The Weight of Womanhood



Women's Health & Weight Loss: Hormonal and Metabolic Considerations across life.

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Learning Objectives

- Describe estrogen's role in metabolic regulation
- Explain mechanisms of midlife body composition change
- Evaluate evidence-based interventions including resistance training, hormone therapy, and pharmacotherapy



About Me

OU graduate
Private practice boss lady since 2018
Retired obstetrician since 2024
Menopause expert
Weight loss wrestler
Oklahoma Women's Health Collective Co-Founder

Financial Disclosures

- Paid speaker by Bayer
- Co-Founder of Oklahoma Women's Health Collective

That's Me!

- June 2023
  - 250lbs
  - BMI 38
  - Busy OBGYN
  - 5 & 2 year olds





- June 2025
  - 175lbs
  - BMI 26.6
  - Retired OB
  - 7 & 4 year olds

The Lie Women are Told...

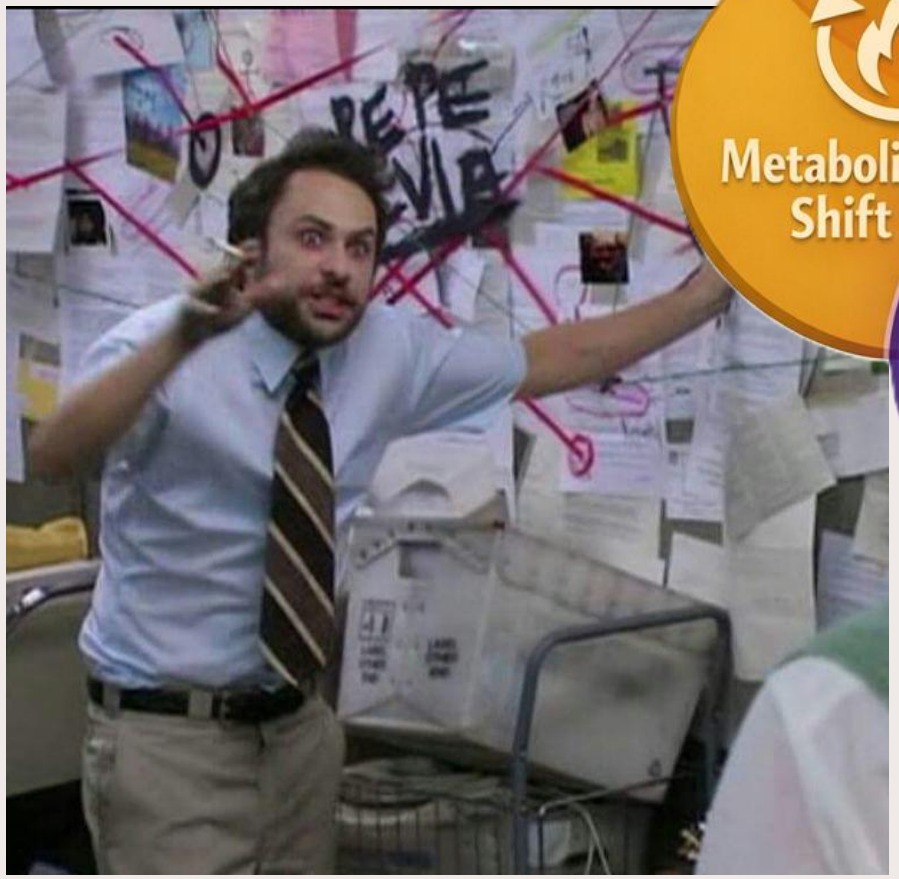
Eat Less...

Move More...

Try Harder...

Laws of Thermodynamics

- The first law of thermodynamics states that ”Energy cannot be created or destroyed, only transformed, and the change in a system's internal energy equals the heat added minus the work done by the system”
    - “Calories In, Calories Out” Mantra
- Why this doesn’t fully explain weight loss…
    - Some calories are lost to metabolic waste (feces, urine, sweat, breath)
        - Gut microbiome can play a role
    - The body’s energy expenditure is influenced by hormones, sleep, stress, medications, and metabolic health
    - Thermodynamic inefficiency (A calorie is a calorie…or is it?)
        - Some calories require more energy to process





Weight gain is a convergence of physiological stressors, not a failure of willpower

Women Are Not Men

- Almost all nutrition research was originally done by men
- Women are hormonally dynamic
    - Puberty, Menstrual cycle, Pregnancy, Perimenopause and Menopause
    - A constant changing of hormones
        - Estrogen, Progesterone, Testosterone
- Cyclical Metabolism
- Circadian Rhythm

What Estrogen Actually Does

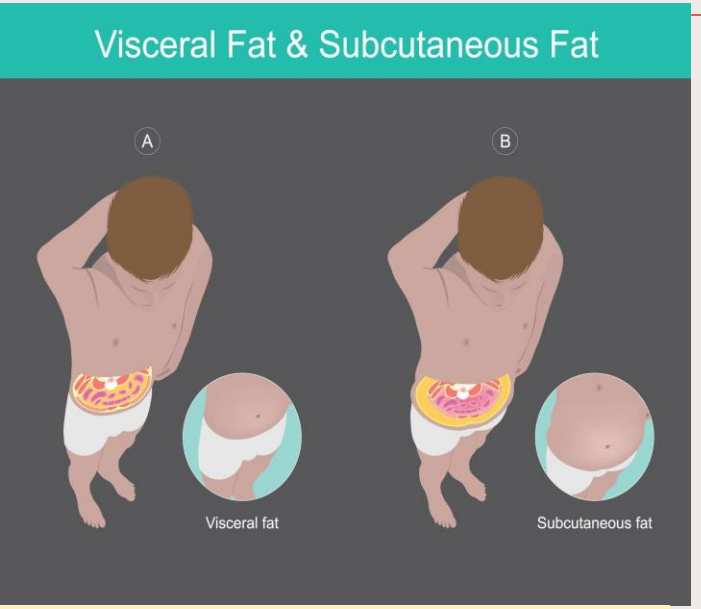
- Nearly EVERY tissue in the body has estrogen receptors!
- Improves insulin Sensitivity
- Affects fat distribution
- Inflammation Control
- Improves Mitochondrial efficiency

•*Mauvais-Jarvis F. Diabetologia. 2015;58:220-229.*
•*Barros RPA, Gustafsson JA. Physiol Rev. 2011;91: 1301-1356.*

Life Stages of Metabolic Change



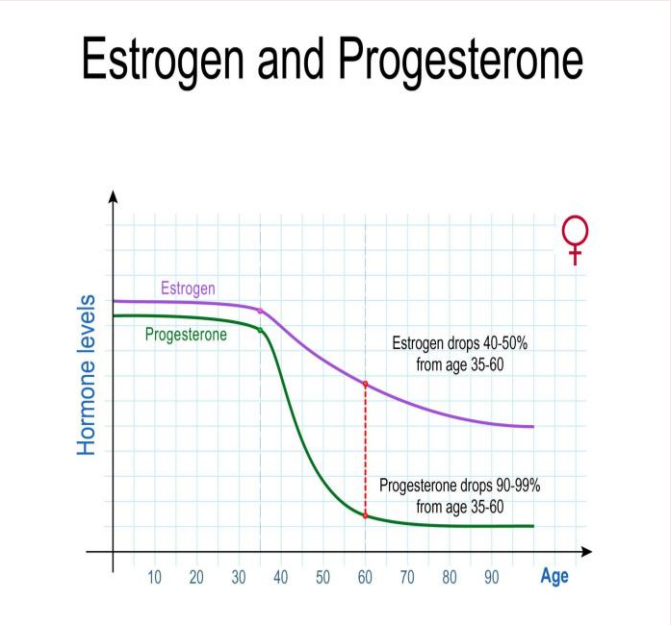
- Puberty
- Pregnancy
- Postpartum
- Perimenopause
- Menopause





The Perimenopause Shift

- Visceral fat increases
  - Both menopause and Aging affect this independent of each other
  - Shift from gynoid to android fat distribution
- Muscle mass declines
- Resting metabolic rate drops
- Sleep worsens



- Lovejoy JC et al. Obes Res. 2008;16:213-221
- Toth MJ et al. Am J Clin Nutr. 2000;71:473-480
- Després JP. Circulation. 2012;126:1301-1313.

A Word about PCOS

- What is it?
  - Polycystic Ovarian Syndrome is a common (and complex) hormonal disorder characterized by irregular ovulation, excess androgens, and metabolic dysfunction that can affect fertility, weight, skin, and long-term health
  - Not well understood
  - Insulin resistance is at its core
    - Intrinsic insulin resistance
    - Ovarian overproduction of androgens > leads to insulin resistance
      - Insulin resistance further stimulates ovaries to produces more androgens
        - A horrible self-reinforcing loop
    - Weight gain...leading to further insulin resistance

The Consequences of Weight Gain

- Cardiac Risk
- Cancer Risk
- Cognitive Risk
- Diabetes Risk
- Non-Alcohlic Fatty Liver Disease
- Bone Health



Muscle Loss Starts Earlier Than You Think

- Skeletal muscle = primary site of insulin-mediated glucose uptake
- Lean mass correlates with improved insulin sensitivity
- Sarcopenia begins in late 30s
- 3-8% muscle loss per decade
- Muscle drives metabolic rate

- Wolfe RR. Clin Nutr. 2006;25:539-548.
- Janssen I et al. J Appl Physiol. 2000;89:81-88.
- DeFronzo RA, Tripathy D. Diabetes Care. 2009;32(Suppl 2):S157-S163.

Insulin Resistance in Midlife

- What is insulin?
    - Insulin is a hormone made by the beta cells of the pancreas and helps regulate how your body uses and stores energy
    - Insulin is central to weight regulation, drives fat storage vs. fat burning, is a key player in metabolic syndrome, and interacts with other hormones.
- Estrogen decline leads to decreased insulin sensitivity
- Sleep disruption increases insulin resistance
- Increased visceral fat increases insulin resistance

The Cortisol Effect

- Elevated cortisol drives insulin resistance
- Chronic stress → elevated cortisol → promotes central fat storage
- Other factors that increase cortisol...
    - Poor sleep
        - Stress can lead to elevated evening cortisol and further lead to fragmented sleep – a vicious cycle
    - Alcohol consumption
    - Menopause

- Epel ES et al. Psychoneuroendocrinology. 2000;25: 741–759.

Poor Sleep

- Partial sleep deprivation → reduced insulin sensitivity
- Altered leptin/ghrelin signaling
    - Increased appetite, reduced impulse control
- Increased cortisol
- Circadian Rhythm also plays a role
    - Morning > highest insulin sensitivity
    - Evening/Night > lowest insulin sensitivity > higher insulin > more fat storage (same meal, different outcomes)
        - Melatonin reduces insulin secretion
    - Every tissue has its own clock (liver, muscle, fat) that can get out of sync.



- Spiegel K et al. Lancet. 1999;354:1435–1439.
  12. Buxton OM et al. Sci Transl Med. 2012;4:129ra43.

Well this is all a bummer... So let's talk strategies!

- " Unless you're genetically blessed, once you get into your 40s (and maybe sooner), you can't eat the way you used to without gaining weight." –The Menopause Diet Plan (page 23)

- Embrace what you can control!



Foundational Strategy #1: Eating patterns matter

- Increasing protein consumption
  - 1.2 – 1.6g/kg/day
  - 30g per meal target
- WHEN YOU EAT is important
- 80/20 rule…but everyday!
- Include protein in every snack
- FIBER
- Decrease alcohol consumption

Foundational Strategy #2: Exercise

- 150 minutes/week
  - Strength training 2-3x/week
- Cardio
  - Walking!
- Literally ANYTHING is better than nothing

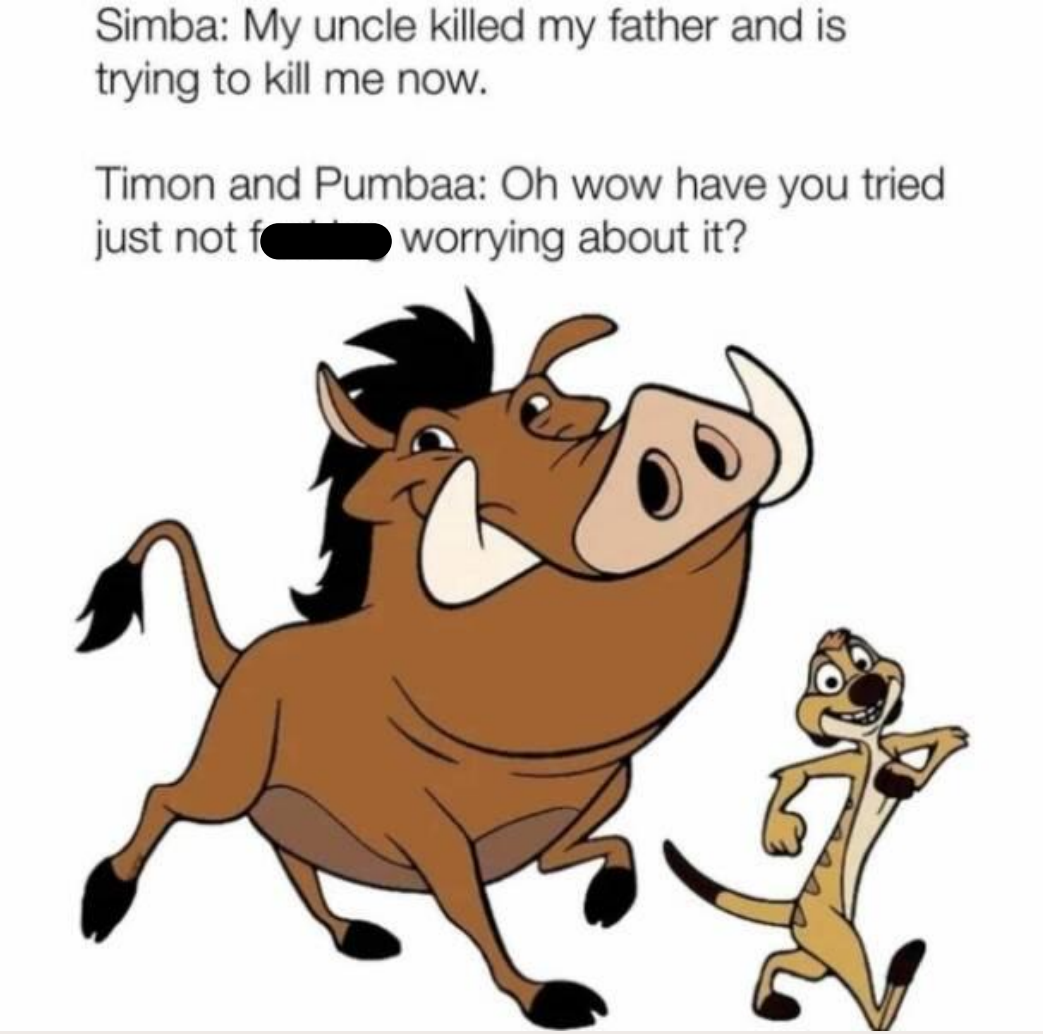
9. Willis LH et al. J Appl Physiol. 2012;113:1831-1837.
10. Strasser B et al. Sports Med. 2010;40:397-415.

Foundational Strategy #3: Sleep as Metabolic Medicine

- 7-9 hours
- Medication support if needed
- Sleep Hygiene



Foundational Strategy #4: Decrease Stress



- Again…EMBRACE when you can control

Hormone Optimization

- Estrogen therapy
    - May attenuate central fat accumulation
    - Improves insulin sensitivity in early menopause
- Progesterone
    - May improve sleep quality
- Testosterone (selected patients)
- Thyroid evaluation



- Davis SR et al. Menopause. 2015;22:346–353.
15. NAMS Position Statement. Menopause. 2022;29:767–794

Anti-Obesity Medications

- Appetite regulation
- Insulin signaling
- Brain-gut axis

Who is a Candidate?

- BMI ≥ 30
- BMI ≥ 27.5 + comorbidity
- Insulin resistance
- PCOS
- Menopausal metabolic shift

- AACE/ACE Obesity Guidelines. Endocr Pract. 2016.
  18. Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab. 2015.

Medication Options

Wellbutrin
- Less reward driven eating; less food noise; suppressed appetite; mild metabolism increase
- 3-7% body weight loss

Wellbutrin + Naltrexone
- Targets appetite suppression and reward pathways simultaneously
- 5-10% body weight loss

Phentermine
- Appetite suppression & stimulation of the adrenergic system
- 5-10% body weight loss

Phentermine + Topiramate
- Targets both hunger and cravings; changes food taste
- 10-15% body weight loss

Orlistat
- Blocks fat absorption in the gut
- 3-5% body weight loss

Metformin
- Suppresses gluconeogenesis; improves insulin sensitivity; reduce appetite
- 2-5% body weight loss

Liraglutide
- Central, GI, and metabolic pathways (less potent)
- 8-10% body weight loss

Semaglutide
- Central, gastrointestinal, AND metabolic pathways
- 15-20% body weight loss

Tirzepatide
- Hunger + satiety + cravings + fat metabolism
- GIP effect: enhances satiety signaling, improves adipose tissue metabolism, helps restore normal energy partitioning
- 20-25% body weight loss

Medication	Primary Mechanism	Hunger	Cravings / Reward	Metabolism / Insulin
Metformin	↓ hepatic glucose, ↑ insulin sensitivity	–	–	✅✅
Wellbutrin	↑ dopamine + norepinephrine	–	✅✅	–
Wellbutrin + Naltrexon	POMC activation + opioid blockade	–	✅✅✅	–
phentermine	↑ norepinephrine (hypothalamus)	✅✅✅	–	–
Phentermine + Topiramate	NE + GABA/glutamate modulation	✅✅	✅✅	–
Semaglutide	GLP-1 (satiety + gastric emptying)	✅✅✅	✅✅	✅
Tirzepatide	GLP-1 + GIP dual incretin	✅✅✅	✅✅✅	✅✅

Patient Struggle	Best Options
Insulin resistance / PCOS / menopause weight gain	Metformin, GLP-1, Tirzepatide
Food noise / emotional eating	Contrave, Wellbutrin
True hunger / large portions	Phentermine, GLP-1
Hunger + cravings combined	Qsymia, Tirzepatide
Need most effective option	Tirzepatide > Semaglutide

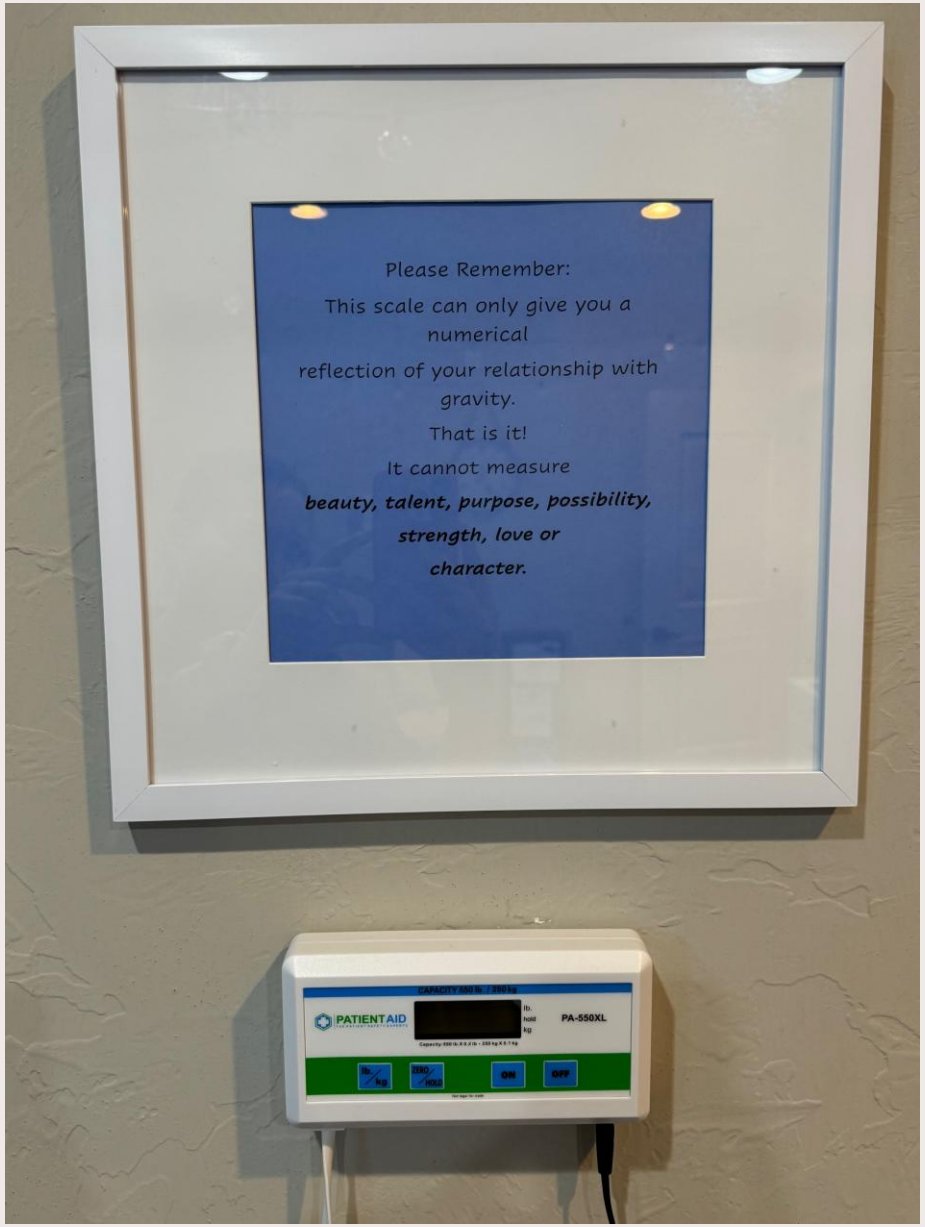
Emotional Component

- We HAVE to reframe how we think about this…
  - Shame cycle
  - All-or-nothing mindset
  - Monday restart syndrome

- Perfection is the enemy of good enough. How you live the majority of the time influences your health the most

- LOVE your changing body!
  - If you are struggling with loving your changing body, seek help.
    - Depression, anxiety, eating disorders, body dysmorphia – these are REAL.

The Balance and Reality of life



"Please Remember: This scale can only give you a numerical reflection of your relationship with gravity. That is it! It cannot measure beauty, talent, purpose, possibility, strength, love, or character."

References

•Mauvais-Jarvis F. Role of sex steroids in metabolic homeostasis, diabetes, and obesity. *Diabetologia.* 2015;58(10):220–229.
•Barros RPA, Gustafsson JA. Estrogen receptors and the metabolic network. *Physiol Rev.* 2011;91(4):1301–1356.
•Lovejoy JC, Champagne CM, de Jonge L, Xie H, Smith SR. Increased visceral fat and decreased energy expenditure during the menopausal transition. *Obes Res.* 2008;16(9):213–221.
•Toth MJ, Tchernof A, Sites CK, Poehlman ET. Menopause-related changes in body fat distribution. *Am J Clin Nutr.* 2000;71(2):473–480.
•Després JP. Body fat distribution and risk of cardiovascular disease. *Circulation.* 2012;126(10):1301–1313.
•Wolfe RR. The underappreciated role of muscle in health and disease. *Clin Nutr.* 2006;25(5):539–548.
•Janssen I, Heymsfield SB, Ross R. Low relative skeletal muscle mass is associated with functional impairment. *J Appl Physiol.* 2000;89(1):81–88.
•DeFronzo RA, Tripathy D. Skeletal muscle insulin resistance. *Diabetes Care.* 2009;32(suppl 2):S157–S163.
•Willis LH, Slentz CA, Bateman LA, et al. Effects of aerobic and/or resistance training on body composition. *J Appl Physiol.* 2012;113(12):1831–1837.
•Strasser B, Arvandi M, Siebert U. Resistance training, visceral obesity, and inflammatory response. *Sports Med.* 2010;40(5):397–415.
•Spiegel K, Leproult R, Van Cauter E. Impact of sleep debt on metabolic and endocrine function. *Lancet.* 1999;354(9188):1435–1439.
•Buxton OM, Pavlova M, Reid EW, et al. Sleep restriction for 1 week reduces insulin sensitivity. *Sci Transl Med.* 2012;4(129):129ra43.
•Epel ES, McEwen B, Seeman T, et al. Stress and body shape: cortisol and abdominal fat. *Psychoneuroendocrinology.* 2000;25(7):741–759.
•Davis SR, Castelo-Branco C, Chedraui P, et al. Understanding weight gain at menopause. *Menopause.* 2012;19(4):419–429.
•The North American Menopause Society. The 2022 hormone therapy position statement. *Menopause.* 2022;29(7):767–794.
•American College of Obstetricians and Gynecologists. Hormone therapy in menopausal women. *ACOG Practice Bulletin No. 141.* Obstet Gynecol. Reaffirmed.
•Garvey WT, Mechanick JI, Brett EM, et al. American Association of Clinical Endocrinologists guidelines for obesity. *Endocr Pract.* 2016;22(suppl 3):1–203.
•Apovian CM, Aronne LJ, Bessesen DH, et al. Pharmacologic management of obesity. *J Clin Endocrinol Metab.* 2015;100(2):342–362.
•Wilding JPH, Batterham RL, Calanna S, et al. Once-weekly semaglutide in adults with overweight or obesity. *N Engl J Med.* 2021;384(11):989–1002.
•Jastreboff AM, Aronne LJ, Ahmad NN, et al. Tirzepatide once weekly for obesity. *N Engl J Med.* 2022;387(3):205–216.
•Marso SP, Daniels GH, Brown-Frandsen K, et al. Liraglutide and cardiovascular outcomes. *N Engl J Med.* 2016;375(4):311–322.
•Wright H, Ward EM. The Menopause Diet Plan: A Natural Guide to Managing Hormones, Health, and Happiness. Rodale; 2020.

Thank you!







