Unlock your hormonal harmony

Dr Lisa Kennedy

General Physician

My background

- General medicine physician, Norwood
  - metabolic health, lifestyle medicine, women's hormonal health and neuroimmune fatigue syndromes.
- Obsessed permaculturist/gardener and plant-based home cook and nutrition enthusiast




Disclosures and Biases

Disclosures: *None.*

Biases: *Gardening, carbs, and shiraz.*

Outline

- Perimenopause / Menopause
- MHT / HRT
- Lifestyle factors in /Perimenopause/Menopause
- Nutrition in Perimenopause/Menopause
- Alcohol in menopause

A word on estrogen…

Effects (Benefits) of Estrogen =

- Brain - dopamine, serotonin, GABA, acetylcholine, glutamate
- HPA axis
- Cardiovascular system
- Bone
- Muscle and connective tissue
- Skin and hair
- Urogenital tract
- Metabolic health
- Immune and inflammatory modulation

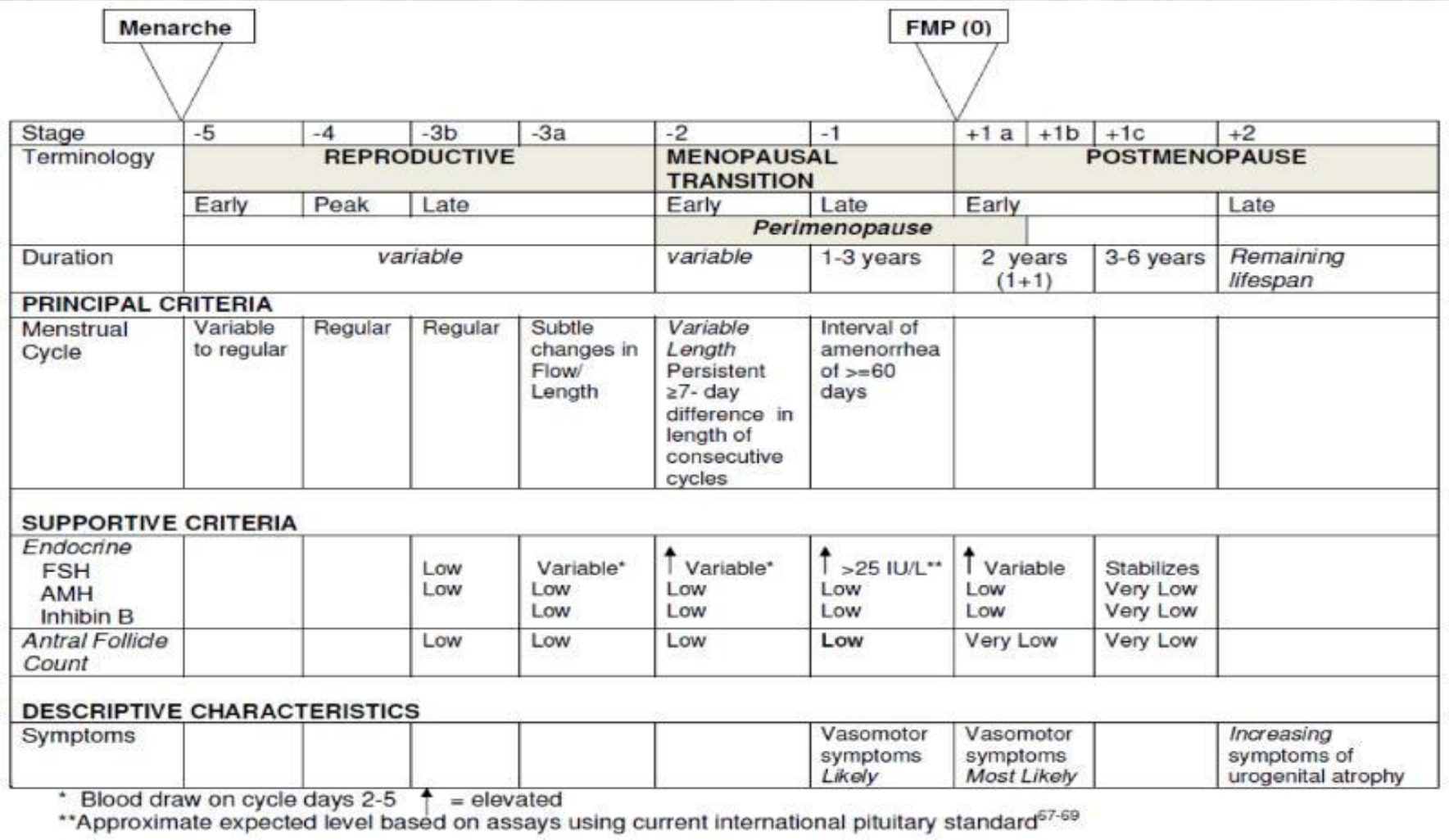
Perimenopause

- Transitional phase leading up to menopause and extending for 12 months after the final menstrual period
- Progressive decline in ovarian follicular function
- Fluctuating hormone levels - often surges of estrogen and declining progesterone
- Symptoms – Irregular cycles, heavier bleeding, mood, cognitive, sleep disturbances
- May precede complete menopause by several years

Menopause

- 12 months since last period
- The end of ovarian follicular activity and a hypoestrogenic state.
- Clinical signs - Amenorrhoea for at least 12 months, Persistently elevated FSH, low estradiol (testing rarely required)
- Symptoms - Vasomotor instability (hot flushes, night sweats), Sleep and cognitive changes, Mood fluctuations, Urogenital atrophy, sexual dysfunction, joint stiffness, Long-term - metabolic and bone health changes
- Timing - Average age in Australia ~51 years (range 45–55)

STRAW +10 Staging System



Stage	-5	-4	-3b	-3a	-2	-1	+1 a	+1b	+1c	+2
Terminology	REPRODUCTIVE				MENOPAUSAL TRANSITION		POSTMENOPAUSE			
	Early	Peak	Late		Early	Late	Early			Late
					Perimenopause					
Duration	*variable*				*variable*	1-3 years	2 years (1+1)		3-6 years	*Remaining lifespan*
PRINCIPAL CRITERIA										
Menstrual Cycle	Variable to regular	Regular	Regular	Subtle changes in Flow/ Length	*Variable Length* Persistent ≥7- day difference in length of consecutive cycles	Interval of amenorrhea of >=60 days				
SUPPORTIVE CRITERIA										
Endocrine FSH AMH Inhibin B			Low Low	Variable* Low Low	↑ Variable* Low Low	↑ >25 IU/L** Low Low	↑ Variable Low Low		Stabilizes Very Low Very Low	
Antral Follicle Count			Low	Low	Low	**Low**	Very Low		Very Low	
DESCRIPTIVE CHARACTERISTICS										
Symptoms						Vasomotor symptoms *Likely*	Vasomotor symptoms *Most Likely*			*Increasing* symptoms of urogenital atrophy

* Blood draw on cycle days 2-5 ↑ = elevated

**Approximate expected level based on assays using current international pituitary standard[67-69]

Reference:

Harlow SD, Gass M, Hall JE, Lobo R, Maki P, Rebar RW, Sherman S, Sluss PM, de Villiers TJ; STRAW +10 Collaborative Group. *Executive summary of the Stages of Reproductive Aging Workshop +10: addressing the unfinished agenda of staging reproductive aging. Menopause.* 2012;19(4):387–395. doi:10.1097/gme.0b013e31824d8f40

But wait…

It’s not just hormones

Other challenges at mid-life

Women at mid-life, more than a lack of estrogen

- **Career demands**
- **Financial Pressure** – managing retirement planning, supporting kids/parents
- **Parenting Stress**
- **Elder Care Responsibilities Marital Strain or Divorce**
- **Body image pressures** – weight gain / fat redistribution, skin and hair changes
- **Health issues**

(Yes men have issues too!! That’s for another talk another day…)

A short word on MHT (Menopausal hormonal therapy)…

- Estrogen – relief of most menopausal symptoms, plus bone strengthening, vascular and brain health, urogenital health
- Progesterone (or progestin) (necessary if uterus present) – uterine protection, micronized progesterone can have a calming effect
- +/- Testosterone (Androfemme)- for hypoactive sex drive, plus possible benefits on cognition, energy
- Greatest benefit if started within 10 years of last period
- MHT can be started in perimenopause – stabilise fluctuating estrogen and supplement declining progesterone -consider contraceptive needs

MHT - Safety

- Evidence shift - WHI data re-evaluated: risks small, largely age-dependent, and not applicable to modern regimens
- **Early initiation** may reduce all-cause and cardiovascular mortality
- Safe for most women within 10 years of menopause onset or under age 60
- **Transdermal oestrogen** (estrogel, sandrena, patches) preferred for lowest stroke and clotting risk
- **Micronised progesterone** (prometrium) more favourable side effect profile than progestins
- Vaginal oestrogen safe at any age and duration for urogenital symptoms
- Therapy must be individualised — no “one-size-fits-all” duration limit

Lifestyle and Menopause – The evidence

- Symptoms of menopause are less severe in women who adhere to positive lifestyle behaviours – particularly increased physical exercise, not smoking, drinking less alcohol and having a lower BMI.
- Interventional studies tend to show limited evidence of benefit.
- Unfortunately most studies focus menopausal symptoms rather than longer term outcomes.

Climacteric

ISSN: 1369-7137 (Print) 1473-0804 (Online) Journal homepage: www.tandfonline.com/journals/icmt20

The role of lifestyle medicine in menopausal health: a review of non-pharmacologic interventions

Chika V. Anekwe, Antonio Cano, Jennifer Mulligan, Seng Bin Ang, Corinne N. Johnson, Nick Panay, Zoe Schaedel, Eftitan Y. Akam, Florence Porterfield, Emily Wang & Rossella E. Nappi

To cite this article: Chika V. Anekwe, Antonio Cano, Jennifer Mulligan, Seng Bin Ang, Corinne N. Johnson, Nick Panay, Zoe Schaedel, Eftitan Y. Akam, Florence Porterfield, Emily Wang & Rossella E. Nappi (12 Sep 2025): The role of lifestyle medicine in menopausal health: a review of non-pharmacologic interventions, Climacteric, DOI: 10.1080/13697137.2025.2548806

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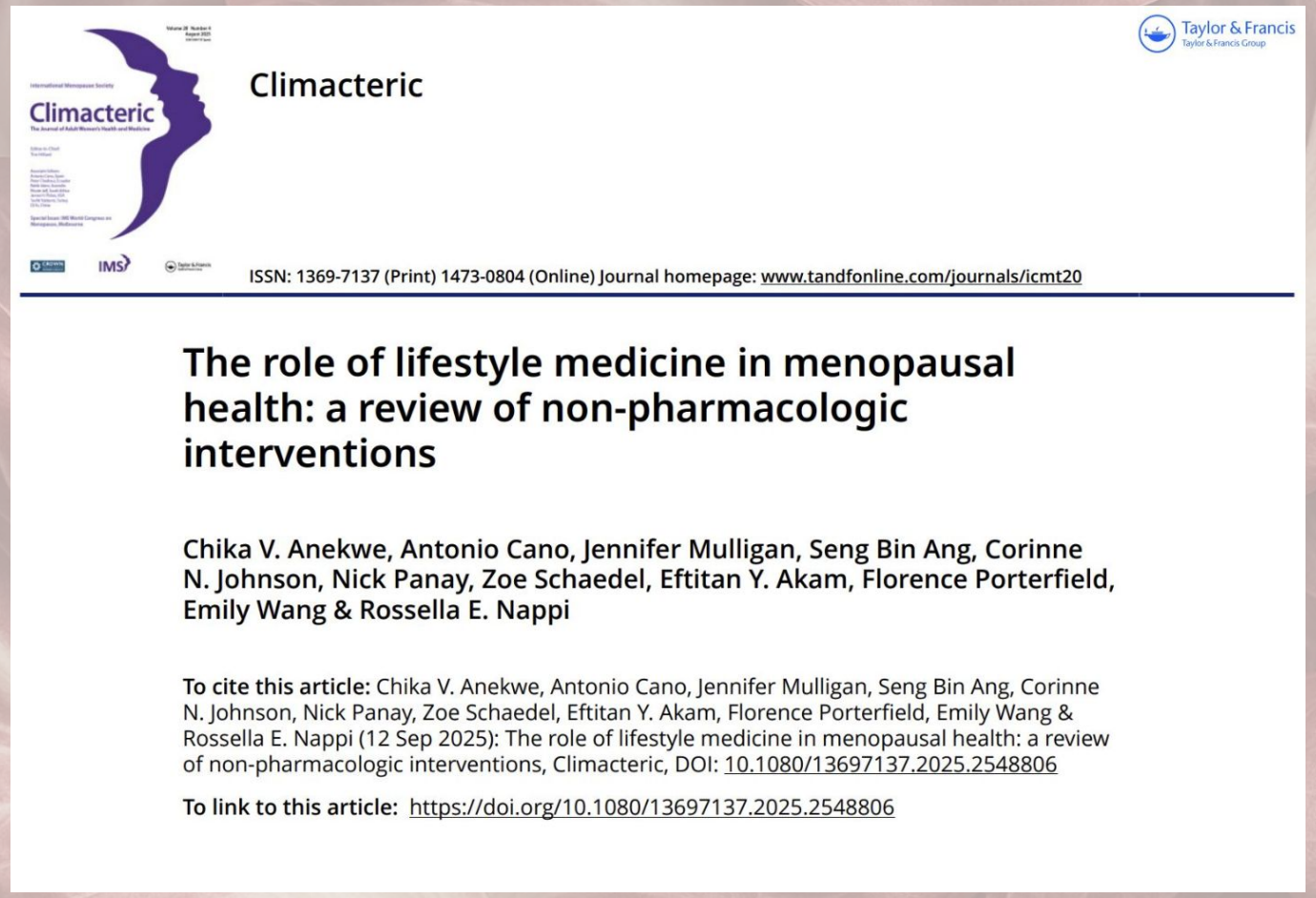
Method-



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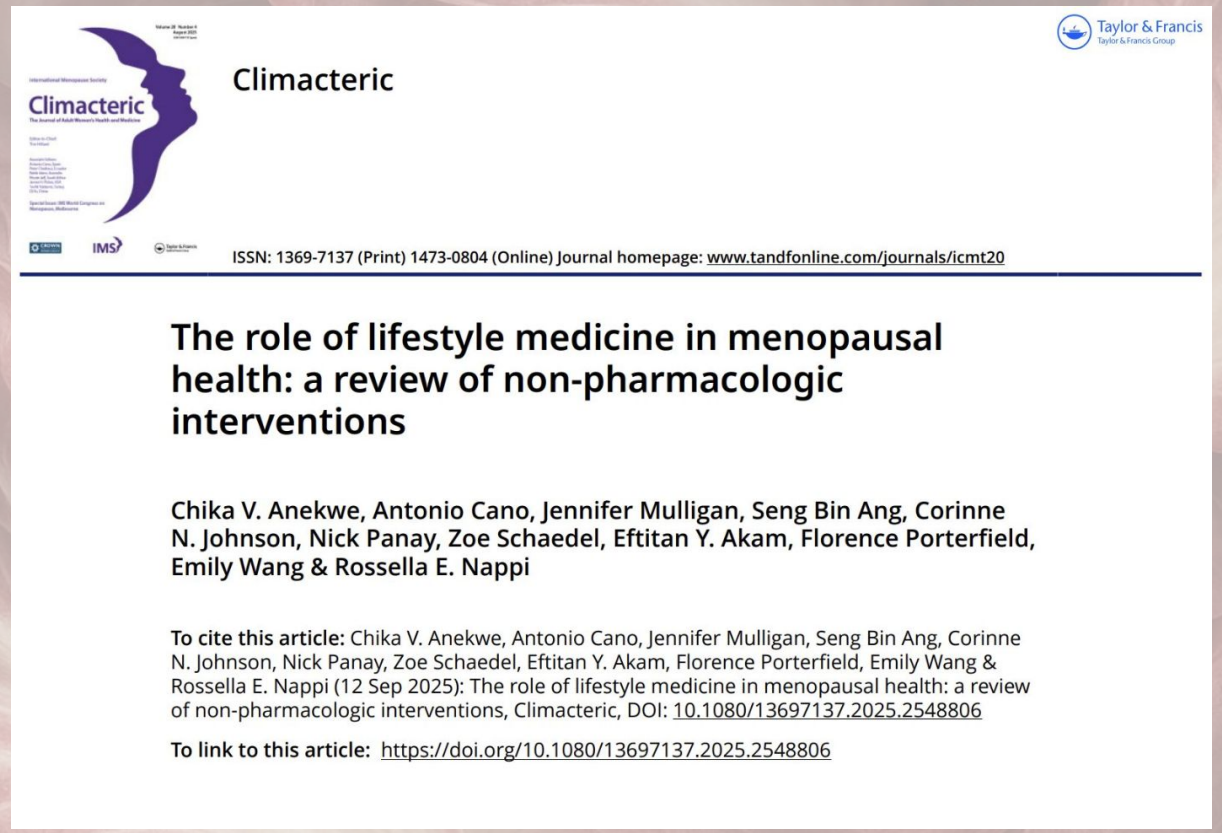
- 54 studies (≈ 24 RCTs + 30 observational) | > 12 000 participants aged 40–65.
- Inclusion → ≥ 1 pillar of lifestyle medicine (nutrition, physical activity, sleep, weight, avoidance of risky substances).
- Outcomes → vasomotor symptoms, sleep quality, mood, metabolic markers, bone health.
- Quality appraisal using GRADE criteria → overall *moderate* certainty.

Main Findings



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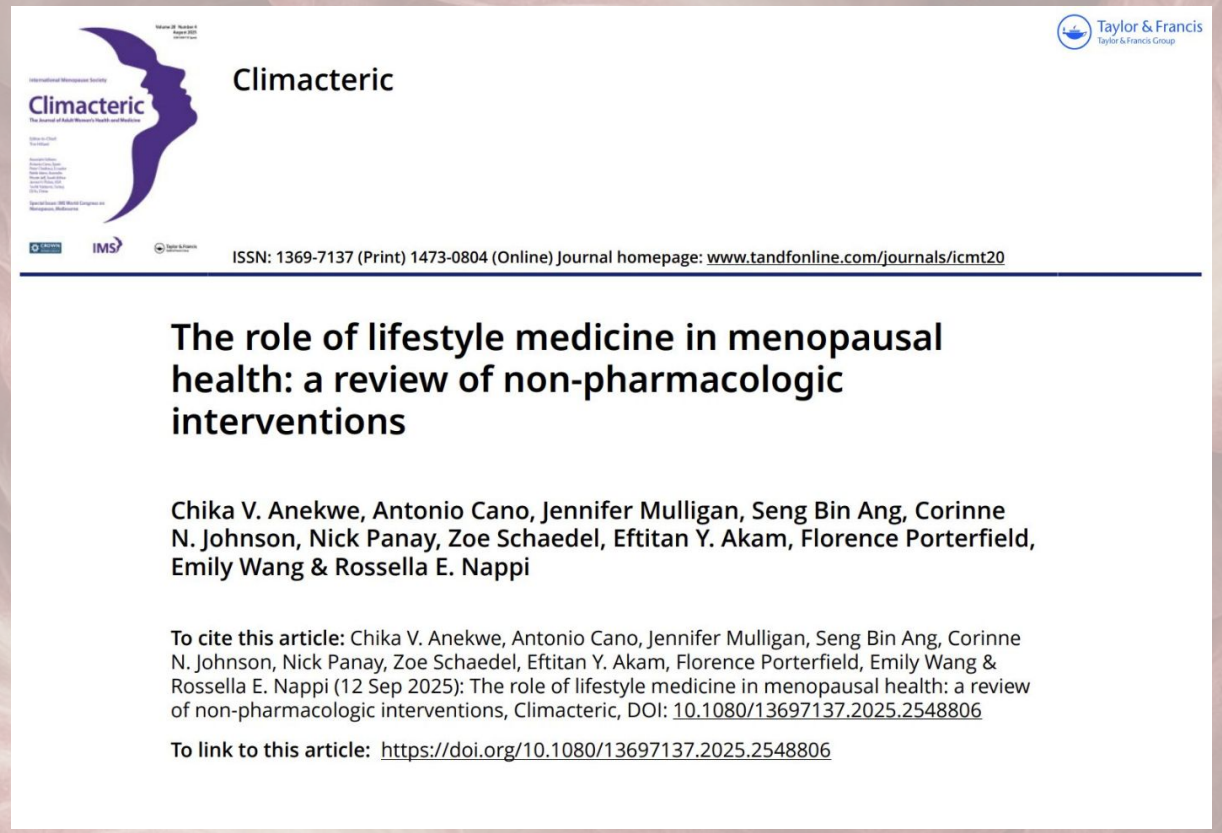
- **Vasomotor Symptoms:** ↓ frequency & severity in > 70 % of weight-loss & exercise interventions (≥ 5 % body-weight loss or regular aerobic + resistance training).
- **Sleep:** Improved Pittsburgh Sleep Quality Index by ≈ 2 points across 9 RCTs.
- **Mood / Well-being:** Reduced depressive symptoms and better HADS/CES-D scores in > 60 % of studies.
- **Metabolic Health:** Average 3–6 kg weight loss + improved HOMA-IR and lipid profiles.
- **Bone / CV Health:** Synergistic benefit from Mediterranean-style diet + resistance training.

Clinical takeaways -



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- **Lifestyle medicine** = evidence-based first-line support for menopausal women.
- Addresses multiple domains (vasomotor, sleep, mental, metabolic, bone).
- Especially useful when MHT is contraindicated or declined.
- Integrates with MHT for synergistic benefit on quality of life and long-term health.
- Reinforces the role of multidisciplinary care (physicians, dietitians, exercise physiologists, psychologists).

Exercise in Menopause

- Structured physical activity (exercise) is associated with improved health outcomes in menopause.’

- “mind-body” exercises (yoga, tai chi, Pilates, qigong) in perimenopausal/postmenopausal women – improves bone density, sleep quality, anxiety, depression, fatigue

- Strength (resistance) training in menopause - improvements in pelvic floor strength, lean mass, bone density

Exercise in Menopause – practical prescription

- Aim for **≥ 150 minutes/week** of moderate aerobic activity (or 75 minutes vigorous)
- At least **2–3 sessions/week** of resistance (strength) training: moderate-to-high intensity, targeting major muscle groups
- Include **impact/weight-bearing** activities for bone health (e.g., jumping, hopping, impact walks) when safe.
- Mind-body exercise (yoga/tai chi) 1–3 times/week can augment sleep, mood, fatigue and bone outcomes.

Nutrition for hormonal harmony

- Polyphenols
  - Phytoestrogens
- Microbiome and estrobolome
- Nutrition for insulin resistance
- Bone Health

Polyphenols

- Found in plant foods - give fruits, vegetables, tea, coffee, herbs, cocoa, and wine their colour and flavour.
- Protect plants from UV damage, pests, and oxidative stress
- In humans they act as antioxidants and signalling molecules – resulting in improved vascular tone and endothelial function, reduction in inflammation, enhanced cellular resilience to oxidative stress, and activation of pathways that support metabolic and hormonal balance.

- Flavonoids – berries, tea, onions, apples, soy, cocoa
- Phenolic acids – coffee, whole grains, and some fruits
- Lignans – flaxseed, sesame, and whole grains
- Stilbenes – grapes, peanuts, and red wine

Polyphenols: Phytoestrogens

- Phytoestrogens are polyphenols that are structurally similar to estrogen.
- Main classes:
  - **Isoflavones** (soy, chickpeas, other legumes)
  - **Lignans** (flaxseed, sesame, wholegrains, berries)
  - **Coumestans** (split peas, pinto beans, alfalfa)

Phytoestrogens

- Act as partial agonists/antagonists — “buffering” estrogen effects (eg, relieve symptoms in low-estrogen states, but not overstimulating in high-estrogen states).
- Bind to ER-α and ER-β with (much) weaker affinity than estradiol.
  - but **preferentially bind ER-β** due to structural compatibility, so functioning as **selective estrogen receptor modulators (SERMs)**
  - Influence gene expression → bone, vascular, lipid metabolism.
- In some individuals, the microbiome converts phytoestrogens to the metabolite equol – which exerts stronger oestrogen-like effects in bone, brain, and blood vessels
- Anti-inflammatory and antioxidant properties, like any good polyphenol.

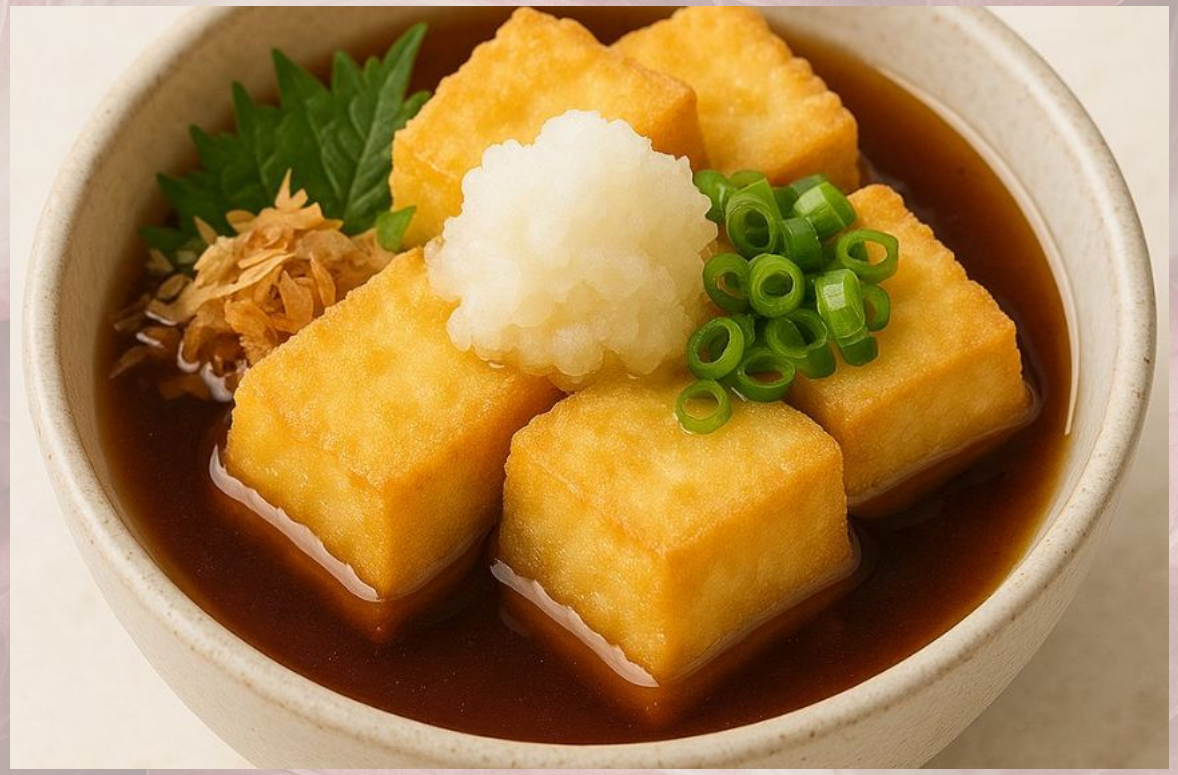
Phytoestrogens

EVIDENCE IN MENOPAUSE

- **Vasomotor symptoms:**
  - Meta-analyses show ~25–50% reduction in hot flush frequency/severity with soy isoflavones vs placebo (though effect sizes vary).
  - Equol-producers may see greater benefit.
- **Bone health:**
  - Isoflavones linked to reduced bone loss and improved markers of bone turnover.
- **Cardiovascular/metabolic health:**
  - Soy protein lowers LDL cholesterol, modestly improves endothelial function.
- **Breast cancer safety:**
  - Cohort studies (esp. in Asia) show soy intake **reduces recurrence and mortality** in breast cancer survivors. No evidence of harm.

Phytoestrogens – practical application

- Encourage whole food forms over supplements (though red clover/soy isoflavone extracts sometimes used in studies).
- Aiming for a soy food most days + flaxseed most days = natural, safe, effective strategy

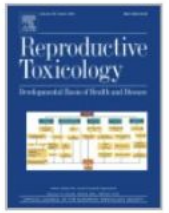


Phytoestrogens & Men

ELSEVIER

Reproductive Toxicology

Volume 100, March 2021, Pages 60-67



Neither soy nor isoflavone intake affects male reproductive hormones: An expanded and updated meta-analysis of clinical studies

Katharine E. Reed [a] ✉, Juliana Camargo [b] ✉, Jill Hamilton-Reeves [c] ✉, Mindy Kurzer [d] ✉, Mark Messina [e] ✉

Gut microbiota-estrogen axis

- The gut microbiome is a principal regulator of circulating estrogens

- **Estrobolome**: the subset of gut microbial genes whose products (enzymes) metabolise oestrogens and thus influence circulating oestrogen levels.

How the estrobolome impacts circulating estrogen levels

- **β-glucuronidase (enzymes produced by commensal bacteria)**
  - Deconjugates oestrogens in the gut → enable reabsorption
  - Low activity → lower circulating oestrogen → worsens low-E symptoms and diseases
  - High activity → excess reabsorption → dysregulated levels, and high estrogen disease states

- **Phyto-oestrogen conversion**
  - Gut microbes convert isoflavones → **equol** (active form)
  - Plant-rich, high-fibre diets foster equol producers
  - Processed, low-fibre diets suppress them

A diverse estrobolome maintains estrogen homeostasis

- **Microbial diversity**
  - Greater diversity = metabolic buffering
  - Maintains oestrogen *homeostasis*

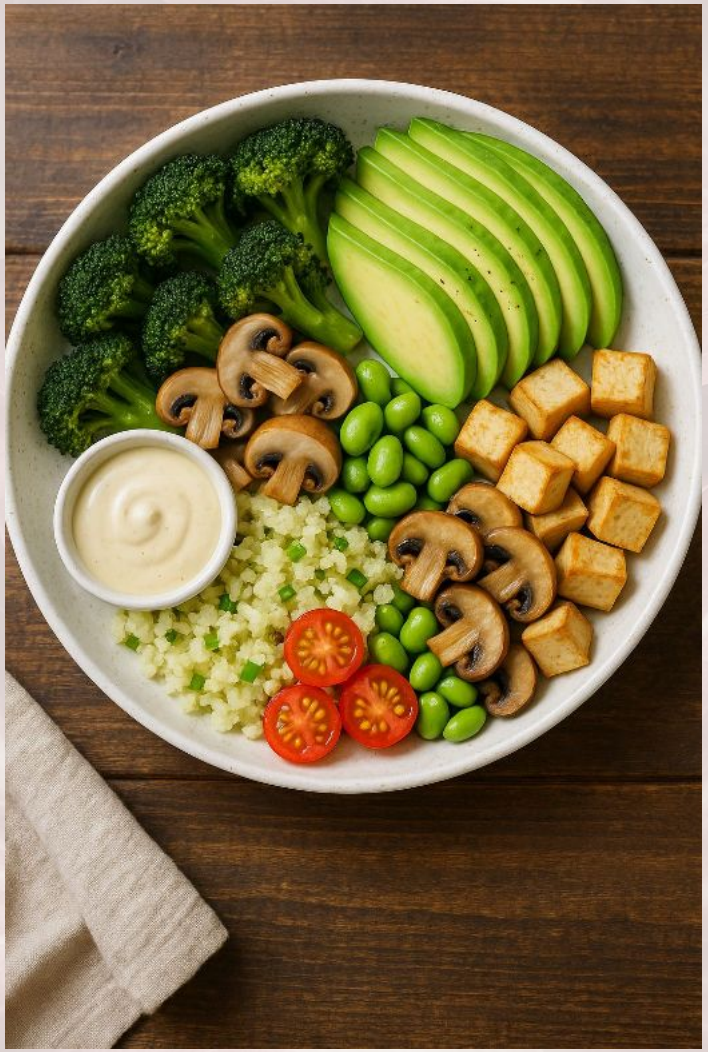
- **Dysbiosis** has an effect on hormone-related disease:
- Endometriosis associated with higher numbers of β-glucuronidase producing bacteria – results in higher circulating estrogen
- Reduced microbial diversity leads to less estrogen reabsorbed in the gut and is associated low estrogen disease states like PCOS and other complications

Gut microbiota-estrogen axis in menopause

- In the menopausal transition, as ovarian oestrogen production fluctuates and declines, peripheral oestrogen metabolism and recirculation becomes more important.
- Estrogen also effects the gut microbiome, and at menopause, greater dysbiosis occurs, which can lead to related health problems
- Dysbiosis or reduced microbial diversity may impair this process, altering free oestrogen levels, possibly affecting symptoms, bone health, cardiovascular risk and cancer risk.

Gut microbiota-estrogen axis

- **Eat for better gut microbial diversity**
  - Consume more plant-based foods (vegetables, legumes, whole grains) supports microbial diversity and gut-health
- **Avoid abrupt dysbiosis**
  - avoid unnecessary antibiotics, heavy alcohol use, processed foods



Nutrition for insulin resistance

Insulin resistance increases at Menopause – leading to weight gain, associated with other health problems – type II diabetes, fatty liver, dementia, breast cancer, heart disease

Dietary approaches that improve insulin sensitivity –

- Plant-based mediterranean diet - rich in fibre, vegetables, nuts, olive oil, plant based protein sources
- Increased protein intake
- Minimise refined sugars
- Strategies to avoid insulin spikes - start meals with non-starchy vegetables
- *(also weight loss, muscle building, stress reduction, improved sleep)*

Nutrition for Bone Health

- **Protein -** Adequate protein intake (1.0–1.2 g/kg/day) supports bone matrix formation and muscle strength.
- **Calcium and Vitamin D -** Calcium (1,000–1,200 mg/day total intake) and vitamin D (800–1,000 IU/day)
- **Magnesium, Vitamin K, and Zinc -** Magnesium contributes to bone crystal structure and vitamin D activation. Vitamin K (from leafy greens and fermented foods) supports osteocalcin carboxylation. Zinc aids collagen formation.
- **Phytoestrogens and Polyphenols -** shown to attenuate bone loss and improve bone turnover markers
- Mediterranean-style and plant-rich dietary patterns - associated with higher bone mineral density and lower fracture risk.

Alcohol in the menopausal transition

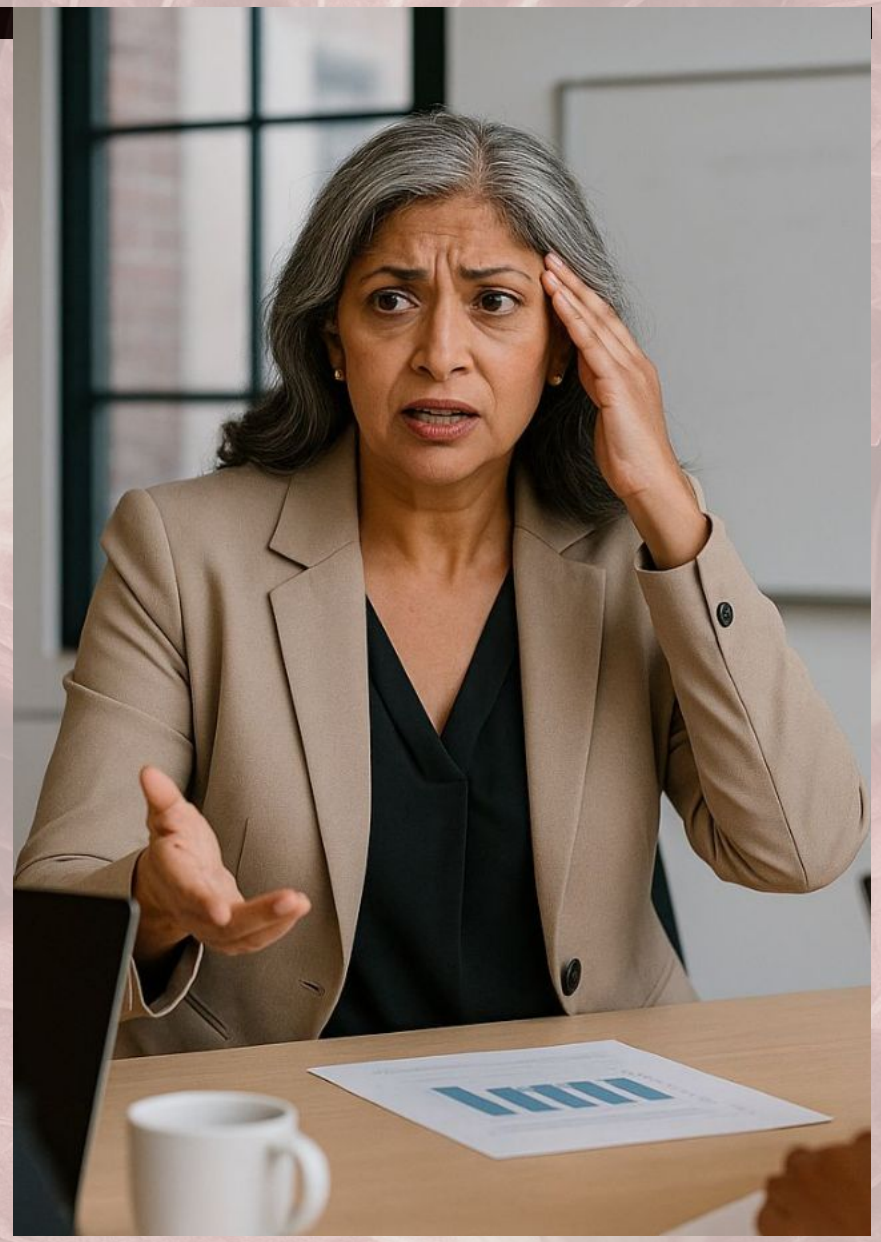
Alcohol in the menopausal transition

During reproductive years:

- Oestrogen stabilises **dopamine**, **GABA**, and the **stress response**

As oestrogen fluctuates and declines:

- Dopamine under-fires → low motivation, flat mood
- GABA under-soothes → tension, anxiety
- Cortisol runs late → wired at night



Alcohol in the menopausal transition

- **Dopamine:** Alcohol gives a short-term boost in dopamine, mimicking the motivation and reward effect normally supported by oestrogen.
- **GABA:** It temporarily enhances GABA activity, producing the same calming, anxiety-reducing effect that drops when oestrogen fluctuates.
- **Cortisol:** Alcohol initially blunts stress hormones but disrupts their rhythm, leading to a 3 a.m. cortisol surge and fragmented sleep.

So that glass of wine feels like relief…

Alcohol in the menopausal transition

DOWNSIDES:

The rebound:

- 3 am wake-up with racing mind
- Fragmented REM sleep
- Elevated next-day anxiety

Long term health consequences

Replacement Strategies

GABA – Calm and inhibition

- Evidence-based GABA-enhancers:
  - **Slow diaphragmatic breathing** (extends exhalation → vagal activation → GABA release).
  - **Yoga, tai chi, meditation**
  - **Magnesium glycinate or threonate supplementation** (small studies show improved GABAergic tone).
  - **Sleep ritualisation** — dimming lights, hot shower, weighted blanket — tells the nervous system it's safe.

Replacement Strategies

Dopamine – Reward and pleasure

- The reward system still needs to *anticipate something nice*.
- Same time, same glass — but kombucha, bitters + soda, or a botanical mocktail.
- Pair it with something sensorially rewarding: music, sunset — anything that gives a micro-hit of interest and pleasure.
- Morning sunlight + movement are powerful dopamine resets
    - even 10 minutes outside boosts tyrosine hydroxylase activity and mood regulation.

Replacement Strategies

Cortisol – The stress blunt

- Alcohol artificially suppresses cortisol but worsens regulation long term.
- What restores proper rhythm is *predictable decompression*:
  - A boundary ritual after work (change clothes, walk the dog, step outside).
  - A brief co-regulation moment with a safe person
  - Time alone, in nature
  - Creative outlets

Let alcohol once again be a treat, not a daily necessity

Summary of diet and lifestyle advice for menopause

- Whole-food, plant-rich, mediterranean-style dietary pattern
- Adequate protein for muscle and bone mass
- Adequate calcium, vitamin D, magnesium, and vitamin K for bone health.
- Incorporate phytoestrogen-rich foods such as soy, flaxseed, and legumes
- Limit refined carbohydrates, sugars, and processed foods
- Support gut health with fibre and fermented foods
- Maintain regular physical activity
- Prioritise sleep, stress management, and mindfulness to reduce HPA-axis overactivation
- Moderate alcohol, avoid smoking, and maintain a healthy body composition/weight

Peak overwhelm years

- Perimenopause collides with what sociologists call the **“peak overwhelm years.”**
- Women 40–55 carry the *highest cumulative load* of professional, domestic, and emotional labour (Australian Institute of Family Studies, 2022).
- Cortisol and inflammatory markers rise chronically when cognitive and emotional labour remain high without recovery periods (McEwen, *Nat Rev Neurosci* 2017).

Dispatch Stressors and redirect energy

The menopause prescription has to include boundary setting, not just hormone or lifestyle tweaks.

- Reevaluate "Default Roles” and invisible labor
- Set Micro-Boundaries
- Avoid Medicating around bad boundaries
- Build joy and competence back In
- Redirect energy inward
- Lean in to leadership, creativity, wisdom

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Thank you for listening