



Resource 12-4: Menopause: Issues of Assessment and Intervention

The following is adapted from *Nurse Practitioner Certification and Practice Preparation*, Female Reproductive and Genitourinary Systems, 3rd Edition. By Margaret Fitzgerald, DNP, FNP-BC, NP-C, FAANP, CSP, available at www.fhea.biz

A woman's life is characterized by a series of shifts: first, a woman transitions to the reproductive years, then to the premenopausal period, and then to the menopausal and postmenopausal years. Each transition is normal, expected, and not a disease state. Perimenopause and menopause are often symptom-producing events, however.

Perimenopause is the time surrounding menopause; its onset is marked by the beginning symptoms of menopause and ends with the cessation of menses. The average onset of perimenopause is 40 to 45 years; it occurs earlier in cigarette smokers. Perimenopause lasts an average of 4 years, but can range from a few months to 10 years. Menopause, when the final menstrual period occurs, marks another transition in a woman's reproductive life. By definition, a woman is in menopause when she has had no naturally occurring menstrual period for 12 months. The average age for a North American woman at menopause is 51.3 years, with some women living one-third of their lives after this time.

During perimenopause, menstrual irregularity is common, with the interval between periods becoming longer or shorter, and flow can become heavier or lighter. Ovulation becomes more erratic, but pregnancy is still possible. Hot flashes and sleep problems are usually worse in the week before the menses and are reported by approximately 65% to 75% of women during perimenopause. During this stage, estrogen levels are usually normal, but FSH levels are elevated. As mentioned, the woman often notes hot flashes or flushes during the week before the onset of the menses, a time when hormonal shifts are most dramatic. Because most women associate menopause symptoms with irregular or absent menstrual bleeding, these perimenopausal symptoms can be confusing as the woman is menstruating on a regular basis. Although low estrogen levels have often been implicated as the cause of perimenopausal symptoms, likely the shifting levels of multiple biological substances is implicated.

As the menopausal period progresses, LH and FSH levels increase dramatically as the anterior lobe of the pituitary sends out an abundance of these substances in an attempt to induce ovulation; the ovaries fail to respond with ovulation, sometimes leading to heavy, anovulatory menstrual bleeding. Levels of estrogen forms (estradiol, estrogen) and androgens (testosterone, progesterone, androsterone, and dehydroepiandrosterone) are reduced. Hot flashes usually become more frequent and severe, in part induced by the FSH surge. About 80% of woman going through menopause have hot flashes, ranging in severity from mildly bothersome to debilitating. Compared with naturally occurring menopause, women with surgical menopause usually have more severe symptoms, likely because the hormonal shifts are more rapid and dramatic.

Estrogen receptors are found in high concentrations in the vulva, vagina, urethra, and trigone of the bladder. As a result, symptoms of urogenital atrophy from estrogen shifts are a common perimenopausal and menopausal problem. These receptors are found in lower concentrations in the vascular bed, heart, brain, bone, and eye, areas of the body that also exhibit changes during perimenopause and menopause.

Vasomotor symptoms can be debilitating, causing disturbed sleep, avoidance of social situations where hot flashes occur, and numerous other problems. Women often seek advice from their health-care provider about minimizing these symptoms. Numerous lifestyle modifications can be quite helpful. When these measures are inadequate, pharmacological intervention is often appropriate.

HT, usually in the form of an estrogen supplement prescription, is likely the most commonly used and most effective therapy that has been extensively studied for hot flash management. When given during the first years after menopause, reduction of hot flashes by 80% to 95% is expected. All types and routes of administration of estrogen are effective. Although the benefit seems to be dose-related, even low doses of estrogen are often effective. Higher doses (equivalent of 1 mg of oral estradiol) usually provide relief in about 4 weeks, whereas lower doses usually take about 8 to 12 weeks to provide similar hot flash effect. Lower dose HT is usually better tolerated with less breast tenderness and uterine bleeding. The FDA and the American College of Obstetrics and Gynecology recommend using the lowest dose of HT that is effective; the length of therapy should be dictated by clinical response and keep as short as possible.

As with all medication use, HT comes with the possibility for adverse effects. Endometrial cancer risk with unopposed estrogen use is considerable, with the rate of 4 to 5 per 1000 users per year, with a 5-year use risk of 2% and a 10-year use risk of 4%. As a result, unless a woman taking HT has undergone a hysterectomy, she must also take a progestin to minimize this risk. An observed increased risk of breast cancer in women who use HT has been also noted, particularly with long-term use. Supplemental estrogen use should be avoided in women who have a history of or are at high risk for cardiovascular disease,

breast cancer, uterine cancer, or venous thromboembolic events and in women with active liver disease. Compared with the oral form, transdermal estrogen use is associated with a lower thromboembolic risk in short-term studies.

Many women who use oral HT continue to have symptoms of atrophic vaginitis; the addition of topical estrogen via an estrogen-containing vaginal cream, ring, or tablet can be helpful. Increasing the dose of oral estrogen is seldom helpful and likely increases HT adverse effects. The use of over-the-counter vaginal lubricants and moisturizers can also afford great relief for vaginal dryness that interferes with sexual activity.

Occasionally, a woman with significant vasomotor symptoms does not or cannot use HT for relief. Low-dose antidepressant (selective serotonin reuptake inhibitors [SSRIs] and selective serotonin and norepinephrine reuptake inhibitors [SNRIs]) therapy can reduce the frequency and severity of hot flashes by 35%. Examples of options include the SNRI venlafaxine (Effexor) and the SSRIs sertraline (Zoloft) and paroxetine (Paxil). Typically, the doses given to minimize vasomotor symptoms are less than the doses used for the treatment of depression. The usual adverse effects associated with the use of these medications can be anticipated; sexual dysfunction including anorgasmia is common with SSRI and SNRI use. Gabapentin (Neurontin) has also demonstrated efficacy in reducing vasomotor symptoms. Older antihypertensives, such as methyldopa (Aldomet) and clonidine (Catapres), have been used for this purpose with little effect.

In a woman who continues to menstruate but is having significant perimenopausal symptoms, low-dose oral contraceptives can be helpful for symptom relief and for cycle regulation. Oral contraceptives contain approximately three to four times the estrogen dose of usual-dose HT.

After menopause, androgen levels also decrease, leading to loss of lean muscle mass, attenuated libido, and additional bone loss. Androgen supplementation, usually in the form of low-dose testosterone, can be helpful in women with postmenopausal low libido and in women with continued hot flashes despite HT, a particularly common problem in younger women who have undergone surgical menopause. The prescriber and the patient need to be aware of the risks of estrogen supplementation and the risks of specific androgens, such as acne and hirsutism (common) and alopecia, vocal changes, and clitoral enlargement (less common); as with all medications, the use of HT should be approached with caution and is contraindicated in some women (Table 13–6).

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Estrogen deficiency is a potent risk factor in the development of osteoporosis, which is most common in postmenopausal woman. By age 80, the average woman has lost greater than 30% of her premenopausal bone density. When taken with calcium supplements, postmenopausal HT can help reduce the

risk of postmenopausal fracture by 50% by minimizing further bone loss. Because of the greater observed rate of venous thrombotic events with short-term and long-term HT use and invasive breast cancer with longer term use, however, and the availability of other medications to treat bone thinning such as bisphosphonates and salmon calcitonin (Miacalcin), HT should not be used solely for this purpose.

Because the vaginal introitus remains colonized with protective flora when HT is used, there are lower rates of urogenital atrophy and UTIs in women using this therapy. Some women using HT continue to need topical estrogen, however, in the form of a vaginal cream, tablet, or estrogen-impregnated ring (Estring) to help minimize urogenital atrophy symptoms.

Phytoestrogens are chemical substances similar to estrogen, in particular estradiol, that are found in more than 300 plants, including apples, carrots, coffee, potatoes, yams, soy products, flaxseed, ginseng, bean sprouts, red clover sprouts, sunflower seeds, rye, wheat, sesame seeds, linseed, black cohosh, and bourbon. These are active substances that bind to estrogen receptor sites and have mild estrogenic effects and some antiestrogenic activity in some areas by binding and blocking to sites in the breast, colon, and rectum. Over-the-counter topical creams made of wild yam, a phytoprogestone, are available and commonly used by women seeking relief from hot flashes. Because of poor bioavailability, however, little of the product actually reaches circulation. In limited study of women who were breast cancer survivors, high-dose vitamin E, 800 IU/d, modestly reduced the number of hot flashes. Few high-quality studies support the use of nutritional supplements for management of menopausal symptoms. Women often view these supplements as a safe alternative to drug therapy, however.

References

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Hot Flash Triggers and Lifestyle Intervention	
Hot flashes can often be reduced in number and minimized in severity with simple lifestyle changes. Here is a list of common triggers and helpful interventions.	
Hot flash trigger	Intervention
Spicy foods, chocolate, other foods	Keep food diary to track triggers. Avoid triggers or eat in small amounts.
Alcohol use	Note if certain amounts of types of alcohol trigger hot flashes. Restrict or avoid use.
Elevated ambient temperature and humidity	Control room temperature and humidity. Using climate control to achieve a cool room with low humidity is particularly helpful in improving sleep quality.
Tight, restrictive clothing	Dress in layers that can be removed and replaced in response to hot flashes.
Cigarette smoking	Tobacco use is associated with a marked increase in hot flashes. Smoking cessation improves overall health while reducing hot flash frequency and severity.
Hot baths or showers	Well known hot flash trigger. Also tends to worsen dry skin, a common complaint during perimenopause and menopause. Taking a cool shower or bath minimizes hot flash risk.
Relaxation techniques, self hypnosis	In a number of smaller studies, shown to be helpful in reducing hot flash severity and frequency

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Sidebar- What estrogen form? What dose? How much relief?

The three most commonly used prescription hormone therapy include oral conjugated equine estrogen, and oral as well as transdermal 17B estradiol. The amount of hot flash relief women get from each form and dose differs.

Estrogen form	Dose	Reported hot flash relief
Oral conjugated equine estrogen	0.625 mg	94%
	0.4 mg	78%
	0.3 mg	78%
Oral 17B estradiol	2.0 mg	96%
	1.0 mg	89%
	0.5 mg	79%
Transdermal 17B estradiol	0.25 mg	55%
	0.1 mg	96%
	0.05 mg	96%
	0.025 mg	86%