Outstanding Care,
Compassionate People,
Healthier Communities

NHS
Sherwood Forest Hospitals
NHS Foundation Trust

Menopause

MSK Pain

Maria Levers
Senior Occupational Health Physiotherapist

18. 10. 2024

Outstanding Care,
Compassionate People,
Healthier Communities

NHS
Sherwood Forest Hospitals
NHS Foundation Trust

Add your image here

Contents

What is the menopause ?

The permanent cessation of your menstrual cycle resulting from the loss of ovarian follicular activity.

Retrospective diagnosis is 12 months of amenorrhea

Average age of menopause is 51 (45-55)

Early menopause is before the age of 45.

Premature menopause is before the age of 40.

Different stages of menopause?

Peri-menopause

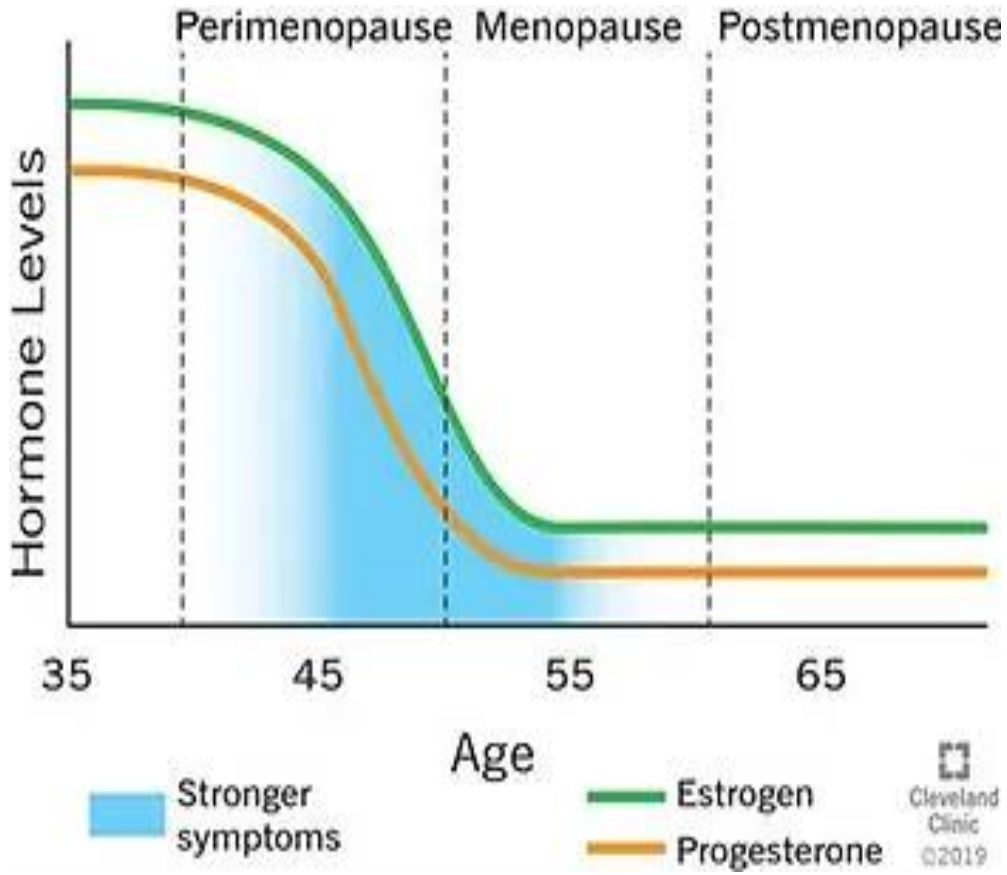
- Initial phase of the transition which can start 10 years before the menopause.
- Average age is 45-52
- Symptoms can worsen in the last 1-2 years of this stage.
- This is where the estrogen levels start to drop dramatically.

Menopause

- 12 months of no period
- Symptoms are the same but normally worsen than peri-menopause.

Post-menopause

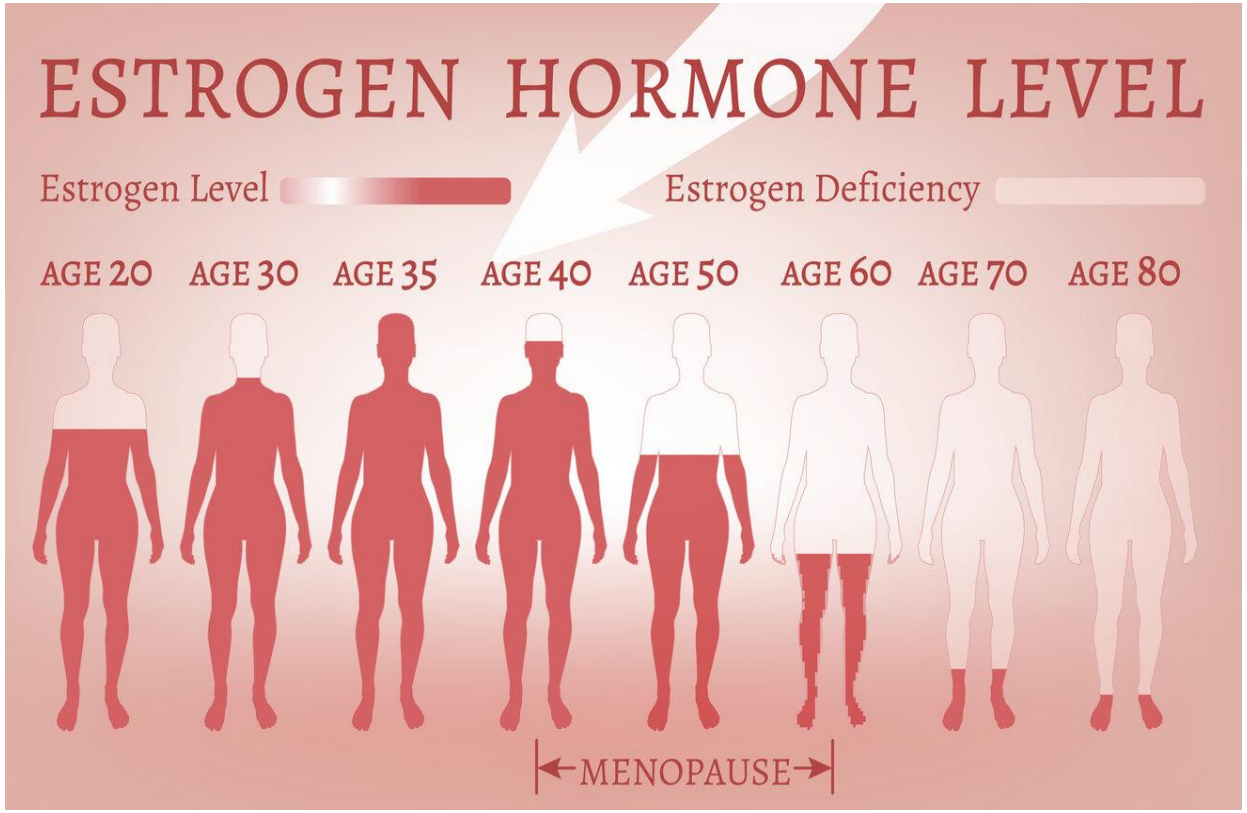
- 12 months after the menopause
- Symptoms can last upto 10 years.



Hormones

Oestrogen

- Paracrine effect and endocrine effect
- Supports collagen production
- Reduces the body inflammation levels and regulates new bone growth.
- Helps to regulate the bodies fluid levels so cells remain hydrated.
- Maintains brain power and keeps organs like the heart and liver healthy.
- Involved in regulating core body temperature
- Promotes deep sleep.
- Protects existing bone against bone loss.



Hormones

Progesterone

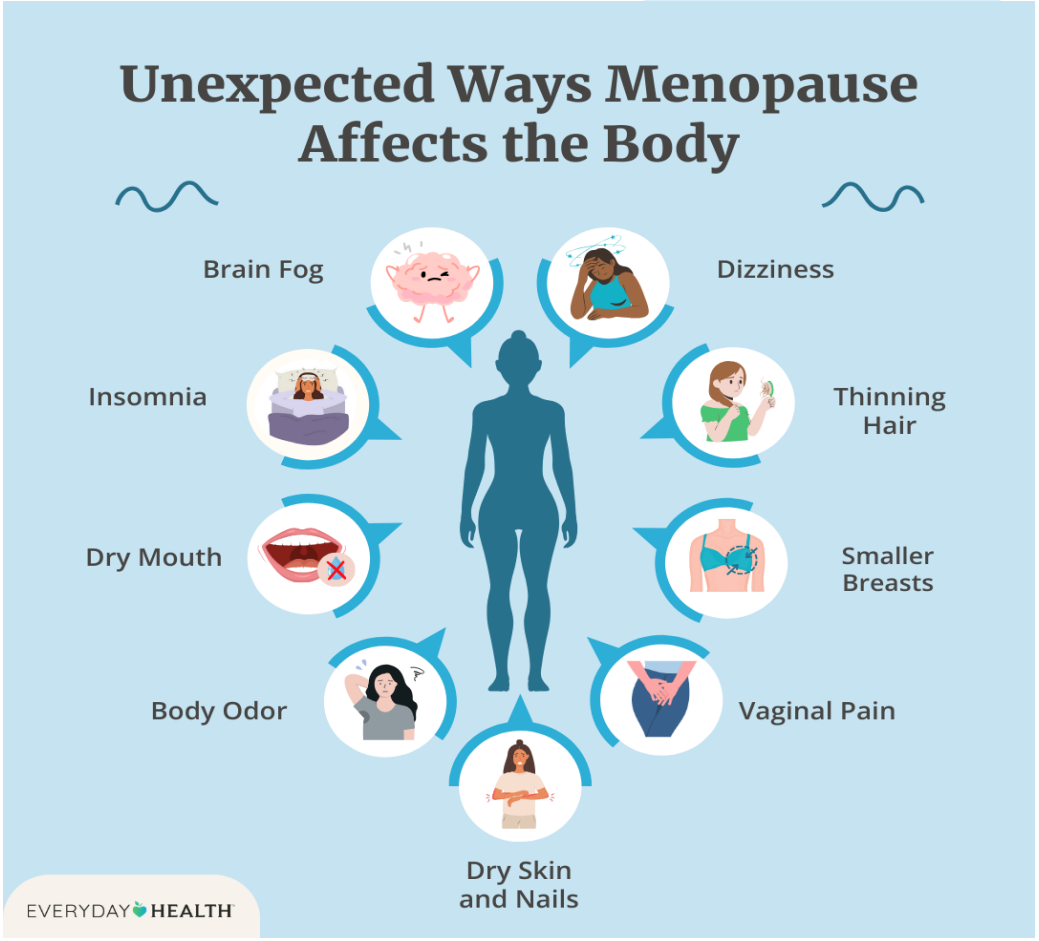
- Boosts feelings of natural calmness, improves mood, and increases pain threshold levels
- Helps you to enjoy relaxing andrejuvenating sleep
- Helps to normalize and regulate blood sugar levels
- Helps to protect the lining of the womb
- Can help to build new bone

Testosterone

- Supports and increases bone density and helps to turn fat into muscle.
- Keeps the liver and heart healthy.
- Improves cognitive function and aids motivation

Menopause symptoms

- Hot flushes
- Night sweats
- Anxiety
- Heart Palpitations
- Sleep Disturbance
- Vaginal Dryness
- Dyspareunia
- UTIs
- Low mood /irritability
- Loss of concentration / brain fog
- Muscle and Joint pain
- Reduction in bone mass
- 50% of fractures are post menopausal.



Musculoskeletal syndrome of menopause

- On average 70% of midlife women will experience MSK symptoms during menopause.
- Approximately 25% will have severe symptoms
- Approximately 40% will have no structural cause for the explanation of pain.
- Common symptoms for MSK syndrome of menopause are :
    - Joint Pain and stiffness
    - Decreased muscle tone, strength and endurance
    - Onset or worsening OA
    - Decreased mobility and range of movement
    - Slower walking speed, impaired balance and risk of falls due to lack of strength.
    - Increased risk of fractures
    - Increased risk of fractures and back pain due to spinal fractures.
    - Changes of fat distribution.
    - Inflammatory conditions such as tendonitis, bursitis and frozen shoulder

Joint pain

- The Menopause Centre (2024) reports that in a survey 40% of women aged between 45-65 have joint pain associated with the menopause.
- Oestrogen is an inflammatory regulator that plays a role in the prevention of generalized arthralgia.
- Oestrogen receptors are found in all joint tissues.
- Pain increases through the menopausal stages but peaks in early post menopause.
- More than half of perimenopausal women report arthralgia symptoms.
- Oestrogen and testosterone both reduce pain, therefore due to a drop in oestrogen this might explain the increase in pain.

Bone Health

Decrease in oestrogen ↓

=

Decrease in bone density ↓

AND

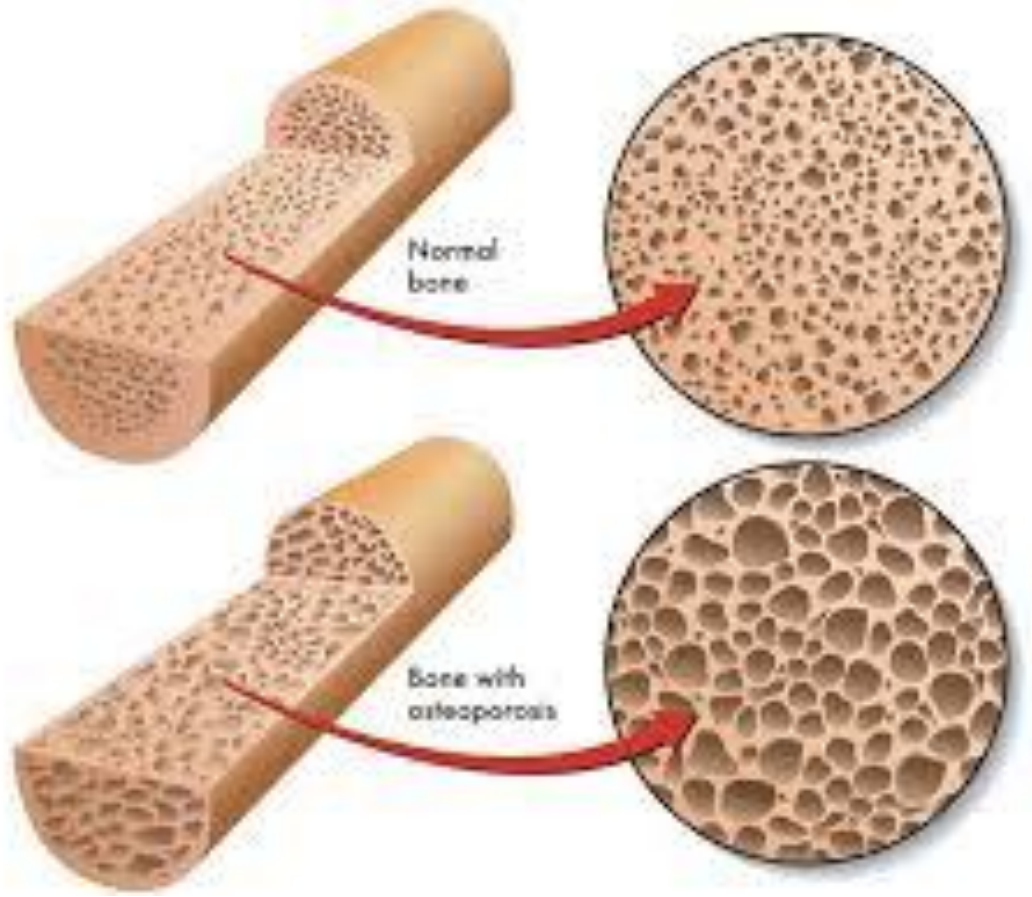
Decrease in the ability to build new bone ↓

=

Increase osteoporosis ↑

AND

Increase spontaneous fracture ↑



Bone Health Management

- Diet controlled
  - Vitamin D
  - Calcium
- Exercise
  - Weight bearing (Low, moderate and high)
  - Resistance
  - Aerobic
  - Flexibility
  - Balance
- HRT
  - Less OA related bony changes (knee)
  - Less changes on x-ray with hand and kne es.
  - Lower rates arthroplasty

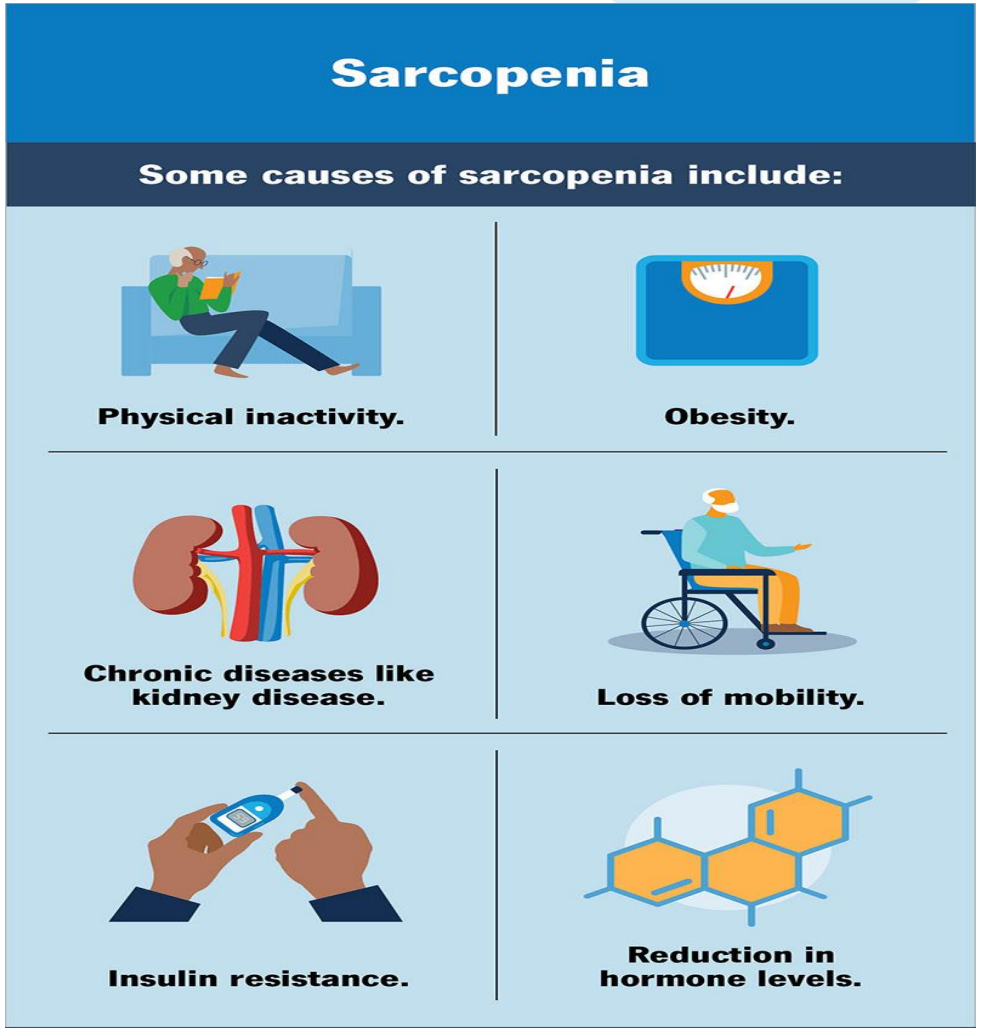
Muscles (Sarcopenia)

- Otherwise known as age related loss of lean muscle mass.

- It is a secondary effect to oestrogen deficit.

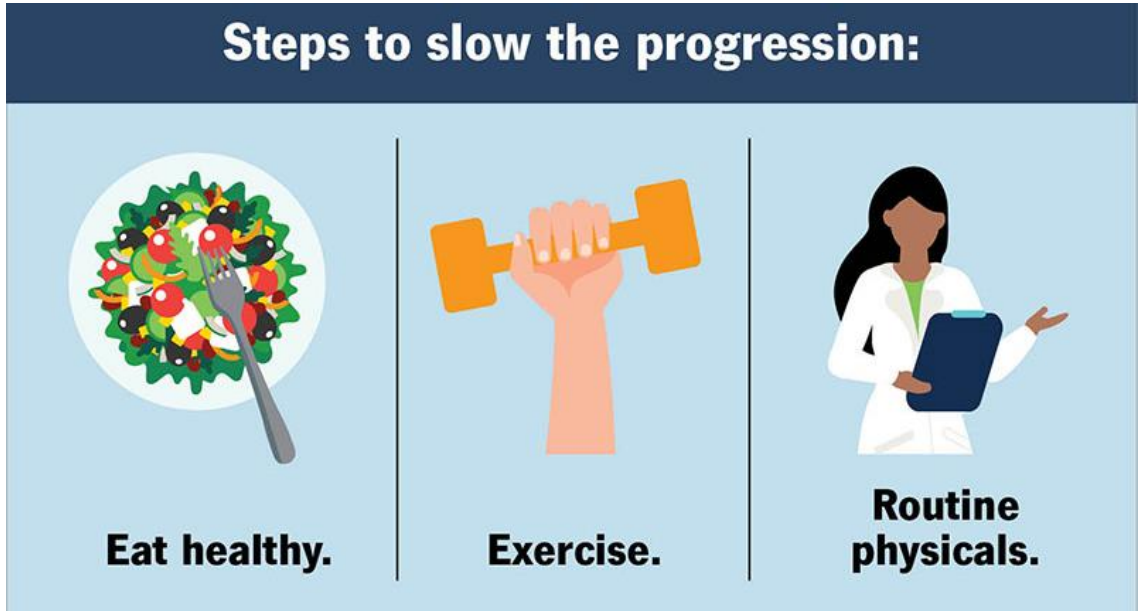
- Some causes of sarcopenia are :
  - Physical Inactivity
  - Obesity
  - Chronic diseases like kidney disease
  - Loss of mobility
  - Insulin resistance

- Decrease in Oestrogen
  - Decrease in muscle mass
  - Decrease in Strength
  - Decrease in muscle fibres



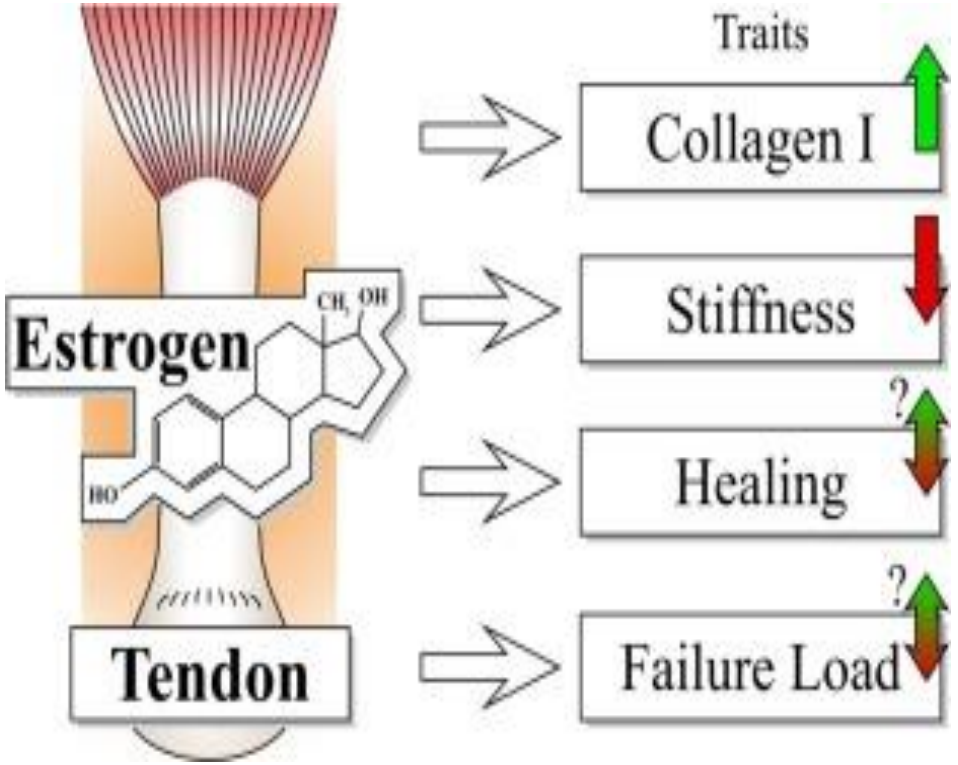
Muscle Management

- Resistance training
- Aerobic training
- Protein and Vitamin D
- HRT
- SMART training



Tendons

- Tendons connect muscle to bone.
- Tendons and Ligaments have oestrogen receptors.
- Oestrogen regulates the collagen metabolism.
- Reduction in oestrogen impacts the tendon by:
  - Longer to produce new collagen fibres.
  - Decrease in tensile strength (tension under load).
  - Decrease in breakdown of fibre
- Overall this lengthens the recovery period.



Tendon Management

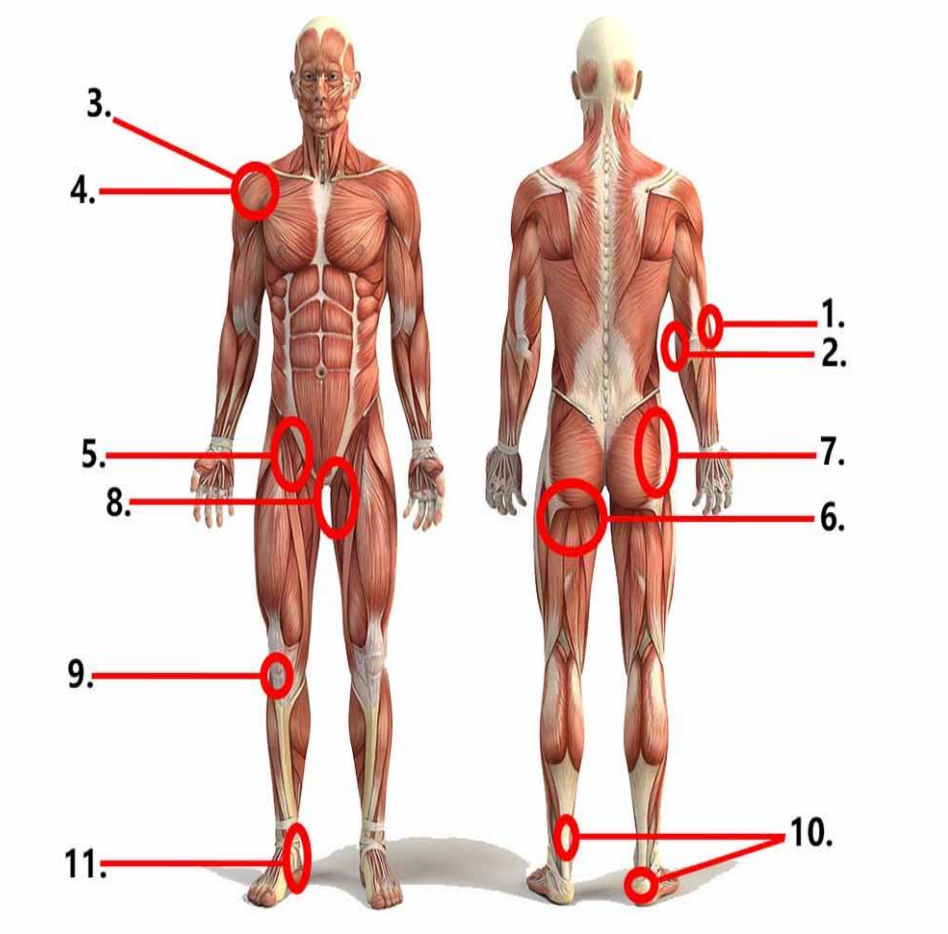
Most common areas affected are MCL, LCL, ACL, plantar fascia, achilles and gluteal tendon areas.

Loading of tendons

- How often
- Level of load
- Type of load

- Slower with exercises progressions

- Need for recovery period post exercise



Exercise tips

1. Traffic light system of pain it is safe to operate in the 1-5/10.
2. Exercise regime for muscles, joints and tendons. :

- Warm up
- Weight bearing activities : wall squats, rows, step ups, bicep curls, wall press-ups, leg press, balance, short sprint burs ts, jumping jacks, heel raises and marching
- Cool down

3. Advised to do either

150minutes moderate exercises OR 75 minutes vigorous

AND

2 days a week of resistance training

4. Allow for recovery periods post exercise.

Your Turn Now …….

1. Marching on the spot 1 minute
2. Bicep curl to shoulder press 1minute
3. Row to tricep kick back 1 minute
4. Knee high crunches 1 minute
5. Squat 1 minute
6. Heel raises 1 minute
7. Side steps 1 minute
8. Spinal roll down and chest opener

Work related adjustments

- Consider if menopause symptoms are affecting work or how the role maybe contributing to your symptoms.
- OH advise that you speak to your line manager first about adjustments OR you could as k your manager for if they could do a management referral to Occupational Health for t heir advice on adjustments.
- We advise precenting sedentary positions and receptive tasks. Take regular rest / stretch / change of positions breaks to try a different task.
- Consider your workstation environment and manual handling team for advice or support
- Consider your shift pattern and working hours could this be looked at to support staff.
- FIT for work forms

Refer yourself for physiotherapy

1. Look at your trust or service you work for do they have Physiotherapy as part of a benefit to staff that are within the occupational health department
    1. Sherwood Forest Hospitals
    2. Nottingham University Hospitals
    3. Derby Hospitals

2. GP self referral to physiotherapy providers :
    1. Mid-Notts GP (Kirkby, Sutton, Mansfield and Newark) https://www.sfh-tr.nhs.uk/services/msk-together-partnership/our-services/physiotherapy-and-occupational-therapy/
    2. Connect Health in Nottingham West and North/East (carlton, chillwell, Arnold, Hucknall, stapleford) https://www.connecthealth.co.uk/services/nottingham/

Referral to Physiotherapy continued …

3. Nottingham City GP City Care https://www.nottinghamcitycare.nhs.uk/msk-home

4. Derbyshire GP Service https://dchs.nhs.uk/our-services-and-locations/a-z-list-of-services/msk-triage-derbyshire/outpatient-musculoskeletal-therapy-self-referral

5. Chesterfield GP Service https://www.chesterfieldroyal.nhs.uk/all-services-and-wards/physiotherapy-services/musculoskeletal-and-rheumatology-services/musculoskeletal-physiotherapy-self-referral

For any further areas then please discuss with your GP surgery of where they refer to Physiotherapy as they might have a self referral service there to.

SUMMARY

- **Diet** : Healthy and balance diet is needed to support bones, joints, muscles and tendons.
    - Include calcium and protein in your diet.
    - Vitamin D as a supplement.

- **Exercise** : Regular exercise needs to include a mix of cardiovascular, strength, balance and flexibility training. Also have rests for recovery not to avoid pain. If y ou need help then refer yourself to a Physiotherapist.

- **HRT :** consider HRT but this is to be discussed with your GP to make sure this is right for you but it does have benefits to the muscles, joints, tendons and boens.
  .

References

Barry and Carson (2004) The consequences of resistance training for movement control in older adults

British Dietetics Society (2024) https://www.bda.uk.com/resource/vitamin-d.html

Buckinx and Aubertin-Leheudre (2022) Sarcopenia in menopausal women : current perspec tives.

Cho et al. (2022) Role of exercise in estrojgen deficiency-induced sarcopenia. <jer-18-1-2.p df (nih.gov)>

Geraci et al. (2021) Sarcopenia and Menopause : the role of Estradiol <fendo-12-682012.p df>

Greendale et al. (2019) Changes in body composition and weight during the menopause tra nsition. <jciinsight-4-124865.pdf (nih.gov)>

References continued ……

Menopause Centre (2024) Menopause and Joint Pain <Menopause Symptoms | Joint Pain | My Menopause Centre>

NHS Inform (2024) Physical activity guidelines https://www.nhsinform.scot/healthy-living/keeping-active/physical-activity-guidelines/

Rizzoli et al. (2014) The role of dietary protein and vitamin D in maintaining musculoskeletal health in postmenopausal women : A consensus statement from the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO).

Royal Osteoporosis Society (2024)

Teixeira et al, (2003) Resistance Training in Postmenopausal Women with and without Hor mone THerapy

Wright et al. (20024) The musculoskeletal syndrome of menopause

Outstanding Care,
Compassionate People,
Healthier Communities

NHS
Sherwood Forest Hospitals
NHS Foundation Trust