EVIDENCE BUILDING FOR A COMBINATION OF WHEY PROTEIN, LEUCINE AND VITAMIN D

- Muscle loss negatively impacts self-reported quality of life, physical activity and health care costs.
- Older adults with muscle loss have a lower nutritional intake and status of several nutrients.
- Older adults with muscle loss have lower serum levels of leucine, branched-chain amino acids, essential amino acids, and vitamin D.
- Vitamin D sensitizes the muscle anabolic response to leucine in muscle cells, and restores blunted muscle protein synthesis response in vitamin D deficient aged rats.
- Leucine enriched whey protein, but not leucine alone, stimulates muscle protein synthesis in aged mice.
- Improved muscle function and muscle quality after a diet intervention with leucine enriched whey protein in aged mice.
- Muscle loss negatively impacts self-reported quality of life, physical activity, and health care costs. Older adults with muscle loss have a lower nutritional intake and status of several nutrients. Older adults with muscle loss have lower serum levels of leucine, branched-chain amino acids, essential amino acids, and vitamin D.

Primary outcomes on SPPB and grip strength not significant from control. Improvement of chair stand time (secondary outcome) with a leucine and vitamin D enriched whey protein formula in older adults with muscle loss.

Increase of appendicular muscle mass with a leucine and vitamin D enriched whey protein formula in healthy older adults.

Stimulation of muscle protein synthesis with a leucine enriched whey protein formula in healthy older adults and older adults with muscle loss.

Higher rise of serum levels of leucine and essential amino acids with a leucine enriched whey protein formula compared to isocaloric, isonitrogenous casein protein dominant formula in healthy older adults.

Muscle protein synthesis

Muscle mass

Muscle strength and function

Bioavailability of protein and amino acids

Preclinical research

Population characterization
References


