Author: Molly Brett, MD

Section editor: Adelaide McClintok, MD

Executive Editor: Yilin Zhang, MD

**Objectives:**

1. Diagnose menopause and the menopausal transition based on characteristic clinical features and determine when additional evaluation is warranted.
2. Identify evidence-based treatment options (both hormonal and non-hormonal) for symptoms of menopause.
3. Counsel patients on risk and benefits of hormone therapy and provide anticipatory guidance on treatment duration.

**Teaching instructions:**

Plan to spend at least 20 minutes preparing for this talk by using the interactive board for learning/preparing, clicking through the graphic, and becoming familiar with the order of the content that appears on the graphic. The teaching script below details how to walk through the talk. Every interactive or “clickable” element is denoted with a rounded box and cursor icon.

**Anticipated time to deliver the talk with and without cases or other features: without cases 20-25 minutes. The cases may take an additional 10-15 min.**

The talk can be presented in two ways:

1. Project the “interactive Board for Presentation” OR
2. Reproduce your own drawing of the presentation on a whiteboard.

With either method, print out copies of the Learner’s Handout so they may have this for reference after the discussion. Begin with reviewing the objectives for the session.

**Objective 1: Diagnose menopause and the menopausal transition based on characteristic clinical features and determine when additional evaluation is warranted. *(Definitions and Diagnoses)***

This figure depicts the continuum from a woman’s reproductive period through menopause. The timeline gives average years of onset, though these vary amongst individuals.

*Ask learners to define menopausal transition and menopause click each button to reveal the definition.*

* **Menopausal transition ("perimenopause")** - is defined by irregular menses and some hormonal symptoms such as hot flashes and mood changes. Menopausal transition begins on average 4 years prior to the last menstrual period (LMP). A change in intermenstrual interval is characteristic of this time period.1
* **Menopause** is defined retroactively, after 12 consecutive months of amenorrhea (mean age 51).1

*Bonus: When should you check an FSH?*

* FSH rises as the ovarian follicular reserve decreases during menopause. FSH, along with an estrogen level, can be used to confirm when someone has completed menopause.
* However, a single FSH is a poor predictor of menopause because it can vary widely during the menopause transition. In fact, one large study showed that irregular menses are a better predictor of menopause than FSH values.2
* Patients with symptoms of menopause onset prior to 45 years *do* require additional testing. Ask learners what testing is indicated for a woman 40-45 vs <40, Refer to the [Abnormal Uterine Bleeding](https://teachim.org/teaching_material/abnormal-uterine-bleeding/) talk for more information on this work-up.

**Objective 2: Identify evidence-based treatment options (both hormonal and non-hormonal) for symptoms of menopause. (*Perimenopause* and *Menopause*)**

**Perimenopause:** *Introduce the case, which is characteristic of the menopausal transition. Ask learners what additional work-up is indicated and click on the button to reveal the answer*. Because this patient has heavy bleeding, she will need the appropriate work-up for heavy menstrual bleeding: a pregnancy test, complete pelvic exam, pelvic ultrasound, +/- endometrial biopsy (biopsy depending on ultrasound findings and risk factors for endometrial cancer).

*Ask your leaners what common symptoms of perimenopause are, and they would manage each of her symptoms of perimenopause. Click on the “How would you manage her symptoms”? button to reveal symptoms of perimenopause. Click on the individual symptoms to reveal management.*

* *Hot flashes* – for mild hot flashes, lifestyle changes can be helpful such as avoiding hot rooms/drinks/caffeine/cigarettes and weight loss and exercise.
  + Non-hormonal options include SSRIs and SNRI. Paroxetine is the only FDA approved SSRI, though it is also the most anti-cholinergic SSRI, so others may be preferrable. Avoid fluoxetine and sertraline which have not been shown to benefit hot flashes).
  + Gabapentin can also be used, though side effects are often limiting.
  + Hormone therapy is the most effective treatment – the risks/benefits of which will be discussed in future slides.
* *Mood changes and sleep disturbances* – therapy is similar to that for hot flashes
* *Menstrual irregularity* – hormone therapy is the most effective treatment. IUDs and combined oral contraceptives can be used in many patients until menopause.

**Menopause:** *Introduce the case, which is characteristic of the menopause. Ask learners what additional work-up is indicated*. Emphasize that no additional work-up is needed to diagnosis menopause. This is a clinical diagnosis!

*Ask your learners what some symptoms of menopause are and how they would manage them. Click on the “How would you manage her symptoms”? button to reveal symptoms of menopause.*  *Click on the individual symptoms to reveal management.*

* *Hot flashes/ Mood disturbance –* similar to perimenopause. Conservative measures can be used for hot flashes. If mood symptoms predominant, SSIRs should be used preferentially. Patients undergoing menopause are 2.5x more likely to be diagnosed with depression.2
* *Vaginal dryness/ dyspareunia* – these are symptoms of vaginal atrophy which also can predispose to UTIs and lower urinary tract symptoms. Vaginal moisturizers and lubricants can help with mild symptoms and are available over the counter. Vaginal estrogen is generally the most effective and has relatively limited systemic absorption.8

*Ask your learners what some complications of menopause are and how they would manage them. Click on the “How would you manage her symptoms”? button to reveal symptoms of menopause. Click on the individual symptoms to reveal management.*

Estrogen deficiency that occurs with menopause increases women’s risk for atherosclerosis and osteoporosis. Both are managed preventively similar to other patients. *Click on each button to reveal specific recommendations.*

**Objective 3: Counsel patients on risk and benefits of hormone therapy and provide anticipatory guidance on treatment duration. (*MHT* and *Risk/Benefit*)**

**Menopausal Hormone Therapy (MHT):** In the past, MHT was prescribed broadly based on observational data suggesting it helps prevent CAD and osteoporosis in menopausal women. This changed after the 2002 publication of results from the Women’s Health Initiative (WHI) – two large, randomized trials of hormone therapy in women with a **mean age of 63**. The WHI demonstrated several adverse outcomes (excess risk of CAD, stroke, VTE, breast cancer) with use of MHT in this largely older age group.3 The use of MHT has decreased approximately 80% since the publication of the WHI,4 despite substantial evidence – which will be discussed here – that MHT is safe in younger, healthy women.

*Ask learners who is a candidate for MHT and click on the associated button to reveal:*

* The primary use for MHT is to manage moderate to severe hot flashes (eg with negative impact on sleep, quality of life, ability to work, etc). It is not used first line for other symptoms of menopause.
* Candidates are **<60 years of age or <10 years post-menopause.6** Why? There is robust evidence that the absolute risks associated with MHT in this age group are very low (compared with the elevated risks in women over 60 demonstrated in the WHI). The next slide will explain the risks/benefits in women in this age group.
* Bonus: contraindications to systemic MHT include history of breast cancer, prior VTE or stroke, active liver disease, unexplained vaginal bleeding, high-risk endometrial cancer.

*Click on the duration of therapy button.* Most guidelines recommend using MHT for 5 years or less (and stopping by age 60); however, for patients with severe hot flashes a longer course may be considered after weighing risks and benefits. Rebound worsening of vasomotor symptoms is common upon stopping.

*Ask learners and click “what is used for MHT” to reveal regimens used.* MHT always includes estrogen. Progesterone is added for all patients with an intact uterus (to prevent endometrial hyperplasia). *Click on “estrogen” button to discuss different formulations and risks and benefits of each.*

A few key points from this chart:

* Transdermal estrogen confers lower risk of VTE and stroke than oral estrogen7 so it is preferred for patients with moderate ASCVD risk (5-10%) and migraines. The main downside of transdermal estrogen is simply that it is often more expensive.
* Femring is a specific vaginal ring which releases much higher doses of estradiol and is considered systemic rather than local treatment.
* Most still consider a history of VTE to be an absolute contraindication to systemic MHT, though transdermal patch confers lower risk of VTE than oral estrogen.

**Risks and Benefits:** Introduce learners to this chart, which illustrates risks and benefits of MHT (orally administered estrogen [E] OR estrogen + progesterone [E+P]) in women 50-59 using MHT for five years. The chart depicts excess risks and benefits of these agents per 1000 women ages 50-59 using MHT for 5 years. (Note that it is not meant to depict base incidence of each condition, which varies).

For example, clicking on coronary heart disease reveals: for every 1000 women taking MHT for 5 years, one would expect 5.5 FEWER cases of CHD in patients taking E only, but 2.5 ADDITIONAL cases in women on E+P. For breast cancer, you’d expect fewer cases in the E only group, and additional cases in the E+P group, etc.

A few take-home points from this chart:

* For reasons that remain unclear, women taking estrogen alone have a much more favorable risk-benefit profile than those on E+P.
* AVERAGE risks tend to be very low (~3 additional cases/1000 women over 5 years), though risk to an individual woman varies and depends on her underlying risk factors, which should be taken into consideration.

**Cases:**There are 6 cases for this talk. Each case can take 2-5 min depending on the amount of discussion.

* Case 1 - patient with symptomatic perimenopause and risks and benefits of MHT
* Case 2 - patient with menorrhagia in perimenopause
* Case 3 - patient with symptomatic hot flashes and risks and benefits of MHT in patients with other comorbidities
* Case 4 - risks and benefits of MHT with migraine history
* Case 5 - risks and benefits of MHT with ASCVD
* Cast 6 - risks and benefits of MHT with breast cancer history

**Take Home Points:**

1. Menopause is primarily a clinical diagnosis based upon the patient's age and symptoms; lab testing is only required for younger women or those with unusual features.
2. Clinical features of menopause include menstrual irregularity, vasomotor symptoms (hot flashes), mood changes, sleep disturbances, and vaginal symptoms (dryness, dyspareunia, frequent UTIs).
3. Menopausal hormone therapy is the most effective treatment for moderate or severe hot flashes. The risks associated with MHT are low with proper patient selection, and magnitude of risk depends upon a woman's age, time since menopause, comorbidities, presence or absence of an intact uterus, and the formation selected.

**References:**

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