ACTUS NUTRITION

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Protecting Lean Mass During Weight Loss: The Role of Whey Protein

Obesity is commonly defined by excess fat mass, but preservation of fat-free mass—particularly skeletal muscle—is increasingly recognized due to its metabolic, endocrine, and functional roles. Weight-loss interventions such as hypocaloric diets, pharmacologic treatments, and bariatric surgery are frequently associated with loss of skeletal muscle, which may increase the risk of sarcopenic obesity and related complications.

A recent systematic review evaluated the effects of whey protein supplementation on fat-free mass and muscle-related outcomes in adults with obesity undergoing weight-loss interventions.

Randomized controlled trials published in English were identified through searches of multiple scientific research platforms, covering studies published through September 2025. Eligible studies included adults (>18 years) with obesity receiving whey protein supplementation as part of a hypocaloric diet, compared with placebo or standard interventions. Primary outcomes were changes in fat-free mass measured using validated methods (DXA, BIA, or MRI). Secondary outcomes included body weight, fat mass, metabolic parameters, adherence, and safety. Risk of bias was assessed using the Cochrane RoB 2.0 tool, and certainty of evidence was evaluated using GRADE.

Fourteen randomized controlled trials met inclusion criteria. Across studies, whey protein supplementation was associated with maintenance or modest improvements in fat-free mass. Effects were more frequently observed in trials that included resistance exercise or anabolic-enriched formulations, such as those containing leucine or vitamin D. Other trials reported neutral effects, particularly in the absence of structured physical activity. Reported effect sizes ranged from small improvements to no clear differences between groups. The certainty of evidence was frequently downgraded due to small sample sizes, wide confidence

intervals, heterogeneity in intervention protocols and body-composition assessment methods, short follow-up durations, and methodological limitations including open-label designs and inconsistent adherence assessment.

The findings indicate that whey protein supplementation has been evaluated as a strategy to preserve fat-free mass during weight loss in adults with obesity, with variable results across study designs and intervention contexts.

López-Gómez et al. Nutrients. 2026 Feb 21;18(4):695.

Evaluating Amino Acid Fortification in Low-Dairy Ready-to-Use Therapeutic Foods

Ready-to-use therapeutic food (RUTF) is the standard treatment for children with severe wasting, with protein traditionally supplied by milk and peanuts. These ingredients account for a large proportion of RUTF cost, driving efforts to develop alternative formulations that rely more heavily on locally available, non-dairy protein sources. When dairy protein is reduced or removed, amino acids are commonly added to formulations to meet Codex requirements for protein quality, as assessed by the Protein Digestibility Corrected Amino Acid Score (PDCAAS).

This study re-evaluated data from a previously published systematic review and meta-analysis to assess whether amino acid fortification influences growth outcomes in RUTF formulations containing less than 50% dairy protein. The authors reclassified seven RUTF formulations into two categories: low-dairy formulations without added amino acids and low-dairy formulations with added amino acids. Both categories were compared with standard milk–peanut RUTF. The primary outcome for this re-analysis was rate of weight gain (g/kg/day), selected because it was the most consistently reported outcome across studies.

The re-analysis included data from 6,356 infants and children aged six months and older with severe acute malnutrition, enrolled in randomized or cluster-randomized trials conducted in sub-Saharan Africa, South Asia, and Southeast Asia. Although amino acid fortification increased calculated PDCAAS values in low-dairy formulations, making them comparable to

standard RUTF on paper, this did not correspond to differences in weight gain outcomes. Mean weight gain remained lower in both low-dairy categories compared with standard RUTF, regardless of whether amino acids were added. Growth outcomes were similar between amino acid–fortified and unfortified low-dairy RUTFs when compared with standard formulations.

The amino acid–fortified category was represented by a single clinical trial that tested two formulations, which limited the ability to draw formal meta-analytic conclusions for this subgroup. However, the descriptive comparison showed no difference in weight gain between fortified and unfortified low-dairy RUTFs. The analysis also showed that meeting PDCAAS thresholds alone did not consistently align with clinical growth outcomes in children treated for severe wasting.

Berhane et al. Food Chem. 2026 Apr 15;508(Pt A):148316.

Dairy Protein, Meal Timing, and Metabolic Regulation in Type 2 Diabetes

The timing of food intake and the type of dietary protein consumed may influence circadian regulation and metabolic outcomes. This randomized, crossover study examined the effects of a dairy-enriched vs non-dairy diet, consumed with structured meal timing, on circadian clock gene expression, glycaemic control, and appetite regulation in adults with type 2 diabetes.

Twenty-five participants with type 2 diabetes (HbA1c ≥6.5%), managed with diet or stable oral glucose-lowering therapy, completed two 4-week dietary intervention phases: one including dairy-based protein sources (YesMilk) and one excluding dairy (NoMilk). Diets were isoenergetic and followed a structured meal schedule. The two phases were separated by a 3–4-week washout period. Participants were randomly assigned to the order of diets in an open-label design. The primary outcome was circadian clock gene expression in peripheral

blood mononuclear cells, with secondary outcomes including continuous glucose monitoring–derived glycaemic indices and self-reported appetite measures.

Nineteen participants completed both intervention phases. Compared with the NoMilk diet, the YesMilk diet was associated with higher expression of several circadian clock genes, including BMAL1, REV-ERBα (NR1D1), CRY1, and PER1 after four weeks. Glycaemic outcomes also differed between diets: during the YesMilk phase, fasting glucose decreased by approximately 1.7 mmol/L, the glucose management indicator declined by 0.7%, and time in target glucose range increased by 9% compared with baseline. Appetite-related outcomes showed reductions of approximately 15–20% in hunger and sweet craving scores during the YesMilk phase.

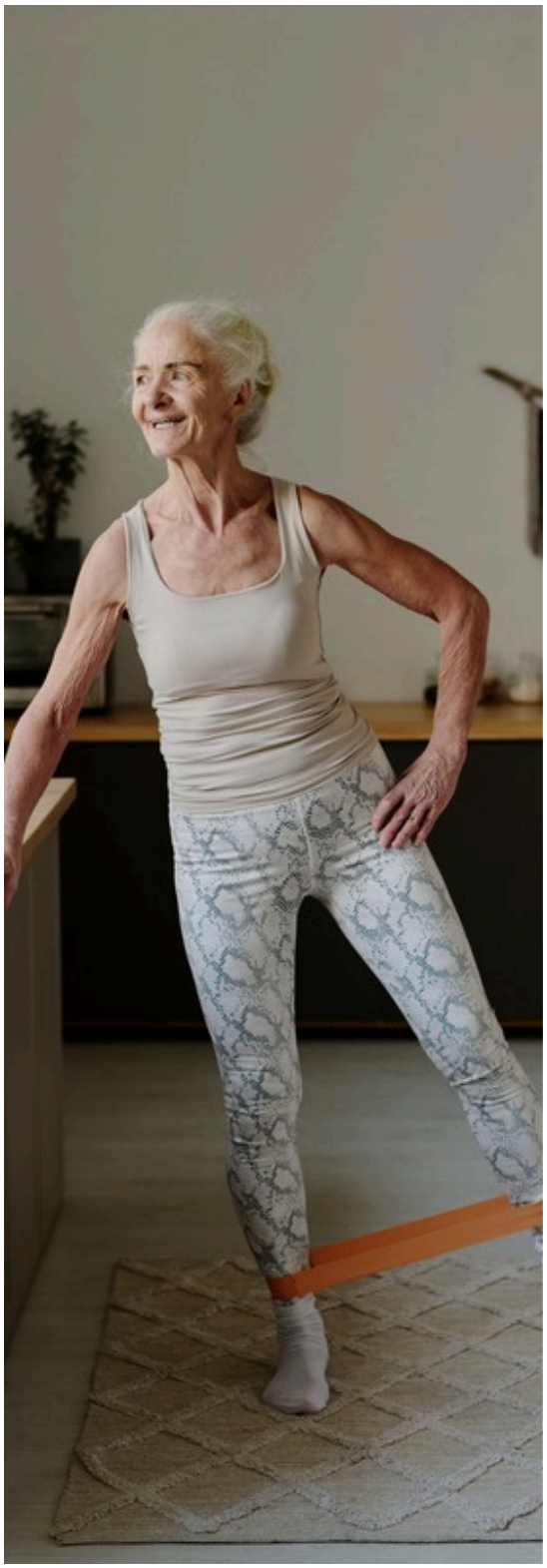
Tsameret et al. Diabetologia. 2026 Apr;69(4):1021-1034.

Fermentation Modifies Milk Protein Digestion and Peptide Formation

Fermented milk is widely regarded as a functional food, yet the effects of fermentation on protein digestion—particularly peptide formation during digestion—are not fully understood. In this study, pasteurized whole milk was compared with two fermented milk products: one fermented with Lactobacillus bulgaricus and Bifidobacterium animalis subsp. lactis (Y1), and one fermented with Lactobacillus bulgaricus alone (Y2). A recent study examined differences in protein digestion between yoghurt and whole milk, with a focus on the peptide profiles generated during gastric and intestinal digestion.

Both fermented milk samples showed a higher degree of protein hydrolysis and greater overall peptide intensity than whole milk in both gastric and intestinal digesta. Peptidomics analysis revealed that fermentation altered the peptide profile in gastric digesta but not in intestinal digesta. In gastric samples, peptides that were more abundant—and in some cases only present—in fermented milk digesta were generally longer than those predominant in whole-milk digesta, and cleavage site patterns differed between fermented and unfermented samples. In silico analysis indicated greater intensity and diversity of predicted bioactive peptides and epitopes in the gastric digesta of fermented milk, consistent with trends observed for total peptides. After intestinal digestion, whole milk digesta showed higher overall epitope intensity than fermented milk, suggesting a potential difference in allergenic properties, although further validation is required. Overall, the study provides insight into how milk fermentation influences protein digestion and peptide formation, with implications for the bioactivity and allergenicity of fermented milk products.

Ren et al. Food Res Int. 2026 Apr 30;230:118670.



Protein Plus Resistance Training in Sarcopenia

Sarcopenia, marked by age-related losses in muscle mass, strength, and function, is a major contributor to reduced independence in older adults. This systematic review examined whether combining protein supplementation with resistance exercise produces synergistic effects on biochemical and functional markers of sarcopenia.

Randomized controlled trials published between 2019 and 2025 were identified through searches of PubMed, Scopus, ScienceDirect, and Cochrane databases. Eligible studies included human trials published in English, Spanish, or French, with risk of bias assessed using Cochrane criteria. Seven randomized controlled trials, involving a total of 260 participants, met inclusion criteria.

Across studies, interventions combined resistance training performed three times per week at 60–80% of one-repetition maximum with daily protein supplementation of at least 15 g, primarily from dairy sources. Reported outcomes included reductions in inflammatory and catabolic markers such as myostatin, activin, and interleukin-6, alongside increases in anabolic and anti-inflammatory markers including IGF-1, follistatin, and interleukin-10. Functional outcomes included improvements in muscle strength, gains in fat-free mass, and increases in muscle fiber cross-sectional area.

Cruz-Pierard et al. Biomolecules. 2026 Jan 27;16(2):195.

IN THE **NEWS**

RFK Jr.: Expect Federal Definition for Ultraprocessed Foods by April | Food Processing

U.S. Health and Human Services Secretary Robert F. Kennedy Jr. said the federal government expects to establish its first official definition of "ultra-processed foods" by April 2026, following recent interagency efforts involving HHS, FDA, and USDA. The definition is expected to underpin future actions such as front-of-package labeling and potential updates to federal nutrition programs, according to remarks Kennedy made on the Joe Rogan Experience podcast.

This content is provided for informational and educational purposes only and does not constitute medical advice, diagnosis, or treatment. Readers should consult a qualified healthcare professional for individual guidance.

We support the World Health Organization's recommendation that breastfeeding is the optimal source of nutrition for infants. When breastfeeding is not possible or not sufficient, infant formula can provide an appropriate alternative.