Preservation and recovery of muscle: The power of omega-3 fatty acids

FRESENIUS KABI



Prof. Philip Calder

"Omega-3s counteract muscle loss in synergy with protein."

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Question

- Why are omega-3s, specifically EPA and DHA derived from fish oil, relevant for muscle protein turnover?
- How do the omega-3s affect muscle protein synthesis and breakdown?
- What are the implications of these findings in clinical practice?

Observations and ideas

- With high inflammation present providing protein alone is not effective at conserving muscle mass.
- Omega-3s resolve inflammation, thereby increasing muscle protein synthesis while decreasing degradation.[1,2]
- Aggregation of clinical trials showed that patients receiving omega-3s had increased lean and muscle mass.[3]

Take aways

- Omega-3s as part of clinical nutrition in combination with protein may counteract muscle loss.
- This is clinically relevant to numerous patient settings, including chronic wasting diseases (e.g., cancer, COPD), during immobilization, post-surgery, and in critical illness.

Prescribing Information can be found here

COPD = chronic obstructive pulmonary disease; DHA = docosahexanoic acid; EPA = eicosapentanoic acid | 1. Smith GI et al. Clin Sci 2011. 2. McGlory C et al. FASEB J 2019 3. Bird JK et al. Clin Nutr ESPEN 2021

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