



NUTRITION

Sarcopenia Guideline 2018-2019 - Intervention

BVGG - SBGG



WHY?

To provide an evidence-based overview of the possible nutritional interventions for sarcopenia targeting one or more of the three sarcopenia domains (muscle mass, muscle strength or physical performance).

PROTEIN

Based on the conflicting evidence, protein supplementation **may be considered** to increase muscle mass. No clear effect has been reported on muscle strength and physical performance. In conclusion, protein supplementation may be considered as an intervention to increase muscle mass.

PROTEIN + RT*



A significant additive effect of protein supplementation on top of resistance training on muscle mass and muscle strength is shown in persons with obesity (BMI ≥ 30). This effect is also present for muscle mass, when the intervention had a duration of ≥ 24 weeks. No clear additive effect has been reported on physical performance. To achieve optimal effects on muscle mass and muscle strength in older adults, particularly obese, **we do recommend** protein supplementation in combination with resistance training (with a minimum duration of 24 weeks to increase muscle mass).

PROTEIN + NS*

Protein supplementation on top of exercise (not specified) **may be considered** to increase muscle mass, but not for muscle strength and physical performance.

EAA*

No clear effect has been reported on muscle mass, muscle strength and physical performance. In conclusion, EAA supplementation should **not be considered** as an intervention to increase muscle mass, strength and physical performance.

LEUCINE



A significant effect of leucine supplementation on muscle mass is shown in persons with **sarcopenia**, but not in healthy subjects. No clear effect has been reported on muscle strength and physical performance. In conclusion, **we do recommend** leucine supplementation for sarcopenic older people to increase muscle mass.

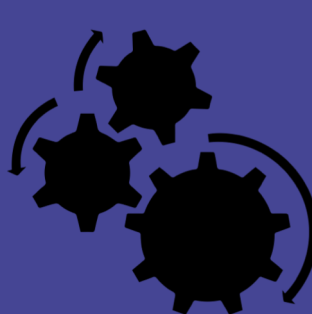
HMB*

Based on the conflicting evidence, HMB supplementation **may be considered** to increase muscle mass. No clear effect has been reported on muscle strength and physical performance. In conclusion, HMB supplementation may be considered as an intervention to increase muscle mass.

CREATINE + NS*

Creatine supplementation on top of exercise (not specified) **may be considered** as an intervention to increase muscle mass and muscle strength.

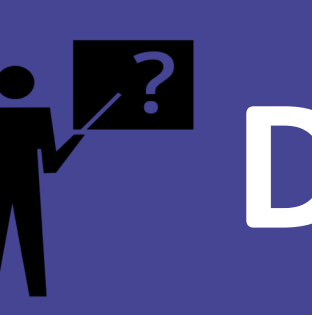
* EAA = essential amino acids; HMB = B-Hydroxy-B-Methylbutyrate RT = resistance training; NS = not specified exercise program



HOW?

An umbrella review on nutritional interventions was performed:

- *Population*: older adults (65+)
- *Intervention*: nutritional supplementation
- *Control*: non-exposed control
- *Outcome*: sarcopenia domains
- *Study design*: systematic review, meta-analysis
- *Quality assessment*: AMSTAR checklist



DATA HANDLING

Initial search yielded 516 eligible reviews of which 15 were finally included.

Key characteristics of the reviews, including participants, nutritional interventions, outcomes assessed were retrieved.

Recommendations were generated based on the overall syntheses about the main effect of each intervention.



RECOMMENDATION

- At this moment best evidence is available to recommend **leucine** supplementation since it has a significant effect on muscle mass in persons with sarcopenia.
- **Protein supplementation on top of resistance training** is recommended to increase muscle mass and muscle strength. This supplementation is particularly advised for persons with obesity and should be performed at least for 24 weeks to achieve optimal results.