PIPADOR REVISION

MRCOG Part 1 Revision Notes

Menopause

ENDOCRINOLOGY • LECTURE 167

VISUAL EXAMINATION REVISION NOTES

2026 Edition

MRCOG PART 1 REVISION NOTES | ENDOCRINOLOGY

167 Menopause

Definitions and endocrinology, symptoms and consequences, diagnosis, HRT and alternatives, contraception and POI

51 yr	12 months	< 40 yr	≈ 75–80%
Mean age of menopause (UK)	Amenorrhoea to diagnose (retrospective)	Premature ovarian insufficiency (≈ 1%)	Women with vasomotor symptoms

■ KEY FACTS: Learning objectives

- Define menopause, perimenopause, early menopause and POI, and describe the endocrine changes.
- Explain the mechanisms of vasomotor symptoms and the long-term consequences of oestrogen deficiency.
- Describe diagnosis (NICE NG23) and the pharmacology, benefits and risks of HRT and non-hormonal treatments.
- Describe contraception in the perimenopause and management of POI.

167.1 Definitions and endocrinology

Term	Definition
Menopause	Permanent cessation of menstruation from loss of follicular activity — diagnosed retrospectively after 12 months' amenorrhoea; final menstrual period (FMP) mean 51 yr
Perimenopause / menopausal transition	From onset of cycle irregularity and symptoms to 12 months after the FMP
Early menopause	40–45 years
Premature ovarian insufficiency	< 40 years; oligo/amenorrhoea ≥ 4 months + FSH > 25 IU/L on two samples ≥ 4 weeks apart
Surgical / iatrogenic	Bilateral oophorectomy (abrupt, severe symptoms), chemotherapy, pelvic radiotherapy, GnRH analogues

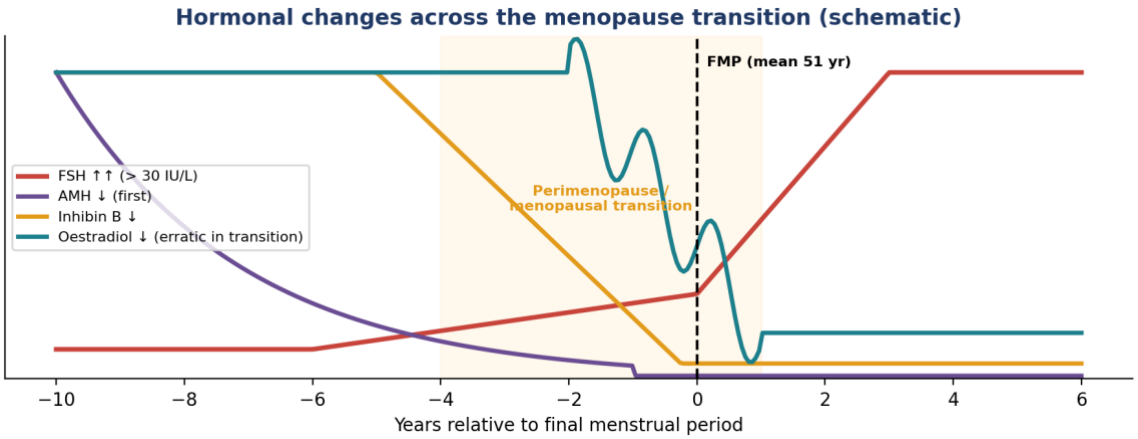


Figure 167.1 — Hormonal changes across the menopause transition

- Follicle depletion → **↓ AMH** (earliest marker) and **↓ inhibin B** → **↑ FSH** (loss of negative feedback) → accelerated follicle recruitment, shorter follicular phases, then erratic anovulatory cycles with **fluctuating oestradiol** (sometimes very high).
- After menopause: **FSH > 30 IU/L**, LH ↑, **oestradiol low**; main oestrogen becomes **oestrone** (adipose aromatisation of androstenedione). Ovarian stroma and adrenals continue to produce androgens (testosterone falls gradually with age, abruptly after oophorectomy).

167.2 Symptoms and consequences

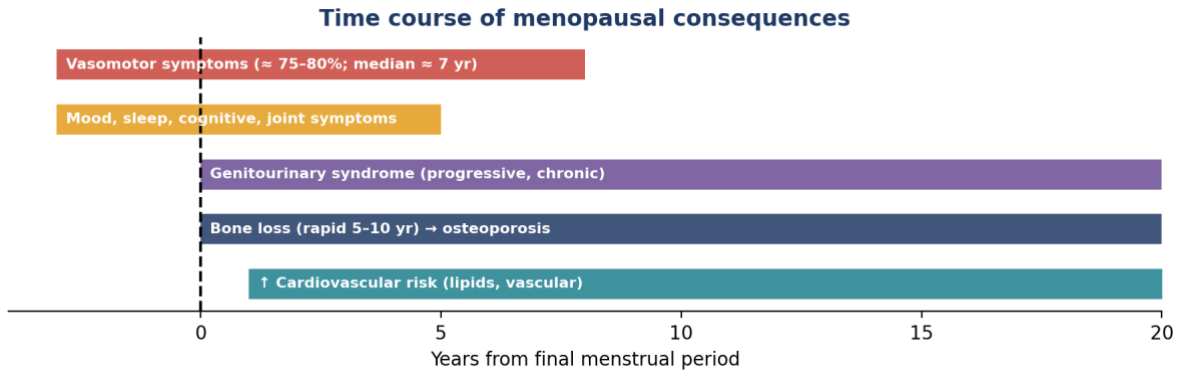


Figure 167.2 — Time course of menopausal consequences

Consequence	Mechanism / features
Vasomotor symptoms	Oestrogen withdrawal → hypertrophy/hyperactivity of KNDy neurons (↑ neurokinin B) → narrowed thermoneutral zone in the hypothalamus → small core temperature rises trigger heat dissipation (flushes, sweats); median duration ≈ 7 years. Target of NK3 receptor antagonists (fezolinetant)
Genitourinary syndrome of menopause	Atrophy of oestrogen-dependent vulvovaginal, urethral and bladder epithelium: dryness, dyspareunia, ↑ vaginal pH (loss of lactobacilli), recurrent UTI, urgency — progressive without treatment
Bone	↑ RANKL, ↓ OPG → rapid trabecular loss (≈ 2–3%/yr for 5–10 yr) → osteoporosis, vertebral, wrist and hip fractures (Lecture 156)
Cardiovascular	Adverse lipids (↑ LDL), central fat, endothelial dysfunction → CVD risk rises; early menopause/POI ↑ risk
Psychological / other	Mood, sleep, cognition ('brain fog'), joint pains, ↓ libido, skin collagen loss

167.3 Diagnosis (NICE NG23)

- **Over 45** with typical symptoms: diagnose **clinically** — perimenopause (vasomotor symptoms + irregular periods) or menopause (no period for 12 months, or symptoms if no uterus). **FSH testing not needed**.
- Consider **FSH** in women **40–45** with symptoms/cycle change, and **< 40** with suspected POI (two FSH levels 4–6 weeks apart). FSH is unreliable on combined hormonal contraception or high-dose progestogens.
- **AMH** is not recommended to diagnose menopause.

167.4 Hormone replacement therapy

Situation	Regimen
No uterus (hysterectomy)	Oestrogen alone
Uterus present	Oestrogen + progestogen (endometrial protection): sequential/cyclical if perimenopausal or < 12 months since LMP; continuous combined if > 12 months postmenopausal (no bleeds); LNG-IUS as progestogen
Routes	Oral, transdermal (patch, gel, spray — no ↑ VTE; preferred with VTE risk, migraine, BMI > 30, liver disease), vaginal (local GSM — minimal systemic absorption, no progestogen needed)
Other	Tibolone (synthetic steroid with oestrogenic, progestogenic and androgenic metabolites); testosterone for low sexual desire if HRT alone ineffective; ospemifene/vaginal DHEA for GSM

Outcome	Effect of HRT (NICE NG23, updated)
Vasomotor & GSM symptoms	Most effective treatment
Osteoporosis/fractures	↓ Fracture risk while taking

Outcome	Effect of HRT (NICE NG23, updated)
Breast cancer	Combined HRT: small ↑ risk, increasing with duration; some excess persists for years after stopping. Oestrogen-only: little or no change. Individualise counselling
Venous thromboembolism	↑ with oral HRT; transdermal at standard doses not above baseline
Stroke	Small ↑ with oral oestrogen (baseline low under 60)
Coronary heart disease	Not ↑ when started < 60 yr (timing hypothesis)
Endometrial cancer	↑ with unopposed oestrogen; protected by adequate progestogen
Dementia, ovarian cancer	Uncertain/small effects

■ RED FLAGS

- Contraindications include **current/past breast cancer**, other oestrogen-dependent cancers, **undiagnosed vaginal bleeding**, untreated endometrial hyperplasia, **active VTE** (transdermal may be considered with specialist advice for past VTE), active arterial disease, severe liver disease, pregnancy.
- **Unscheduled bleeding** on HRT (persisting > 3–6 months after starting or new after amenorrhoea) → investigate (TVS ± endometrial biopsy).

Non-hormonal options	Notes
SSRIs/SNRIs (venlafaxine, citalopram)	Vasomotor symptoms; avoid paroxetine/fluoxetine with tamoxifen (CYP2D6)
Gabapentin, clonidine, oxybutynin	Vasomotor second-line
Fezolinetant (NK3 receptor antagonist)	Targets KNDy pathway; monitor LFTs
CBT	Effective for vasomotor symptoms and mood
Bisphosphonates, denosumab, raloxifene	Osteoporosis (raloxifene ↑ VTE, worsens flushes)

167.5 Contraception and POI

- **Contraception** (FSRH): needed until **1 year after the LMP if ≥ 50**, **2 years if < 50**, or until **age 55** (stop all methods). HRT is **not contraceptive** (except when the progestogen is an LNG-IUS 52 mg).
- **POI** (< 40): idiopathic, genetic (**Turner, FMR1 premutation**), autoimmune (thyroid, adrenal — screen), iatrogenic. Offer **HRT or COC until at least the average age of menopause** (bone, cardiovascular, cognitive protection); fertility via **egg donation**; spontaneous pregnancy ≈ 5–10%; DXA.

167.6 Must-know summary

■ EXAM TIP

- Menopause = 12 months' amenorrhoea (mean 51); POI < 40 (FSH > 25 twice).
- **AMH ↓ first**, then inhibin B ↓ → **FSH ↑**; oestrone becomes the main postmenopausal oestrogen.
- Flushes: **KNDy neurons/NKB** narrow the thermoneutral zone.
- Over 45 with symptoms: **clinical diagnosis** — no FSH test.
- Uterus → add progestogen; **transdermal oestrogen does not ↑ VTE**; combined HRT ↑ breast cancer with duration; HRT < 60 does not ↑ CHD.

■ MNEMONIC / MEMORY AID

Contraception — '1 over 50, 2 under 50, stop at 55'. **HRT contraindications — 'BUVL'**: Breast (oestrogen-dependent) cancer, Undiagnosed bleeding, VTE (active), Liver disease (severe).