

Relaxation of Pelvic Supports (Pelvic Organ Prolapse)

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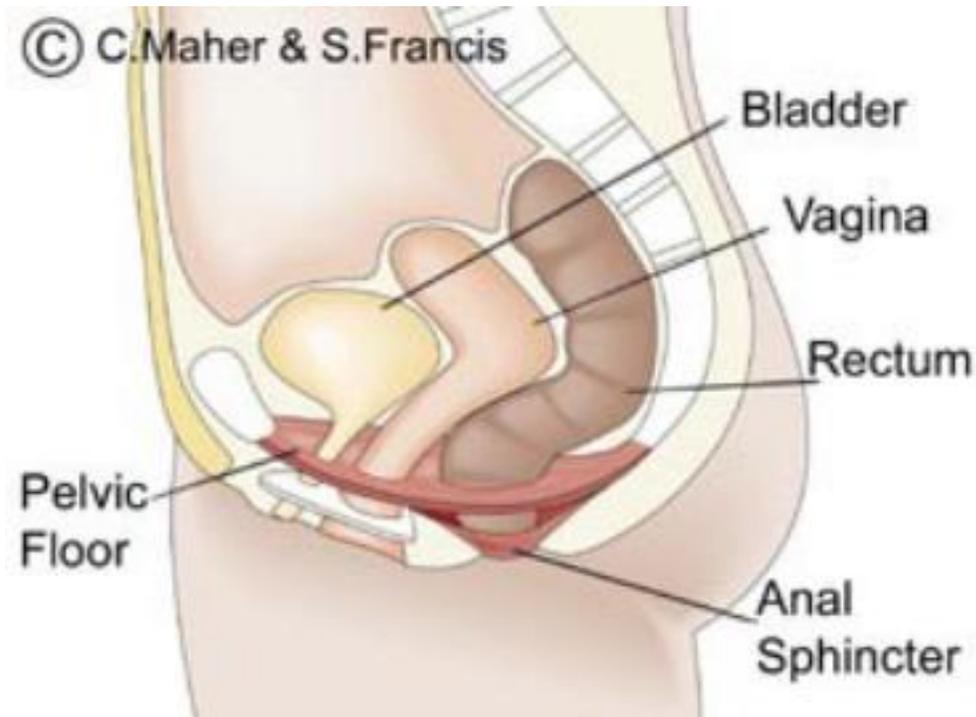
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INTRODUCTION

- ***Pelvic organ prolapse (POP)*** is a condition characterized by the failure of various anatomic structures to support the pelvic viscera.
- ***Symptoms*** can include vaginal bulging, pelvic pressure, vaginal bleeding or discharge, low backache, and the need to reduce the prolapse (splint) in order to void or defecate

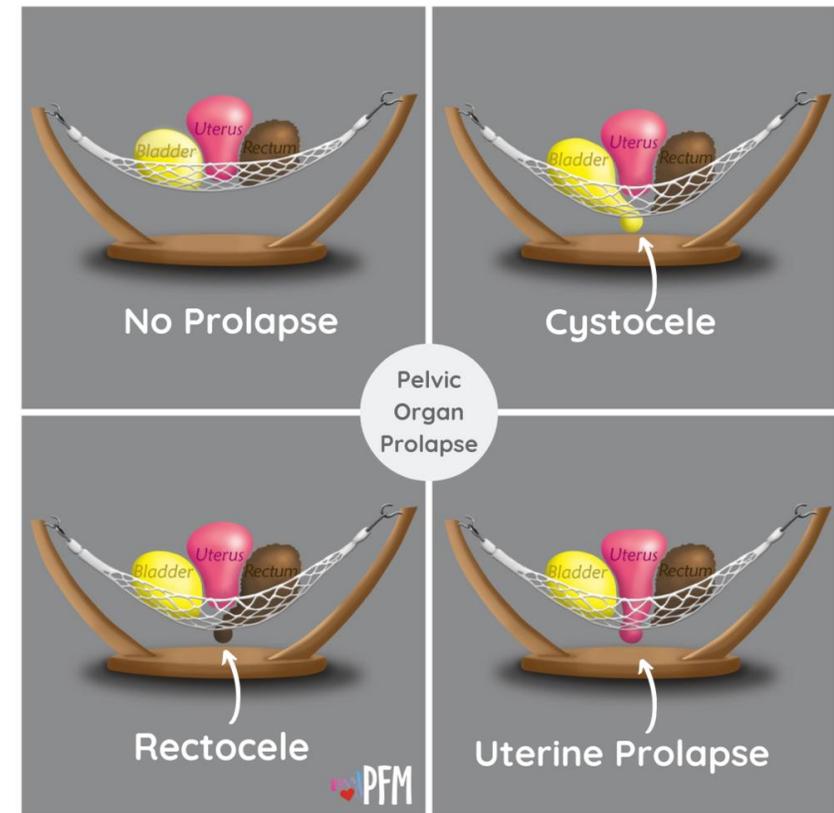
Pelvic Floor



The female pelvic floor serves to aid in the function of the lower urinary system, genital tract and rectum. The female pelvic floor is composed of voluntary muscle, fascia and condensations of fascia called ligaments that all work together to offer support and function to the organs that exit through the female pelvis

"Prolapse" refers to a descending or drooping of organs. Pelvic organ prolapse refers to the prolapse or drooping of any of the pelvic floor organs, including:

- Anterior vaginal wall prolapse
 - Cystocele*
 - Urethrocele*
 - Paravaginal defect*
- Posterior vaginal wall prolapse
 - Rectocele*
 - Enterocele*
- Uterine/cervical prolapse
- Vaginal vault prolapse



Clinical Importance

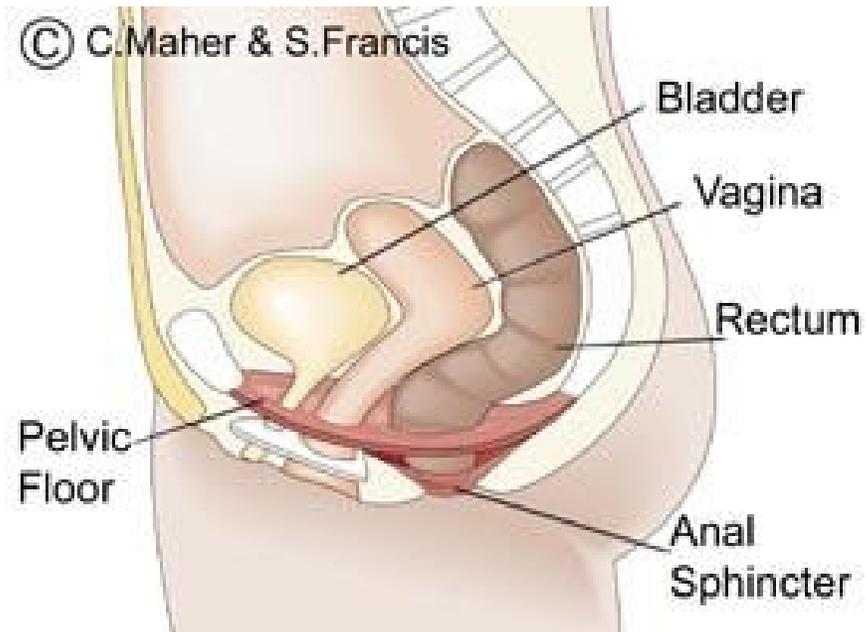
- POP is common, particular in parous women.
- The prevalence of POP is 30% to 50%, which **increases with age**.
- A woman in the United States has a **13%** lifetime risk of undergoing prolapse surgery, with up to **1/3** of surgeries representing reoperation.
- The direct cost of prolapse surgery is greater than **\$1 billion per year**.

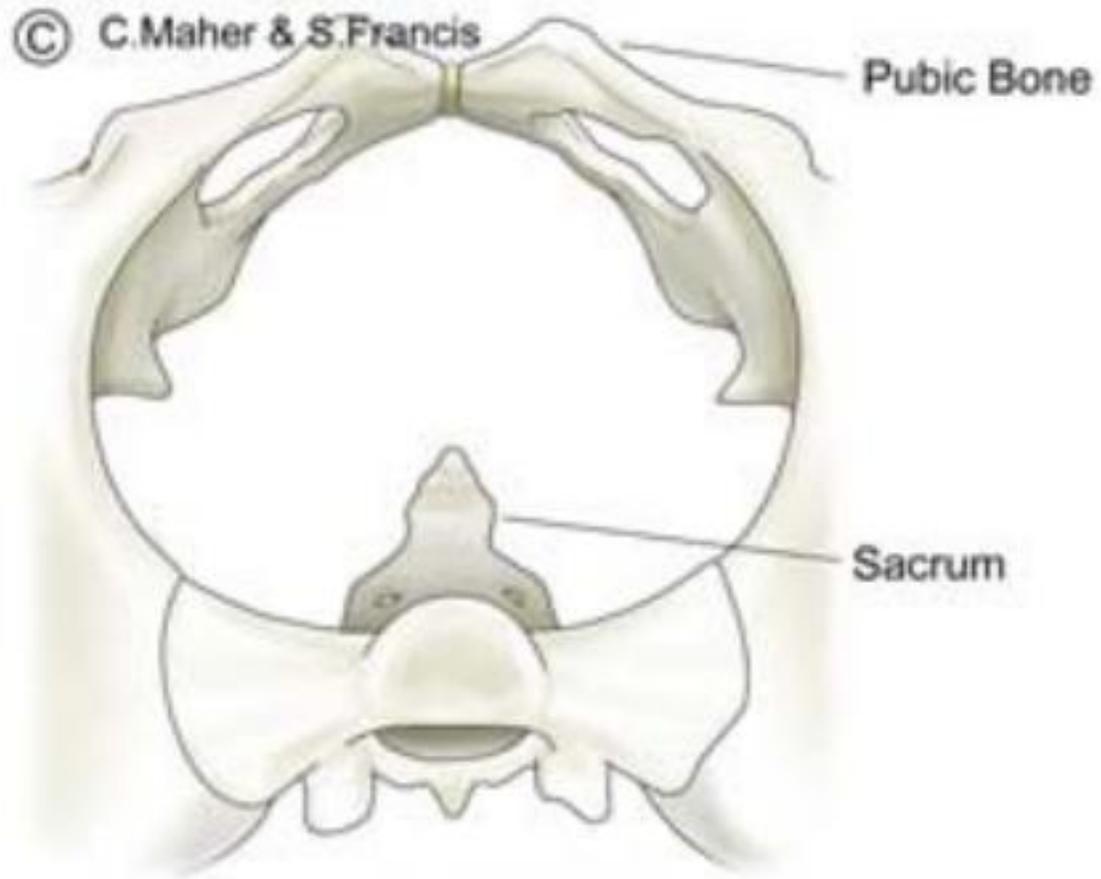
Clinical Importance

- However, surgically-treated prolapse represents the severe end of the clinical spectrum.
- For the vast majority of **asymptomatic** women with physical findings of prolapse, **no treatment is indicated**.

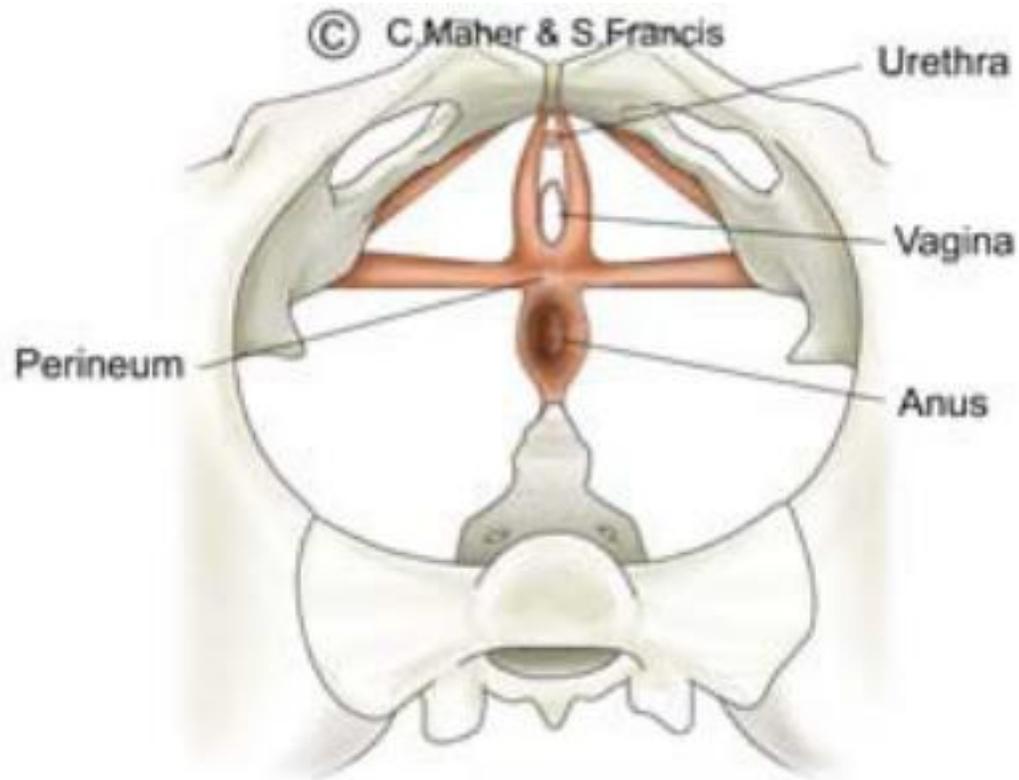
Anatomy of Pelvic Floor

- To understand the pathophysiology of POP
- Some knowledge of normal vaginal support is needed

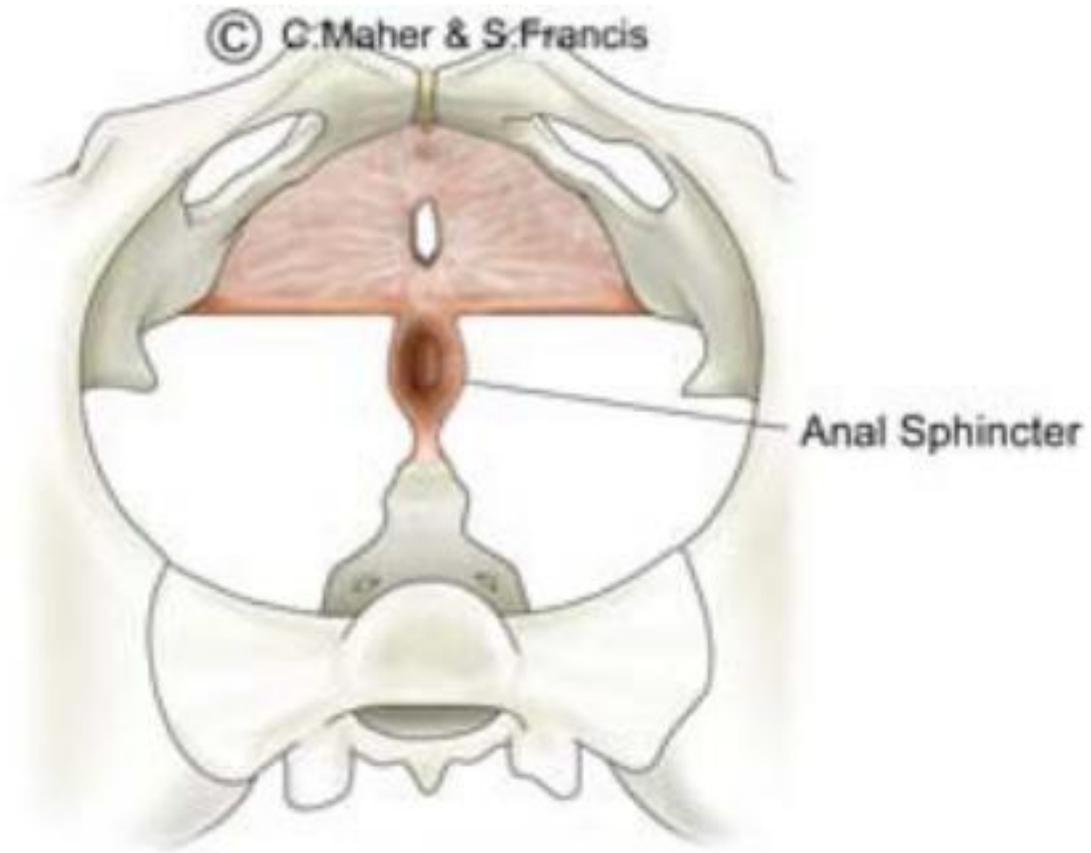




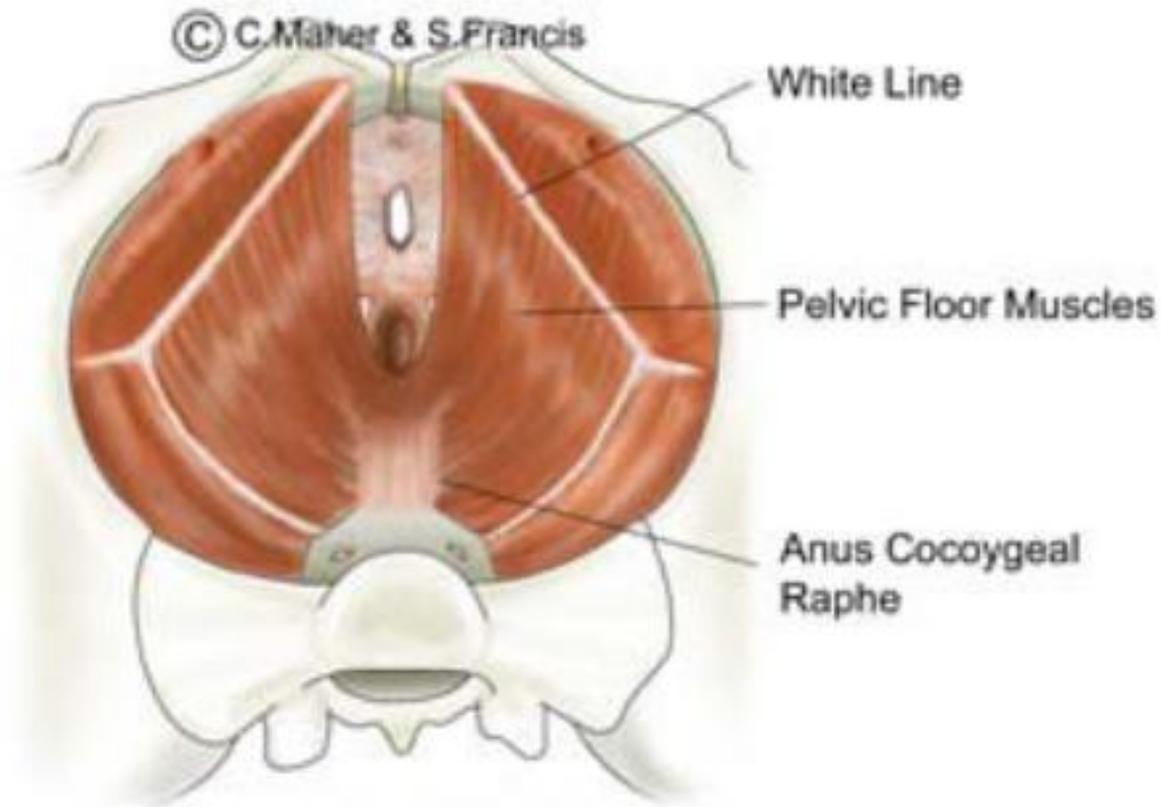
- *An empty pelvis looking from above.*
- *At the back is the sacrum (tailbone) and the front is the pubic bones.*



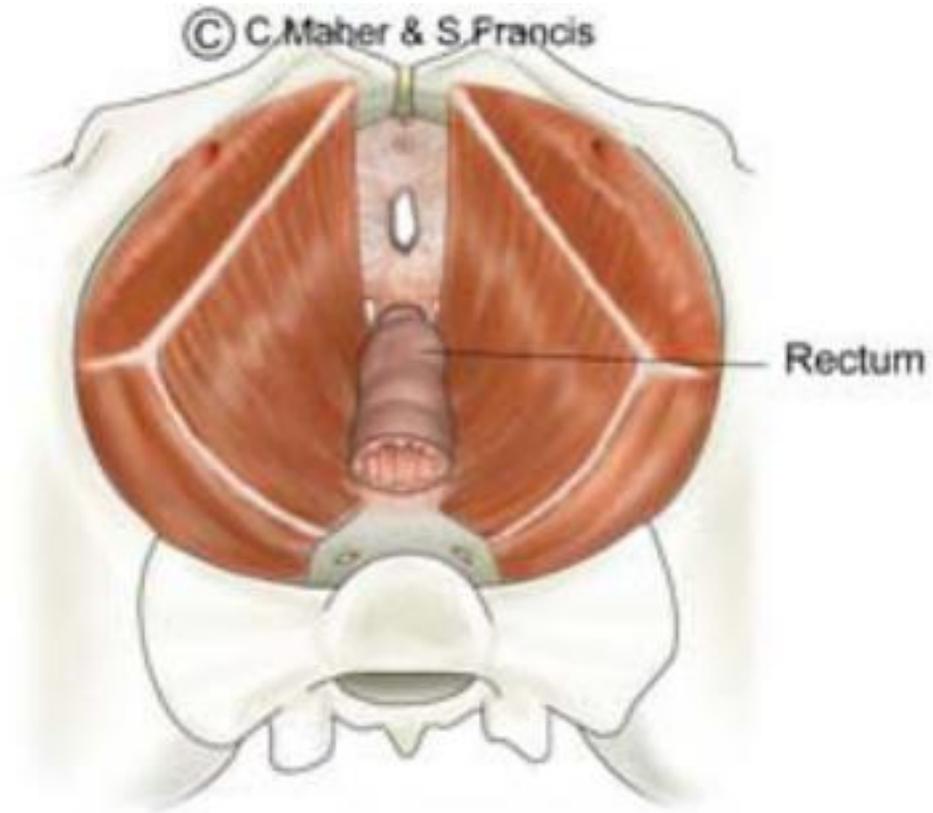
- *Exiting the female pelvis from the front to the back, is the urethra, vagina and anus.*
- *The anus is surrounded by the anal sphincter which is connected to the sacrum behind and the perineum muscles in front.*
- *The perineum stabilizes the lower pelvic floor. The perineum is stabilized to the pelvic side-wall by the transverse perineum muscles.*



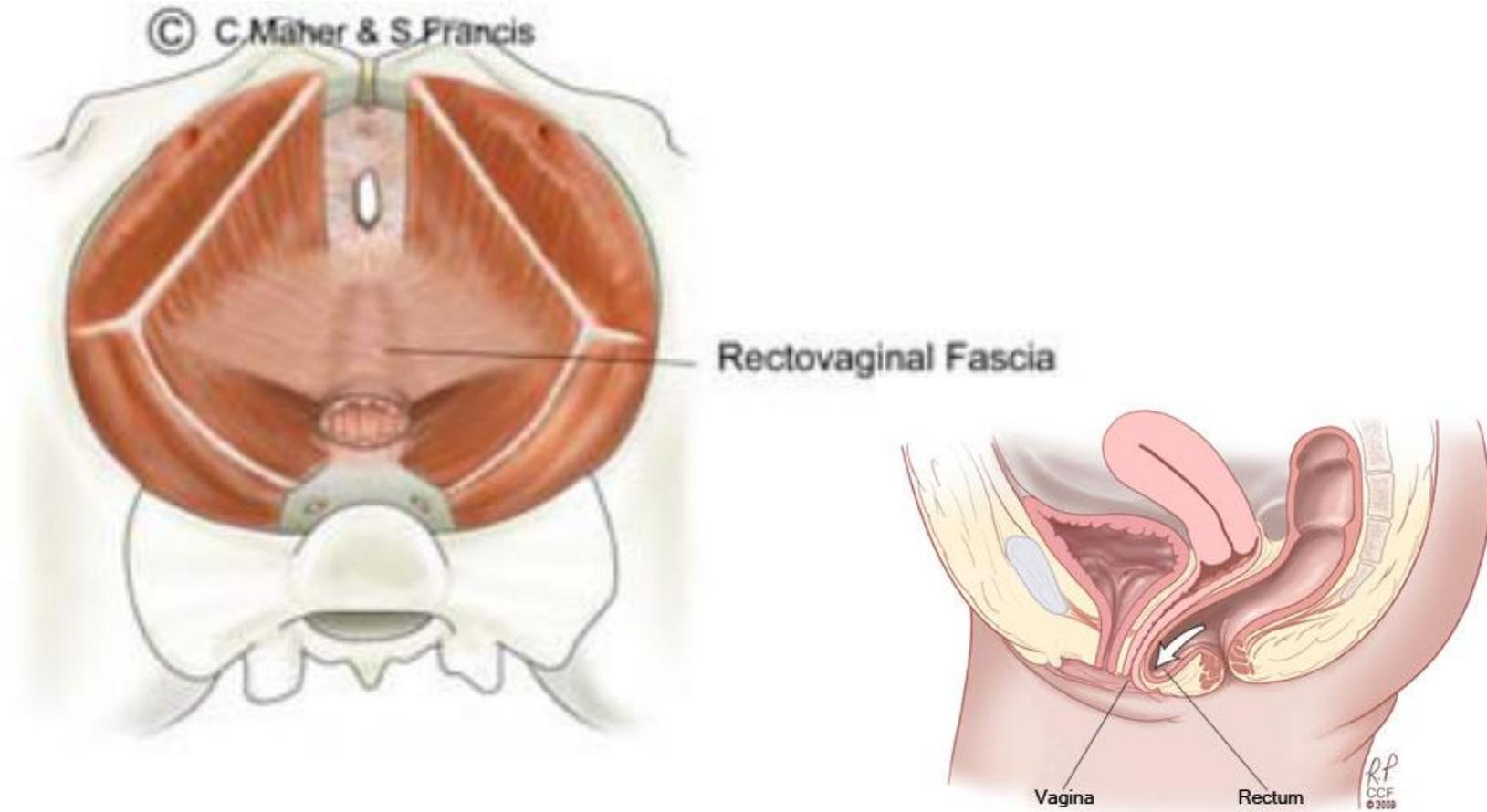
The urogenital diaphragm offers further support to the lower urethra and vagina and is stabilized to the pubic bones and the perineum



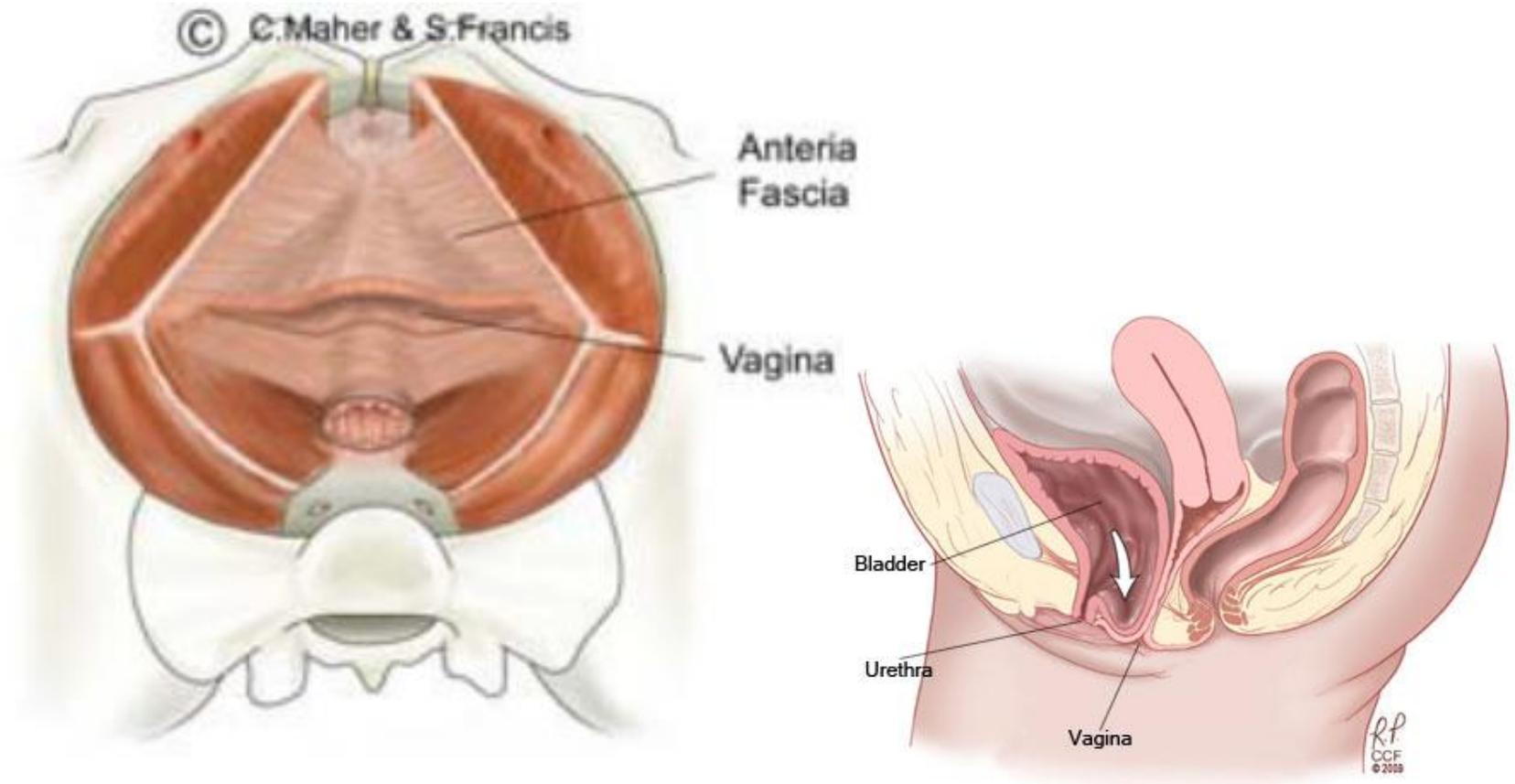
The pelvic floor muscles form a sling around the lower pelvic outlet and when contracted offers support to the lower bowel, the genital tract and the lower urinary tract. These muscles arise from the white line on lateral pelvic side-wall and interdigitate with each other and the anococcygeal raphe in the centre.



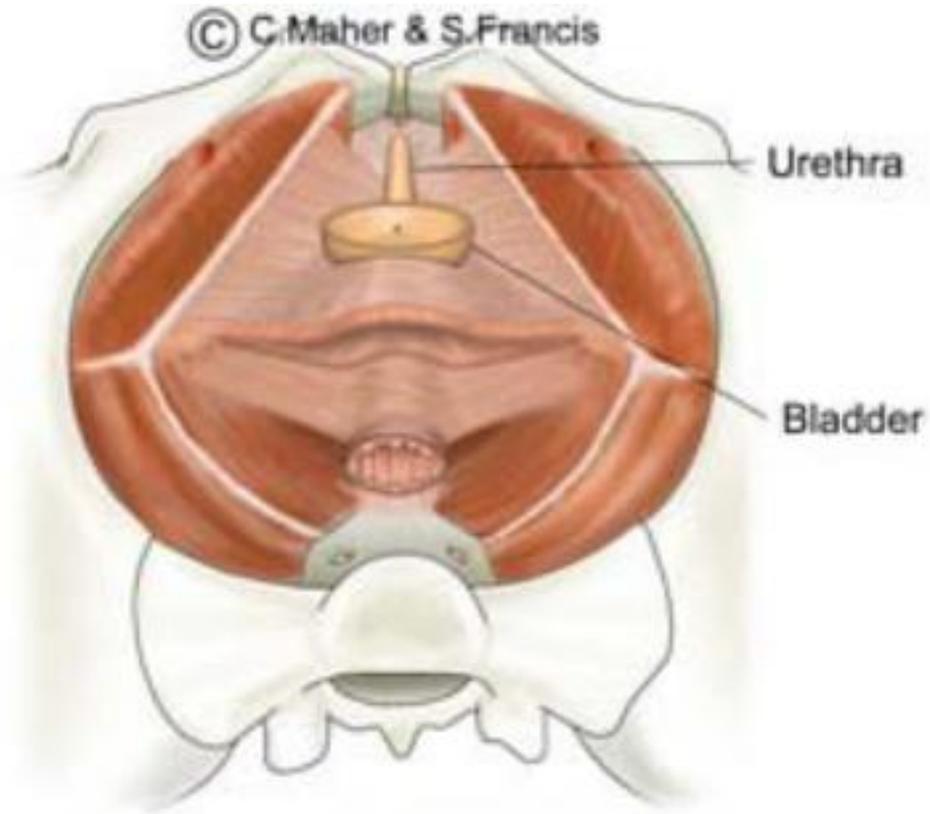
The rectum lies on the pelvic floor and joins to the anus as it passes through the pelvic floor.



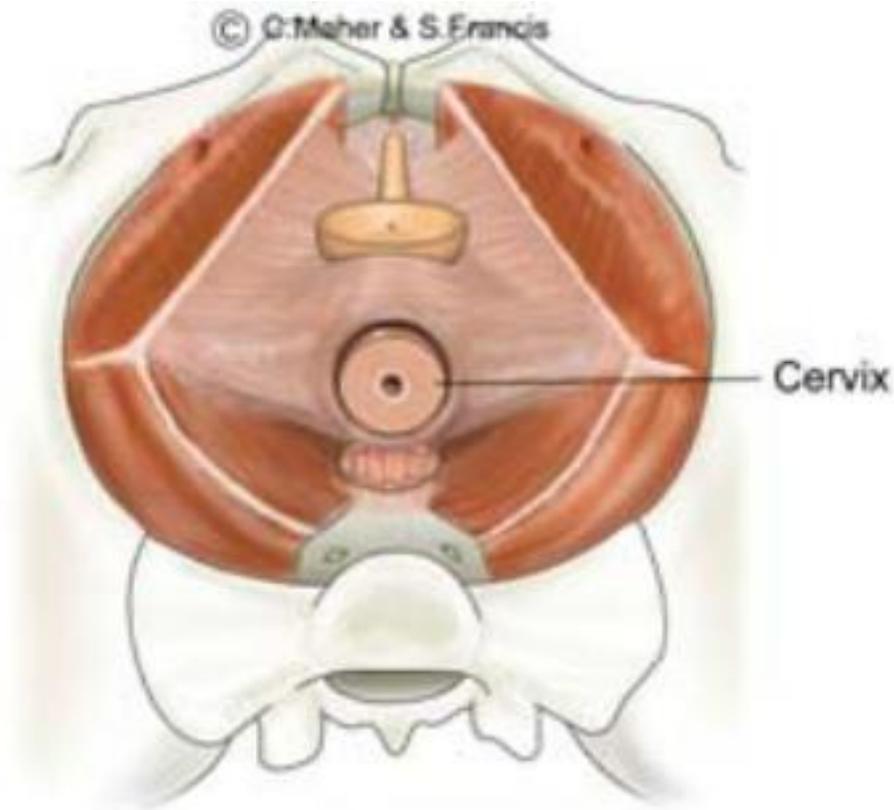
- *The rectum is stopped from bulging forward into the vagina by the **rectovaginal fascia**.*
- *Women with **rectoceles** (rectum bulging forward into the vagina) have defects in this fascia.*



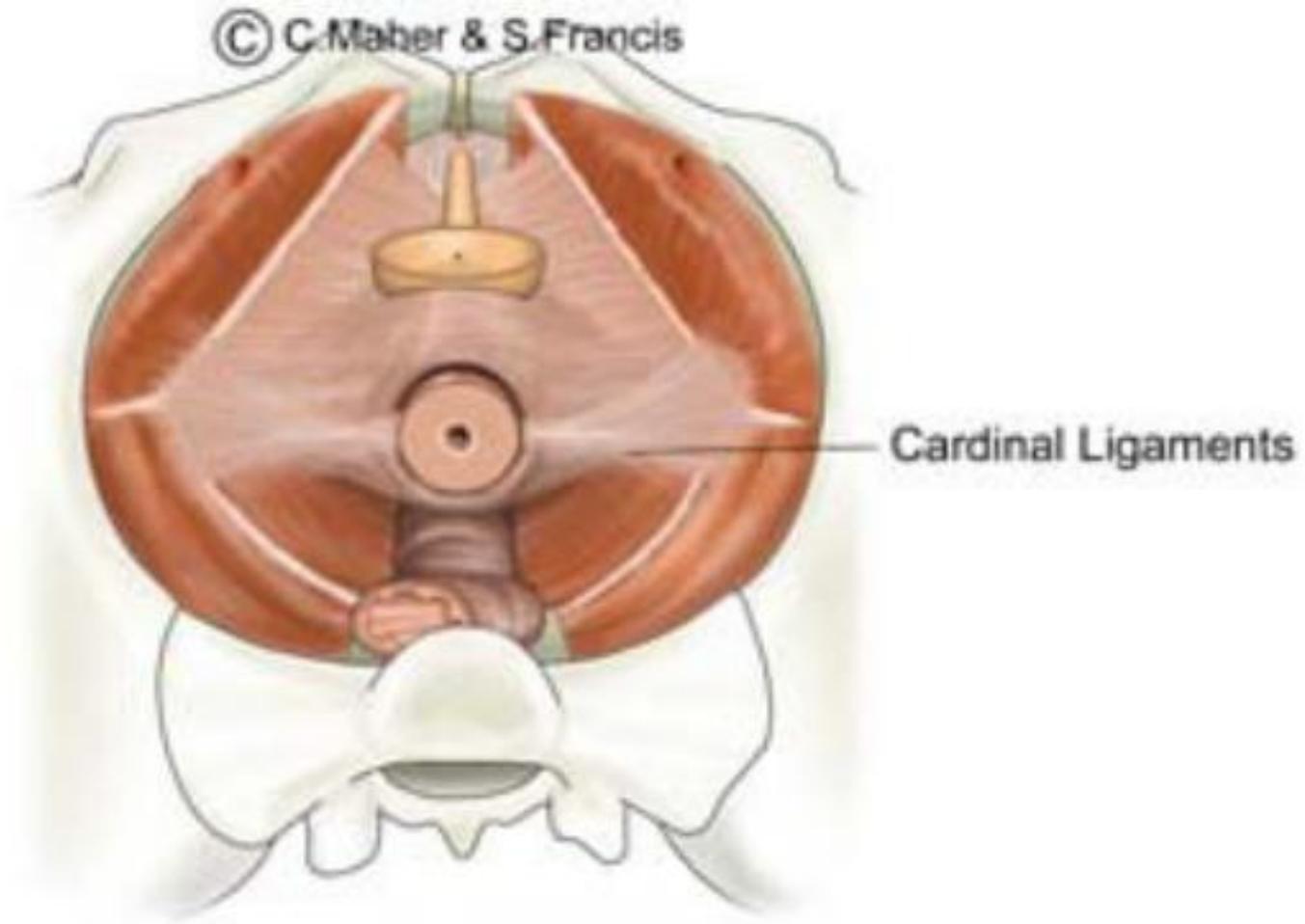
- The mid-vagina rest on the rectovaginal fascia and is separated from the bladder and urethra by the anterior vaginal wall fascia (*pubocervical fascia*).
- Women with *cystoceles* (bladder prolapse) have a defect in this fascia.



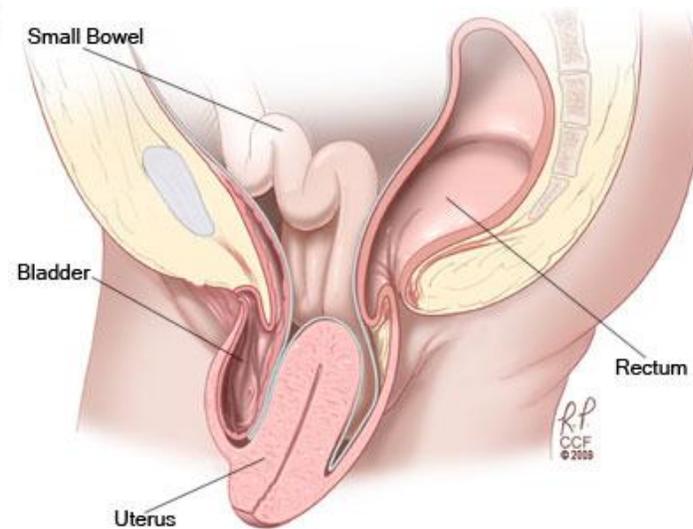
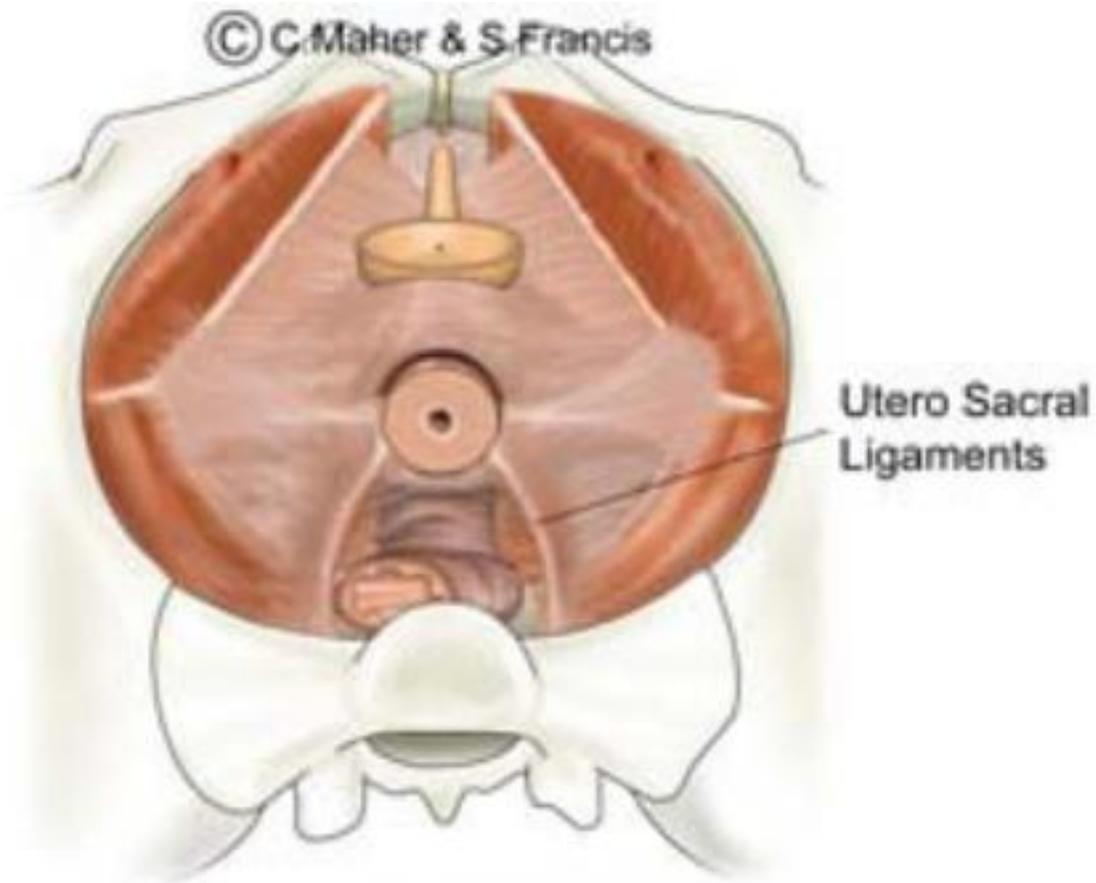
- *The bladder and urethra are separated from the vagina by the **pubocervical fascia**. Intact fascia stops the bladder from bulging down into the vagina.*



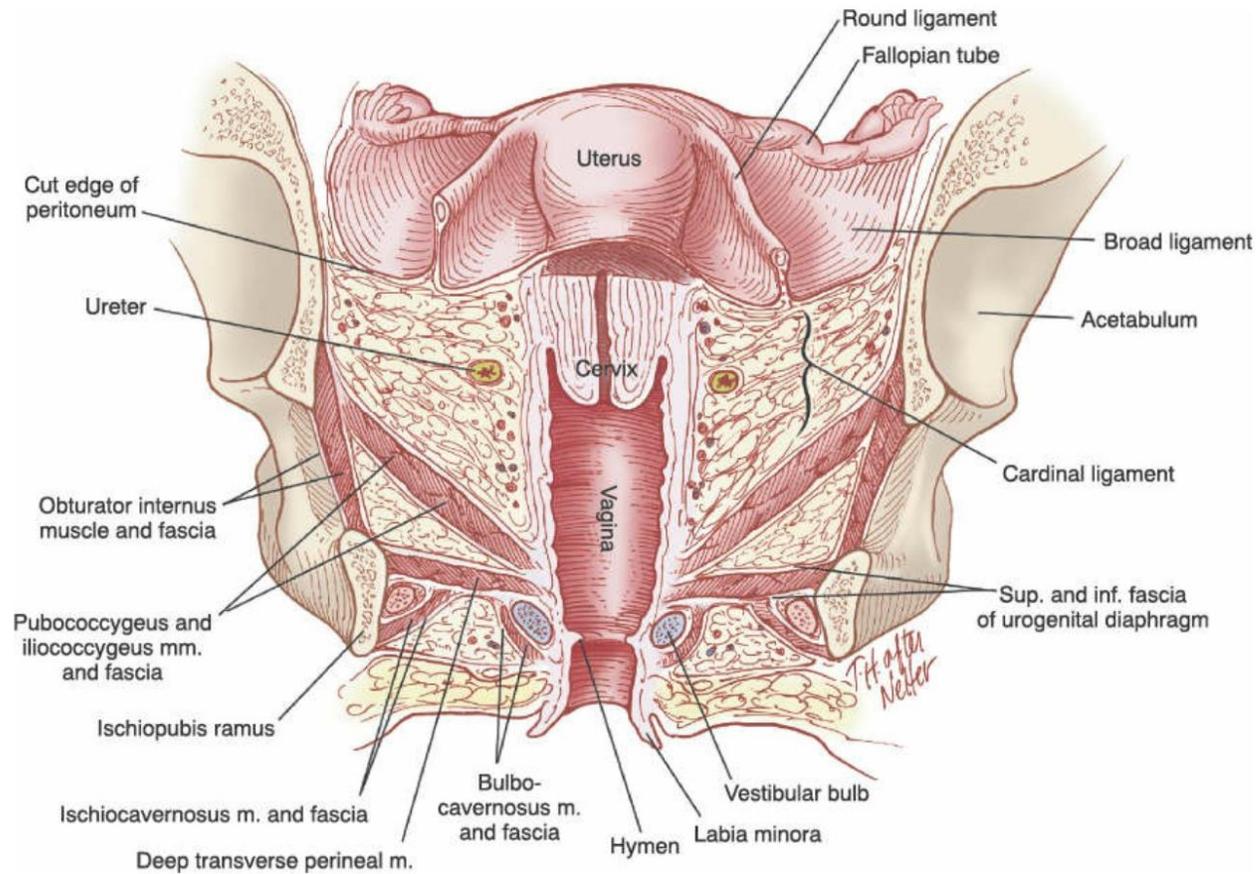
- *The top of the fascia on the anterior and posterior vaginal wall connect with cervix at the top of the vagina.*
- *The cervix is the very firm lower portion of the uterus and acts to stabilize the fascia of the female pelvis.*



- *The cervix is supported to the lateral pelvic side-wall by the strong cardinal ligaments.*

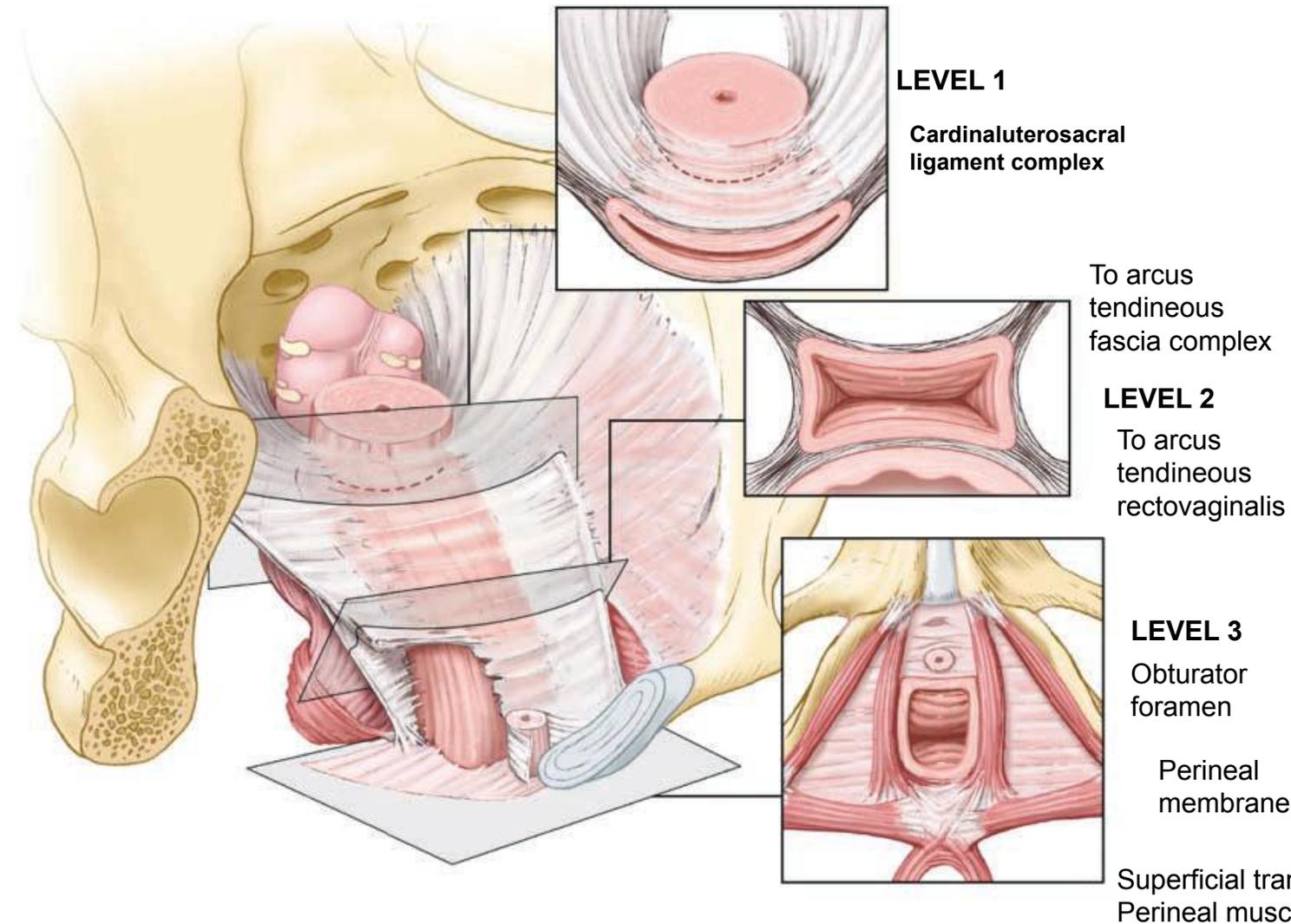


- *The cervix is also supported by the strong uterosacral ligaments that run from the sacrum (tailbone) to the cervix.*
- *Women with **upper vaginal prolapse** (uterine prolapse, vault prolapse or enteroceles) have defects in the **uterosacral and/or cardinal ligaments** that allows the prolapse to occur*



- Women with *upper vagina prolapse* have a defect of the cardinal and uterosacral defects.
- *Cystoceles* — weakness of the pubocervical fascia.
- *Rectoceles* — tears or weakness of the rectovaginal fascia.
- The cervix and perineum are the centre points for stabilization of the pelvic floor.

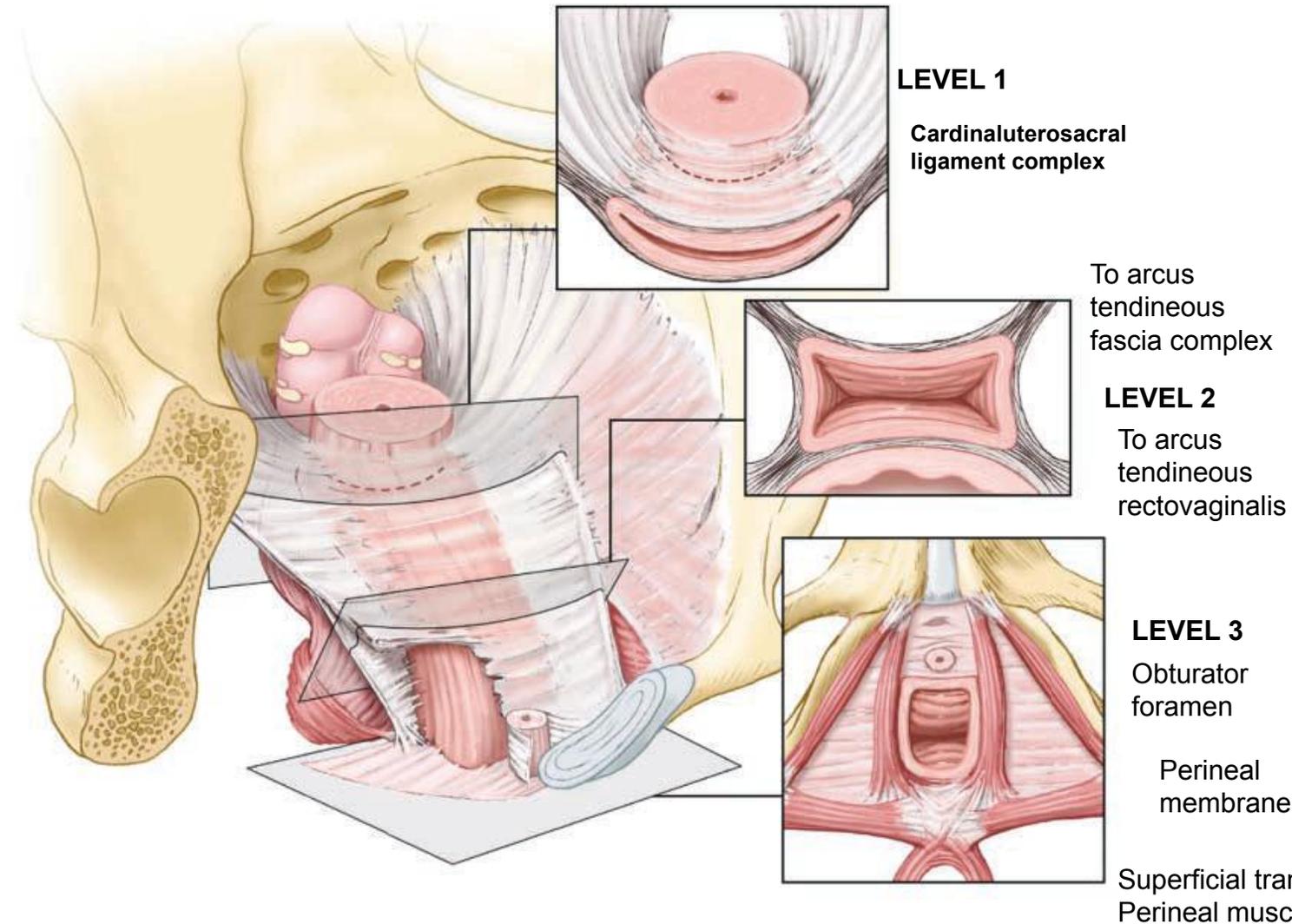
Delancey's three levels of support are now accepted worldwide



- **Level 1:**

*The cardinal-uterosacral ligament complex provides apical attachment of the uterus and vaginal vault to the bony sacrum. **Uterine prolapse** occurs when the cardinal-uterosacral ligament complex breaks or is attenuated.*

Delancey's three levels of support are now accepted worldwide



- **Level 2:**

The arcus tendineus fascia pelvis and the fascia overlying the levator ani muscles provide support to the middle part of the vagina.

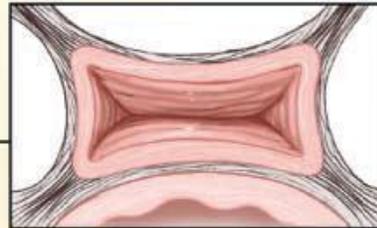
Delancey's three levels of support are now accepted worldwide



LEVEL 1

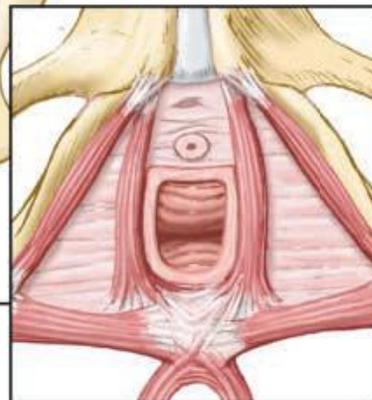
Cardinaluterosacral ligament complex

To arcus tendineous fascia complex



LEVEL 2

To arcus tendineous rectovaginalis



LEVEL 3

Obturator foramen

Perineal membrane

Superficial transverse Perineal muscle

- **Level 3:**

The urogenital diaphragm and the perineal body provide support to the lower part of the vagina.

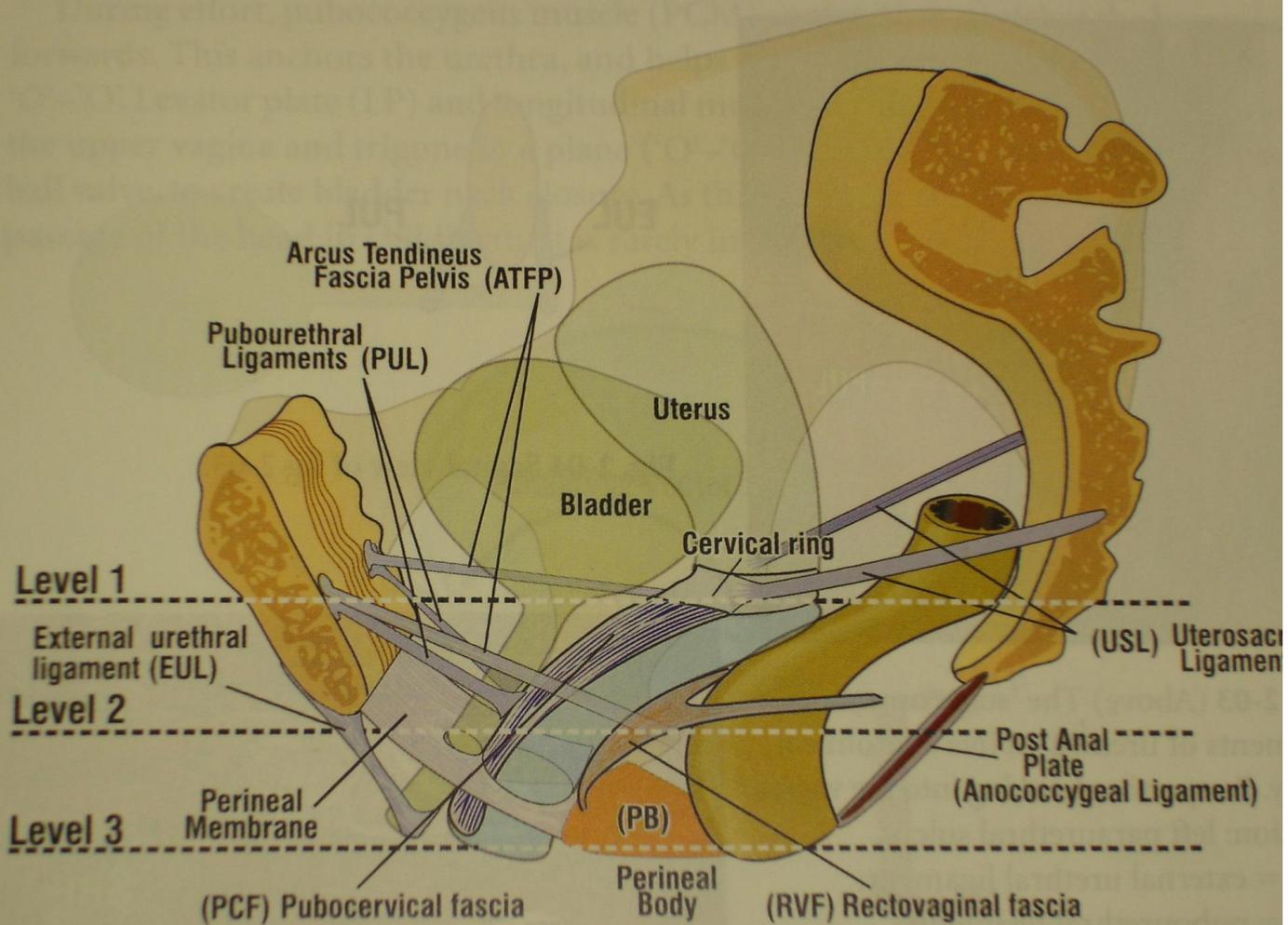


Fig. 2-02 Connective tissue levels - This is a schematic 3D sagittal section of the main connective tissue structures of the pelvis, showing their relationship to the organs and pelvic bones

Potential Risk Factors for POP

Box 20.1 Risk Factors for Development of Pelvic Organ Prolapse

Vaginal childbirth

Aging

Obesity

Diabetes

Genetic conditions/connective tissue disorders

Neurologic injury

Possible Associations with Pelvic Organ Prolapse

Prior pelvic surgery

Hysterectomy

Constipation

Irritable bowel syndrome

Episiotomy

Higher weight of the largest infant delivered vaginally

Chronic cough and respiratory diseases

Exercise

Heavy lifting

Lower education

A useful concept for looking at risk factors:

- **Predispose**
- **Incite**
- **Promote**
- **Decompensate**

Predispose

- Genetic (congenital or hereditary)

eg.) thicker, bulkier levator ani muscles

a more vertical vaginal axis and wider genital hiatus

aging process

- Race: White (4-5 times higher risk) African-American

White and Latina women have 4-5 times higher risk of symptomatic POP

- Gender: Female > Male

Incite

- Pregnancy and delivery-birth trauma

vaginal delivery is the major inciting factor in most of women.

- Surgery

hysterectomy for prolapse(11.6%/1.8%)

radical pelvic surgery and radiation

- Myopathy

- Neuropathy

eg.) muscle atrophy from denervation from childbirth injuries

Promote

- Obesity(40%--75%)
an independent and significant risk factor for urinary incontinence
- Smoking
- Pulmonary disease (chronic coughing)
- Constipation
repeated prolonged defecatory straining effort leads to progressive neuropathy and dysfunction.
- Recreational or occupational activities
eg.) frequent or heavy lifting

Decompensate

- Aging
- Menopause
- Dementia
- Disease
- Debilitation
- Medication

Comorbid diseases such as diabetes, vascular insufficiency or congestive heart failure may overwhelm fragile continence reserves with a sudden increase in urine output.

Diagnostic Approach

Symptoms

Note: *Not specific to different compartments of prolapse but may reflect the overall stage of prolapse at its most advanced site.*

- A feeling of pressure or fullness in the pelvic area
- A backache low in the back
 - not associated with the severity of prolapse*
- Painful intercourse
- A feeling that something is falling out of the vagina
- Urinary problems such as leaking of urine or a chronic urge to urinate
- Constipation
- Spotting or bleeding from the vagina

Symptoms

- Some women may have latent or occult stress incontinence because their continence depends on urethral kinking or obstruction from severe prolapse.
- Treating the prolapse with a pessary support or surgery could unkink the urethra and result in stress urinary incontinence.

Physical Examination

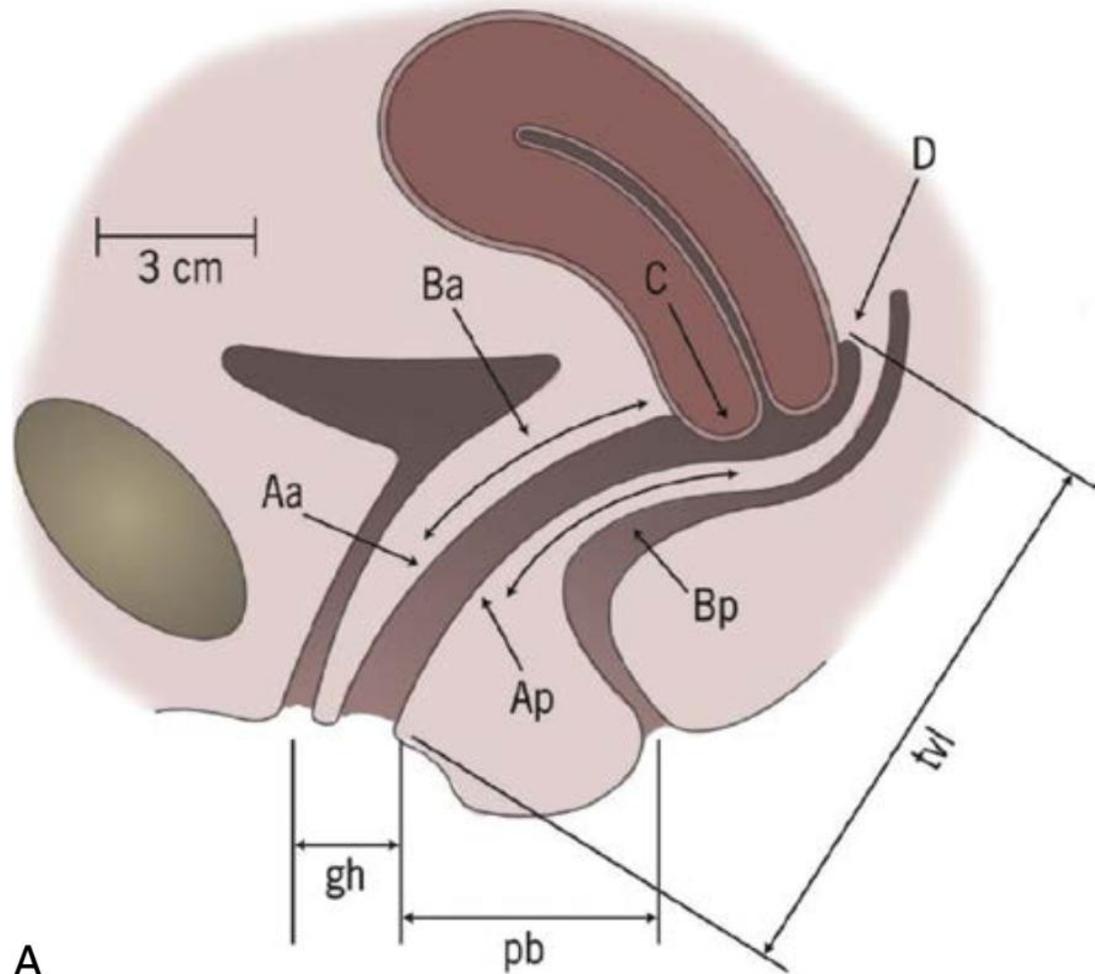
- Focuses on the pelvic examination
- Beginning with a careful inspection of the vulva and vagina to identify erosions, ulcerations, or other lesions
- Suspicious lesions should be biopsied
- The extent of prolapse should be systematically assessed

Baden Walker Halfway System

- It takes hymen as reference point and as follows:
 - Grade 0-Normal position
 - Grade 1-Descent halfway to hymen
 - Grade 2-Descent to hymen
 - Grade 3-Descent halfway past the hymen
 - Grade 4-Maximum possible descent for each site
- It is adequate for clinical use. Most clinicians utilize this system.

Pelvic Organ Prolapse Quantification system

- Measures 9 locations on the vagina and vulva in centimeters relative to the hymen
- These 9 locations are used to assign a stage (from 0 to IV) of prolapse at its most advanced site
- More detailed than necessary for clinical care



A

Point	Description	Range of values
Aa	Anterior vaginal wall 3 cm proximal to the hymen	-3 cm to +3 cm
Ba	Most distal position of remaining upper anterior vaginal wall	-3 cm to +tvl
C	Most distal edge of cervix or vaginal cuff scar	-
D	Posterior fornix (N/A if post-hysterectomy)	-
Ap	Posterior vaginal wall 3 cm proximal to the hymen	-3 cm to +3 cm
Bp	Most distal position of remaining upper posterior vaginal wall	-3 cm to +tvl
gh (genital hiatus)	Measured from middle of external urethral meatus to posterior midline hymen	-
pb (perineal body)	Measured from posterior margin of gh to middle of anal opening	-
tvl (total vaginal length)	Depth of vagina when point D or C is reduced to normal position	-

B

2 most important advantages over previous grading systems

- 1) The standardized technique with quantitative measurements at straining relative to the hymen, a constant landmark
- 2) Prolapse assessment at multiple vaginal sites

Staging of Pelvic Floor Prolapse

Stage 0

No prolapse is demonstrated. Points Aa, Ap, Ba, and Bp are all at -3 cm, and either point C or D is between total vaginal length -2 cm.

Stage I

Criteria for stage 0 are not met, but the most distal portion of the prolapse is >1 cm above the level of the hymen.

Stage II

The most distal portion of the prolapse is ≤ 1 cm proximal or distal to the plane of the hymen.

Stage III

The most distal portion of the prolapse is >1 cm below the plane of the hymen but protrudes no farther than 2 cm less than the total vaginal length in centimeters.

Stage IV

Essentially complete eversion of the total length of the lower genital tract.

Indications for Treatment

- Depends on symptoms and severity of prolapse
- Patient's general health and activity
- The [correlation](#) between many pelvic symptoms and the extent of prolapse is weak

Therapeutic Approach

- Observation

If the patient is not bothered by the prolapse, it can be left alone and managed expectantly unless it is causing urinary retention or renal hydronephrosis.

- Pelvic floor rehabilitation

eg.) Kegel exercises, which can decrease the risk of prolapse progression and can be effective at improving the sensation of pressure from mild POP

- Pessary use

- Surgery

Observation

- Appropriate for women whose symptoms are not sufficiently bothersome to warrant active intervention
- There is virtually no indication for treatment, particularly surgery, for women with asymptomatic prolapse
- The old adage “You can’t make an asymptomatic patient better; you can only make her worse” was never more true than it is for prolapse.

Nonsurgical Management

- Adjunct therapy to address concomitant symptoms
 - pelvic floor muscle training and pessaries*
- Nonsurgical management
 - *decrease the frequency and severity of symptoms*
 - *delay or avoid surgery*
 - *potentially prevent worsening the prolapse*

Pelvic Floor Muscle Training

- Be designed to increase the strength and endurance of the pelvic muscles
- Thereby improving support to the pelvic organs



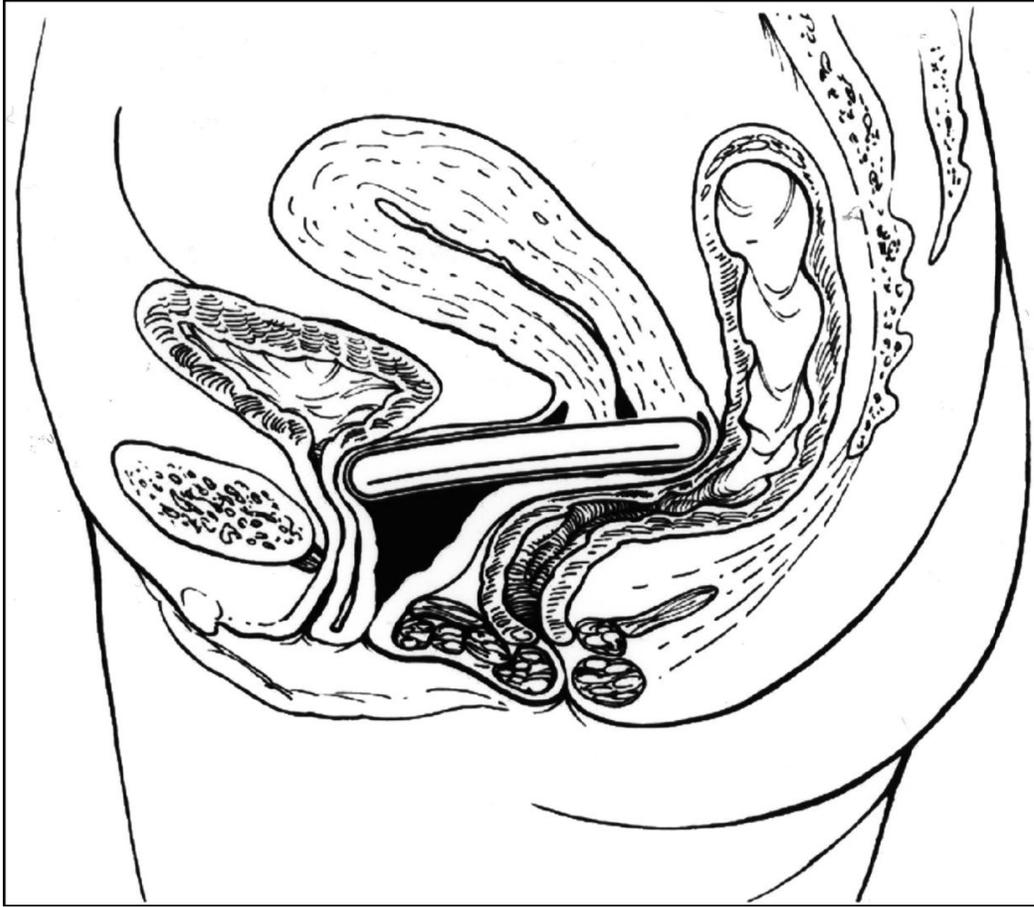
Pessaries

- To decrease symptom frequency and severity
- Delay or avoid surgery
- Potentially prevent worsening of prolapse
- Relative contraindication to pessary use is persistent vagina erosions

Pessaries



Pessaries



Pessaries



Surgical Management

- The aim of surgery is to relieve or improve prolapse symptoms
- Symptoms associated with the lower urinary and gastrointestinal tracts.
- In some women, this means an attempt to restore normal vaginal anatomy and maintain or improve sexual function.
- In others, an obliterative approach is more appropriate and still yields the desired result of symptom relief.

Surgical procedures for POP

- Hysterectomy for uterine prolapse
- Anterior repair, paravaginal repair for cystocele
- Posterior repair for rectocele
- Enterocele repair
- Vaginal vault suspension
- Perineorrhaphy for relaxed vaginal outlet

Treat patients individually

- **The best choice is the first choice**
- **The first choice is the best choice**

Thanks For Your Attention!

- Additional educational resources-Resources for health professionals
- Conservative management of pelvic organ prolapse in women.
www.cochrane.org/reviews/en/ab003882.html
- Mechanical devices for pelvic organ prolapse in women.
www.cochrane.org/reviews/en/ab004010.html
- Surgical management of pelvic organ prolapse in women.
www.cochrane.org/reviews/en/ab004014.html
- BMJ Clinical Evidence. Genital prolapse in women.
www.clinicalevidence.com/ceweb/conditions/woh/0817/0817.jsp