welcome

OAND SPRING CON MENO-Group

WhatsApp group

MENOPAUSE CARE IN 2024. THE SOLUTION IS IN OUR OFFICES.

Dr. Jordan Robertson ND

Dr. Jordan Robertson BHSc ND, MSCP

My mission is to give Naturopathic Doctors the same clinical support and resources available to conventional practitioners.

You deserve to be as confident in your recommendations as other health care providers do.

My role

Chief educator and facilitator at The Confident Clinician.

Visionary, crazy-idea person.

At TCC I'm responsible for the "how". How we're going to get where we're going.

Today I'm here to convince you you're the future of menopause care in Ontario. With evidence.

CONFLICT OF INTEREST

Clarity Health
Clinic owner in Burlington Ontario Canada.

The Confident Clinician
Founder and lead educator.

McMaster University
Educator for the BHSc program

CONO
Member of the Standards Committee.

WHY ARE WE HERE?

- Menopause care has a spotlight in the media and in standards of care.
- The current healthcare structure does not have the resources or capacity to execute the current menopause standards of care.
- It has been recognized that the Standards of Care have not been met in Canada, and an emphasis has been made on accurate MHT education and prescribing.
- The majority of menopause care requires non-prescriptive solutions.
- These solutions are “nobody’s specialty” in the Ontario health care model.

It’s what we do.

SOC

- Many care guidelines for menopause discuss symptoms in isolation from each other.
  - MHT for hot flashes
  - Nutrition for weight management
  - Exercise for sarcopenia prevention
  - Medication for osteoporosis
  - Nutrition and medication for cardiovascular changes.
- Without a guideline that adds up each of these areas of health, we constantly underestimate the amount of time good menopause care takes.
- Unless we’re operating in the 1 question per visit model.

Systematic review

A systematic review and critical appraisal of menopause guidelines

Chandima Hemachandra [1], Sasha Taylor [1], Rakibul M Islam [1], Ensieh Fooladi [2], Susan R Davis [1, 3]

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Abstract

Objective and rationale To identify and appraise current national and international clinical menopause guidance documents, and to extract and compare the recommendations of the most robust examples.

Design Systematic review.

Data sources Ovid MEDLINE, EMBASE, PsycINFO and Web of Science

Eligibility criteria for selecting studies Practice guidance documents for menopause published from 2015 until 20 July 2023. Quality was assessed by the Appraisal of Guidelines for Research and Evaluation II (AGREE II) instrument.

Supplementary table 4: Quality assessment of Clinical Practice Guidelines using AGREE II tool

Domain	**1** Scope & purpose **(%)**	**2** Stakeholder involvement **(%)**	**3** Development rigour **(%)**	**4** Clarity of presentation **(%)**	**5** Applicability **(%)**	**6** Ed in **(%)** torial dependence	**ICC (95% CI)**	**Overall quality**
General menopause management								
NICE; 2015[29]	100	97	90	99	65	7	0·97 (0·88-1·00)	High
OGSM, MMS; 2022[30]	99	75	76	100	56	9	0·90 (0·65-0·99)	High
Indian Menopause Society; 2020[31]	78	82	46	75	44	6	0·92 (0·72-0·99)	Moderate
Association of Scientific Medical Societies in Germany; 2020, 2021[32, 33]	89	60	59	90	14	6	0·91 (0·70-0·99)	Moderate
Endocrine Society; 2015[34]	88	46	59	96	41	8	0·90 (0·65-0·98)	Low moderate
International Menopause Society; 2016[35]	85	65	55	100	47	4	0·92 (0·71-0·99)	Low moderate
CNGOF & GEMVi; 2022[36]	89	39	51	94	23	6	0·92 (0·73-0·99)	Low moderate
JSOG, JMWH; 2018[37]	90	72	25	78	27	3	0·95 (0·83-0·99)	Low moderate
SOGC; 2021[38]	76	49	53	94	26	2	0·98 (0·91-1·00)	Low
Korean Society of Menopause; 2020[39]	74	21	18	93	18	0	0·97 (0·88-1·00)	Low
Italian Society of Menopause, Italian Society of Gynaecology of the Third Age; 2019[40]	71	15	15	74	18	2	0·95 (0·84-0·99)	Low
Median (IQR)	88 (14)	60 (36)	53 (34)	94 (21)	27 (29)	6 (46)		
Management of Urogenital Symptoms of Menopause								

Domain 5. Applicability	
18. The guideline is supported with tools for application.	The guideline provides advice and/or tools on how the recommendations can be put into practice. AND Change in domain (from Clarity of Presentation) AND renumber to 19
19. The potential organizational barriers in applying the recommendations have been discussed.	The guideline describes facilitators and barriers to its application. AND change in order – renumber to 18
20. The potential cost implications of applying the recommendations have been considered.	The potential resource implications of applying the recommendations have been considered.
21. The guideline presents key review criteria for monitoring and/ or audit purposes.	The guideline presents monitoring and/ or auditing criteria.

There are no guidelines describing “how” we do this.

THE CURRENT ONTARIO MODEL

- The Ontario family practice model disincentivizes practitioners from having a comprehensive exam with patients.
- The average wait time for a Gynecologist in Canada is 84 days (Liddy 2020)
- There are 104 NAMS certified non-ND practitioners in Canada
    - There are approximately 96,000 MDs in Canada.
- There are 44 Canadian NAMS certified NDs
    - There are 3000 NDs in Canada

30% of the MSCP in Canada are NDs

JOGC
Journal of Obstetrics and Gynaecology Canada
Journal d'obstétrique et gynécologie du Canada

Guideline No. 422a: Menopause: Vasomotor Symptoms, Pres…

3 Menopausal hormone therapy should be individualized after careful consideration of symptoms, medical conditions, health risks, family history, treatment goals, patient preferences, and timing of last menstrual period (*strong, high*).

4 Duration of menopausal hormone therapy should be individualized to the patient, based on ongoing symptoms, benefits, and personal risks. Periodic re-evaluation of menopausal hormone therapy is recommended (*strong, high*).

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Published online 2024 Jan 12. doi: 10.3390/jcm13020428
PMCID: PMC10816958
PMID: 38256562

Insomnia in Postmenopausal Women: How to Approach and Treat It?

Gyun-Ho Jeon

Błażej Męczekalski, Academic Editor

5. Assessment of Insomnia in Menopausal Women

Go to:

The diagnosis of insomnia is mainly performed clinically based on the subjective complaints of the patient, and in menopausal women, insomnia commonly occurs as a secondary disorder to physical and psychiatric problems, underlying other sleep disorders, such as OSA or RLS [10,11]. Therefore, careful assessment by proper history taking is important to exclude the comorbid factors. A detailed history from patients and family members using sleep questionnaires and diaries, including the onset of insomnia, pattern and frequency (number of nights/week) of insomnia symptoms, sleep/awake schedule, frequency and bother from menopausal symptoms (HFs and night sweats), and contributing factors or diseases, should be performed. The impact of the sleep complaint on the patient's life, daytime sleepiness, sleep hygiene, and physical symptoms—snoring, any apneic episodes, dryness of mouth, sweating, restless legs sensation, and periodic limb movements—suggesting other sleep disorders, such as OSA, RLS, etc., should be assessed. The medical, surgical, and psychiatric history, and medications and caffeine/alcohol/nicotine/illicit drug use, are also reviewed [11,42]. Although a polysomnography (PSG) is not generally an essential test for the assessment of insomnia, in menopausal women suffering from persisting sleep disturbances suggesting primary insomnia or other sleep disorders, such as OSA, PSG and a comprehensive assessment are needed [10,43]. Detailed contents of these comorbid diseases with sleep disorders are considered outside the scope of this review, which highlights primary or secondary insomnia in postmenopausal women.

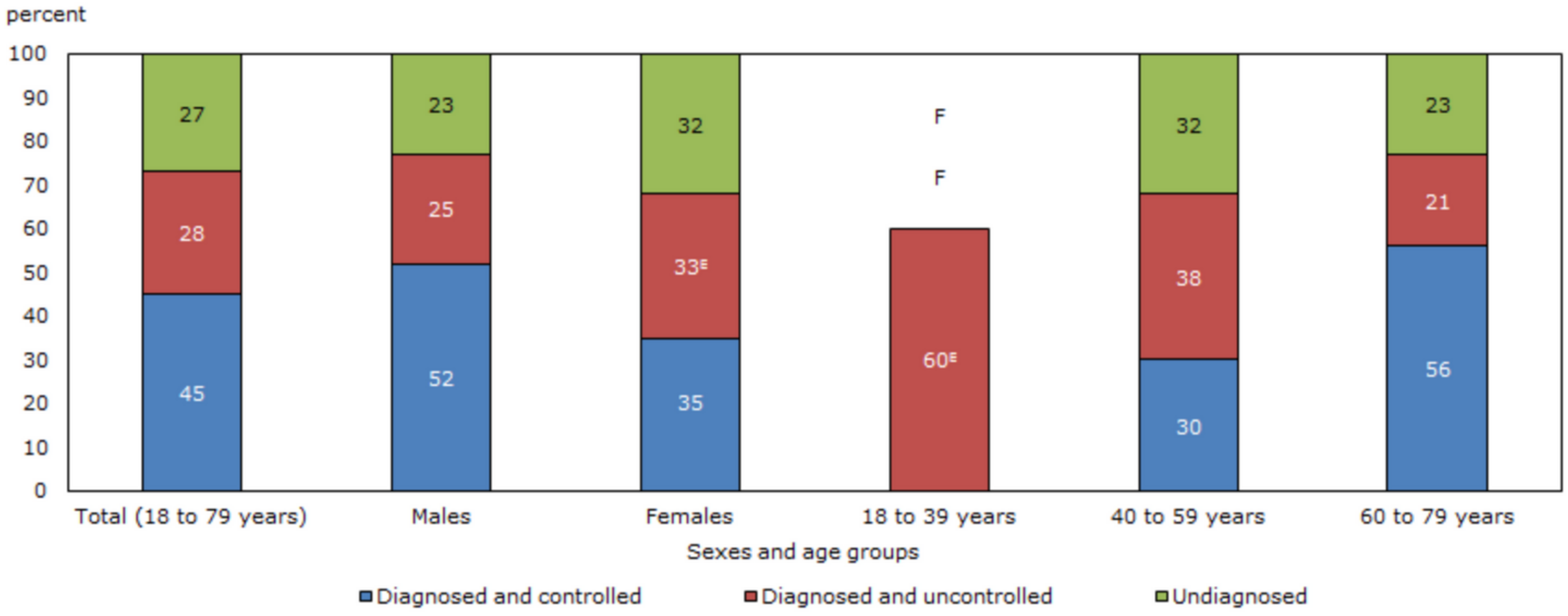
5 MINUTES = 87% OF GSM MISSED

- In a Spanish study on the disclosure of sexual dysfunction and GSM in menopause, only 12% of women spontaneously disclosed sexual symptoms in the first 5 minutes of their medical appointment (Cuerva 2018)
  - If physicians asked after the first 5 minutes, the % of women who disclosed rose to 38%.
- Gynecologists list time as the greatest barrier to assessing sexual dysfunction in a Brazilian study (de Carvalho 2024)

More than half of all males with hypercholesterolemia were diagnosed and controlled (52%), which was significantly higher than females (35%)

The proportions of those who were diagnosed but had uncontrolled levels did not significantly differ between the sexes (25% of males and 33% of females) (Chart 3).

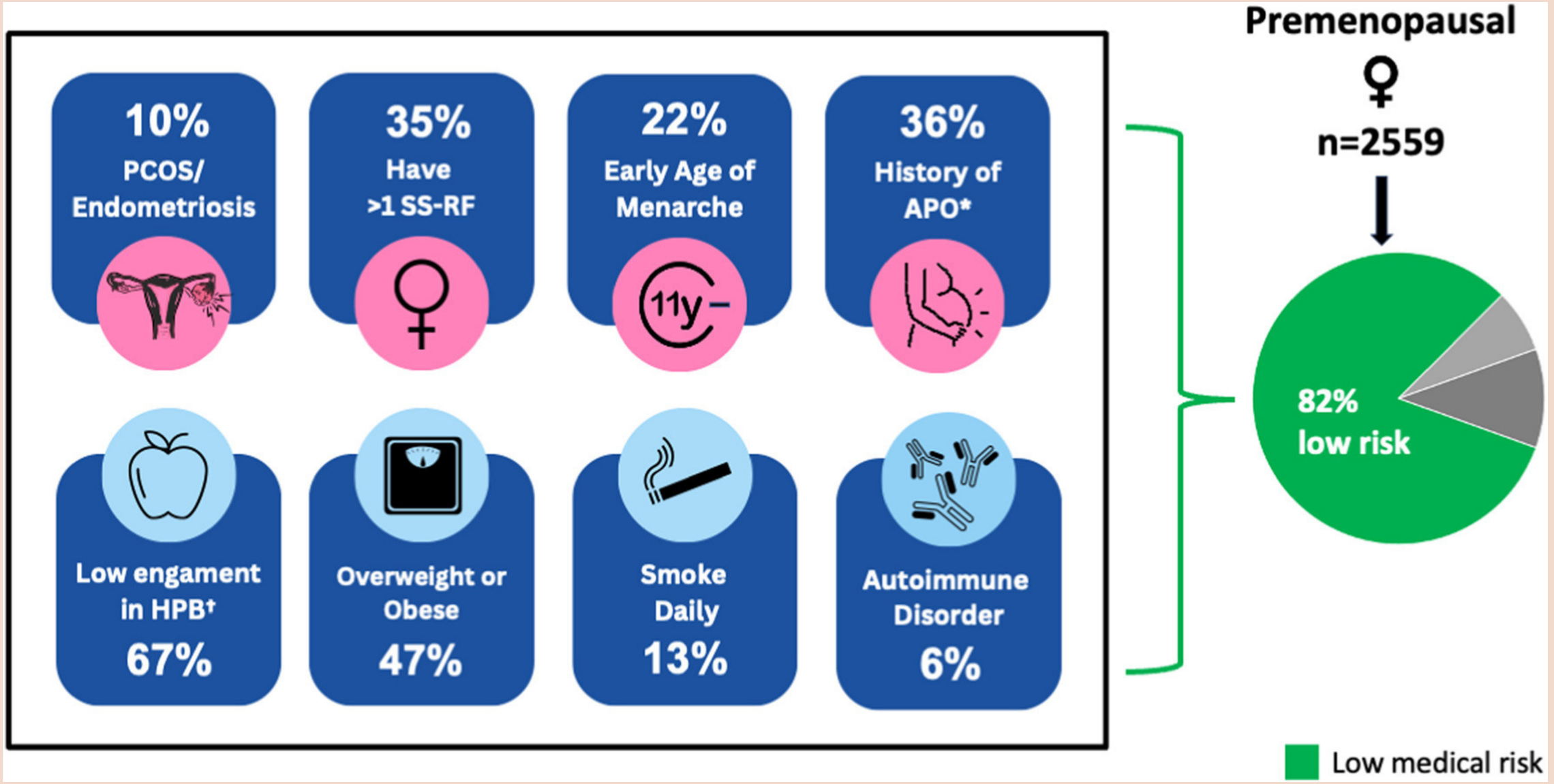
Chart 3
Percentage of adults aged 18 to 79 with hypercholesterolemia who are diagnosed, controlled or uncontrolled, or who are undiagnosed with the condition, by sex and age group, household population, Canada, 2016-2019



E Use with caution
F too unreliable to be published (data with coefficient of variation (CV) greater than 33.3%; supressed due to extreme sampling variability)
Note: An individual who reported being told by a health care professional of having high blood cholesterol or who was taking prescribed medication for lowering blood cholesterol is considered diagnosed.
Source: Canadian Health Measures Survey, Cycle 5 (2016 and 2017) and Cycle 6 (2018 and 2019).

SEX SPECIFIC RISK FACTORS

- A Canadian survey of 2500 premenopausal people AFB indicated that most women were unaware of the sex specific risk factors associated with heightened cardiovascular disease in their lifetime (Szakun 2023)
  - 2% of the study population identified as non-binary, 2S or men combined.
  - 37% of the respondants were from Ontario
- 38% had at least one SSRF.
- 40% of those who had ever been pregnant had one adverse pregnancy outcome in their lifetime (23% of all pregnancies, 19% of total sample)
- Patients with the highest risk (based on traditional and SSRF) were the most likely to underestimate their risk (70% underestimated their personal risk).


10%
PCOS/
Endometriosis
35%
Have
>1 SS-RF
22%
Early Age of
Menarche
11y–
36%
History of
APO*
Low engament
in HPB†
67%
Overweight or
Obese
47%
Smoke
Daily
13%
Autoimmune
Disorder
6%
Premenopausal
♀
n=2559
82%
low risk
Low medical risk

You were made to treat this problem.

HOW I ORGANIZED THIS

- An hour isn't very long.
- I have included some interesting new research on each area of menopause (non-HRT)
- I want to touch on each of them at a high level and give you confidence that you can do this better than anyone else right now.
- The slides we don't get through, you can read later!
    - They are sampled from a 2-day menopause course where I presented on OP, weight and cognitive decline.

WEIGHT GAIN

WEIGHT GAIN - WHAT'S NEW

- The importance of protein for satiety and maintaining energy intake has been solidified.
- The discussion of metabolically healthy obesity and small amounts of weight gain has surfaced.
- Weight loss without exercise has some implications to bone health, even if weight is regained later.
- Estrogen losses and brown adipose tissue emerges as a primary driver between reduced BMR in menopause.
- Semaglutide + HRT achieves better results then semaglutide alone (Hurtado 2024)

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Royal College of Obstetricians & Gynaecologists

COMMENTARY | Open Access

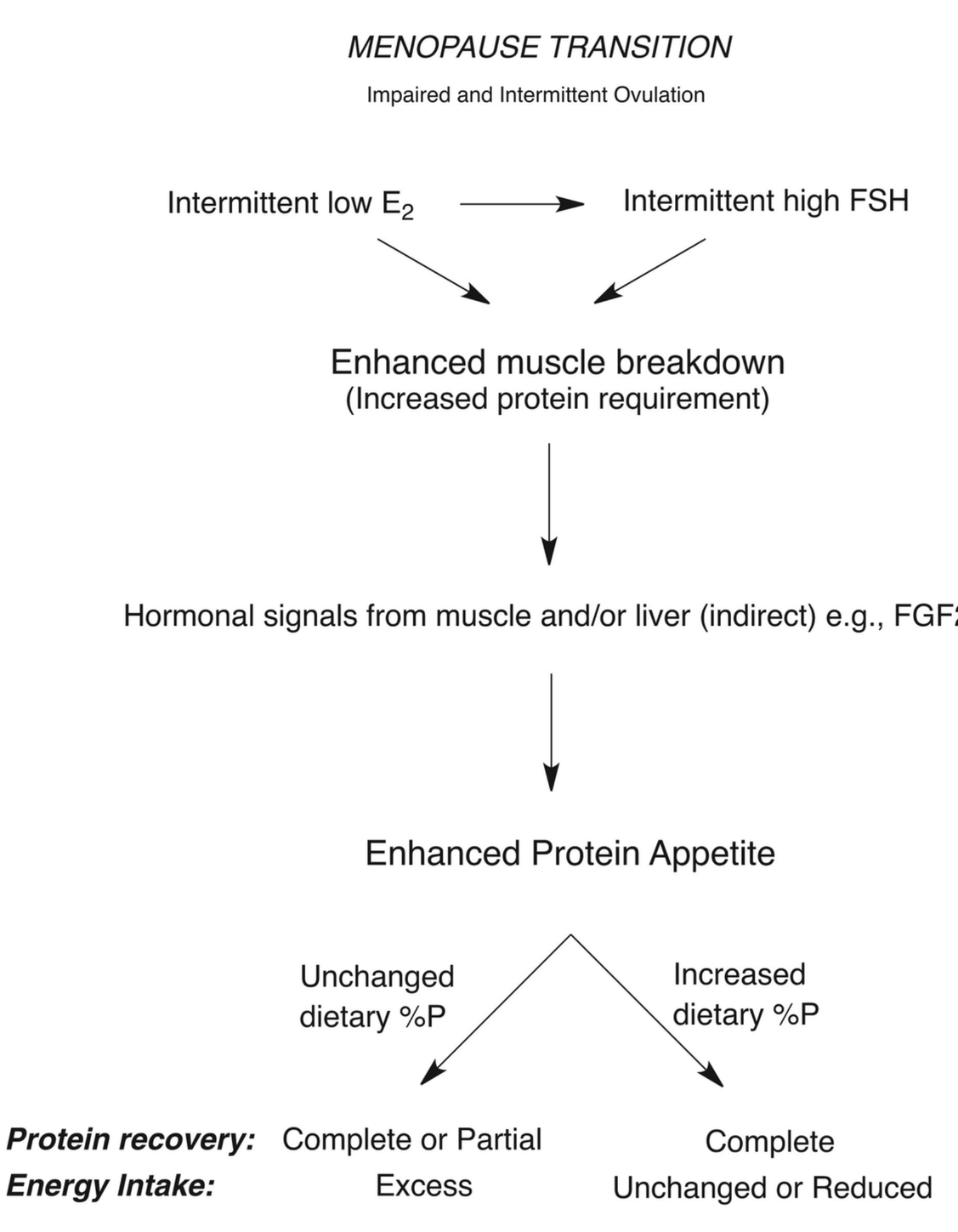
Weight gain during the menopause transition: Evidence for a mechanism dependent on protein leverage

Stephen J. Simpson, David Raubenheimer, Kirsten I. Black, Arthur D. Conigrave

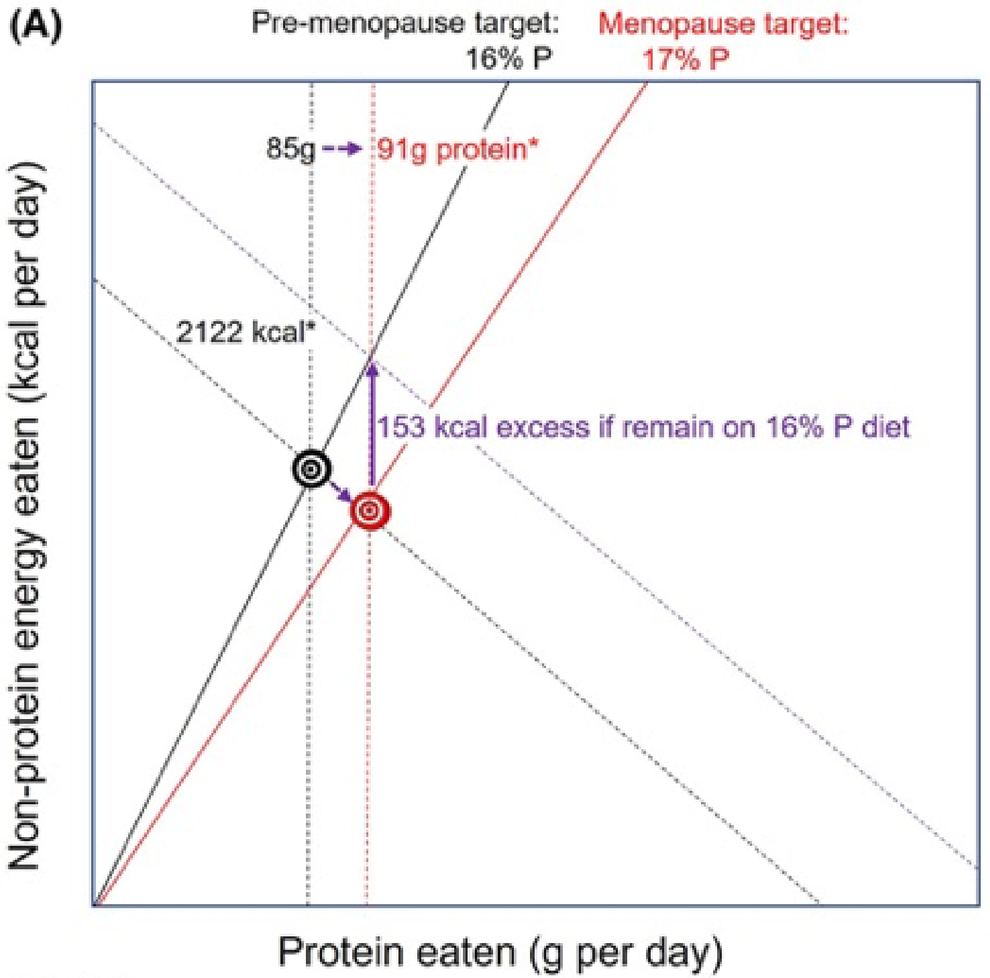
First published: 08 September 2022 |
https://doi-org.libaccess.lib.mcmaster.ca/10.1111/1471-0528.17290 | Citations: 1

PROTEIN LEVERAGE

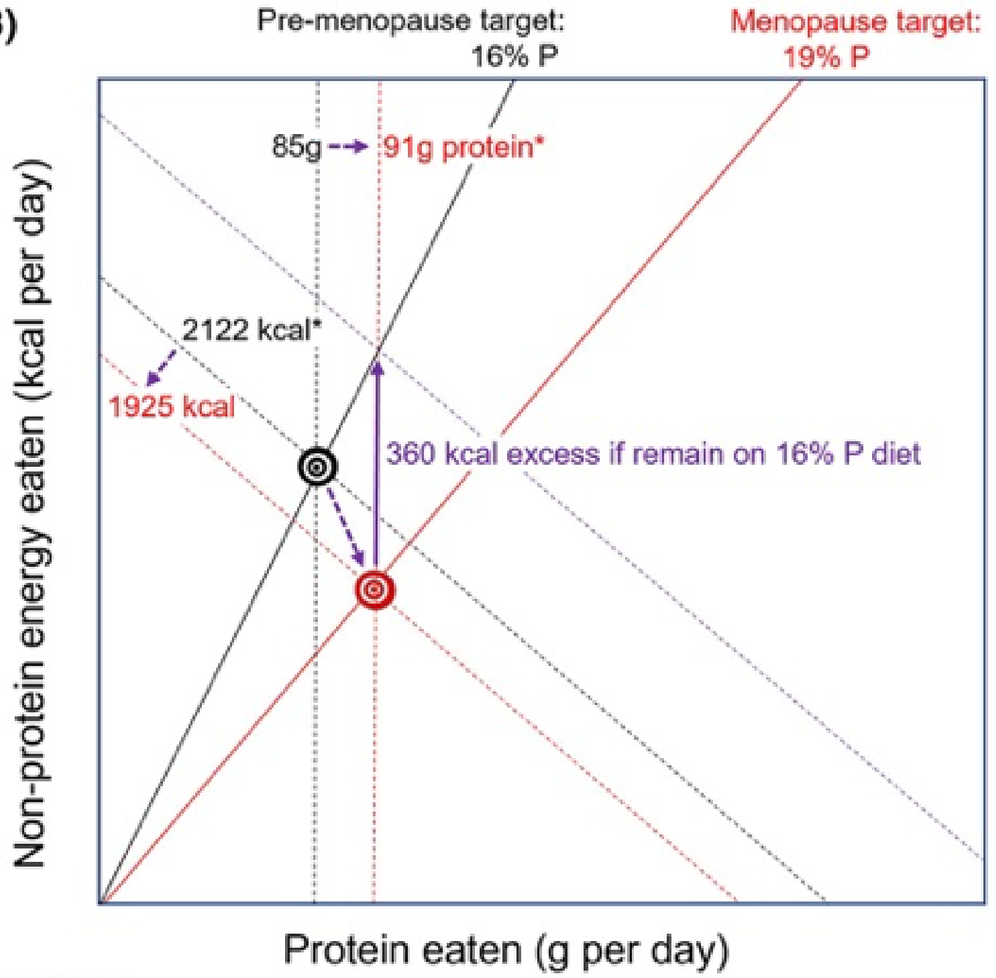
- A recent (brilliant) study by Simpson (2022) looks at "protein leverage" as the main challenge for weight gain in menopause.
- They describe the two age-related phenomena that happen in muscles that contribute to energy balance change
  - Anabolic protein resistance (reduced mTOR pathways) which is universal across both sexes
  - Increased protein breakdown which is estrogen dependent and specific for people in menopause.


MENOPAUSE TRANSITION
Impaired and Intermittent Ovulation
Intermittent low E_2
Intermittent high FSH
Enhanced muscle breakdown
(Increased protein requirement)
Hormonal signals from muscle and/or liver (indirect) e.g., FGF21
Enhanced Protein Appetite
Unchanged dietary %P
Increased dietary %P
Protein recovery:
Energy Intake:
Complete or Partial
Excess
Complete
Unchanged or Reduced

What happens if we increase the number of grams without increasing the relative % of calories coming from protein?



* *Lovejoy et al. 2008*
* *Gregario et al. 2014*



* *Lovejoy et al. 2008*
* *Gregario et al. 2014*

PROTEIN PRESCRIPTIONS

- Dietary protein concentration should increase from a minimum of 16% of calories (around 1.0 g kg-1) at age 40, to 18–20% (around 1.2 g kg-1) at age 50, and total energy intake should be reduced by around 10%, to ~8 MJ day-1.
- Removing ~250 kcal per day of processed fats and carbohydrates lowers energy intake and increases percent protein and could help to solve the problem long-term.
- We need to increase about 3% from the individual's baseline level, which is expected to increase total protein intake by 0.1–0.2 g kg-1 day-1

OBESITY Reviews

WORLD OBESITY

REVIEW | Open Access

Impact of estrogens on resting energy expenditure: A systematic review

Susanna Weidlinger, Katja Winterberger, Janna Pape, Magdalena Weidlinger, Heidrun Janka, Michael von Wolff, Petra Stute

First published: 06 August 2023 | https://doi.org/10.1111/obr.13605

“BUT ESTROGEN CAUSES WEIGHT GAIN?”

- This was a brilliant paper (Weidlinger Aug 2023) that reviews the mechanisms behind estrogen’s role in resting energy metabolism and reviews the 10 papers that specifically look at REE with OCP and MHT.
- Estrogen impacts brown adipose tissue in a variety of positive ways that influences REE.
- The withdrawal of estrogen (even in medically induced states with GNRH inhibitors) reduces REE and the addition of estrogen reverses this.

ESTROGEN SUPPORTS REE

- Resting energy expenditure is the largest contributor to caloric burn during the day.
- DEE only contributes 10%
- Activity-induced energy expenditure is the only modifiable contributor.
- Women have higher levels of brown adipose tissue than men prior to menopause.
- The loss of BAT at menopause is partially responsible for the reduction in REE.

WHAT ABOUT MHT?

- 4 articles looked specifically at MHT and REE
- One study showed maintenance of REE after pharmacological suppression of hormones with GnRH analogues (while the unsupported group had a reduction of REE)
- Another study looking at MHT in naturally postmenopausal people showed a 222 kcal/d difference between users and non-users in REE.
- In another study, postmenopausal women on MHT had the same REE as the luteal phase of premenopausal women while the non-users had a lower REE.

WEIGHT GAIN AND HTN

- A newer study by Ghare Naz (2024) looked at weight change from baseline (premenopause) on the impact of hypertension in postmenopause.
- I liked this study because it was looking at % change, rather than a crude number to work towards.
- Weight loss of >5% and weight gain of >5% did not have an impact on HTN
- BMI, FBS, smoking and age remained as independent risk factors for HTN.
- Conclusion? Small amounts of menopause-related weight gain and loss on its own do not have significant impacts on HTN risk in this particular study.
- The research on metabolically healthy obesity will be interesting over the next 2-5 years.

MAKE SURE YOU CHECK IN

- Avoiding breakfast, higher dietary restraint during dieting, lower nuts, seeds and pulses are associated with higher weight gain after dieting in postmenopausal women (Bajerska 2020).
  - This paper goes on to suggest that regular check ins during the menopause transition would help both identify patients at risk of regain and help counsel patients towards healthier behaviours to avoid weight regain after loss.
- Every single successful study on nutrition (in all ages, not just midlife) shows enhanced success with accountability and coaching.
  - This is why I focus on this so much with clinicians. You need to be good at this behaviour change (and encourage your patients to come in often) to see the results.

WEIGHT GAIN

- Things to consider this year:
  - The people who approach you who are upset about 2-3 lbs of weight gain or body shape changes in menopause are not likelly the group that we can support the most (and yet this may be who is in your office the most).
  - The patients who benefit the greatest from ND/IM care for weight management have pre-existing lifestyle challenges (depression, low exercise, smoking) (Verma 2024)
  - We must be curious whether small amounts of weight gain are metabolically consequential. The research right now suggests that on it's own, small amounts of weight gain/shape change isn't a problem.

OSTEOPOROSIS - WHAT'S NEW?

- Weight loss and osteoporosis are the dominant topics right now.
  - Ozempic, bariatric surgery, and dieting are all areas to explore as a risks for OP.
  - Dietary calcium and protein deficiency (which may stem from low energy availability) are risk factors for bone loss.
- Vitamin K - The data is the same; we're not using this right now as a supplement.
  - Most recent reviews mention Vitamin K in the context of a balanced diet (Anish 2024)
- Screening is still not recommended, and outpatient lab assessments are still not helping us diagnose people or find patients at risk (with the exception of Vitamin D) (Merlijn 2024)
- The research is pointing towards a more complex conversation.

THE “NEW” OP CONVERSATION

- The BMD side includes
  - Nutrient intake and deficiencies
  - Hormones
  - Age
  - "Chemical and metabolic environment that influences bone"
- The Fracture side includes
  - Eyesight and hearing
  - Mobility
  - Strength
  - Falls
  - "Aging with confidence and independence"

PROVIDER EDUCATION

- Chen (2022) randomized 104 women to standard care (OP medication, calcium, vitamin D) or individualized care for 5 years which included:
  - 30 minute visits annually with a specialist that included:
    - Discussion about medication compliance, and the importance of calcium and Vitamin D.
    - Discussion about exercise, nutrition and lifestyle to support BMD.
    - A discussion about falls, psychotropic drugs and strategies for reducing fractures.
- 7.7% of the intervention group had fragility fractures in the 5 years and 30% of the control group had fragility fractures.
- BMD was significantly better in the intervention group compared to control.
- Compliance of medication was significantly greater in the intervention group.

BONE LOSS IN MENOPAUSE

- Bone loss through adulthood for women occurs at a rate of 1-2% per year with accellerated change during the menopause transition.
- The entire menopause transition accounts for 10-12% bone loss.
  - This translates into one T score in the hip and lumbar spine.
- The prevalence is high with over 15% of American women satisfying the diagnostic criteria of OP (T score <-2.5) (NAMS)
- Most fractures in older adults are due at least in part to low bone mass, even when they result from considerable trauma (LeBoff 2022)
- Many patients cannot cite menopause as being a risk factor for ostsoporosis (30% in most studies) (Chin 2022)

WHY IS THIS IMPORTANT?

- Osteoporotic fractures increase risk of mortality and are a significant contributor to mortality and morbidity in aging women.
  - The mortality rate in the first year after hip fracture is approximately 20%.
- Men and women do not have a good grasp on the risks associated with OP. (Chelf 2022)
- Many people who suffer a fracture are not subsequently diagnosed with OP, and do not receive treatment.
  - Even those prescribed appropriate therapy are unlikely to take the medication as prescribed. (LeBoff 2022)
- Approximately 20% of hip fracture patients require long-term nursing home care, and 60% do NOT fully regain pre-fracture independence (LeBoff 2022)

FOLLOW UP AFTER FRACTURE

- Wrist fractures are predictive of future fractures (LeBoff 2022)
- All fractures >50 year (except toes and skull which are traumatic) should be investigated for BMD - even if the fracture heals completely.
    - The highest risk of second fracture is in first 1–2 years after the initial fracture.

FRAX

- The Fracture Risk Assessment Tool (FRAX®) was developed to calculate 10-year probabilities of hip fracture and major osteoporotic fracture (defined as clinical vertebral, hip, forearm or proximal humerus fracture).
- FRAX® is validated for women and men aged 40–90 years.
- FRAX® was tested in treatment-naïve patients not on osteoporosis medications. It may, however, be useful for assessing risk in previously treated individuals who have discontinued bisphosphonate therapy for 2 years or non-bisphosphonate therapy for 1 year

CLINICAL SCREENING -> EARLY DXA

- FRAX was designed to estimate fracture risk in a clinical setting.
- Other Osteoporosis scoring tools were developed to assess OP risk in a clinical setting.
- The US task forPecinace uses a FRAX score of 9.3% to estimate "the same fracture risk as a 65 year old person" when discussing early assessment before 65 years of age.
- FRAX for this purpose may not be sensitive enough to capture all younger patients.
- Pecina (2016) conducted a small study on the sensitivity and specificity of FRAX and clinical scores of OP (SCORE and ORAI) to assess for OP in younger women.
    - FRAX preformed worse than SCORE or other clinical assessments.

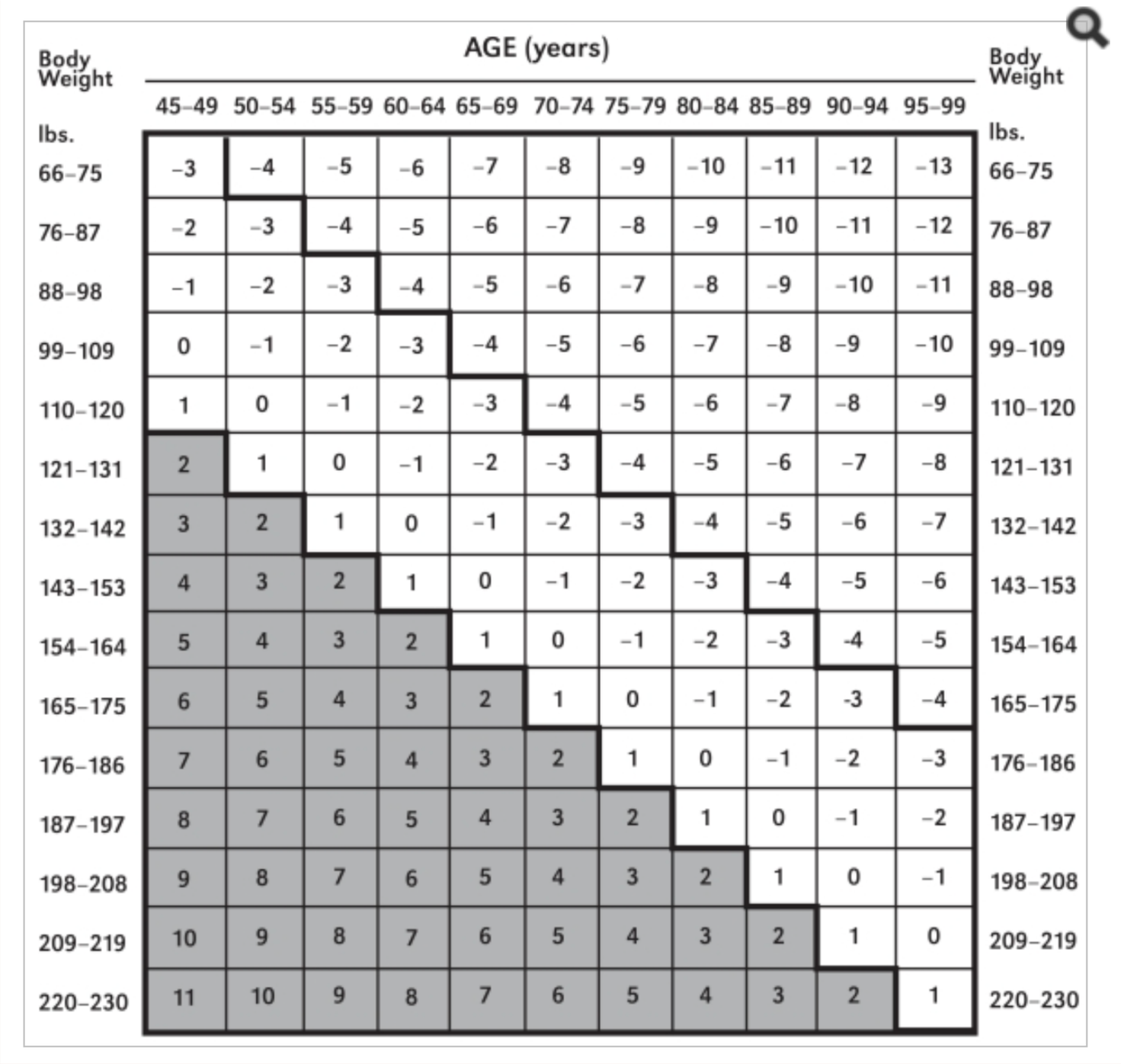
SCORE SCREENING

- Scoring system for SCORE Osteoporosis Clinical Assessment
  - Race not black: 5 points
  - Rheumatoid Arthritis: 4 points
  - Fracture after age 45 of wrist, hip or rib: 4 points per Fracture
  - Age over 65: Calculate 3 x (1st digit of age)
  - Example for age 70: 21
  - Weight: Calculate (-1 x weight in pounds)/10
    - Example for weight 200 pounds: -20
  - Estrogen therapy never used: 1 point
- A score of >6 has high likelihood of OP.

OST (Osteoporosis Self Assessment Tool)

A simple calculation that uses only age and weight.

This has been well validated against other screening measures (Subramaniam 2018)



Body Weight lbs.	AGE (years) 45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85–89	90–94	95–99	Body Weight lbs.
66–75	–3	–4	–5	–6	–7	–8	–9	–10	–11	–12	–13	66–75
76–87	–2	–3	–4	–5	–6	–7	–8	–9	–10	–11	–12	76–87
88–98	–1	–2	–3	–4	–5	–6	–7	–8	–9	–10	–11	88–98
99–109	0	–1	–2	–3	–4	–5	–6	–7	–8	–9	–10	99–109
110–120	1	0	–1	–2	–3	–4	–5	–6	–7	–8	–9	110–120
121–131	2	1	0	–1	–2	–3	–4	–5	–6	–7	–8	121–131
132–142	3	2	1	0	–1	–2	–3	–4	–5	–6	–7	132–142
143–153	4	3	2	1	0	–1	–2	–3	–4	–5	–6	143–153
154–164	5	4	3	2	1	0	–1	–2	–3	-4	–5	154–164
165–175	6	5	4	3	2	1	0	–1	–2	-3	–4	165–175
176–186	7	6	5	4	3	2	1	0	–1	–2	–3	176–186
187–197	8	7	6	5	4	3	2	1	0	–1	–2	187–197
198–208	9	8	7	6	5	4	3	2	1	0	–1	198–208
209–219	10	9	8	7	6	5	4	3	2	1	0	209–219
220–230	11	10	9	8	7	6	5	4	3	2	1	220–230

CLINICAL SCREENING -> EARLY DXA

- What do we do with this information?
- Essentially, all >65 women regardless of risk factors get screened.
- If you want your younger patient to be screened, and they don't quite fit the US task force recommendations, use a clinical OP scoring system or FRAX (of either 9.3 or 6.8?) as a validation for your suspicions about OP.
- This is the most "evidence based" approach to early assessment of OP at this point. We may see more information on this in the future but right now, DXA is too inaccessible for it to be considered a screening test in younger people.

BLOOD TESTING FOR OP?

- CBC
- Serum calcium
- Creatinine
- Alkaline phosphatase
- Albumin
- Serum phosphate
- 24 hour urinary calcium
- Vitamin D
- 24 hour free cortisol
- TSH
- Celiac screen
- PTH

INTERNATIONAL OP GUIDELINES HISTORY TAKING (LEBOFF)

- Investigate any broken bone in adulthood as suspicious for osteoporosis, regardless of cause.
- Measure height annually, preferably with a wall-mounted stadiometer (without shoes).
- Record history of any falls.
- Perform BMD testing in the following:
- Fracture(s) during adulthood (any cause).
- Historical height loss of ≥ 1.5 in. (defined as the difference between the current height and peak height)
- Prospective height loss of ≥ 0.8 in. (defined as the difference between the current height and last documented height measurement)
- Recent or ongoing long-term glucocorticoid treatment.
- Diagnosis of hyperparathyroidism

INTERNATIONAL OP GUIDELINES

- Counsel individual patients on their risk for osteoporosis, fractures, and potential consequences of fractures (functional deterioration, loss of independence, increased mortality).
- Recommend a diet with adequate total calcium intake (1000 mg/day for men aged 50–70 years; 1200 mg/day for women ≥ 51 years and men ≥ 71 years), incorporating calcium supplements if intake is insufficient.
- Monitor serum 25-hydroxyvitamin D levels.
- Maintain serum vitamin D sufficiency (≥ 30 ng/mL)
- Identify and address modifiable risk factors associated with falls, such as sedating medications, polypharmacy, hypotension, gait or vision disorders, and out-of-date prescription glasses.
- Provide guidance for smoking cessation, and avoidance of excessive alcohol intake; refer for care as appropriate.

INTERNATIONAL OP GUIDELINES

- Counsel or refer patients for instruction on balance training, muscle-strengthening exercise, and safe movement strategies to prevent fracture(s) in activities of daily life.
- In community-dwelling patients, refer for at-home fall hazard evaluation and remediation.
- In post-fracture patients who are experiencing pain, prescribe over-the-counter analgesia, heat/ice home care, limited bed rest, physical therapy, and alternative non-pharmacologic therapies when appropriate. In cases of intractable or chronic pain, refer to a pain specialist or physiatrist.

ASSESSMENT SUMMARY

- Educate patients about the role of menopause in osteoporosis.
  - Especially about fractures (even traumatic ones) that have healed and not followed up with.
- Assess if patients qualify for early screening.
  - Use this opportunity to educate about risk factors.
- Assess patients for additional risk factors beyond BMD.
- Run blood tests that rule out secondary OP if patients have low BMD and do not fit the typical patient profile.
- Continue to check in on screening every 12 months after the age of 45 to be aware of changes that may adjust the patient's qualification for screening.

The side effect of weight loss is lower calories, protein, calcium and exercise.

WEIGHT LOSS?

- Theoretically there are some concerns around weight loss causing excess bone loss in overweight or obese subjects.
- Zibellini (2022) has the most up to date review on the subject with pooled results from 41 trials.
    - **A statistically significant reduction in hip BMD was seen in 6+ month interventions for weight loss (not 3 month).**
    - Other markers of increased bone turnover were observed in various trials of various lengths but the clinical relevance is yet to be determined.
- At this point it is not ideal to avoid weight loss in patients where it adds health benefit on the basis of preserving bone mass alone.

OSTEOPOROSIS

- Serra (2023) found BMD losses at various sites after weight loss without exercise, even after weight was regained when the trial was completed.
  - Although they didn't look at the typical sites we consider for OP diagnosis, research is pointing towards the negative effects of weight loss without strength training in this area of menopause care.
- A retrospective analysis of another trial looking at significant caloric restriction (goals of 25%) in patients with healthy or slightly elevated BMI over 2 years (Villareal 2016)
  - The results showed a loss of bone at the lumbar and femoral sites in both men and women in the study.
  - The CR group also had significantly lower physical activity, which accounted for 30% of the variance of BMD levels.
- What we are missing is fracture data.
- Many studies on CR show a loss of bone or an increase in bone related turnover markers but we don't have the outcome data to show it causes fractures per se.
- We also have to be interested in the impact on protein, calcium and exercise when someone diets.

EXERCISE + CALORIC RESTRICTION

- Yazdanpanah (2021) meta analysis of 16 studies.
- Exercise added to caloric restriction did not attenuate the impact of dieting on bone (there was bone loss)
- **Only when they stratified to the 8 studies looking at resistance exercise did exercise support bone health during caloric restriction.**
- The diets ranged from low calorie (<800-1200) and modest calorie (>1200) restricted diets.
- The review only stated WMD and not % change in BMD in their results so it's difficult to give you the actual numbers and % change.

VEGETARIAN DIETS

- **Vegetarians and vegans require the same basic nutrition as omnivores to maintain and support bone health.**
- There is nothing specifically about these diets that influences bone negatively, except that a significant proportion of patients fall below the recommended intake of calories, protein, calcium, vitamin D, B12 (Falchetti 2022)
    - The average protein intake is lower in vegetarians (13.4%) and vegans (12.9%) compared to meat eaters (16.0%) which was reviewed in Falchetti (2022)
- Ho Pham (2009) systematic review (9 studies, 2700 people) that BMD in vegetarians and vegans were 4 and 9% lower than meat eaters, but it did not have a significant clinical impact on fracture risk.

VEGETARIAN DIETS

- Counselling around protein intake may be the best move in these patients.
- Even increasing plant based protein sources from 3 x per week to 3 x per day reduced the risk of bone loss in vegetarians (Falchetti 2022)
- Lousuebsakul-Matthews (2014) examined the dietary intake of over 30,000 vegetarians and found no difference between high legumes, meat proteins or "meat analogues" on BMD.
    - **This is further demonstrating that the dietary source doesn't matter, we just don't want our patients to be deficient.**

VEGAN DIETS

- Tong (2020) has conducted one of the better prospective studies on omnivores, vegetarians and vegans with respect to fracture risks.
- Even after controlling for calcium intake, fracture risk was higher in vegans compared to the other groups studied.
- The vegans in the study had a 43% increased risk of all fractures (and various amounts around this % at the individual sites).
- There are conversations about the vegan diet exerting impact because of lower calories and BMI, but this study found significant impacts on bone even after adjusting for BMI.

CALCIUM

- Liang (2020) published a review in the International Osteoporosis journal citing pooled risk factors for falls in post menopausal women.
  - **Women with a low calcium diet had a significantly increased risk of falling when compared to women with calcium adequacy.**
- I have questions about this!
  - Are we talking about calcium? protein? health behaviours?
  - I have a suspicion that when we look at the impact of calcium intake above frank deficiency, that we're actually talking about resources (in yourself and your country) and protein/health behaviours that go along with increased calcium intake.
  - But that's my opinion. :)

OSTEOPOROSIS - VITAMIN K

- Effect of vitamin K on bone mineral density and fractures in adults: an updated systematic review and meta-analysis of randomized controlled trials (Mott 2023)
  - We still aren't convinced about this as most trials were found to have significant bias; all come from the same few labs in Japan and won't disclose parts of their work.

MEDICATIONS

- Barrionuevo (2022) has the most recent network meta analysis on the subject of medications and fracture risk.
  - Calcium and vitamin D make the list for hip fracture (RR: 0.81)
- **Aside from calcium/D for hip fracture, no other integrative options comes anywhere close to the pharmaceutical options for patients who already have OP.**
- Each effective treatment option has overlapping confidence intervals, which makes it less clear "which" pharmaceutical option we should choose.
- Bisphosphonates are still the primary standard of care.

BISPHOSPHONATES

- The non-compliance rates of studies varies from 20-80% (with compliance meaning over 80% adherence and less than 60 days interval between scheduled doses).
- Likely the differences are based on medication dosing differences, injection or oral therapies.
- Bisphosphonates reduce fracture risk in postmenopausal women by 20-45% (depending on site) in a systematic review of over 74,000 women (Chen 2022)
- The time to benefit (TTB) to reduce 1 vertebral fracture in 100 women is approximately 12 months, meaning that bisphosphinates should be considered in women with a life expectancy of over 12 months (Deardorff 2022)

BISPHOSPHONATES

- There is very little data on how to improve the compliance with bisphosphonates.
- Discussions around physician-centered monitoring doesn't see the kind of benefit that you'd expect.
- Our role here may include:
  - Discussing bisphosphonate alternatives (meaning alternate dosing or delivery options that may improve compliance).
  - Educating around the benefits (because patients can't feel them)
  - Dispelling misinformation

MEDICATION AFTER FRACTURE

- There has been a theoretical risk that starting antiresorptive drugs (Bisphosphonates) immediately after a fragility fracture can impact healing.
- Palui (2022) found no impact of early addition of any OP drugs on fracture healing (greatest amount of research is for Bisphosphonates)

EXERCISE

- Hejazi (2022) conducted a meta analysis on older PMP women (>60) to better understand the impact of a late exercise intervention on OP.
    - Typically we consider early intervention to be the best, and maybe only way to substantially impact bone.
- All studies had to include participants who were not exercising (defined as <120 min per week) at baseline and not on HRT.
- Overall exercise had a positive impact on BMD in older women at all sites.
- **When stratified by exercise type, the type of exercise mattered less for this population when applied to non-exercising patients.**

COGNITION AND MOOD

- There have been a few interesting papers written in the last year on cognition and menopause.
- The most important point to make here is that we're not ready to consider MHT as a protection or treatment for cognitive decline
    - Even though there is some interesting data in APO E carriers, it's not strong enough for us to consider it a "reason" to use MHT or standard care for the prevention of cognitive decline.
- There's a cool new meta analysis on melatonin for mood in menopause (Kayacik 2024)

THE IMPACT OF HORMONES

- Estrogen crosses the blood brain barrier and the brain produces it's own estrogen through endogenous production from cholesterol (Rahman 2019)
- The loss of estrogen in the perimenopause/menopause transition impacts energy metabolism systems in the brain, leading to hypometabolism, grey and white matter loss and possible amyloid deposition (Mosconi 2019)
    - It has been hypothesized that hypometabolism in areas of dense estrogen receptors (areas related to thinking, learning and memory) contributes to symptoms in menopause. (Rahman 2019)
- These changes are particularly consequential when women have genetic (APOE) risk factors for Alzheimers - but we are not in a position to screen for who these patients are (Mosconi 2019)

HOW DOES IT PRESENT?

- Cognitive changes that present during menopause are subtle, and more significant changes to cognitive function should be fully assessed (NAMS)
- In the SWAN trial, perimenopause findings were mostly an "absence of learning" over repeated cognitive tests (Khoudary 2019).
    - But post-menopause the learning effect was similar to pre-menopause levels.
- Cognitive changes do improve over time (which means that "low estrogen" is not soley responsible).
    - Cognitive changes that happen a long time since the LMP are associated with aging (or another factor) and not menopause (Conde 2021)

ASSESSMENT FOR COGNITION

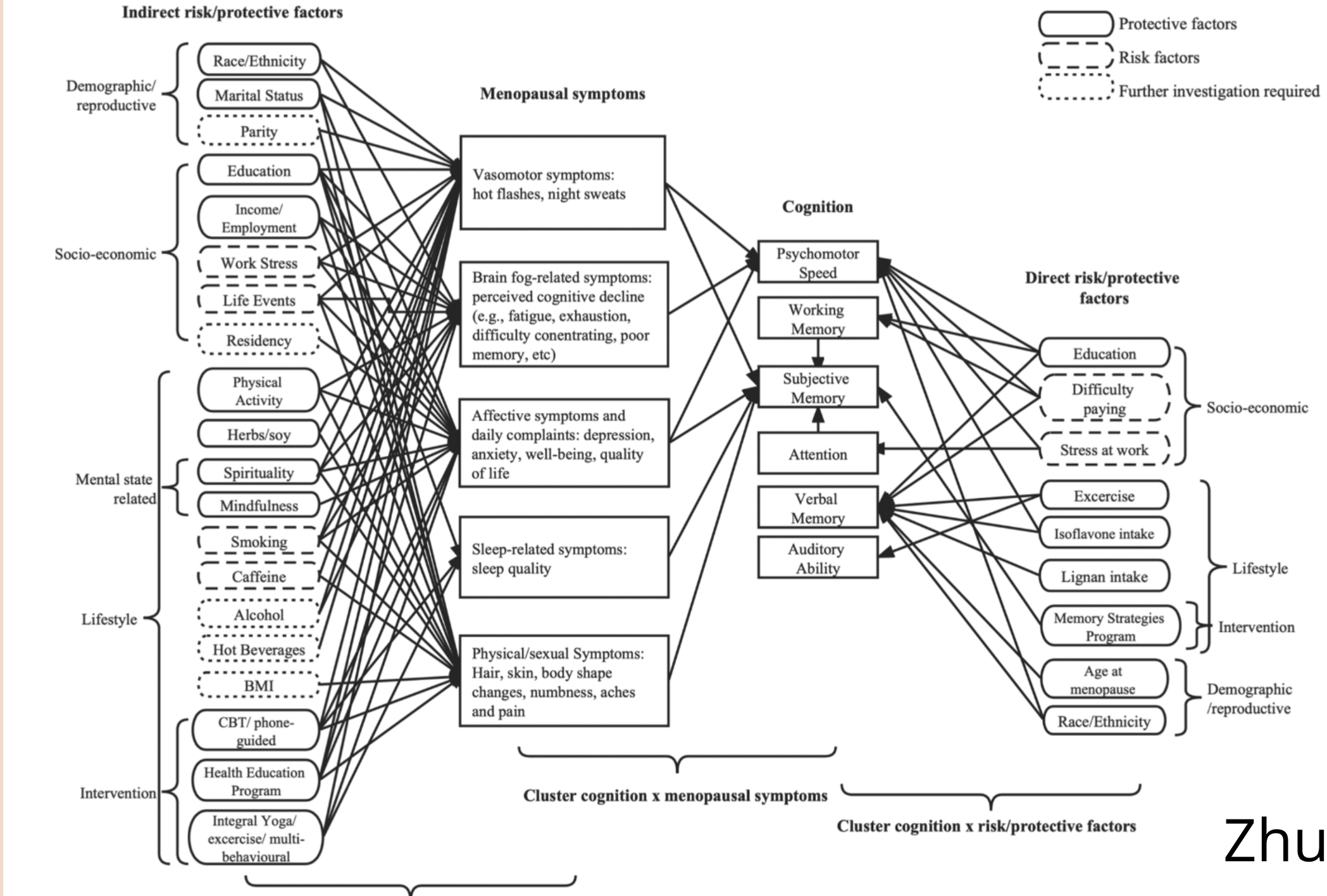
- There are unique factors that influence cognitive changes in women that should be screened during the menopause transition
- APOE genotype (if we can access this)
- Race
- Cardiovascular disease
- Diabetes
- Depression
- History of TBI
- Thyroid disease
- Waist circumference (<88 cm)
- Blood pressure

ASSESSMENT FOR COGNITION (JORDAN'S ADDITIONS)

- ADHD
- Burnout
- Iron deficiency
- Sleep apnea
- Dieting/caloric restriction
- Meal timing/fasting
- B12 deficiency
- Autoimmune disease
- PMS
- Bordem.

ASSESSMENT

- Research has used a variety of testing to examine verbal and learning changes that occur during menopause, but no single measure has been validated as the gold standard. (Rice 2003)
- Given that most symptoms are subjective, we likely have to "take our patient's word for it" on most changes they experience versus feeling confident in one particular testing strategy in office.


Indirect risk/protective factors
Protective factors
Risk factors
Further investigation required
Demographic/ reproductive
Race/Ethnicity
Marital Status
Parity
Socio-economic
Education
Income/ Employment
Work Stress
Life Events
Residency
Mental state related
Physical Activity
Herbs/soy
Spirituality
Mindfulness
Lifestyle
Smoking
Caffeine
Alcohol
Hot Beverages
BMI
Intervention
CBT/ phone-guided
Health Education Program
Integral Yoga/ excercise/ multi-behavioural
Menopausal symptoms
Vasomotor symptoms: hot flashes, night sweats
Brain fog-related symptoms: perceived cognitive decline (e.g., fatigue, exhaustion, difficulty conentrating, poor memory, etc)
Affective symptoms and daily complaints: depression, anxiety, well-being, quality of life
Sleep-related symptoms: sleep quality
Physical/sexual Symptoms: Hair, skin, body shape changes, numbness, aches and pain
Cognition
Psychomotor Speed
Working Memory
Subjective Memory
Attention
Verbal Memory
Auditory Ability
Direct risk/protective factors
Education
Difficulty paying
Stress at work
Socio-economic
Excercise
Isoflavone intake
Lignan intake
Memory Strategies Program
Lifestyle
Intervention
Age at menopause
Race/Ethnicity
Demographic /reproductive
Cluster cognition x menopausal symptoms
Cluster cognition x risk/protective factors

Zhu 2022

THE USE OF MHT FOR COGNITION

- The current standards do not recommend using MHT to support patients to prevent cognitive changes or to reduce the risk of Alzheimer's Disease.
- Maybe we'll feel differently in the future, but for now, we can't say that MHT prevents cognitive changes.
- Perhaps the greatest impact that MHT can have is by improving sleep, reducing depression and reducing cardiovascular risks.
- There is some data that MHT will prevent the memory changes after surgical menopause in younger women (NAMS).
- There have been 8 systematic reviews published on MHT and cognition (Andy 2024 is the latest) and they all show no effect.

MIND DIET

- ·3 servings per day of whole grains
- ·6+ servings per day of leafy green vegetables
- ·1+ serving(s) per day of other vegetables
- ·5+ servings per week of nuts
- ·4+ servings per week of beans and legumes
- ·2+ servings per week of berries
- ·2+ servings per week of poultry
- ·1+ servings per week of fish
- ·Olive oil as your main cooking oil.

- ·Less than 5 servings per week of sweets and pastries
- ·Less than 4 servings per week of red meat
- ·Less than 1 serving per week of cheese or fried foods
- ·Less than 1 tbsp per day of butter.

MIND DIET

- Arjmand (2022) randomized female participants (mean age 48) to a hypocaloric diet OR a hypocaloric MIND diet.
  - The MIND diet participants lost more weight, had higher satiety markers than the other diet. (They must have eaten less but the study didn't publish the "after" calories).
- Arjmand (2022) conducted another small study on obese women (average age 48) with the MIND diet versus a hypocaloric diet.
  - There were no differences in brain structure, but improved cognitive domains on the MIND diet.
- Holthaus (2022) N = 200 (~ 100 female) mean age 34 had faster cognitive processing speed if MIND diet scores were in the highest quartile.

MIND DIET - OTHER NOTES

- What I took away from this Arjmand study was the importance of discussing "HOW" to do CR if you are recommending this to your patient.
- The instructions in the study of "eat X calories" lead to a natural reduction in the foods that have been shown to be beneficial for cognitive health.

Foods	MIND diet group (n:22)		p value	Control group (n:15)	p value
Green leafy vegetables (serving/week)[α]			< 0.001		< 0.019
	Baseline	3.72 ± 0.55		3.60 ± 0.50	
	Follow up	5.50 ± 0.51▲		3.93 ± 0.25▲	
Other vegetables (serving/week) [β]			< 0.001		< 0.670
	Baseline	3.86 ± 0.63		3.93 ± 0.25	
	Follow up	6.90 ± 0.52▲		4.00 ± 0.65▲	
Berries (serving/week)			< 0.001		< 0.189
	Baseline	0.90 ± 0.42		0.93 ± 0.25	
	Follow up	2.00 ± 0.00▲		0.73 ± 0.59▼	
Nuts (serving/month)			0.478		< 0.001
	Baseline	4.45 ± 1.01		4.53 ± 0.63	
	Follow up	4.63 ± 0.49▲		3.73 ± 0.59▼	
Olive oil (primary oil)*			< 0.001		1
	Baseline	0		0	
	Follow up	1		0	
Butter, margarine (Table spoon/day)			< 0.001		< 0.001
	Baseline	1.50 ± 0.59		1.20 ± 0.41	
	Follow up	0.63 ± 0.49▼		0.46 ± 0.51▼	

Cheese (servings/week)			< 0.001		1
	Baseline	6.40 ± 0.50		6.33 ± 0.48	
	Follow up	1.68 ± 0.56▼		6.33 ± 0.48	
Whole grains (serving/day)			< 0.001		< 0/001
	Baseline	1.00 ± 0.00		1.00 ± 0.00	
	Follow up	2.18 ± 0.39▲		0.33 ± 0.48▼	
Fish (not fried) (meals/month)			< 0.001		< 0.019
	Baseline	1.22 ± 0.42		1.33 ± 0.48	
	Follow up	2.45 ± 0.50▲		1.00 ± 0.00▼	
Beans (meal/week) [€]			< 0.001		< 0.164
	Baseline	1.36 ± 0.49		1.46 ± 0.51	
	Follow up	2.92 ± 0.52▲		1.60 ± 0.50▲	
Poultry (not fried) (meal/week)			< 0.001		< 0.164
	Baseline	2.09 ± 0.29		2.13 ± 0.35	
	Follow up	2.86 ± 0.35▲		2.00 ± 0.37▼	
Red meat and products (meals/week)			0.002		0.334
	Baseline	2.36 ± 0.49		2.46 ± 0.51	
	Follow up	2.00 ± 0.00▼		2.40 ± 0.50▼	
Fast fried foods (times/week)			< 0.001		0.019
	Baseline	1.18 ± 0.39		1.26 ± 0.45	

▲Increase in food intake at the final assessment compared with baseline. ▼Decrease in food intake at the final assessment compared with baseline.

MIND AND COGNITIVE DECLINE

- Morris (2016), as part of the Memory and Aging project followed 960 participants over 4.7 years based on MIND diet scores.
- The difference in decline over the 5 years equated to a cognitive difference of 7.5 years between the top tier and the lowest tier on MIND diet scores.
- The excluded 220 participants who were found to have MCI at baseline were also followed. They had a 9.5 year difference in cognitive aging between the highest and lowest scores at the end of the study.
- They also separately analyzed the patients who's MIND diet scores improved over the study period and those participants altered their cognitive scores over time in most cognitive domains.

SUMMARY OF NUTRITION

- The MIND diet is the supperior diet for cognitive decline in adults.
  - Prescribing the MIND diet improves cognitive scores
  - Improving MIND diet compliance (fair to good) improves cognitive scores
  - The MIND diet has a preventive effect on cognition.
- Caloric restriction in this population may reduce foods on the MIND diet without specifically addressing nutrition quality.
- Polyphenols are a dietary focus for brain health.
- Don't forget to use your other clinical skills - this population can have poor concentration, focus and memory loss for many reasons, not just menopause.

THE CHA CHA CHA

- In a recent study looking at exercise, diet and cognition, the combination of a fasting protocol and cognitive-exercise improved markers of cognition and weight management in obese women in postmenopause (Keawtep 2024)
- The fasting intervention included 2 days per week of controlled eating (75% of energy requirements for weeks 1–4, 50% of energy requirements for weeks 5–8, and 25% of energy requirements for weeks 9–12) and consumed ad libitum on the remaining 5 days
- The exercise program included exercising while performing cognitive exercises (remembering cards, following a story)
- Patients lost an average of 1.5 kilograms in all arms (diet, exercise or combo) but only had improvement to cognitive function in the arms that participated in exercise (alone or in combination with fasting)

WAIT SO WHAT?

- To treat weight, you have to
  - treat mood, sleep, nutrition, exercise, VMS, use HRT and support behaviour change.
- To treat bone health, you have to
  - Support healthy weight loss and exercise, screen for vitamin D, and encourage nutritional adequacy in calcium, protein and calories
- To support cognitive health, you have to
  - Include exercise, educate your patient, screen for change over time
- To support cardiovascular health, you have to
  - Screen for sex-specific risk factors, even in patients presenting with low-mod risk

Except all of this is happening in the same patient at the same time.

IN SUMMARY

- My goal in being here today is to inspire you to do this well and for you to offer the most comprehenisve menopause care your patients can get.
- The system is set up for you to be the best at this.
  - You might need some resources at your fingertips or a community of practitioners to help you feel more confident about it.
  - “How” you do menopause care is something you can learn. It’s not special, it just takes guts to step into this very big ring.
- Let’s get some questions into the Whatsapp group and we’ll work to answer them over the rest of the day!

Thank you!

If you haven't already, scan the Whatsapp group link and we'll share a few extra resources there for you!

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