

What every PT should know about Menopause

Carey E. Rothschild, PT, DPT

Clinical Associate Professor, University of Central Florida

Board-certified Clinical Specialist in Orthopedics and Sports Physical Therapy

Certificate of Advanced Practice in Pelvic Health (CAPP-Pelvic)

Menopause Society Certified Practitioner (MSCP)



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Objectives

- Differentiate between **menopause**, **menopause transition/perimenopause**, and **post menopause**.
- Recognize **signs and symptoms** of estrogen decline across body systems (ie. musculoskeletal, cardiovascular, neurological, integumentary, genitourinary).
- Describe **screening tools** to assess menstrual function and menopause status in middle aged females.
- Explain the **musculoskeletal syndrome of menopause** and how physical therapy can assist in its management.
- Recommend appropriate **rehabilitation interventions** to maximize health and wellness in menopausal females.



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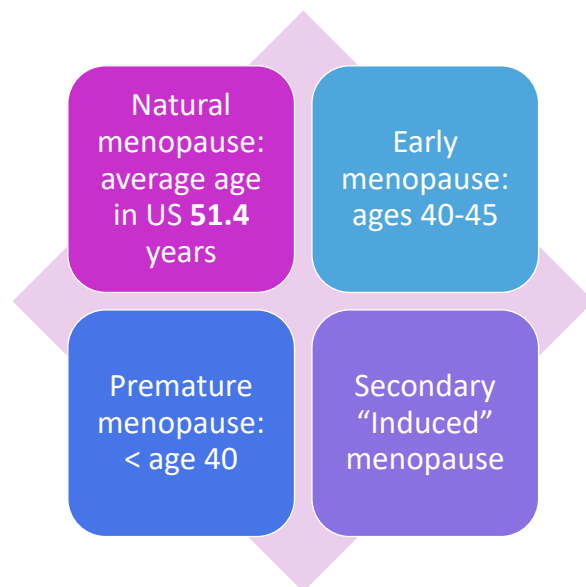
What is menopause?

- Greek term: 'menos' (menstrual cycle) + 'pause' (stop)
- "The final menstrual period (FMP), defined by 12 months without menses due to the loss of ovarian follicular activity." *World Health Organization*
- **NORMAL** part of female aging



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Menopause categories



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Why care about menopause?

- Worldwide female population > age 50 growing ~2.4% annually
- > 50% of the population in the US is female
- All females experience menopause
- Symptoms are widespread and can last years



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Menopause by the numbers

6,000 US women transition daily

2 million US women annually

47 million global women annually

Projected 1.2 billion women globally by 2030

Typical age range 45 to 56 years*

Symptom duration 4-10 years



Wright V & Schwartzman JD 2024;
Stuenkel CA 2024

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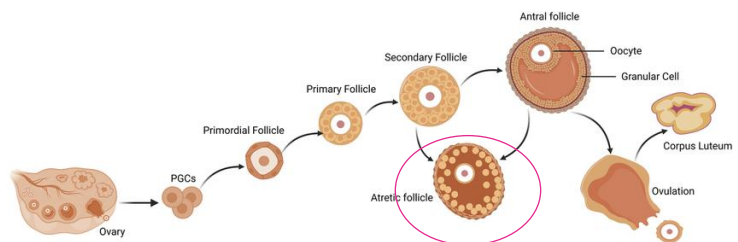
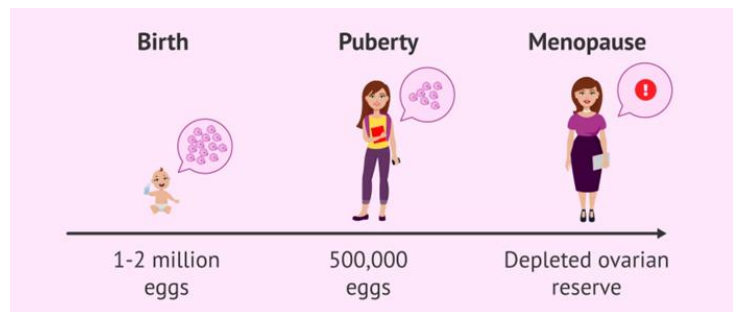
Viewing female patients through a new lens



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What causes menopause?

- Ovarian aging!
- **Oocyte depletion** in the ovary - reproductive senescence
- **Follicular atresia** – degeneration & death of ovarian follicles

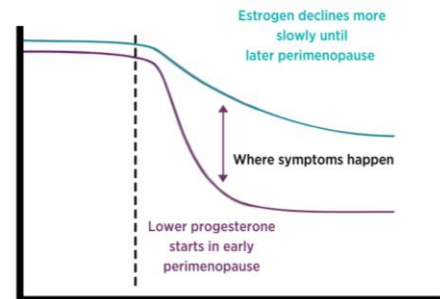


Stuenkel CA 2024

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What happens in menopause?

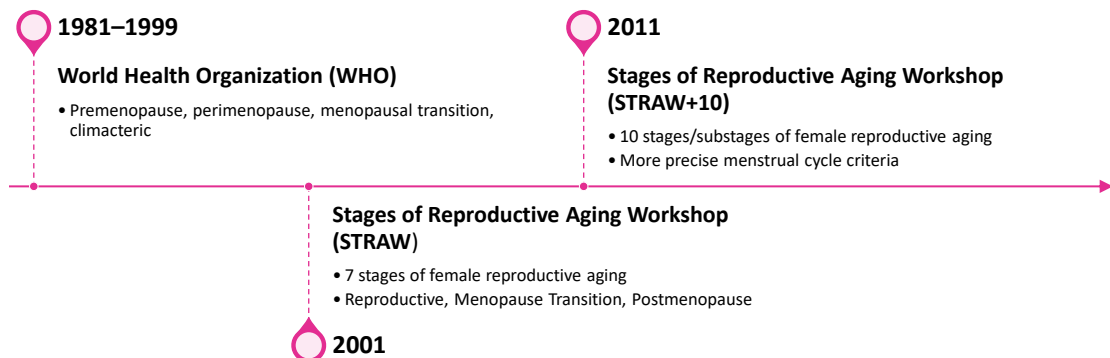
- ✓ Altered function of the **hypothalamic-pituitary-ovarian-uterine** axis
- ✓ Fluctuations in reproductive **hormones**
- ✓ Changes in **menstrual patterns**
- ✓ Final menstrual period (**FMP**)
- ✓ Reproductive function is lost



Santoro N et al 2021

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Menopause terminology



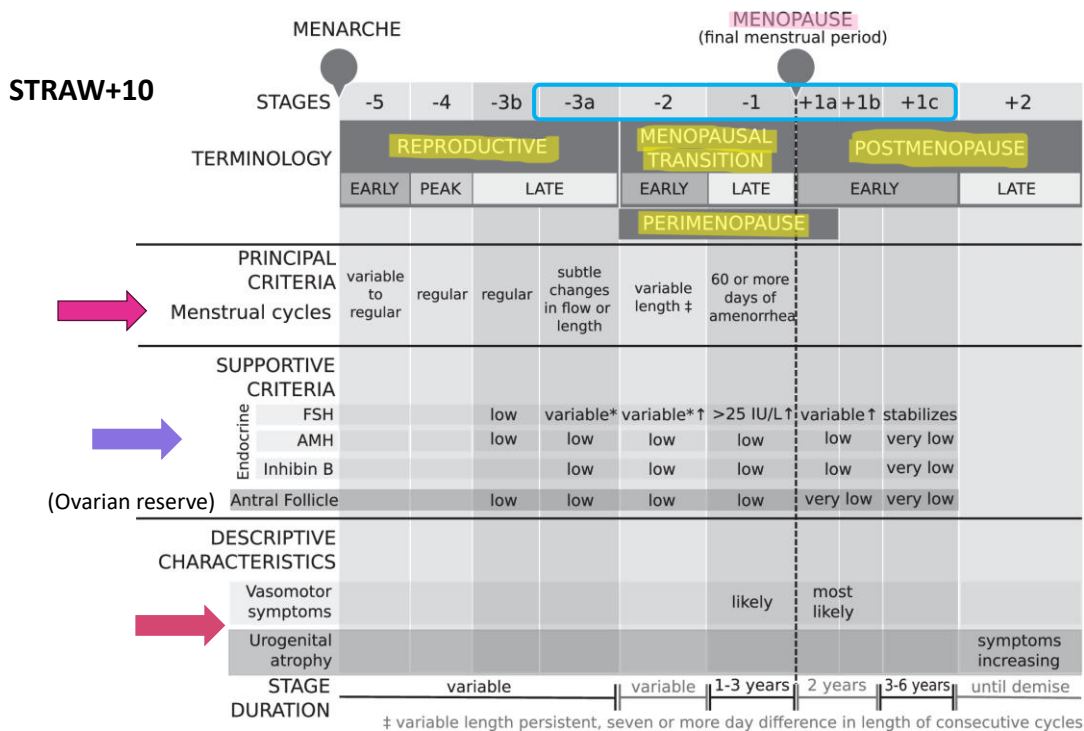
Ambikairajah A, Walsh E, & Cherbuin N, 2022

10

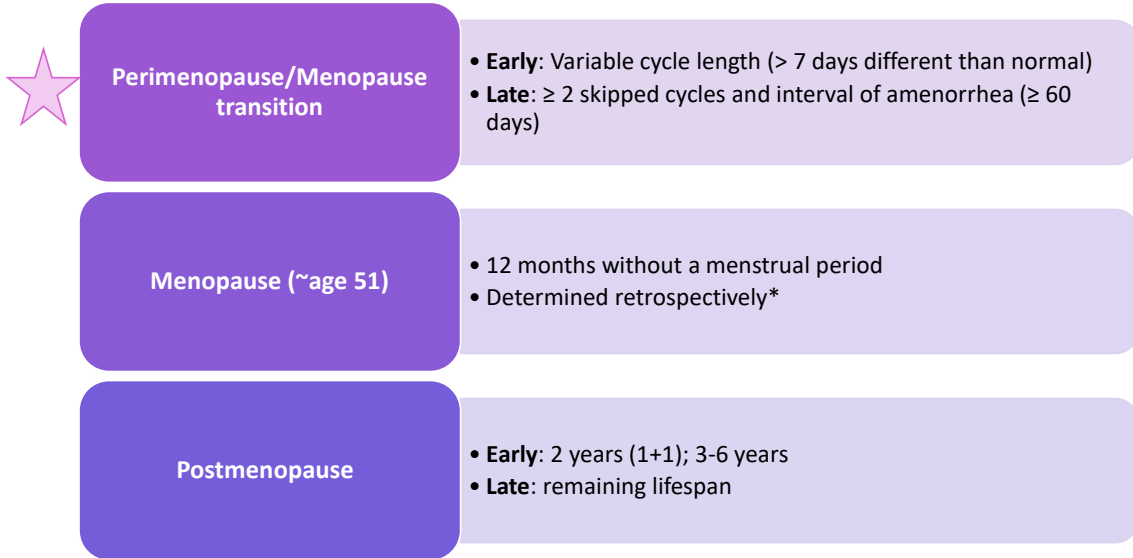
Stages of Reproductive Aging Workshop criteria (STRAW+10)

- Gold standard framework of standardized, objective criteria to define stages of reproductive aging for clinical & research purposes
- Stages include
 - 1) reproductive,
 - 2) menopause transition,
 - 3) postmenopause
- Phases are defined based on
 - Menstrual cycles
 - Hormone biomarkers
 - Symptoms
- "0" equates to menopause

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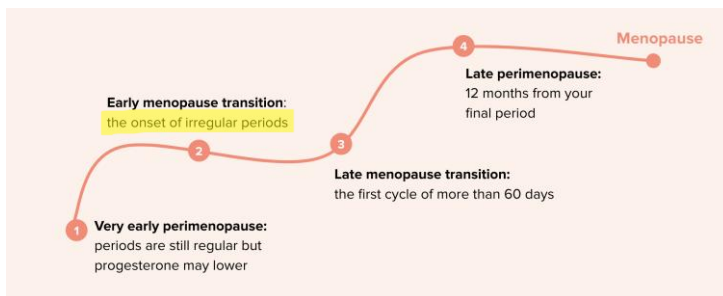
Stages of Reproductive Aging Workshop criteria (STRAW+10), 2012

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Menstrual changes

Irregular bleeding patterns

- ✓ Unusually light or heavy
- ✓ Change in period frequency
- ✓ Change in bleeding duration

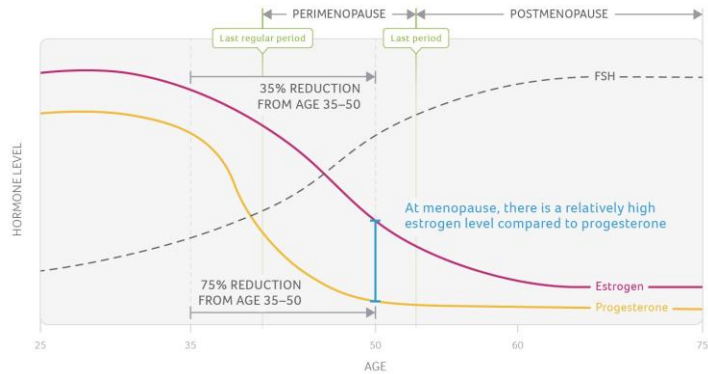


Santoro N et al 2021

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Hormone profile changes

- Ovaries secrete ↓ **estrogen** & **progesterone**
- Anterior pituitary gland ↑ secretion of follicle stimulating hormone (FSH)

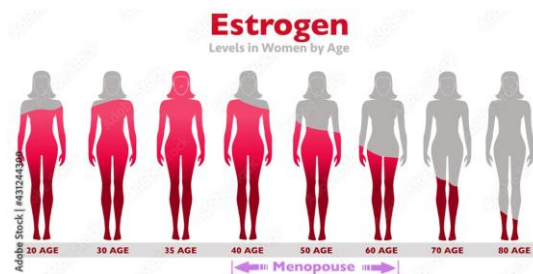


Santoro N et al 2021

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Estrogen

- Group of hormones produced by the ovaries
 - Estradiol
 - Estrone
 - Estriol
- Crucial roles
 - Brain health
 - Bone density
 - Mood
 - Metabolism
 - Immune function

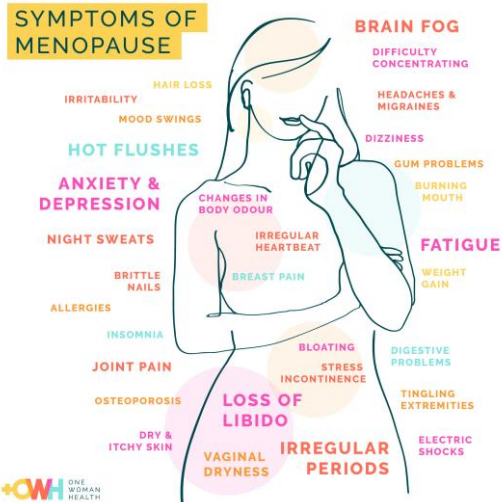


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- Increased inflammatory cytokines
- Decreased lean muscle mass & strength
- Pelvic floor muscle dysfunction
- Declines in melatonin production
- Visceral adiposity
- Risk of CV disease
- Risk for osteopenia & osteoporosis
- Vasomotor symptoms
- Impact to skin, breast tissue, cognition, mood, digestion

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Signs & Symptoms

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Initial signs of perimenopause



Menstrual cycle changes

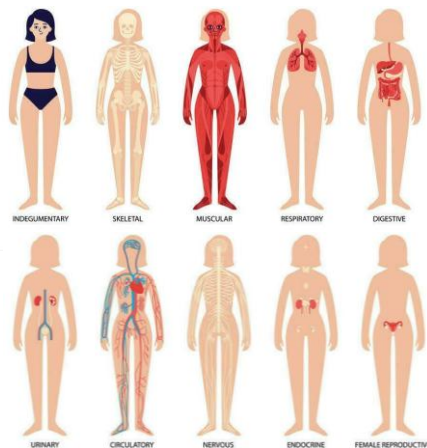
- Irregularity (>7 days difference between cycle lengths) (EARLY)
- Skipped cycles
- >60 days of amenorrhea (LATE)
- No menstrual cycle >1 year (Menopause)

Santoro N et al 2021

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Physiological changes in perimenopause

- ✓ Cardiovascular
- ✓ Neurocognitive
- ✓ Genitourinary
- ✓ Integumentary
- ✓ Musculoskeletal
- ✓ Sleep



Santoro N et al 2021

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Vasomotor symptoms (VMS)

Hot flashes, night sweats

- Experienced by > 70% of women
- Racial & ethnic differences
- Risk factors for VMS
- Variable patterns
- Can persist 7-10 years+
- Pathobiology

VMS as a risk factor

- Depressed mood, anxiety
- Impaired QoL
- Decreased work productivity
- Impaired sleep (4-5 fold increase!)
- Cardiovascular disease (77% increased risk!)
- Bone loss
- Brain health



Kagan R, 2024; Thurston RC, 2024; Santoro N et al 2021

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VMS & Cardiovascular disease

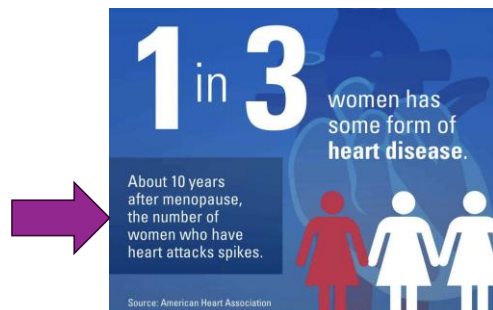
Poorer

- Lipid profiles (>LDL, total cholesterol)
- Vascular endothelial function
- Cognitive function

Greater

- Insulin resistance
- Pro-inflammatory profile
- Carotid atherosclerosis
- Likelihood of HTN
- Visceral adiposity

Greatest CVD risk: frequent VMS + impaired sleep



Thurston RC, 2024; Santoro N et al 2021

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Neurocognitive – Mood changes

Symptoms

- Irritability/Anger
- Depressive symptoms/Sadness
- Major depressive disorder (MDD)
- Anxiety

Due to hormonal changes and dysregulation of GABA 2° ↓ estrogen

Impacted by > VMS

Increased susceptibility with h/o clinical depression , PMS, PPD

Consider impact of life stressors



Kagan R, 2024; Santoro N et al 2021

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Neurocognitive – Cognitive fog

Experienced by **60%** of women in menopause transition

- Forgetfulness, difficulty concentrating
- Worsening memory, slower cognitive speed

Transient cognitive impairment more likely related to aging

Poorer cognitive performance in perimenopause

- Greater VMS
- Anxiety
- Depression

Estrogen decline = less neuro protection



Kagan R, 2024; Santoro N et al 2021

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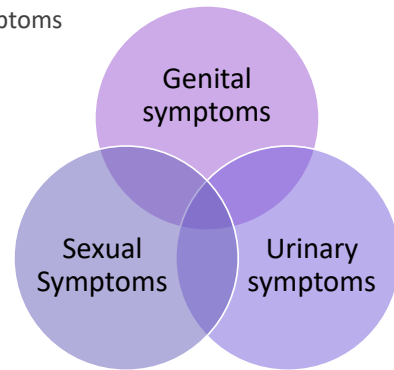
Genitourinary Syndrome of Menopause (GMS)

Comprehensive term encompassing many signs and symptoms

- Vaginal/vulvar atrophy
- Vaginal dryness
- Urinary incontinence
- Urinary tract infections
- Pelvic organ prolapse
- Decreased libido
- Dysuria/Dyspareunia
- Pruritis/burning

Underlying etiology

- Estrogen deprivation



Kagan R, 2024; Santoro N et al 2021

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GMS – cont'd

Prevalence

- > 50% during menopause transition
- 27-84% in postmenopause

Negative impact on

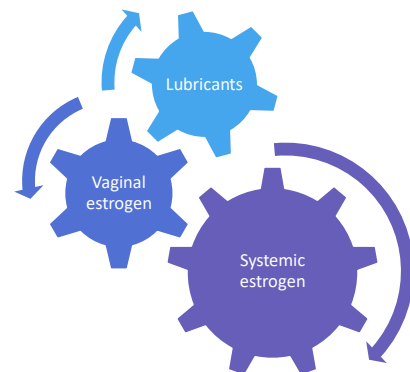
- Relationships
- Sexual health
- Overall QoL

Underreported, underdiagnosed, undertreated

Mostly reversible with local and/or systemic therapies!

Most women unaware that this is a treatable condition!

[2020 Genitourinary syndrome of menopause position statement](#)



Kagan R, 2024; Santoro N et al 2021

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Integumentary

Skin is an endocrine organ!

Signs & symptoms:

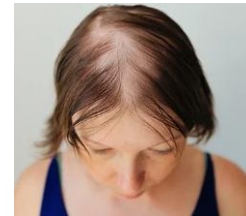
- Dry, itchy skin
- Sagging, inelasticity
- Hair thinning and dryness
- Hair loss

Prevalence

- 64-72% report skin problems/changes
- 50% uninformed of these sx's

Treatment

- Sun protection, collagen stimulators, moisturizers
- Minoxidil, nutricosmetics



[Zouboulis CC et al 2022](#); Santoro N et al 2021

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Musculoskeletal

Bone

- Rapid loss of bone mineral density
- Osteopenia/osteoporosis
- 50% of women suffer osteoporotic fracture after age 50

Muscle

- Decreased lean body mass/sarcopenia
- PFM dysfunction

Soft tissue

- Weakened tendons, ligaments, fascia, cartilage

Pain

- Increased report of LBP in perimenopause
- Musculoskeletal conditions

Visceral adiposity

- Aging & lifestyle changes - limited by pain?



Strand et al, 2025; Santoro N et al 2021

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Musculoskeletal Pain and Menopause

Prevalence ~71%

- 25% have severe pain
- 40% without significant imaging findings

BMI independent risk factor

Sleep, anxiety, & depression also linked to pain

Perimenopausal state may represent an independent risk factor for MSP of mild degree

Review Article

Musculoskeletal Pain during the Menopausal Transition: A Systematic Review and Meta-Analysis

Chang-bo Lu¹, Peng-fei Liu², Yong-sheng Zhou³, Fan-cheng Meng³, Tian-yun Qiao³, Xiao-jiang Yang¹, Xu-yang Li⁴, Qian Xue⁴, Hui Xu⁴, Ya Liu⁵, Yong Han⁵, and Yang Zhang¹

[Lu C et al, 2020](#)

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CLIMACTERIC
<https://doi.org/10.1080/13697137.2024.2380363>

 Taylor & Francis
Taylor & Francis Group

REVIEW ARTICLE

 OPEN ACCESS  Check for updates

The musculoskeletal syndrome of menopause

Vonda J. Wright^a, Jonathan D. Schwartzman^a , Rafael Itinoche^a and Jocelyn Wittstein^b

^aUniversity of Central Florida College of Medicine, Orlando, FL, USA; ^bDuke University School of Medicine, Durham, NC, USA

- Experienced by ~70% of women in midlife
 - ~25% severe
 - ~40% with no structural findings
- Clinician awareness is critical



[Wright VJ & Schwartzman JD 2024](#)

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MSK syndrome of menopause

Musculoskeletal pain

Arthralgia

Loss of lean muscle mass/sarcopenia

Loss of bone density/ increased risk of resultant fracture

Increased tendon/ligament injury

Adhesive capsulitis

Cartilage matrix fragility

Progression of osteoarthritis

Wright V & Schwartzman JD 2024

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MSK conditions: Female as a risk factor

Low back pain (LBP)

Neck pain

Adhesive capsulitis

Lateral elbow tendinopathy (LET)

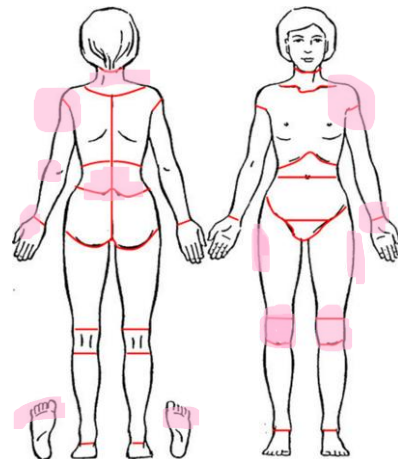
Carpal tunnel syndrome (CTS)

Osteoarthritis: 1st CMC & knee

Greater trochanteric pain syndrome (GTPS)

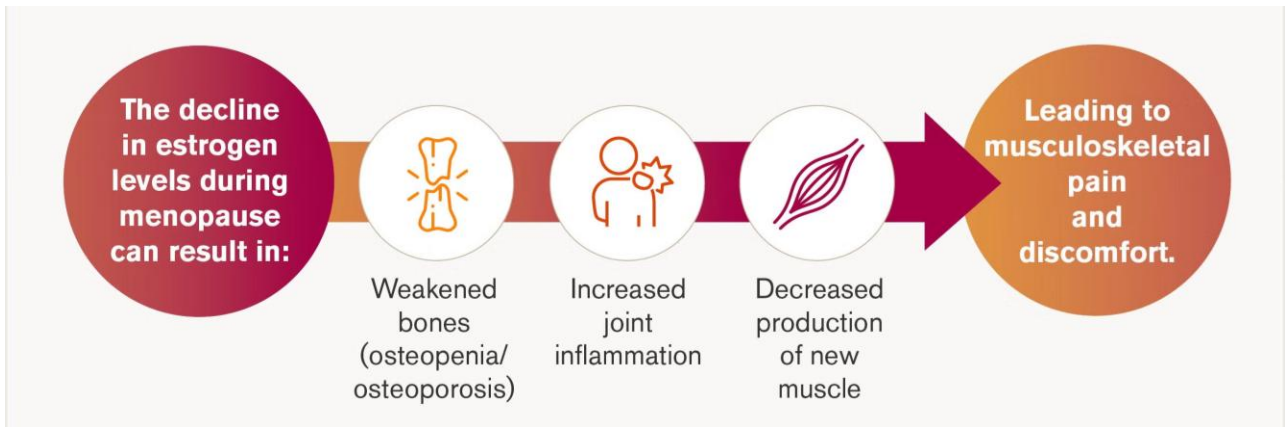
Patellofemoral Pain Syndrome (PFPS)

Metatarsalgia



Current Concepts in Orthopaedic Physical Therapy, 5th ed

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Sleep Disturbance

Prevalence: **40-60%** peri and postmenopausal women

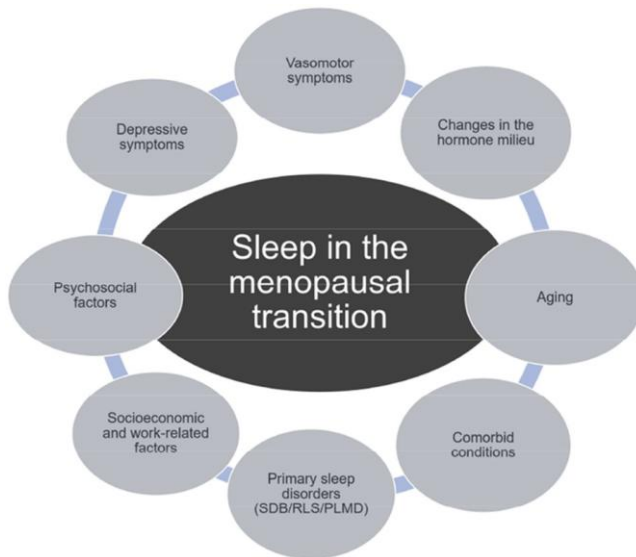
Disturbances

- Nonrestorative sleep
- Increased sleep latency
- Number of awakenings
- Difficulty returning to sleep
- Sleep efficiency
- Napping
- Perceived sleep quality



Bertisch S & Joffe H, 2024; Santoro N et al 2021

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Drivers of sleep disturbance

VMS

Hormone dynamics

Depression

Anxiety

Perceived poor health

Stress

Caffeine

Alcohol

Chronic pain

Bertisch S & Joffe H, 2024; Santoro N et al 2021

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Primary sleep disorders

Insomnia

- Difficulty falling asleep, maintaining sleep, or waking up too early ≥ 3 nights/week for past 3 mos

Obstructive Sleep Apnea (OSA)

- Recurrent episodes of upper airway blockage during sleep which leads to \downarrow O_2 sat & \uparrow effort of breathing

Restless legs syndrome (RLS)

- Neuro condition; persistent & overwhelming urge to move the legs while resting +/- c/o burning, itching, throbbing

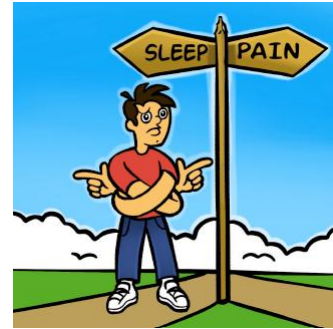
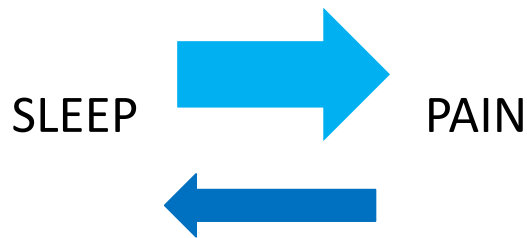


Siengsukon CF et al, Sleep Health Promotion...2017

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Sleep & pain

*Sleep impairments are a stronger, more reliable predictor of pain than pain is of sleep impairments.



Nijs et al, Table 1, Sleep disturbances. PTJ, 2018

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Rheumatology, 2023, **62**, 2951–2962
<https://doi.org/10.1093/rheumatology/kead190>
 Advance access publication 27 April 2023
 Systematic Review and Meta Analysis



British Society for
Rheumatology

RHEUMATOLOGY



Clinical science

The bidirectional association between chronic musculoskeletal pain and sleep-related problems: a systematic review and meta-analysis

Mayara Santos¹, Flávia L. Gabani², Selma M. de Andrade¹, Bruno Bizzozero-Peroni^{3,4}, Vicente Martínez-Vizcaino^{3,5}, Alberto D. González¹, Arthur Eumann Mesas^{3,*}

- ✓ Individuals with sleep-related problems were more likely to have incident and persistent chronic MSK pain.
- ✓ Chronic MSK pain is associated with the incidence of sleep-related problems.
- ✓ Chronic MSK pain and sleep-related problems are bidirectionally associated.

[Santos et al Rheumatology 2023](#)

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Take home points

Untreated menopause sx's are associated with

- Greater healthcare costs
- Loss of work productivity
- Negative QoL

Women should be **educated and screened** for menopause signs & sx's (VMS, GMS, MSM, mood changes, sleep disturbance...)

Clinicians should provide **reassurance** about cognition and memory changes

Healthy **lifestyle changes** in diet, exercise, and sleep should be promoted

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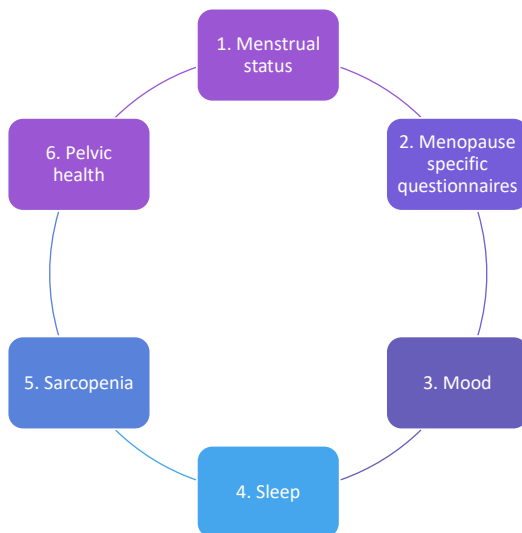
Screening for menopause

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Implications for PTs

Recognize	Recognize link between common msk diagnoses and declining estrogen
Start	Start a conversation in all women ages 35-40 years+
Screen	Screen for menopause status
Educate	Educate regarding menopause signs & symptoms and treatment options
Provide	Provide physical therapy interventions per examination findings
Refer	Refer to physician/gynecologist for further discussion about menopause hormone therapy

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Pertinent Screenings

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1. Menstrual status

Questions to assess menstrual status:

- ✓ What is the date of your last menstrual period? How many days did it last?
- ✓ Have you experienced any changes in the # of days or amount of bleeding with your menstrual cycle in the past 5 years?
- ✓ Have you experienced any changes in the length of your menstrual cycle in the past 5 years?
- ✓ Have you gone > 1 year without a menstrual cycle? How many years has it been since you've had a menstrual cycle?

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2. Menopause-specific Questionnaires

[Menopause Rating Scale \(MRS\)](#)

[Menopause Health Questionnaire \(MHQ\)](#)

[Menopause-Specific Quality of Life Questionnaire \(MENQOL\)](#)

[MenoScores Questionnaire](#)

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Menopause Rating Scale (MRS)

Which of the following symptoms apply to you at this time?
 (X ONE Box For EACH Symptom) For Symptoms That Do Not Apply, Please Mark "None".

Symptoms:	none	mild	moderate	severe	extremely severe
	0	1	2	3	4
1. Hot flashes, sweating (episodes of sweating).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Sleep problems (difficulty in falling asleep, difficulty in sleeping through the night, waking up early).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Irritability (feeling nervous, inner tension, feeling aggressive).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Anxiety (inner restlessness, feeling panicky).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Sexual problems (change in sexual desire, in sexual activity and satisfaction).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Joint and muscular discomfort (pain in the joints, rheumatoid complaints).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Symptoms

Please indicate how bothered you are now and in the past few weeks by any of the following:

	Not at all	A little bit	Quite a bit	Extremely		Not at all	A little bit	Quite a bit	Extremely
1. I have hot flashes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18. I have pain or burning when urinating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I have night sweats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19. I have bladder infections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I have difficulty getting to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20. I have uncontrollable loss of stool or gas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I have difficulty staying asleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	21. My vagina is dry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I get heart palpitations or a sensation of butterflies in my chest or stomach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22. I have vaginal itching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel like my skin is crawling or itching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23. I have an abnormal vaginal discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel more tired than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24. I have vaginal infections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I have difficulty concentrating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25. I have pain during intercourse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. My memory is poor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26. I have pain inside during intercourse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am more irritable than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27. I have bleeding after intercourse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I feel more anxious than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28. I lack desire or interest in sexual activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I have more depressed moods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29. I have difficulty achieving orgasm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am having mood swings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30. My opportunity for sexual activity is limited	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I have crying spells	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	31. My stomach feels like it's bloated or I've gained weight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I have headaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32. I have breast tenderness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I need to urinate more than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33. I have joint pains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I leak urine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

FIG. 1. Menopausal symptom questions from the **Menopause Health Questionnaire**.

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3. Screening for mood disorders



Depressive symptoms



Anxiety

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The Four-Item Patient Health Questionnaire (PHQ-4)

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
Feeling nervous, anxious or on edge	0	1	2	3
Not being able to stop or control worrying	0	1	2	3
Feeling down, depressed or hopeless	0	1	2	3
Little interest or pleasure in doing things	0	1	2	3
TOTALS				

<https://pubmed.ncbi.nlm.nih.gov/19996233/>

Total score is determined by adding together the scores of each of the 4 items. Scores are rated as normal (0-2), mild (3-5), moderate (6-8), and severe (9-12). Total score ≥ 3 for first 2 questions suggests anxiety. Total score ≥ 3 for last 2 questions suggests depression.

Reprinted with permission from Kroenke K, Spitzer RL, Williams JB, Löwe B. An ultra-brief screening scale for anxiety and depression: the PHQ-4. Psychosomatics. 2009;50(6):613-21. From Principles of Neuropathic Pain Assessment and Management, November 2011.

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4. Screening for sleep disturbance

Patient Interview: General Questions^{8,97}

1. How much sleep do you typically get?
2. Do you feel well rested when you wake up?
3. Is your condition impacting your sleep? If so, how?
4. How would you rate your sleep quality?
5. Does being sleepy during the day interfere with your daily function?
6. Do you have difficulty falling asleep, difficulty returning to sleep if you wake up in the middle of the night, or difficulty with waking up too early (possible indicator of insomnia if lasts longer than 3 months)?
7. Do you snore loudly or frequently? Has anyone observed you stop breathing while you sleep (possible indicator of obstructive sleep apnea [OSA])?
8. Do you have a strong urge to continually move your legs while you are trying to sleep. (possible indicator of restless leg syndrome [RLS])?

Figure 1.

Recommendation of general questions to probe for sleep issues and assess general sleep quality and sleep health during the patient interview portion of the examination.

Siengsukon CF et al, Sleep Health Promotion...2017

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Outcome measures for sleep

Pittsburgh Sleep Quality Index (PSQI)

- Assesses **sleep quality**
- 19 items
- Score range 0-21
- Higher scores → poorer sleep quality



Epworth Sleepiness Scale (ESS)

- Assesses **daytime sleepiness**
- 8 items
- Score range 0-24
- Higher scores → greater daytime sleepiness



Siengsukon CF et al, Sleep Health Promotion...2017

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Outcome measures for sleep (cont'd)

Insomnia Severity Index (ISI)

- Assesses level of **insomnia**
- 7 items
- Score range 0-28
- Higher scores → Clinical insomnia

STOP-BANG Questionnaire

- Assesses risk for **obstructive sleep apnea**
- 8 items, yes/no
- Low, intermediate, high risk



What Do You Do if OSA Is Suspected: STOP-BANG

- | ▶ STOP Questionnaire | ▶ BANG |
|---------------------------------------|--|
| • S nororing | • B MI >35 |
| • T iredness | • A ge >50 |
| • O bserved you stop breathing | • N eck circumference >40 cm (>15.7") |
| • Blood P ressure | • G ender male |

High risk: Yes to ≥3 items → Refer for sleep testing

Siengsukon CF et al, Sleep Health Promotion...2017

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Outcome measures for sleep (cont'd)

Sleep Hygiene Index (SHI)

- Measures behaviors and environmental variables thought to cause or lead to relatively poor sleep quality rather than measuring outcomes
- 13-items,
- Ranked on Likert scale as: always (5), frequently (4), sometimes (3), rarely (2), never (1)
- Higher scores → maladaptive **sleep hygiene status**



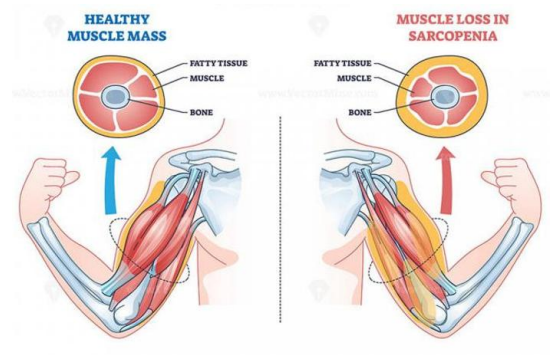
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5. Screening for sarcopenia

SARC-F: Strength, Assistance with walking, Rising from a chair, Climbing stairs, and Falls

- 5 items scored
 - None (0), Some (1), A lot or unable (2)
- Max score= 10
- Higher scores, > likelihood of sarcopenia & poor outcomes

SARC-F score of ≥ 4 best predicts the need for further, more comprehensive evaluation



Malmstrom TK, Morley JE, 2023

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SARC-F

Components	Questions	SARC-F Score
Strength	How much difficulty do you have in lifting and carrying 10 pounds?	None = 0 Some = 1 A lot or unable = 2
Assistance in walking	How much difficulty do you have walking across a room?	None = 0 Some = 1 A lot, use aids, or unable = 2
Rise from a chair	How much difficulty do you have transferring from a chair or bed?	None = 0 Some = 1 A lot or unable without help = 2
Climb stairs	How much difficulty do you have climbing a flight of 10 stairs?	None = 0 Some = 1 A lot or unable = 2
Falls	How many times have you fallen in the past year?	None = 0 1-3 falls = 1 4 or more falls = 2

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Osteoporosis screening

Goal: Prevent fractures!

Screen at the time of menopause!

- Prior fragility fracture
- Advanced age
- Low body mass index (BMI)
- Secondary causes of bone loss including early menopause, primary hyperparathyroidism, malabsorption conditions, and the use of bone toxic drugs
- Diet containing < 1200 mg elemental calcium daily and poor in protein content
- Restricted sunlight exposure
- Sedentary lifestyle with lack of exercise
- Tobacco smoking
- Alcohol abuse (> 2 drinks per day) Increased propensity to falls



[deVilliers TJ 2024](#)

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Fracture Risk Assessment Tool (FRAX)

- ✓ Determines estimated fracture risk over 10 years
- ✓ Can be helpful in deciding on the need for DXA scan

Calculation Tool

Please answer the questions below to calculate the ten-year probability of fracture with or without BMD.

Continent Country

Local Reference

About the risk factors

Individuals with fracture risk assessed since Sep 2011: 11,581,393

Questionnaire

1. Age (between 40 and 90 years)

2. Sex Female Male

3. Weight Pounds / Pounds / Inc...

4. Height Inches

5. Previous Fracture

6. Parent Fractured Hip

7. Current smoking

8. Glucocorticoids

9. Rheumatoid arthritis

10. Secondary osteoporosis

11. Alcohol 3 or more units/day

12. Femoral neck BMD

Age: 48 BMI: 22.5 without BMD

THE TEN-YEAR PROBABILITY OF FRACTURE

Major osteoporotic 7.0 %

Hip Fracture 0.9 %

What does FRAXplus® do? Click here

<https://www.fraxplus.org/>

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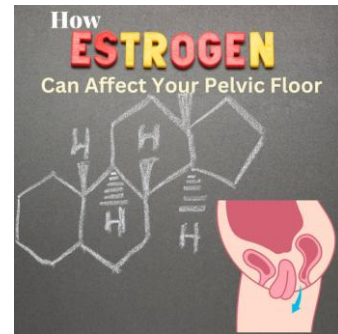
6. Pelvic Health

Include in your examination of patients with LBP/SIJ/Hip pathology

Screening for common pelvic floor dysfunctions:

- Pain
- Urinary incontinence
- Pelvic organ prolapse
- Constipation
- Accidental bowel leakage
- Sexual function

Consider referral to pelvic floor PT



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COZEAN PELVIC DYSFUNCTION SCREENING PROTOCOL

INSTRUCTIONS: CHECK ALL THAT APPLY

- I sometimes have pelvic pain (in genitals, perineum, pubic or bladder area, or pain with urination) that exceeds a '3' on a 1-10 pain scale, with 10 being the worst pain imaginable
- I can remember falling onto my tailbone, lower back, or buttocks (even in childhood)
- I sometimes experience one or more of the following urinary symptoms
 - Accidental loss of urine
 - Feeling unable to completely empty my bladder
 - Having to void within a few minutes of a previous void
 - Pain or burning with urination
 - Difficulty starting or frequent stopping/starting of urine stream
- I often or occasionally have to get up to urinate two or more times at n
- I sometimes have a feeling of increased pelvic pressure or the sensation my pelvic organs slipping down or falling out
- I have a history of pain in my low back, hip, groin, or tailbone or have had sciatica
- I sometimes experience one or more of the following bowel symptoms
 - Loss of bowel control
 - Feeling unable to completely empty my bowels
 - Straining or pain with a bowel movement
 - Difficulty initiating a bowel movement
- I sometimes experience pain or discomfort with sexual activity or intercourse
- Sexual activity increases one or more of my other symptoms
- Prolonged sitting increases my symptoms

<https://hermanwallace.com/blog/simple-screening-questionnaire-for-pelvic-floor-dysfunction>

**IF YOU CHECKED 3 OR MORE CIRCLES,
PELVIC FLOOR DYSFUNCTION IS LIKELY**

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PT interventions for menopause

[APTA MAGAZINE](#)

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PT for menopause symptoms?

Vasomotor
symptoms

Cardiovascular
disease

Bone health

Muscular
strength

Soft tissue
health

Mood
disturbance

Sleep
disturbance

Genitourinary
symptoms

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Role of physical therapy

- ✓ Physical activity
- ✓ Aerobic exercise
- ✓ Strength training
- ✓ Flexibility exercise
- ✓ Education
- ✓ Pelvic floor PT

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Physical Activity



Occupational, sports, conditioning, household, other activities



Reduced in women during perimenopause (*UK Women in Sport*)

Not meeting minimum for aerobic or strength training per week

Desire to be more active was high, especially when reinforced by a health professional!

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Aerobic exercise

Positive impact on all aspects of health

- CV function
- Psychological well being
- MSK
- Sleep quality
- QoL

Parameters

- Mode: variable (walking, yoga, pilates)
- Frequency: 3 times/week
- Intensity: Low to medium (60-70% VO₂max)
- Duration: 70–90 min
- Setting: Structured group best

Menopause and movement: exercise for better sleep and psychological well-being—a systematic review

Avi Choudhary, PhD Scholar, MPT, BPT and Kshitija Bansal, PhD, MPT, BPT

Money et al. *BMC Women's Health* (2024) 24:399
<https://doi.org/10.1186/s12905-024-03243-4>

BMC Women's Health

RESEARCH

Open Access

The impact of physical activity and exercise interventions on symptoms for women experiencing menopause: overview of reviews



Annemarie Money^{1,2}, Aylsh MacKenzie^{1,2}, Gill Norman¹, Charlotte East-Telling^{1,2}, Danielle Harris^{1,2}, Jane McDermott² and Chris Todd^{1,2,3}

63

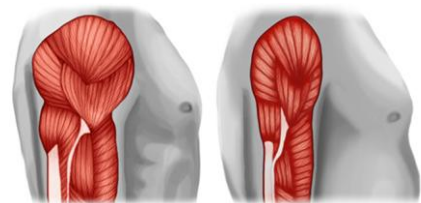
Resistance exercise

Potential benefits

- Combat decreased lean muscle mass with aging + menopause
- Improve tendon and soft tissue strength
- Improve power, endurance, VO₂max
- Reduce risk of falls

Considerations

- Optimize muscle mass!
- Parameters for **hypertrophy** and **power** (per ACSM)
- Heavy resistance training
- Impact activities
- Pelvic floor muscle training



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Resistance exercise parameters

Mode: multi-joint exercises

- Free weights
- Fitness machines
- Weighted vests
- Elastic bands
- Impact activities

Frequency: 2-3x/week




Intensity:

- **Hypertrophy:** 70-80% 1RM, 8-12 reps, 1-3 sets, 1-2 min rest (novice)
- **Power:** 80-100% 1RM, 3-6 reps, 1-3 sets, 2-3 min rest



Review

The Efficacy of Strength Exercises for Reducing the Symptoms of Menopause: A Systematic Review

Ana Maria Capel-Alcaraz , Héctor García-López , Adelaida Maria Castro-Sánchez , Manuel Fernández-Sánchez and Inmaculada Carmen Lara-Palomo

Department of Nursing, Physical Therapy and Medicine, University of Almería, Road Sacramento s/n, 04120 Almería, Spain

* Correspondence: hector.garcia@ual.es; Tel: +34-950-214-594

[ACSM Position Resistance training for Healthy Adults](#)

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Education



Sleep hygiene



Mental health

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Sleep Health Promotion Strategies

Enhance	circadian rhythm
Increase	sleep drive
Reduce	pre-sleep arousal
Make	environment conducive to sleep

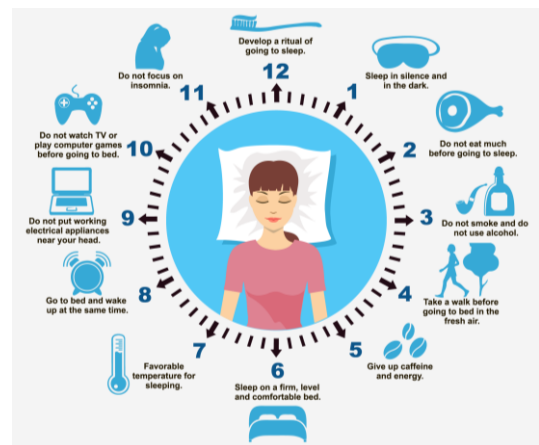
[Sleep Toolkit](#)

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Sleep hygiene education

Goal= To make changes in habits that precede sleep

- ✓ Maintain regular sleep schedule
- ✓ Limit use of bedroom to sleep and sexual activity
- ✓ Dim lighting, lower temperature
- ✓ Decrease electronic use
- ✓ Avoid alcohol/caffeine
- ✓ Avoid OTC or unprescribed sleeping pills
- ✓ Avoid daytime napping



Siengsukon CF et al, Sleep Health Promotion...2017

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Breathwork

Diaphragmatic breathing / deep breathing

“An efficient integrative body–mind training for dealing with stress and psychosomatic conditions.”

Correct technique:

- ✓ Contraction of the diaphragm
- ✓ Expansion of the belly
- ✓ Deepening of inhalation and exhalation



[Ma X et al, The Effect of Diaphragmatic Breathing on Attention, Negative Affect and Stress in Healthy Adults, 2017](#)

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Breathing for relaxation



↓ respiration frequency



Maximization of blood gases



Calming of the nervous system



Emotion enhancement - ↓ anxiety, depression, & stress

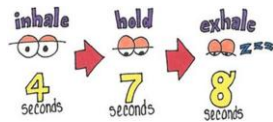


*Prolonged **exhalation** elicits a stronger parasympathetic response*

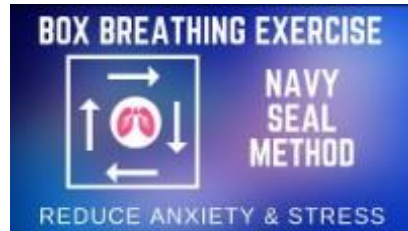
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Breathing techniques

4-7-8 BREATHING



BOX BREATHING (4-4-4-4)



Louw A et al, Teaching people about pain, 2018; Nestor J, Breath, 2020

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Breathing techniques (cont'd)

PHYSIOLOGICAL SIGH



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Relaxation Techniques

Goal: ↓ general levels of physiological arousal or arousal in a specific body part or location

Variable styles & approaches

Multiple forms produce (+) changes in individuals

Keep it uncomplicated

Designed to help patients **cope** with stress & anxiety and to manage pain



Louw et al p. 144

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Other Relaxation Techniques

Basic instruction:

- **Longer, more relaxing version** (10-20 minutes) in quiet space
- **Quicker version** (60-90 seconds) during stressful times

Common approaches:

1. Progressive Muscle Relaxation (PMR)
2. Guided imagery
3. Meditation
4. Mindfulness
5. Biofeedback



Louw et al p. 144

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Progressive muscle relaxation (PMR)

Deliberate way of relaxing the body

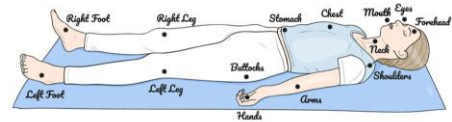
Each muscle group is tensed & then released

Allows for recognition of contrast between tension & relaxation

Performed in comfortable sitting or lying position

Begins with deep breathing

Coordinates muscle tension & relaxation with the breath



Progressive Muscle Relaxation

[Louw A et al, Teaching people about pain, 2018](#)

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Guided imagery/Visualization

Utilizes generation of **mental images** to distract from pain

Images should involve **all the senses**

Benefits:

- Sense of control
- Redirection of attention away from pain
- Achieve state of relaxation

Strategies:

- Self-induced
- Audiotape
- Visual print

[5 steps to easing pain with guided imagery](#)



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Mindfulness

“A state of nonjudgmental **awareness** of one’s thoughts, emotions, and physical sensations”

Involves shifting attention to the **present moment** with openness, curiosity & **acceptance**

*DOES NOT aim to clear the mind or prevent thoughts from occurring



Louw et al p. 144

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Other topics for education

Nutrition

- Protein intake
- Vitamin supplements: Vitamin D, magnesium, Vitamin K2
- Creatine?

Menopause Hormone Therapy

- Formulations: transdermal, oral, vaginal, topical
- < age 60 & within 10 years of menopause onset
- Individual risk assessment required

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Considerations for providers


Barriers to PT engagement

- Fatigue
- Cognitive issues
- Low self-efficacy
- Negative language by healthcare provider

Facilitators to PT engagement

- Direct, empathetic inquiry about menopause status
- Education on menopause status as contributing factor
- Comprehensive, individualized treatment plans

What are the barriers and facilitators to women with menopausal symptoms participating in physiotherapy intervention?

 Julia Gross,  Gareth Stephens,  Andrew Soundy

doi: <https://doi.org/10.1101/2025.07.15.25331542>

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Case study

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Resources

[The Menopause Society](#)

[APTA Academy of Pelvic Health Physical Therapy](#)

[The 2023 Practitioner's Toolkit for Managing Menopause](#)

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