

# Regulation of Vasomotor Tone After Menopause

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## Vasomotor Tone after Menopause

Although menopause is a natural physiological transition, it significantly impacts vasomotor tone: the autonomic nervous system's regulation of blood vessel diameter through smooth muscle contraction and relaxation. Declining estrogen levels lead to changes in endothelial function, alter sympathetic nervous system regulation, and can lead to thermoregulatory dysfunction. The dramatic hormonal shifts associated with menopause profoundly impact vascular function and can lead to vasomotor symptoms and increased cardiovascular risks.

Estrogen stimulates endothelial nitric oxide synthase, which facilitates vasodilation. After menopause, declining estrogen levels reduce the availability of nitric oxide, which leads to impaired vasodilation and promotes vasoconstriction. The production of endothelin-1—a potent vasoconstrictor—also rises with lower estrogen. Post-menopausal women also frequently experience heightened sympathetic nervous tone, which can contribute to increased vasoconstriction and elevated peripheral vascular resistance.

Declining estrogen levels can disrupt hypothalamic thermoregulation by affecting neurotransmitter balance, decreasing serotonin, and increasing norepinephrine. These changes narrow the hypothalamus's thermoneutral zone, making it sensitive to even slight variations in body temperature. Consequently, minor temperature fluctuations trigger signals from the hypothalamus, causing peripheral vasodilation and increased blood flow to the skin surface. Clinically, this manifests as a sudden sensation of warmth, flushing of the skin, and perspiration.

Vasomotor symptoms such as hot flashes and night sweats are classic indicators of menopause and represent the most frequent reason women seek medical care during this season of life. These symptoms can lead to significant psychological distress, social embarrassment, and anxiety. Diet and lifestyle interventions can support healthy vasomotor tone by modulating the impact of estrogen decline, regulating the autonomic nervous system, and promoting healthy hypothalamic function.

## Supportive Lifestyle Practices

- Mindfulness-based stress reduction has been clinically demonstrated to reduce stress, anxiety, sleep disturbances, and vasomotor symptoms like hot flashes and night sweats.<sup>1</sup>
- Regular, moderate-intensity physical activity such as brisk walking, jogging, cycling, swimming, or dancing for at least 30 minutes, 3–5 times per week, can help stabilize autonomic function, improve vascular endothelial health, and reduce the frequency and severity of hot flashes.<sup>2</sup>

## Whole Foods Nutritional Recommendations

- Limiting alcohol, caffeine, spicy foods, refined sugars, and processed carbohydrates can help patients avoid hot flashes and night sweats by reducing triggers that disrupt thermoregulatory pathways.<sup>3–5</sup>
- Recommend whole food sources of phytoestrogens—plant compounds with estrogen-like properties—including soybeans, legumes, and flaxseed. Phytoestrogens have been shown to modulate vasomotor symptoms via their estrogen-like hormone actions and stabilize thermoregulation.<sup>6</sup>
- Recommend daily consumption of cruciferous vegetables such as broccoli, cauliflower, and cabbage. These vegetables are rich in glucosinolates that are metabolized into compounds like diindolylmethane (DIM) and indole-3-carbinol (I3C). These metabolites can support healthy estrogen metabolism, which helps modulate vasomotor tone.<sup>7,8</sup>

# Dietary Supplement Regimen



## General Female Endocrine Packs

Suggested Use: **Each box includes a 30-day supply (taken morning and evening)**

General Female Endocrine Packs provide a protocol of supplements to support a healthy endocrine system and overall well-being.\* Each box includes a 30-day supply of individual packs (taken morning and evening). Each pack contains:

- Black Currant Seed Oil (one softgel) — Contains the essential fatty acid gamma-linolenic acid (GLA)\*
- Catalyn® (two tablets) — Encourages healthy cell functioning to support overall well-being\*
- Hypothalamus PMG® (one tablet) — Contains PMGs with a unique profile of nucleotides and peptides from porcine hypothalamus\*
- Symplex E® (one tablet) — Contains PMGs with a unique profile of nucleotides and peptides from bovine ovary, adrenal, pituitary, and thyroid\*
- Tuna Omega-3 Oil (two softgels) — Essential omega-3 fatty acids (DHA and EPA)\*



## SP Power Mix

Suggested Use: **One serving per day**

SP® Power Mix is a superfood powder that provides a whole food, plant-based blend of phytonutrient-rich fruits, vegetables, oats, and algae

- Several ingredients in this blend are grown on the Standard Process certified organic farm
- Contains nutrients in a whole food-based matrix



## Wild Yam Complex

Suggested Use: **1 tablet 3-4 times daily**

Wild Yam Complex is a menopause support formula containing Wild Yam root, Shatavari root, St John's Wort, Sage, Black Cohosh and Korean Ginseng.\* These herbs have been traditionally used in herbal preparations to:

- Provide relief from mild discomfort associated with menopause\*
- Support calm nerves, balanced mood, and overall well-being\*
- Provide antispasmodic activity to ease occasional spasms associated with the menstrual cycle\*



## Ashwagandha Forte

Suggested Use: **1 tablet 1-2 times daily**

Ashwagandha Forte is an herbal supplement that contains Ashwagandha root. It is traditionally used in Ayurvedic herbal preparations:

- As a rejuvenative tonic to support immune function and overall well-being\*
- Helps maintain healthy cognition, learning and memory\*
- As a nervous system relaxant that calms the mind and soothes the nerves\*

## Assessment of Vasomotor Tone

- **Signs and symptoms:** flushing, night sweats, heart palpitations, sleep disturbances, anxiety, irritability, brain fog

## In Office/Physical Exam

- **Lab studies:** fasting insulin, blood glucose, 4-point salivary cortisol, thyroid panel
- Vital signs, cardiovascular, and thyroid exam

### REFERENCES

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