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The Estrogen Equation: Dominance, Detox & Dysfunction

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DUTCH Labs

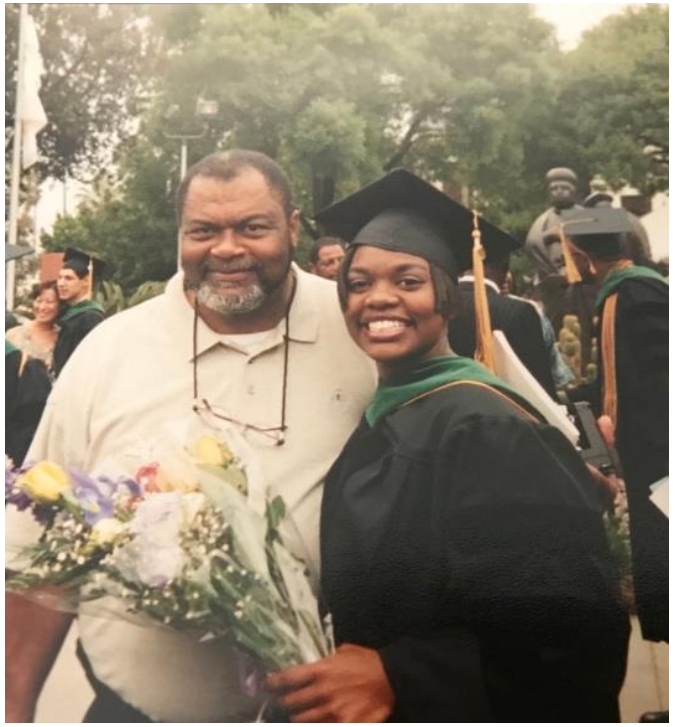
Webinar Outline

1. What Is Estrogen Dominance?
   - Recognize clinical symptoms and patterns in midlife women
   - Differentiate between absolute and relative estrogen dominance
2. Why It Happens in Perimenopause?
   - Understand how ovarian aging, anovulatory cycles, and environmental factors contribute
   - Explore ERα/ERβ signaling and the impact of insulin resistance and inflammation
3. How to Test for Estrogen Excess
   - Use DUTCH testing to assess estrogen metabolism and methylation
   - Identify common patterns in estrogen metabolite pathways
4. How to Treat It.
   - Match treatment strategies to Phase I, II, and III dysfunction
   - Support hormonal balance through detoxification, nutrition, and targeted supplements

Key Takeaways

- Estrogen dominance is not just about hormone levels. It’s about metabolism, receptor activity, and elimination.
- Symptoms persist when clearance pathways are impaired, especially at the gut-liver (Phase III) level.
- DUTCH testing reveals patterns, not just values, and shows you the “why” behind hormonal symptoms.
- Inflammation, insulin resistance, and genetics all contribute to estrogen dominance.
- The goal isn’t just to reduce estrogen. You are looking to rebalance the system and restore metabolic harmony.

My Story



Featured On

Section 1:
What is Estrogen Dominance?

Meet Angela

Angela, a 47-year-old teacher, came into the office exhausted, frustrated, and feeling like she was “losing control of her body.”

Over the past 8 months, she’d noticed:

- Her periods were getting heavier and longer, with large clots and unpredictable cycles
- Her sleep was erratic: she’d fall asleep okay, but wake up at 3 am wired and sweaty
- She’d gained 12 pounds around her midsection, despite eating “cleaner than ever”
- Her breasts felt sore almost every day, and her moods were swinging from anxious to irritable
- She felt disconnected from her partner and had zero sex drive, but plenty of guilt about it
- She had seen two providers already. Her labs were called “normal.” She was told this was just aging and offered either an antidepressant or the pill.

But Angela knew something was off.

Relative vs. Absolute Dominance

Symptoms:

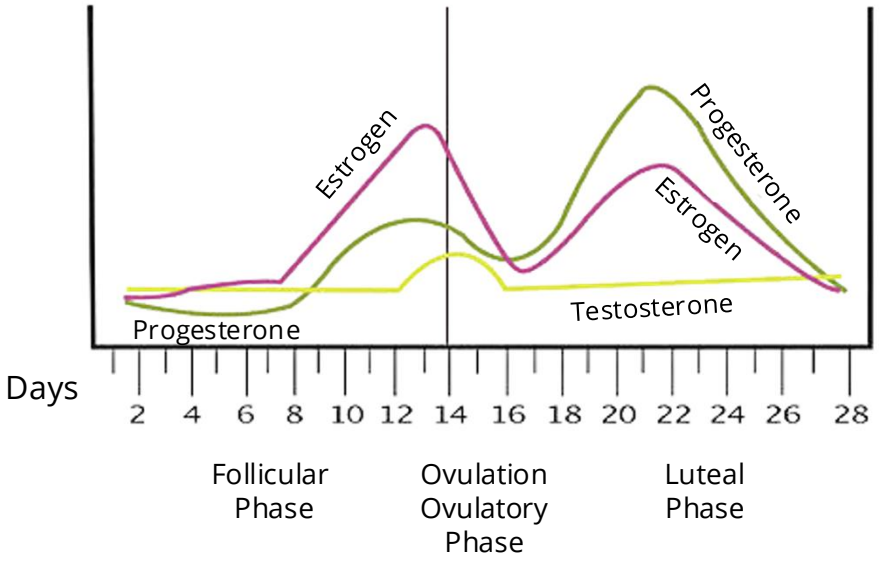
- Heavy Periods
- Weight Gain
- Anxiety
- Sleep Disturbances
- Fibroids

Section 2:
Why Estrogen Dominance Happens in Perimenopause & Menopause?

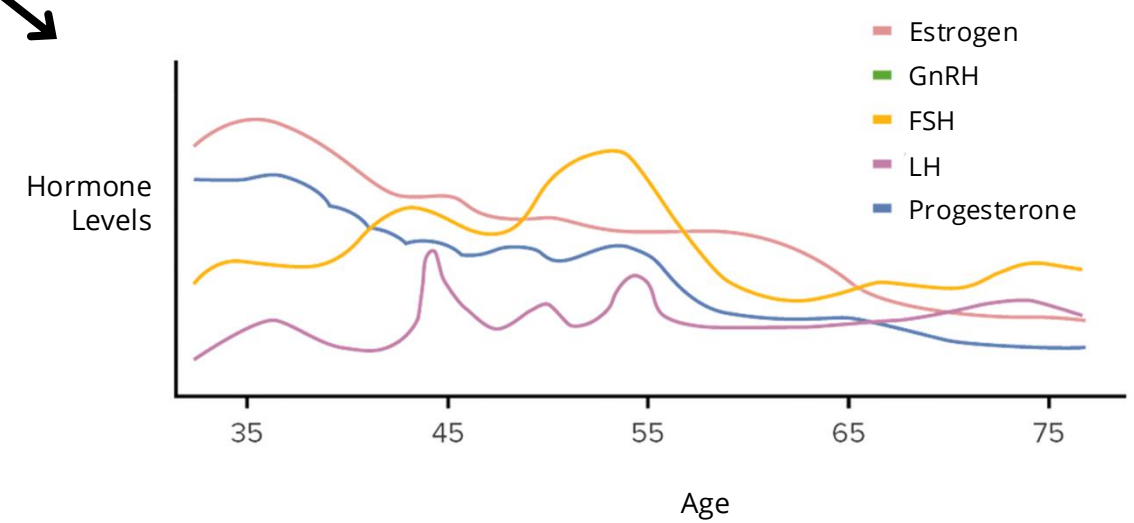
Why It Happens in Perimenopause

1. Anovulatory Cycles = Low Progesterone
2. Ovarian Aging = Hormonal Chaos
3. Environmental Xenoestrogens
4. Stress = Adrenal Hormone Shift

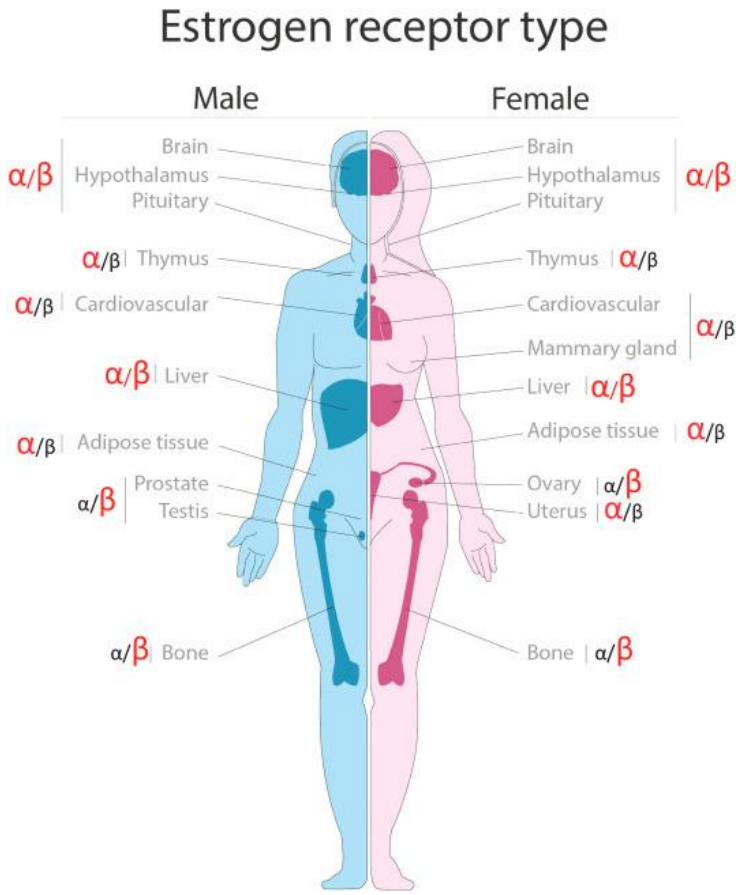
Why It Happens in Perimenopause



Hormones leading up to, during, and after menopause



Estrogen Receptors: The Forgotten Layer



- ERα = pro-proliferative, inflammatory
- ERβ = anti-inflammatory, regulatory

Remember:

Aging & inflammation shift receptor balance

Biason-Lauber, A. (2022). Estrogens: Two nuclear receptors, multiple possibilities [Figure]. General and Comparative Endocrinology. Retrieved from ScienceDirect: https://www.sciencedirect.com/science/article/pii/S0303720722001587

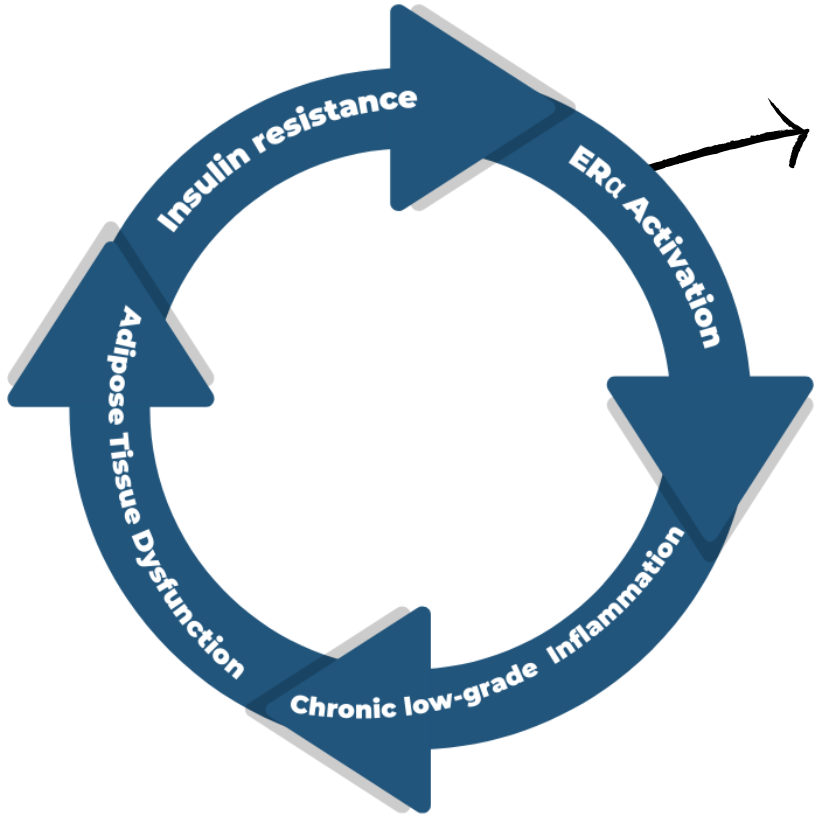
Estrogen Dominance in Perimenopause and Menopause

Insulin Resistance

ERα Activation → Proliferative / Inflammatory Effects

Chronic Low-Grade Inflammation

Adipose Tissue Dysfunction (↑ Aromatase Activity → ↑ Estrogen)

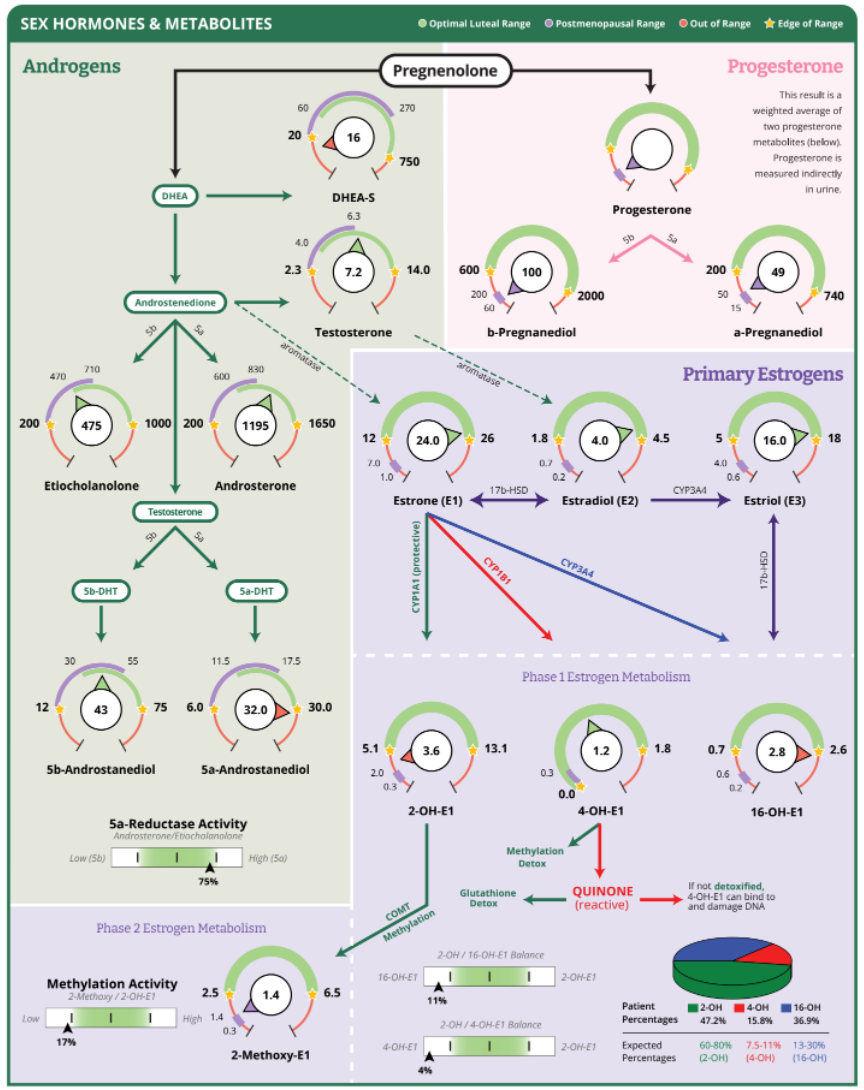


Proliferative / Inflammatory Effects
- Elevated lipids
- Cardiovascular complications & CVA's
- HTN

Conceptual Credit @drlakeischamd
Illustrated by Dream Build Impact

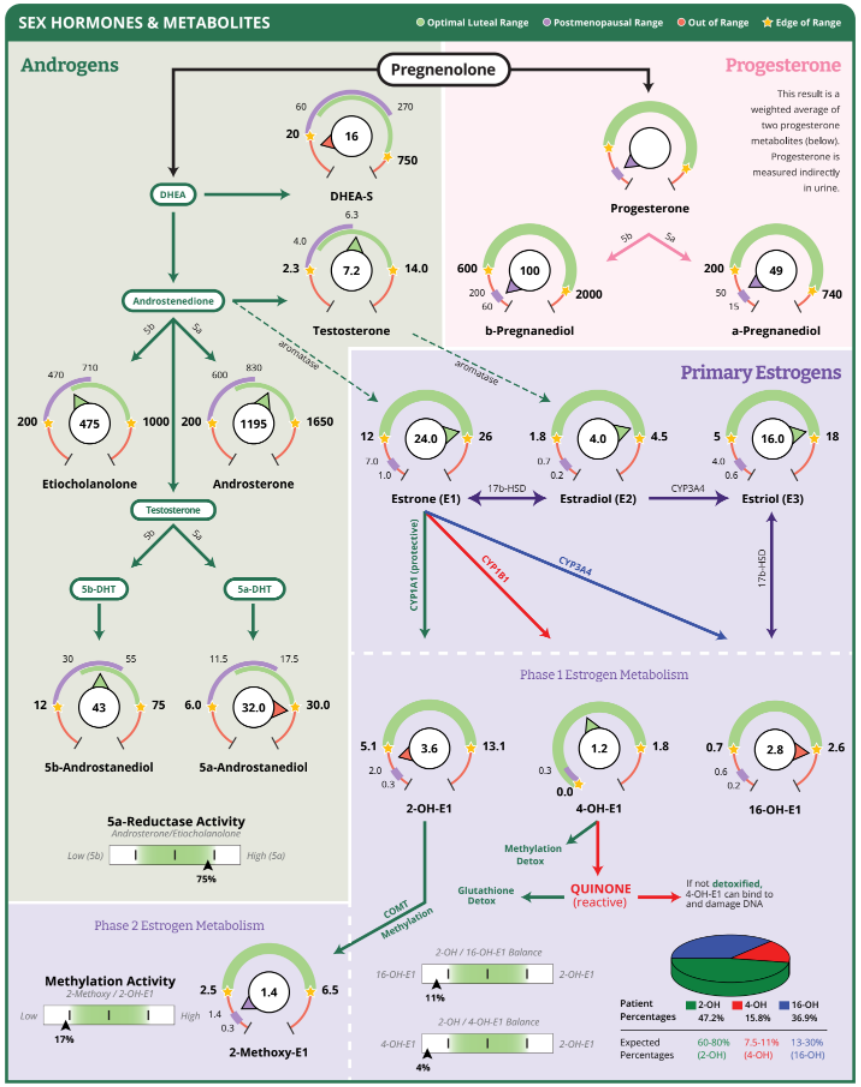
Section 3:
How to Test for Estrogen Excess (DUTCH Focused)

Estrogen Detoxification (Phase I)



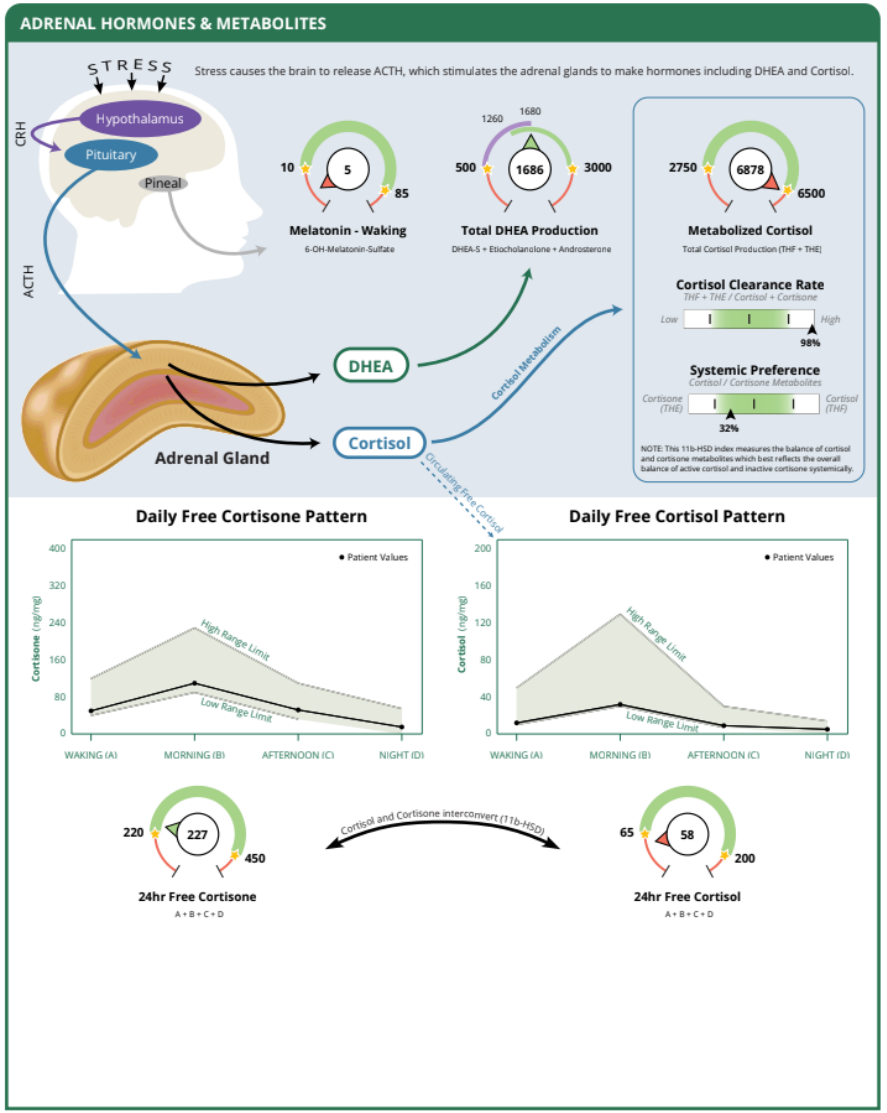
- CYP1A1 → 2-OH: protective pathway
- CYP1B1 → 4-OH: potentially carcinogenic
- CYP3A4 → 16α-OH: proliferative

Estrogen Detoxification (Phase I)



- COMT = methylation of catechol estrogens
- UGT, SULT, GST = conjugation pathways
- SNPs + nutrient cofactors (Mg, B6, SAMe, B12) impacting clearance

Cortisol Pattern



Angela's DUTCH & Functional Lab Findings

DUTCH Test:

- Estrogen metabolites skewed toward 4-OH and 16α-OH pathways
- Very low 2-Methoxy-E1, indicating impaired methylation
- Low progesterone

- **GI Map/Stool Testing:**
  - High beta-glucuronidase (Phase III congestion)

- **Cortisol Pattern:**
  - Flattened slope with low morning output

Section 4:
How to Treat It

How To Treat It

Match treatment strategies to Phase I, II and III dysfunction

Support hormonal balance through detoxification, nutrition, BHRT (when indicated) and targeted supplements

Angela's Treatment Approaches (Phase-Based Protocols)

Phase I Support:

- DIM and I3C to shift estrogen metabolism toward the 2-OH pathway
- Increased cruciferous vegetables (broccoli, Brussels sprouts, kale)
- Limited alcohol and reduced charred meat intake to ease CYP1B1 activity

Phase II Support:

- Methylated B12 and methylfolate for COMT support
- Magnesium glycinate for methylation cofactor
- SAMe to improve low methylation capacity
- NAC and glutathione for conjugation and oxidative stress reduction

Angela's Treatment Approaches (Phase-Based Protocols)

Phase III Detox & the Gut-Liver-Hormone Highway:

- Calcium-D-glucarate to reduce estrogen reactivation
- Dietary fiber to 30g/day (flax, chia, vegetables)
- Broad-spectrum probiotic to rebalance gut flora
- Supported bile flow with lemon water, bitters, and digestive support
- Addressed constipation with magnesium citrate at night

Terrain Support:

- Reduced high-glycemic carbs to stabilize insulin
- Added daily walks and light strength training to improve insulin sensitivity
- Implemented sleep hygiene practices to restore cortisol rhythm

Angela's Treatment Approaches (Phase-Based Protocols)

Hormone Support:

- Bioidentical progesterone to counter estrogen dominance symptoms and improve sleep

Angela's Treatment Approaches (Phase-Based Protocols)

The Estrogen Equation = Whole Systems
Angela's care addressed:

Production: Balanced with progesterone support
- **Receptor Activity**: Shifted ERα dominance with anti-inflammatory diet and gut healing

Detox Pathways: Optimized Phase I, II, and III
- **Terrain**: Reduced inflammation, improved insulin sensitivity, restored gut function

Angela's Outcome — 12 Weeks Later
- Periods lighter and more predictable
- 8 pounds weight loss without calorie restriction
- Sleeping through the night, no 3am wakeups
- Moods stable, no more daily breast tenderness
- Energy restored — she's "herself" again

Resources

1. **Estrogen Receptor Dynamics (ERα vs ERβ)**
   - Katzenellenbogen BS et al. *Regulation by selective estrogen receptor modulators…* – This foundational thematic review explores how ERα and ERβ differ in tissue distribution and ligand binding, and why receptor subtype balance is clinically significant.
   - Chen P et al. "Role of estrogen receptors in health and disease." *Frontiers in Endocrinology* (2022) – Offers a modern overview of ERα, ERβ, and GPER1 roles across health states.

2. **Inflammation, Insulin Resistance & Aromatase in Midlife**
   - Ahmed F et al. (2025) – Demonstrates the connection between metabolic dysregulation and elevated aromatase and estrogen receptor activity in adipose tissue.
   - Brown KA et al. (2017) – In postmenopausal women, breast aromatase levels correlate with metabolic dysfunction, revealing a key driver of local estrogen production.

Resources

3. Mechanisms of Estrogen Production in Fat Tissue

- Rose DP et al. (2015) – Reviews how estrogen continues to be produced from adrenal androgens in adipose tissue post-menopause.

4. The Menopausal Transition as an Inflammatory Event

- McCarthy M et al. (2020) – Frames menopause itself as a systemic and central inflammatory event, with implications for estrogen receptor regulation.

5. Metabolic Changes & Adiposity After Menopause

- Rehman A et al. (2024) – Explores how increased central adiposity during reproductive aging intersects with endocrine shift and metabolic risk.

6. Estrogen's Role in Glucose & Insulin Metabolism

- Mauvais-Jarvis F et al. (2024) – Clinical insight into estrogen's (E_2) benefits on glucose control and insulin sensitivity in postmenopausal women, including differences by administration route

More Information About Your Instructor

Stay in Touch
with Dr. LaKeischa

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Thank You!

Dr. LaKeischa McMillan, MD

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