Patient

View this article online at: patient.info/doctor/hot-flushes

Hot flushes

Hot flushes are due to vasomotor instability and are usually related to the female menopause.

What causes hot flushes? (Aetiology)

Hot flushes are thought to be related to changes in central nervous system neurotransmitters and peripheral vascular reactivity. There is still much that is not understood. The aetiology of hot flushes in menopause would seem to be related to low oestrogen levels as the ovaries fail and the effect on central thermoregulation. Many women are thought to try to manage their symptoms without seeking professional advice.

They do not tend to occur in men, as there is not a similar rapid decline in hormones. However, treatment for prostate cancer that involves suppression of testosterone production can produce a picture similar to menopausal hot flushes in women and can be just as severe.

How common are hot flushes? (Epidemiology)

- Reported prevalence varies greatly between studies.
- These symptoms are experienced by around 80% of menopausal women.[1]
- Frequent menopausal vasomotor symptoms (including hot flushes) persist in more than half of women for more than seven years.[2]
- Hot flushes can also occur in younger women with premature ovarian insufficiency.
- A cohort study of US women reported that vasomotor symptoms were more prevalent among African-American and Hispanic women, and less prevalent among Japanese and Chinese women, with the lowest reported prevalence among non-Hispanic Caucasian women.[3]

Risk factors

- They tend to be more severe in women of low body weight, those who take little or no exercise and those who smoke cigarettes.
- Flushes last for fewer years when they are first felt after the cessation of menstruation.[2]
- There is variation in frequency and duration between different races. Japanese women seem to have a particularly low incidence of hot flushes. In the USA, women of Afro-Caribbean origin have been shown to have flushes which last for more years than those of white women.[2] [4]
- An abrupt or early menopause causes more severe symptoms. Thus, surgical oophorectomy or its equivalent induced with chemotherapy, radiation or drugs produces more pronounced symptoms than a natural menopause.

Symptoms of hot flushes[1] [3]

There may be a history of menstruation becoming irregular or ceasing but not necessarily. There may have been surgery, radiotherapy or chemotherapy, involving removal or inactivation of the ovaries. Similar causes of sudden withdrawal of sex hormones in men produce a similar response.

Hot flushes and night sweats substantially increase in frequency and severity during the menopausal transition and are most common in the first year following the last menstruation.

- Hot flushes may last between a few seconds and 10 minutes but an average is around 4 minutes. Frequency may be from every hour to a couple of times a week.
- Hot flushes commonly affect the face, head, neck and chest.
- There is a sensation of intense heat and a feeling that the face and whole body are flushing. It is often difficult to ignore and women having hot flushes often fling open windows when all around them are anything but warm. Flushing and sweating may not be apparent to the observer but the person affected tends to be very self-conscious of the affliction.

- Lack of concentration and poor memory are commonly associated with hot flushes.
- Sleep disturbance is common with night sweats.
- Features of depression are not unusual.
- Having frequent flushes and disturbance of sleep may be a major contributor to the commonly observed adverse effect on mood.
- Inappropriate vasodilatation leads to a slight drop in core temperature. Between attacks there is no abnormality to be found.

Differential diagnosis

Other causes of flushing to consider:

- Hyperthyroidism.
- Carcinoma of the pancreas.
- Carcinoid tumours.
- Phaeochromocytoma (may be part of a multiple endocrine neoplasia syndrome).
- Brain tumours and spinal cord lesions (can lead to vasomotor instability).
- Panic disorder.
- Tuberculosis.
- Diabetes insipidus.
- Frey's syndrome (flushing when the affected person eats, sees, thinks about or talks about certain kinds of food which produce strong salivation; may occur as a complication of parotid gland surgery).
- Some food substances - eg, monosodium glutamate.

- Some drugs - for example:
    - Nitrates.
    - Calcium-channel blockers.
    - Selective serotonin reuptake inhibitors (SSRIs).
    - Levodopa.
    - Selective (o)estrogen receptor modulators (SERMs) such as raloxifene and tamoxifen.
    - Anti-androgens such as cyproterone, spironolactone, bicalutamide, 5-alpha-reductase inhibitors.
    - Danazol.
    - Goserelin.

Investigations

Laboratory tests are not required in the following otherwise healthy women aged over 45 years with menopausal symptoms:[5]

- Perimenopause based on vasomotor symptoms and irregular periods.
- Menopause in women who have not had a period for at least 12 months and are not using hormonal contraception.
- Menopause based on symptoms in women without a uterus.

Follicle-stimulating hormone (FSH) levels should be undertaken in suspected premature ovarian insufficiency.

Hot flushes treatment and management[3]

Hot flushes do not threaten life but they can have a very detrimental effect on the quality of life. They will subside with time but a sympathetic, positive approach is required.

General points

The following lifestyle advice should be given:

- Take regular exercise: exercise training has been shown to reduce the severity of physiological symptoms that occur during a postmenopausal hot flush.[6] However, other studies have not demonstrated this benefit with exercise.[7]
- Weight loss in overweight women may improve symptoms.
- Wear lighter-weight clothing and sleep in a cooler room.
- Avoid possible triggers, such as spicy foods, caffeine, smoking, stress and alcohol.

Pharmacological treatments

Hormone replacement therapy (HRT)

Hormone replacement therapy (HRT) is the most effective treatment to relieve the symptoms caused by the menopause. HRT can be offered for vasomotor symptoms after discussing the short-term (up to five years) and longer-term benefits and risks.The necessary duration of treatment is very variable but is usually months or often years. The use of HRT in symptomatic postmenopausal women should only be after consideration of all risk factors for cardiovascular disease, age and time from menopause.[8]

When choosing the HRT preparation, the use of transdermal as compared with oral oestrogen preparations is considered less likely to produce thrombotic events and perhaps the risk of stroke and coronary artery disease. In addition, when the use of progesterone is necessary, micronised progesterone is considered the safer alternative.

See the separate Hormone Replacement Therapy (including Benefits and Risks) article for details.

Alternative pharmacological treatments to HRT

Some women consider alternatives to HRT to combat climacteric symptoms. They may not want to take HRT, or have contra-indications to taking it.

These may include:

- SSRIs - effective for vasomotor symptoms in some women but their effect is often short-acting.[9]

- Venlafaxine - can also be effective in some women.[10]
- Clonidine - probably does work, although evidence is limited; side-effects such as dry mouth and tiredness can be a problem.[4] Clonidine works by widening the thermoneutral zone. A trial of 2-4 weeks is required.
- Medroxyprogesterone acetate - can be beneficial for some women.[11]
- The anticonvulsant gabapentin - can also be effective.[12]

The National Institute for Health and Care Excellence (NICE) recommends that clinicians should not routinely offer SSRIs, serotonin and norepinephrine reuptake inhibitors (SNRIs), or clonidine as first-line treatment for vasomotor symptoms alone.[5]

Alternative therapies

- Cognitive behavioural therapy has been shown to be effective for some women.
- Acupuncture or relaxation techniques - there is little evidence to support the use of either.[13] [14]
- Phyto-oestrogens - naturally occurring compounds found in plant sources and structurally related to estradiol. Foods such as soy beans, as well as nuts, wholegrain cereals and oilseeds, are the foods most rich in phyto-oestrogens. Phyto-oestrogens can also be taken in the form of tablets containing concentrated isoflavones, such as red clover. However, the efficacy of phyto-oestrogens has not been proven in randomised clinical trials.[15] One meta-analysis has shown that the use of phyto-oestrogens is associated with a reduction in frequency of hot flushes and that their side-effects are similar to those with placebo.[16]
- Botanical medicines - there is a wide array of botanical medicines (such as black cohosh, sage, ginkgo biloba) available to take as an alternative approach to HRT for menopause. However, data documenting efficacy and safety are limited and interactions with other medicines have been reported.

Many women choose to try these products, as they believe them to be safer and more 'natural' than prescribed medication. However, most herbal products available in the UK are not subject to the same regulatory requirements as licensed medications and, as such, are not subject to the same degree of standardisation. There may be variability between products or a lack of clarity as to what ingredients a particular product contains and uncertainty about potential serious interactions with other drugs (including tamoxifen, anticoagulants and anticonvulsants).

In addition, there is currently insufficient evidence to suggest that they are safe to be taken by women with oestrogen-dependent cancer - eg, breast cancer. There are no safety data available in relation to their risk of venous thromboembolism (VTE).

Prognosis[3]

- Symptoms typically last for 5-7 years, but some women continue to experience symptoms for at least 10-15 years.
- A large US longitudinal observational study found that vasomotor symptoms persisted for a median of 7.4 years.
- Persistent vasomotor symptoms may be associated with ethnicity, younger age at menopause, current smoking, weight gain, and lower educational level.

Last updated by: Dr Colin Tidy, MRCGP 27/02/2023	
Peer reviewed by: Dr Hayley Willacy, FRCGP 27/02/2023	**Next review date:** 07/02/2028

View this article online at: patient.info/doctor/hot-flushes

Discuss Hot flushes and find more trusted resources at Patient.