

# Lifestyle Medicine to Support Menopause and Healthy Aging in Women

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NURSE PRACTITIONER

LIFESTYLE, INTEGRATIVE, AND FUNCTIONAL MEDICINE

HENRY FORD HEALTH

# Disclosures

NO FINANCIAL RELATIONSHIPS TO DISCLOSE

# Background

- ▶ BSN and MSN (Adult Primary Care)—Wayne State University
- ▶ Post-master's certificate in family nurse practitioner studies—University of Massachusetts (Boston)
- ▶ Diplomate American College of Lifestyle Medicine
- ▶ Menopause Society Certified Practitioner
- ▶ Experience in critical care and hospital-based medicine

# Objectives



Understand the timeline of menopause and symptoms/health conditions that can occur



Understand how lifestyle can impact/support menopause symptoms



Understand how lifestyle can support healthy aging

# Common Menopause Symptoms

- ▶ Vasomotor symptoms (VMS)
- ▶ Insomnia
- ▶ Mood changes
- ▶ Hair/skin changes
- ▶ Vulvovaginal changes
- ▶ Joint pain
- ▶ Changes in oral health
- ▶ Cognitive changes

# Health Concerns

- ▶ Osteoporosis/Fractures
- ▶ Recurrent UTI
- ▶ Cardiovascular disease (CVD)
- ▶ Weight gain
- ▶ Decline in muscle mass
- ▶ Cancer

# STRAW +10

- ▶ The Stages of Reproductive Aging Workshop + 10 staging system
  - ▶ (STRAW+10)
- ▶ Gold standard for describing reproductive aging
- ▶ Reproductive years through menopause
- ▶ Seven stages—five before menopause and two after

**Figure 1.** The Stages of Reproductive Aging Workshop + 10 Staging System

Stage	-5	-4	-3b	-3a	-2	-1	+1a	+1b	+1c	+2	
Terminology	<b>REPRODUCTIVE</b>				<b>MENOPAUSE TRANSITION</b>		<b>POSTMENOPAUSE</b>				
	Early	Peak	Late		Early	Late	Early		Late		
					<i>Perimenopause</i>						
Duration	<i>variable</i>				<i>variable</i>	1-3	2 (1+1)		3-6	<i>Remaining lifespan</i>	
<b>PRINCIPAL CRITERIA</b>											
Menstrual cycle	Variable to regular	Regular	Regular	Subtle changes in flow/length	<i>Variable length</i> Persistent ≥7-day difference in length of consecutive cycles	Interval of amenorrhea of ≥60 days					
<b>SUPPORTIVE CRITERIA</b>											
Endocrine FSH AMH Inhibin B			Low Low	Variable <sup>a</sup> Low Low	↑ Variable <sup>a</sup> Low Low	↑ >25IU/L <sup>b</sup> Low Low	↑ Variable <sup>a</sup> Low Low	Stabilizes Very low Very low			
Antral follicle count			Low	Low	Low	Low	Very low	Very low			
<b>DESCRIPTIVE CHARACTERISTICS</b>											
Symptoms						Vasomotor symptoms <i>Likely</i>	Vasomotor symptoms <i>Most likely</i>			<i>Increasing symptoms of urogenital atrophy</i>	

↑ indicates elevated.

a. Blood draw on cycle days 2-5.

b. Approximate expected level based on assays using current international pituitary standard.

Abbreviations: AMH, antimüllerian hormone; FMP, final menstrual period; FSH, follicle-stimulating hormone.

Adapted from Harlow SD, et al.<sup>9</sup>© North American Menopause Society.

# Timeline

- ▶ Menopause—12 months of amenorrhea after the final menstrual period (FMP)
- ▶ Age of menopause 45-54, median is 52
  - ▶ 90% will have reached by age 55
- ▶ Premature menopause—FMP before age 40
- ▶ Early menopause—FMP age 40-44
- ▶ Late menopause—after age 54
- ▶ Vasomotor symptoms are likely in late perimenopause and very likely in early menopause (60-80% will experience at some point)
- ▶ Urogenital atrophy increases in late menopause

# Bone loss

- ▶ Rates of bone loss are highest at the time of menopause
- ▶ Average annual loss of about 2% beginning 1 to 3 years before menopause and lasting 5 to 10 years
- ▶ Across the menopause transition, women experience an average loss of 10% to 12% (about one T-score) in the spine and hip
- ▶ Thereafter, rates of bone loss fall to about 0.5% per year.

# Lifestyle Medicine



AMERICAN COLLEGE OF  
**Lifestyle Medicine**

# Mission of Lifestyle Medicine

- ▶ “Advancing evidenced-based lifestyle medicine to treat, reverse, and prevent non-communicable, chronic disease”

# Pillars of Lifestyle Medicine



Plant-  
predominant  
nutrition



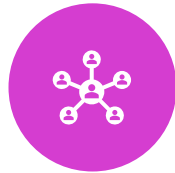
Regular physical  
activity



Stress  
management



Restorative sleep



Positive social  
connections



Avoidance of  
risky substances

# Nutrition Recommendation

- ▶ ACLM recommends a predominantly plant-based diet consisting of primarily minimally-processed vegetables, fruits, whole grains, legumes, nuts, and seeds

# Plant-Predominant Nutrition

- ▶ Dietary patterns frequently studied
  - ▶ DASH, Mediterranean
- ▶ Higher intake of fruits, vegetables, legumes, whole grains, healthy fats
- ▶ Lower intake of animal protein (saturated fat), ultra-processed grains, sweets, sodas



# Plant-Predominant Nutrition

- ▶ Helps support fiber goals—28 g per day
- ▶ Abundance of vitamins, minerals, **phytonutrients**
  - ▶ Reduce inflammation
  - ▶ Support a healthy gut microbiome
  - ▶ May support joint pain, cognition, and overall healthy aging

## ORIGINAL ARTICLES

# Effects of a dietary intervention and weight change on vasomotor symptoms in the Women's Health Initiative

Kroenke, Candyce H. ScD, MPH<sup>1</sup>; Caan, Bette J. DrPH<sup>1</sup>; Stefanick, Marcia L. PhD<sup>2</sup>; Anderson, Garnet PhD<sup>3</sup>; Brzyski, Robert MD, PhD<sup>4</sup>; Johnson, Karen C. MD, MPH<sup>5</sup>; LeBlanc, Erin MD, MPH<sup>6</sup>; Lee, Cathy MD<sup>7</sup>; La Croix, Andrea Z. PhD<sup>3</sup>; Park, Hannah Lui PhD<sup>8</sup>; Sims, Stacy T. PhD<sup>2</sup>; Vitolins, Mara DrPH<sup>9</sup>; Wallace, Robert MD, MS<sup>10</sup>

# Nutrition in Reduction of VMS

- ▶ WHI showed that women who engaged in dietary changes were more likely to report reduced or eliminated VMS
  - ▶ Increased fruit, vegetable, and whole grain intake
  - ▶ Lowered fat intake
- ▶ Even more likely when accompanied by  $\geq 10$  lb weight loss

# Phytoestrogens

- ▶ Compounds found in many plants
- ▶ Structurally similar to 17- $\beta$  estradiol, considered a natural selective estrogen receptor modulator (SERM)
  - ▶ Estrogenic and anti-estrogenic properties
- ▶ Higher affinity to ER- $\beta$  than ER- $\alpha$ 
  - ▶ Acts as a tumor suppressor and anti-proliferative agent

# Phytoestrogen Classification

- ▶ Subclassification of phytoestrogens

<b>Lignans</b>	<b>Flavonols</b>	<b>Coumestans</b>	<b>Isoflavones</b>	<b>Stilbenes</b>
Enterolactone	Quercetin	Cumestrol	Glycitein	Resveratrol
Enterodiol	Rutin		Genistein	
			Daidzein	

# Soy for Bones?

- ▶ Studies have shown relationships between phytoestrogens and markers of bone turnover
- ▶ Genistein and daidzein suppress osteoclast activity, have a stimulatory effect on protein synthesis and alkaline phosphatase release
- ▶ Genistein stimulates the production of osteoprotegerin (inhibits osteoclast activation)
- ▶ Large-scale dietary studies are limited and have mixed results, which can't support isoflavone intake as a strategy to support BMD

## ORIGINAL STUDY

### A dietary intervention for vasomotor symptoms of menopause: a randomized, controlled trial

*Neal D. Barnard, MD, FACC,<sup>1,2</sup> Hana Kahleova, MD, PhD,<sup>2</sup> Danielle N. Holtz, BS,<sup>2</sup>  
Tatiana Znayenko-Miller, MSHS,<sup>2</sup> Macy Sutton, MS,<sup>2</sup> Richard Holubkov, PhD,<sup>3</sup> Xueheng Zhao, PhD,<sup>4</sup>  
Stephanie Galandi, MS,<sup>4</sup> and Kenneth D. R. Setchell, PhD, FAASLD<sup>4,5</sup>*

# Vegan Diet with Soy

- ▶ Control group: no dietary changes
- ▶ Study group: low-fat vegan diet with serving of soybeans daily (1/2 cup)
- ▶ Moderate-to-severe hot flashes decreased by 88% ( $p < 0.001$ )
- ▶ At 12 weeks, 50% of the study group reported no hot flashes

# Is it All Equol?

- ▶ Gut metabolite of isoflavone daidzein
- ▶ Greatest estrogenic and antioxidant activity
- ▶ Not everyone has the specific gut bacteria
- ▶ Asian populations and those with vegetarian diets have higher amounts of these gut bacteria
- ▶ Urinary isoflavones tested showed no difference in benefit between equol producers and non-producers



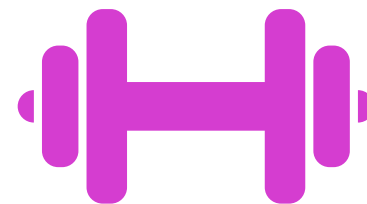
# Physical activity



# Physical Activity Recommendations



150 minutes of moderate-intensity exercise per week



2 days of strength training per week

**CLINICAL TRIAL**

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**JBMR®**

# **High-Intensity Resistance and Impact Training Improves Bone Mineral Density and Physical Function in Postmenopausal Women With Osteopenia and Osteoporosis: The LIFTMOR Randomized Controlled Trial**

Steven L Watson,<sup>1,2</sup> Benjamin K Weeks,<sup>1,2</sup> Lisa J Weis,<sup>3</sup> Amy T Harding,<sup>1,2</sup> Sean A Horan,<sup>1,2</sup> and Belinda R Beck<sup>1,2,3</sup>

# LIFTMOR Trial

- ▶ 101 Post-menopausal women > 58 years old with low bone mass (T-score 0.0 to -3.9)
- ▶ 27 participants reported an osteoporotic fracture within 10 yrs
- ▶ 8 Months
- ▶ Two groups:

Supervised, twice-weekly 30 min strength HiRIT training (high-intensity, progressive resistance and impact weight bearing training)

Unsupervised, home-based low-intensity exercise

## Study Group, n=49

- ▶ Lower intensity deadlifts as warm up
- ▶ Four basic exercises
  - ▶ Dead lifts
  - ▶ Overhead press
  - ▶ Back squat
  - ▶ Impact-loading jumps
- ▶ Bodyweight then low resistance first month
- ▶ 5 sets of 5 repetitions at 80-85% of 1 repetition maximum

## Control Group, n=52

- ▶ 10 min walking warm-up
- ▶ Four exercises, 10-15 repetitions at < 60% of 1 repetition maximum
  - ▶ Started with bodyweight then max 3 kg hand weights
    - ▶ Lunges
    - ▶ Calf raises
    - ▶ Standing forward raises
    - ▶ Shrugs
- ▶ Stretches (neck, shoulder, calf, lumbar spine)

# Results

## Control Group

- ▶ Decrease LS BMD -1.2% +/- 3.1 SD
- ▶ Decrease FN BMD -2.0% +/- 3.0 SD

## Study Group

- ▶ Increase LS BMD 2.9% +/- 3.1 SD ( $p < 0.001$ )
- ▶ Increase FN BMD 0.3% +/- 3.0 SD ( $p < 0.025$ )

# What About Calcium and Vitamin D?

- ▶ “Much emphasis has been placed on providing adequate intakes of bone-healthy nutrients, especially calcium and vitamin D, so much so that a strong but incorrect perception exists that osteoporosis is the consequence of life-long calcium and/or vitamin D deficiency.”

# Physical Activity for VMS

- ▶ According to the Menopause Society, exercise does not affect vasomotor symptoms
  - ▶ But is that outdated?
- ▶ 2022 Meta-analysis showed that physical activity significantly reduced the severity of vasomotor symptoms

ARTICLE

OPEN ACCESS

# Midlife cardiovascular fitness and dementia

A 44-year longitudinal population study in women

Helena Hörder, PhD, Lena Johansson, PhD, XinXin Guo, MD, PhD, Gunnar Grimby, MD, Silke Kern, MD, PhD, Svante Östling, MD, and Ingmar Skoog, MD

*Neurology*<sup>®</sup> 2018;90:e1298-e1305. doi:10.1212/WNL.0000000000005290

# Physical Activity and Dementia

- ▶ 44-year long study published in *Neurology* in 2018
  - ▶ 191 women from a population-based sample of 1462
- ▶ Fitness assessed at baseline per cycling ergometer testing
  - ▶ Two submaximal tests before testing maximal workload
  - ▶ Interrupted for 20 women (ECG changes, BP, claudication, chest pain)
- ▶ Neuropsychiatric examinations periodically over duration of study

# Findings

- ▶ 44 women developed dementia
- ▶ Compared to medium fitness, high fitness:
  - ▶ Mean age at dementia onset was 11 years higher
  - ▶ Time to dementia onset was 5 years later
  - ▶ Risk of dementia 88% less
- ▶ Low fitness 32%, medium fitness 25%, high fitness 5%
- ▶ Dementia incidence for those with interrupted submaximal test was 45%

# Sleep



# Sleep Recommendations

- ▶ ACLM recommends that adults achieve 7-9 hours of sleep
- ▶ Sleep disturbance is prevalent in midlife and can be complex
  - ▶ Insomnia
  - ▶ Obstructive sleep apnea (OSA)
  - ▶ Restless legs syndrome (RLS)
  - ▶ Periodic limb movement disorder (PLMD)

# Insomnia



Menopause-related  
insomnia (usually due  
to VMS)

Studies have shown it's due  
to VMS and not hormone  
concentrations



Primary insomnia  
(psychophysilogic)



Secondary insomnia  
(associated with  
sleep, mental, or  
medical disorders, or  
aging)



Induced by  
behavioral,  
environmental, or  
psychosocial factors

# Habits to Support Optimal Rest

- ▶ Keep a consistent sleep and wake time
  - ▶ Anchors your circadian rhythm and improves sleep efficiency
- ▶ Create a wind-down routine
  - ▶ Gentle cues (dim lights, stretching, reading) help the brain shift into “sleep mode”
- ▶ Limit screens 1 hour before bed
  - ▶ Blue light and mental stimulation delay melatonin release

# More Healthy Sleep Habits

- ▶ Keep the bedroom cool, dark, and quiet
  - ▶ Supports thermoregulation and reduces nighttime awakenings
- ▶ Avoid heavy meals, alcohol, and intense exercise close to bedtime
  - ▶ These disrupt sleep architecture and increase overnight arousal
- ▶ Use the bed only for sleep
  - ▶ Strengthens the brain's association between bed and rest, not wakefulness

# That 3 am Wake Up!

- ▶ Possibly due to cortisol
- ▶ Cortisol follows a natural 24-hour rhythm
- ▶ Levels are lowest at night and begin rising in the early morning hours
- ▶ Most people sleep through this gradual rise
- ▶ In individuals with elevated baseline stress, the cortisol increase can be strong enough to trigger a wake-up
- ▶ This is a physiologic response — not a sign of “bad sleep”
- ▶ Improving daytime stress regulation reduces nighttime cortisol sensitivity

# How to Handle That Wake Up

- ▶ Keep lights low and stay in “sleep mode”
  - ▶ Light suppresses melatonin and signals the brain to wake up
- ▶ Use a relaxation technique instead of thinking your way through it
  - ▶ Slow breathing, body scan, or a simple mantra helps deactivate the stress response
- ▶ Stay in bed unless you feel wide awake
  - ▶ Most cortisol-related wake-ups pass within minutes if you don't engage with them
- ▶ Avoid problem-solving or planning
  - ▶ Middle-of-the-night thinking activates the prefrontal cortex and delays sleep
- ▶ Takeaway: Treat the wake-up as a normal physiologic blip — stay calm, stay dark, and let your nervous system settle.

# #1 Overnight Waking Tip

**DON'T  
LOOK AT  
THE  
TIME!**

# Apps For Sleep\*



doze

# Stress



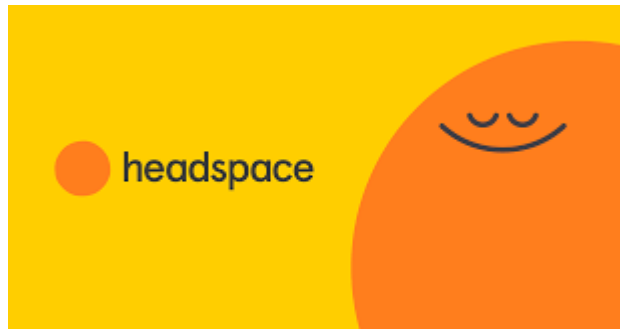
# Deep Breathing and Mindfulness

- ▶ Managing stress with mindfulness and breathing can reduce perceived severity of VMS
- ▶ Less distress even when frequency of VMS didn't change
- ▶ Best with regular, brief practice
- ▶ Reported improved overall emotional regulation and sleep
- ▶ In summary: changes the experience of VMS by reducing distress and improving resilience

# How to Teaching Breathing

- ▶ Slow the breath to 6-8 breaths per minute
  - ▶ This activates the parasympathetic nervous system and reduces sympathetic arousal
- ▶ Use a 4-6 second inhale with 6-8 seconds exhale
  - ▶ The longer exhale is what signals the body to calm down
- ▶ Keep shoulders relaxed and the belly soft
  - ▶ Encourages diaphragmatic breathing rather than chest breathing
- ▶ Builds a *trained* relaxation response that helps during hot flashes and nighttime awakenings

# Meditation Apps\*



# Social Connections



# Relationships are Important

## Social Connection Lowers Disease Risk

- Women with strong relationships have lower rates of cardiovascular disease, dementia, and depression

## Loneliness increases inflammation and stress hormones that accelerate aging

- Emotional Support Buffers Stress
- Emotional validation improves coping, mood stability, and sleep quality

## Community Strengthens Healthy Behaviors

- Women are more likely to maintain exercise, nutrition, and medical follow-ups when socially supported
- Accountability and shared routines reinforce long-term lifestyle habits

# Connections Support Health

## Connection Protects Cognitive Health

- Social engagement stimulates memory, language, and executive function
- Isolation is a known risk factor for cognitive decline

## Relationships Enhance Meaning & Purpose

- Purposeful roles — friend, mentor, caregiver, community member — support psychological well-being
- A sense of belonging is linked to higher life satisfaction and resilience

## Support Networks Improve Menopause Experience

- Sharing experiences normalizes symptoms and reduces anxiety
- Peer support improves adherence to lifestyle strategies and treatment plans

# Encourage Connections

- ▶ Maintain current friendships
- ▶ Join volunteer organizations
- ▶ Participate in activities at the community center
- ▶ Join a sports league
- ▶ Take a class

# Risky Substances



# Risky Substances

- ▶ Tobacco
- ▶ Vaping
- ▶ Alcohol
- ▶ Marijuana
- ▶ Other drugs (heroin, cocaine, etc)
- ▶ Could worsen menopausal symptoms and increase risk of disease

# Cigarettes Impact Disease and VMS

- ▶ Cancer
- ▶ Lung disease
- ▶ Osteoporosis
- ▶ CVD
- ▶ Significantly associated with VMS in a dose-related manner



# Alcohol

- ▶ Increases risk of chronic disease
- ▶ Group 1 Carcinogen
  - ▶ Increased risk of breast and GI cancers
- ▶ Affects sleep quality
- ▶ Recommendations were for women to consume one or less drinks per day, not on average
  - ▶ Now “consume less alcohol for better overall health”

# Alcohol Impacts VMS

- ▶ Higher alcohol drinking positively and dose-dependently associated with an elevated prevalence of moderate-to severe VMS
- ▶ More impactful on night sweats than hot flashes
- ▶ Previous studies have conflicting evidence
  - ▶ Different study groups (ethnicities, menopause stage)
  - ▶ Alcohol was not main interest
  - ▶ Didn't categorize in a way to determine dose-dependency

# Alcohol and Bone Health

- ▶ No bones about it, there's a positive association between alcohol and osteoporosis
- ▶ Compared to abstainers:
  - ▶ 0.5-1 drinks per day=38% greater risk of developing osteoporosis
  - ▶ 1-2 drinks per day=63% greater risk

# Serving Size Matters!

## What is considered a “drink”?

U.S. Standard Drink Sizes







“Would not recommend.”

# Some Points on Weight Loss

- ▶ Reduce VMS
- ▶ Improve joint pain
- ▶ Reduce risk of chronic diseases (DM, HTN, CVD)



The Journal of Nutrition  
**Nutrition and Disease**

## **Fiber Intake Predicts Weight Loss and Dietary Adherence in Adults Consuming Calorie-Restricted Diets: The POUNDS Lost (Preventing Overweight Using Novel Dietary Strategies) Study**

Derek C Miketinas,<sup>1,2</sup> George A Bray,<sup>2</sup> Robbie A Beyl,<sup>2</sup> Donna H Ryan,<sup>2</sup> Frank M Sacks,<sup>3</sup>  
and Catherine M Champagne<sup>2</sup>

# Study Design

- ▶ 345 participants (53.9% were female)
  - ▶ Ages 30-70
  - ▶ BMI 25-40
- ▶ Four calorie-restricted diets
  - ▶ Low-fat, average-protein
  - ▶ Low-fat, high-protein
  - ▶ High-fat, average-protein
  - ▶ High-fat, high-protein
- ▶ At least 20 g fiber across all diets
  - ▶ Grains, fruits, vegetables, nuts, seeds

# Study Design

- ▶ Dietitian visit to start and every 8 weeks
- ▶ Moderate exercise 90 minutes weekly
- ▶ Dietary logs were analyzed at baseline and 6 months
- ▶ Dietary predictors measured: energy (kcal), energy density, protein, fiber, carbohydrates, total fat, SFA, MUFA

# Findings

- ▶ Fiber intake was significantly greater, and weight loss was greater amongst those who adhered to their dietary prescription
- ▶ All groups had weight loss
  - ▶ Not significantly different between groups
- ▶ Across all groups, total fat and saturated fat were the macronutrients that decreased the most while total fiber intake increased
  - ▶ Fiber intake significantly increased in the low-fat, average-protein group compared to the two high-fat groups

# Take Home Points

- ▶ Of all diet predictors fiber had the most influence and was negatively associated with weight change
- ▶ Fiber was associated with greater weight loss over 6 months
- ▶ Those who met the adequate intake for fiber were significantly more likely to adhere to their diet

**Original Investigation** | Nutrition, Obesity, and Exercise

## **Aerobic Exercise and Weight Loss in Adults**

### A Systematic Review and Dose-Response Meta-Analysis

Ahmad Jayedi, PhD<sup>1,2</sup>; Sepideh Soltani, PhD<sup>3</sup>; Alireza Emadi, MSc<sup>4</sup>; [et al](#)

# Aerobic Exercise for Weight Loss

- ▶ Systematic review and meta-analysis of 116 RCTs
- ▶ More exercise = more fat loss.
- ▶ Aerobic exercise produced linear reductions in body weight, waist circumference, and body fat as weekly minutes increased.

# Aim for More

- ▶ 150 minutes/week
  - ▶ Meaningful reductions in waist circumference and body fat
  - ▶ Modest weight loss
- ▶ 300 minutes/week
  - ▶ Greater decreases in body weight, body fat, and central adiposity
  - ▶ No plateau at this level — benefits continued to rise
- ▶ Moderate and vigorous aerobic exercise both produced dose-dependent improvements.
- ▶ Traditional guidelines (150 min/week) improve health, but 300 min/week is more effective for fat loss, especially during midlife metabolic changes.





*nutrients*



*Review*

## **Sleep Deprivation: Effects on Weight Loss and Weight Loss Maintenance**

Evangelia Papatriantafyllou <sup>1</sup>, Dimitris Efthymiou <sup>2</sup>, Evangelos Zoumbaneas <sup>3</sup>, Codruta Alina Popescu <sup>4,\*</sup>   
and Emilia Vassilopoulou <sup>1</sup> 

# Sleep Deprivation Complicates Weight

- ▶ National Health and Nutrition Examination Survey (NHANES) showed significantly higher rates of obesity in those that reported less than 7 hrs of sleep per night
- ▶ Many others have demonstrated increased risk of weight gain
- ▶ Circadian rhythm impacts leptin and ghrelin, hormones that drive appetite, hunger, and caloric intake
- ▶ Increased caloric intake noted after imposed sleep deprivation

# Literature Review Details

- ▶ Review more closely the impact of sleep deprivation specifically in those that are trying to lose weight
- ▶ Literature search focused on RCTs and clinical trials
- ▶ 10 studies included in review

# Weight Loss Was Impacted

- ▶ Better sleep quality and longer sleep duration supported weight loss
- ▶ Sleep restriction impacts metabolic function:
  - ▶ Glucose and insulin sensitivity decrease
  - ▶ Evening leptin decreases
  - ▶ Evening cortisol and ghrelin increase

## **Influence of Sleep Restriction on Weight Loss Outcomes Associated with Caloric Restriction**

**Xuewen Wang<sup>1</sup>, Joshua R. Sparks<sup>1</sup>, Kimberly P. Bowyer<sup>1</sup>, Shawn D. Youngstedt<sup>1,2</sup>**

<sup>1</sup>Exercise Science, University of South Carolina, Columbia, South Carolina, United States

<sup>2</sup>College of Nursing and Health Innovation and College of Health Solutions, Arizona State University, Phoenix, Arizona, United States

# Sleep Impacts Body Composition

- ▶ All participants were engaged in calorie restriction for 8 weeks
- ▶ Two groups:
  - ▶ Calorie restriction alone (n=15)
  - ▶ Calorie and sleep restriction (n=21)
- ▶ Calorie and sleep restriction group slept less hours 5 days per week and ad libitum 2 days

# Study Results

- ▶ Everyone lost weight
- ▶ Calorie restriction group lost more fat as total weight lost
- ▶ Findings suggest that sleep deprivation could impact body composition with weight loss efforts

# In Summary

- ▶ Nutrition: plant-predominant, high-fiber, soy-inclusive
- ▶ Movement: aerobic + strength; consider HiRIT
- ▶ Sleep: prioritize 7–9 hours
- ▶ Stress: daily relaxation practice
- ▶ Substances: reduce alcohol, avoid tobacco
- ▶ Connection: build supportive routines
- ▶ Weight loss/maintenance is important

# Beyond Lifestyle

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Medical evaluation of symptoms

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Refer to sleep medicine and/or order a sleep study

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Consider menopause hormone therapy, GLP-1, etc

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Order pelvic floor physical therapy

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Refer to behavioral health

Thank you!



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