



# **Nutrition during COVID 19 times: eating for muscle and immunity**

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## Muscle is much more than what moves us around



Muscle provides a protein reserve for:

- immune system
- organ repair and maintenance
- repair after injury/surgery etc
- brain glucose supply

also assists insulin action – helps avoid diabetes and minimise symptoms.





## Bodyweight and impact of weight loss

### Younger adults (below mid 60s)

weight loss is vital if overweight

- proportionally more fat lost

- relatively easy to rebuild

physical activity important but 'dieting' alone helpful

### Older adults

weight loss is not necessarily helpful

- muscle loss can be substantial

- lack of anabolic stimuli impairs rebuilding

**must** include good resistance exercise - dieting alone more likely harmful



## Muscle loss can be disastrous – especially in later adulthood



- Increased incidence and severity of illness, impaired wound repair, slowed recovery from illness/accident or surgery
- Drives chronic inflammation
- Worsens (or initiates diagnosis) of T2 diabetes/Insulin Resist.
- Potential impact on brain fuel supply
- Alters medication clearance rate
- Increases physical incapacity/social isolation

Malnutrition worsens outcomes in COVID 19: ESPEN May 2020





## Protein

Adults 18 -70: 1g/kg bodyweight/day

Adults 70+: 1.2g/kg bodyweight/day

In older adults achieving this impacted by:

age-inappropriate eating/weight loss advice

lower appetites

community/individual acceptance of weight loss

Wound repair/recovery from illness – can need 2+ g/kg/d

often high protein supplements needed



## Nutrition and muscle

European Journal of Sports Science. May 12, 2020. Narici et al:



- Rapid loss of muscle due to inactivity in home confinement.
- Increased body fat, reduced insulin sensitivity
- Need to reduce kJ intake
  
- 1.3 g protein/kg bodyweight/day ('usual' adult protein rec. 0.8 – 1 g/kg/day)
- Largest meal early, smallest in evening -at least 12 hr overnight fast
- Protein evenly spread across meals
- Avoid processed, refined foods as much as possible

**BUT - older adults need different consideration**





## What else to consider in COVID times?



### Antioxidants/Anti-inflammatory foods

- Vegetables, fruits, nuts, seeds – local, seasonal, fresh if possible
- Good oils – olive, nut, seed, marine sourced (oily fish)

### Vitamin D

- Evidence low vit D assoc with poor outcomes in COVID
- Higher incidence of COVID in European countries w low VitD status
- Home isolation/reduced outdoor activity impacts levels

In older people, isolation itself can impact appetite, food security and thus nutritional status.



## Questions?

### References and links

Vitamin D and COVID:

[https://www.thelancet.com/pdfs/journals/landia/PIIS2213-8587\(20\)30183-2.pdf](https://www.thelancet.com/pdfs/journals/landia/PIIS2213-8587(20)30183-2.pdf)

ESPEN Practical Guidance for Nutrition in COVID:

<https://www.clinicalnutritionjournal.com/action/showPdf?pii=S0261-5614%2820%2930140-0>

Narici et al:

Impact of sedentarism due to the COVID-19 home confinement on neuromuscular, cardiovascular and metabolic health: Physiological and pathophysiological implications and recommendations for physical and nutritional countermeasures (<https://www.tandfonline.com/doi/full/10.1080/17461391.2020.1761076>)

