evaluation and management of menopause and the perimenopause

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BMJ Best Practice

Menopause

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THE KOREAN SOCIETY OF MENOPAUSE PAGES

The 2025 Menopausal Hormone Therapy Guidelines - Korean Society of Menopause

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The Epidemiology and Effects of Menopause

- **Prevalence of Symptoms:**
  - 25% of women experience debilitating menopausal symptoms.

- **Definition:**

Post menopause is defined as 1 year after a woman's last period

Premature Ovarian Insufficiency (POI)

  - Loss of ovarian function before age 40
  - Affects 1–3% of women

- **Symptom Onset:**
  - Symptoms may begin during **perimenopause**

European Journal of Endocrinology, 2025

Common Menopause Symptoms

- **Most Frequent Symptoms:**
  - **Vasomotor Symptoms (VMS):** hot flushes, night sweats (can persist ≥7 years)
  - **Mood Changes:** low mood, irritability
  - **Urogenital Symptoms:** vaginal dryness, urinary issues

- **Other Symptoms:**
  - Sleep disturbances (may occur independently or due to VMS)
  - Anxiety, palpitations
  - Muscle and joint discomfort
  - Headaches and migraines

Some symptoms not directly caused by oestrogen deficiency may still respond to MHT

European Journal of Endocrinology, 2025

MenoPause Management

Treatment is indicated when menopausal symptoms interfere with daily functioning and quality of life.

Assessment
Identify the prevailing symptoms
Explain lifestyle modification options
Explain drug therapy options, including benefits and risks

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Baseline examinations required prior to MHT

History taking

- Cardiovascular disease (coronary artery disease, stroke, venous thromboembolism, hypertension, etc.)
- Thyroid disorders
- Liver disease
- Breast cancer
- Endometrial cancer
- Osteoporosis
- Diabetes
- Dementia
- Psychiatric disorders such as depression
- Lifestyle habits (smoking, alcohol, etc.)

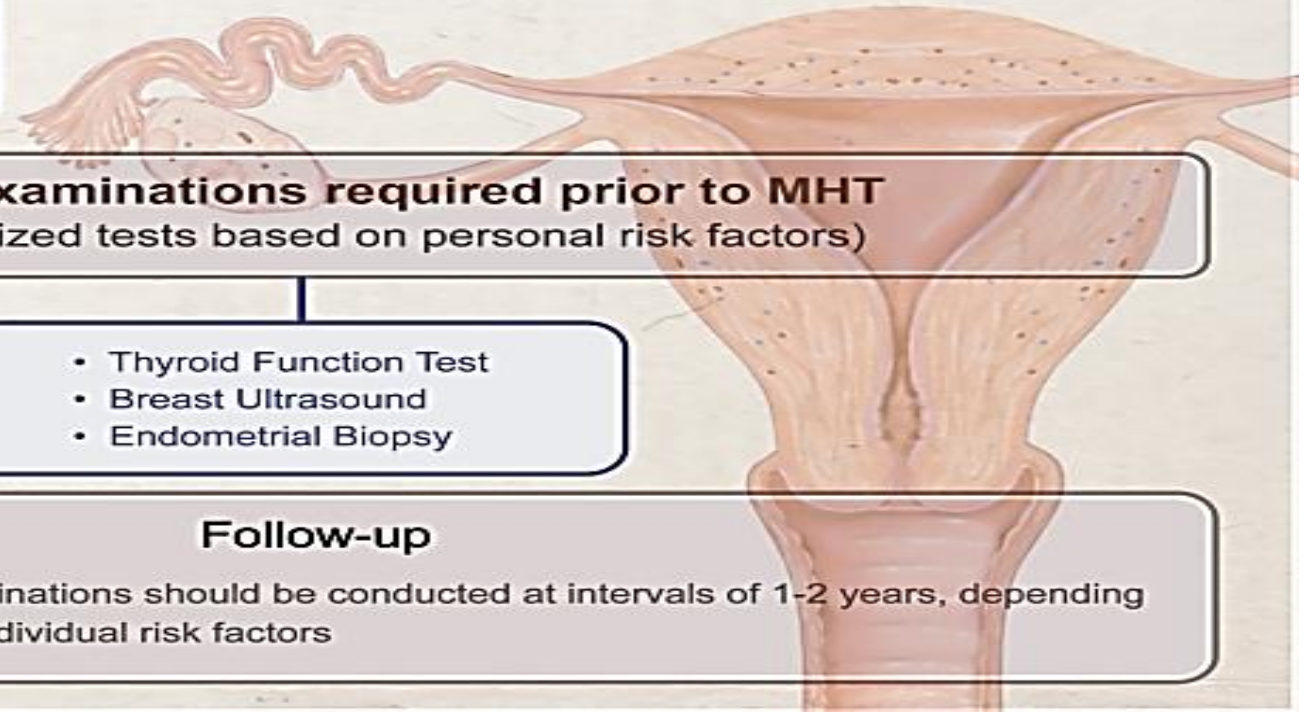
Physical Examination

- Height, body weight, blood pressure
- Pelvic examination
- Breast examination
- Thyroid examination

Blood Tests

- Liver function tests
- Renal function tests
- Lipid profiles
- Glucose level
- Complete blood count

- Mammography
- Bone densitometry
- Pap smear
- Pelvic ultrasound (It is reasonable to consider this a basic test in Korea considering cost-effectiveness)



Optional examinations required prior to MHT

(Individualized tests based on personal risk factors)

- Thyroid Function Test
- Breast Ultrasound
- Endometrial Biopsy

Follow-up

Baseline and optional examinations should be conducted at intervals of 1-2 years, depending on clinical symptoms and individual risk factors

Examinations required prior to MHT.
MHT: menopausal hormone therapy.

The Korean Society of Menopause 2025

MenoPause Management

Principles of Hormone Therapy

Use the **lowest** effective **dose**

Use for the **shortest duration** necessary

No predetermined maximum duration, since symptom duration cannot be predicted

Decisions must be **individualised**

Follow-up

Reassess at least **annually**

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Table 2. Dosage of estrogens

	Standard dose (mg/d)	Low dose (mg/d)	High dose (mg/d)
Oral conjugated equine estrogen	0.625	0.3, 0.45	0.9, 1.25
Oral E2 valerate	2.0	1.0	-
Oral E2 acetate	0.9	0.45	1.8
Transdermal 17β-E2 patch	0.0375, 0.05	0.025	0.06, 0.075, 0.1

E2: estradiol, -: not available.

Types of Progesterone

Natural Micronized Progesterone

- **Bioidentical** to endogenous progesterone produced by the corpus luteum
- Minimizes hormone-related CV risks compared to synthetic progestogens

- Neutral or potentially beneficial effect on blood pressure
- Better safety profile regarding thrombotic risk

- Fewer psychological side effects
- Associated with a lower risk of breast cancer compared to synthetic progestins

- Available in oral micronized form with improved bioavailability versus non-micronized progesterone

Synthetic Progestins

1)Medroxyprogesterone Acetate (MPA)

•Most extensively studied progestin with proven endometrial efficacy

•Negatively affects CV risk through:
- Lipid profile changes
- Vasomotion effects
- Carbohydrate metabolism alterations

•Associated with *more physical symptoms than norethindrone*
•May cause fatigue, fluid retention, lipid alterations, and dysphoria

2)Norethindrone Acetate (NA)

- First-generation synthetic progestin
- Twice as potent as norethindrone by weight

- Rapidly deacetylated to norethindrone after oral administration
- Worse profile regarding blood pressure and renal function

- Induces more negative mood symptoms than MPA in women without PMS history
- Strong off-target activity on androgen and glucocorticoid receptors

- May contribute to acne and adverse metabolic effect.

Eligibility and Risk Considerations for MHT

- **Low-Risk Women Suitable for MHT:**
  - <60 years old or within 10 years of menopause onset
  - 10-year ASCVD risk <5%
  - No increased breast cancer risk or personal history of VTE

- **Intermediate/High-Risk Considerations:**
  - Women with increased VTE risk or intermediate CVD risk (e.g., obesity, controlled diabetes, older age)
  - **Recommendation:** Use transdermal oestradiol

European Journal of Endocrinology, 2025

Contraindications for MHT include

- unexplained vaginal bleeding
- estrogen-dependent malignancies (e.g., breast cancer or endometrial cancer)
- active thromboembolic disease
- liver dysfunction or gallbladder disease
- CV conditions (e.g., CAD, stroke, PTE or DVT)
- pregnancy

Initial presentation with mild vasomotor symptoms

1st : Lifestyle Changes for Managing Menopausal Symptoms

General Measures

- Limited evidence

- Weight loss (when appropriate) and increased exercise
  → benefits for CV and bone health and overall wellbeing
  (but **no clear effect on hot flushes** or **bone density**).

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Initial presentation with mild vasomotor symptoms

1st Lifestyle Changes for Managing Menopausal Symptoms

- Encourage **weight management** and **regular exercise** (≥30 min most days)
- Balanced diet and nutritional **supplements** (calcium, vitamin D)

Cooling Techniques

Layered clothing

- **Relaxation training:** may **moderately reduce hot flushes**
- Avoid: **spicy foods**, **alcohol**, **caffeine**, **warm environments**, **stress**
  - Alcohol and caffeine may **worsen vasomotor symptoms**.

- **Yoga ,exercise**: moderately effective **short-term** for **psychological** symptoms
- No effect on somatic, vasomotor, or urogenital symptoms

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women with a uterus, **moderate to severe hot flushes, with/without reduced libido**

- **Amenorrhoea >12 months**

Requires **oestrogen + progestin** to protect against endometrial hyperplasia/cancer

- **Oestrogen** is the **most effective** vasomotor symptom treatment (reduces hot flushes by **80–90%**)

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women with a uterus, moderate to severe hot flushes, with/without reduced libido

- **Amenorrhoea >12 months**

1st : Continuous combined regimen; Simple to follow

- **Breakthrough bleeding after 6 months** → evaluate with pelvic ultrasound ± biopsy and consider switching to a **sequential regimen**

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Primary options

» oestrogens, conjugated/ medroxyprogesterone: 0.3/1.5 mg orally once daily

OR

» estradiol/norethisterone transdermal

Secondary options

» medroxyprogesterone: 2.5 mg orally once daily **AND**

» conjugated oestrogens: 0.3 to 1.25 mg orally once daily

-or-

» oestrogens, esterified: 0.3 to 1.25 mg orally once daily

-or-

» estradiol transdermal

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Hormonal Therapy in Women With a Uterus

Transdermal vs. Oral Oestrogen

- Transdermal preferred when:
  - Higher thrombotic risk (e.g., **BMI >30**)
  - Concomitant medications
  - Borderline triglycerides
  - bRisk of gallstones
  - Difficulty with daily pills

- May reduce thromboembolism risk (no first-pass effect)
- Possibly lower nausea

- **Safety:**
  - Long-term risks likely similar to oral oestrogens
  - NICE: Standard-dose transdermal oestrogen **does not increase VTE risk**

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Hormonal Therapy

menstrual irregularity and periods of amenorrhoea (perimenopause)

1st Sequential Regimen

- **Hormonal Therapy Components:**
  - **Oestrogen + Progestin** (progestin added to protect endometrium)
  - Oestrogens are the **most effective treatment** for vasomotor symptoms
    - Reduce hot flushes by **80–90%**

- **Sequential Regimen:**
  - **Progestin added for the last 10–14 days** of each cycle
  - Designed for women who are still menstruating or in the **perimenopausal transition**

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2nd Conjugated Oestrogens + Bazedoxifene 0.45/20 mg orally once daily

- Approved in several countries for women with an **intact uterus** :
  - Vasomotor symptom treatment
  - Osteoporosis prevention

- **Benefits Compared with CE/MPA:**
  - Fewer adverse events
  - **No progestin required**

- **Breast Tissue Effect:**
  - Bazedoxifene has a **favourable anti-oestrogenic effect** on breast tissue

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3rd SSRIs & SNRIs

Effective for **hot flushes and VMS** in women **unable to take hormone therapy**

SSRIs and SNRIs offer a **non-hormonal treatment option** for managing vasomotor symptoms

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3rd SSRIs & SNRIs

Primary Options

- **Paroxetine:** 7.5 mg orally once daily
- Only **paroxetine** is approved for moderate to severe menopausal VMS

- **Escitalopram:** 10–20 mg orally once daily
- **Escitalopram** may be more effective than other SSRIs in reducing hot flushes

- **Venlafaxine (extended-release):** 37.5–75 mg orally once daily
  - 8-week RCT: reduced VMS by **1.8 episodes/day vs placebo**

Des venlafaxine:100mg/d

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3rd SSRIs & SNRIs

Secondary Options

- **Fluoxetine:** 10–20 mg orally once daily
- **Citalopram:** 10–30 mg orally once daily

Use: Non-hormonal management of vasomotor symptoms (e.g., hot flushes)

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4th Gabapentin for Hot Flushes

- **Initial:** 300 mg orally once daily Increase gradually up to 300 mg 3 times daily if needed
- **Maximum:** 2400 mg/day

Efficacy

- Moderately effective for **hot flushes**

Adverse Effects

- **Drowsiness, dizziness, unsteadiness**
- Daytime lethargy may be intolerable

Clinical Tips

- For **night sweats:** take only at night
- For **daytime hot flushes:** consider **gradual dose escalation** if other options unavailable

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5th clonidine for Hot Flushes

- **Primary:** Transdermal patch 0.1 mg/24 hr once weekly (preferred)
- **Secondary:** Oral 0.05–0.2 mg (immediate-release) once or twice daily

Efficacy

- Reduces hot flushes but is **Less effective** than SSRIs, SNRIs, or gabapentin

Adverse Effects

- **Hypotension** may limit treatment
- Monitor blood pressure during therapy and after discontinuation

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***women without a uterus or with levonorgestrel-releasing intrauterine device fitted in the last 5 years*, moderate to severe hot flushes, with/ without reduced libido**

1st Oestrogen-Only Therapy

Primary Options : Estradiol (transdermal)

Secondary Options

- **Conjugated oestrogens:** 0.3–1.25 mg orally once daily
- **Esterified oestrogens:** 0.3–1.25 mg orally once daily

- Effective for **vasomotor symptoms, night sweats, and other menopausal symptoms**

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Transdermal Estradiol for Menopause

Effective **non-oral option** for vasomotor symptom management

Efficacy

•12-week multi-centre RCT: **significantly** reduced **frequency** and **severity** of moderate to severe hot flushes at weeks 4 and 12 vs placebo

Common Side Effects

•Headache
•Infection
•Insomnia
•Breast pain
•Nausea

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2nd SSRIs & SNRIs for Menopause (Non-Hormonal Therapy)

Primary Options

- **Paroxetine:** 7.5 mg orally once daily
- **Escitalopram:** 10–20 mg orally once daily
- **Desvenlafaxine:** 100 mg orally once daily
- **Venlafaxine (extended-release):** 37.5–75 mg orally once daily

Secondary Options

- **Fluoxetine:** 10–20 mg orally once daily
- **Citalopram:** 10–30 mg orally once daily

Use

- Management of **vasomotor symptoms (hot flushes)** in women **unable to take hormone therapy**

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3rd Gabapentin for Hot Flushes

Initial: 300 mg orally once daily Gradually increase to 300 mg three times daily if needed

•**Maximum:** 2400 mg/day

Efficacy

•Moderately effective for **hot flushes**

4rd Clonidine for Hot Flushes

Primary Option : Transdermal patch: 0.1mg/24 hr, once weekly

Secondary options : clonidine: 0.05-0.2 mg orally (immediate release) 1-2/d

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Genitourinary Symptoms: First-Line and Vaginal Hormone Therapy

- **First-Line Treatment:**
  - Non-hormonal lubricants and moisturizers

- **When Non-Hormonal Therapy Fails:**
  - **Vaginal hormone therapy options:**
    - Low-dose local oestradiol
    - Estriol (less potent oestrogen)
    - DHEA (converted to oestrogen, use lowest effective dose)
    - **Tibolone** has been shown to **effectively improve female sexual dysfunction**, particularly by enhancing **sexual desire and arousal**

European Journal of Endocrinology, 2025

Urogenital Atrophy only
Symptoms : (dryness, irritation, dyspareunia, urinary urgency/frequency)

1th : Vaginal Oestrogen Therapy

are effective for urogenital atrophy and can be used **alone** with or without vaginal moisturizers (**Progestin replacement not required)**

- **Safety**: Can be used in women **without hormone-dependent cancer**
- **No evidence** to recommend endometrial surveillance
- **No increased risk** of CVD, invasive breast cancer, or endometrial cancer
- Serum estradiol remains within **postmenopausal norms** (except high-dose cream)

Efficacy : May **reduce UTI**

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Urogenital Atrophy only – Vaginal Oestrogen Therapy

Primary Options

- **Conjugated vaginal oestrogen cream (0.625 mg/g):**
  - Insert 0.5–2 g daily for 21 days, then no treatment for 7 days, repeat
  - Or 0.5 g **twice weekly** for maintenance
- **Estradiol vaginal tablets (10 µg):**
  - 1 tablet daily for 2 weeks, then **twice weekly** thereafter
- **Estradiol intravaginal ring:**
  - 7.5–50–100 µg/24 hr, replace every 3 months
- **Estradiol cream (0.01% or 100 µg/g):**
  - 2–4 g daily for 1–2 weeks, taper to 1 g **1–3 times weekly**
  - Limit single treatment period to **up to 4 weeks**

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GENITOURINARY SYNDROME OF MENOPAUSE AND SEXUAL DYSFUNCTION

Management of Vulvovaginal Atrophy

- In patients with significant vulvar atrophy or mucosal fissures, apply **local treatment** to both the **vaginal and vulvar** areas initially.
- **Symptom improvement** typically occurs within **4–6 weeks**.
- Maintenance therapy can continue **beyond symptom resolution**.

- **Routine endometrial monitoring** (TVUS or biopsy) is **not required** unless:
  - High-risk factors are present, or
  - Supratherapeutic doses are being used.

- **Long-term use is acceptable**, but **any unexpected vaginal bleeding** should prompt evaluation.

2nd Ospemifene ± Vaginal Moisturiser for Dyspareunia

Primary Option

- **Ospemifene:** 60 mg orally once daily
- **Indication:** Treatment of **dyspareunia** in postmenopausal women

Efficacy

- Increased **percentage of superficial vaginal cells**
- Reduced **dyspareunia** compared with placebo

Adverse Events:

- **Hot flushes** most common (7% vs 4% placebo)

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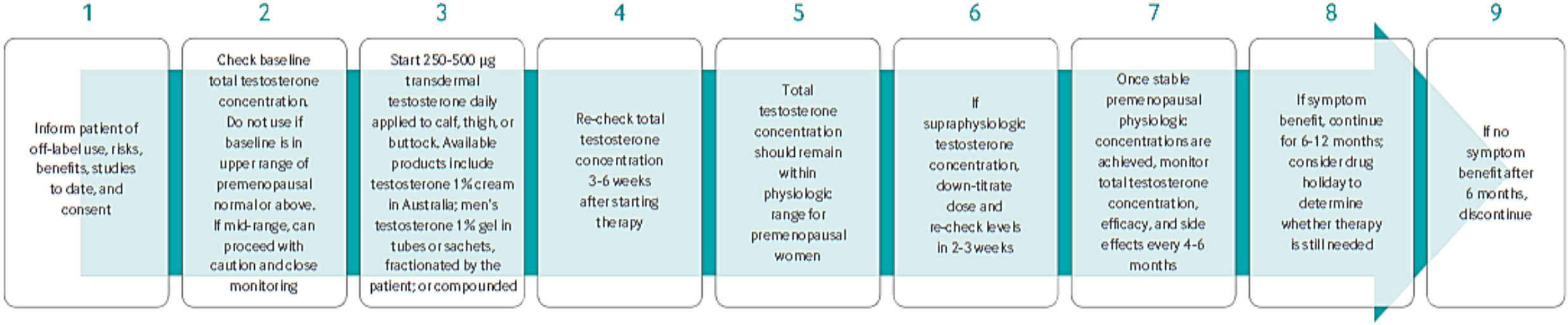

Fig 4 | Guidelines for systemic testosterone use in women with hypoactive sexual desire disorder. Schematic adapted and modified from the International Society for the Study of Women's Sexual Health clinical practice guideline for the use of systemic testosterone for hypoactive sexual desire disorder in women[193]

Management of perimenopausal and menopausal

Inform patient of off-label use, risks, benefits, studies to date, and consent

Check baseline total testosterone concentration. Do not use if baseline is in upper range of premenopausal normal or above. If mid-range, can proceed with caution and close monitoring

Start 250-500 µg transdermal testosterone daily applied to calf, thigh, or buttock. Available products include testosterone 1% cream in Australia; men's testosterone 1% gel in tubes or sachets, fractionated by the patient; or compounded

4

Re-check total testosterone concentration 3-6 weeks after starting therapy

5

Total testosterone concentration should remain within physiologic range for premenopausal women

6

If supraphysiologic testosterone concentration, down-titrate dose and re-check levels in 2-3 weeks

7

Once stable premenopausal physiologic concentrations are achieved, monitor total testosterone concentration, efficacy, and side effects every 4-6 months

8

If symptom benefit, continue for 6-12 months; consider drug holiday to determine whether therapy is still needed

9

If no symptom benefit after 6 months, discontinue

Urinary Stress Incontinence

1th Pelvic floor rehabilitation (exercises, training)
is an effective **non-pharmacologic intervention** for postmenopausal urinary stress incontinence

•Can be combined with **intravaginal estriol** for enhanced effect

Efficacy
•Study: 73.4% of postmenopausal women receiving **estriol + pelvic floor rehab** reported improvement [Control group (estriol only): 9.7% improvement]
•Both groups improved **urogenital atrophy symptoms**

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Emerging Therapies for Menopause Symptoms

1. **DHEA / Prasterone**

- **Mechanism:** Androgen precursor to testosterone and oestrogen
- **Indication:** Postmenopausal dyspareunia due to vulvovaginal atrophy
- **Efficacy: slight improvement** in sexual function
- **Adverse Effects:** Androgenic effects, mainly **acne**
- **Note:** Role remains **uncertain**

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Emerging Therapies for Menopause Symptoms

2. Stellate Ganglion Block

- **Mechanism:** Local anaesthetic block used in pain syndromes and vascular insufficiency
- **Indication:** May reduce **hot flushes** in women **unable to take oestrogen**
- **Evidence:** Preliminary; **further research required**
- These therapies are **experimental options** for select patients with **refractory symptoms**

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Emerging Therapies for Vasomotor Symptoms

3. Tibolone

•**Mechanism:** Steroid with **oestrogen-, progesterone-, and testosterone-like effects**

•**Efficacy:** More effective than placebo but **less effective than standard hormone therapy** for vasomotor symptoms

•**Limitations:**

- **Not recommended** in women with history of **breast cancer**
- May increase **stroke risk** in older women

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Emerging Therapies for Vasomotor Symptoms

4. Fezolinetant

- **Mechanism: Neurokinin 3 (NK3) receptor antagonist**; regulates body temperature in the brain
- **Indication:** Moderate-to-severe vasomotor symptoms associated with menopause

- **Approval:** FDA and EMA

- **Tibolone and fezolinetant** represent **novel options** for women seeking alternatives to traditional hormone therapy

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Therapeutic Considerations for Menopausal Hormone Therapy (MHT)

1. Routes of Administration

- **Transdermal & vaginal**: Avoid first-pass metabolism → minimal impact on triglycerides, CRP, BP
- **Transdermal** preferred for: high VTE risk, metabolic syndrome, HTN , smokers
- **Vaginal** preferred for localized genitourinary symptoms

2. Timing of Initiation

- Greatest benefit: **perimenopause or within 10 years of menopause**, preferably <60 y.
- **POI or early menopause (<45 years):** MHT recommended regardless of symptoms

Therapeutic Considerations for Menopausal Hormone Therapy (MHT)

3. Duration of Therapy

- No fixed duration; **lowest effective dose** with **regular follow-up** is key
- Long-term therapy may be appropriate for women <60 with low risks and persistent symptoms
- Women >65: periodic attempts to taper/discontinue with reassessment
- POI/early menopause: continue **until average age of natural menopause(51y)**

4. Discontinuation Methods

- **Tapering vs abrupt cessation:** no significant difference; choice based on preference

GSM Management in Women With a History of Breast Cancer

- **First-line therapy:**
  - **Non-hormonal** treatments (per ASCO recommendations).

- **Second-line therapy (if symptoms persist):**
  - **Low-dose vaginal estrogen**, *except* in women using **aromatase inhibitors (AIs)**.

- **For women on AIs:**
  - **Vaginal DHEA** may be considered as an alternative.
    Safety data in this group remain **limited**.

- **Ospemifene** (60 mg), a SERM, has estrogenic activity on vaginal tissues without adversely affecting the endometrium or breast in a 52-week clinical trial

MHT in Women with a History of Endometrial Cancer

- **First-Line Treatment:**
  - **Non-hormonal** therapies for symptom relief

- **If Non-Hormonal Therapy Fails:**
  - **Systemic MHT** may be considered in women with:
    - Early-stage endometrial cancer
    - Disease-free status confirmed by oncologist

- **Evidence:**
  - Meta-analysis (1 RCT + 5 observational studies): **no increased risk of cancer recurrence** with MHT

European Journal of Endocrinology, 2025

Endometrial Cancer & Menopausal Hormone Therapy (MHT)

When MHT May Be Considered

•MHT may be offered to women with **stage I, low-grade endometrial cancer** who

1) have undergone **hysterectomy + bilateral salpingo-oophorectomy**
2) have **persistent menopausal symptoms** unresponsive to non-hormonal therapy.

When MHT Is Not Recommended

•Avoid MHT in women with:

- **High-grade or advanced endometrial cancers**
- **Endometrial stromal sarcomas**
- **Leiomyosarcomas**

Ovarian Cancer & Menopausal Hormone Therapy (MHT)

1.Observational studies: Slight increase in risk, mainly **serous ovarian cancer**, in **current or recent MHT users**.

2. Use of MHT in Ovarian Cancer Survivors may be considered for women with **epithelial ovarian cancer** who have significant menopausal symptoms.

3.Avoid MHT in **estrogen-dependent ovarian cancers** such as granulosa cell tumors or serous carcinomas.

4.BRCA Mutation Carriers: Short-term MHT is considered **safe** after risk-reducing **early salpingo-oophorectomy.**

Migraine and Menopausal Hormone Therapy (MHT)

- **Risk:**
  - MHT associated with increased migraine risk
  - Women with migraine **with aura**: ~2-fold increased stroke risk when using MHT

- **Risk Factors**
  - MHT may **worsen migraine symptoms** in women with:
    - Menstrual migraines
    - Migraines starting at menarche
    - History of premenstrual syndrome (PMS)
    - Surgical menopause

Migraine and Menopausal Hormone Therapy (MHT)

- **Management Strategies**
  - Migraine is **not an absolute contraindication** , but requires **careful monitoring**.
  - **If symptoms worsen**:
    - **Reduce estrogen dose**
    - Consider **transdermal formulations** for stable serum estrogen levels
  - **Transdermal** MHT preferred for migraine with **aura** due to superior CV safety
  - Migraine provocation depends on oestrogen levels
  - Use **minimum effective dose** of transdermal oestradiol to reduce symptom exacerbation

  - If migraines remain **refractory**, **discontinue MHT** & use **non-hormonal therapies**.

Cognitive Function and Dementia:

1.Initiating MHT—especially **EPT**—at **age ≥65** increases dementia risk.

2.Starting MHT in **younger menopausal women** or those with **early menopause (e.g., bilateral oophorectomy)** may help reduce cognitive decline.

3.Cognitive outcomes may depend on **baseline cognitive health** at the time MHT is started.

4.MHT is **not recommended** solely for improving cognition or preventing cognitive decline.

Mechanistic Models

- **Timing Hypothesis / Critical Window Hypothesis**
  - MHT may be **beneficial when initiated near menopause**, but **neutral or harmful** if started late.
  - Observational data:
    - Midlife MHT → **lower risk of cognitive impairment**
    - Late-life MHT → **neutral or negative effects**
    - Zandi et al.: >10 years of MHT → **83% lower Alzheimer's risk**, even after discontinuation.

- **Healthy Cell Bias Hypothesis**
  - Benefits of estrogen depend on the **health of neurons**, not age alone.
  - Women with **healthy baseline neural tissue** may benefit from MHT regardless of age.

Colorectal Cancer & Menopausal Hormone Therapy (MHT)

1.Reduced Risk with MHT

1. Observational studies: MHT associated with **20%–40% lower risk** of colorectal cancer.
2. Benefit may **diminish after therapy cessation**.

2.WHI Trial Findings (EPT Group)

1. Reduced incidence of colorectal cancer vs. placebo (**HR 0.62; 95% CI 0.43–0.89**).
2. Diagnosed cancers tended to be **more advanced**, with **higher lymph node involvement**.

Menopausal Hormone Therapy (MHT) and Lung Cancer

•Biological Factors

- Estrogen receptors and aromatase are present in lung cancer tissue → suggests a possible biological link with MHT.
- Meta-analyses show **inconsistent results** regarding this association.

•Impact of Smoking

- Smoking status is a **significant modifying factor**.
- WHI findings:
  - **Increased lung cancer mortality** in past or current smokers ≥60 years using **EPT**.
  - **No increase in lung cancer incidence** with either ET or EPT.

•Survival

- The effect of MHT on **lung cancer survival remains unclear**

Sarcopenia: Clinical Impact and Management

- **Clinical Significance**
  - Sarcopenia substantially impairs **mobility and independence**.
  - Strongly linked with **osteoporosis**, increasing **fracture** risk by **1.5–3 times**.

- **Guideline Recommendations**
  - Management requires an **integrative approach**:
    - **Early screening** for muscle loss and functional decline
    - **Regular physical activity**, including resistance and balance training
    - Skeletal muscle mass varies by **ethnicity so Personalized interventions** based on individual risk factors and health status

Sarcopenia and Menopausal Hormone Therapy (MHT)

The sharp **decline in estrogen after menopause** is a major factor in the development and progression of sarcopenia

Effect of MHT

MHT, especially **combined with exercise**, may help:
Preserve **muscle mass ,**Improve **muscle strength and physical function**

However, evidence is **insufficient to recommend MHT** specifically for preventing or treating sarcopenia.

Gallbladder Disease : MHT Considerations

1.Gallbladder Disease Risk

1. Both **EPT** and **ET** increase the risk of **gallbladder disease**.
2. **No** evidence links MHT to **gallbladder cancer**.

2.Route of Administration

1. Observational data indicate that **transdermal MHT** carries a **lower risk** of gallbladder disease compared with oral MHT.

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