A CLINICAL MASTER CLASS

Pelvic Infection Detective Training

Broadening the differential, reading the anatomy, and treating vulvovaginal & pelvic infections with confidence.

Skin, Bones, Hearts & Private Parts 2026 · Jessica Bell, PA-C, MSCP, ISSWSH Fellow · GynJess

Disclosures

Financial disclosures

Jessica Bell, PA-C, MSCP, ISSWSH Fellow has no relevant financial relationships with ineligible companies to disclose.

Off-label / emerging use

This presentation discusses male-partner treatment for bacterial vaginosis, which is supported by 2025 randomized-trial evidence but is ahead of the current CDC 2021 STI Treatment Guidelines.

Emerging / off-guideline content is identified as such where it appears.

What you'll leave able to do

1. **Broaden the differential** Widen the list for pelvic infection and pelvic pain beyond the obvious.
2. **Know the anatomy** Use detailed pelvic anatomy to localize the problem and guide treatment.
3. **Recognize symptoms** Match presenting symptoms to the likely source.
4. **Evaluate** Combine clinical exam with targeted labs — and interpret them in context.
5. **Treat** Apply current, guideline-based regimens for each diagnosis.

The pelvis is complex



- **Pelvic pain can originate from internal organs, muscles, the tissue level, or the spine.**
- Understanding that complexity is what makes evaluation accurate.

The pelvis: what's in the neighborhood

Viscera

- Ureter, bladder, urethra
- Terminal ileum, sigmoid colon
- Rectum, anus
- Internal & external genitalia

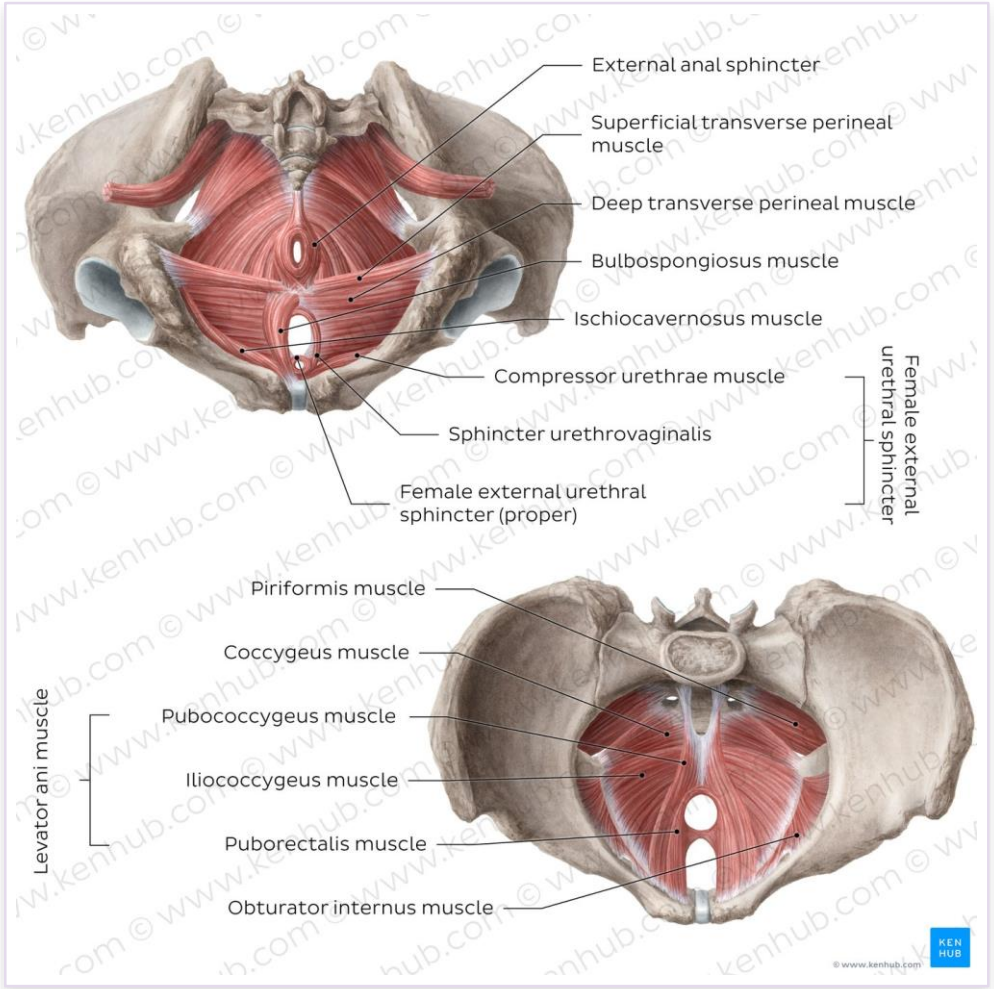
Vessels

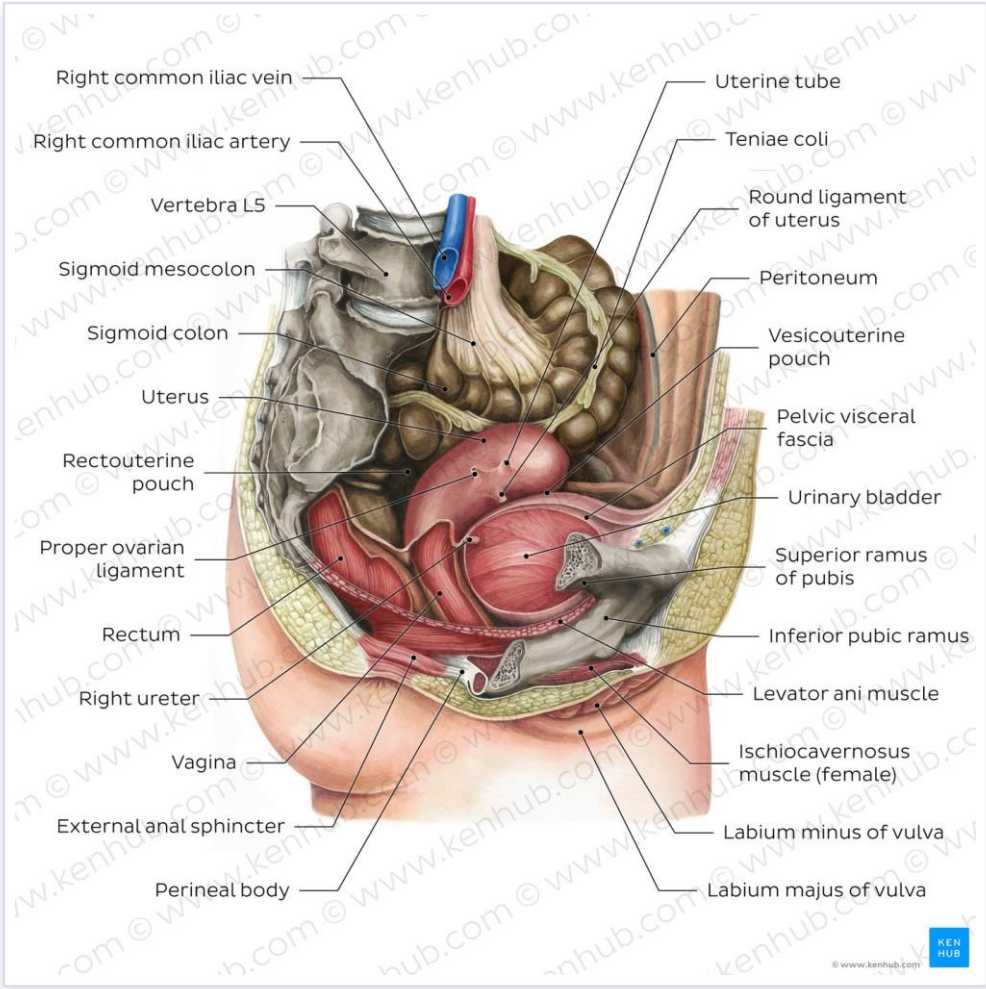
- Internal iliac artery
- Gonadal arteries
- Median sacral artery
- Superior rectal artery

Nerves

- Lumbar plexus
- Sacral plexus
- Coccygeal plexus
- Splanchnic nerves

The pelvis: anatomy in view





The pelvic floor muscles & diaphragm

Pelvic diaphragm

- Two paired muscles and their fasciae: levator ani and coccygeus.
- **Function: support the pelvic organs and prevent prolapse.**

The components

- **Levator ani:**

puborectalis, pubococcygeus, iliococcygeus

- **Coccygeus:**

flexes the coccyx

The female pelvis

Urinary & GI

- Ureter
- Bladder
- Urethra
- Rectum

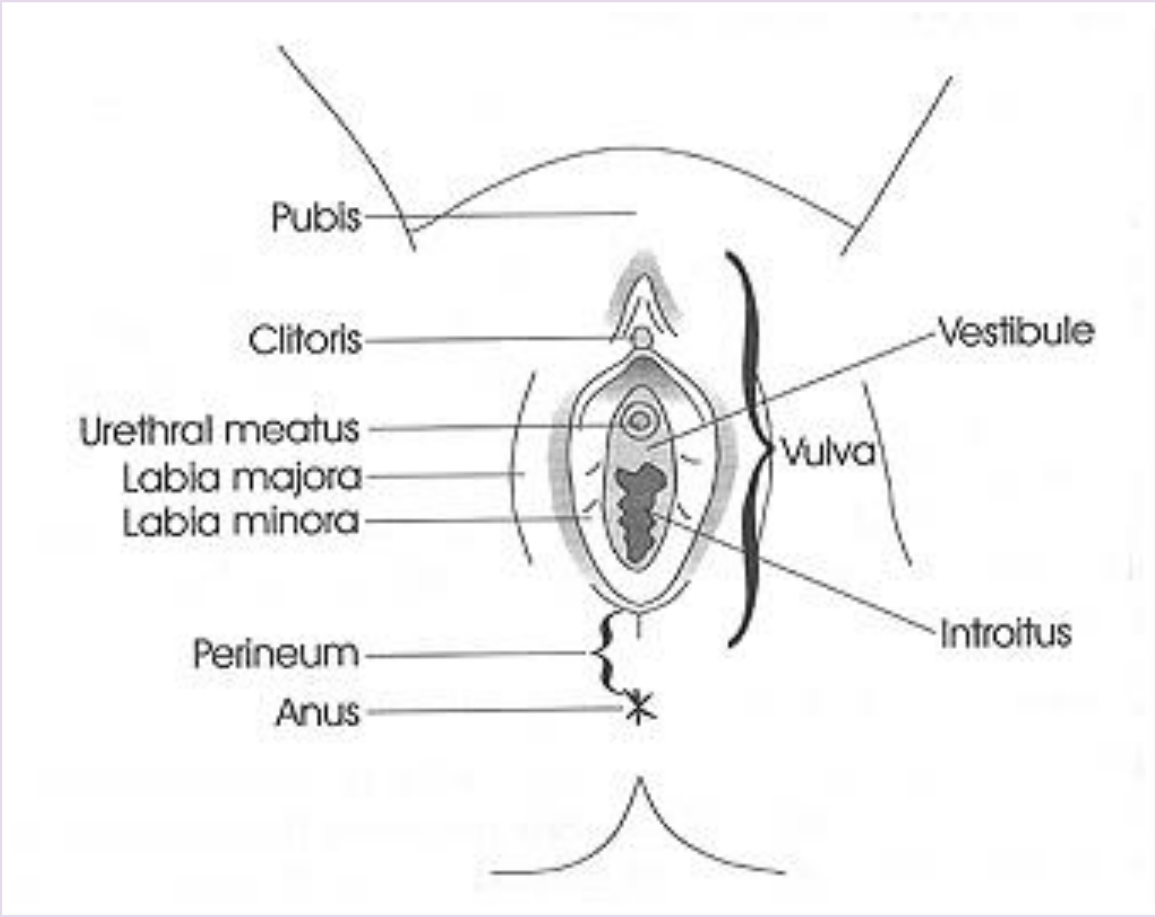
Internal genitalia

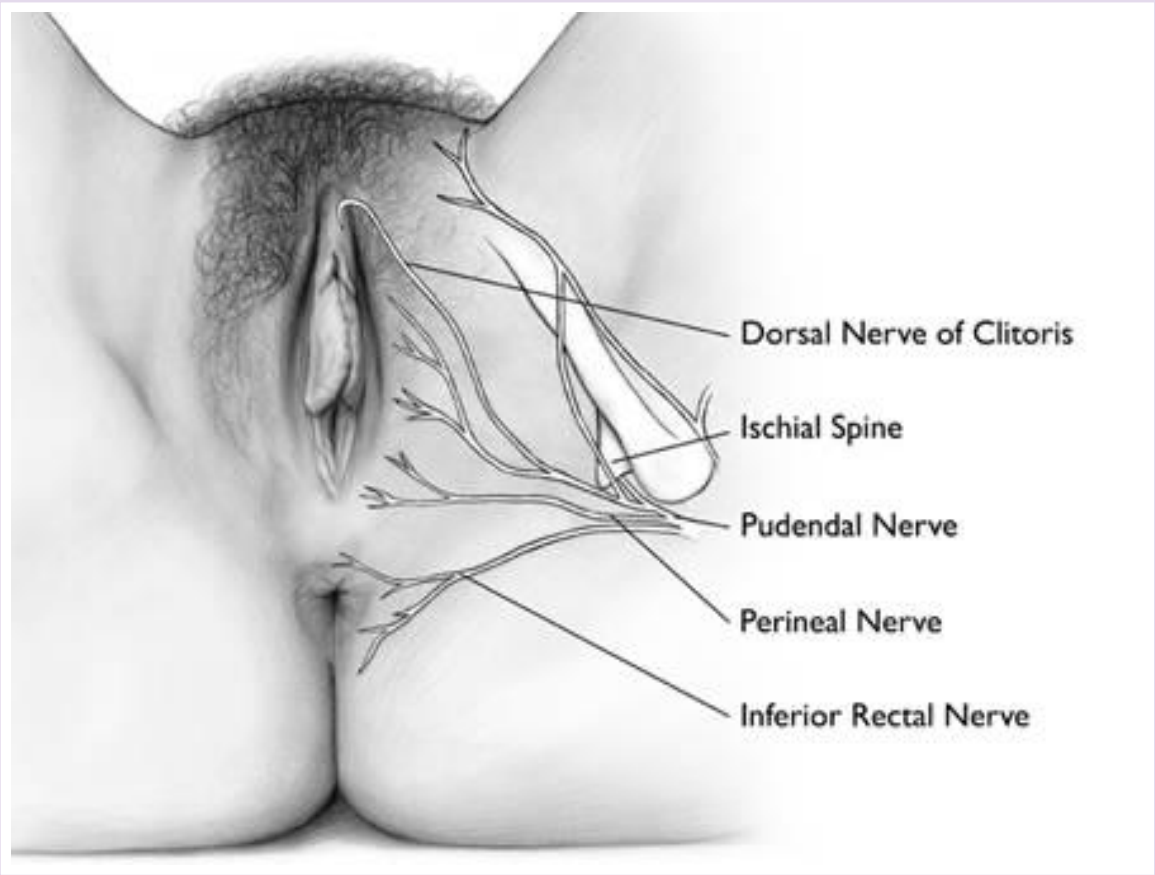
- Ovaries
- Uterine tubes
- Uterus
- Vagina

External genitalia

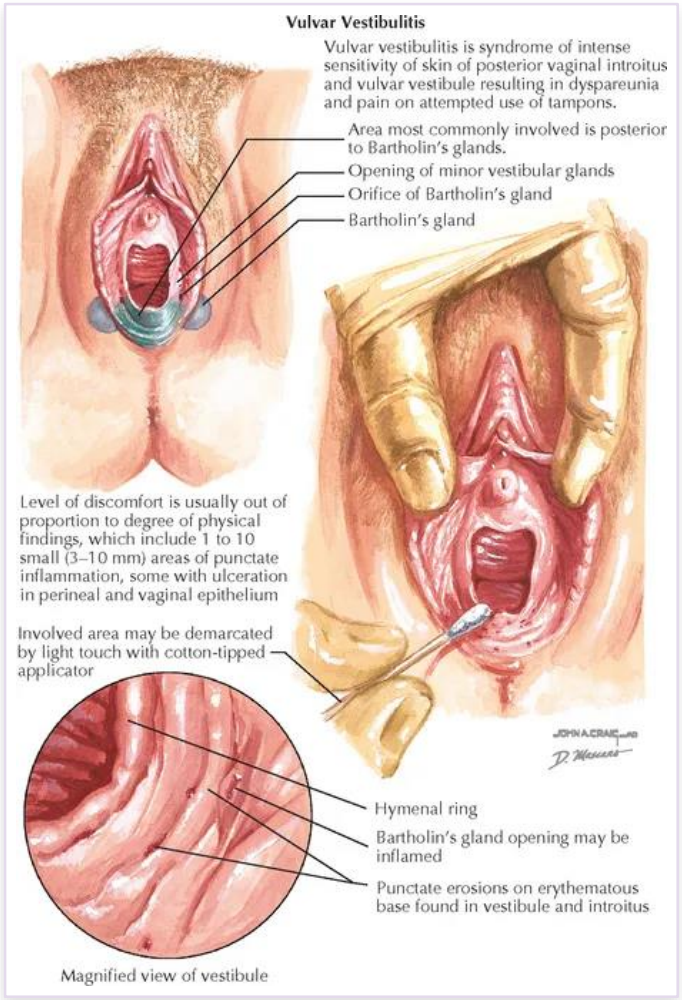
- Mons pubis
- Labia majora & minora
- Glans of clitoris
- Vaginal opening (perineum)

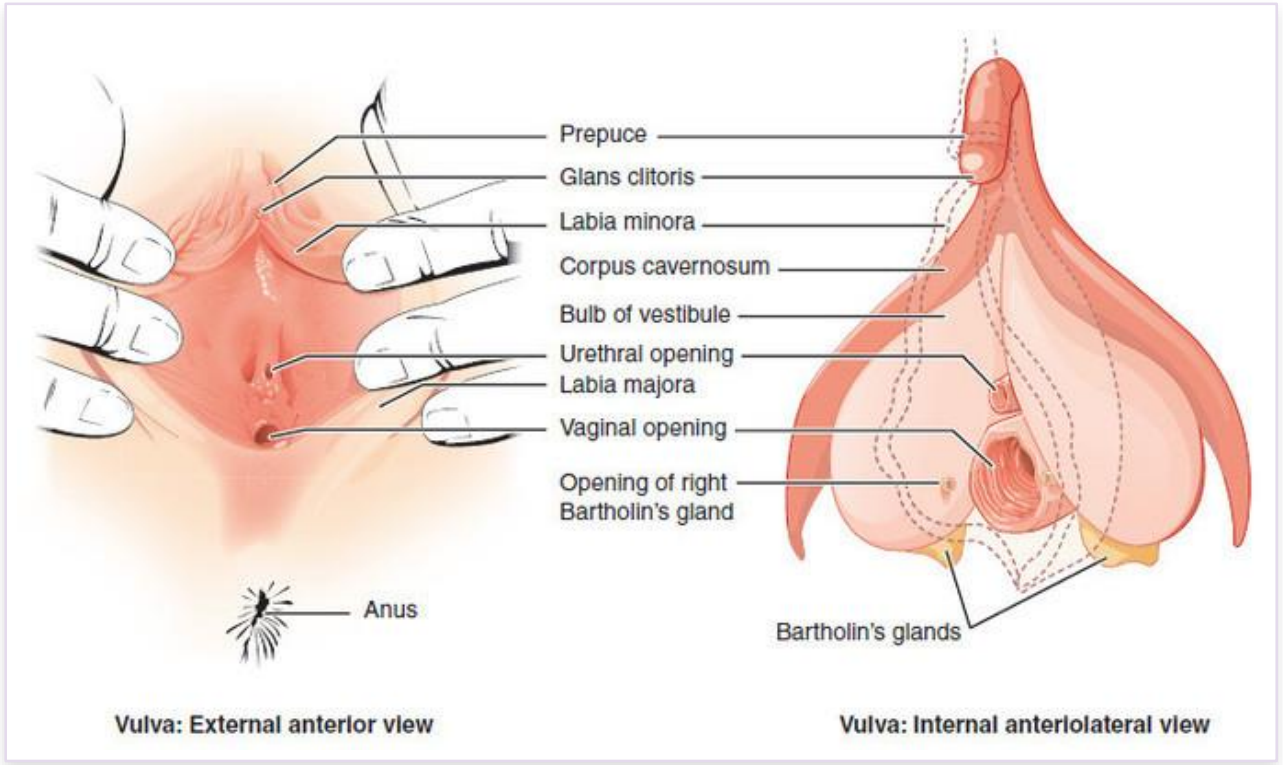
The vulva


Pubis
Clitoris
Urethral meatus
Labia majora
Labia minora
Perineum
Anus
Vestibule
Vulva
Introitus


Dorsal Nerve of Clitoris
Ischial Spine
Pudendal Nerve
Perineal Nerve
Inferior Rectal Nerve

The vestibule & clitoris



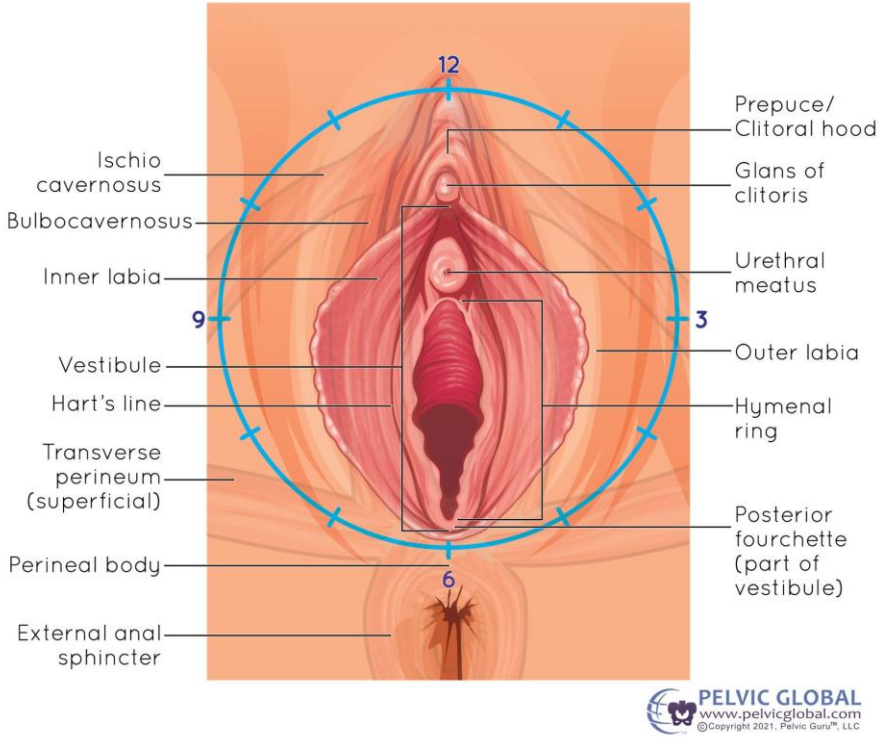


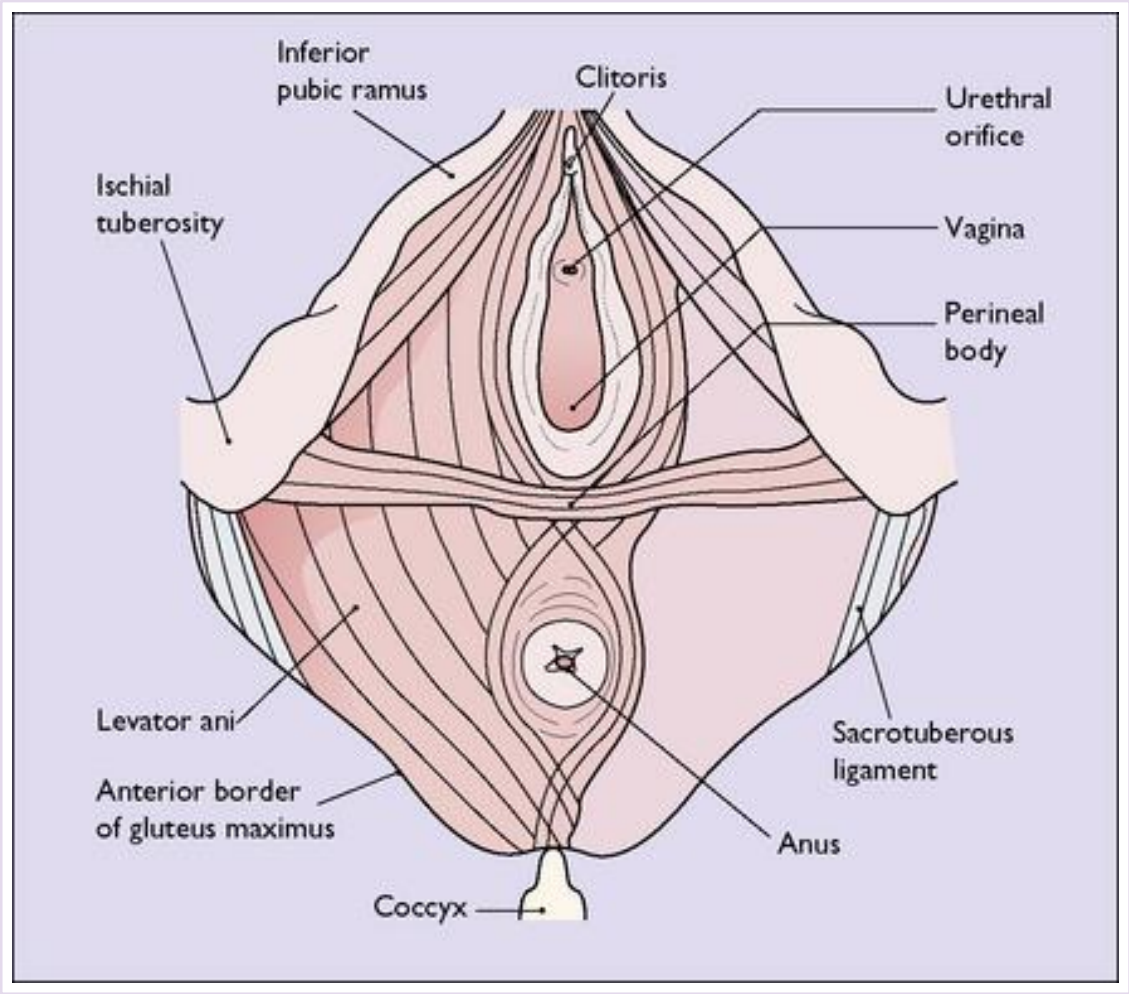
Pelvic pain: where is it coming from?

- **Anatomy can be confusing — it can hurt to urinate simply because urine flows over raw vulvar tissue.**
- Bladder pain: can arise from the bladder itself and/or from the pelvic floor.
- Vaginal pain: from inflammation/infection and/or tight pelvic-floor muscles.
- **Vagina, vulva, urethra, clitoris — location matters. Name the exact site before you treat.**

Localize first. The site of pain narrows the differential faster than any test.

Location, location, location





Vulvar pain: a wide differential

Common drivers

- **Vulvodynia — a diagnosis of exclusion.**
- Genitourinary syndrome of menopause (GSM)
- Yeast; lichen sclerosus
- Vestibule pain — consider lichen planus.

Don't forget

- **GSM = low-estrogen effect:**

menopause, contraceptives, lactation, cancer treatment

- **Infections:**

yeast, HSV lesions, bacterial vaginosis

How do you evaluate?

- **Clinical exam comes first — if it hurts, you look.**
- Test with intention: wet mount, swabs as needed, urinalysis.
- **Interpret in context: a low-colony-count UTI in a symptomatic patient should still be treated.**
- **Some tests drive over-treatment — read results against the symptoms and exam, not in isolation.**

The exam anchors the workup. Tests confirm — they don't replace looking.

Get ready to evaluate & treat

- Vulvovaginal candidiasis
- Bacterial vaginosis
- Trichomoniasis
- Genitourinary syndrome
- Lichen sclerosus
- Lichen planus
- HSV
- HPV
- Chlamydia / gonorrhea
- Mycoplasma / ureaplasma
- Pelvic floor dysfunction

Vulvovaginal candidiasis

Symptoms & exam

- Itching, soreness, dyspareunia, dysuria
- White discharge; erythematous tissue
- **Wet mount / vaginal swab positive.**
- Types: C. albicans, C. glabrata, others.

Treatment

- **Oral and/or topical azole; boric acid for resistant/non-albicans.**
- e.g., fluconazole 150 mg PO; clotrimazole.
- Match agent to severity and species.

Vulvovaginal candidiasis: treatment options

Fluconazole	150 mg PO single dose; more involved cases may need a 2nd dose at 72 h.
Clotrimazole	1% 5 g daily × 7 days, or 2% 5 g daily × 3 days.
Miconazole	2% 5 g daily × 7 days, or 4% 5 g daily × 3 days; vaginal suppositories.
Terconazole	0.4% 5 g daily × 7 days, or 0.8% 5 g daily × 3 days.
Nystatin	1 tablet daily × 7 days.
Ibrexafungerp	300 mg (two 150 mg tablets) twice daily for one day — 4 tablets total.
Boric acid	600 mg suppository daily × 7 days (esp. non-albicans / resistant).

Bacterial vaginosis

Symptoms & exam

- **Most common cause of vaginal discharge.**
- Thin, homogeneous discharge; “fishy” odor, worse after sex.
- Vaginal erythema.

Evaluation

- Amsel, Nugent, or Hay/Ison criteria
- **Clue cells on wet mount.**
- NAAT positive.

Treatment: metronidazole (first line) — details next.

Bacterial vaginosis: treatment

First line

- **Metronidazole 500 mg PO BID × 7 days**
- Metronidazole 0.75% gel, 5 g intravaginally daily × 5 days
- Clindamycin 2% cream, 5 g intravaginally × 7 days

Alternatives

- Clindamycin 300 mg PO BID × 7 days; or ovule 100 mg intravaginally × 3 days
- Tinidazole 2 g PO daily × 2 days, or 1 g daily × 5 days
- Secnidazole 2 g PO once
- Metronidazole 750 mg ER daily × 7 days; single-dose clindamycin bioadhesive 2% cream

CDC STI Treatment Guidelines, 2021

BV: partner treatment — an emerging shift

- **New evidence (StepUp RCT, NEJM 2025): treating the male partner reduced BV recurrence — the first trial to show this, using combined oral + topical therapy.**
- CDC 2021 predates this and does not yet recommend routine partner treatment — treat this as emerging, shared-decision practice.

Male partner (dual therapy)

- **Oral metronidazole 500 mg BID × 7 days**
- **PLUS topical 2% clindamycin cream to penile skin BID × 7 days**

(Trial used 400 mg tablets; 500 mg is the US size.)

Context & counseling

- **Recurrent BV = ≥ 3 episodes in 12 months.**
- Female partners: single-agent therapy.
- Abstain or use condoms until both partners finish treatment.

StepUp trial, Vodstrcil/Bradshaw, NEJM 2025

BV: pregnancy & pre-surgery

Pregnant or lactating

- **Oral metronidazole 500 mg BID × 7 days is preferred.**
- Some data suggest oral therapy treats upper-genital-tract infection more effectively.

Planned gynecologic surgery

- **Treat BV before gynecologic procedures.**
- Reduces postoperative infectious complications.

Trichomoniasis

Symptoms & exam

- Purulent, malodorous discharge; pruritus, burning
- Dysuria, frequency, dyspareunia, lower abdominal pain
- **Green-yellow frothy discharge; “strawberry cervix.”**

Testing & treatment

- NAAT; microscopy shows motile trichomonads (jerky spinning)
- **5-nitroimidazoles are the only curative class.**

Trichomoniasis: treatment

- **Preferred (women): metronidazole 500 mg PO BID × 7 days.**
- **Vaginal metronidazole is NOT recommended — it doesn't reach all the involved anatomy.**

Single-dose options

- Metronidazole 2 g PO once
- Tinidazole 2 g PO once
- Secnidazole 2 g PO once

Multi-dose option

- Tinidazole 500 mg PO BID × 5 days

CDC STI Treatment Guidelines, 2021

Herpes simplex virus

Primary vs. recurrent

- HSV-1 and HSV-2 both cause genital herpes.
- **Primary (no prior antibodies): incubation ~4 days (range 2–12).**

painful ulcers, dysuria, fever, lymphadenopathy

- Recurrent: reactivation — usually milder, shorter.

Diagnosis & treatment

- **Confirm clinical diagnosis with PCR or culture of lesions.**
- Treat with acyclovir, famciclovir, or valacyclovir.

HSV: treatment

Episodic therapy

- Acyclovir 800 mg TID × 2 days, or 800 mg BID × 5 days
- Famciclovir 1000 mg BID × 1 day, or 125 mg BID × 5 days
- Valacyclovir 500 mg BID × 3 days, or 1 g daily × 5 days

Chronic suppression (daily)

- **Acyclovir 400 mg BID**
- **Famciclovir 250 mg BID**
- **Valacyclovir 500 mg daily, or 1 g daily**

Human papillomavirus

What it causes & how it looks

- **Cervical, vulvar, vaginal, anal, and oropharyngeal cancer; genital warts.**
- Soft skin-colored/grayish growths — single bumps or cauliflower-like clusters.
- Cervical lesions may surface on Pap.

Testing & treatment

- **Biopsy; Pap with HPV testing.**
- Podophyllotoxin, imiquimod, sinecatechins, TCA.
- Procedural: LEEP, cone.

Chlamydia & gonorrhea

Why they travel together

- **C. trachomatis and N. gonorrhoeae cause similar symptoms; co-infection is common — test together.**
- Often asymptomatic.
- Urethritis, cervicitis, PID.

Testing

- **NAAT — vaginal swab or first-catch urine.**
- Screen per age/risk; re-test at 3 months after treatment.

Chlamydia & gonorrhea: treatment

Chlamydia

- **Preferred: doxycycline 100 mg PO BID × 7 days.**
- Alternatives:

azithromycin 1 g PO once (preferred in pregnancy)

levofloxacin 500 mg daily × 7 days

amoxicillin 500 mg PO TID × 7 days

Gonorrhea

- **Ceftriaxone 500 mg IM once (< 150 kg).**
- **1 g IM once if ≥ 150 kg.**
- **If chlamydia not excluded, ADD doxycycline 100 mg BID × 7 days.**

CDC STI Treatment Guidelines, 2021

Lichen planus

Erosive vulvar LP

- **Most common vulvar LP — erosive, desquamative, chronic.**
- **~70% have vaginal involvement (vs. rare in lichen sclerosus).**
- Well-demarcated, glazed erythematous erosions with white “Wickham striae” at the margin.
- Labia minora/vestibule; can cause introital stenosis.

Evaluation & treatment

- **Clinical diagnosis + biopsy.**
- **Super-high-potency topical steroid.**

Lichen planus: treatment

- **Super-high-potency topical steroid is the treatment of choice and gold standard.**
- **Do NOT be afraid of it — undertreatment is the bigger risk.**
- Clobetasol 0.05% ointment: a fingertip unit (~0.5 g) daily for 8–12 weeks…
- …then taper to 1–3×/week for indefinite maintenance.
- **Follow up at 3–4 months, then annually.**

Lichen sclerosus

What it is

- **Chronic, progressive dermatologic condition — mainly on the vulva.**
- Highest incidence in low-estrogen states.
- Pruritus (worse at night), perianal pain, anal fissures, dyspareunia, dysuria.
- Hypopigmentation; loss of vulvar architecture.

Diagnosis

- **Usually clinical: white fissures, ecchymoses, architectural change.**
- Biopsy to confirm or when uncertain.
- **“It itches right here.”**

Lichen sclerosus: treatment

- **Location of application matters — give the patient a mirror and a handout.**
- Clobetasol: a fingertip unit (~0.5 g) daily × 12 weeks to induce remission…
- …then maintenance twice weekly; once weekly in prolonged remission.
- **Treat co-existing GSM — it eases symptoms and helps distinguish active LS from atrophy.**

Genitourinary syndrome of menopause (GSM)

Symptoms

- **Formerly “vaginal atrophy” — a constellation from low estrogen.**
- Urgency, frequency, dysuria, recurrent UTI
- Dryness, burning, irritation, decreased lubrication
- **Up to 70% never raise it with their provider — ask.**

Exam & treatment

- Labial resorption/fusion, tissue fragility, pallor, loss of rugae
- Prominent urethral meatus, urethral eversion; reduced elasticity
- **Treat with hormones and/or non-hormonal moisturizers.**

GSM: treatment

The best treatment is the one a person will use. Apply to the vulva purposefully — for creams, discard the applicator and apply with a finger.

Estradiol cream	1 g daily × 2 weeks, then 2–3×/week.
Estradiol ring	1 ring every 90 days.
Estradiol insert	10 mcg tablet daily × 12 weeks, then 2×/week.
Conjugated equine estrogen	0.5 g daily × 2 weeks, then 2×/week.
Prasterone (DHEA)	6.5 mg vaginal insert daily.

Pelvic floor dysfunction

Symptoms & evaluation

- **Uncoordinated muscles produce the symptoms.**
- Frequent urination, incontinence, constipation
- Low back pain; pain in pelvis, genitalia, rectum
- **Evaluate: clinician or pelvic-floor PT.**

Mimics to rule out

- **Interstitial cystitis**
- **Irritable bowel syndrome**
- **Prolapse**
- Treatment is individualized.

Pelvic floor dysfunction: treatment

- **Pelvic-floor physical therapy is the cornerstone.**
- Physician-directed exercises or formal pelvic-floor PT.
- **Help patients find a qualified therapist:**

APTA Pelvic Health PT Locator

Pelvicrehab.com practitioner directory

Resources & references

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