



PIPADOR REVISION

MRCOG Part 1 Revision Notes

Perineum — Surface Anatomy

ANATOMY • LECTURE 18

VISUAL EXAMINATION REVISION NOTES

2026 Edition

MRCOG Part 1 Revision Notes

Lecture 18: Perineum — Surface Anatomy

Anatomy • Visual revision edition

COLOUR CODE USED THROUGHOUT THESE NOTES

UROGENITAL TRIANGLE	ANAL TRIANGLE	LABIA MAJORA	LABIA MINORA	BARTHOLIN'S	SKENE'S
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LEARNING OBJECTIVES — tick off as you go

- ☐ Define the boundaries of the perineum.
- ☐ Identify the urogenital and anal triangles.
- ☐ Describe the surface anatomy of the vulva.
- ☐ Identify Bartholin's and Skene's glands.
- ☐ Describe blood supply, lymphatic drainage and innervation of the perineum.
- ☐ Apply to Bartholin's cyst/abscess, vulval cancer, FGM and lichen sclerosus.

1 The Perineal Diamond

IN ONE LINE: The diamond-shaped region below the pelvic floor — split by a line between the ischial tuberosities into a urogenital triangle in front and an anal triangle behind.

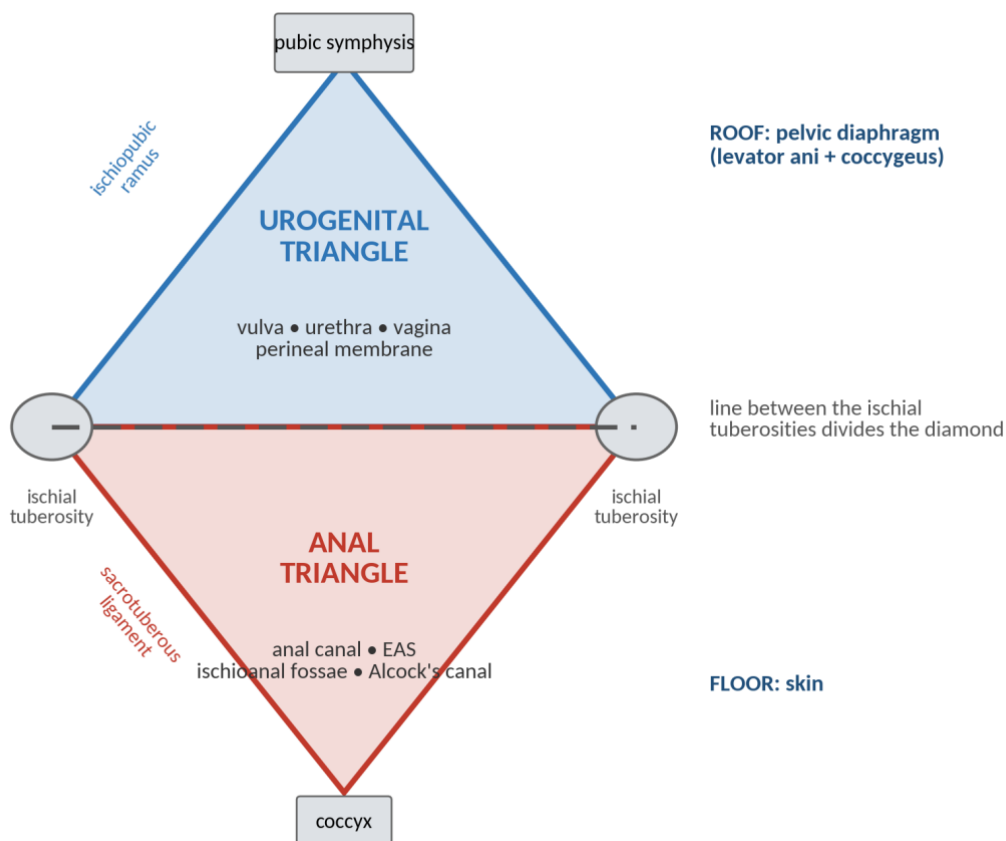


Figure 1. Four corners, two triangles.

UROGENITAL TRIANGLE (front)

- Apex: pubic symphysis • Sides: **ischiopubic rami**
- Base: inter-tuberous line
- Closed by the **perineal membrane** (Lecture 19)
- External genitalia; urethral and vaginal openings
- Superficial and deep perineal pouches

ANAL TRIANGLE (back)

- Apex: coccyx • Sides: **sacrospinous ligaments**
- Base: inter-tuberous line
- Anal canal and external anal sphincter
- **Ischioanal fossae** either side
- **Pudendal (Alcock's) canal** in the lateral wall

MNEMONIC / MEMORY HOOK

Front triangle sides = **RAMI** (bone); back triangle sides = **LIGAMENTS**. Roof = pelvic diaphragm; floor = skin.

2 The Vulva

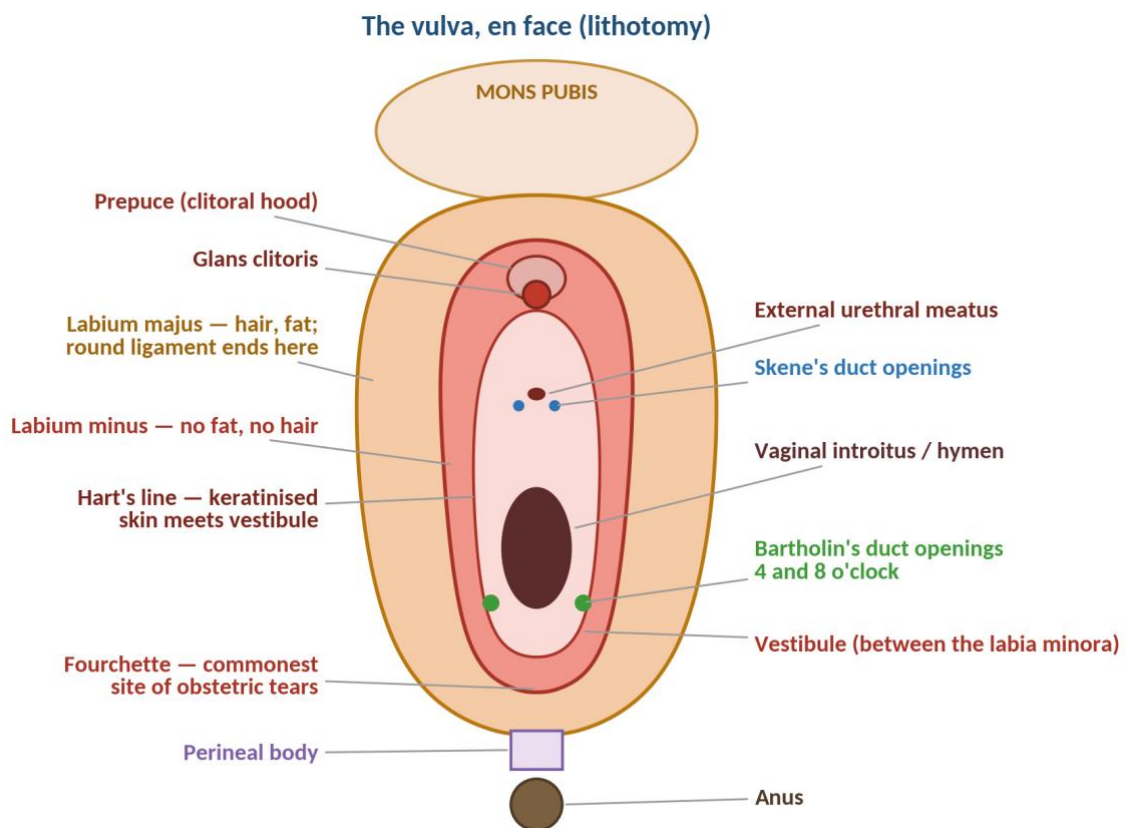
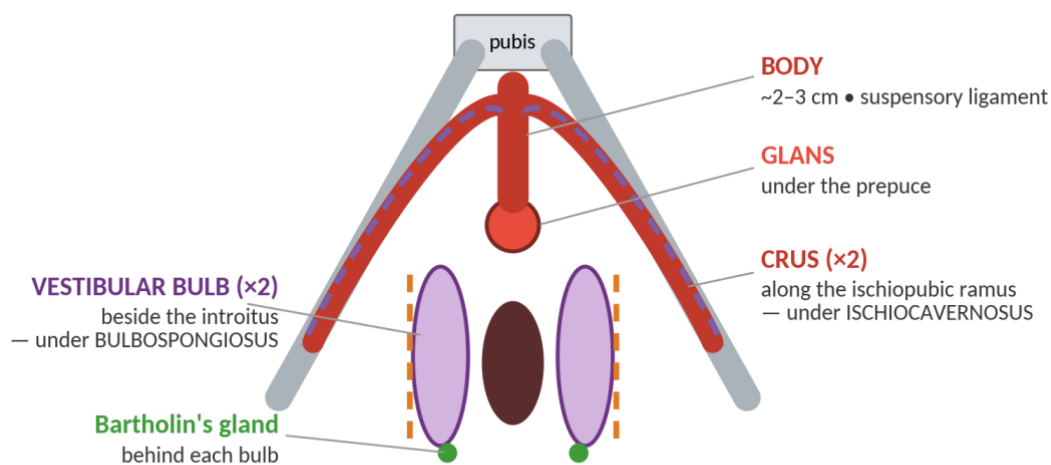


Figure 2. The vulva, labelled as you see it in lithotomy.

Structure	Key facts
Mons pubis	Hair-bearing fat pad over the symphysis; continues into the labia majora
Labia majora	Skin + fat folds from mons to perineal body; outer surface pigmented and hairy, inner smooth; smooth muscle, sebaceous and sweat glands; round ligament ends here; homologue of the scrotum; anterior and posterior commissures
Labia minora	Thin, hairless, fat-free folds — dense connective tissue, elastic fibres, sebaceous glands, rich vessels and nerves; split in front into prepuce and frenulum of the clitoris; join behind at the fourchette (common tear site)

Structure	Key facts
Vestibule	Between the labia minora; non-keratinised stratified squamous; receives the urethral meatus (front), introitus (back), Bartholin's ducts (4 and 8 o'clock), Skene's ducts and minor vestibular glands. Hart's line marks where the keratinised skin of the inner labia minora meets the vestibule
Urethral meatus	Slit ~2–3 cm behind the glans clitoris, just in front of the introitus — catheterisation site
Introitus + hymen	Hymen annular, septate, cribriform or imperforate (haematocolpos); remnants = carunculae myrtiformes
Perineal body	Fibromuscular pyramid between introitus and anus — anchors levator ani, EAS, bulbospongiosus and transverse perineals (Lecture 20)

The clitoris — more than you can see



Nerve: dorsal nerve of the clitoris (pudendal, S2–S4) • **Arteries:** deep + dorsal arteries (internal pudendal)

Figure 3. Glans, body, crura and vestibular bulbs.

MNEMONIC / MEMORY HOOK

Crura under IschioCavernosus; Bulbs under BulboSpongiosus — each erectile body has its matching muscle.

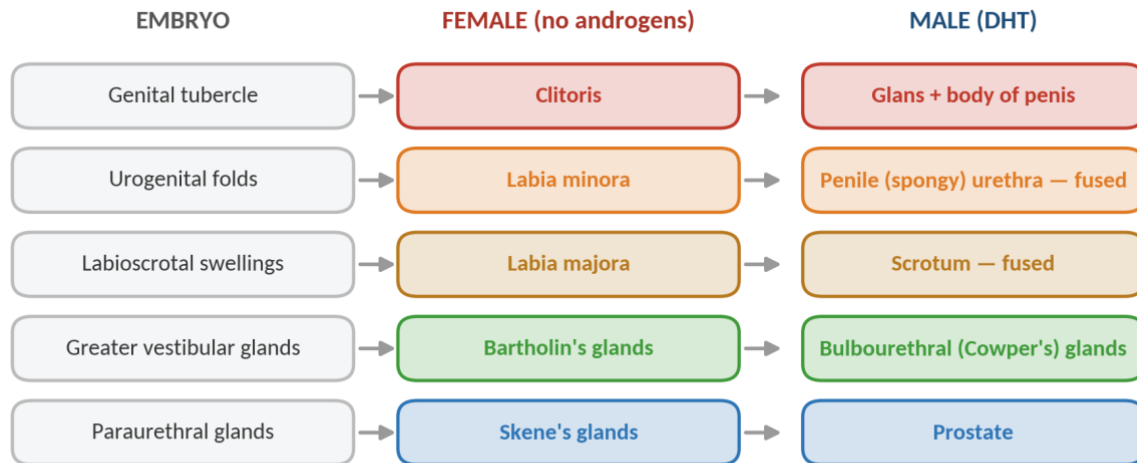
3 Bartholin's and Skene's Glands

BARTHOLIN'S (greater vestibular)

- Pea-sized mucus glands in the **superficial perineal pouch**, behind the vestibular bulbs
- Ducts ~2 cm → vestibule at **4 and 8 o'clock**, between labium minus and hymen
- Lubrication on arousal
- Homologue: **bulbourethral (Cowper's)** glands

SKENE'S (paraurethral)

- Small glands draining beside / into the distal urethra
- Openings **posterolateral** to the meatus
- Homologue: **prostate**
- Cysts, abscesses, diverticula; rare adenocarcinoma



CAH: excess androgen → virilised female genitalia • AIS: 46,XY, androgen-resistant → female external genitalia

Figure 4. Female and male homologues.

4 Blood Supply, Lymphatics and Nerves

Vessel	Detail
Internal pudendal a.	Anterior division of internal iliac → out through the greater sciatic foramen (below piriformis) → in through the lesser foramen → Alcock's canal • branches: inferior rectal, perineal (Bartholin's, posterior labia), artery of the bulb, deep + dorsal arteries of clitoris
External pudendal aa.	From the femoral artery — mons and anterior labia
Veins	Internal pudendal → internal iliac • external pudendal → great saphenous → femoral

LYMPH — the vulval staircase

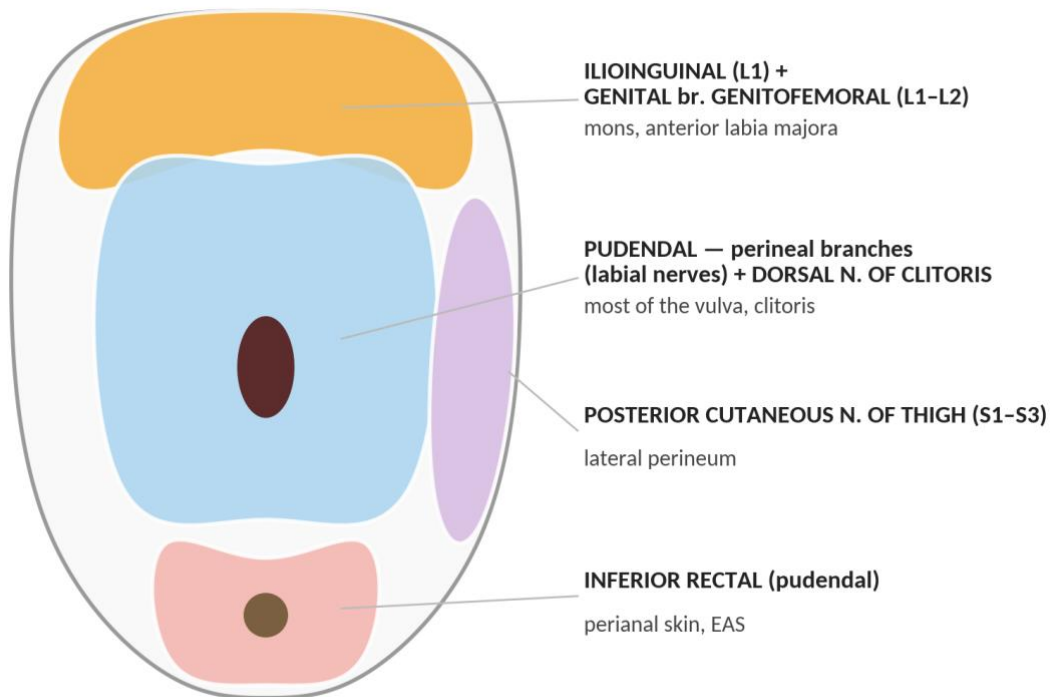
Vulva → **superficial inguinal** → **deep inguinal (Cloquet's)** → **external iliac**.

Clitoris and perineal body may drain directly to deep inguinal / external iliac nodes.

Midline structures drain to BOTH groins — the basis for bilateral groin assessment in midline vulval cancer.

Anal canal below the pectinate line → superficial inguinal.

Who supplies which skin? (schematic)



Pudendal block covers the pudendal zones only — anterior labia need local infiltration.

Figure 5. Cutaneous nerve territories of the vulva and perineum.

- **Pudendal (S2–S4)** is the main nerve: inferior rectal • perineal (superficial labial branches; deep branches to UG-triangle muscles) • dorsal nerve of the clitoris (Lecture 4).
- Autonomic fibres from the pelvic plexus supply the erectile tissue and glands.

5 Embryology and Histology

- Genital tubercle, urogenital folds and labioscrotal swellings stay unfused without androgens (Figure 4); **DHT** drives the male pattern.
- **CAH** — excess androgen: clitoromegaly, labial fusion. **Androgen insensitivity** — 46,XY with female external genitalia. **Hypospadias** — failed fusion of urogenital folds in males.

Tissue	Histology
Labia majora	Thick skin, hair follicles, sebaceous + sweat glands, fat
Labia minora	Thin hairless skin, rich vessels, sebaceous glands, melanocytes
Vestibule / vagina	Stratified squamous non-keratinised; vagina glycogen-rich (oestrogen)
Bartholin's gland	Branched tubuloalveolar, mucin-secreting

6 Female Genital Mutilation

Partial or total removal of, or other injury to, the external female genitalia for **non-medical reasons** (WHO). Illegal in the UK (**FGM Act 2003**; Scotland 2005).

WHO type	Description
Type I	Clitoridectomy: removal of the clitoris and/or prepuce
Type II	Excision: clitoris + partial/total labia minora ± labia majora

WHO type	Description
Type III	Infibulation: narrowing of the vaginal opening by a covering seal (labia cut and repositioned) ± clitoris removed
Type IV	All other harmful procedures — pricking, piercing, incising, scraping, cauterisation

UK DUTIES (RCOG GTG 53)

- **Mandatory police report** if FGM is found in a girl **under 18**
- Record in the **FGM Enhanced Dataset**
- Safeguarding assessment — including daughters and future daughters
- **Re-infibulation is illegal**

COMPLICATIONS + CARE

- Acute: bleeding, infection, retention, death
- Chronic: pain, UTI, dysmenorrhoea, dyspareunia, infertility, psychological harm
- Obstetric: prolonged/obstructed labour, PPH, tears, fistula
- **De-infibulation** (type III) — antenatally or in labour; MDT support

7 Clinical Correlations

BARTHOLIN'S CYST / ABSCESS

- Cyst: painless, fluctuant at 4 or 8 o'clock • Abscess: hot, painful, often febrile
- **Word catheter** (4–6 weeks) or **marsupialisation** (recurrent)
- Antibiotics if cellulitis; screen for STIs
- **Postmenopausal: excise/biopsy** — Bartholin's carcinoma is rare

VULVAL CANCER

- ~90% squamous; mostly postmenopausal
- HPV pathway (younger, usual VIN) vs non-HPV (older, lichen sclerosus, differentiated VIN)
- Lump, ulcer, itch, bleeding
- Wide local excision + **inguinofemoral** node dissection or **sentinel node** (GROINSS-V: unifocal <4 cm, clinically node-negative)

LICHEN SCLEROSUS + LICHEN PLANUS

- LS: white 'parchment' skin, fissures, loss of architecture, labial fusion, narrowed introitus; ~5% SCC risk; **clobetasol**
- LP: erosive lesions, Wickham's striae, vaginal synechiae; topical steroids

OTHER

- **VIN**: usual (HPV) vs differentiated (non-HPV) — excise or imiquimod
- **Vulvodynia**: pain without cause (vestibulodynia) — MDT
- **Warts**: HPV 6/11 — podophyllotoxin, imiquimod, cryotherapy

EXAM HOOK

Vulval examination: lithotomy • inspect skin and architecture • palpate Bartholin's, urethra, masses • speculum and bimanual • document with body maps/photographs (consent) • vulvoscopy with acetic acid in specialist clinics.

8 MRCOG Exam Pearls — Last-Minute Page

Numbers to know

2 Perineal triangles	4 & 8 o'clock — Bartholin's	S2–S4 Pudendal nerve	L1 Ilioinguinal
4 WHO FGM types	<18 Mandatory FGM report	<4 cm Vulval SLN (GROINSS-V)	~5% SCC risk in LS

HIGH-YIELD CHECKLIST

- ☐ Diamond split by the inter-tuberous line: urogenital (front) and anal (back) triangles.
- ☐ UG triangle closed by the perineal membrane; anal triangle holds the ischioanal fossae and Alcock's canal.
- ☐ Labia majora = scrotum homologue; round ligament ends there.
- ☐ Labia minora: prepuce and frenulum in front, fourchette behind.
- ☐ Clitoris = penis homologue; crura under ischiocavernosus; bulbs under bulbospongiosus.
- ☐ Bartholin's: 4 and 8 o'clock; superficial pouch; Cowper's homologue.
- ☐ Skene's: paraurethral; prostate homologue.
- ☐ Pudendal (S2–S4) main nerve; ilioinguinal and genitofemoral to the front; posterior femoral cutaneous laterally.
- ☐ Vulval lymph: superficial → deep inguinal (Cloquet's) → external iliac; midline drains bilaterally.
- ☐ FGM: WHO types I–IV; illegal; mandatory report under 18; RCOG GTG 53.
- ☐ Bartholin's abscess: Word catheter or marsupialisation; biopsy if postmenopausal.
- ☐ Lichen sclerosus: clobetasol; ~5% SCC risk.

Quick-fire self-test — cover the right-hand column

Question	Answer
What divides the perineum into two triangles?	A line between the ischial tuberosities
Lateral boundaries of the anal triangle?	Sacrotuberous ligaments
Where does the round ligament end?	Labium majus
What do the labia minora form behind?	The fourchette
Which muscle covers the clitoral crura?	Ischiocavernosus
Male homologue of Bartholin's glands?	Bulbourethral (Cowper's) glands
Male homologue of Skene's glands?	Prostate
Nerve supplying the mons and anterior labia?	Ilioinguinal (+ genital branch of genitofemoral)
First nodes draining the vulva?	Superficial inguinal
WHO FGM type with narrowing of the introitus?	Type III (infibulation)
Treatment of lichen sclerosus?	Potent topical steroid (clobetasol)

9 References

- Standring S, editor. Gray's Anatomy. 42nd ed. 2020.
- Moore KL et al. Clinically Oriented Anatomy. 8th ed. 2017.
- RCOG Green-top Guideline No. 53. Female Genital Mutilation and its Management. 2015.
- RCOG Green-top Guideline No. 58. The Management of Vulval Skin Disorders. 2011.