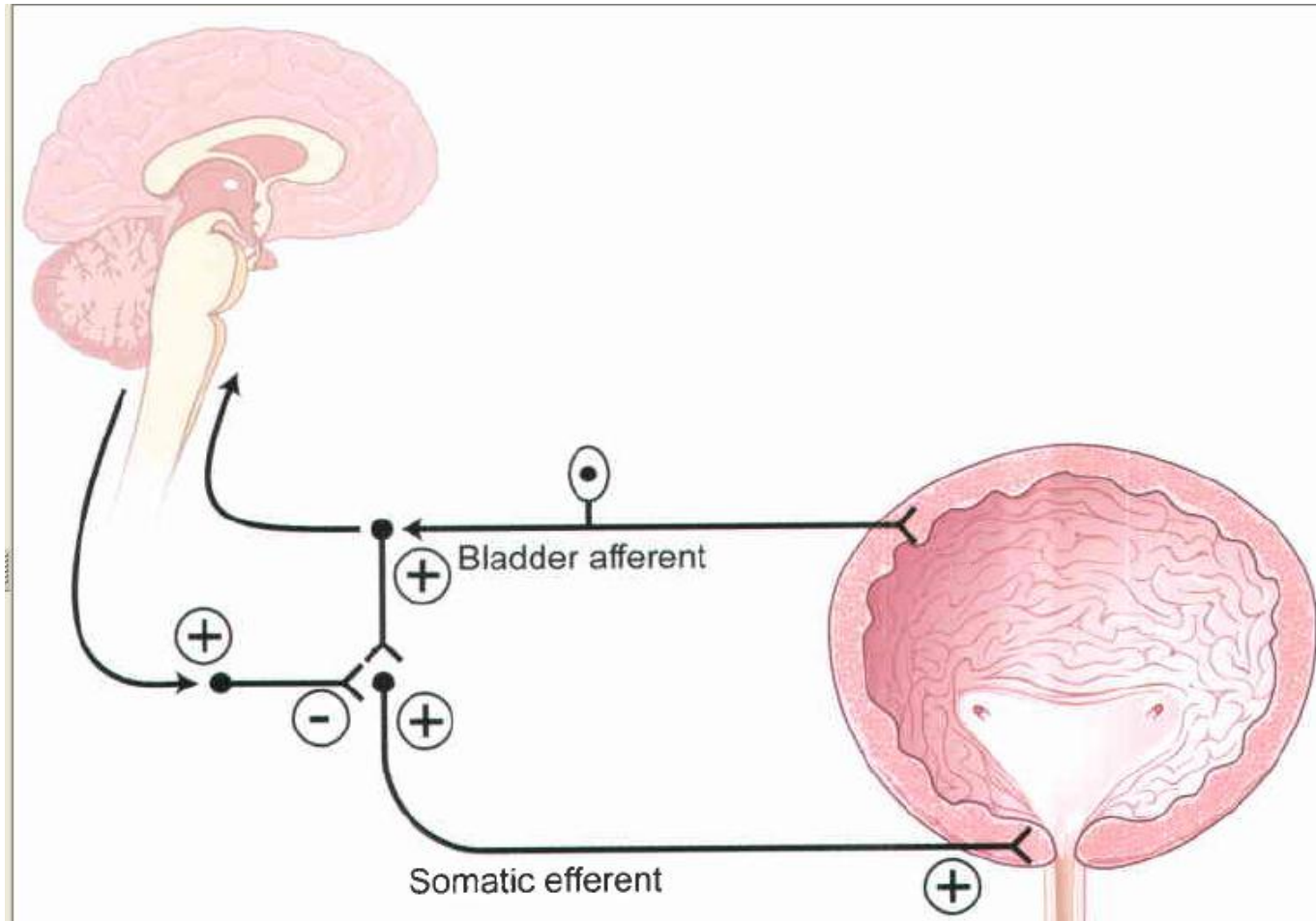


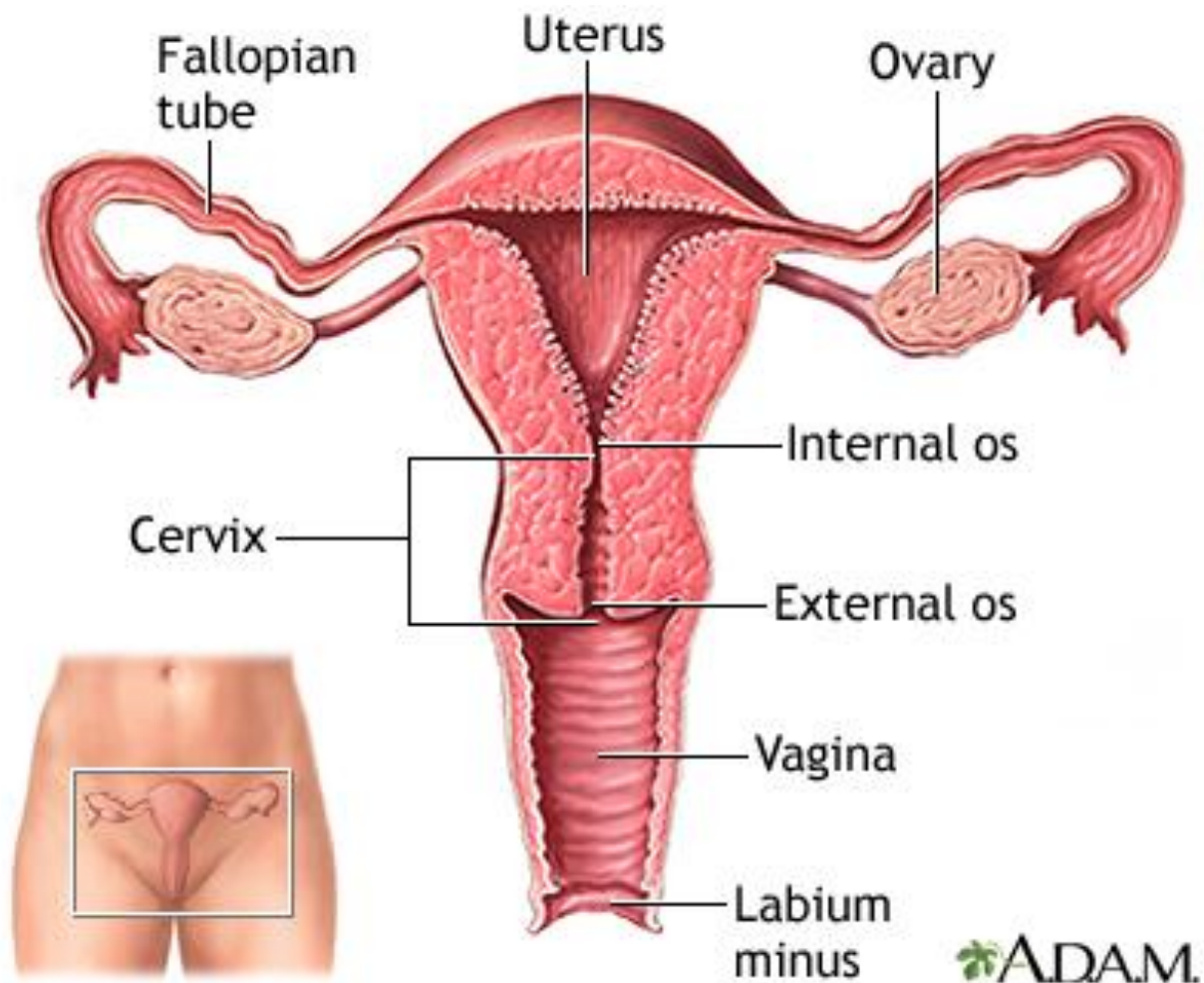
© 2003 Primal Pictures Ltd.

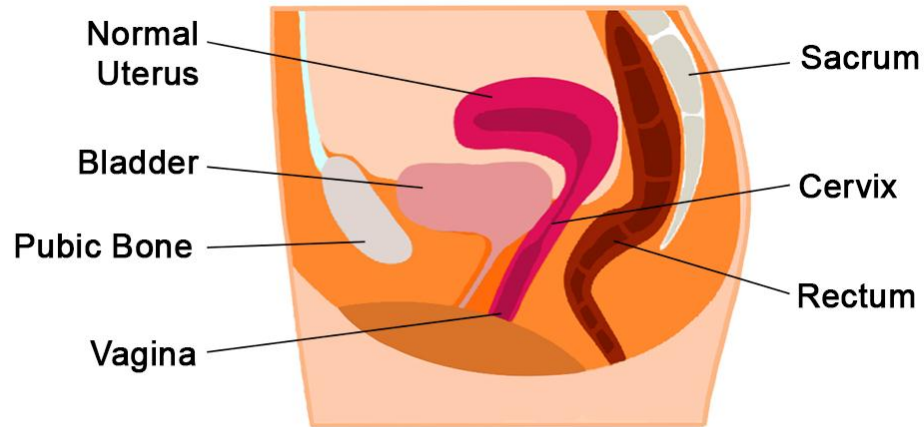


Urinary Bladder and Urethra, Female

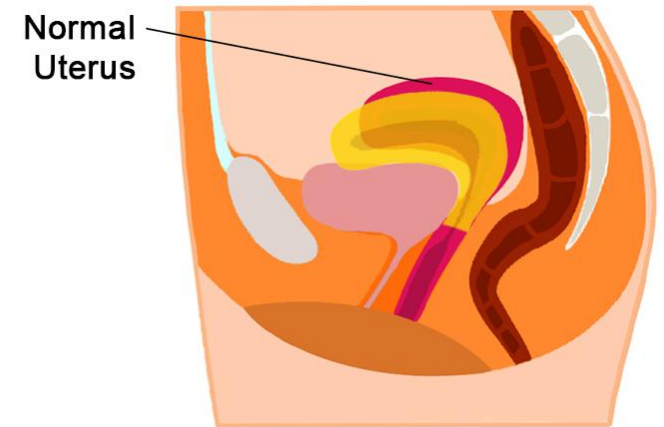




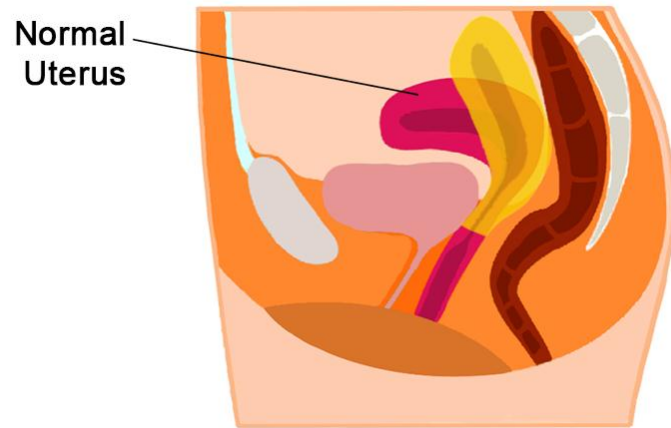




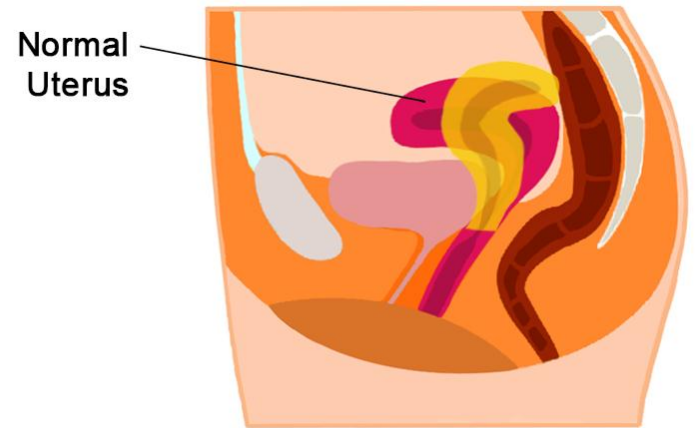
Normal Position



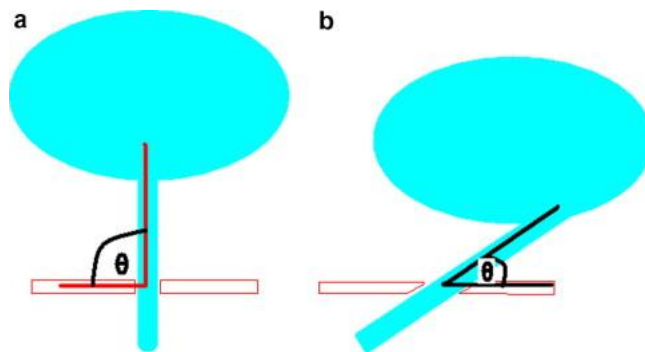
Anteverted



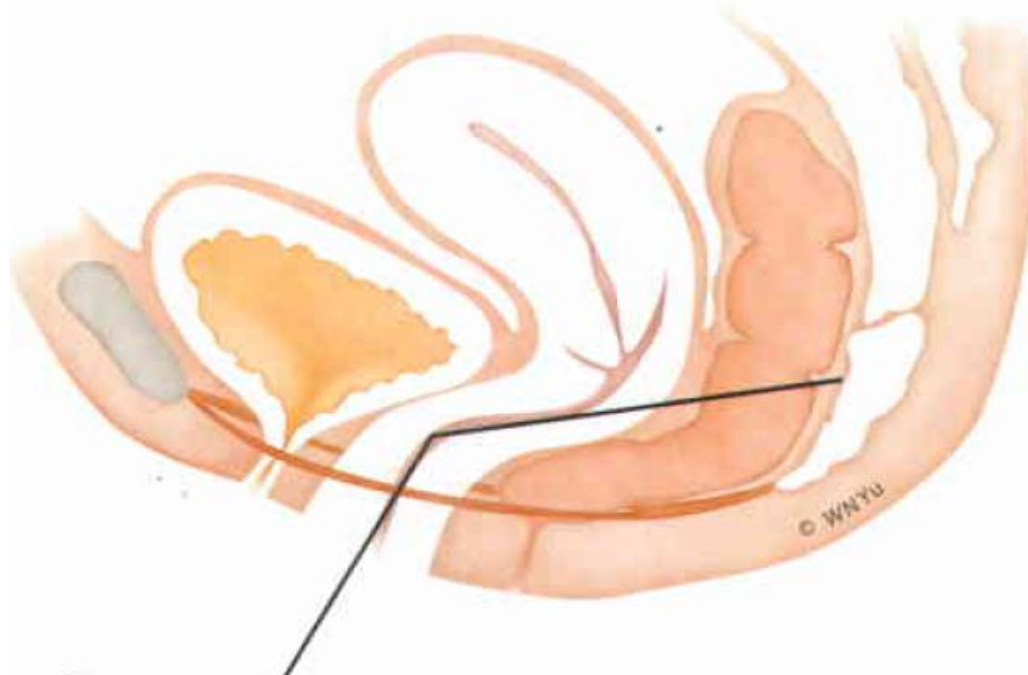
Retroverted

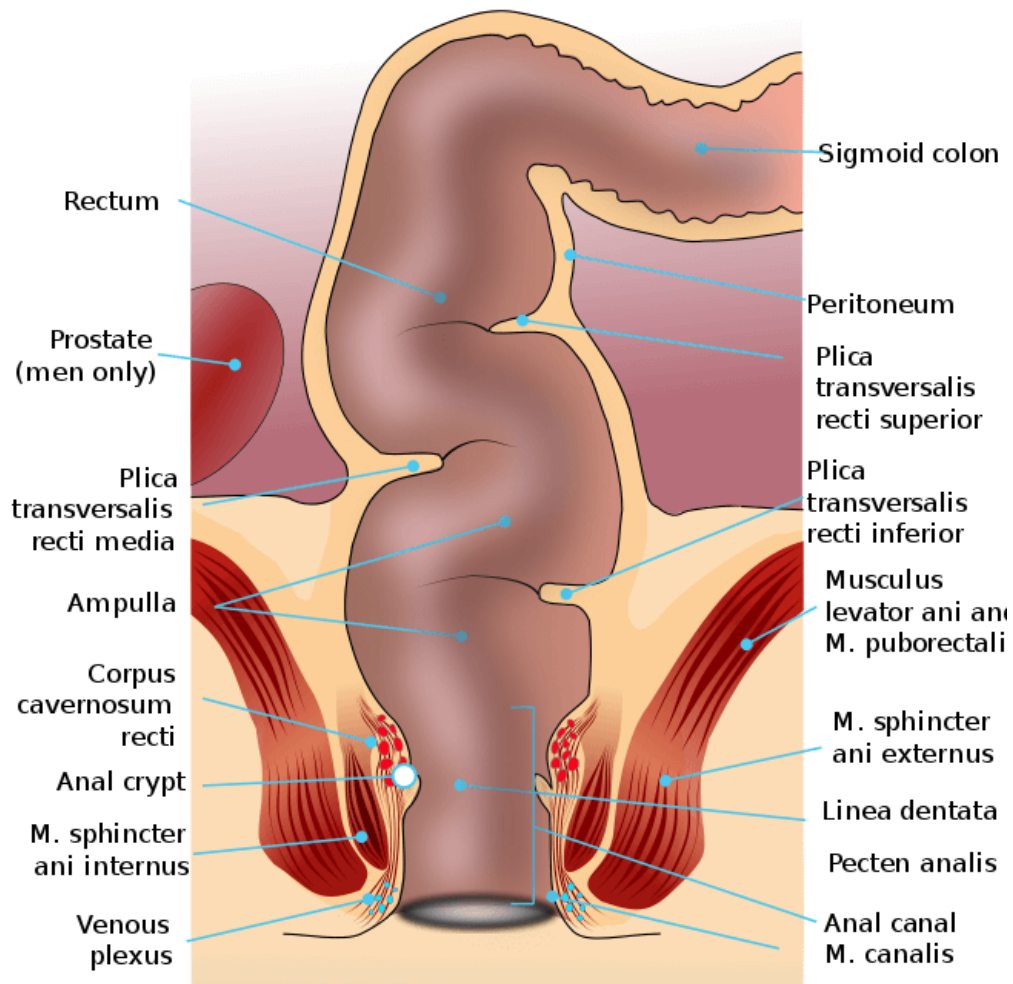
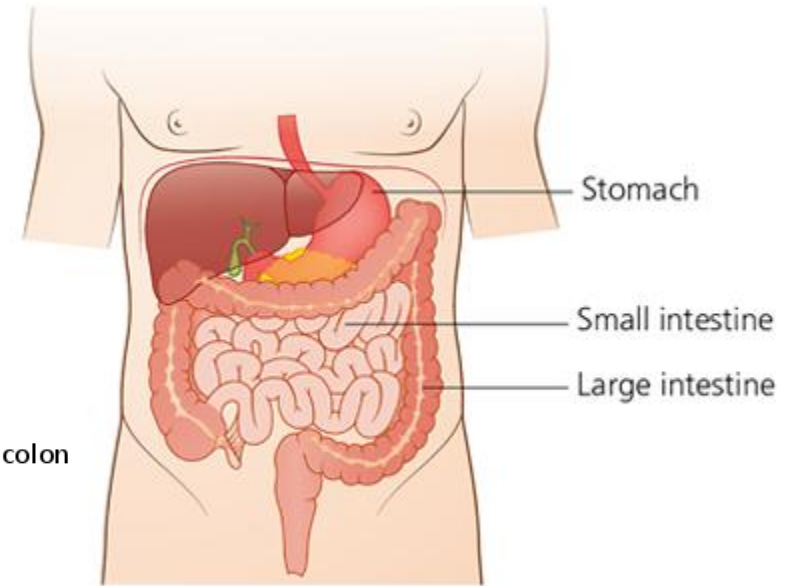


Retroflexed

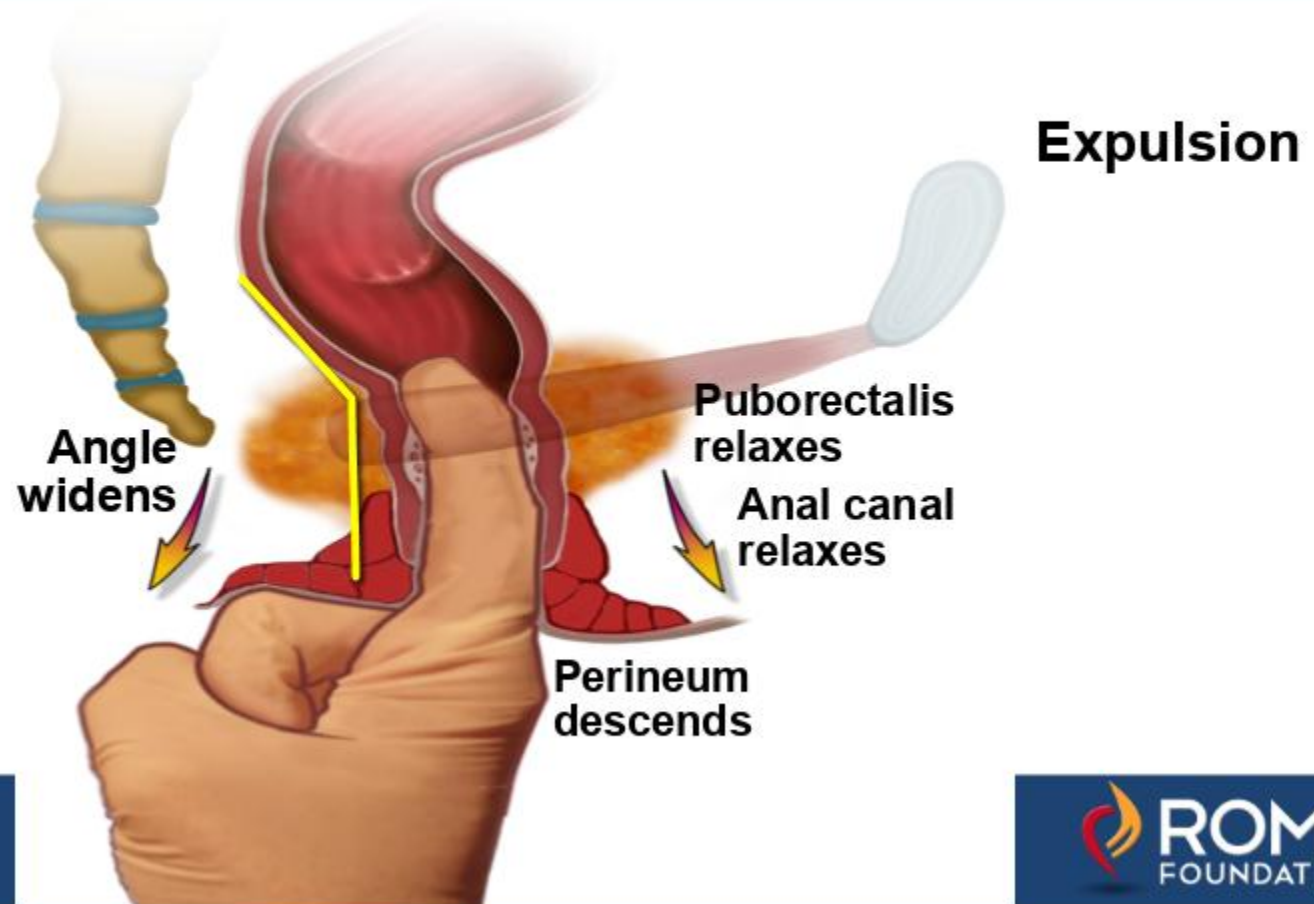


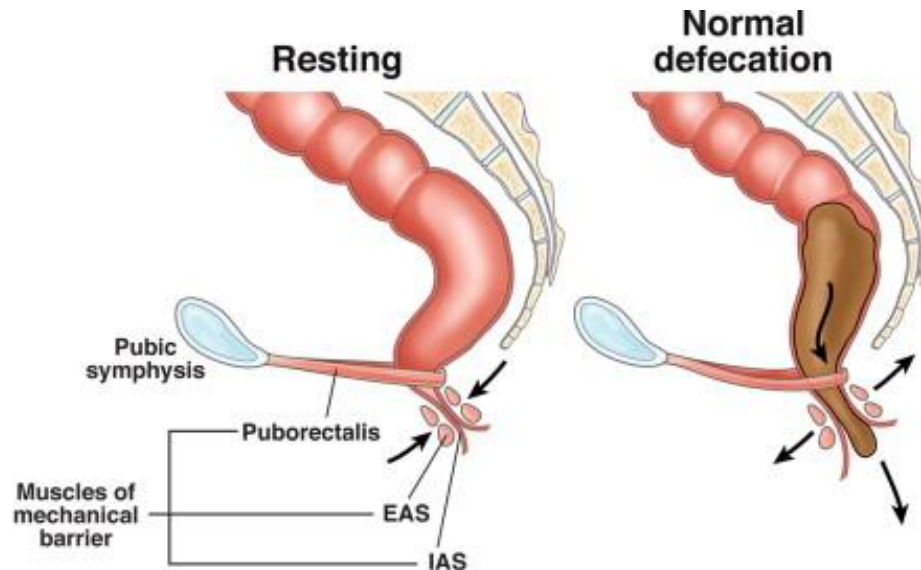
Normal vaginal axis 130°



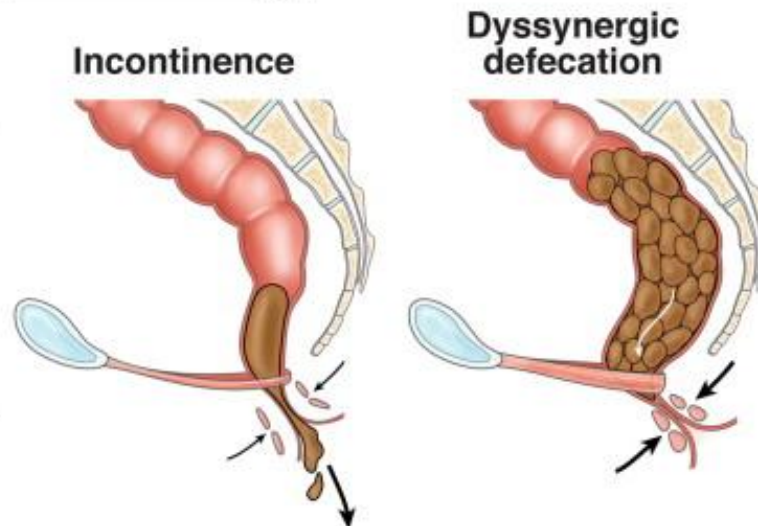


Digital Rectal Exam (continued)





- Sensory perception of stool
- Rectal distension
- Contract diaphragm, abdomen, and rectal muscles
- Relax EAS (decreased sphincter pressure)
- Relax puborectalis muscle



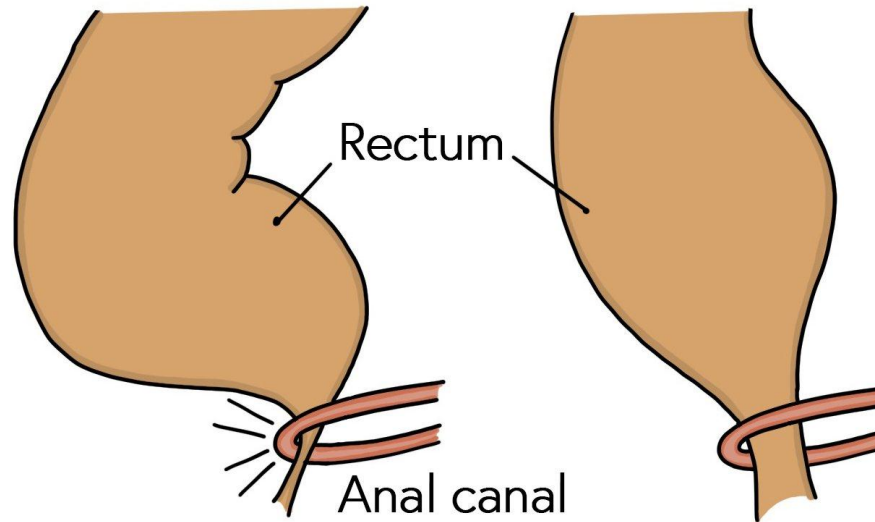
- Low resting and/or low squeeze sphincter pressures (weak IAS and EAS)
- Weakness of puborectalis
- Neuropathy
- Altered rectal or anal sensation
- Diarrheal conditions
- Diminished rectal capacity

- Prolonged colonic transit time
- Discoordination of abdominal, rectoanal, and pelvic floor muscles
- Rectal hyposensitivity
- Paradoxical increase in sphincter pressure
- < 20% relaxation of resting anal sphincter pressure
- Inadequate abdomino-rectal propulsive forces

Sitting posture



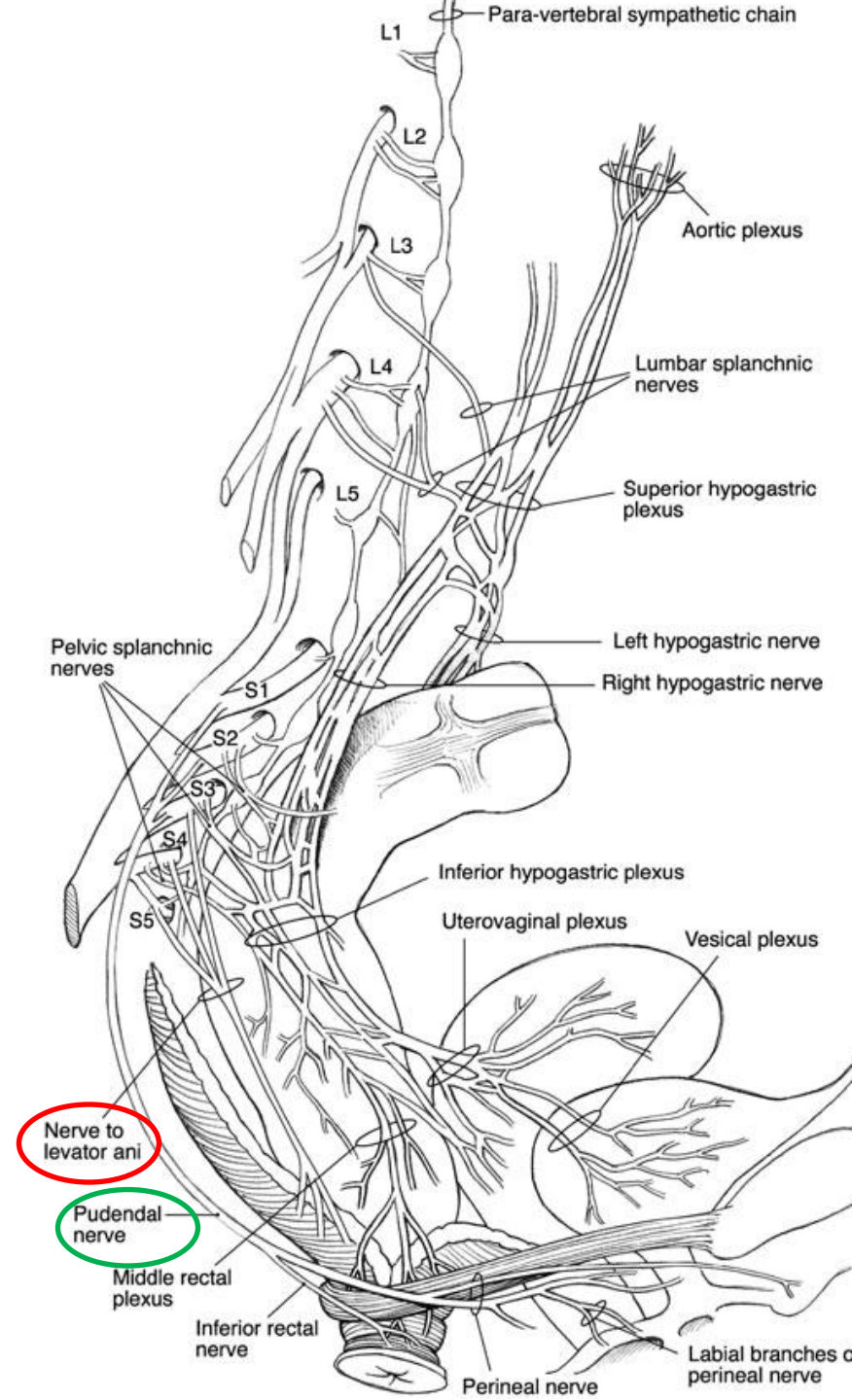
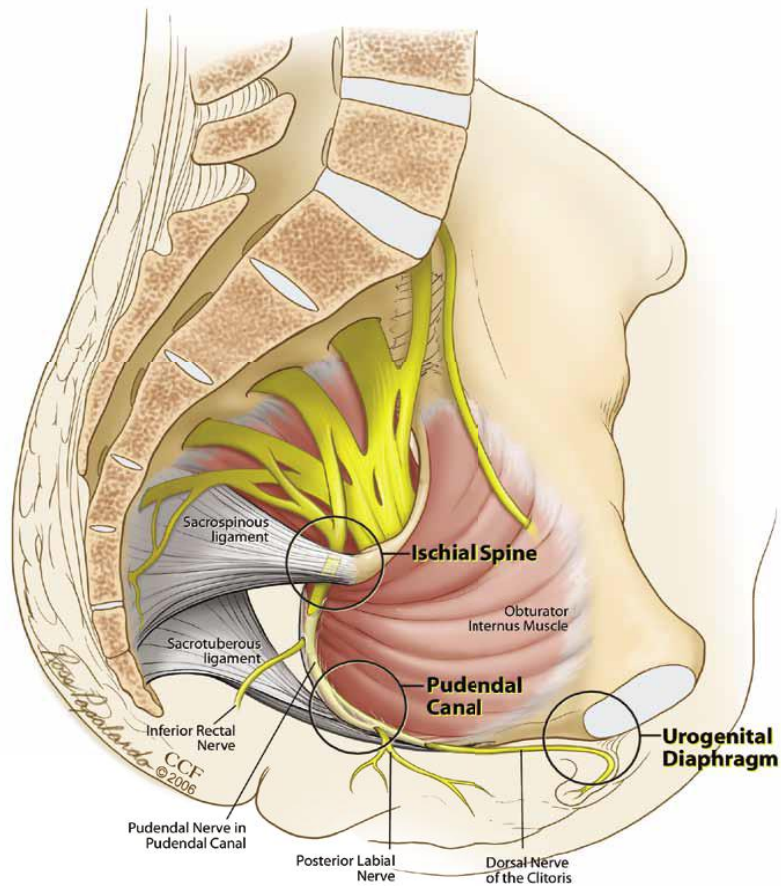
Squatting posture



Puborectalis muscle
"chokes" rectum to
maintain continence

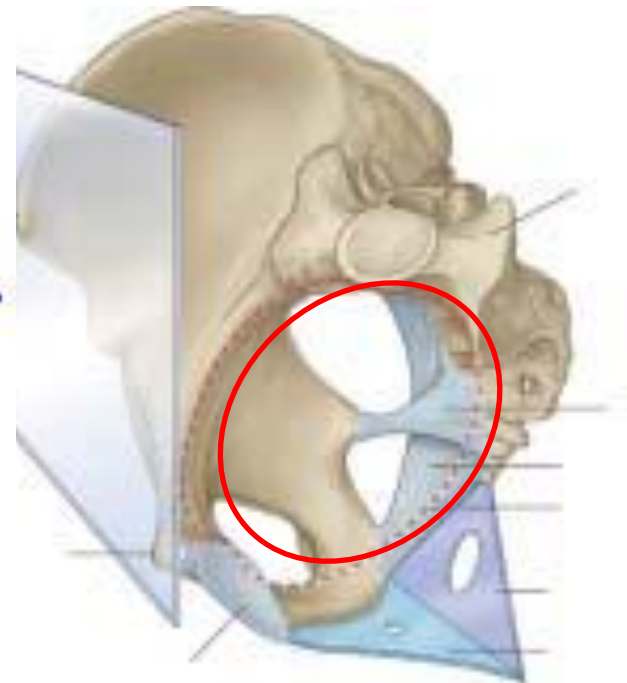
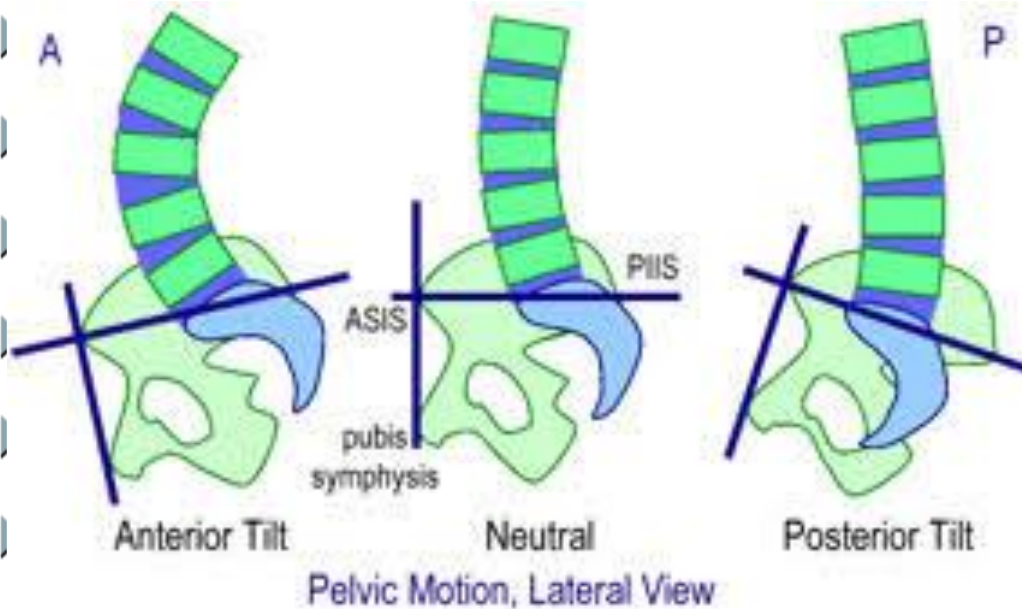
Puborectalis muscle
relaxes and straightens
pathway to anus

Matthew D. Barber 2005

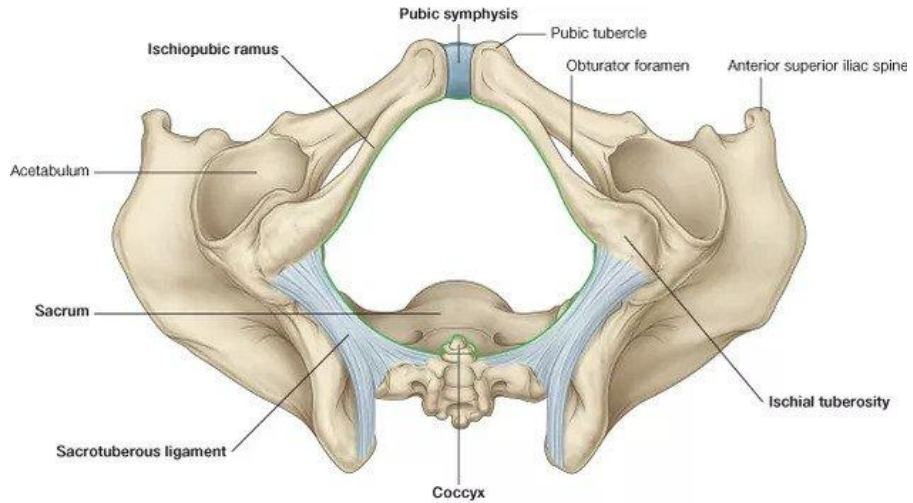


Matthew D. Barber . 'Contemporary views on female pelvic anatomy'. 2005

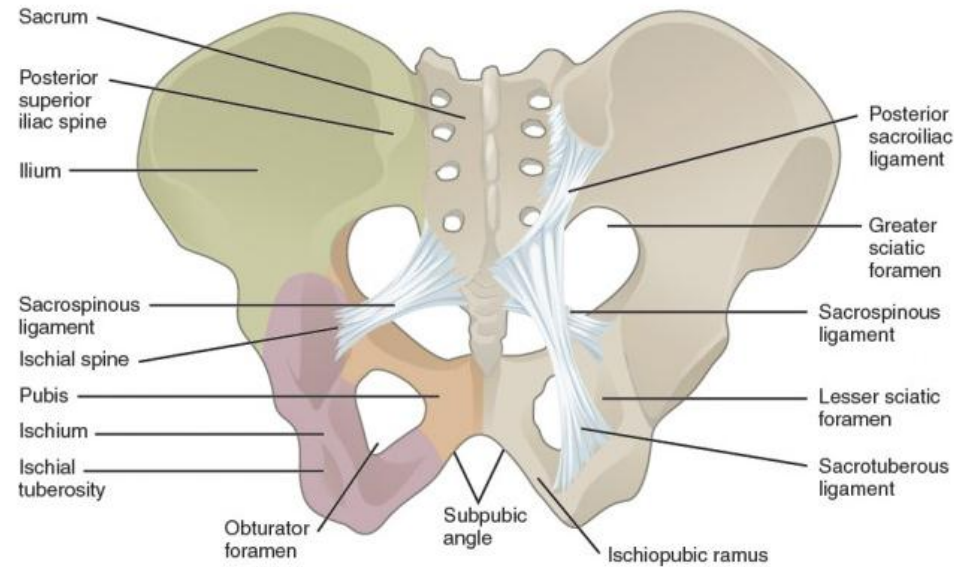
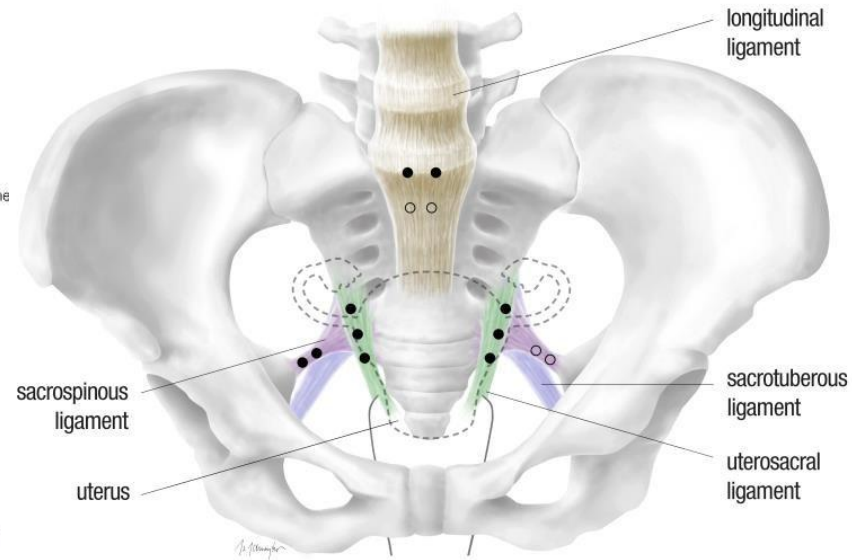
Bone •



Ligaments



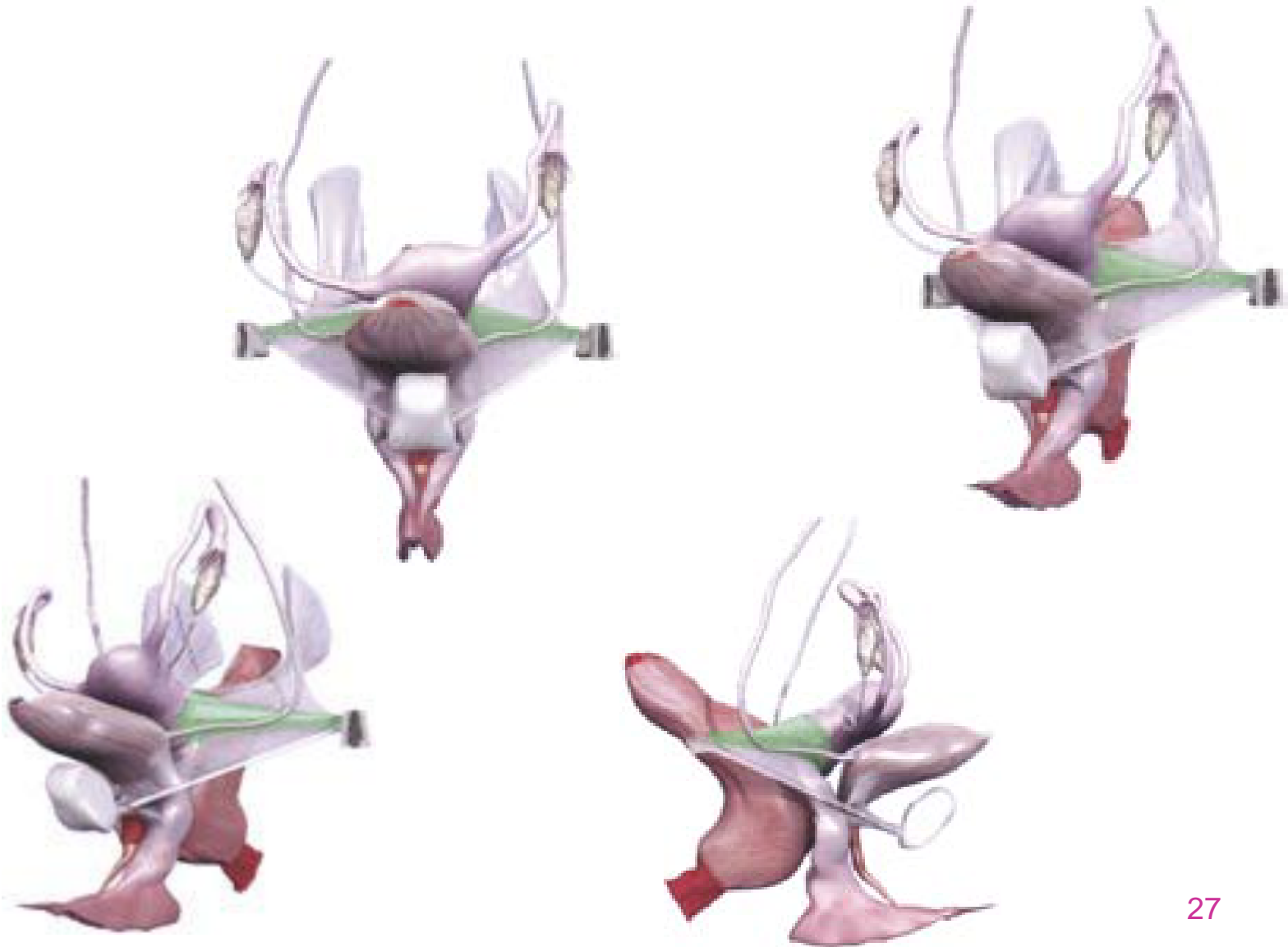
© Elsevier. Drake et al: Gray's Anatomy for Students - www.studentconsult.com



Facia endopelvica



Cardinal ligament



Pubo- urethral ligament



Pubocervical ligament



Uterosacral ligament



Pelvic floor disorder



Bert Messelink et al, 'Standardization of Terminology of Pelvic Floor Muscle Function and Dysfunction : Report From the Pelvic Floor Clinical Assessment Group of the International Continence Society', (2005),

Women

Lower urinary tract symptoms

- **Urinary incontinence**
- Urgency and frequency
- Slow or intermittent stream and straining
- Feeling of incomplete emptying

Sexual function

- In woman :dyspareunia
- In men: erectile and ejaculatory dysfunction
- In both: orgasmic dysfunction

Men

Bowel symptoms

- Obstructed defecation
- Functional constipation
- Fecal incontinence
- Rectal/anal prolaps

Pain

- Chronic pelvic pain
- Pelvic pain syndrome

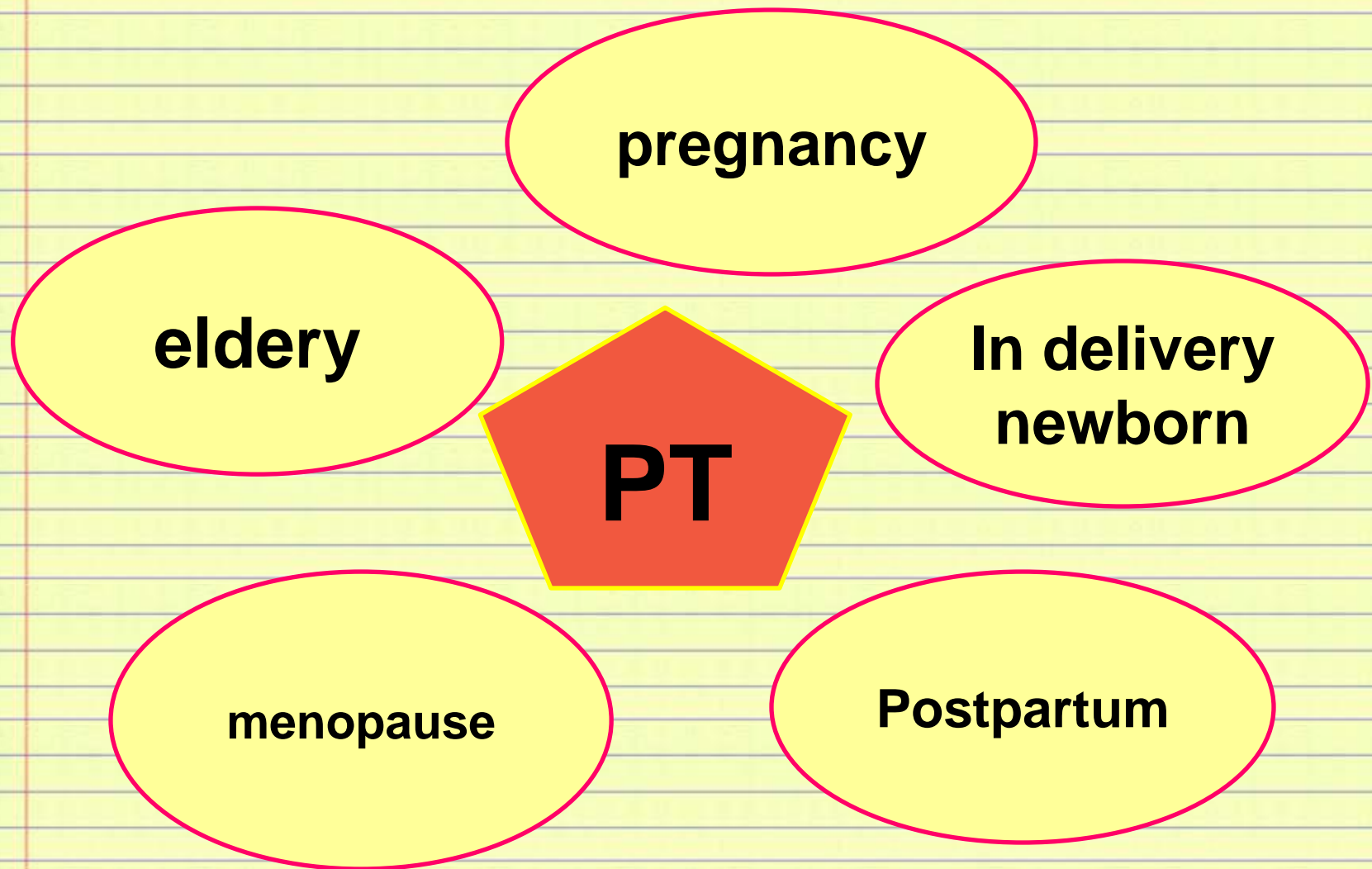
Children

Neurological diseases

Vaginal symptom

- Pelvic organ prolapse

Elite athletes

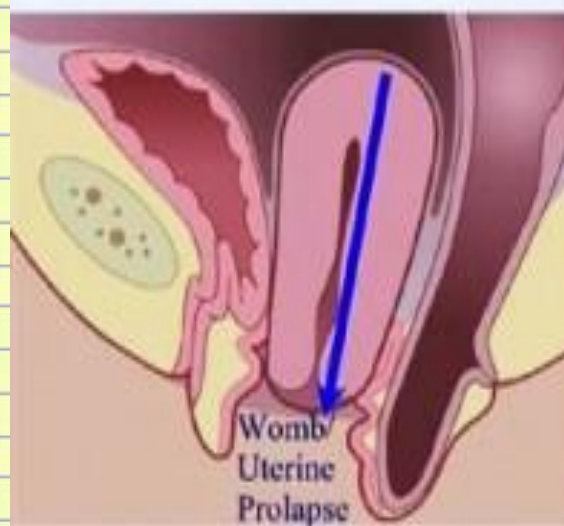
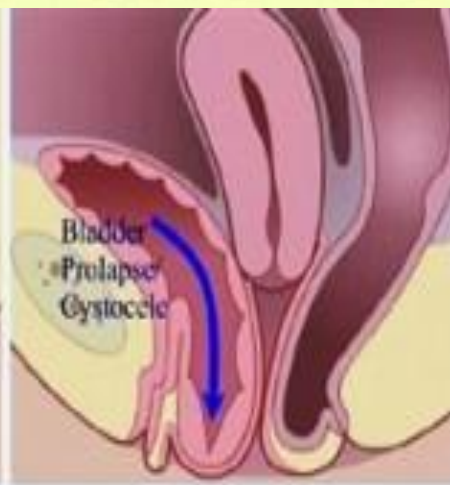
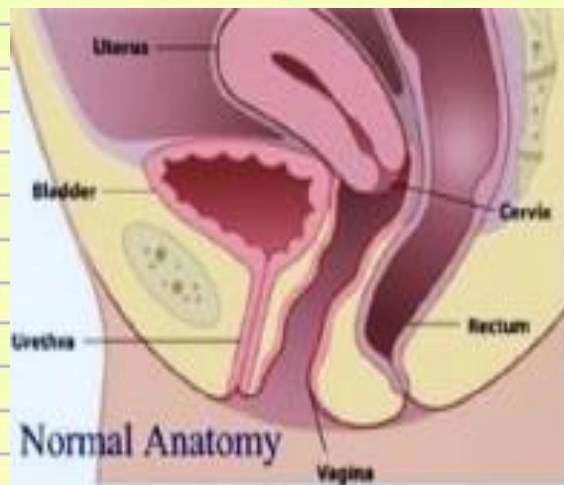


vaginal

- **Vaginismus**
- **Porolaps**

Urinary Incontinency

- **Stress urinary incontinency**
- **Urge urinary incontinency**
- **Mixed**
- **Overflow**
- **Functional**

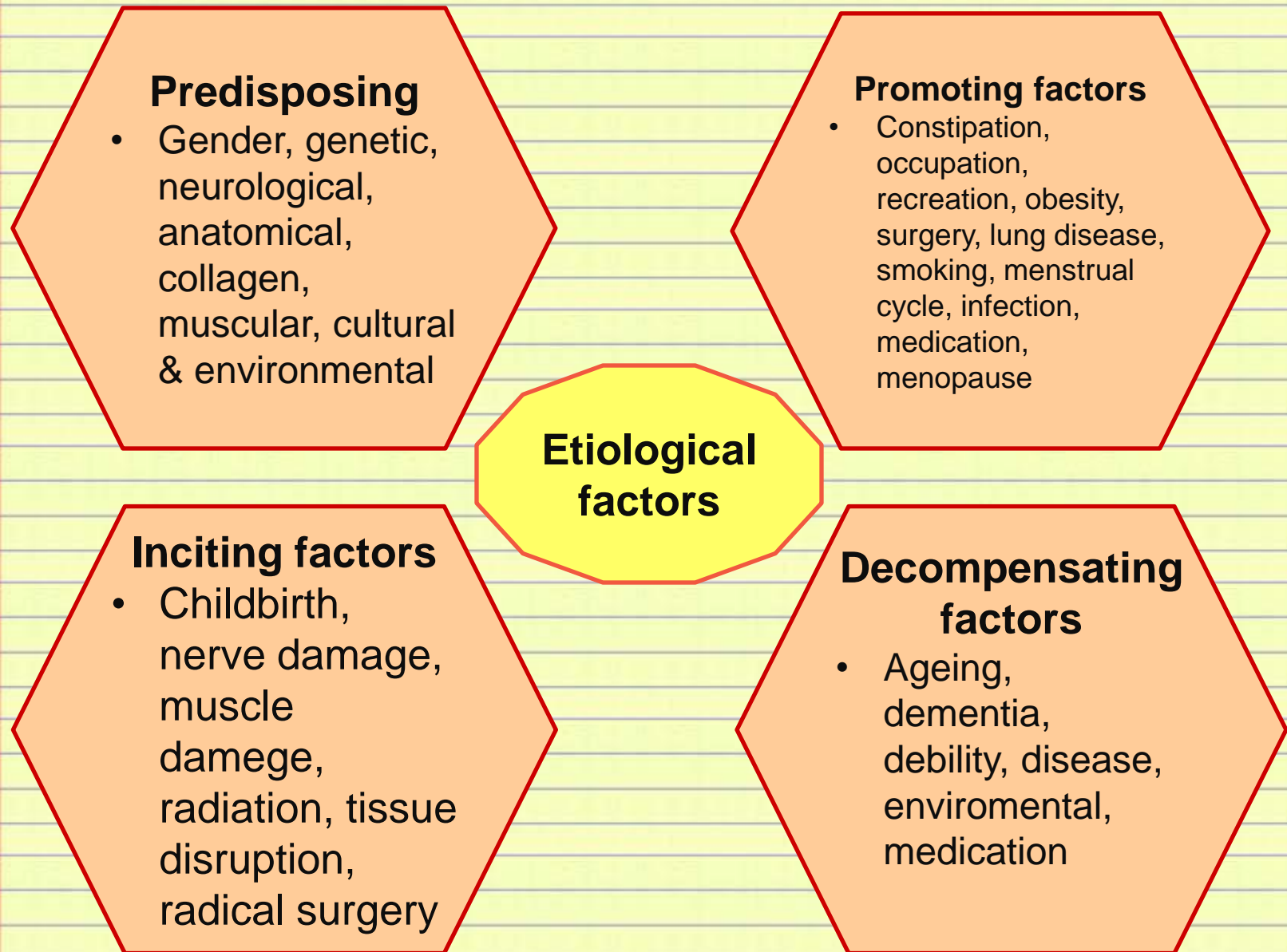


- Coccydynia
- Diastasis recti
- Infertility
- Dysmenorehea
- Breast surgery

- Constipation
- anismuse
- prolapse
- Gas & fecal incontinence

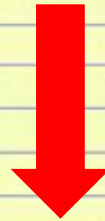
Contraindication

- ☐ Bleeding
- ☐ Peace maker
- ☐ Cancer
- ☐ Infection
- ☐ Skin allergy
- ☐ Sensory disorder
- ☐ Mental problem



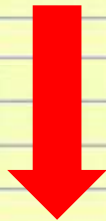
prevalence

(Sahar Sadat Sobhgol et al, 2008) & (Akhlaghi F. et al 2003)



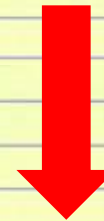
38.4 % _ 89%

(Chia-hsin Chen et al, 2005)



23_34%

(Ingrid E. Nygaard et al 1996)



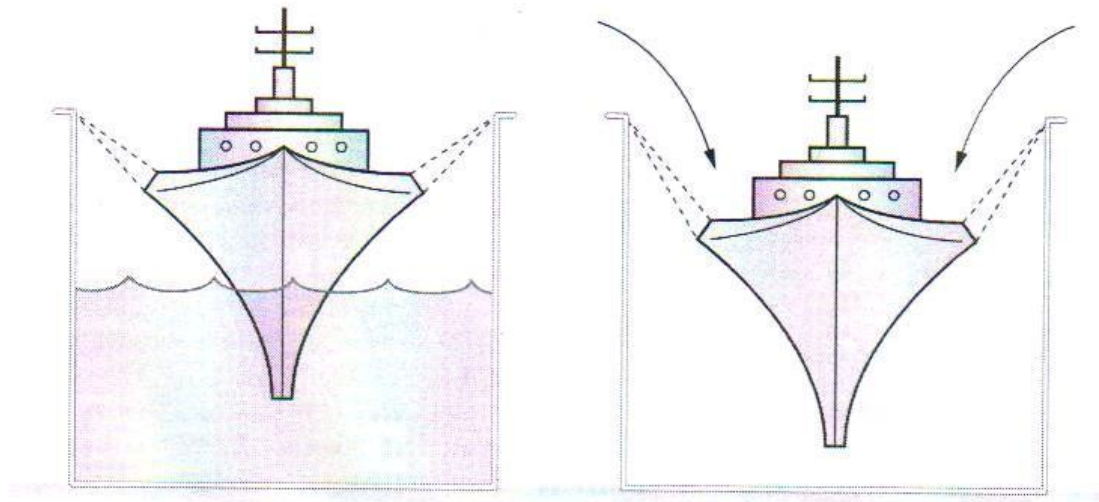
15_30%

Notes of pelvic floor function



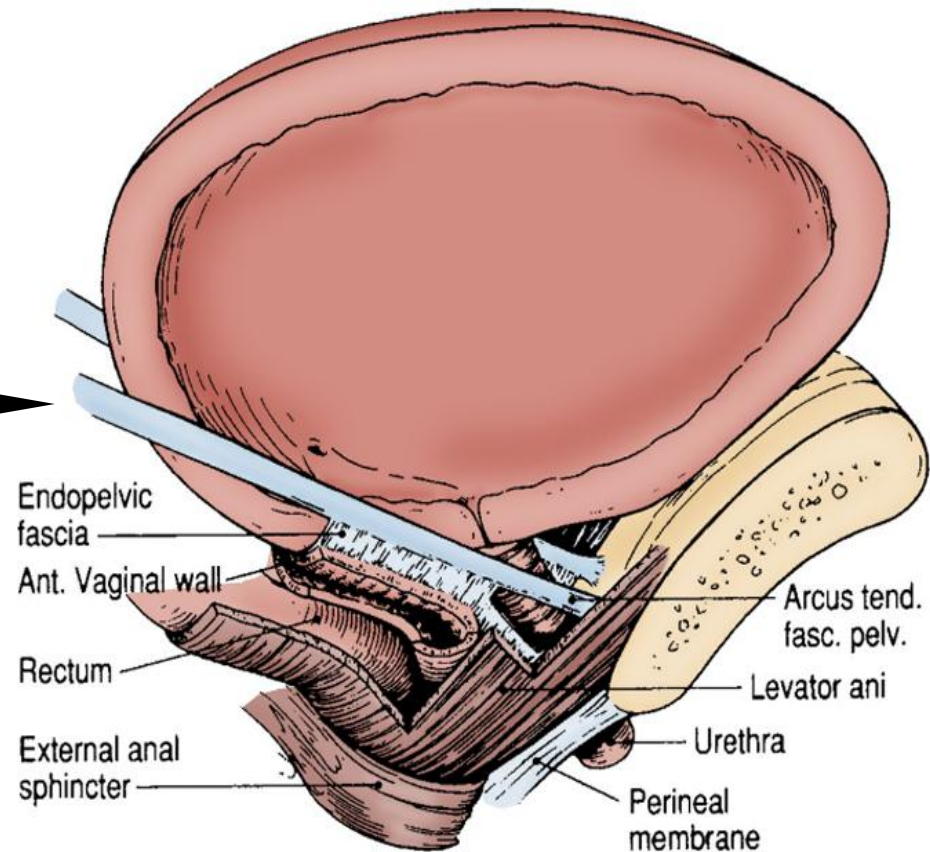
Boat in Dry Dock Theory

- Delancey (1993) suggests that when the PFM or levator ani muscles function normally, the pelvic floor is in good condition & the ligaments & fascia have normal tension.



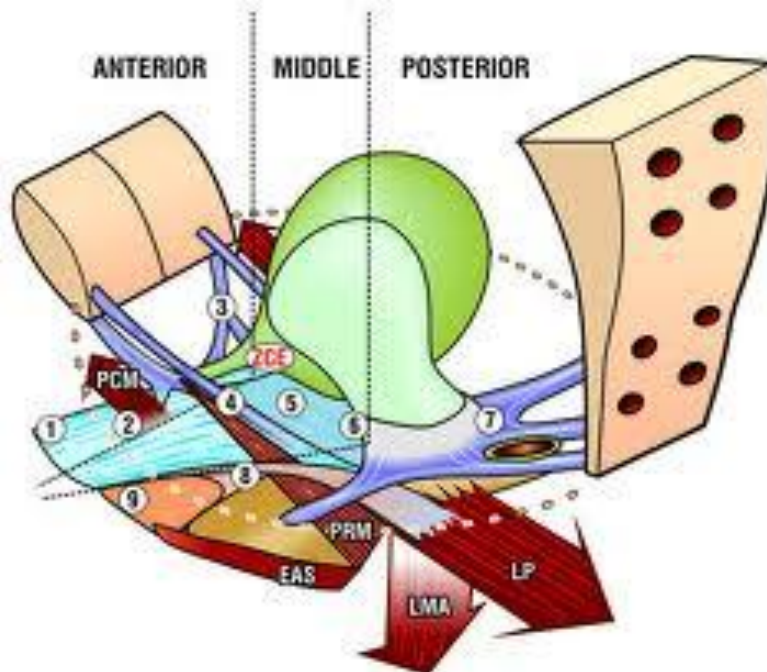
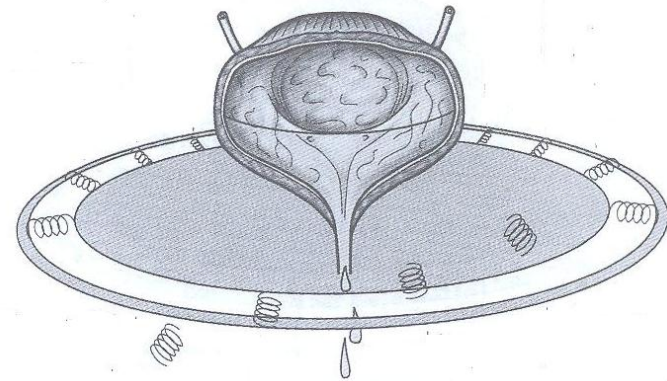
Hammock Theory

ATFP

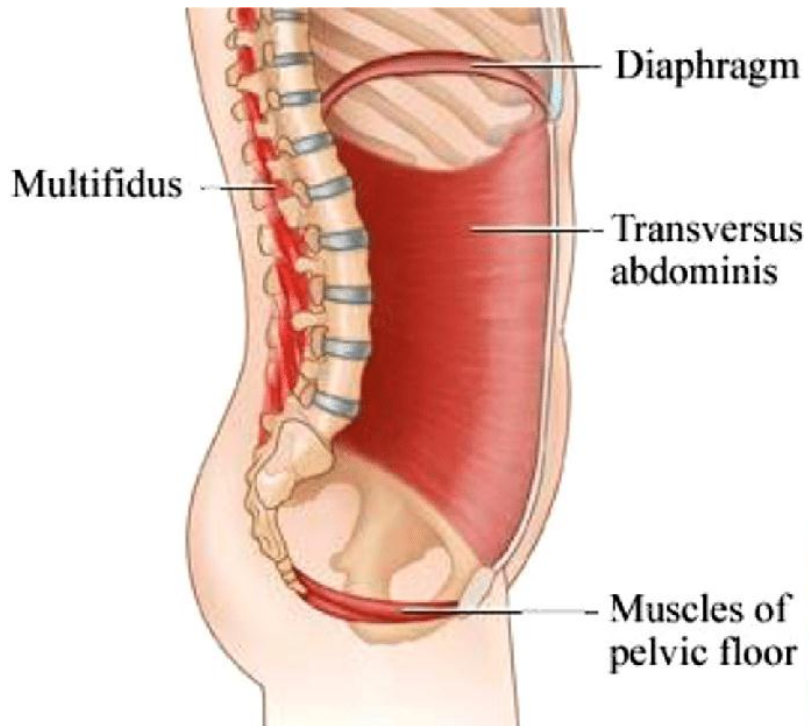


The arcus tendinous fascia pelvis acts as 2 I-beams in the pelvis with the endopelvic fascia serving as a hammock underneath the urethra

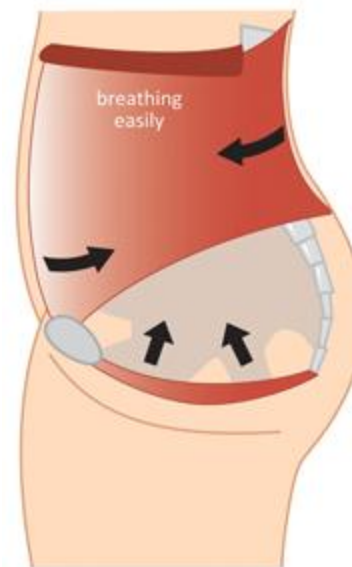
Integral theory



Abdominal capsul Richardson

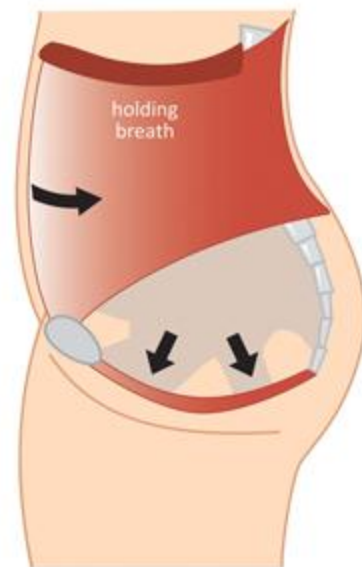


PELVIC FLOOR MUSCLE CONTRACTION



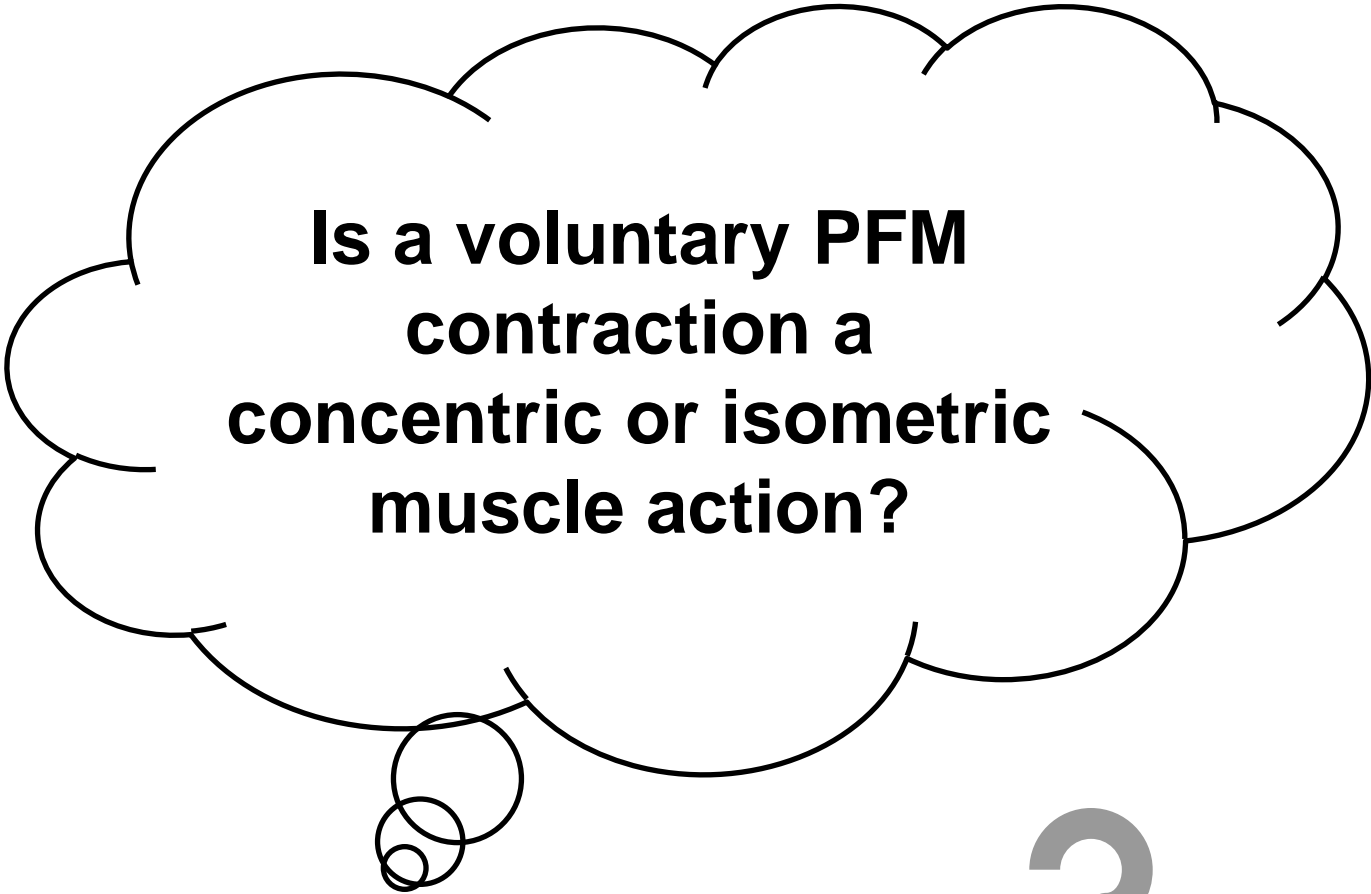
Correct action

The pelvic floor lifts, the deep abdominals draw in and there is no change in breathing



Incorrect action

Pulling the belly button in towards the backbone and holding your breath can cause bearing-down on pelvic floor



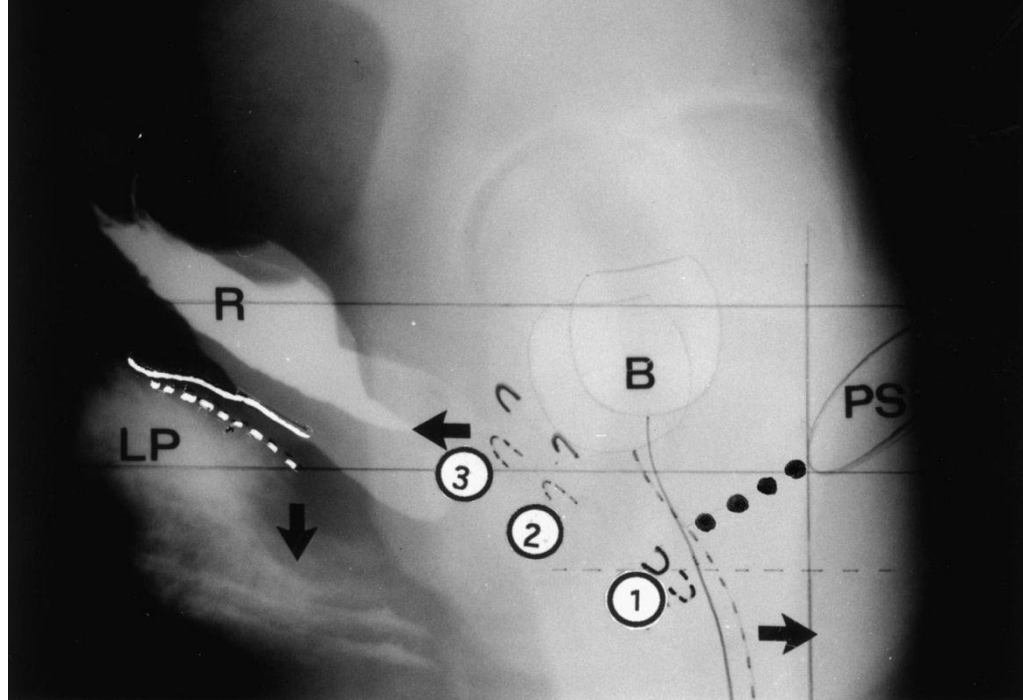
**Is a voluntary PFM
contraction a
concentric or isometric
muscle action?**



Muscular Performance

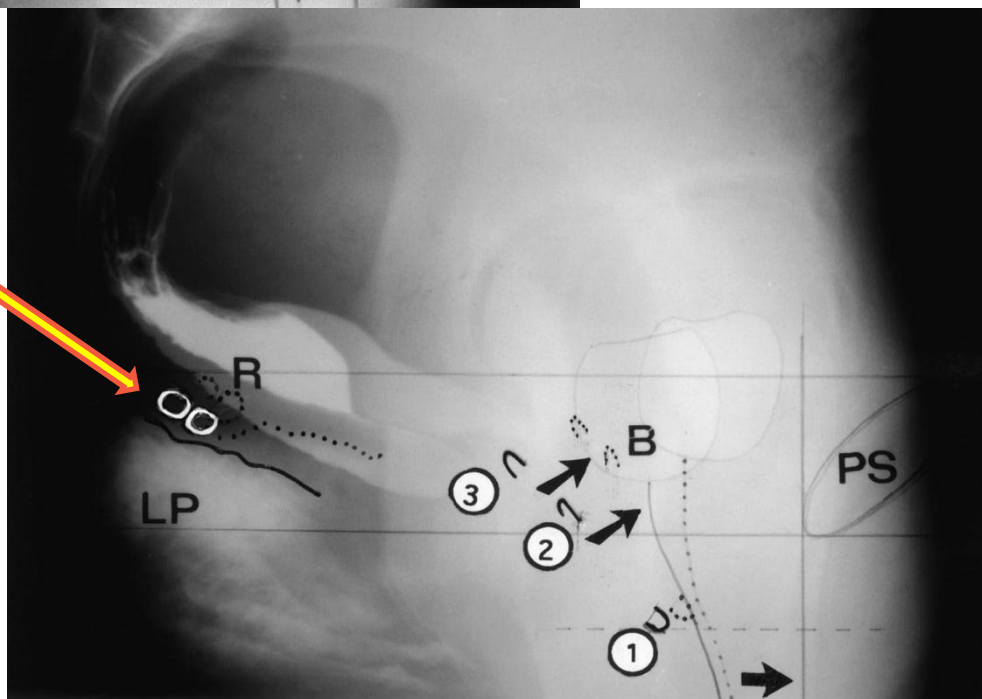
- Active tension decrease under muscles stretching (beyond 150% of its normal resting length)
- Also, active tension is very low when the start point of contraction is around 70% of its normal resting length.

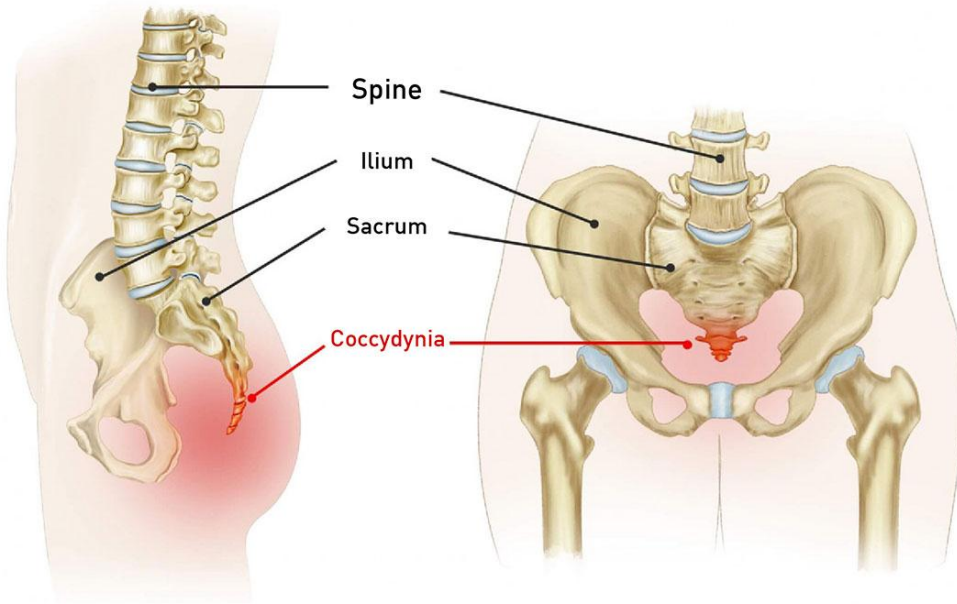
(Apkon, 2003)



strain

squeeze





- Pelvic floor & posture & lumbar & sacrum & foot

Ruth R Sapsford et al, 'Sitting Posture Affects Pelvic Floor Muscle Activity in Parous Women : An Observational Study', (2006).



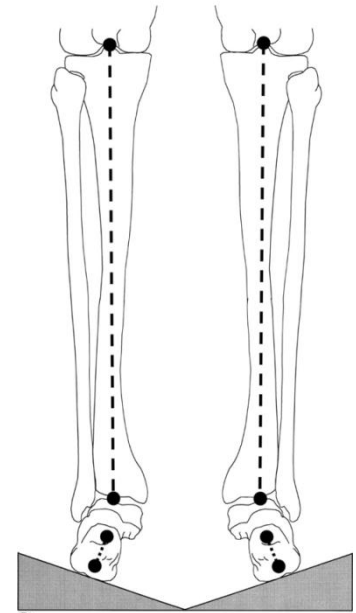
Sitting postures (a) slump supported, (b) upright unsupported, and (c) very tall unsupported showing placement of electrodes recording abdominal muscle activity.

Sam Khamis et al, 'Effect of Feet Hyperpronation on Pelvic Alignment in a Standing Position.',(2007).

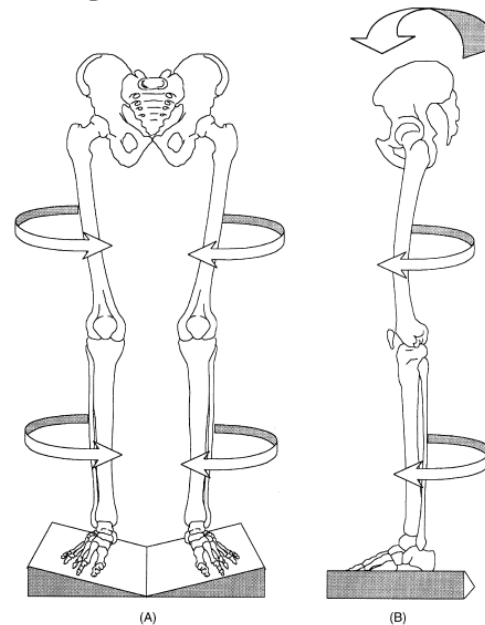
Aim: was to study the effect of induced foot hyperpronation on pelvic and lower limb alignment while standing.



(A)



(B)



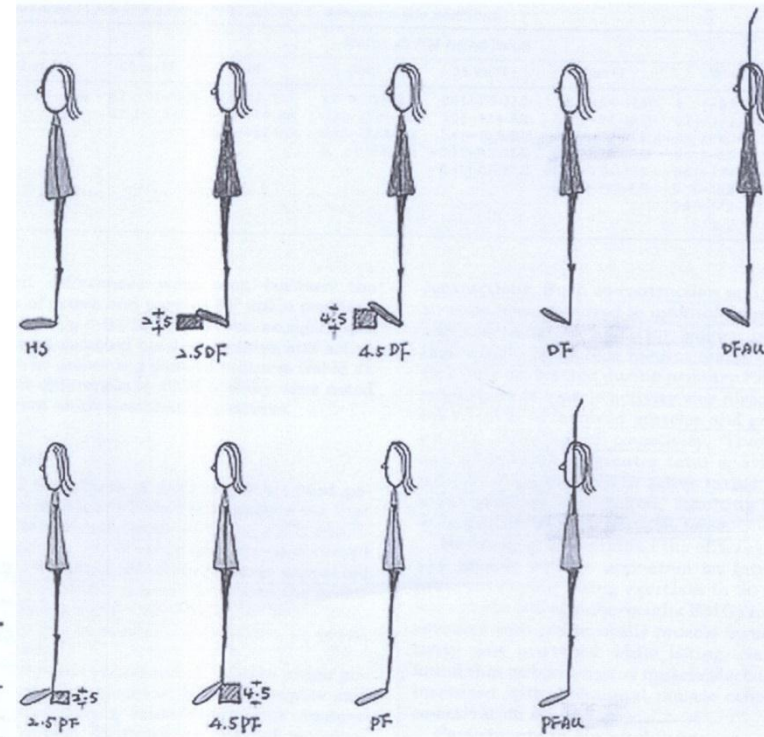
(A)

(B)

Hsiao-Lien Chen et al, ' The Effect of Ankle Position on Pelvic Floor Muscle Contraction Activity in Womwn', (2008)

Table 1. Maximal PFM activity in 31 subjects in different ankle positions

PFM Activity		
Ankle Position	Position Type	Median μv (range)
HS		16.70 (7.57–37.50)
2.5 cm DF	Passive	18.20 (5.00–46.80)
4.5 cm DF	Passive	19.20 (6.10–41.60)
DF	Active	18.00 (7.80–37.60)
DFAU	Active	17.60 (10.60–37.60)
2.5 cm PF	Passive	17.90 (6.10–43.00)
4.5 cm PF	Passive	18.10 (4.40–40.90)
PF	Active	16.40 (5.80–40.96)
PFAU	Active	21.30 (10.70–37.20)



physiotherapy

**PELVIC FLOOR
DYSFUNCTION**

=

**SOCIAL
DISEASE**

Physical therapy

Pelvic floor exercise

Chen et al 2005
Lien chen 2009
ICS

Biofeedback

Vaginal cones

Electrical stimulation & magnetic

Manual therapy & dry needling

**Muscle
awareness**

**6 step of
exercise**

Knack maneuver (miller et al 1999) ➤

Kegel exercise ➤

**Abdominal / lumbopelvic
stabilization Exs.** ➤

Functional training ➤

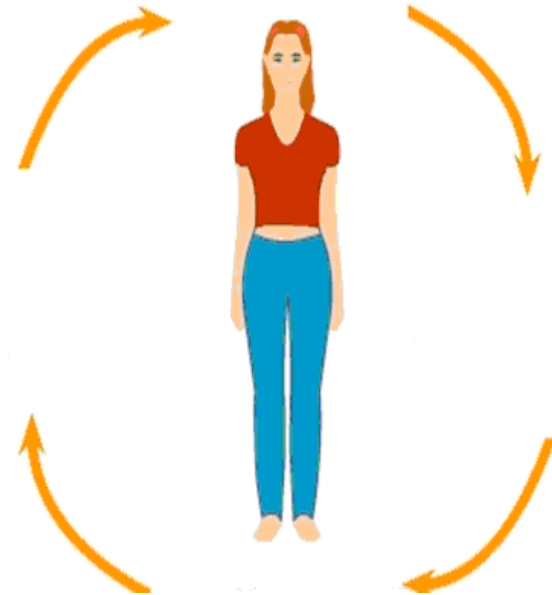
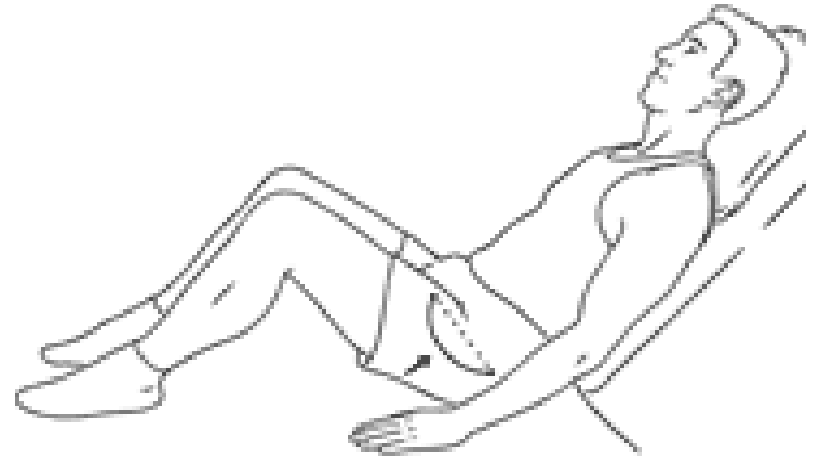
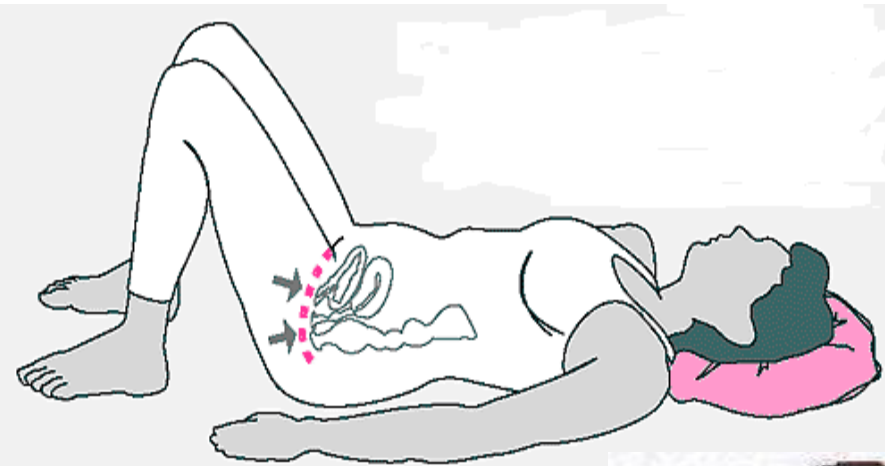
**Correction of biomechanical
(function deformity)** ➤

PFM stretching & relaxation ➤

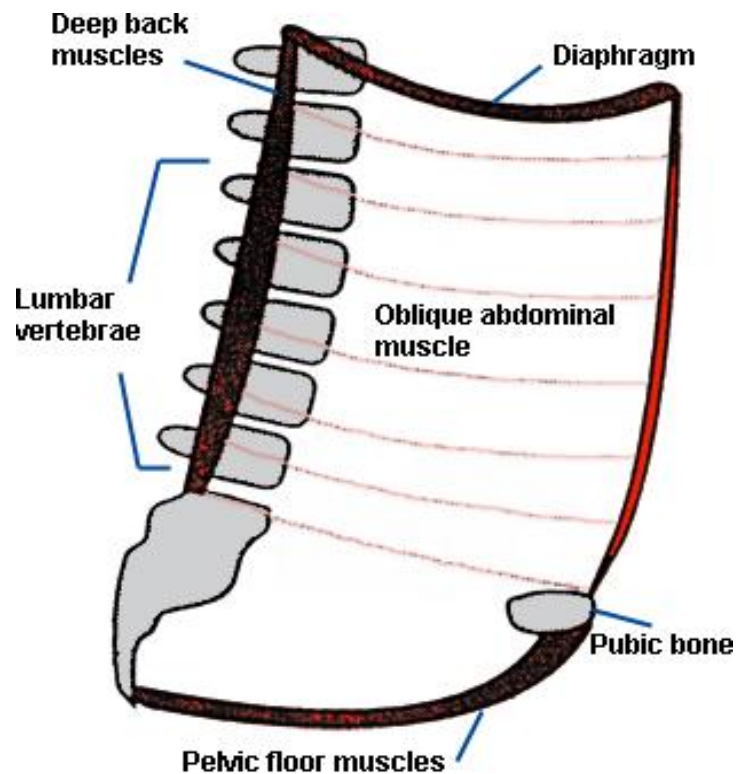
Knack maneuver

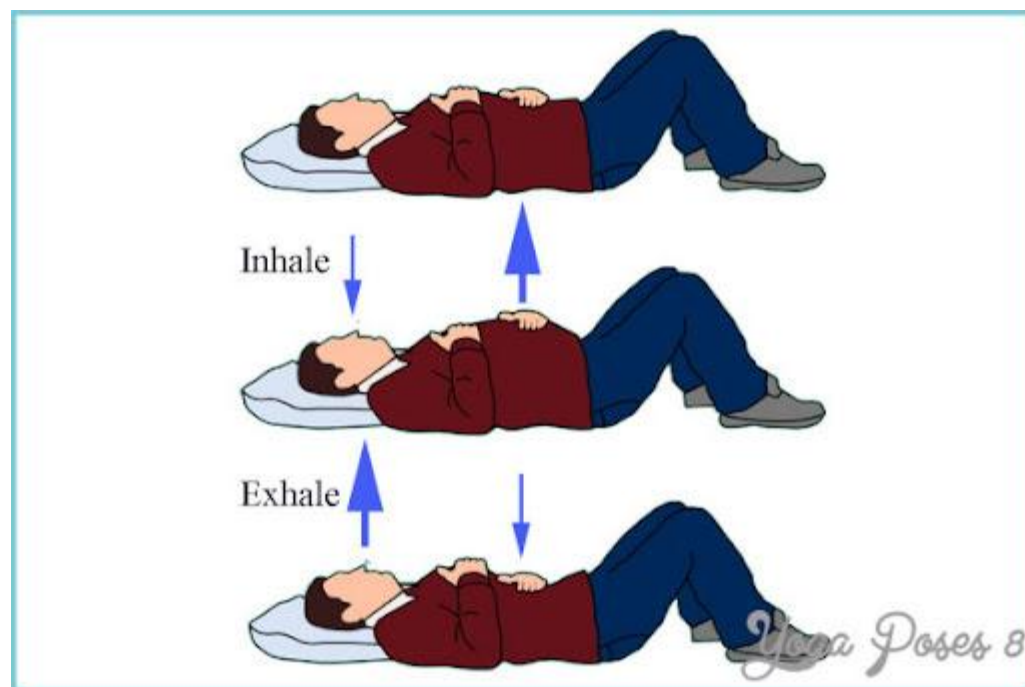


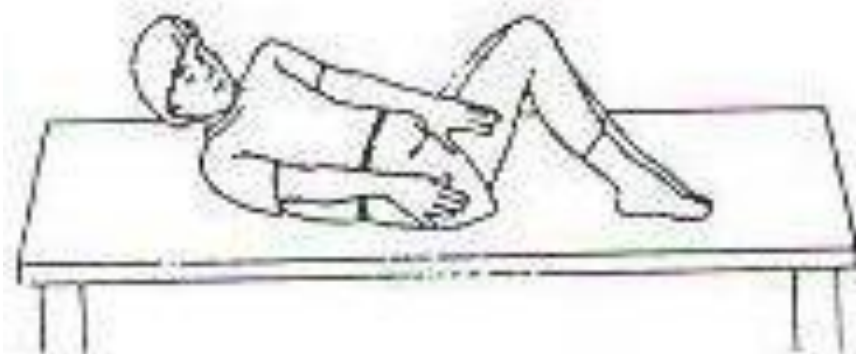
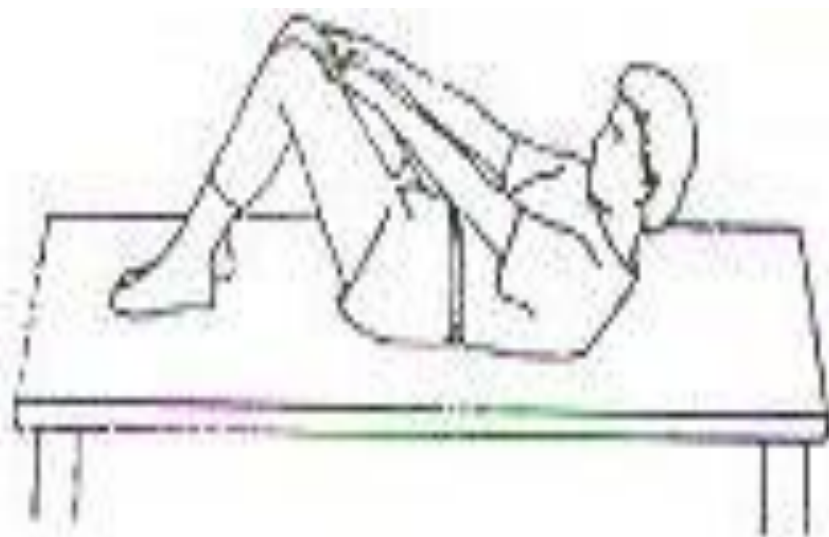
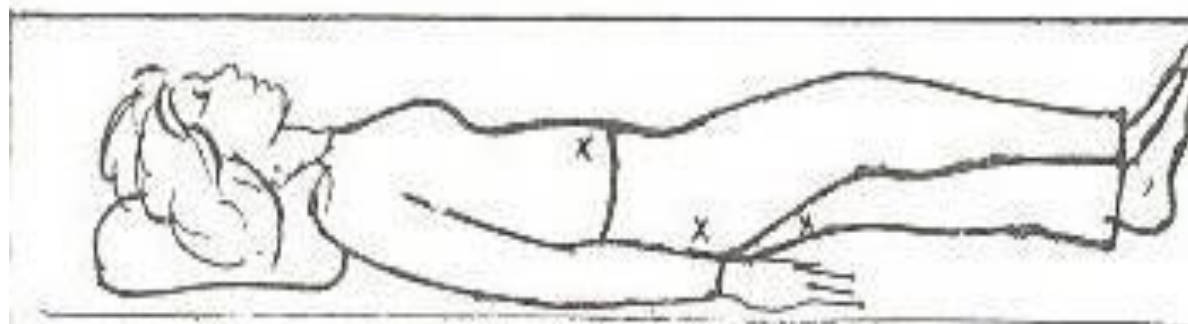
Kegel Exercise

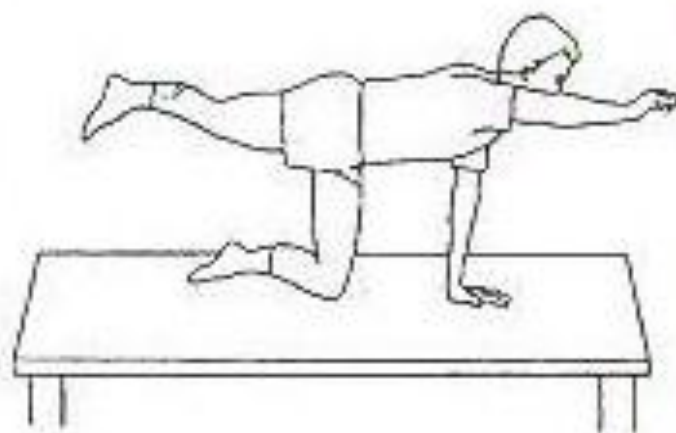
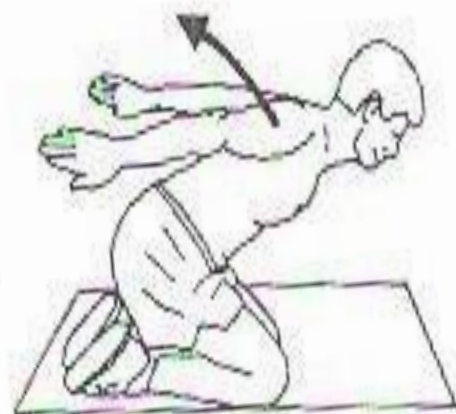
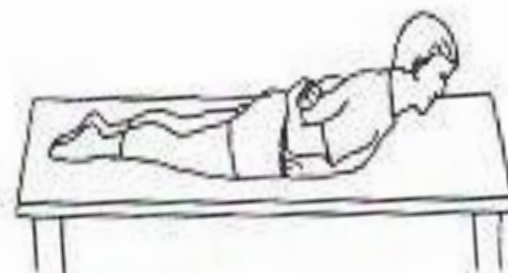
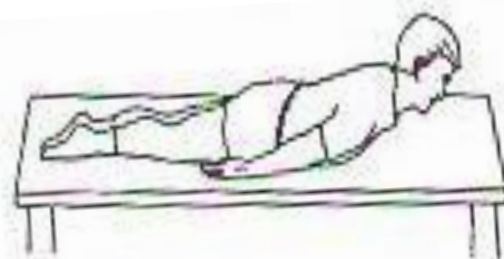
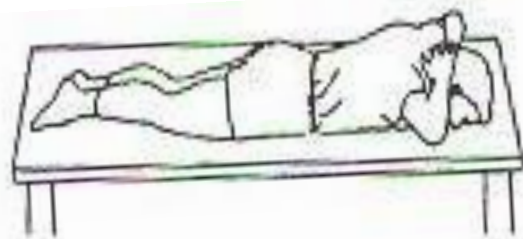


Stabilisation lumbopelvic & abdominal







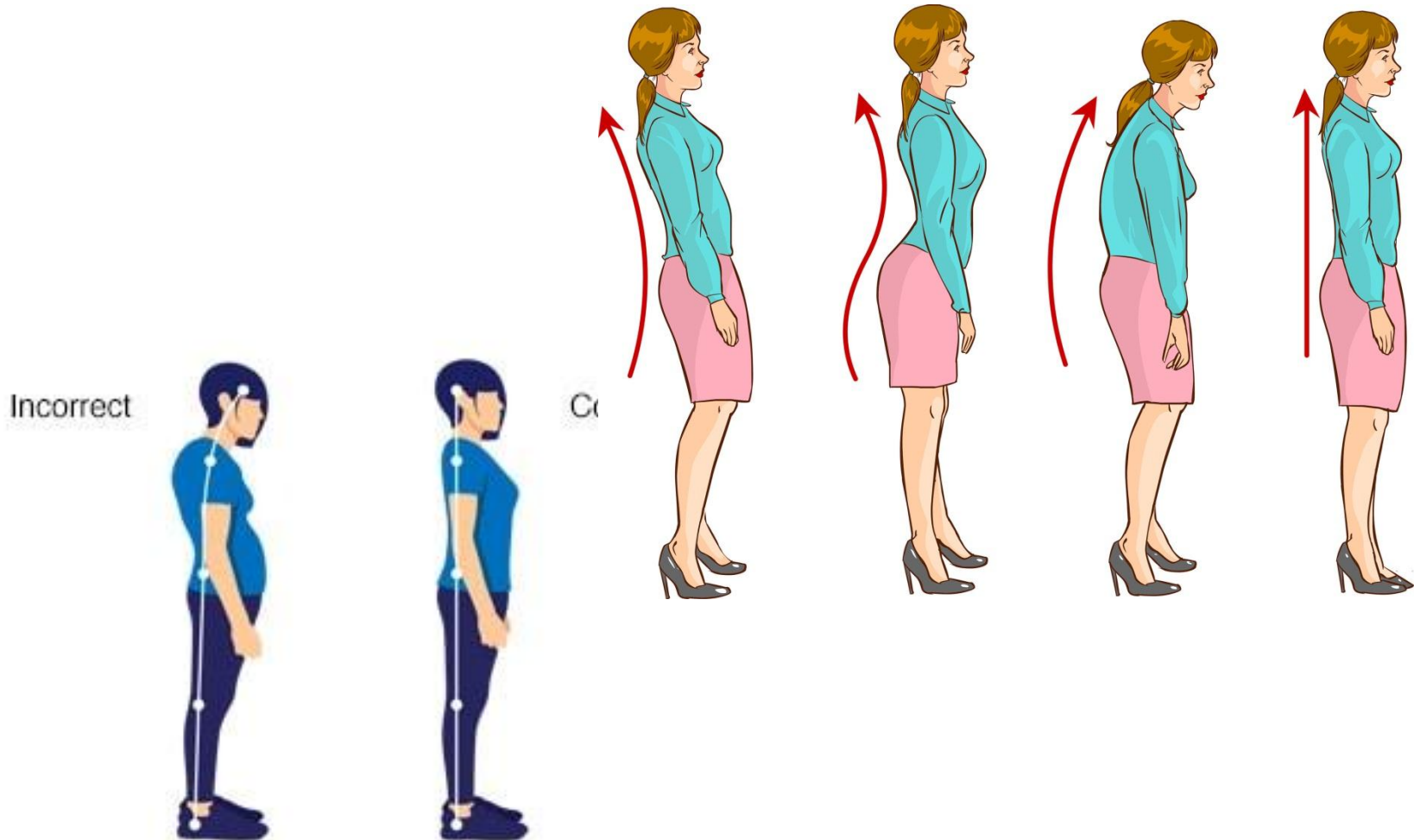


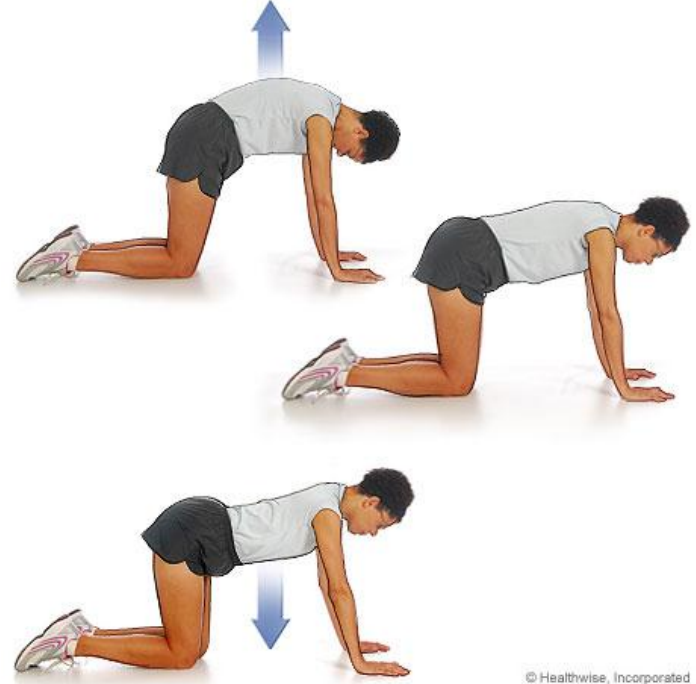
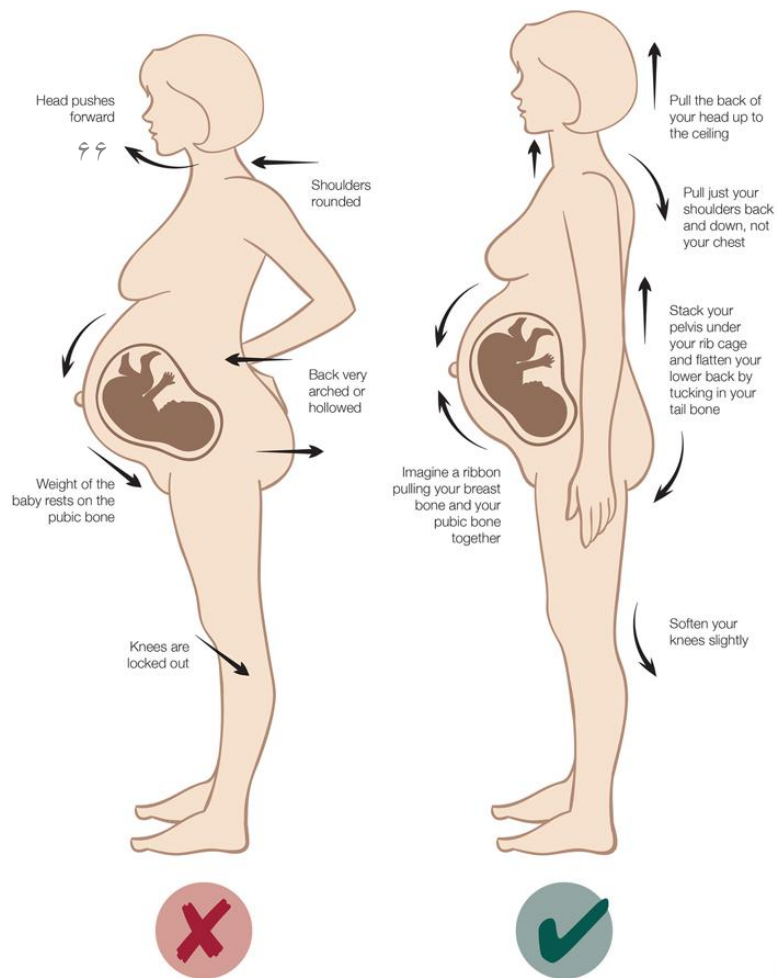
Functional Exercise





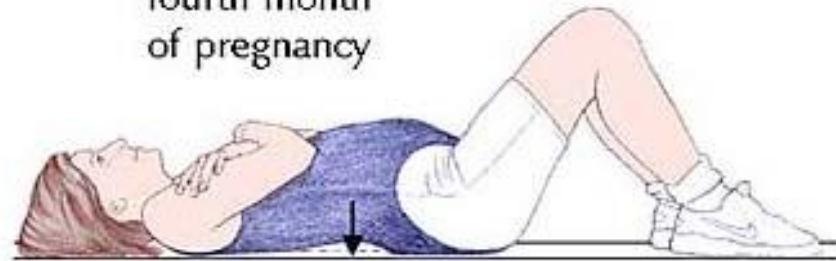
Correction of biomechanical (function deformity)



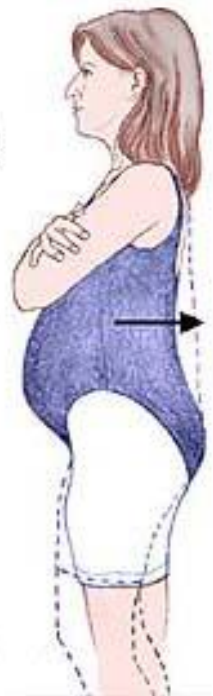


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Pelvic tilt
done on your
back up to the
fourth month
of pregnancy



Pelvic tilt
done standing
beginning
with the
fourth month
of pregnancy



PFM stretching & relaxation



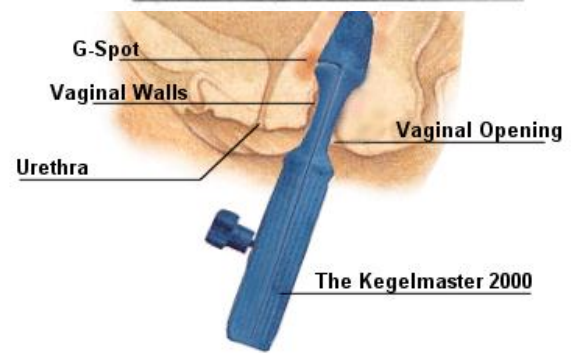
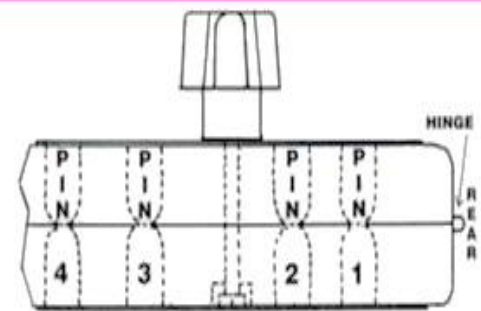


PNF



Squat exercise









Important things

Morning stools

- ✓ Strengthen the mood
- ✓ Yoga, meditation

- Quit eating habits
- ✓ Do not consume of caffeine
- ✓ Proper consumption of water (6-8 glass)
- ✓ supplementation (E, D, C, B)

- ✓ Don't smoking
- ✓ Loss weight

- ✓ Not
bath Hold your

- ✓ Not staying on the toilet
- ✓ Not strain during defecation

- ✓ Behavior therapy

- ✓ Not lifting a heavy object
- ✓ Donot the job uniformly

Biofeedback

- ❑ It's a therapy, i.e. a type of treatment where people are trained to improve their health by using signals from their own bodies
- ❑ Provides the patient with immediate auditory and/ or visual information about the physiological process
- ❑ By watching the monitor and listening to the sound, the patient gets the feedback information and he can adjust his thinking and behavior

Aims of Biofeedback

- ❑ To alter pathophysiologic responses of both smooth and striated muscle that mediates bladder control
- ❑ To reinforce pelvic muscle recruitment to improve contractile force to reinforce bladder inhibition

Types of BF

- *Sensory**
- *Pressure(Manometric/Perinometric)**
- *EMG**
- *Cystometric/Urodynamic**
- *Ultrasonic**

“Sensory BF”

- Vaginal Palpation
- Mirror
- Vaginal Cones

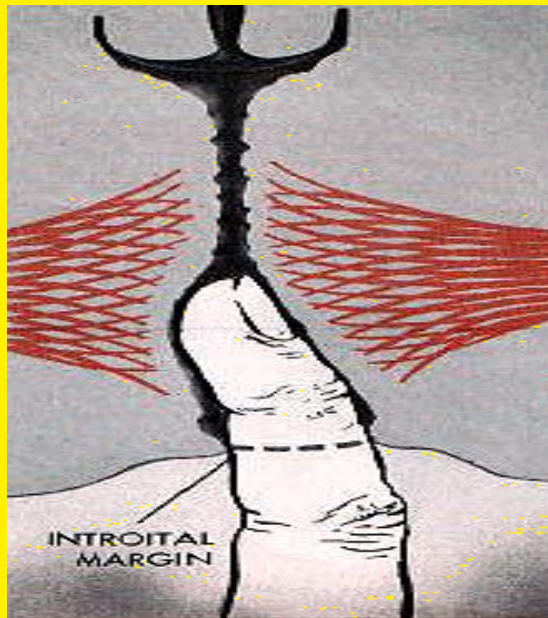


FIGURE 9

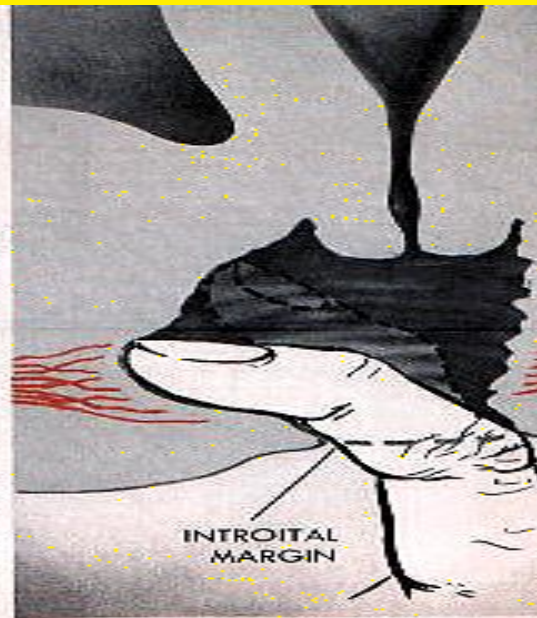


FIGURE 10

Vaginal Cones :PF Trainer &BF

- ❑ Females can be trained to contract PFM to retain cones of increasing weight in vagina.
- ❑ The feeling of “loosing the cone” from vagina initiates powerful
- ❑ sensory biofeedback response that causes PFM to contract around cone to retain.
- ❑ Plevnik(1985) reported clinical success of 60-70% with use of cones.
- ❑ Herbison et al cited in Cochrane review (2003) reported that cones are better than no active treatment in stress incontinence.

Vaginal Cones



Pressure Biofeedback/Perinometer



PFM Biofeedback Protocol

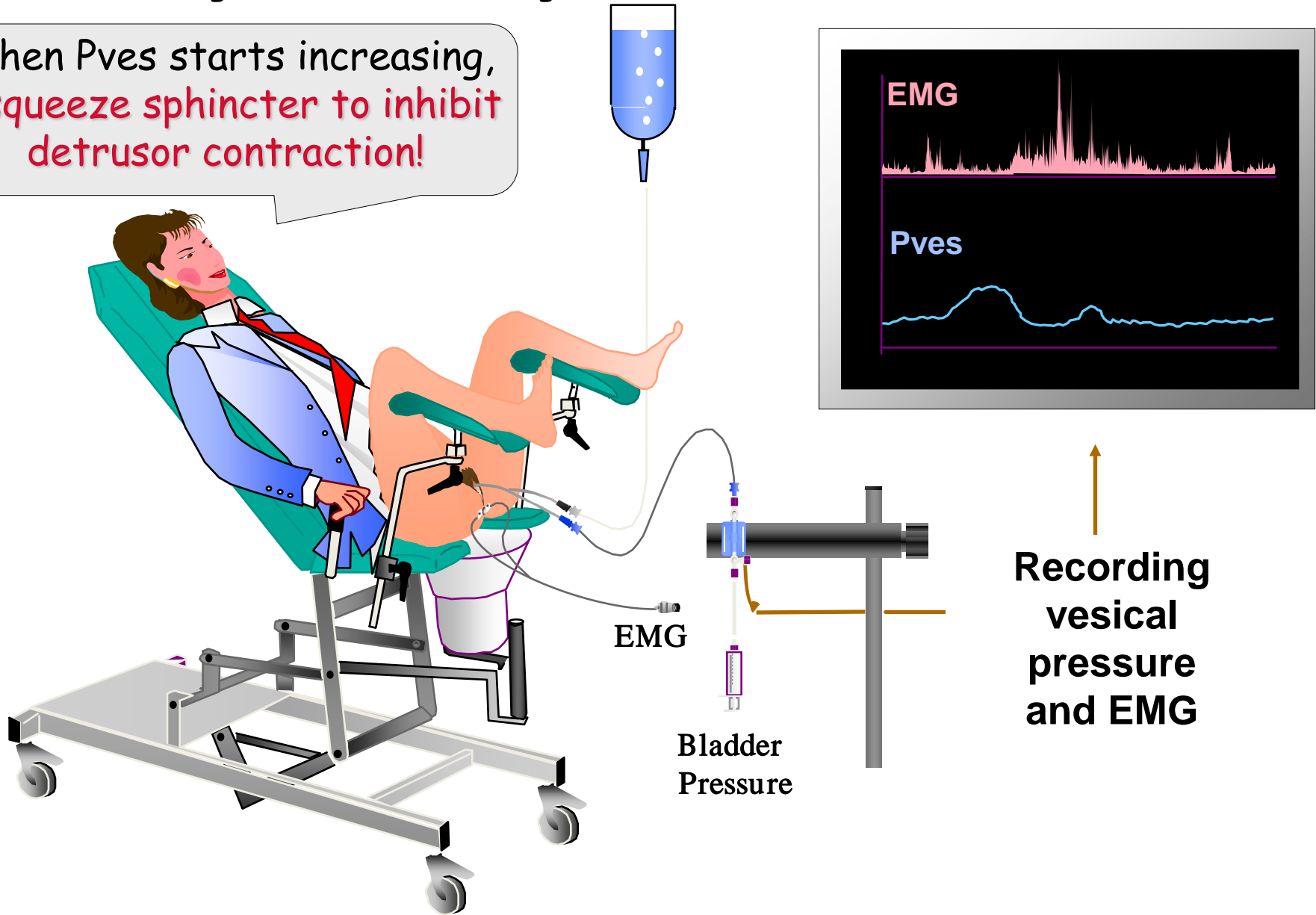
- ☐ Vaginal manometry – by perineometry Kegel reported a 90% improvement rate Vaginal electromyography – in 8 week program
- ☐ 80% younger and 67% older group reported no more incontinence
- ☐ Anal sphincter biofeedback – by perineal surface EMG or rectal probe



Cystometry

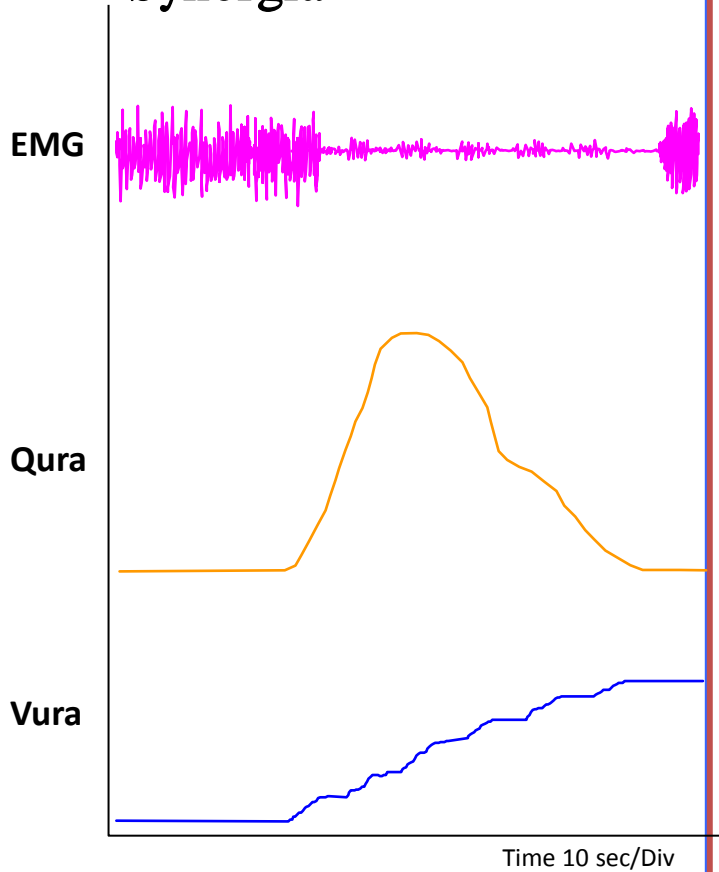
Detrusor Biofeedback

When Pves starts increasing,
I squeeze sphincter to inhibit
detrusor contraction!

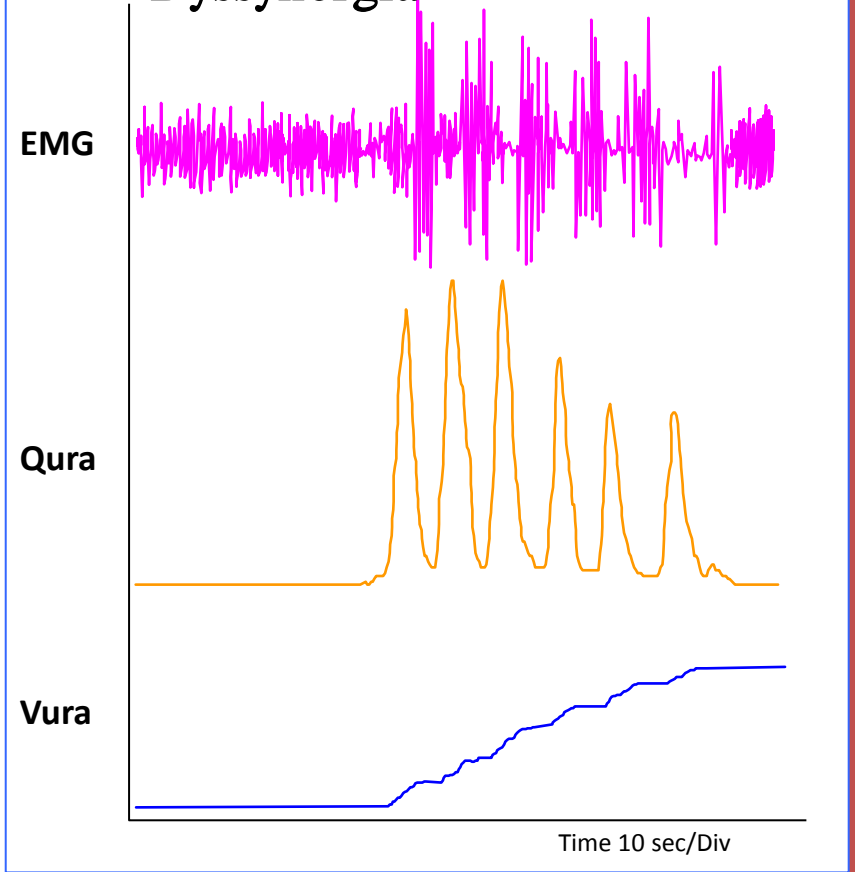


Urodynamic

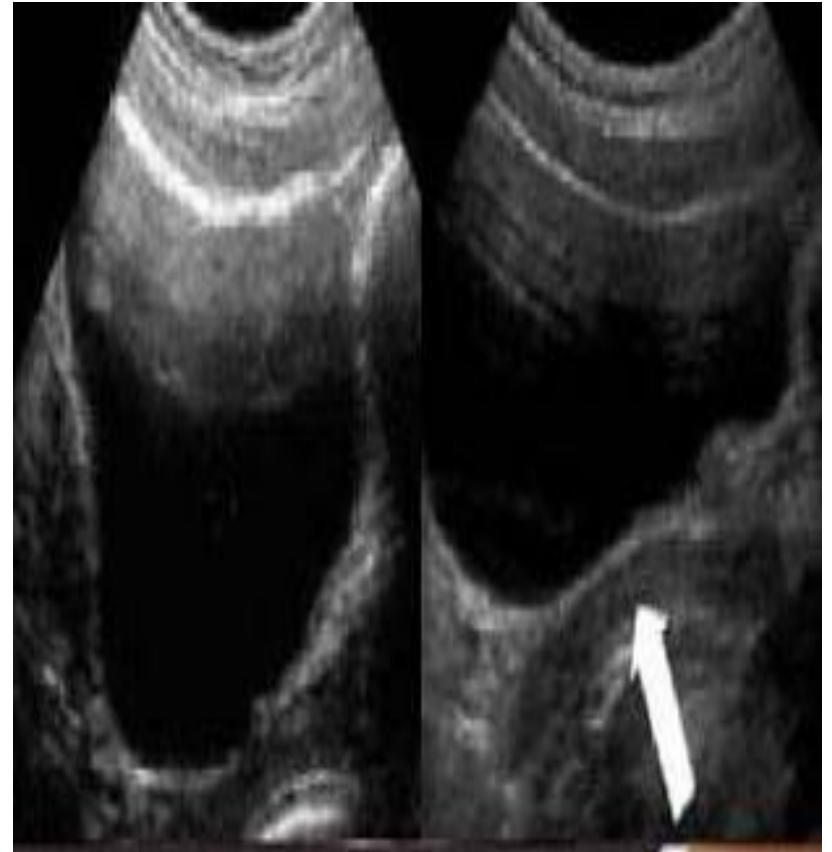
Synergia



Dyssynergia



Ultrasonic





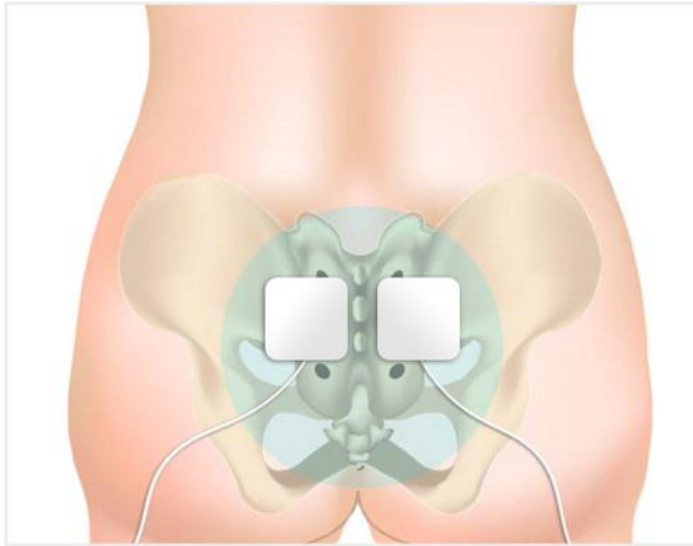
Electrical stimulation

The background of the slide is a close-up photograph of numerous colorful wooden blocks, similar to those used in children's toys. The blocks are in various colors including green, blue, orange, yellow, pink, and teal, and are scattered across the frame. A white rectangular box with a blue border is centered on the slide, containing a list of terms.

- IF** •
- FES/FAR** •
- TENS** •
- RF** •
- Magnetic** •

Type of electrode

- Vaginal
- Anal
- Transcutaneous electrode
- Non electrode magnetic



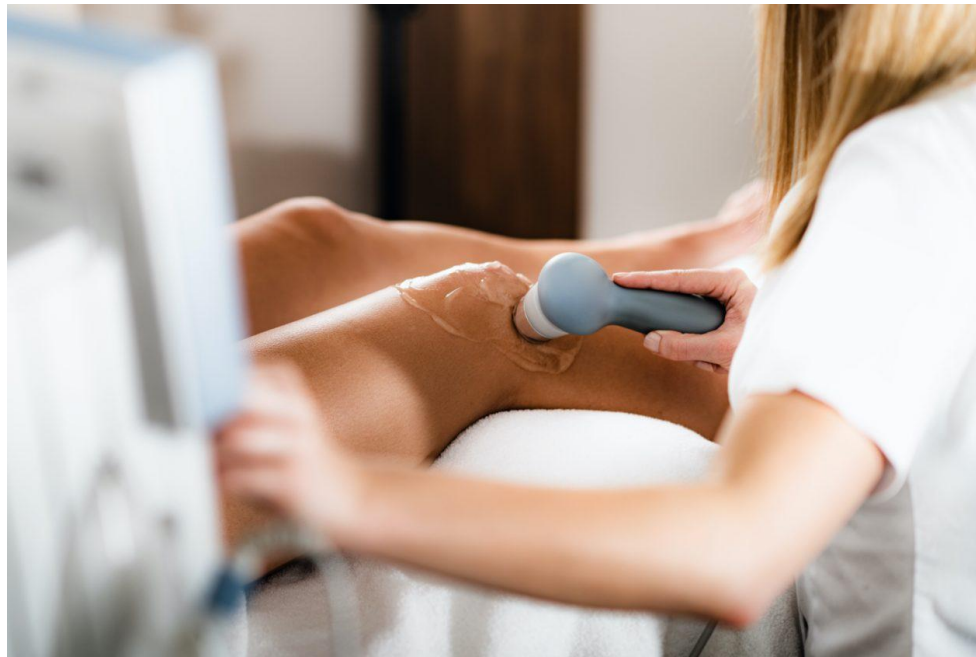
laser



IR



US



Magnetic



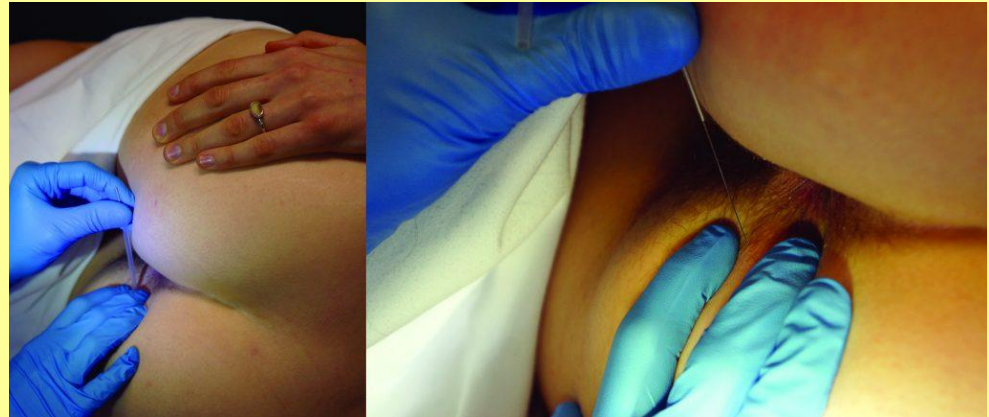
RF



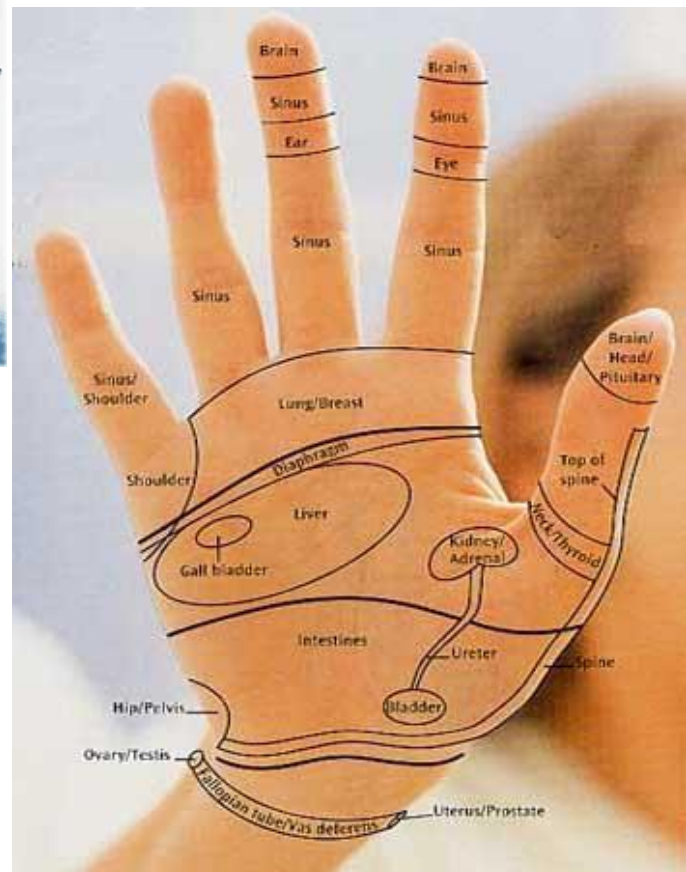
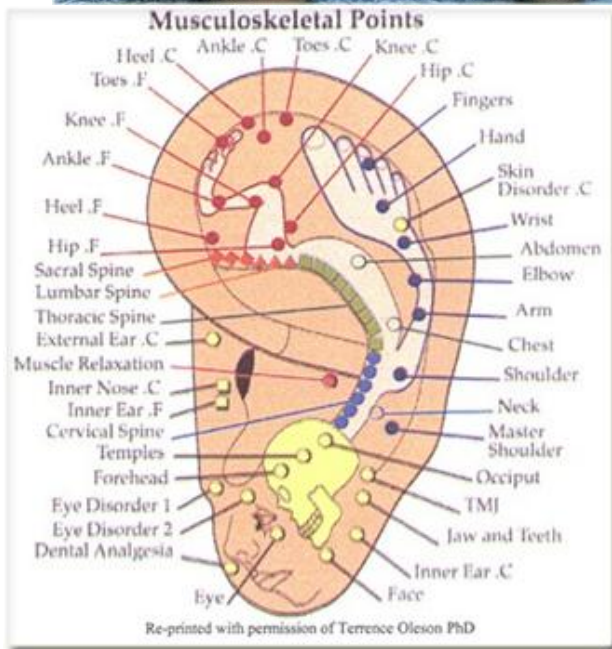
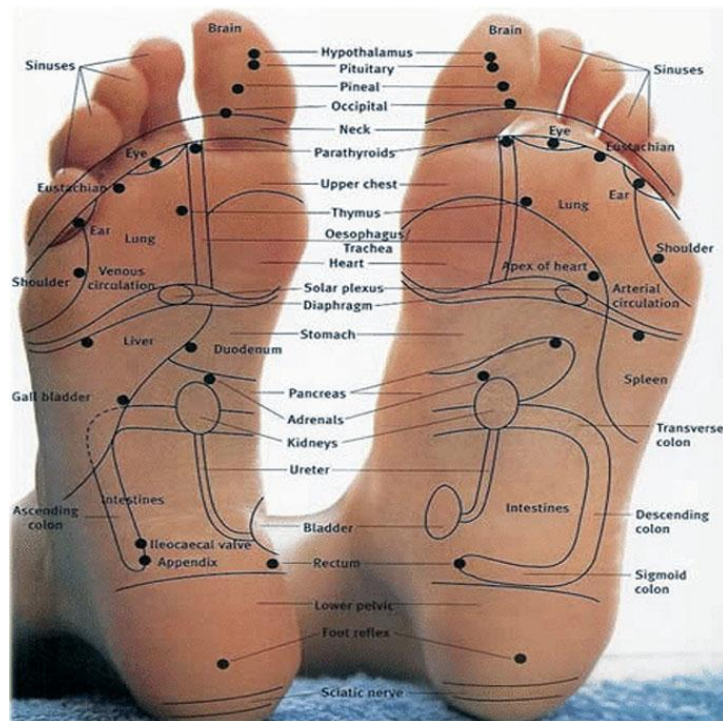
Manual therapy



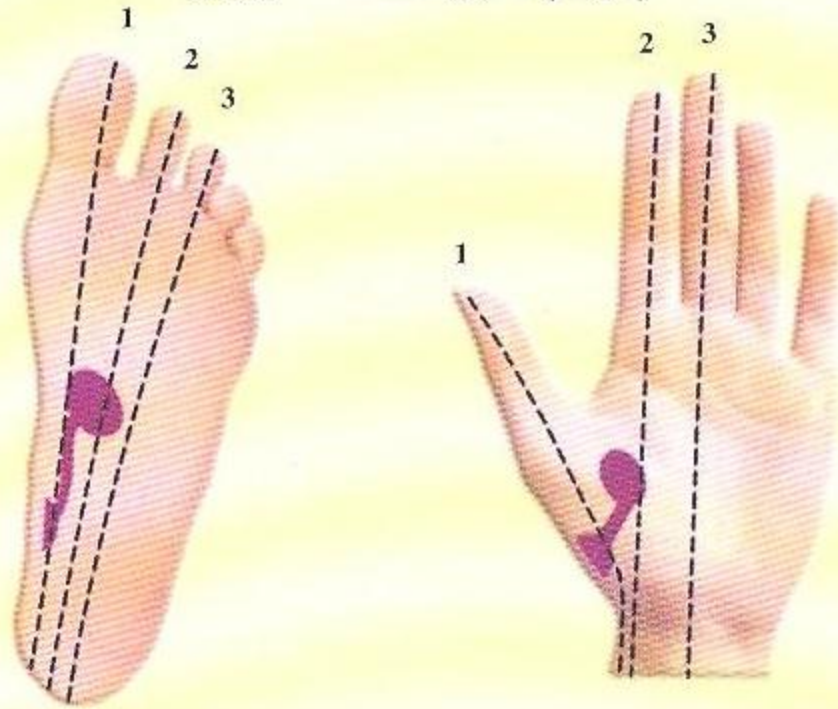
Dry needling



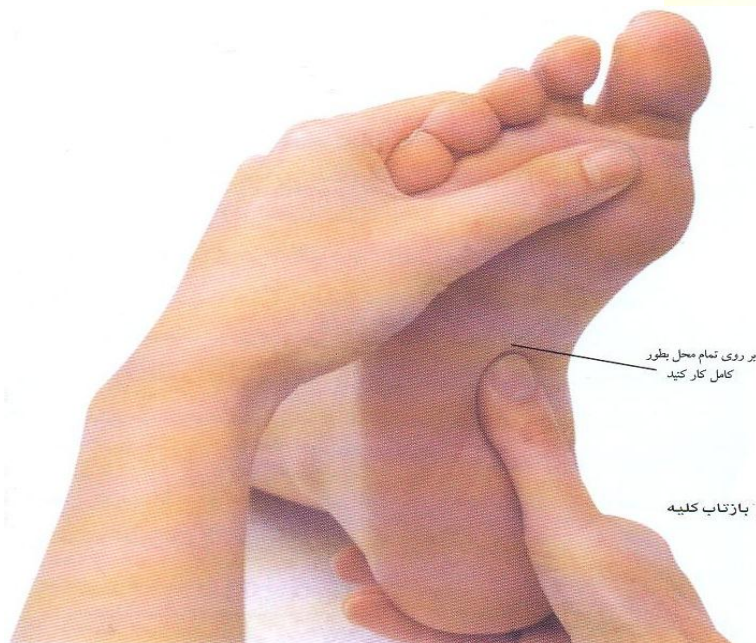
Reflex therapy



بازتاب‌های دستگاه ادراری



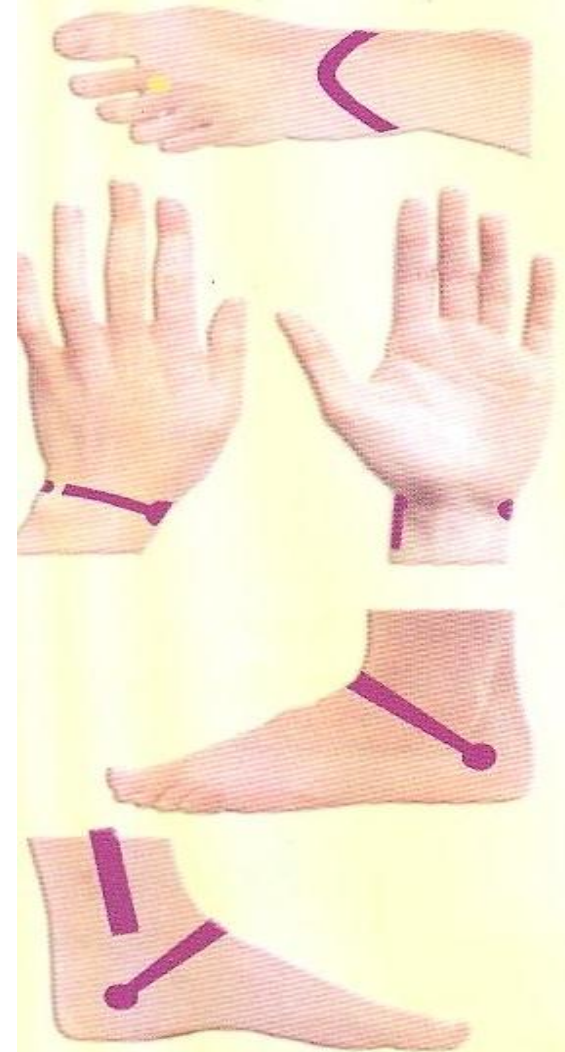
بازتاب میزنای



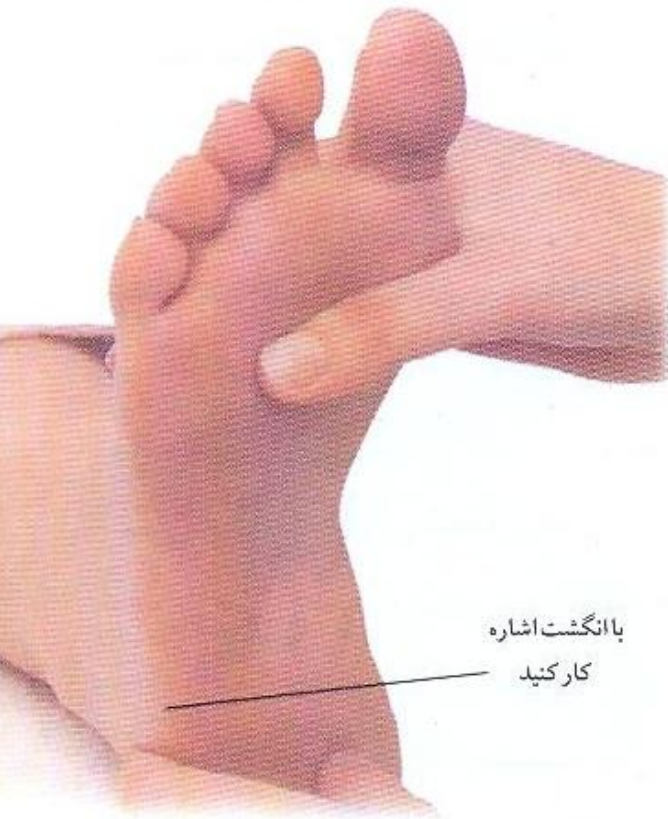
بر روی تمام محل بطور کامل کار کنید

بازتاب کلیه

بازتاب‌های دستگاه تولیدمثل

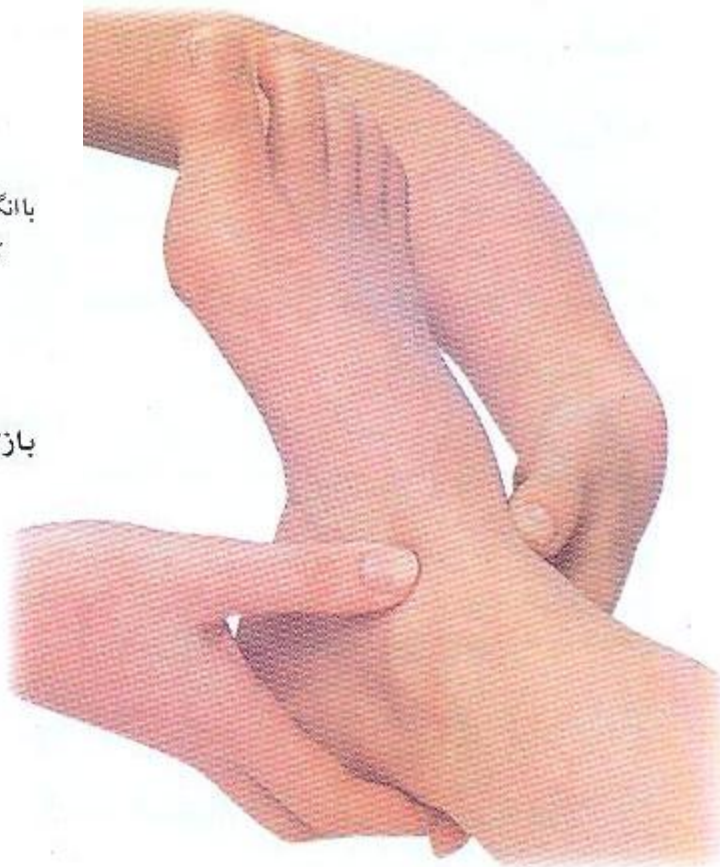


بازتاب‌های رحم / پروستات ، در
قسمت میانی



با انگشت اشاره
کار کنید

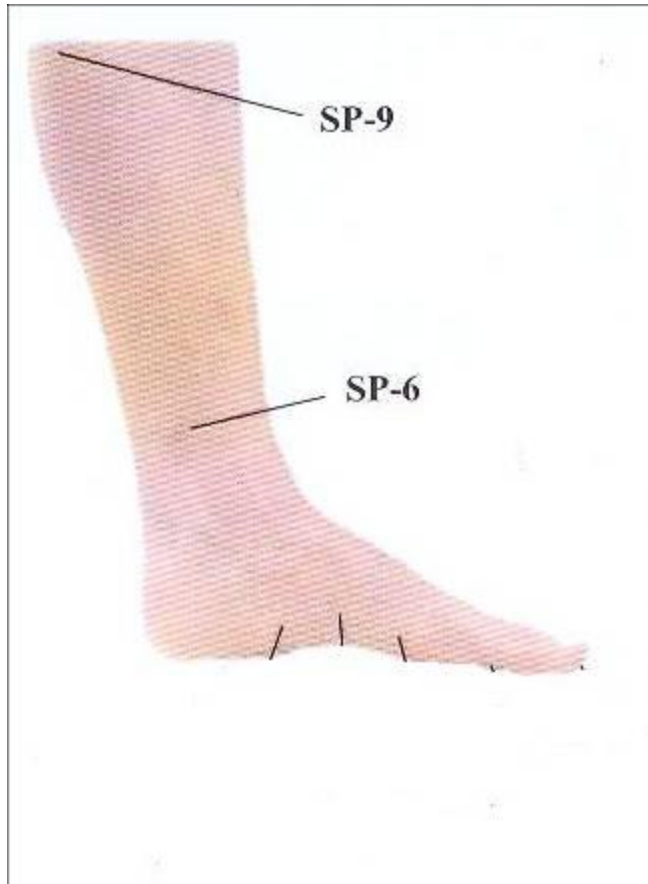
بازتاب بیضه‌ها / تخمدان‌ها (طرف خارجی)



بازتاب‌های لولهٔ دفران / مجاری تخمدان‌ها



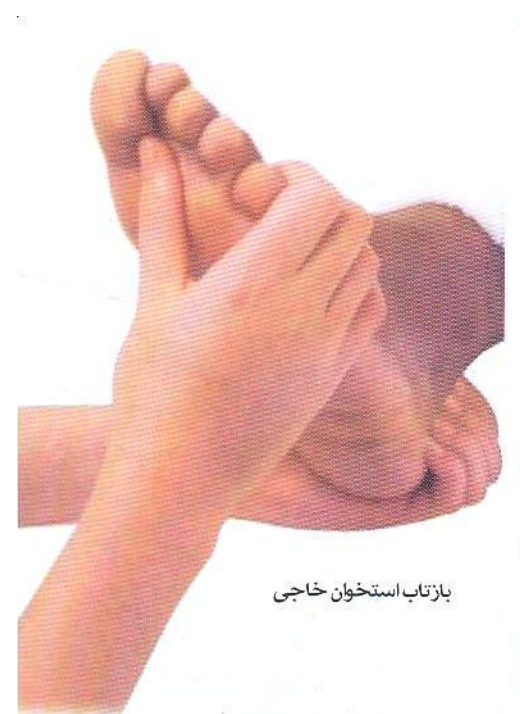
بازتاب سینه



point of SP-6 & SP-9
For dysmenorrhea

Annus & bladder

**Spasm sphincter
for sacrum**



m.ansarian.pt2019
09220095081



**Thanks for
attention**

