

EXCLUSIVE LIVE WEBINAR

Menopause & “Manopause”: Coping with Midlife Health Together

PRESENTED BY

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November 1, 2023
2-3:30pm ET

EARN
1.5 CEUs



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- **Val Schonberg MS, RDN, CSSD, LD, MSCP, FAND**, faculty for this event, has no relevant financial relationship(s) with ineligible companies to disclose.
- **David Orozco MS, RDN, CIEC, EP-C**, faculty for this event, has no relevant financial relationship(s) with ineligible companies to disclose.
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This activity will also award credit for dietetics (CDR CPEU).

Learner Objectives

1. Define menopause and “manopause” and differentiate the similarities of aging from the unique differences in hormonal shifts that occur for midlife men and women.
2. Identify the physical and psychological changes that accompany this stage of life and the underlying causes of the symptomatology.
3. Utilize other disciplines on the healthcare team to employ evidence-based, weight-neutral strategies to help patients navigate the health challenges associated with midlife and beyond in both male and female individuals.
4. Analyze future gaps and challenges in incorporating best practices for men’s and women’s health during aging and beyond.

Introduction



- Midlife is defined by researchers as encompassing the ages of 40 to 60¹
- 1 in 6 individuals will be over the age of 65 by the year 2050, an increase of 45% from 2019²
- Life expectancy in the US:³
 - 2021: 79.9 (females) – 73.2 (males)
 - The longevity gap between men and women is increasing

¹Infurna FJ, Gerstorf D, Lachman ME. Midlife in the 2020s: Opportunities and challenges. *Am Psychol.* 2020 May-Jun;75(4):470-485. doi: 10.1037/amp0000591.

²United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Ageing 2019: Highlights (ST/ESA/SER.A/430)*.

³Arias E, Tejada-Vera B, Kochanek KD, Ahmad FB. Provisional life expectancy estimates for 2021. *Vital Statistics Rapid Release*; no 23. Hyattsville, MD: National Center for Health Statistics. August 2022. DOI: <https://dx.doi.org/10.15620/cdc:118999>.

Good Relationships Keep Us Happier and Healthier

*Harvard Study on Adult Development*⁴

Poll #1

Which of the following best describes your role as a healthcare professional?

- a. General Practitioner/Internist
- b. Specialist: Gynecology, Urology, Endocrinology, etc
- c. Physicians Assistant/Nurse Practitioner
- d. Nurse
- e. Dietitian
- f. Other



Poll #2

Are you regularly utilizing a multidisciplinary team approach to support your patient's health and aging concerns?

- a. Yes
- b. No
- c. Haven't tried



Definitions

Menopause, Manopause, and Aging

Menopause⁵

- A natural biological event that occurs for half the human population
- The mean age of menopause in the US is approximately 51 years
- 95% of women experience menopause between the ages of 45-55
- Occurs in stages due to the natural depletion of oocytes/follicles in ovaries and consequently depletion of ovarian hormones
- There is no universal experience⁶
 - It is experienced differently around the globe
 - Socioeconomic status, education level, and social and cultural attitudes about menopause, along with biological factors shape a person's experience

⁵Faubion SS, Kuhle CL, Shuster LT, Rocca WA. Long-term health consequences of premature or early menopause and considerations for management. *Climacteric*. 2015;18(4):483-91.

⁶Hickey M, Hunter MS, Santoro N, Ussher J. Normalising menopause *BMJ* 2022.



“Manopause”⁷

- A specific equivalent to the definition of menopause does not exist for men
- We are using this as an umbrella term to describe age-related alterations whose exact nature is still to be determined
 - With normal aging, which begins before the 4th decade, men have a progressive reduction in testosterone and bioavailable testosterone levels and an increase in SHBG (Sex Hormone Binding Globulin)
 - Prevalence of erectile dysfunction begins to increase exponentially from 5% of the adult male population to more than 50% by age 80 years

⁷Korenman SG. "Manopause". *West J Med.* 2000;173(2):80. doi:10.1136/ewjm.173.2.80



Hypogonadism

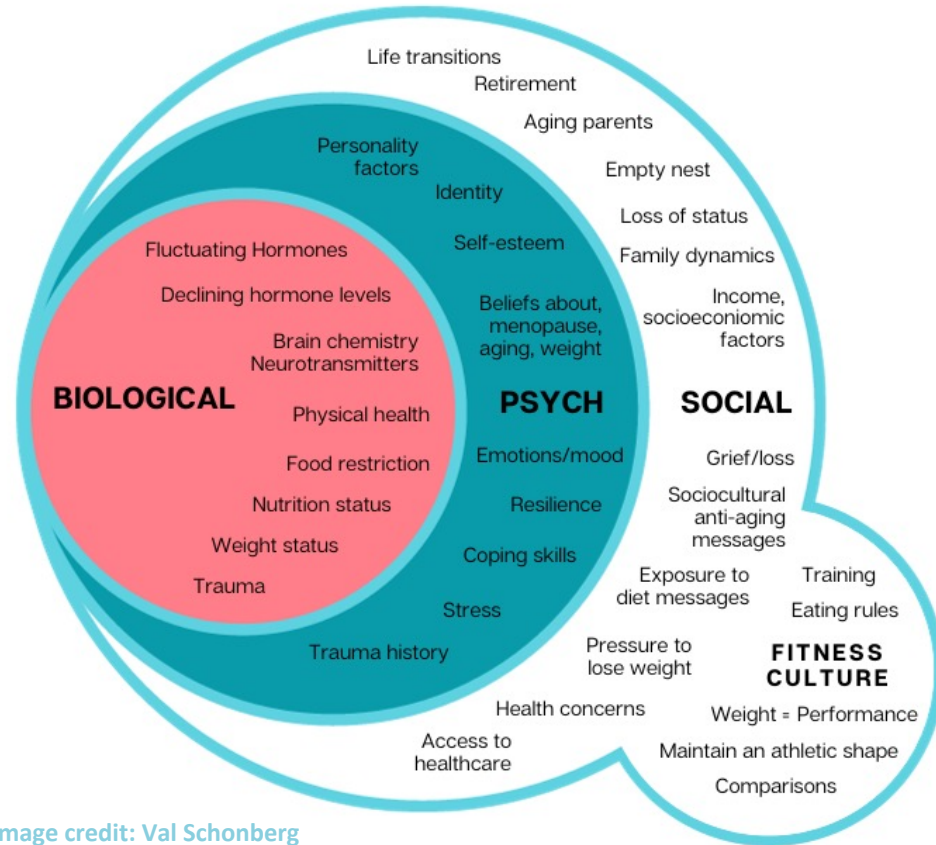
Characteristics:

- Low serum testosterone levels
- Testosterone begins to decline at an average of a 1% rate per year around age 40

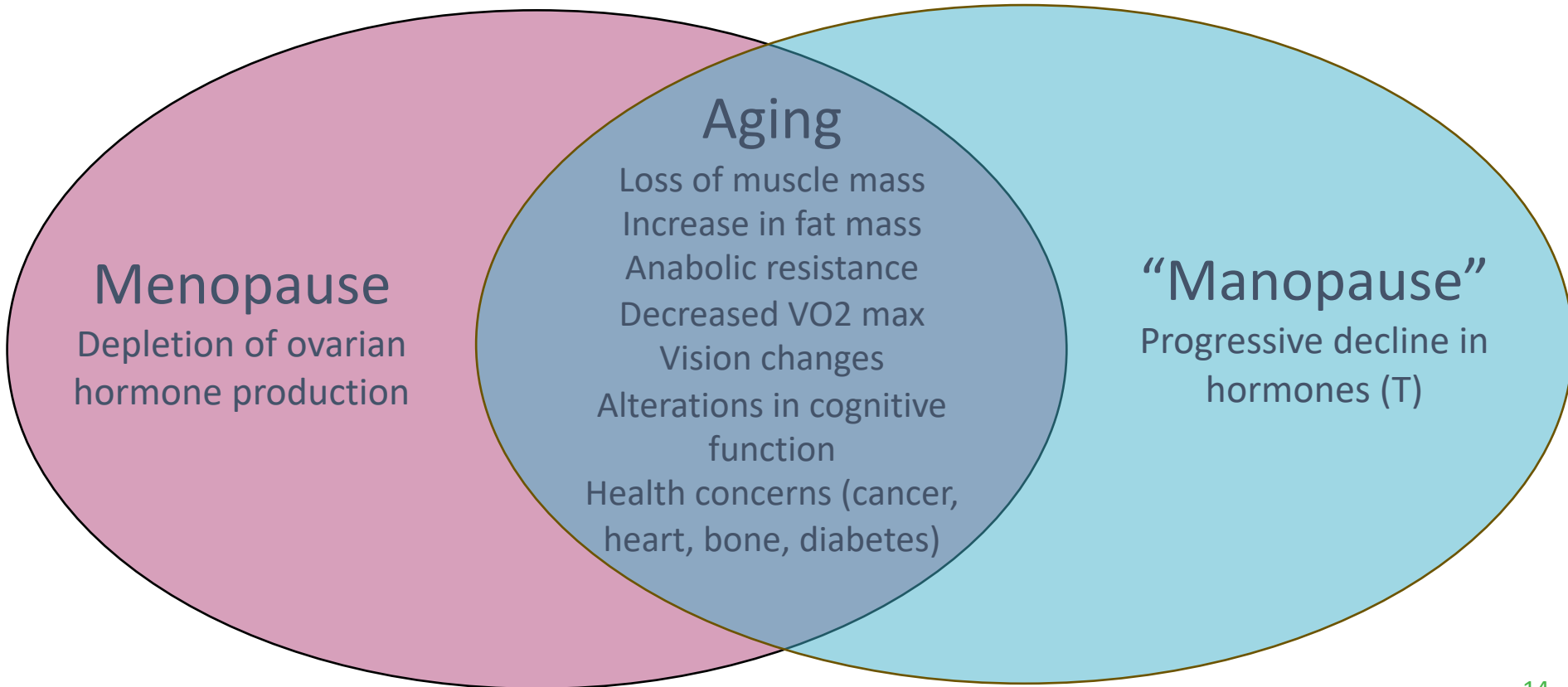
Symptoms:

- Infertility, decreased energy, mood changes and anxiety, decreased libido, hair loss, and height/bone mineral density loss, increased risk for cardiovascular disease and diabetes

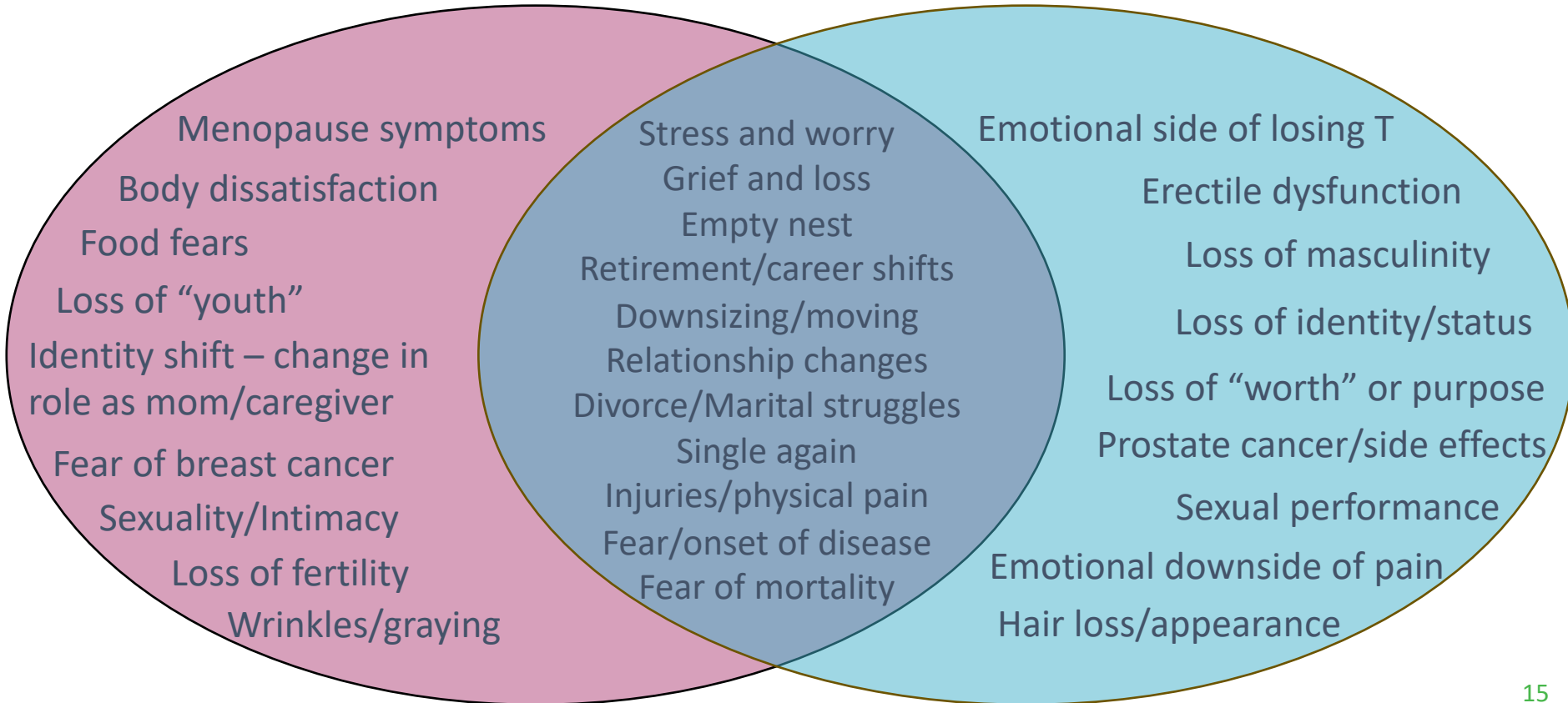
Biopsychosocial model of midlife health



The Midlife “Pause”: More Than Hormones



The Midlife “Pause”: Shared Experiences





Case Study Introduction

His and Her Health Concerns

- 51-year-old female
 - 20-pound weight gain since the pandemic
 - Last period: 6 months ago
 - Menopausal symptoms: Hot flashes, insomnia, and fatigue
 - Lipid profile:
 - Total cholesterol: 220 ng/mL
 - LDL cholesterol: 134 ng/mL
 - HDL cholesterol: 75 ng/mL
 - TGs: 85
 - A1C: 5.6%
 - “I can deal with the hot flashes but can’t tolerate this weight gain. My husband isn’t interested in sex, and I’m sure it’s because he’s not attracted to me anymore”
- 55-year-old male
 - Presents with fatigue, elevated cholesterol, weight gain, and joint pain
 - He is embarrassed about erectile dysfunction and was told he had low testosterone
 - Lipid profile:
 - Total cholesterol: 236 ng/mL
 - LDL cholesterol: 132 ng/mL
 - HDL cholesterol: 49 ng/mL
 - TGs: 238 mg/dL
 - T: 226 ng/dL
 - “I’ve gained so much weight. I used to be fit and now I struggle with joint and back pain and have a hard time doing the exercise I used to do. My wife and I don’t have time to cook so we usually eat separate or get takeout food”



Interactive Question

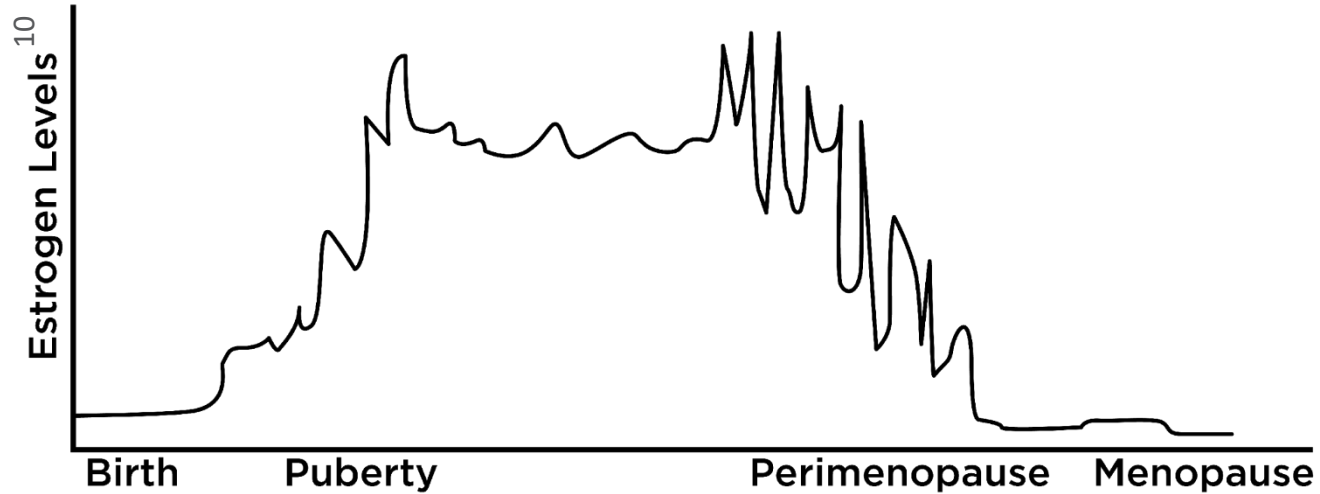
What do you see missing in the treatment of men or women's health during aging?



Menopause

What is Menopause?⁹

- A normal, natural event
- The end of a woman's reproductive years
- Confirmed after one year of no menstrual bleeding



⁹The North American Menopause Society. *Menopause Practice: A Clinicians Guide*, 6th ed. Pepper Pike, Ohio: North American Menopause Society; 2019.

¹⁰Hoyt, LT, Falconi AM. Puberty and perimenopause: reproductive transitions and their implications for women's health. *Soc Sci Med*. 2015;132:103-112.

Why Does Menopause Occur?

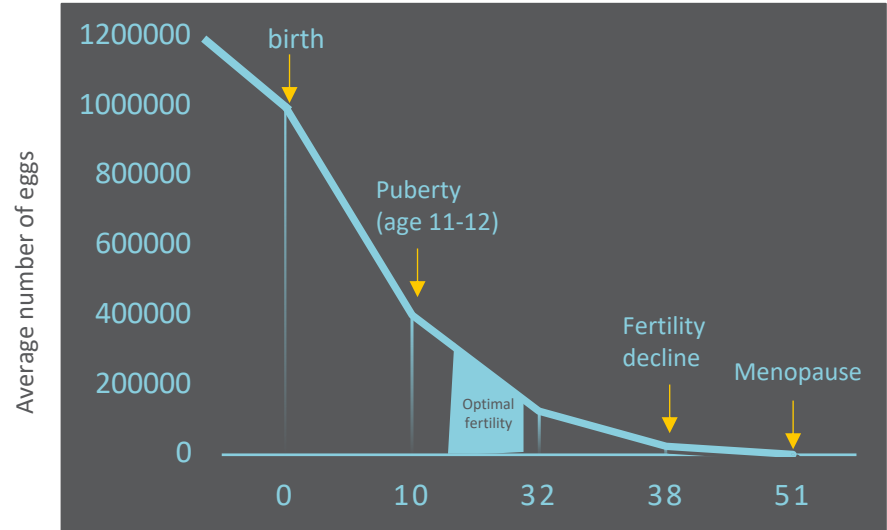
*Reproductive Aging:*¹¹

- We are born with a finite number of eggs “oocytes” contained in follicles
- The ovarian pool of follicles and its depletion is associated with fertility, loss of fertility, and menopause

*The Grandmother Hypothesis:*¹²

- Females outlive their fertility to provide support for younger generations
- There’s an evolutionary benefit of having a grandmother to assist in child-rearing

How many eggs does a woman have?¹¹



¹¹Karl R. Hansen, et al. A new model of reproductive aging: the decline in ovarian non-growing follicle number from birth to menopause, *Human Reproduction*. 2008;23(3):699–708.
Chart Adapted from: ¹¹Karl R. Hansen, et al. A new model of reproductive aging: the decline in ovarian non-growing follicle number from birth to menopause, *Human Reproduction*. 2008;23(3):699–708

¹²Hawkes K, Smith KR. Brief communication: Evaluating grandmother effects. *American Journal of Physical Anthropology*. 2009;140(1):173-176.

Terminology: Stages of Reproductive Aging¹³

Premenopause

- Reproductive years

Perimenopause

- Years leading up to final menstrual period

Menopause

- Final menstrual period confirmed after 12 months of no menstrual bleeding

Postmenopause

- Defined as dating from 1 year after FMP, but immediately in the case of surgical menopause

¹³Harlow SD, et al; STRAW 10 Collaborative Group. Executive summary of the Stages of Reproductive Aging Workshop + 10: addressing the unfinished agenda of staging reproductive aging. *Menopause*. 2012 Apr;19(4):387-95.

Symptoms of Menopause¹⁴

- Hair loss
- Hot flashes/Night sweats
- Sleep disorders
- Irritability, mood swings, depression
- Cognitive (“brain fog”), Memory lapses
- Headaches
- Weight gain/fat redistribution
- Fatigue
- Skin problems (hives, itchy skin)
- Loss of libido
- Vaginal dryness, UTIs
- Persistent urination and urinary pain
- Joint pain, frozen shoulder, decreased bone density
- Irregular heartbeat
- Digestive problems/IBS

Long-term concerns:

Osteoporosis

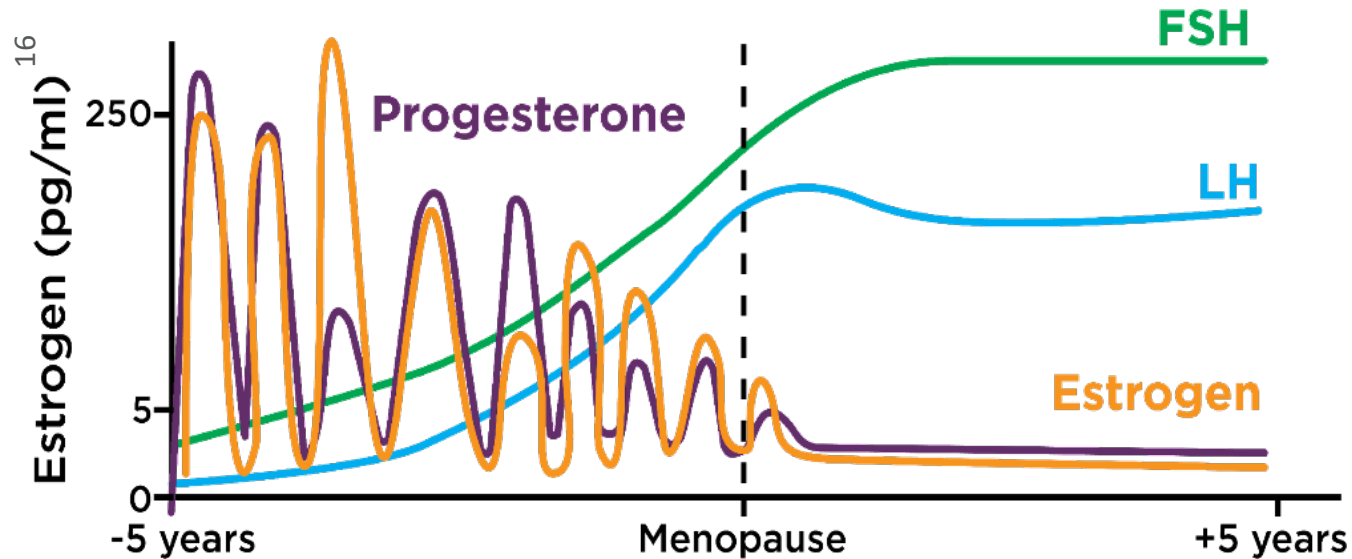
Heart Disease

Diabetes

Cancer

¹⁴Giannini A, Caretto M, Genazzani AR, Simoncini T. Neuroendocrine Changes during Menopausal Transition. *Endocrines*. 2021; 2(4):405-416.

Hormone Fluctuations in the Menopause Transition¹⁵



¹⁵Santoro N, Brown JR, Adel T, Skurnick JH. Characterization of reproductive hormonal dynamics in the perimenopause. *J Clin Endocrinol Metab.* 1996;81(4):1495-1501.

¹⁶Image adapted from Nckehinyere C-O, Baar K. Effect of Estrogen on Musculoskeletal Performance and Injury Risk. *Frontiers in Physiology*, 2019.

Historical Perspective

**1965:
Menopause
is a
“Hormone
Deficiency
Disease”**

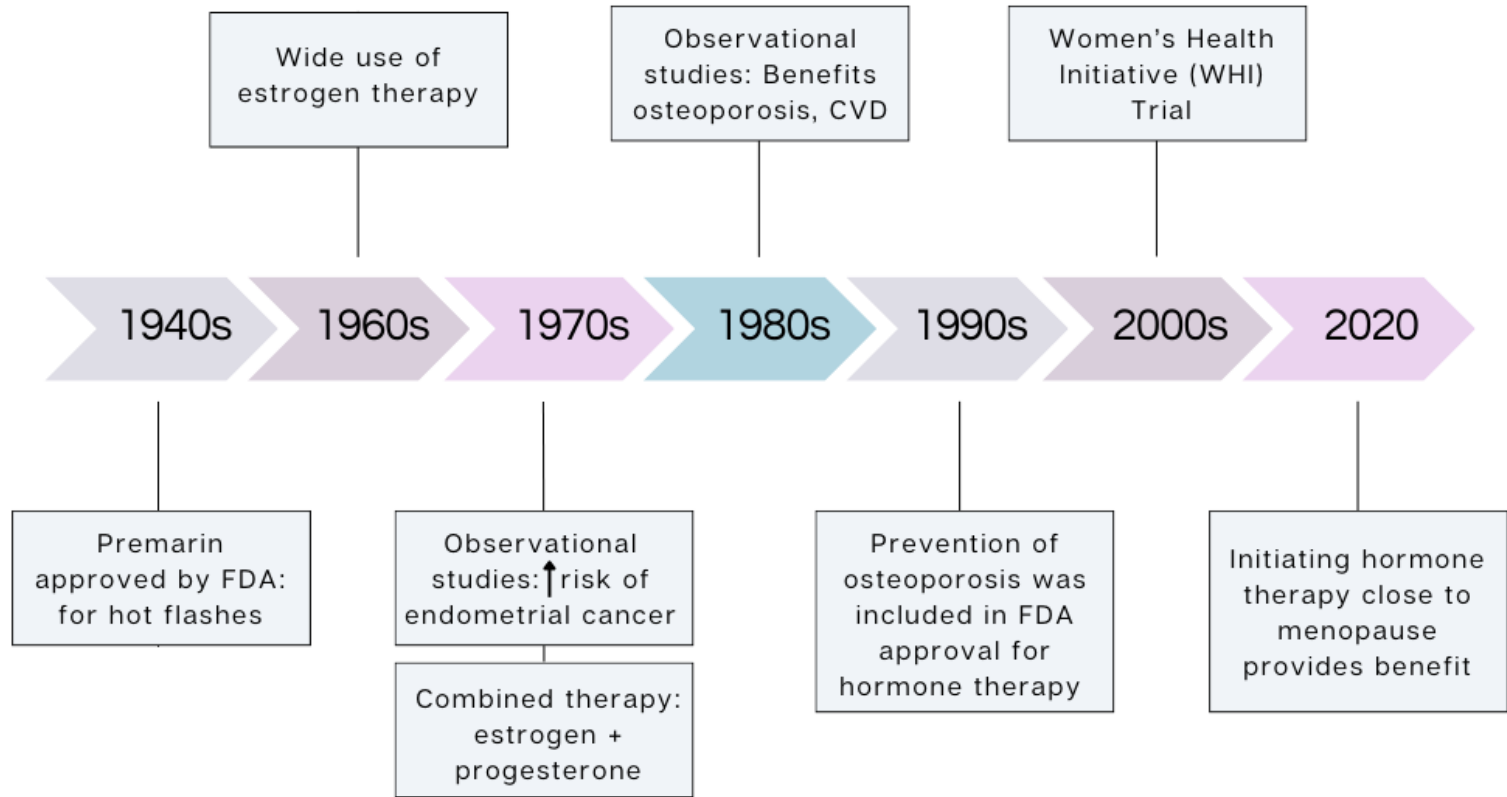
“No woman can escape the horror of this living decay ...even the most valiant woman can no longer hide the fact that she is, in effect, no longer a woman.”¹⁷

**1966
Marketing
Campaign
“Keep her
on
Premarin”**

“It is no easy thing for a man to take the stings and barbs of business life, then to come home to the turmoil of a woman 'going through the change of life'. If she is not on 'Premarin,' that is.”¹⁸

¹⁷Wilson, R. A. (1966). *Feminine Forever (A New Life: The Quest and the Key)*. New York/Philadelphia: Evans/Lippincott. [224 pages] [4th printing]

¹⁸The checkered history of Pfizer's Premarin family of drugs. The Fund for Horses. June 2021

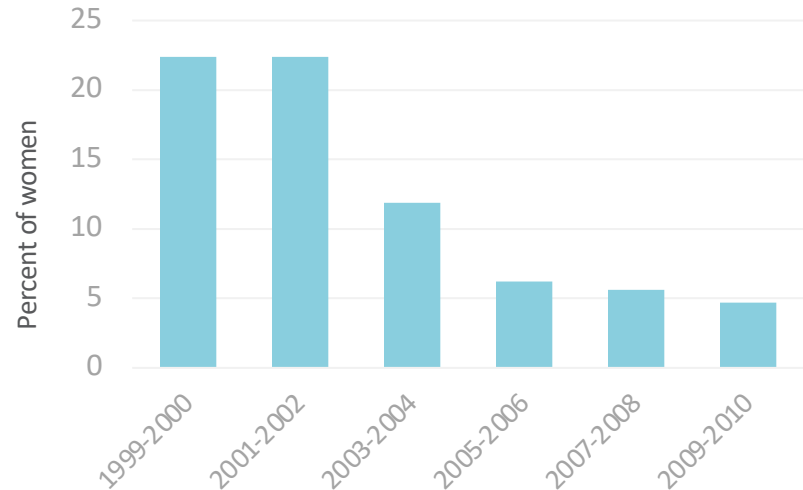


¹⁹Image adapted from: Pan, M et al. Update on hormone therapy for the management of postmenopausal women. *BioScience Trends*, 2022.

2002 Women's Health Initiative Study²⁰

- Linked hormone replacement therapy (HRT) to a “slightly increased risk of stroke, heart disease and cancer”
 - Reassessment of clinical trials now show benefit and rare risks²²
- Women desire “safer” alternative treatment options for menopausal symptoms

Prevalence in Menopause Hormone Therapy Use among women > 40 years of age²¹



²⁰Writing Group for the Women's Health Initiative Investigators. Risks and Benefits of Estrogen Plus Progestin in Healthy Postmenopausal Women: Principal Results From the Women's Health Initiative Randomized Controlled Trial. *JAMA*. 2002;288(3):321–333

²¹Sprague BL, et al. A sustained decline in postmenopausal hormone use: results from the National Health and Nutrition Examination Survey, 1999–2010. *Obstet Gynecol*. 2012;120(3):595–603.

²²Manson JE, et al. Menopausal Hormone Therapy and Health Outcomes During the Intervention and Extended Poststopping Phases of the Women's Health Initiative Randomized Trials. *JAMA*. 2013;310(13):1353–1368

Menopause Research Has Evolved

Empty Nester Syndrome → Physiology and neurobiology of hormones



Do we need to “replace” hormones?



Menopause is a normal, biological event

Knowledge About Menopause

- 2019 MATE Survey of men's perceptions and attitudes towards menopause²³
 - Over three-fourths of men said that menopause negatively affected them and their partner
 - Men affected by menopausal symptoms noted that the symptoms put an emotional strain on their relationship, reduced the frequency of sex/intimacy, and contributed to trouble sleeping
- 2018 Survey of family medicine, internal medicine, obstetrics and gynecology residency trainees²⁴
 - 20% reported not receiving any menopause lectures during their education
 - Only 6.8% felt adequately prepared to manage women experiencing menopause
 - Over one-third indicated they would NOT offer HT to a symptomatic, newly menopausal woman without any contraindications

Men reported that women sought treatment for help with their symptoms from:

Gynecologists/OBGyn (65%)
GP's/internal medicine (42%)
NP's/PA's (24%)
Other health & wellness professionals (16%)
Dietitians (8%)

²³Parish, S. J., Faubion, S. S., Weinberg, M., Bernick, B., & Mirkin, S. (2019). The mate survey: Men's perceptions and attitudes towards menopause and their role in partners' menopausal transition. *Menopause*, 26(10), 1110–1116.

²⁴King JM et al. Menopause Management Knowledge in Postgraduate Family Medicine, Internal Medicine, and Obstetrics and Gynecology Residents: A Cross-Sectional Survey. *Mayo Clinic Proceedings*, Volume 94, Issue 2, 242 - 253

Manopause

Andropause or Hypogonadism

What is “Manopause”?

- Not like menopause in women
- No distinct stopping point of T production like in menopause
- An umbrella term to describe age-related alterations²⁶
 - Exact nature TBA
 - Progressive reduction in Total and Free T
 - An increase in SHBG
- Term 1st popularized by David Von Drehle 2014 Time Magazine²⁵

²⁵2014 Time Magazine article <https://time.com/magazine/us/3062871/august-18th-2014-vol-184-no-6-u-s/>; Accessed on Sep 2023

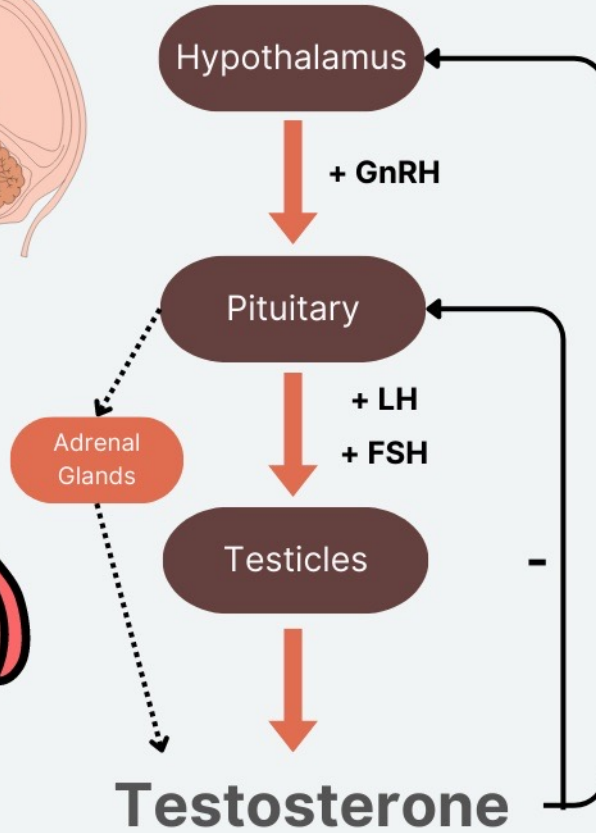
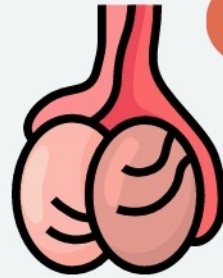
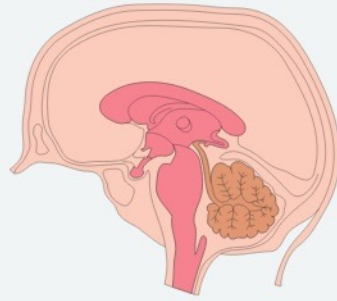
²⁶Korenman SG. "Manopause". West J Med. 2000;173(2):80. doi:10.1136/ewjm.173.2.80

Testosterone “T” Production^{27,28}

- A 19-carbon androgenic steroid hormone made from cholesterol
- Men produce about 7mg of T a day
- About 95% from testes ~ 5% from adrenal glands
- Total T
 - Free T – unbound, 2-3% of Total
 - SHBG Bound T – 40-50 % of Total T is bound, strong bond
 - (*SHBG = Sex Hormone Binding Globulin*)
 - Albumin Bound T – rest of Total T, weak bond
- Highest levels of T are in the morning
 - Poor sleep, illness, extreme fitness can lower levels

²⁷Mechanisms in Medicine; Interactive Animated Medica Education; Testosterone Production: https://youtu.be/djqgao2Uebo?si=xUrq3ZkM_m8E4nCo; Accessed on Sep 2023

²⁸Cleveland Clinic: Testosterone; <https://my.clevelandclinic.org/health/articles/24101-testosterone>; Accessed on Sep 2023



HPG Axis

Image credit: David Orozco

²⁷Mechanisms in Medicine; Interactive Animated Medical Education; Testosterone Production: https://youtu.be/djggao2Uebo?si=xUrq3ZkM_m8E4nCo; Accessed on Sep 2023

²⁸Cleveland Clinic; Testosterone; <https://my.clevelandclinic.org/health/articles/24101-testosterone>; Accessed on Sep 2023

Other Sex Hormones^{27,28}

- DHEA – dehydroepiandrosterone made by adrenal glands to make androgens **T** and estrogen (**E**)
- DHT – dihydrotestosterone – male characteristics
- Estrogen (**E**) – **T** directly converts to **E**
 - **E** is cardioprotective and important for better health
- SHBG – also known as Androgen Binding Globulin
 - Binds **T**, DHT, DHEA, and **E**
 - Helps keep **T** levels stable

²⁷Mechanisms in Medicine; Interactive Animated Medical Education; Testosterone Production: https://youtu.be/djqgao2Uebo?si=xUrq3ZkM_m8E4nCo; Accessed on Sep 2023

²⁸Cleveland Clinic: Testosterone; <https://my.clevelandclinic.org/health/articles/24101-testosterone>; Accessed on Sep 2023

Testosterone Deficiency²⁹

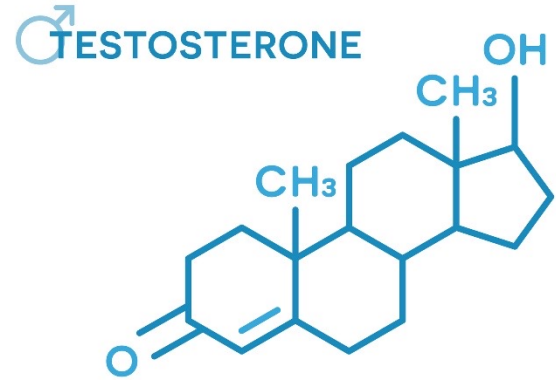
- More commonly known as Hypogonadism
- Testosterone Deficiency (TD) - Consensus term by American Urological Association (AUA)
- Sometimes referred to as Andropause
- Diagnosis Criteria AUA
 - Total T <300 ng/dL presents two times with signs and symptoms
 - Others - Total T <400 ng/dL presents two times with signs and symptoms
 - Many MDs – Total T <250 ng/dL

ANDROPAUSE

²⁹Mulhall JP, Trost LW, Brannigan RE et al: Evaluation and management of testosterone deficiency: AUA guideline. J Urol 2018; **200**: 423.

Testosterone Deficiency²⁹

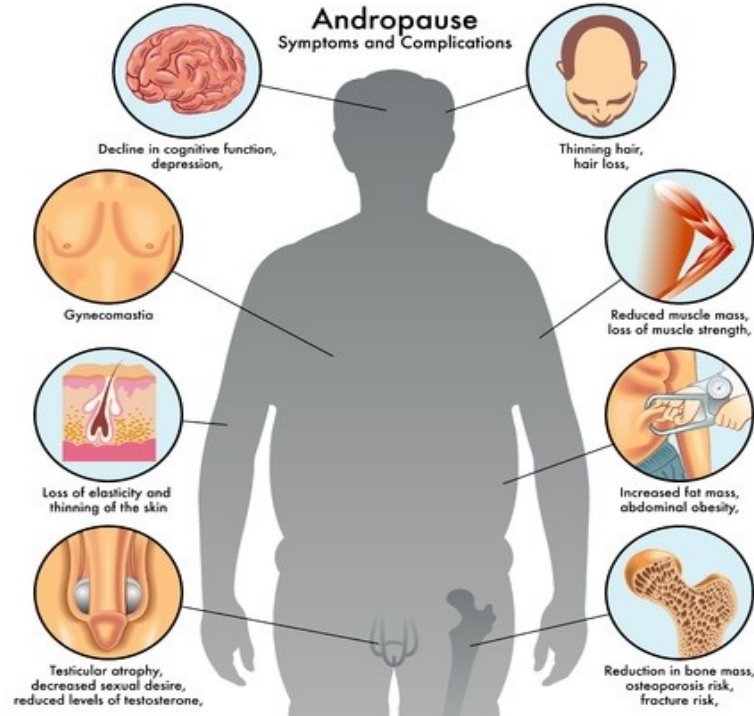
- Occurs in about 5% or about 4-6 million men in US
- Doesn't occur all men and rates vary
- Rates of T decline about 1-1.5% per year over age 30
- Prevalence of erectile dysfunction begins to increase exponentially from 5% of the adult male population to more than 50% by age 80 years



Symptoms

Most common symptoms

- Fatigue
- Weakness
- Depression
- Sexual problems
- Weight gain



Other concerns

- Osteoporosis
- Heart Disease
- Diabetes
- Cancer

Image credit: David Orozco

²⁹Mulhall JP, Trost LW, Brannigan RE et al: Evaluation and management of testosterone deficiency: AUA guideline. J Urol 2018; **200**: 423.

³⁰Shores MM, Matsumoto AM, Sloan KL, Kivlahan DR. Low serum testosterone and mortality in male veterans. *Arch Intern Med.* 2006;166(15):1660-1665. doi:10.1001/archinte.166.15.1660

Causes of Testosterone Deficiency²⁹

Primary – Testicular failure, congenital or acquired

- Castration or absence
- Chemotherapy or radiation
- Testicular cancer or injury
- Klinefelter Syndrome
- Noonan Syndrome
- Sexually Transmitted Infections
- Steroid use

²⁹Mulhall JP, Trost LW, Brannigan RE et al: Evaluation and management of testosterone deficiency: AUA guideline. J Urol 2018; **200**: 423.

Causes of Testosterone Deficiency²⁹

Secondary – Hypothalamic Pituitary Adrenal dysfunction, congenital or acquired

- ↑/↓ LH/FSH levels
- Metabolic Syndrome
 - Insulin resistance
 - Poorly managed diabetes
- HIV/AIDS
- Sleep apnea or insomnia
- Alcohol abuse
- High Stress



Testosterone Replacement Therapy (TRT)³¹

T levels <300 ng/dL with signs or symptoms

- Anemia
- Diabetes or Insulin resistance
- Bone density loss
- Low-trauma fractures
- Testicular radiation
- Chemotherapy
- Positive HIV/AIDS
- Chronic narcotics or alcohol use
- Pituitary gland disorders
- Steroid use



Image credit: David Orozco

³¹Urology Care Foundation: <https://www.urologyhealth.org/urology-a-z/l/low-testosterone>: Accessed on Sep 2023

Testosterone Replacement Therapy^{32,33}

Benefits

- May improve metabolic dysfunction
 - Blood glucose levels or insulin production/resistance
- Increase bone density and lean muscle mass
- Result in weight loss or fat free mass loss
- Improve mood or energy levels
- Improve sex drive or ED conditions
- Improved long-term health profile possible



Image credit: David Orozco

³²Corona G, Giagulli VA, Maseroli E, Vignozzi L, Aversa A, Zitzmann M, Saad F, Mannucci E, Maggi M. THERAPY OF ENDOCRINE DISEASE: Testosterone supplementation and body composition: results from a meta-analysis study. Eur J Endocrinol. 2016 Mar;174(3):R99-116. doi: 10.1530/EJE-15-0262. Epub 2015 Nov 4. PMID: 26537862.

³³Prostate Cancer Foundation: <https://www.pcf.org/c/does-testosterone-cause-prostate-cancer/> : Accessed on Sept 2023

Testosterone Replacement Therapy^{33,34}

Risks

- Cardiovascular complications
 - Blood viscosity – thrombosis concerns
- Prostate cancer progression
 - Inconclusive but possible
 - Possibly ↑PSAs
- Infertility
- Possibly TRT indefinite
- May not work



³³Prostate Cancer Foundation: <https://www.pcf.org/c/does-testosterone-cause-prostate-cancer/>: Accessed on Sep 2023

³⁴Khaw KT, Dowsett M, Folklerd E, et al. Endogenous testosterone and mortality due to all causes, cardiovascular disease, and cancer in men: European prospective investigation into cancer in Norfolk (EPIC-Norfolk) Prospective Population Study. *Circulation*. 2007;116(23):2694-2701. doi:10.1161/CIRCULATIONAHA.107.719005

Aging

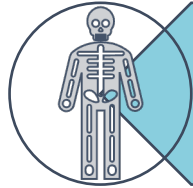
Unique Challenges in Midlife & Beyond³⁵⁻³⁷



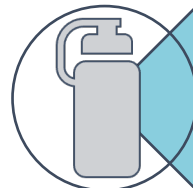
Loss of lean tissue³⁵



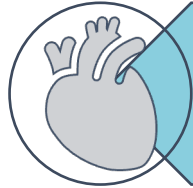
Skin changes →
vitamin D production³⁷



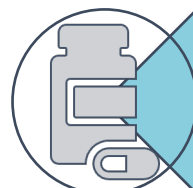
Decreasing bone
mineral density³⁶



Thirst and appetite
changes



Decreased aerobic
capacity³⁶



Stress, illness, aging

³⁵Wilkinson, D. J., Piasecki, M., & Atherton, P. J. (2018). The age-related loss of skeletal muscle mass and function: Measurement and physiology of muscle fibre atrophy and muscle fibre loss in humans. *Ageing Research Reviews*, 47, 123–132.

³⁶Azzolino, D., Spolidoro, G. C., Saporiti, E., Luchetti, C., Agostoni, C., & Cesari, M. (2021). Musculoskeletal changes across the lifespan: Nutrition and the life-course approach to prevention. *Frontiers in Medicine*, 8.

³⁷Gallagher JC. Vitamin D and aging. *Endocrinol Metab Clin North Am*. 2013 Jun;42(2):319-32.

Health Concerns: Both Men & Women

Heart Disease³⁸

Bone Health³⁹

Cancer⁴⁰

Diabetes

Mental Health / Eating Disorders⁴¹⁻⁴²

³⁸Vogel B et al. The *Lancet* women and cardiovascular disease Commission: reducing the global burden by 2030. *The Lancet Commissions* 397(10292): 2385-2438, June 19, 2021.

³⁹Sözen T, Özışık L, Başaran NÇ. An overview and management of osteoporosis. *Eur J Rheumatol*. 2017;4(1):46-56. doi:10.5152/eurjrheum.2016.048

⁴⁰Español A. et al. Breast cancer: Muscarinic receptors as new targets for tumor therapy. *World Journal of Clinical Oncology*. 12. 404-428. 2021.

⁴¹Mangweth-Matzek B, and Hoek HW. Epidemiology and treatment of eating disorders in men and women of middle and older age. *Curr Opin Psychiatry*, 2017.

⁴²Marcus MD, et al. Prevalence and selected correlates of eating disorder symptoms among a multiethnic community sample of midlife women. *Ann Behav Med*, 2007.

Loss of Lean Tissue: Sarcopenia⁴³

Sarcopenia is measurable within the 5th decade of life



- Loss of muscle mass at a rate of ~1% per year
- Loss of muscle strength at ~3% per year
- Loss of muscle power (*force and speed of movement*) at 8% per year

Increased risk of falls
Decline in ability to perform activities of daily living
Loss of independence
Linked with negative metabolic health outcomes



Bone Health:

*Women are at a greater risk for low bone density and osteoporosis,
but men are not immune*

MEN⁴⁴

- Up to one in four men over age 50 will break a bone due to osteoporosis
- Approximately two million American men already have osteoporosis
- Men older than 50 are more likely to break a bone due to osteoporosis than they are to get prostate cancer
- Men are more likely than women to die within a year after breaking a hip

WOMEN⁴⁴

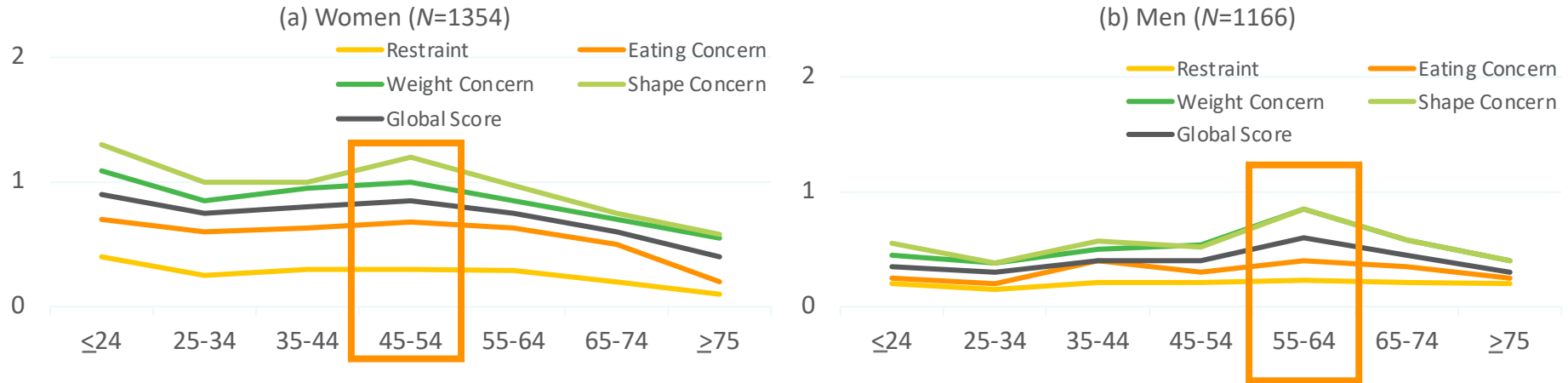
- Approximately one in two women over age 50 will break a bone due to osteoporosis
- About eight million or 80% of Americans with osteoporosis are women
- A woman's risk of breaking a hip is equal to her combined risk of breast, uterine and ovarian cancer
- A prior fracture is associated with an 86% increased risk of any subsequent fracture⁴⁵

⁴⁴Bone Health & Osteoporosis: <https://www.Bonehealthandosteoporosis.org>; Accessed on Sep 2023

⁴⁵Kanis JA, et al. A brief history of FRAX. *Arch Osteoporos*, 2018;13(1):118.

Frequency of Eating Disturbances in the Population

Eating Disorder Examination Questionnaire (EDE-Q): Higher values indicate greater psychopathology⁴⁶



⁴⁶Adapted from Hilbert A, de Zwaan M, Braehler E (2012) How Frequent Are Eating Disturbances in the Population? Norms of the Eating Disorder Examination-Questionnaire. PLOS ONE 7(1): e29125. <https://doi.org/10.1371/journal.pone.0029125>

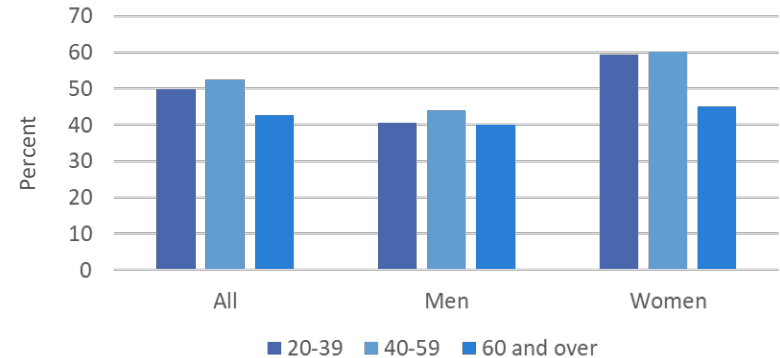
Impact of Dieting & Weight Cycling

- 60% of women and over 40% of men >40 years of age in the US have tried to lose weight (2013-2016)⁴⁷

*Weight Cycling:*⁴⁸

- Loss of lean tissue with weight loss and potential for “fat overshoot” with weight gain
- Older people have difficulties recovering muscle mass
- Increased risk for disordered eating, intense cravings, and eating disorders, including binge eating disorder

Percentage of US adults who tried to lose weight, 2013-2016



⁴⁷Martin CB, Herrick KA, Sarafrazi N, Ogden CL. Attempts to lose weight among adults in the United States, 2013–2016. NCHS Data Brief, no 313. Hyattsville, MD: National Center for Health Statistics. 2018

⁴⁸Montani JP, et al. Dieting and weight cycling as risk factors for cardiometabolic diseases: who is really at risk? *Obes Rev*. 2015 Feb;16 Suppl 1:7-18.

Eating Disorders in Midlife⁴⁹

- Eating disorders *do occur* above 40 years of age both in women and men
- The overall prevalence of eating disorders according to DSM-5 criteria is:
 - Around 3–4% among women and 1–2% in males of middle and older age
 - The majority of these persons are not in treatment
- Healthcare providers often overlook eating disorders among older people – especially in males
 - Patients underreport eating disorder symptomatology because of shame
 - Stigmatization of mental health disorders
 - Eating disorders are often hidden behind excessive sports activity

⁴⁹Mangweth-Matzek B, Hoek HW. Epidemiology and treatment of eating disorders in men and women of middle and older age. *Curr Opin Psychiatry*. 2017 Nov;30(6):446-451.

Evidence-Based Interventions



A Team-Based Approach

Physician

- Overall health, annual physical, vitals
- Preventative health checkups
- Hormone-related health concerns and HT decision-making
- Sleep concerns
- For women: menstrual irregularities

Dietitian

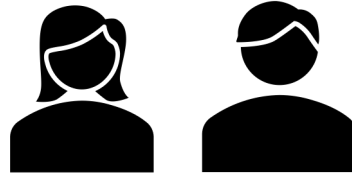
- MNT
- Establish nutritional adequacy
- Support “normalized” eating
- Athletic fueling
- Body image

Mental Health Providers

- Address life changes, stressors, aging and identity concerns
- Mood dysregulation/depression
- Cognitive or memory concerns
- CBT for Insomnia/VMS

Endocrinologist

- Bone health
- Diabetes
- Thyroid
- Insulin/blood sugar management



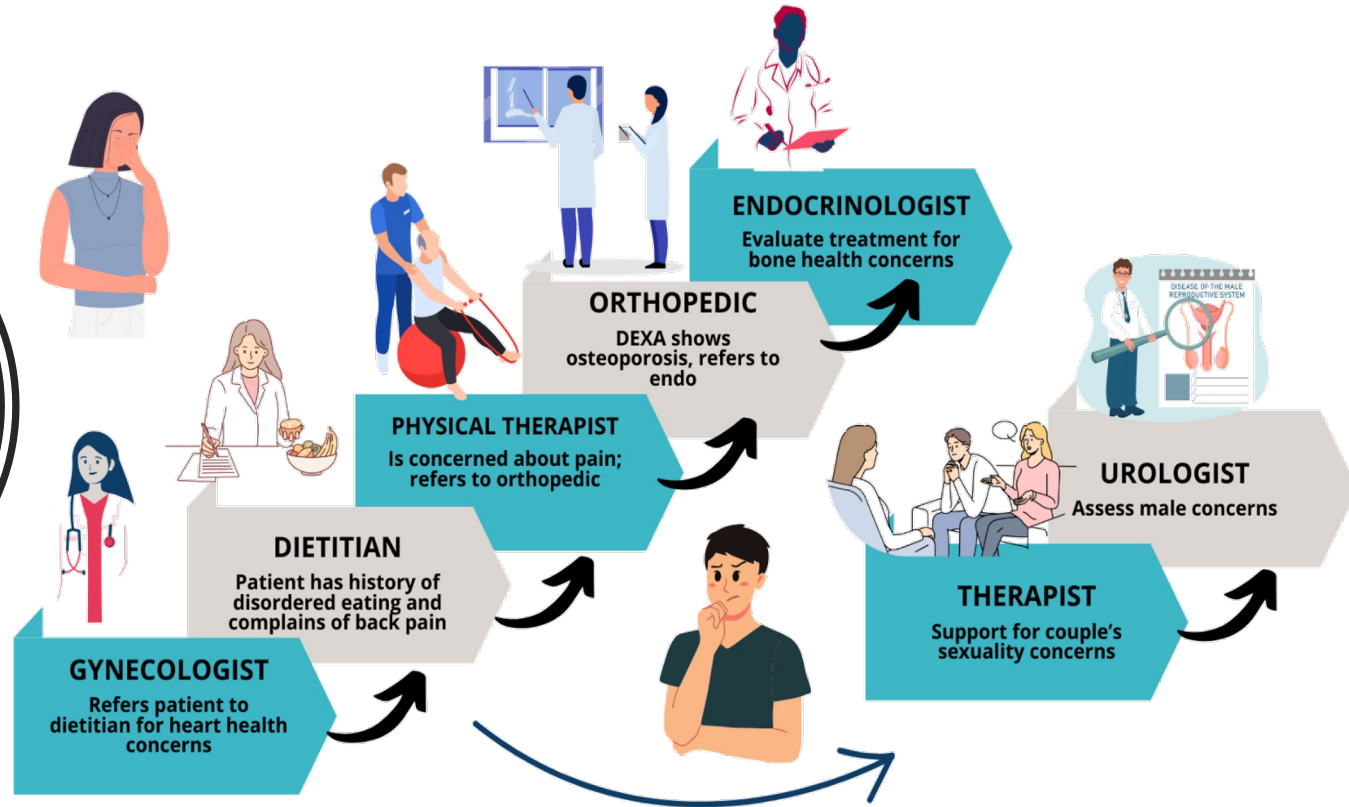
Others

- Cardiology
- Oncology
- Urology
- Gastroenterology

Orthopaedic/Physical Therapy

- Musculoskeletal issues
- Bone disorders
- Pelvic floor

Example of
Interdisciplinary
Collaboration



Weight-Inclusive Care⁵⁰

- Emphasizes health and well-being independent of weight
- Based on the following principles:
 1. Do no harm.
 2. Appreciate that bodies naturally come in a variety of shapes and sizes.
 3. Recognizes that health is multidimensional (examines a number of behavioral and modifiable health indices vs weight or weight loss).
 4. Well-being is dynamic rather than fixed thus process-focus (rather than end-goals) are encouraged for day-to-day quality of life.
 5. Demands that empirical evidence for weight-loss treatments need to be critically evaluated.
 6. Healthful, individualized practices and environments that are sustainable need to be created.
 7. Increase health access, autonomy, and social justice for all individuals along the entire weight spectrum.

⁵⁰Tylka TL, Annunziato RA, Burgard D, et al. The weight-inclusive versus weight-normative approach to health: evaluating the evidence for prioritizing well-being over weight loss. *J Obes.* 2014;2014:983495.



Practical Approaches

Motivation Interviewing

- Collaborative, goal-oriented
- Explores reasons for change within an atmosphere of acceptance and compassion

MNT

- Assess for food anxieties/food rules/food myths
- Address gaps in nutrition knowledge
- Use evidence-based MNT nutrition strategies to address health concerns (i.e., CVD, bone health, diabetes, etc.)

Non-Diet Therapies

- Intuitive eating, mindful eating, body image healing, connection, self-compassion

Heart Disease: Overarching Recommendations for Primary Prevention⁵¹

Patient-Centered Approaches:

1. A team-based care approach for the control of risk factors associated with Atherosclerotic cardiovascular disease (ASCVD).
2. Shared decision-making should guide discussions about the best strategies to reduce ASCVD risk.
3. Social determinants of health should inform optimal implementation of treatment recommendations for the prevention of ASCVD.

⁵¹Arnett, Donna K., et al. 2019 ACC/AHA guideline on the primary prevention of cardiovascular disease: Part 1, lifestyle and behavioral factors. *JAMA Cardiology*, vol. 4, no. 10, 2019, p. 1043, <https://doi.org/10.1001/jamacardio.2019.2604>.

Osteoporosis

- Osteoporosis is a chronic and progressive disease that can be treated, but there is no “cure”
- Modifiable Risk Factors Include:⁵²
 - Adequate calcium, Vitamin D, protein, and total energy intake
 - Weight-bearing exercise
 - Low weight (BMI <21 kg/m² ↑ risk)
 - Weight loss (prevent) or weight cycling
 - Stop smoking and limit alcohol
 - Fall prevention

⁵²Management of osteoporosis in Postmenopausal Women: The 2021 position statement of the North American Menopause Society. *Menopause*. 2021;28(9):973-997.

⁵³Papageorgiou M, Kersch-Schindl K, Sathyapalan T, Pietschmann P. Is weight loss harmful for skeletal health in obese older adults? *Gerontology*. 2019;66(1):2-14.

Cancer

*WCRF/AICR summary of recommended behaviors for reducing risk:*⁵³

- Be physically active
- Eat a diet rich in whole grains, vegetables, fruit and beans
- *Limit* consumption of “fast foods,” red and processed meat, sugar-sweetened drinks, alcohol
- Do not use supplements for cancer prevention
- After a cancer diagnosis, follow the recommendations

And...

- Be a healthy weight – avoid adult weight gain

⁵⁴World Cancer Research Fund/American Institute for Cancer Research. *Diet, Nutrition, Physical Activity and Cancer: A Global Perspective. Continuous Update Project. The Third Expert Report.* American Institute for Cancer Research; 2018.

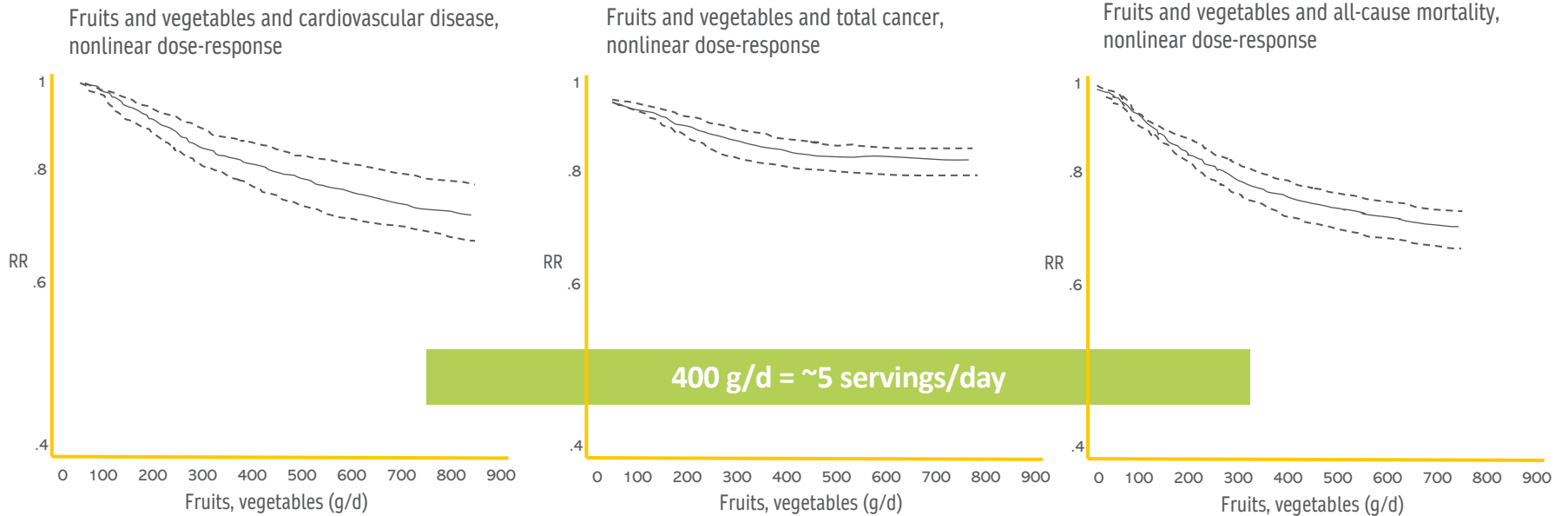
Weight Stigma and Health in Midlife

- Promoting weight or a “healthy weight” as the key to health can instill a sense of helplessness in people who may be unable to achieve these weight-based goals.⁵⁰
- A large body of research has connected weight cycling to compromised health
 - Higher mortality
 - Higher risk of osteoporotic fractures
 - Gallstone attacks
 - Loss of muscle tissue
 - Hypertension
 - Chronic inflammation
- Body dissatisfaction and fear of weight gain are also primary drivers for dieting, weight cycling, and unhealthy eating behaviors

⁵⁰Tylka TL, Annunziato RA, Burgard D, Danielsdóttir S, Shuman E, Davis C, Calogero RM. The weight-inclusive versus weight-normative approach to health: evaluating the evidence for prioritizing well-being over weight loss. *J Obes.* 2014;2014:983495.

Fruit & Vegetable Intake Reduces Risk of CV Disease, Cancer and All-Cause Mortality⁵⁴

- Meta-analysis of 95 studies (142 publications)



⁵⁴Adapted from Aune D. et al. Fruit and vegetable intake and the risk of cardiovascular disease, total cancer and all-cause mortality—a systematic review and dose-response meta-analysis of prospective studies. *Int J Epidemiol.* 2017.

“Food First – But Not Always Food Only”

- Musculoskeletal health⁵⁵
 - Protein – high-quality protein powder
 - Vitamin D – 1000 to 2000 IU/day Vitamin D3
 - Maybe calcium – doses \leq 500 mg at a time up to 1200 mg/day
- Cardiovascular health
 - Omega-3 fatty acids (EPA+DHA) – doses $<$ 1 g/d
 - In RCTs ω -3 supplementation $>$ 1g/d was associated with an increased risk of atrial fibrillation⁵⁶

Special Concerns	Key Nutrients
Bone Health	Calcium Vitamin D Phosphorus, Magnesium, Vit K
Muscle	Protein (leucine)
Heart Health Brain Health	Vits & Minerals (fruit/veg) Omega-3 Fatty Acids Carbohydrate
GI Health Energy Neurological Concerns	Fiber Iron (perimenopause) Vitamin B12

⁵⁵Azzolino D et al. Musculoskeletal Changes Across the Lifespan: Nutrition and the Life-Course Approach to Prevention. *Frontiers in Medicine*. 2021 Aug 31;8:697954.

⁵⁶Gencer B et al. Effect of Long-Term Marine ω -3 Fatty Acids Supplementation on the Risk of Atrial Fibrillation in Randomized Controlled Trials of Cardiovascular Outcomes: A Systematic Review and Meta-Analysis. *Circulation*. 2021;144:1981–1990.

Evaluating Supplements & Herbal Remedies

What is the symptom or health concern?

What ingredient in the supplement will solve that symptom?

What science is there for efficacy or safety?
Check 3rd party sources

What are possible side effects?

What other supplements are they taking?

Medical history, medications.
Contra-indications?

Black Cohosh

Creatine

Ashwagandha

Chasteberry

Tongkat Ali or Longjack

Maca

Maca

Fadogia Agrestis

DIM

Fenugreek

Dong Quai

Boron

Isoflavones

CoQ10

Valerian

Physical Activity: Weight-neutral strategy reduces health risks⁵⁷

- The mortality risk associated with weight is largely reduced or eliminated by moderate-to-high levels of cardiorespiratory fitness.
- Most cardiometabolic risk markers can be improved with exercise training *independent of weight loss*
- Weight loss, even if intentional, is not consistently associated with lower mortality risk
- Increases in physical activity are consistently associated with greater reductions in mortality risk than intentional weight loss



⁵⁷Gaesser and Angadi, Obesity treatment: Weight loss versus increasing fitness and physical activity for reducing health risks, *iScience*, 2021;24(10):102995

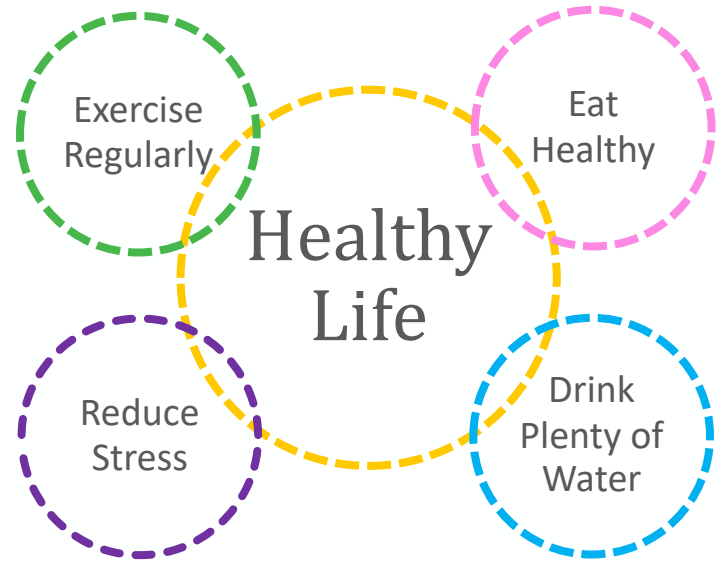
The Paradox of Midlife

Most adults know that eating nutritious foods and being physically active would help them:

- Feel better
- Reduce risk of chronic illness
- Reach old age healthier
- Reduce healthcare costs
- Increase individual quality of life

BUT

- We need to recognize the barriers to being active, having resources to improve eating and activity, and managing time-related barriers to activity and good nutrition.



Stress Management

HPA Axis - Alarm System⁵⁸

- Stress stimulates release of CRF
- CRF stimulates Pituitary
- Pituitary release ACTH
- ACTH stimulates Adrenal Glands
- Adrenal Glands release Cortisol
- Cortisol stimulates
 - Liver glucose release
 - Muscle glucose release
 - Brain release adrenaline
 - Suppresses immune, digestive, reproductive, and growth systems

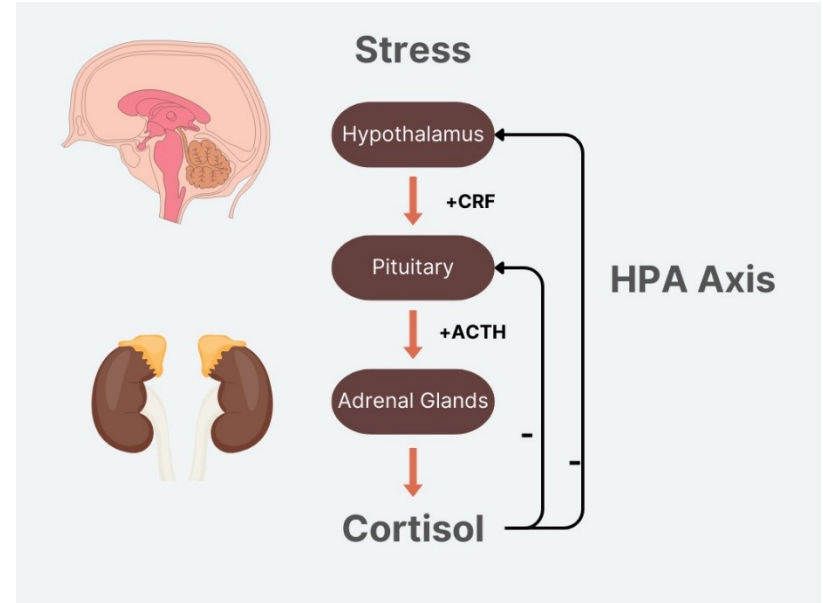


Image credit: David Orozco

⁵⁸Stephens MA, Wand G. Stress and the HPA axis: role of glucocorticoids in alcohol dependence. Alcohol Res. 2012;34(4):468-83. PMID: 23584113; PMCID: PMC3860380.

SLEEP!



Importance of adequate sleep^{59,60}

- T levels highest in AM
- 7-9 hours quality sleep
- Reset HPG and HPA
- Reduce stress
- Allows body to
 - Rebuild
 - Recharge
 - Regenerate
- Allows for growth and development

⁵⁹NIH, National Heart, Lung, and Blood Institute; How Sleep Works: <https://www.nhlbi.nih.gov/health/sleep/why-sleep-important>; Accessed on Sep 2023

⁶⁰Sleep Foundation; Why Do We Sleep: <https://www.sleepfoundation.org/how-sleep-works/why-do-we-need-sleep#the-importance-of-getting-enough-sleep-4>; Accessed on Sep 2023

Harvard Study of Adult Development:

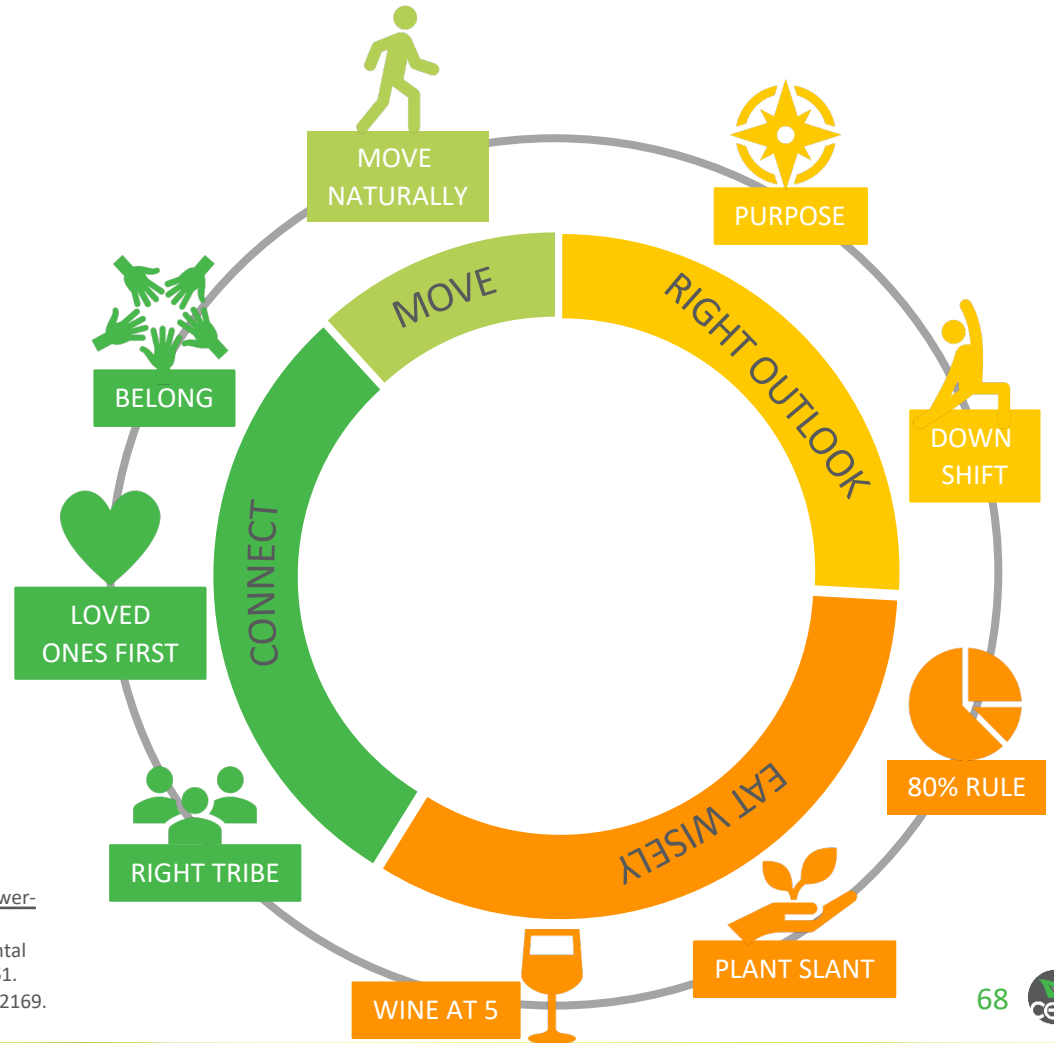
Longest Study on Longevity (85-years) ⁶¹

- Found the strongest association between longevity with having close relationships like spouses, family, friends, and social circles
- Social connections (*the quality not quantity of relationships*) are very good for us
 - People are happier
 - Physically healthier
 - Live longer
- Loneliness and isolation from others:
 - Less happy
 - Health declines earlier in midlife
 - Brain functioning declines sooner
 - Live shorter lives
 - 1 in 5 Americans report that they are lonely
- Middle age (50 years) cholesterol levels did not predict how they were going to grow old – but rather how satisfied they were in their relationships predicted their health at age 80

⁶¹Harvard Study of Adult Development. *Harvardstudy*, www.adultdevelopmentstudy.org/. Accessed 31 Aug. 2023.



Connection!



⁶²Image Adapted from: Blue Zones Power 9 - <https://www.bluezones.com/2016/11/power-9/>; Accessed on Sept 2023

⁶³McKenzie SK, Collings S, Jenkin G, River J. Masculinity, Social Connectedness, and Mental Health: Men's Diverse Patterns of Practice. Am J Mens Health. 2018 Sep;12(5):1247-1261. doi: 10.1177/1557988318772732. Epub 2018 Apr 28. PMID: 29708008; PMCID: PMC6142169.



His and Her Recommendations

Jessica needed:

- Education about the transition to menopause, what to expect, and options for treating her menopausal symptoms
- A referral to a gynecologist to help her sort through HT options

Jose needed:

- Education about the natural changes that come with aging and men's health
- Help supporting his wife with the menopause symptoms she was experiencing
- A referral to a physical therapist who could help him with safe exercises for his joint/back pain

Together, they worked on:

- Communicating with each other about challenges in the life transition – and distinguishing what is menopause, “menopause,” or aging itself.
- Learning to shift from a focus on weight to well-being by incorporating meaningful lifestyle interventions
- Prioritized planning and preparing meals together
- Reclaimed their favorite meals and recipes
- Started going on walks together, and talking about their day
- Met with a couples' therapist to help with intimacy concerns



Comprehensive Patient Care & Interprofessional Collaboration

As it relates to caring for older male and female patients, what are barriers to developing and communicating your care plan with...

*The patient and the patient's significant other, spouse or partner?
Other healthcare professionals?*

Barriers and How to Overcome Them

Patient's significant other, spouse, or partner

Lack of understanding about menopause and/or men's health
Dieting, restrictive or disordered eating in the household
Financial burdens/constraints
Lack of interest for partner's health concerns



- Including both parties in appointments, when possible
- Encourage shared decision making
- Health/nutrition education
- Utilizing educational handouts
- Encourage therapy, if necessary

Other healthcare providers⁶⁴

Inconvenient / time consuming
Different approaches to care
Lack of clarity about roles or expertise of other providers
Imbalance of professional power vs shared decision making



- Establish best approaches for communication
- Schedule regular meetings (informal, face-to-face, if possible)
- Share knowledge and info regarding patients
- Recognize shared patient goals

⁶⁴Rawlinson C, et al. An Overview of Reviews on Interprofessional Collaboration in Primary Care: Barriers and Facilitators. *Int J Integr Care*. 2021 Jun 22;21(2):32.

Future Directions

Challenges in Modern Healthcare for Women's and Men's Health⁶⁵

- Misinformation about midlife and the lack of research for this stage of life
 - Example: Midlife eating disorders, especially for midlife males
- Need for a better understanding of how midlife is experienced differently across race/ethnicity, SES, and sexual orientation
- The narrative surrounding midlife needs to move beyond the misconceptions tied to “the midlife crisis” to consider midlife as a vibrant period with unprecedented opportunities and challenges

⁶⁵Infurna FJ, Gerstorf D, Lachman ME. Midlife in the 2020s: Opportunities and challenges. *Am Psychol.* 2020 May-Jun;75(4):470-485. doi: 10.1037/amp0000591.



Challenges in Modern Healthcare for Women's and Men's Health

- It's imperative to assess for and understand the impact of social determinants of health in midlife⁶⁵
 - Middle-aged adults who experience extraordinary challenges such as raising a child with a disability or illness
 - Financially supporting and providing care for ailing parents
 - Dealing with physically or mentally ill spouses
 - Working multiple jobs because of strained household budgets
 - Addressing one's own declining health

⁶⁵Infurna FJ, Gerstorf D, Lachman ME. Midlife in the 2020s: Opportunities and challenges. *Am Psychol.* 2020 May-Jun;75(4):470-485. doi: 10.1037/amp0000591.

Challenges with Interprofessional Collaboration

Themes	Sub-categories
Personal values and beliefs	Egotism vs self-depreciation Lack of trust and respect Neglect and closed-mindedness Unfamiliarity of roles and services
Organizational resource constraints	Human health resource constraints Financial difficulties Logistical challenges Insurance challenges and complications
Silo systems care culture	Working independently Lack of emphasis on older adults Absence of leadership Absence of structure, standards, and policies Availability and access to health professional

⁶⁶Moncatar, TRT. *et al.* Interprofessional collaboration and barriers among health and social workers caring for older adults: a Philippine case study. *Hum Resour Health*, 2021;19,52.

Potential Solutions: Putting it into Practice

- Take initiative – Reach out and establish a network of interdisciplinary professionals to improve patient care
- Speak up with treatment providers about patient goals and treatment plan recommendations
- Address knowledge gaps with collaborative learning
 - “Lunch and Learns”, “Grand Rounds”, or “Journal Clubs”
- Standardize communication
 - schedule regular meetings
 - simplify physician communication forms



Key Take-Aways

- Recognize that midlife is a time of change for *both* men and women
- It is unlikely that any one stressor (biological, psychological, or social) can fully explain an individual's symptoms
- To understand and respond adequately to patients' suffering – and to give them a sense of being understood – clinicians must work together to attend to the biological, psychological, and social dimensions of illness
- Identify barriers and challenges to developing and communicating treatment care plans
 - With the patient, spouse, or significant other
 - With an interdisciplinary professional team

WE'RE ALL IN THIS
Together

Questions?

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