

## Mental Health and Falls Prevention Workshop

# UNDERSTANDING SARCOPAENIA: RELEVANCE TO MENTAL HEALTH AND FALLS PREVENTION

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**Health**  
Northern Sydney  
Local Health District

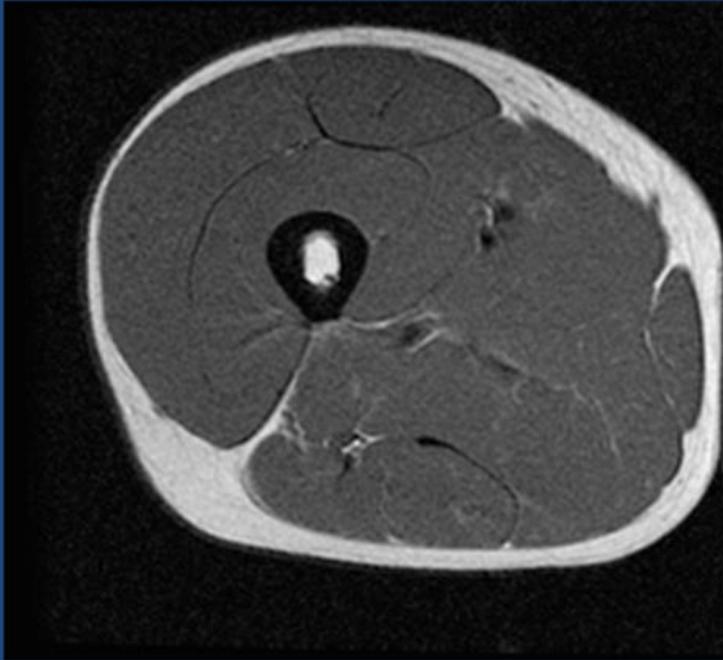
# What is Sarcopaenia?

- Sarx = flesh
- Paenia = lack of
- Defined as:
  - an age associated combination of low muscle mass together with muscle weakness causing functional problems
  - A progressive and generalised loss of muscle mass and strength

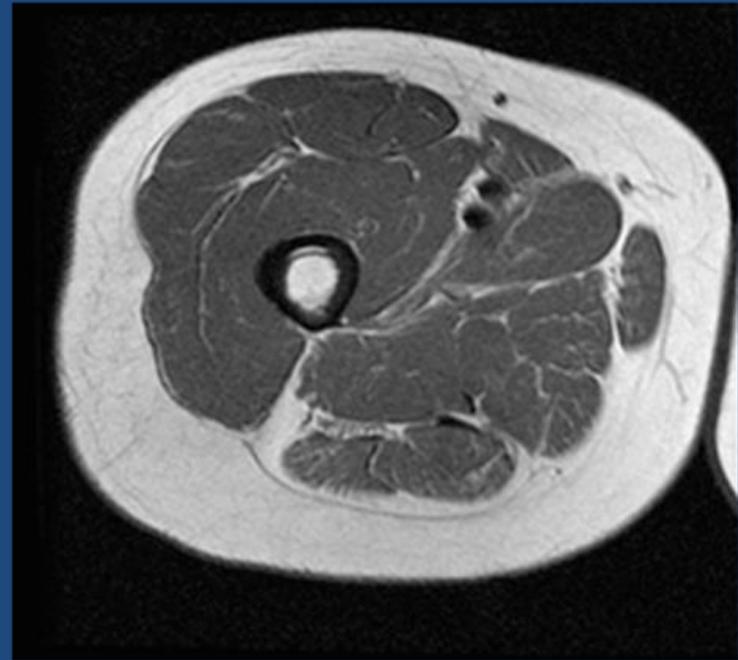
# What does Sarcopaenia look like?

- Low muscle mass (appendicular lean body mass)
- Low muscle strength
- Low walking speed
- The thin patient:
  - Muscle wasting more marked on limbs
  - Legs more than arms
- Obese patients may have unrecognised sarcopaenia:
  - struggles to stand unaided, walk or manage bed mobility

# Sarcopaenia in the thigh

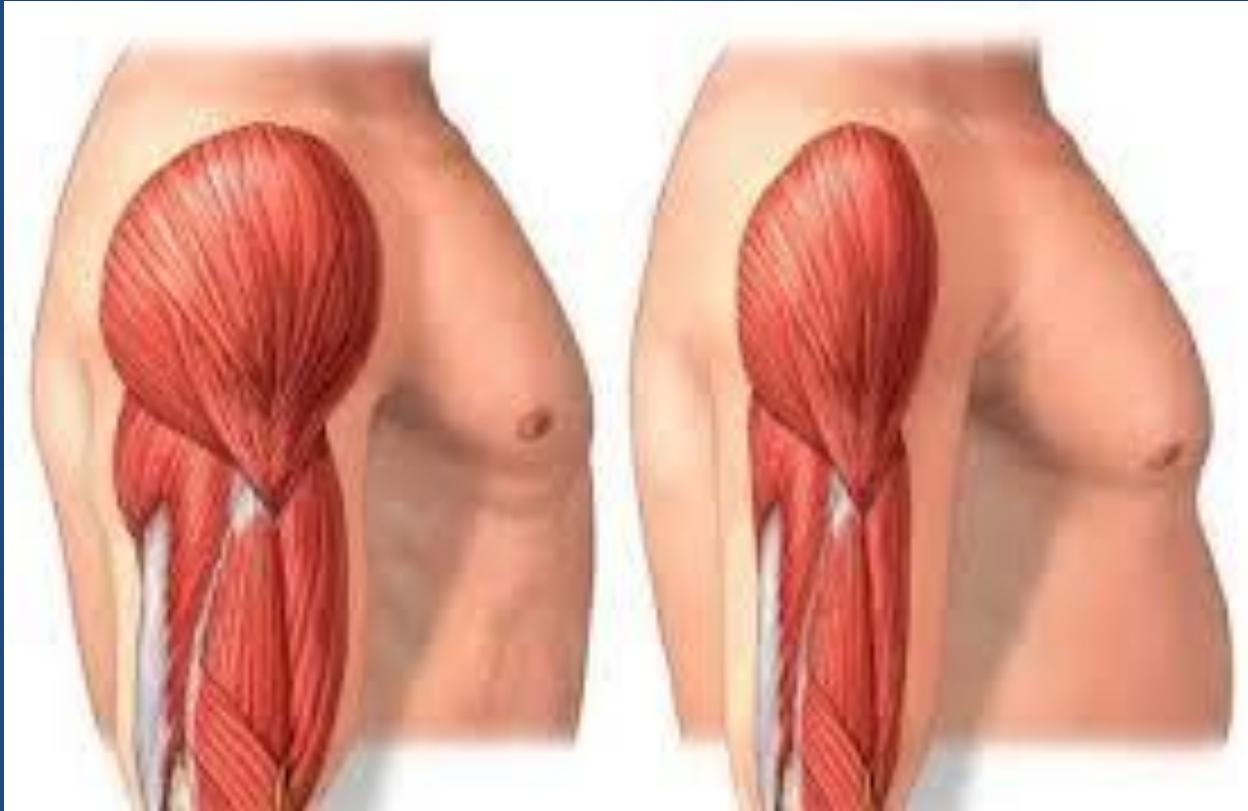


**Age 25**



**Age 63**

# Sarcopaenia in the arm



# Why is muscle important?

- Major source of protein and energy in times of stress and malnutrition
- Regulates glucose levels - low muscle mass associated with increased insulin resistance and Type 2 Diabetes – relevance to MH
- Low muscle mass associated with increased drug toxicity, and reduced hormonal homeostasis

# Sarcopaenia

- We lose approximately 1% of muscle mass every year from age 30, more with **chronic disease** or after age 75
- Lose gluteal muscle mass more than any other muscle groups in both men and women
- Loss of muscle with age is probably inevitable – even life long athletes have less muscle mass as they age
- Muscle mass is **not** the same as muscle strength as quality of muscle is also important

# Sarcopaenia

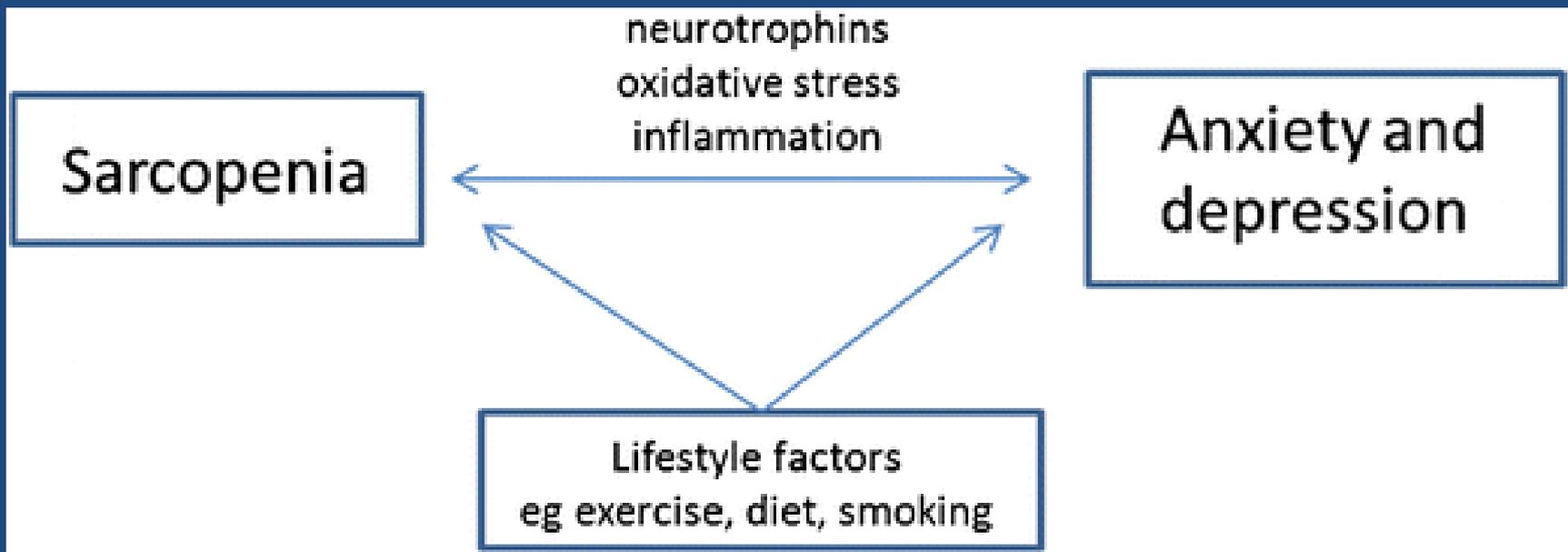
- **Muscle mass** measured as appendicular lean body mass (ALM) which is non bone lean mass of the limbs, measured using dual Xray absorptiometry (DEXA)
- **Muscle strength** is measured traditionally by hand grip strength, but chair rise or gait speed may be used
- Lose muscle strength **more** than muscle mass
- May be **unrecognised** because muscle is replaced by fat or connective tissue

# Causes of sarcopaenia

- Age
- Lack of exercise
- Poor nutrition
- Pro-inflammatory factors – which are produced in acute and chronic disease and in older age
- Decreased muscle cell functions
- **Smoking, medical comorbidities, Vit D deficiency, obesity**

# Falls, sarcopaenia and mental health

- Falls occur in younger MH consumers -mean age 56.
- Sarcopaenia associated with poor mental health outcomes, such as increased risk of depression, anxiety.
- Medication side effects eg of antipsychotics, can contribute to higher levels of obesity.
- Malnutrition, poor appetite, poor eating habits and poor fluid intake more common.
- Lack of physical activity from poor mood state, sleep disturbances, medication side effects, medical co-morbidities etc
- Alcohol and nicotine are pro-inflammatory.

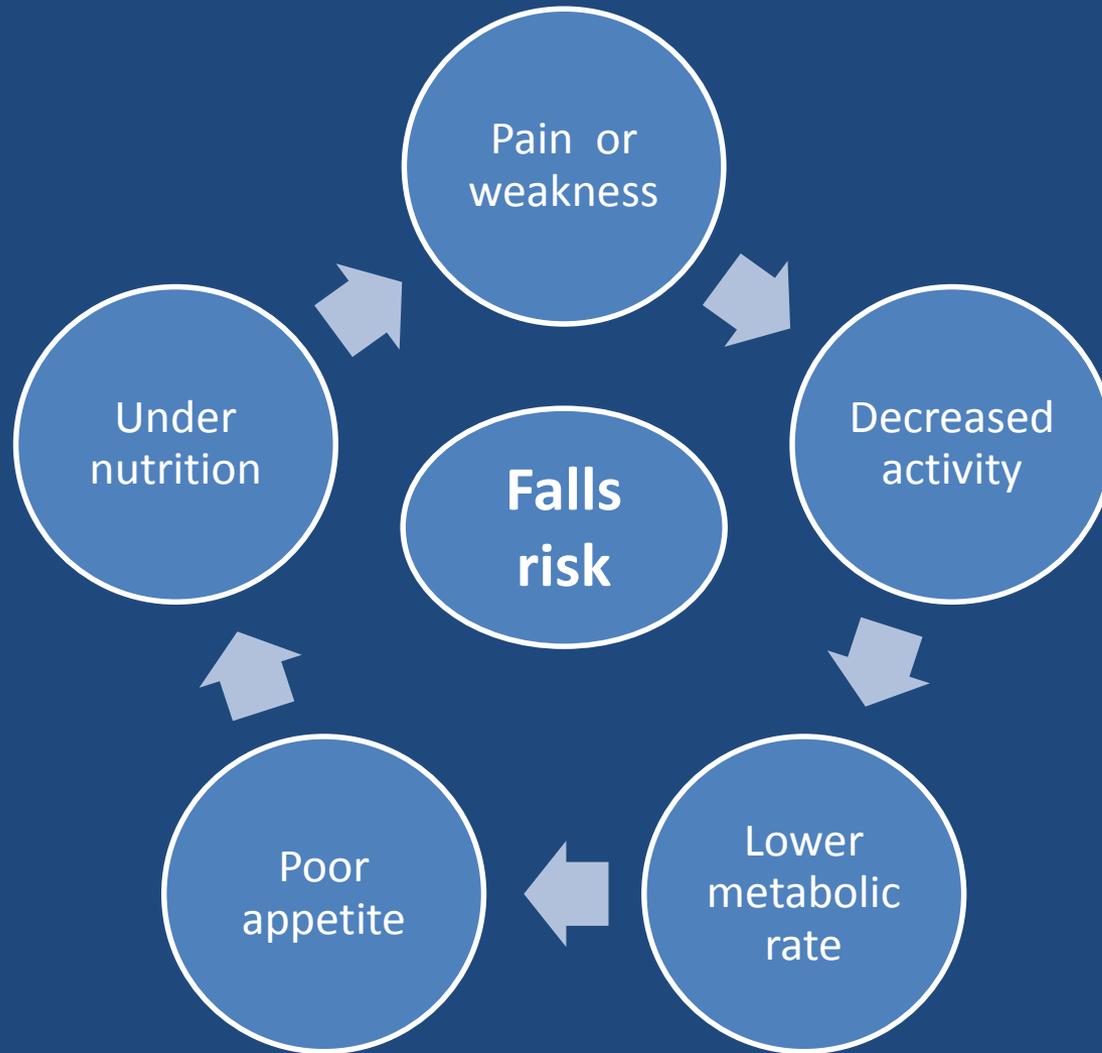


- It is thought that contracting skeletal muscle secretes positive neurotrophic factors that are known to play a role in mood and anxiety, reduce oxidative stress and inflammation.
- Poor neurotropic activity in the brain may have a negative effect on mood state and sense of wellbeing.

# What are the consequences of sarcopaenia?

- Low muscle strength
  - Slow gait speed
  - Increased risk of falls
  - Decreased function in ADLs
- Increased chance of hospitalisation and institutionalisation
- Poor post operative recovery
- Higher drug toxicity
- Decreased heat and cold tolerance
- Development of frailty
- Increased risk of death

# Sarcopaenia and Falls Risk



# How are sarcopaenia and frailty linked?

- Sarcopaenia is a major contributor to the onset of frailty
- Definition of frailty includes 2 criteria related to low muscle strength (low handgrip strength and low walking speed)
- Frailty itself is associated with falls, reduced physical function, institutionalisation and death
- Brief periods (from > 1 day) of bed rest can accelerate sarcopaenia in those who are frail.
- **MH consumers can be frailer at a much earlier age.**

# Treatment of sarcopaenia

- Progressive resistance training 3 sessions/week of main muscle groups –
- Exercise and physical activity are also recognised as effective strategies for treating depression and anxiety.
- Appropriate nutrition:
  - RDI: 1-1.5g protein/kg Body Weight/Day in divided doses (whey protein enriched with leucine)
  - Omega 3 FA 4gms/day
- Medications eg Vitamin D

# Take home message – our consumers

Weak consumers: **skinny or obese** - consider  
**Sarcopaenia**

In-hospital prevention:

- Promote early mobilisation and avoid bed rest
- Maintain or improve nutrition - consider nutritional supplements

In the Community

- Encourage daily physical activity and good nutrition

**Your timely intervention may improve consumers'  
independence & long term outcomes**

# Take home message - us

- We will all lose some muscle mass as we age even with regular exercise
- BUT we can markedly ameliorate these changes by:
- Maximising muscle strength when younger
- Participate in weight bearing and resistance exercises throughout life
- Adequate nutrition