PIPADOR REVISION

MRCOG Part 1 Revision Notes

Skin

PHYSIOLOGY • LECTURE 157

VISUAL EXAMINATION REVISION NOTES

2026 Edition

157

MRCOG PART 1 REVISION NOTES | PHYSIOLOGY

Skin

Skin structure and function, physiological changes of pregnancy, pregnancy dermatoses and clinical correlations

≈ 2 m²	≈ 4 weeks	50–90%	≈ 50–70%
Largest organ (≈ 15% body weight)	Epidermal turnover	Striae gravidarum	Melasma in pregnancy

■ KEY FACTS: Learning objectives

- Describe skin structure, cells, appendages and functions.
- Describe physiological skin, hair and nail changes in pregnancy and their mechanisms.
- Distinguish the pregnancy-specific dermatoses.
- Relate skin physiology to the neonate, vulval skin and surgery.

157.1 Structure of the skin

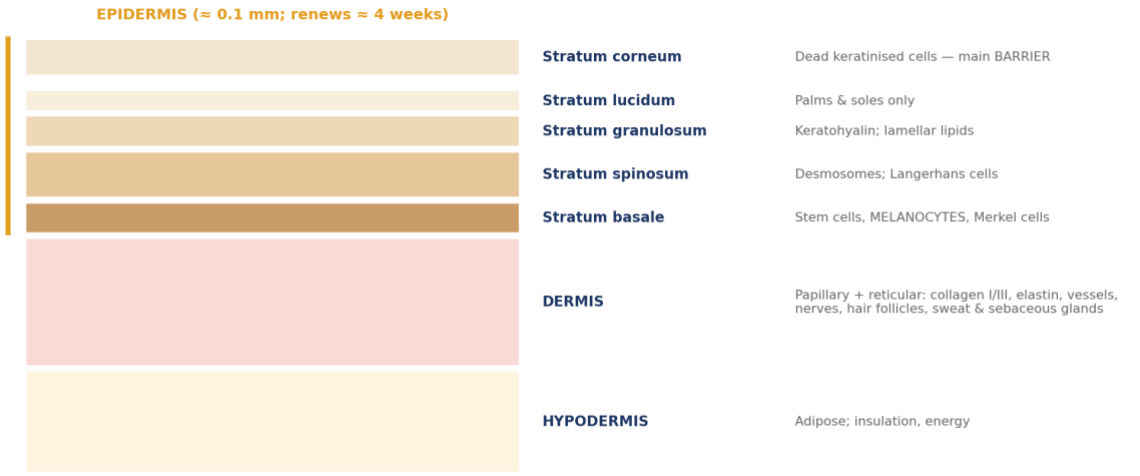


Figure 157.1 — Layers of the skin

Cell / appendage	Function
Keratinocytes	≈ 90% of epidermal cells; keratin barrier; cytokines
Melanocytes	Basal layer (neural crest); melanin transferred to keratinocytes; number similar across ethnicities — activity differs; stimulated by MSH, ACTH, oestrogen, progesterone, UV
Langerhans cells	Antigen-presenting dendritic cells (spinosum)
Merkel cells	Touch mechanoreceptors
Eccrine glands	Thermoregulatory sweat (sympathetic cholinergic); everywhere
Apocrine glands	Axilla, anogenital, areola; open into hair follicles; puberty — hidradenitis suppurativa
Sebaceous glands	Sebum (androgen-driven) — acne
Hair follicles	Cycle: anagen (growth, ≈ 85–90%) → catagen → telogen (rest, ≈ 10–15%)

Barrier
Water, microbes, chemicals, UV

Thermoregulation
Sweat, vasodilatation (AV anastomoses)

Vitamin D
UVB → D_3

Sensation & immunity
Nerve endings; Langerhans cells

157.2 Physiological changes in pregnancy

Category	Changes	Mechanism / notes
Pigmentation	Linea nigra, darkening of areolae, genitals, axillae, recent scars; melasma (chloasma) — face	↑ MSH, oestrogen, progesterone; worse with sun; melasma may persist (sun protection)
Connective tissue	Striae gravidarum (abdomen, breasts, thighs)	Stretch + ↑ adrenocortical hormones/relaxin; genetics; fade to silvery but permanent
Vascular	Spider naevi, palmar erythema, varicose veins, haemorrhoids, vulval varices, non-pitting oedema, gingival hyperplasia / pyogenic granuloma (epulis gravidarum)	Oestrogen + ↑ blood volume + venous pressure; most regress postpartum
Hair	Thicker hair (↑ anagen) → postpartum telogen effluvium 1–5 months after birth; mild hirsutism	Hormonal; effluvium recovers within ≈ 6–12 months
Nails	Faster growth, brittleness, onycholysis	—
Glands	↑ Eccrine (except palms), ↓ apocrine activity; Montgomery's tubercles (areolar sebaceous glands)	Heat dissipation
Pruritus	Common (≈ 20%)	Always check bile acids and LFTs if itching without rash (ICP)

157.3 Pregnancy-specific dermatoses

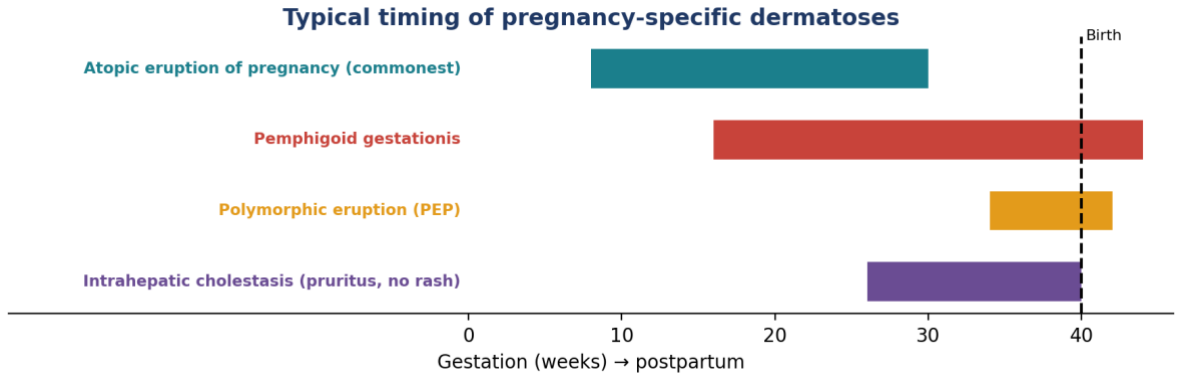


Figure 157.2 — Typical timing of pregnancy dermatoses

Condition	Features	Fetal risk / management
Atopic eruption of pregnancy	Commonest (≈ 50%); eczematous/papular, early onset (< 3rd trimester); personal/family atopy	None; emollients, topical steroids
Polymorphic eruption of pregnancy (PEP)	Primigravidae, 3rd trimester, multiple pregnancy; urticarial papules within striae, periumbilical sparing	None; resolves within weeks; does not usually recur
Pemphigoid gestationis	Autoimmune — IgG to BP180 (collagen XVII); periumbilical urticarial plaques → tense blisters; can flare at delivery and with COC; recurs earlier in later pregnancies	FGR, preterm birth; transient neonatal blisters (≈ 10%); systemic steroids
Intrahepatic cholestasis of pregnancy	Pruritus without primary rash — palms and soles, worse at night; excoriations; ↑ bile acids (≥ 19 µmol/L), ALT	Stillbirth risk ↑ with bile acids ≥ 100 µmol/L; timing of birth by bile acids

Condition	Features	Fetal risk / management
		(RCOG GTG 43, 2022); ursodeoxycholic acid for symptoms

157.4 Other clinical correlations

Topic	Key points
Neonatal skin	Vernix caseosa (sebaceous + desquamated cells; antimicrobial, moisturising); lanugo (shed ≈ 32–36 wk); preterm skin thin with poor stratum corneum → ↑ water and heat loss, absorption of topical agents (plastic wraps at birth)
Vulval skin	Keratinised stratified squamous; lichen sclerosus (autoimmune; ↑ SCC risk), lichen planus, VIN; post-menopausal atrophy
Surgery	Skin closure, Langer's lines (Pfannenstiel follows them → better scars); keloids more common in darker skin (Lecture 162)
Drugs	Isotretinoin teratogenic; topical steroids safe; tetracyclines avoided (teeth/bone)

157.5 Must-know summary

■ **EXAM TIP**

- Epidermis layers (deep → superficial): **basale, spinosum, granulosum, lucidum, corneum**; melanocytes in the basal layer.
- Pregnancy: **linea nigra, melasma** (MSH/oestrogen), **striae**, spider naevi and palmar erythema (oestrogen), postpartum **telogen effluvium**.
- **PEP** spares the umbilicus, 3rd trimester, primigravida, benign; **pemphigoid gestationis** is periumbilical, blistering, anti-BP180, FGR.
- Itch without rash → **ICP** (bile acids).

■ **MNEMONIC / MEMORY AID**

Epidermis — 'Come, Let's Get Sun Burnt': Corneum, Lucidum, Granulosum, Spinosum, Basale (superficial → deep).