Nutrition’s Impact on Maintaining Muscle Mass in Menopausal Women

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Objectives:

1. Understand the importance of being educated on hormonal changes and how they impact muscle strength and mass in women undergoing the menopausal transition.

2. Understand the importance of providing nutritional guidelines to patients in this population to provide the highest standard of care and maintain muscle strength and mass despite hormone changes.

3. Dispel the myths surrounding a PTs ability to provide patient education and guidance on principles of nutrition.

4. Understand the impact of exercise on hormonal changes and menopausal symptoms.

5. Develop a more complete understanding of how to educate patients on these issues and be able to be confident in the delivery of information when introducing these topics and fielding questions from patients.

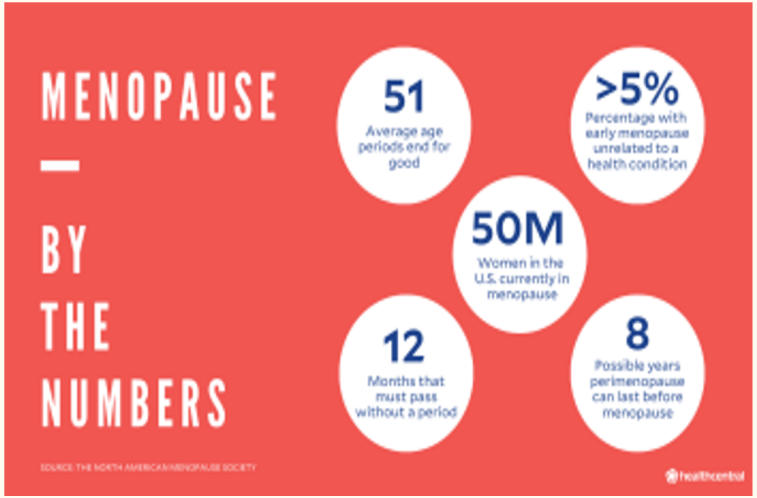
- Do you engage in conversations surrounding nutrition with your patients?
- Do you feel your patients are willing to discuss the topic of menopause and the symptoms that accompany this transition?
- Do you feel your patients are prepared to combat common menopausal symptoms caused by hormonal changes?
- Do you feel your fellow clinicians are prepared, in any clinical setting, to engage in this conversation and provide education to their patients surrounding menopause and/or nutrition?

The Why:

- Breaking the stigma of discussing the transition through menopause
- Helping to decrease the difficulty in initiating conversations surrounding nutrition and body composition with women from varying generations
- Bridging the gap surrounding the lack of knowledge surrounding the connection between menopause/aging/nutrition and functional capacity/quality of life
- Empowering women to take control of their bodies during a time of uncertainty and insecurity

The Data:

- ~52% of physical therapy patients are female[15]
- The average age of a physical therapy patient is 52 years old[15]
    - Menopause typically occurs between the ages of 45 and 55
- Loss of muscle mass (sarcopenia) can lead to disability, decreased QOL, increased fall risk and even death[16]
- Decline in female hormones is associated with increased injury rates and delayed healing/therapy outcomes[1]
- The Study of Women's Health Across the Nation found that lean body mass decreased by 0.2kg per year during the menopause transition[20]



Hormone Changes & Their Impact On Muscle Strength:[1-4]

- Altered functional capacity:
  - Decreased muscle mass
  - Decreased muscle strength
  - Decreased grip strength
  - Decreased LE/UE function
- Change in muscle quality:
  - Decreased contractility of muscle
  - Decreased muscle regeneration and repair
- Increased injury risk:
  - Decreased recovery rate
  - Decreased bone mineral density

The How: Nutrition

Outcome Measures to Monitor Nutrition:[17]

- Food diaries, nutrition logs, fluid intake
- BMI, % body fat
- Anthropometric measurements
  - Weight loss
  - Circumferential measurements
- Questionnaires
  - Patient reported quality of life
    - Menopause-Specific QOL measure[18]
  - Food frequency questionnaires
    - NHANES Food Questionnaire[19]

My food diary

To keep track of my eating

If you are thinking of making changes so you can eat more healthily, use this diary to record everything you eat and drink. This can help you work out how much you are eating and where you could make changes.

Meal	Type of food and drinks	Amount	How did I prepare/cook it?
Breakfast			
Morning snack			
Lunch			
Afternoon snack			
Dinner			
Evening snack			

Meal	Type of food and drinks	Amount	How did I prepare/cook it?
Breakfast			
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Evening snack			

Health Navigator NEW ZEALAND

hn.org.nz/kete/fatigue

The Menopause-specific Quality of Life (MENQOL) Questionnaire.
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The Menopause-Specific Quality of Life Questionnaire

For each of the following items, indicate whether you have experienced the problem in the **PAST MONTH**. If you have, rate how much you have been ***bothered*** by the problem.

					Not at all bothered							Extremely bothered
					0	1	2	3	4	5	6	
1.	HOT FLUSHES OR FLASHES	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
2.	NIGHT SWEATS	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
3.	SWEATING	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
4.	BEING DISSATISFIED WITH MY PERSONAL LIFE	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
5.	FEELING ANXIOUS OR NERVOUS	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
6.	EXPERIENCING POOR MEMORY	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
7.	ACCOMPLISHING LESS THAN I USED TO	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
8.	FEELING DEPRESSED, DOWN OR BLUE	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
9.	BEING IMPATIENT WITH OTHER PEOPLE	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
10.	FEELINGS OF WANTING TO BE ALONE	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
11.	FLATULENCE (WIND) OR GAS PAINS	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
12.	ACHING IN MUSCLES AND JOINTS	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
13.	FEELING TIRED OR WORN OUT	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
14.	DIFFICULTY SLEEPING	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
15.	ACHES IN BACK OF NECK OR HEAD	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
16.	DECREASE IN PHYSICAL STRENGTH	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
17.	DECREASE IN STAMINA	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
18.	FEELING A LACK OF ENERGY	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
19.	DRYING SKIN	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
20.	WEIGHT GAIN	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
21.	INCREASED FACIAL HAIR	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
22.	CHANGES IN APPEARANCE, TEXTURE, OR TONE OF YOUR SKIN	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
23.	FEELING BLOATED	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
24.	LOW BACKACHE	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
25.	FREQUENT URINATION	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
26.	INVOLUNTARY URINATION WHEN LAUGHING OR COUGHING	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
27.	CHANGE IN YOUR SEXUAL DESIRE	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
28.	VAGINAL DRYNESS DURING INTERCOURSE	❑ No	❑ Yes	→	0	1	2	3	4	5	6	
29.	AVOIDING INTIMACY	❑ No	❑ Yes	→	0	1	2	3	4	5	6	

Caloric Intake:[9,13]

- Diets with less than 1200 kcal per day lead to deficiencies in micronutrients and are difficult to maintain
- Women between the ages of 31-59 should aim for about 1,600-2,200 calories per day and women above 60 years old should aim for about 1,600-2,000 calories
    - This number varies depending on the patient's body composition and daily energy expenditure

Protein to Help Maintain Strength:[5-9]

- Decreased protein intake leads to higher body fat and impaired extremity function
- Dietary protein impacts/increases muscle growth factors
- Increasing protein intake during the aging process helps to maintain muscle mass while losing body fat

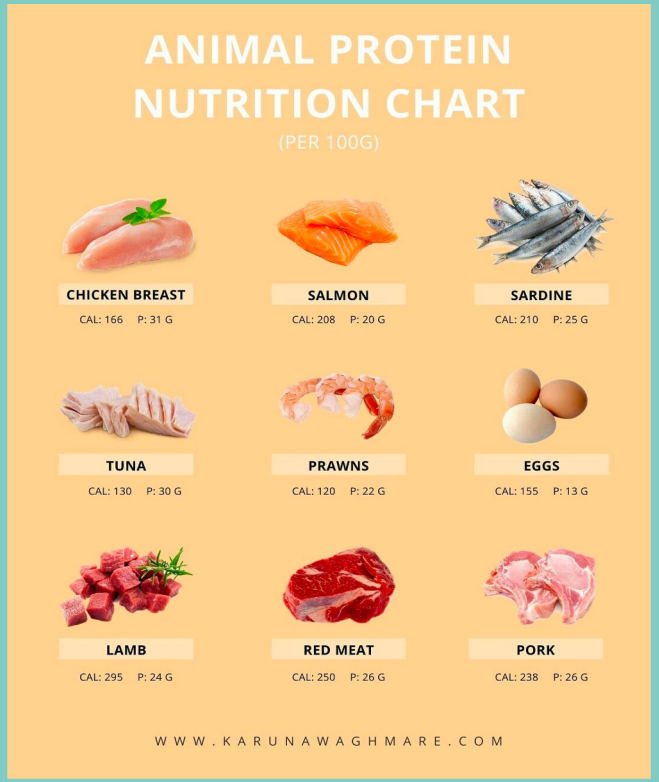
Protein dosage:

- Increasing protein intake to at least 1.2 g/kg leads to 32% lower risk of frailty and increased physical function[8]
- 10-20 g of protein helps initiate muscle protein synthesis[20]
    - aim for this number with snacks
- A goal of at least 25 g per meal is ideal[20]
- If a patient is physically active, more protein may be needed[20]
    - Closer to 1.4-1.6 g/kg of bodyweight

Example: A 150 lb woman would need at least 82 grams of protein per day to reach 1.2 g/kg and 102 grams to reach 1.5 g/kg if they are more active.

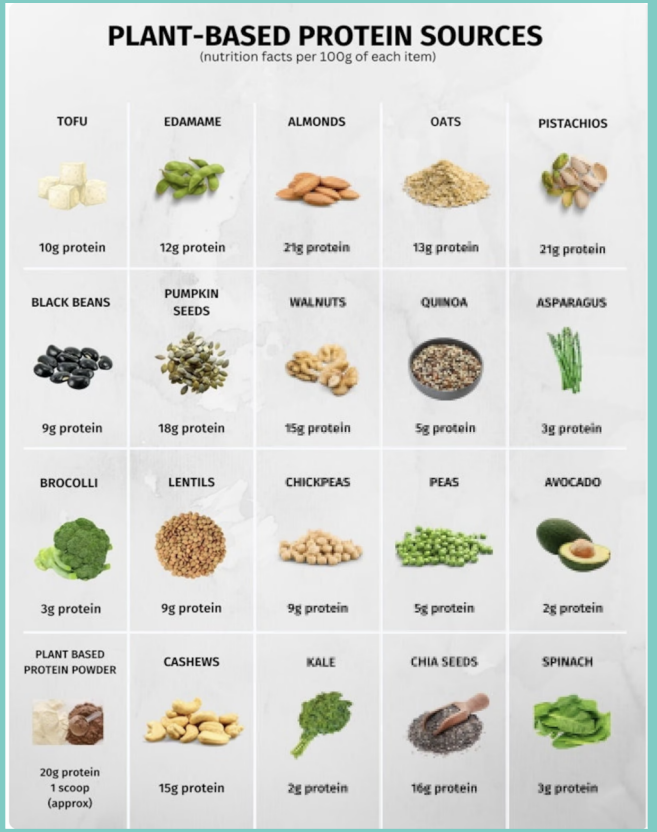
Animal Source	Example/Amount
Beef/Pork	2 medium slices (75 grams)
Chicken/Turkey	1 small breast (75 grams)
Fish	1 small fillet (100 grams)
Salmon/Tuna	1 small tin/fillet (100 grams)
Eggs	3 medium eggs
Cottage Cheese	4 tablespoons (150 grams)
Milk	1 pint (600 ml)

*the above examples lead to about 20 grams of protein



Vegetable Source	Example/Amount
Nuts	100 grams
Seeds	8 tablespoons (100 grams)
Baked Beans	1 large tin (400 grams)
Lentils	10 tablespoons, cooked (240 grams)
Tofu	1 packet (250 grams)
Peanut Butter	4 tablespoons (100 grams)
Soy Milk	1 ⅓ pint (700 ml)

*the above examples lead to about 20 grams of protein



Patient Education:

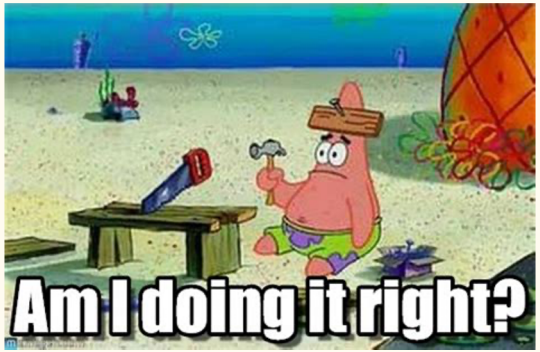
Patient Education Resources:

- MyPlate.gov
- DietaryGuidelines.gov
- The Menopause Dietitian - Laura Clark
  - themenopausedietitian.co.uk
- Dr. Jolene Brighten
  - drbrighten.com[23]

Scope of Practice

Common Questions from Therapists:

- Am I allowed to give nutrition advice or initiate conversations surrounding diet?
- When am I overstepping when providing nutritional guidance?
- Is it appropriate to screen for dietary patterns and administer outcome measures addressing nutrition?



PT Scope of Practice for nutrition[11-13]

- “Diet and nutrition are key components of primary, secondary, and tertiary prevention of many conditions managed by physical therapists. It is within the professional scope of physical therapist practice to screen for and provide information on diet and nutritional issues to patients, clients, and the community.”[21]

- “21 NCAC 48G.0601 Prohibited items: (8) promoting an unnecessary device, treatment intervention, nutritional supplement, product, or service for the financial gain of the practitioner or of a third party as determined by the investigative committee; “[11]

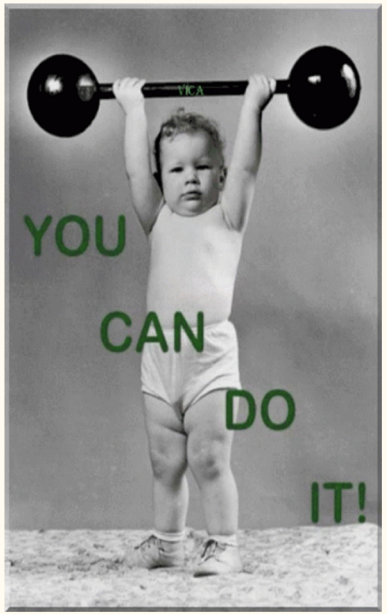
What is appropriate & when to refer:

- “PTs should refer out when the required education is beyond general information that may be found in the public domain”[12]
- According to the APTA website, PTs should use the Dietary Guidelines for Americans to educate patients.[12]

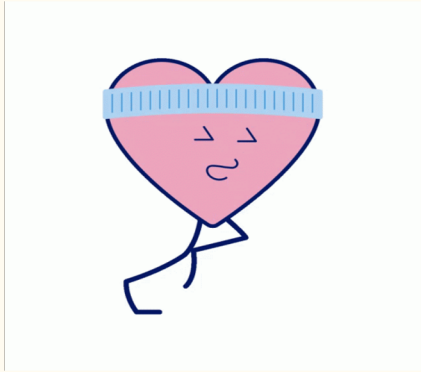
The How: Exercise Interventions

Resistance Training:

Outcome Measures:	***Interventions:***
Sit to Stand[22] - LE functional strength capacity	Squat, leg press, shoulder press, lat pulldown, seated row, tai chi[24]
1 Rep Max[22]	Box squats, bench press, neutral cable row, prone plank[25]
Countermovement Jump[22] - LE power	RT 3x per week, 8-10 reps @ 70% 1RM, leads to increased muscular strength for menopausal women



Cardiovascular Training:



Outcome Measures:	***Interventions:***
6MWT[22]	Brisk walking, cycling, treadmill training, gardening, dancing[24]
Maximum Walking Speed[22]	HIIT intervals: 20 sec on/20 sec off, 30 sec on/60 sec off, tabata[26]

Balance Training:

Outcome Measures:	***Interventions:***
TUG[26]	Tandem stance, SL balance, balance on foam or uneven surfaces, obstacle courses, standing balance with EC[28]
Y-Balance Test[27]	Yoga, Tai Chi, Y-balance test, functional reach, tandem walking, TUG[28]

WOMEN'S HEALTH INTAKE FORM

Full Name _____ DOB _____

Address _____ Contact Phone _____

Email Address _____

- Are you currently taking any medications? **Yes** **No**
  if yes, please specify _____
  _____
- Do you see a PCP or any medical specialists? **Yes** **No**
  if yes, please specify _____
  _____
- Have you been pregnant? If so, have you had any live births? **Yes** **No**
  if yes, please specify _____
  _____
- Do you use tobacco or drink alcohol? **Yes** **No**
  if yes, please specify _____
- Have you transitioned through Menopause? **Yes** **No**
  when was your last menstrual cycle? _____
- List any previous serious injuries: _____
  _____
- Date of last Pap Smear/Mammogram: _____

Check any of the following symptoms that you are currently experiencing:

☐ Fatigue	☐ Appetite loss	☐ Hot flashes
☐ Weight gain	☐ Increased appetite	☐ Unsteadiness
☐ Weight loss	☐ Muscle weakness	☐ Decreased ability to perform activities

- Do you currently monitor your food intake? **Yes** **No**
  if yes, please specify _____
  _____
- Do you follow a specific diet? **Yes** **No**
  if yes, please specify _____
- How many meals do you consume per day? _____
- If known, how much protein do you consume per day? _____

- Do you currently participate in regular exercise? **Yes** **No**
  if yes, please specify how often:
  _____
- What kind of exercise do you engage in? _____
  _____

Please list any concerns you may have about your health below:

_____

_____

_____

Please provide any more information you deem necessary below:

_____

_____

_____

Thank you for providing us with this information!

Takeaways for Clinicians:

- Initiate conversations surrounding menopause, symptoms and dietary patterns in patients in this population
- It is within the scope of practice for PTs to provide nutritional advice that is accessible via the public domain
- Encouraging middle aged and older adult women to increase protein intake will help maintain strength, therefore maintaining functional capacity
- A combination of establishing healthy dietary patterns and engaging in resistance/aerobic/balance training will help maintain strength and BMD while decreasing menopausal symptoms and increasing recovery rates from injury

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https://hzbtc68rnsp.typeform.com/to/RwaQZfQk