women have hot flashes that are very frequent or severe. For most women, vasomotor symptoms are self-limited, lasting on average 1 to 2 years; however, up to 25% of women may have symptoms for longer than 5 years.

The exact cause of a hot flash is not understood, although it is related to a disturbance of hypothalamic thermoregulation. Women experience a sudden onset of warmth, ranging from noticeable to markedly uncomfortable, especially over the face and upper body. This may be accompanied by significant perspiration. There are racial and ethnic differences in reported hot flashes, with African American women experiencing increased rates compared with white women and Hispanic and Asian women experiencing lower rates.

In the 1950s, it was discovered that estrogen could relieve hot flashes, and its use became widespread. In 1975, a study published in the *New England Journal of Medicine* showed that women who used estrogen for more than 7 years had a 14-fold increase in uterine cancer. Subsequent research determined that endometrial hyperplasia and cancer is reduced to essentially zero when low-dose progestin is continued for 12 to 13 days per month. Women on estrogen with an intact uterus must use progestin therapy to prevent endometrial hyperplasia and cancer.

Hormone treatment (i.e., estrogen or combined estrogen and progestin for women with an intact uterus) remains the most effective treatment of menopausal vasomotor symptoms (level A evidence). It is also FDA approved for the treatment of urogenital atrophy and the prevention of osteoporosis. In the 1990s, the results of the Heart and Estrogen/Progestin Replacement Study (HERS) found that women with preexisting heart disease had increased numbers of cardiac events when placed on estrogen.

The Women's Health Initiative (WHI) was designed to look at various hormone regimens and their effects on disease prevention, particularly cardiovascular disease, in postmenopausal women. More than 16,000 women participated in the trials, which ran for 5.6 years in the combined estrogen-progestin arm and 6.8 years in the estrogen-only arm. In the combined-therapy group, there was an increased risk for coronary heart disease (CHD) (hazard ratio [HR] = 1.29), an increased risk for stroke (HR = 1.41), an increased risk for pulmonary embolism (HR = 2.13), and increased risk for breast cancer (HR = 1.26). The combined-therapy trial was discontinued because of this excess risk.

The conclusion from the combined-therapy trial was that combination estrogen-progestin therapy should not be initiated or continued for the prevention of CHD. The estrogen-only trial did not find a significant increase in CHD or breast cancer but did show an increased risk of stroke (HR = 1.39). The conclusion was that estrogen alone should not be recommended for the prevention of chronic disease in postmenopausal women and hormone therapy should not be prescribed for disease prevention.

Postmenopausal Therapy

Hormone Therapy

Several medical societies have published guidelines for the use of postmenopausal hormone therapy, including the American College of Obstetricians and Gynecologists (ACOG) and the North American Menopause Society (NAMS). Most guidelines agree that estrogen and estrogen-progestin therapy are appropriate for the treatment of moderate to severe vasomotor symptoms and for urogenital atrophy in women who have been appropriately counseled on the risks and benefits (level B evidence). If hormone therapy is initiated, the lowest dose needed to treat the symptoms should be used and usually for a short term (i.e., 2 to 3 years and not more than 5 years). For women who have only vaginal dryness, vaginal estrogen can be used instead of oral estrogen. It may be acceptable under some circumstances, provided the woman is aware of the potential benefits and risks, to extend low-dose therapy if the benefits of treatment outweigh the risks, and a woman has failed attempts to stop (level C evidence).

Alternative Therapies

Interest in nonhormonal and "natural" alternatives in the treatment of menopausal symptoms is extremely high. As many as 75% of menopausal women have used some form of alternative or complementary treatment to relieve menopausal symptoms. Behavioral options such as dressing in layers, regular exercise, stress reduction techniques, and avoidance of known triggers are safe and may be helpful for a number of women. Some of the more common herbal remedies for menopausal symptoms include isoflavones (e.g., soy, red clover) and black cohosh. None of these therapies has consistently been shown to decrease hot flashes beyond placebo in rigorous randomized, controlled trials.

There are effective nonhormonal medication options for treatment of hot flashes, although hormone therapy is superior to these alternatives. Although paroxetine is the only other FDA-approved medical treatment for hot flashes, paroxetine and venlafaxine have been shown to decrease hot flash frequency, but they may cause sexual side effects. Gabapentin and clonidine have been shown to reduce hot flash frequency beyond placebo.

Sexual Dysfunction

According to the largest study of prevalence of female sexual dysfunction in the United States (PRESIDE study), more than 40% of women report some form of sexual problems. Women between 45 and 65 years of age are disproportionately affected, just before and after the menopausal transition. Female sexual dysfunction diagnoses in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) include disorders of desire, arousal, and orgasm; dyspareunia; and vaginismus. Disorders of desire and arousal are the most common. Risk factors for dysfunction include depression and anxiety, relationship conflict, stress and fatigue, and a history of abuse. Medical and physical issues, such as pelvic floor disorders, endometriosis, and psychiatric and neurologic disease, can negatively affect sexuality.

Symptomatic vaginal atrophy occurs in up to 40% of postmenopausal women. As women age and enter menopause, the decline in estrogen levels causes thinning of the vaginal epithelium, decreased vaginal elasticity, and decreased vaginal lubrication, resulting in painful intercourse. Evaluation should include a thorough medical and sexual history and a pelvic examination, including vaginal cultures for STIs if there is pain or vaginal discharge.

Management of sexual dysfunction should be based on the underlying cause, such as evaluation of selective serotonin reuptake inhibitors (SSRIs), antihistamines, β-blockers, and