

Diagnosing sarcopenia

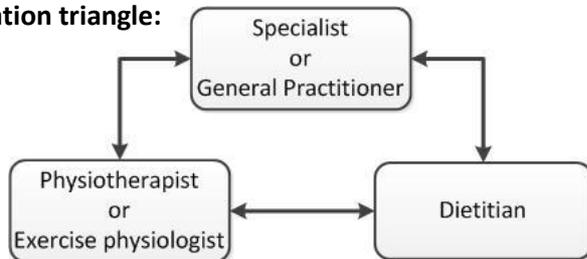
What is sarcopenia?

Sarcopenia is age-related low muscle mass with accompanied low muscle strength and/or gait speed. Sarcopenia is prevalent in one third of older adults.

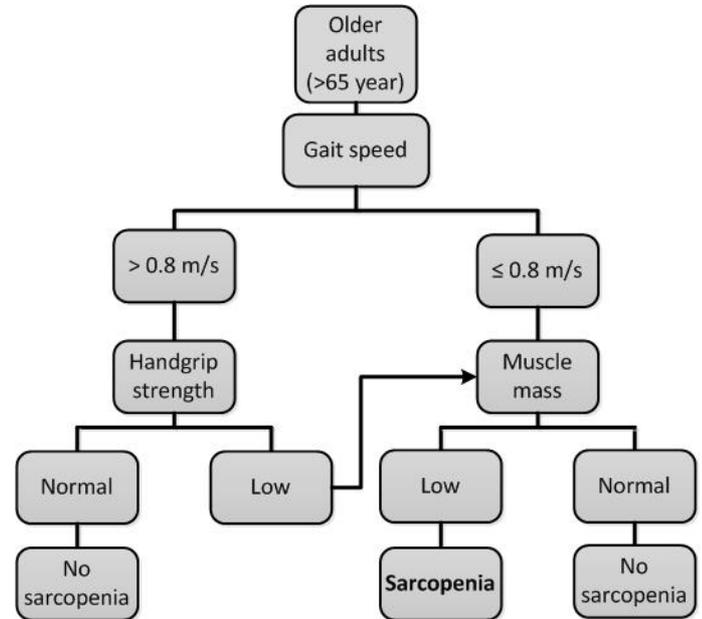
Multidisciplinary approach

A multidisciplinary approach is required to prevent, diagnose and treat sarcopenia. The specialist or general practitioner (GP), physiotherapist or exercise physiologist and dietitian should collaborate for the diagnosis and treatment of sarcopenia.

Collaboration triangle:



European consensus definition of sarcopenia



Reference: Cruz-Jentoft et al. 2010

Handgrip strength

Dynamometer

Males: <30 kg
Females: <20 kg



Reference: Lauretani et al. 2003

Gait speed

4-meter walktest

Males and females:
≤0.8 m/s



Reference: Lauretani et al. 2003

Muscle mass

Bio-electrical Impedance Analyser

Four-point measurement:
Appendicular lean mass (lean mass of arms and legs) index
Males: ≤7.26 kg/m²
Females: ≤5.45 kg/m²

Two-point measurement:

Fat free mass index
Males: <16 kg/m²
Females: <15 kg/m²

Reference: Baumgartner et al. 1998

Managing sarcopenia



Physiotherapist / Exercise physiologist

Strength training

Progressive resistance training with a high intensity has the most effect on increasing muscle mass and -strength. Take into account the dose-response relationship, recovery period and co-morbidities.

Reference: Peterson et al. 2010



Dietitian

Nutritional intervention

The nutritional intervention is focused on maintaining or increasing muscle protein through adequate consumption of protein, energy, calcium and vitamin D. The dietitian translates the nutritional advice into a diet that is sustainable in the long-term.

Resistance training advice

Exercises

- 8 to 10 different large muscle groups
- Muscle group of arms, legs and trunk

Intensity

- High intensity (BORG scale 7-8/10)
- 80% of one repetition maximum (1RM)

Frequency

- 3 or more times per week

Repetitions

- 8 to 12 repetitions, 1 set

Rest between exercises

- Approximately 2 minutes

Reference: Montero-Fernandez et al. 2013

Nutritional advice

Protein

- 1.2 to 1.5 g/kg body weight/day
- Equal distribution over the three main meals
- Aim towards ± 25 g per main meal

Energy

- WHO equation >60 years + 30% activity/stress factor
- Females: at least 1500 kcal/day
- Males: at least 1700 kcal/day

Calcium

- 51-70 years: 1100 mg per day
- >70 years: 1200 mg per day

Vitamin D

- 51-70 years: 10 μ g per day
- >70 years: 15 μ g per day

Reference: Deutz et al. 2014, Paddon-Jones et al. 2009, WHO 2001

Combination of progressive resistance training and adequate protein intake is most efficient to increase muscle mass and muscle strength. Collaboration between physiotherapist/exercise physiologist and dietitian is essential.

Reference: Kim et al. 2012