

Pelvic Organ Prolapse

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Summary of Recommendations and Conclusions

The following recommendations and conclusions are based on good and consistent scientific evidence (Level A):

Uterosacral and sacrospinous ligament suspension for apical POP with native tissue are equally effective surgical treatments of POP, with comparable anatomic, functional, and adverse outcomes.

The following recommendations and conclusions are based on good and consistent scientific evidence (Level A):

The use of synthetic mesh or biologic grafts in transvaginal repair of posterior vaginal wall prolapse does not improve outcomes.

The following recommendations and conclusions are based on good and consistent scientific evidence (Level A):

Polypropylene mesh augmentation of anterior vaginal wall prolapse repair improves anatomic and some subjective outcomes but does not affect reoperation rates for recurrent prolapse and is associated with a higher rate of complications compared with native tissue vaginal prolapse repair.

The following recommendations and conclusions are based on limited or inconsistent scientific evidence (Level B):

Many women with POP on physical examination do not report symptoms of POP. Treatment is indicated only if prolapse is causing bothersome bulge and pressure symptoms, sexual dysfunction, lower urinary tract dysfunction, or defecatory dysfunction.

Women considering treatment of POP should be offered a vaginal pessary as an alternative to surgery.

The following recommendations and conclusions are based on limited or inconsistent scientific evidence (Level B):

Vaginal apex suspension should be performed at the time of hysterectomy for uterine prolapse to reduce the risk of recurrent POP.

Abdominal sacrocolpopexy with synthetic mesh has a lower risk of recurrent POP but is associated with more complications than vaginal apex repair with native tissue.

The following recommendations and conclusions are based on limited or inconsistent scientific evidence (Level B):

Obliterative procedures—which narrow, shorten, or completely close the vagina—are effective for the treatment of POP and should be considered a firstline surgical treatment for women with significant medical comorbidities who do not desire future vaginal intercourse or vaginal preservation.

The following recommendations and conclusions are based on limited or inconsistent scientific evidence (Level B):

The use of synthetic mesh or biologic grafts in POP surgery is associated with unique complications not seen in POP repair with native tissue.

Hysteropexy is a viable alternative to hysterectomy in women with uterine prolapse, although there is less available evidence on safety and efficacy compared with hysterectomy.

The following recommendations are based primarily on consensus and expert opinion (Level C):

A POP-Q examination is recommended before treatment for the objective evaluation and documentation of the extent of prolapse.

A pessary should be considered for a woman with symptomatic POP who wishes to become pregnant in the future.

The following recommendations are based primarily on consensus and expert opinion (Level C):

Pelvic organ prolapse vaginal mesh repair should be limited to high-risk individuals in whom the benefit of mesh placement may justify the risk, such as individuals with recurrent prolapse (particularly of the anterior or apical compartments) or with medical comorbidities that preclude more invasive and lengthier open and endoscopic procedures.

Before placement of synthetic mesh grafts in the anterior vaginal wall, patients should provide their informed consent after reviewing the benefits and risks of the procedure and discussing alternative repairs.

The following recommendations are based primarily on consensus and expert opinion (Level C):

Surgeons who perform POP surgery with biologic grafts or synthetic mesh grafts should have training specifically for these procedures and should be able to counsel patients regarding the risk–benefit ratio for the use of mesh compared with native tissue repair.

The following recommendations are based primarily on consensus and expert opinion (Level C):

Routine intraoperative cystoscopy during POP surgery is recommended when the surgical procedure performed is associated with a significant risk of injury to the bladder or ureter.

These procedures include suspension of the vaginal apex to the uterosacral ligaments, sacrocolpopexy, and anterior colporrhaphy and the placement of mesh in the anterior and apical compartments.

The following recommendations are based primarily on consensus and expert opinion (Level C):

All women with significant apical prolapse, anterior prolapse, or both should have a preoperative evaluation for occult stress urinary incontinence, with cough stress testing or urodynamic testing with the prolapse reduced.

The following recommendations are based primarily on consensus and expert opinion (Level C):

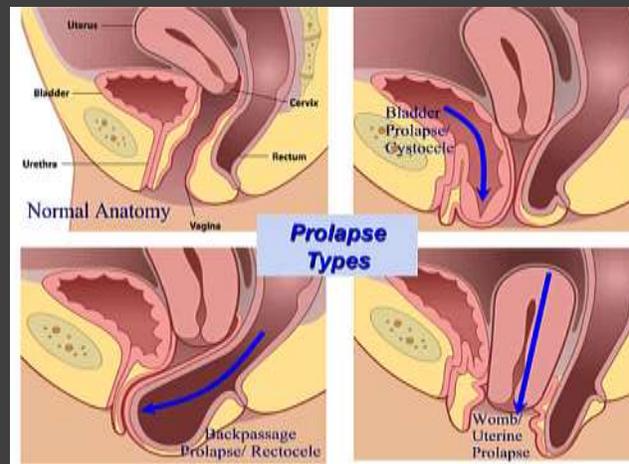
Patients with POP but without stress urinary incontinence who are undergoing either abdominal or vaginal prolapse repair should be counseled that postoperative stress urinary incontinence is more likely without a concomitant continence procedure but that the risk of adverse effects is increased with an additional procedure.

Pelvic Organ Prolapse (POP)

common, benign condition in women

- *vaginal bulge*
 - *pelvic pressure*
 - *voiding dysfunction*
 - *defecatory dysfunction*
 - *sexual dysfunction*
-
- *US women - 13% lifetime risk of undergoing surgery for POP*
 - *peak incidence: 70–79 years*
 - *50% increase by 2050*

Definition



- Pelvic organ prolapse is the descent of one or more aspects of the vagina and uterus:
 - anterior vaginal wall
 - posterior vaginal wall
 - the uterus (cervix) or the apex of the vagina (vaginal vault or cuff scar after hysterectomy)

Nearby organs herniate into the vaginal space:

commonly referred to as cystocele, rectocele, or enterocele.

Epidemiology

- 3% of US women report symptoms of vaginal bulging
 - (National Health and Nutrition Examination Survey)
- Prevalence of POP in one review:
 - based on reported symptoms: 3–6%
 - identified by examination: 41–50%
- Many women with POP are asymptomatic
- POP usually due to global pelvic floor dysfunction,
 - most women will present with POP in multiple compartments
 - anterior, apical, and posterior vaginal wall

Surgery for POP

- The incidence of POP surgery is 1.5–1.8 surgeries per 1,000 women years.
- There are approximately 300,000 POP surgeries each year in the United States



Risk factors for developing symptomatic POP

parity

vaginal delivery

age

obesity

connective tissue disorders

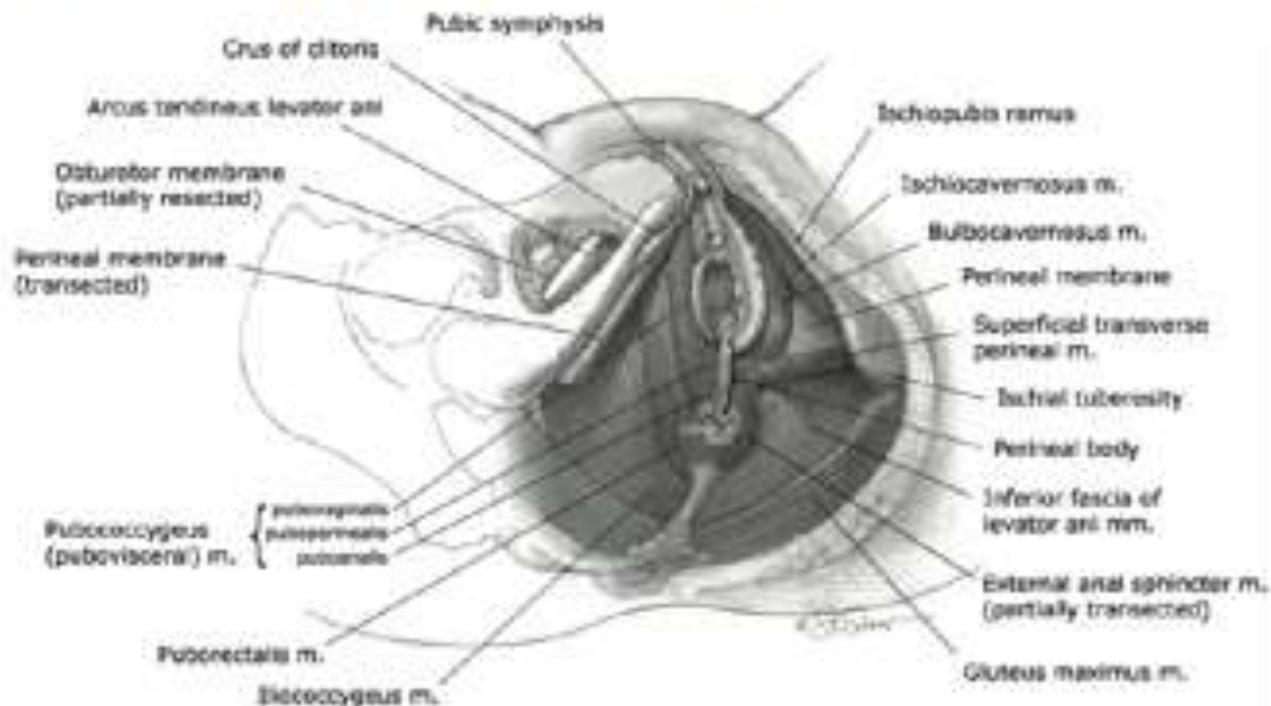
menopausal status

chronic constipation

Modifiable risk factors (obesity and constipation) should be addressed in patients at wellness visits because improvement in these factors may reduce the risk of developing POP.

Pathophysiology

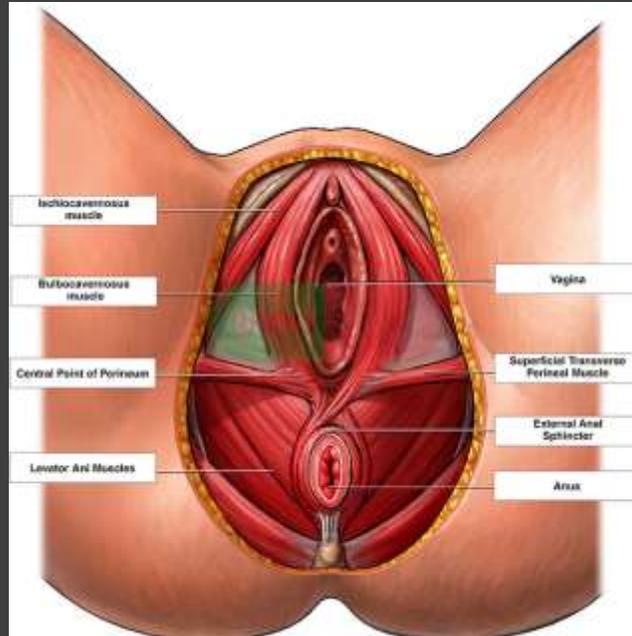
Damage or injury to pelvic organ support structures: levator ani complex, connective tissue attachments, or vaginal wall



Source: Hoffman B., Schump D., Schaffer B., Williams JB, Brackley EC, Cunningham FG: *Williams Gynecology, 2nd Edition* www.williamsbooks.com
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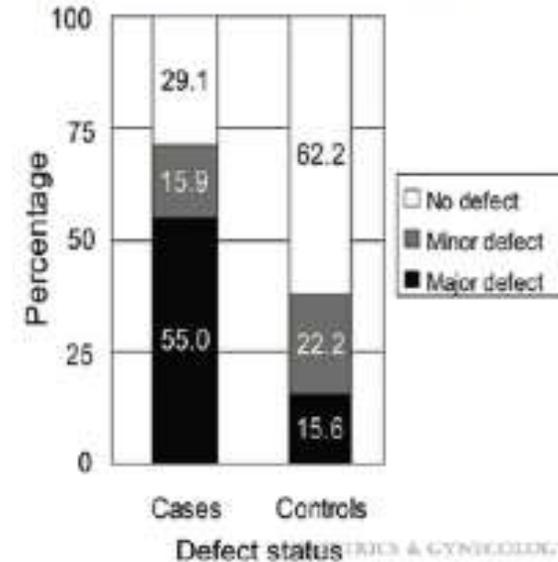
Levator Ani Muscles

- Pubococcygeus
- Iliococcygeus
- Puborectalis



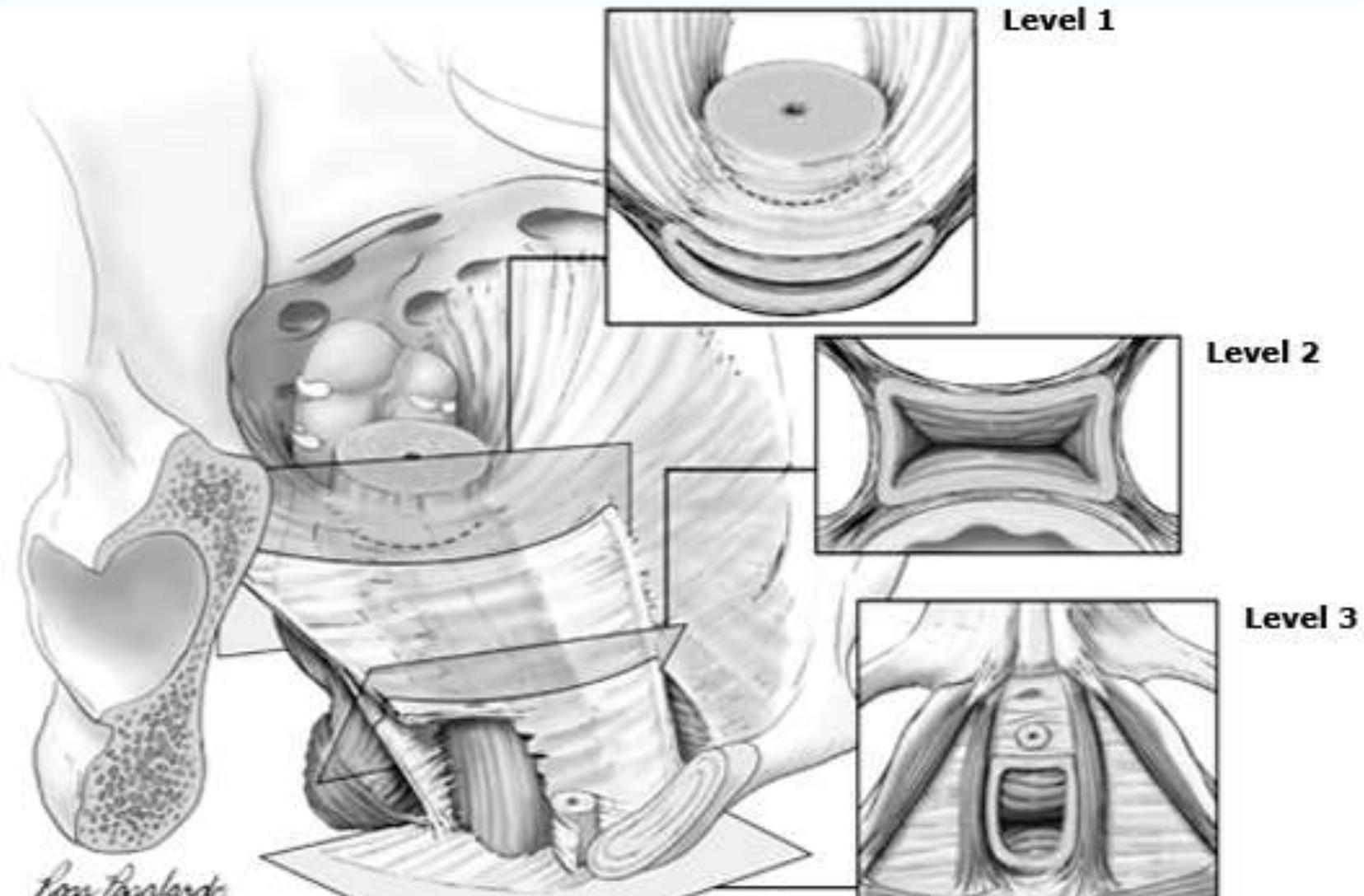
Levator Ani Defects in Prolapse

- MRI study to measure levator ani defects in prolapse
- Cases (prolapse n=151) and controls (no prolapse, n=135)



DeLancey, John O. L.; Morgan, Daniel M.; Fenner, Dee E.; Kearney, Rohna; Guire, Kenneth; Miller, Janis M.; Hussain, Hero; Umek, Wolfgang; Hsu, Yvonne; Ashton-Miller, James A. *Obstetrics & Gynecology*. 109(2, Part 1):295-302, February 2007.

DeLancey levels of vaginal support



Does hysterectomy increase risk of POP?

- It is not clear if hysterectomy for non-POP conditions is a risk factor for developing POP.
- In a subanalysis of a cohort study from the United Kingdom, patients who underwent a hysterectomy had a 5% cumulative risk of undergoing prolapse surgery within the next 15 years.
- A more recent study found no increased risk of POP in women who underwent prior hysterectomy for non-POP indications.

Recurrent POP after surgery

- Older studies reported that women who underwent primary POP surgery had an approximate 30–50% chance of needing a second prolapse surgery
- More recent studies show a lower reoperation rate of approximately 6–30%, with most estimates consistent with the lower end of this range
 - This lower reoperation rate may reflect improvement in surgical technique as well as stratification of urinary incontinence as a separate risk in the outcomes data

Recurrent POP after surgery

- Pelvic organ prolapse surgery that includes suspension of the vaginal apex is associated with a decreased reoperation rate
- Risk factors for recurrent prolapse
 - age younger than 60 years for patients who underwent vaginal surgery for POP
 - obesity
 - preoperative stage III or stage IV prolapse

Initial evaluation for a woman with suspected POP

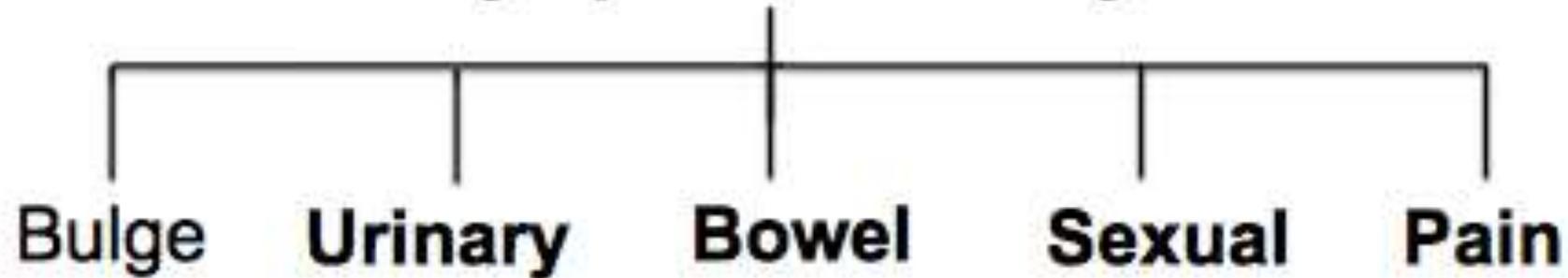
thorough history
assessment of symptom severity
physical examination
goals for treatment



Symptom assessment is the most important part of the evaluation of a woman with POP.

Clinical Presentation

Symptom Inventory



*Pelvic Floor Impact Questionnaire 7-Item (PFIQ-7)

*Pelvic Floor Distress Inventory 22-Item (PFDI-22)

Pelvic Floor Distress Inventory 22-Item (PFDI-22)

PFDI-4

Do you usually _____, and if so how much are you bothered by?

1. experience a pressure in the lower abdomen
2. experience heaviness or fullness in the abdomen or genital area
3. have a bulge or something falling out that you can see or feel in the vaginal area
4. have to push on the vagina or around the rectum to have or complete a bowel movement
5. experience a feeling of incomplete bladder emptying
6. have to push up on a bulge in the vaginal area with your fingers to start or complete urination

CRADI-4

_____ and if so how much are you bothered by it?

1. Do you usually feel you need to strain too hard to have a bowel movement?
2. Do you usually feel you have not completely emptied your bowels at the end of bowel movement?
3. Do you usually lose stool beyond your control if your stool is well formed?
4. Do you usually lose stool beyond your control if your stool is loose or liquid?
5. Do you usually lose gas from the rectum beyond your control?
6. Do you usually have pain when you pass your stool?
7. Do you usually experience a strong sense of urgency and have to rush to the bathroom to have a bowel movement?
8. Does part of your stool ever pass through the rectum and bulge outside during or after a bowel movement?

LDI-8

Do you usually have _____, and if so, how much are you bothered by?

1. frequent urination
2. leakage related to feeling of urgency
3. leakage related to activity, laughing, or sneezing
4. leakage when you go from sitting to standing
5. small amounts of urine leakage (i.e., drops)
6. difficulty emptying the bladder
7. pain or discomfort in the lower abdomen or genital area
8. pain in the middle of your stream as your bladder fills

Pelvic Floor Impact Questionnaire 7-Item (PFIQ-7)

Please select the best answer to each question below.

Name: _____

Has your prostate affected your:

1. Ability to do household chores (cooking, house cleaning, laundry)?

Not at all Mildly Moderately Severely

2. Physical recreation such as walking, swimming, or other exercises?

Not at all Mildly Moderately Severely

3. Entertainment activities (movies, church)?

Not at all Mildly Moderately Severely

4. Ability to travel by car or bus more than 30 minutes from home?

Not at all Mildly Moderately Severely

5. Participation in social activities outside your home?

Not at all Mildly Moderately Severely

6. Emotional health (nervousness, depression)?

Not at all Mildly Moderately Severely

7. Feeling frustrated?

Not at all Mildly Moderately Severely

History

In addition to a complete medical, surgical, obstetric, and gynecologic history, the nature of vaginal bulge symptoms and the degree of *bother* associated with the bulge should be recorded.

Key information to elicit from the patient includes whether the protrusion is *limiting physical activities* or *sexual function* or becoming *progressively worse or bothersome*.

Treatment is indicated only if prolapse is causing *bothersome* bulge and pressure symptoms, sexual dysfunction, lower urinary tract dysfunction, or defecatory dysfunction

- 58 year old G4 P4 (SVDs) menopausal female, no current HRT, 3 month history of feeling something bulging from her vagina. She denies current urinary incontinence, however up until approximately 3 months ago she did have occasional loss of urine with sneezing and coughing. Experiences urinary hesitancy and doesn't always feel completely empty. Voids 10 times per day, 3 times per night, and has urgency. She has vaginal dryness and discomfort with intercourse. Denies fecal incontinence, reports at least weekly constipation with difficulty passing stools, often has to put pressure in the vagina to have a bowel movement.

List possible working diagnosis:



List possible working diagnosis:

- Pelvic Organ Prolapse
- Occult urinary incontinence
- Overactive bladder
- Nocturia
- Incomplete emptying
- Atrophic vaginitis
- dyspareunia

Physical Examination

abdominal and pelvic examination to rule out pelvic masses

external genitalia and vaginal epithelium should be evaluated for vaginal atrophy, skin irritation, or ulceration

A detailed examination of the POP should be performed with a split speculum as the patient performs the Valsalva maneuver, repetitive coughing, or both

Performance of a pelvic organ prolapse quantification (POP-Q) examination is recommended before treatment for the objective evaluation and documentation of the extent of prolapse

Physical Examination

If a patient's prolapse symptoms are not confirmed by the extent of prolapse observed during supine pelvic examination, repeating the pelvic examination in the **standing position** may reveal the greatest descent of POP.

Pelvic floor muscle tone should be assessed. It should be noted if the pelvic floor muscles can contract and relax voluntarily.

The strength of the contraction should be described as “absent,” “weak,” “normal,” or “strong”

Evaluation of posterior vaginal wall prolapse



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Evaluation of uterine prolapse



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Nerve Supply

- **S2, S3, and S4** segments of the spinal cord fuse to form the **pudendal nerve**
- **pudendal nerve** innervates the external anal sphincter
- levators, coccygeus muscles, and urogenital diaphragm appear to be innervated by a direct connection of **S2, S3, and S4** nerve fibers

Describing Prolapse

Pelvic Organ Prolapse Quantification (POP-Q)

Terminology developed in 1996 to standardize how to describe prolapse

anterior wall Aa	anterior wall Ba	cervix or cuff C
genital hiatus gh	perineal body pb	total vaginal length tvL
posterior wall Ap	posterior wall Bp	posterior fornix D

Baden-Walker System for the Evaluation of Pelvic Organ Prolapse on Physical Examination

Grade posterior urethral descent, lowest part other sites

Grade 0: Normal position for each respective site

Grade 1: Descent halfway to the hymen

Grade 2: Descent to the hymen

Grade 3: Descent halfway past the hymen

Grade 4: Maximum possible descent for each site

Baden WF, Walker T. Fundamentals, symptoms and classification. In: Baden WF, Walker T, editors. Surgical repair of vaginal defects. Philadelphia (PA): J.B. Lippincott; 1992. p. 14.

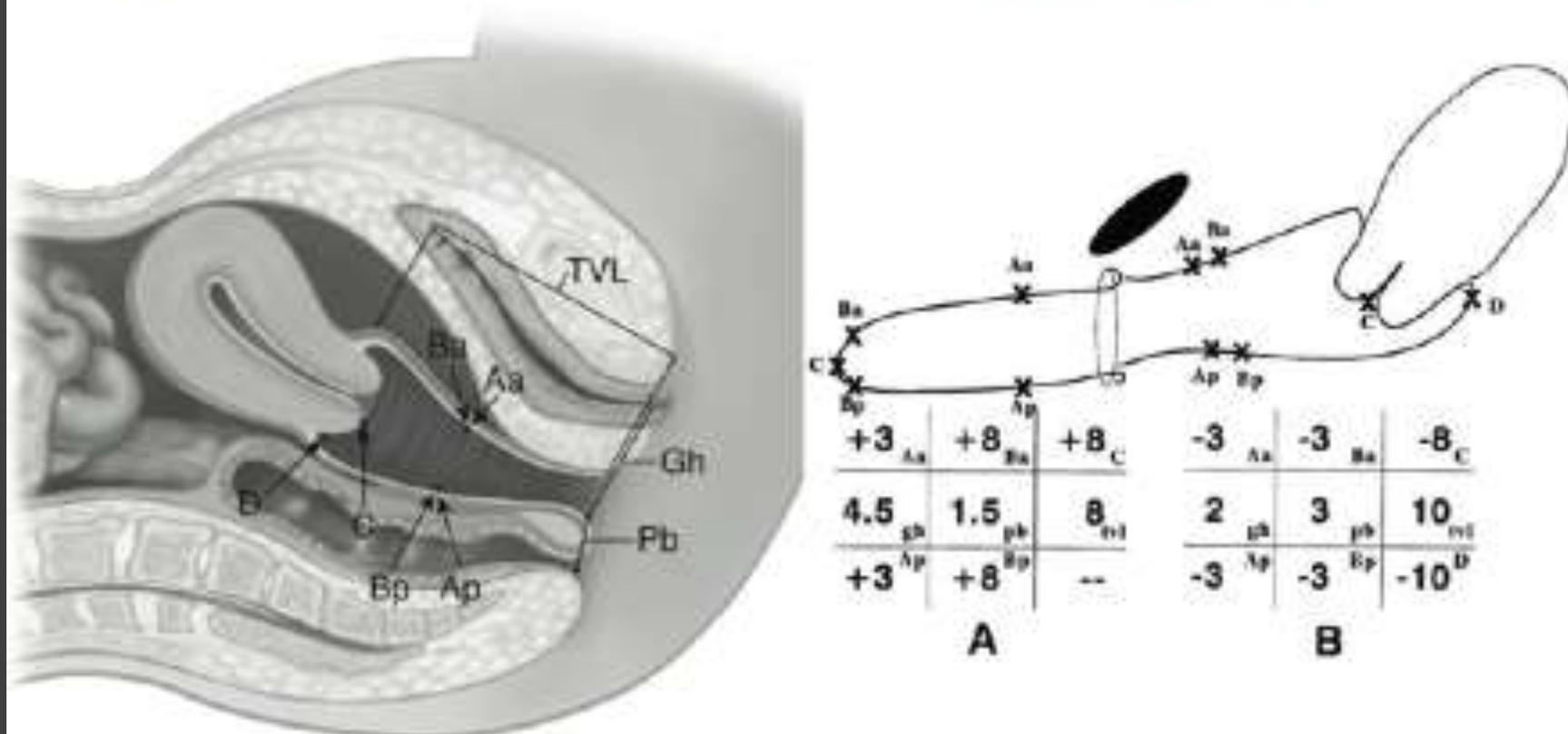
Baden-Walker Halfway System

-
-

Grade	Description
Grade 0	Normal position for each respective site
Grade 1	Descent halfway to the hymen
Grade 2	Descent halfway past the hymen
Grade 3	Maximum possible descent for each site

Classification of POP

All POP-Q points, except TVL, are measured during patient Valsalva and should reflect maximum protrusion



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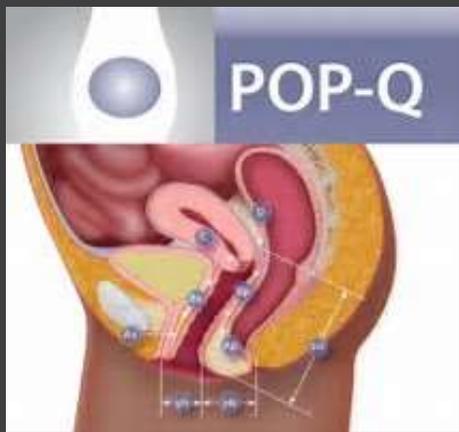
Richard C. Bump, Anders Mattiasson, Karl Bø, Linda P. Brubaker, John O.L. DeLancey, Peter Klarskov, Bob L. The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction. American Journal of Obstetrics and Gynecology, Volume 175, Issue 1, 1996, 10 - 17

Stages of Prolapse

Stage	Description
Stage 0	No prolapse is demonstrated.
Stage 1	The most distal portion of the prolapse is > 1 cm above the level of the hymen
Stage 2	The most distal portion of the prolapse is ≤ 1 cm proximal or distal to the hymen
Stage 3	The most distal portion of the prolapse is > 1 cm below the hymen but protrudes no further than 2 cm less than the total vaginal length
Stage 4	Complete eversion of the total length of the vagina The distal portion protrudes at least the total vaginal length minus 2 cm beyond the hymen



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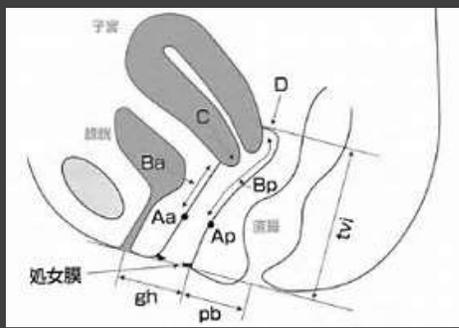


Is the pelvic organ prolapse quantification examination necessary before treatment of pelvic organ prolapse?

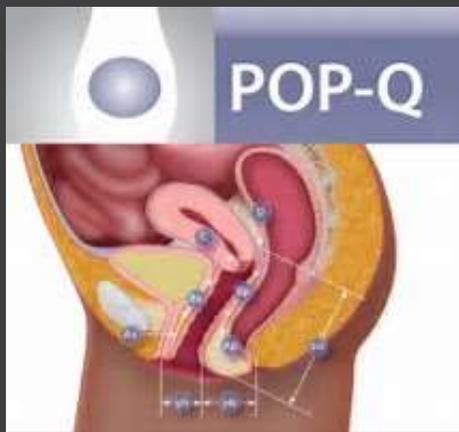
A POP-Q examination is recommended before treatment of POP to objectively evaluate and document the extent of prolapse.

Evaluation and documentation of the extent of the prolapse is important before treatment so that the surgeon has a preoperative comparator by which to measure postoperative anatomic success.

The POP-Q system is the only validated method for objective measurement of prolapse in the three pelvic compartments: 1) anterior, 2) apical, and 3) posterior



anterior wall Aa	anterior wall Ba	cervix or cuff C
genital hiatus gh	perineal body pb	total vaginal length tvl
posterior wall Ap	posterior wall Bp	posterior fornix D

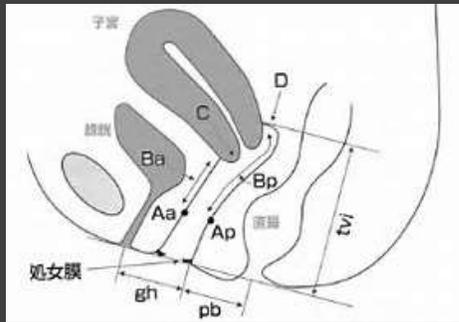


Is the pelvic organ prolapse quantification examination necessary before treatment of pelvic organ prolapse?

The POP-Q system is **recommended** by the major national and international urogynecologic health organizations, including the American Urogynecologic Society, the Society of Gynecologic Surgeons, and the International Continence Society

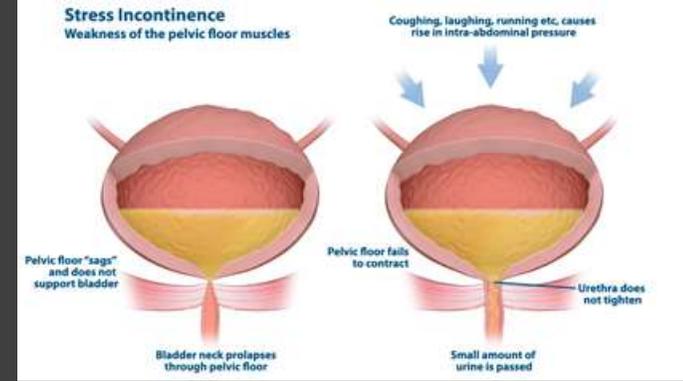
In addition, POP-Q is used in most scientific publications on POP

Although the Baden–Walker system clinically describes prolapse findings, **the POP-Q system is more precise and has been shown to be reproducible.**



anterior wall Aa	anterior wall Ba	cervix or cuff C
genital hiatus gh	perineal body pb	total vaginal length tvl
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Lower urinary tract function



- This includes an evaluation for urine loss and type (stress or urgency urinary incontinence) and adequacy of bladder emptying.
- The relationship between urinary symptoms and prolapse can be inferred if voiding becomes more difficult when the effects of gravity are more pronounced, such as after long periods of standing
- In addition, splinting (ie, the need to push on or support the bulging tissue) may be required to initiate or complete voiding.

Assessment of bowel function

- history of straining with bowel movements
 - laxative use
 - fecal incontinence
 - incomplete rectal emptying
-
- The symptom of splinting often is correlated with the presence of a posterior compartment defect (eg, rectocele).



Assessment of sexual function

- Each patient should be assessed for symptoms of:
 - dyspareunia,
 - coital incontinence (of urine or stool)
 - sexual dysfunction that is related to the prolapse

Is additional testing beyond history and physical examination needed to evaluate women with pelvic organ prolapse?

In general, no additional testing beyond a complete gynecologic, urologic, and defecatory history and physical examination is needed before treatment.

However, if the prolapse is beyond the hymen or the patient has voiding symptoms, a **postvoid residual urine volume** should be recorded either with a catheter or ultrasonography.

Is additional testing beyond history and physical examination needed to evaluate women with pelvic organ prolapse?

If there is urinary urgency or other lower urinary tract symptoms, minimum assessment involves a **urinalysis, with culture and microscopy performed if indicated**

Urodynamic testing may help inform patient counseling and may be considered if there is **bothersome incontinence with stage II or greater prolapse or voiding dysfunction.**

If findings on initial assessment do not concur with symptoms, more specific imaging or referral to a specialist in urogynecologic care may be needed.