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Protein Intake: Is 25g per serving still adequate?

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Today's Agenda

- THE 25-GRAM QUESTION: WHY THIS QUESTION MATTERS
- HOW 25-GRAMS BECAME THE GOLD STANDARD
- WHERE THE 25 GRAM FRAMEWORK BEGINS TO BREAK DOWN
- CONSUMER EDUCATION STRATEGY
- PRACTICAL IMPLICATIONS AND TAKEAWAYS

The 25-Gram Question: Why This Question Matters?

Protein demand is surging across the broader food market

High-protein products are moving beyond the gym niche into mainstream menus and grocery aisles.

The rise of GLP-1 weight-loss medications is reshaping eating habits.

This evolution invites us to rethink longstanding per serving defaults.

New U.S. dietary guidelines put greater emphasis on protein intake.

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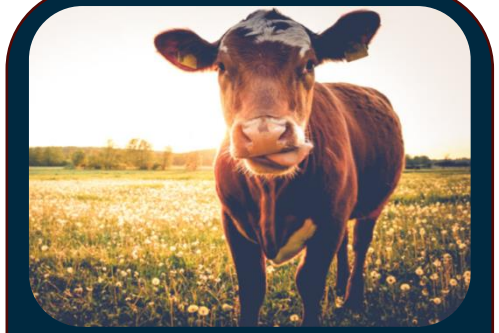
How 25-Grams Became the Gold Standard

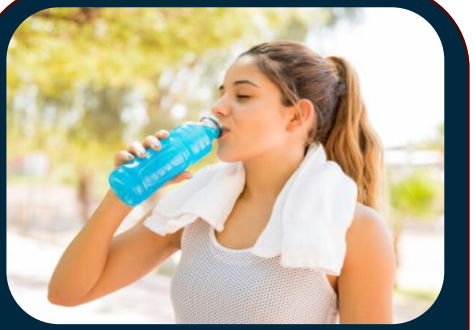
Early dose-response studies suggested muscle protein synthesis (MPS) plateaus at ~20-25 g of protein per serving.[1]

Protein consumed above this dose was viewed as unnecessary, as excess amino acids were oxidized rather than used for muscle building.[1]



Whey protein became the reference, as this dose reliably delivered enough leucine to trigger MPS signaling.[2]

Whey + Leucine quietly defined what "enough" meant. [4]



A clean dose-response result turned into a simple rule.[3]

[1] Moore, D. R., et al. (2009). Ingested protein dose response of muscle and albumin protein synthesis after resistance exercise in young men. American Journal of Clinical Nutrition, 89(1), 161–168.
[2] Churchward-Venne, T. A., et al. (2012). Leucine content is a determinant of the skeletal muscle anabolic response to protein ingestion. Journal of Physiology, 590(10), 2317–2333.
[3] Moore, D. R., et al. (2009); Churchward-Venne, T. A., et al. (2012). [4] Moore, D. R., et al. (2009); Tang, J. E., et al. (2009).

Where the 25-Gram Framework Begins to Break Down: Population & Protein Factors

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OLDER ADULTS EXHIBIT ANABOLIC RESISTANCE

Aging muscle shows reduced sensitivity to amino acids. [1]

A standard EAA dose fails to stimulate MPS in elderly muscle without higher leucine. [2]

HIGHER PROTEIN DOSES STIMULATE GREATER MPS IN THE ELDERLY

40 g protein increased MPS more than 20 g after resistance exercise in older adults. [3]

PROTEIN SOURCE AFFECTS MPS INDEPENDENT OF TOTAL PROTEIN

Whey stimulated greater MPS than micellar casein in elderly men at the same dose. [4]

Differences were driven by faster aminoacidemia and higher leucine availability.

PDCAAS DOES NOT PREDICT ANABOLIC POTENCY

Soy protein stimulated less MPS than whey or milk despite similar PDCAAS values. [5,6]

Highlights limitations of quality scoring systems for MPS outcomes.

THE ORIGINAL FRAMEWORK REFLECTS A SPECIFIC SCENARIO

Young, healthy men consuming rapidly absorbed whey represent maximal anabolic sensitivity. [3]

Other populations fall outside this optimal window.

KEY LEARNING → Subsequent research indicates that the 25 g threshold is not universal. Factors such as age, gender, and protein characteristics significantly influence the muscle protein synthesis (MPS) response.

[1] Cuthbertson D, Smith K, Babraj J, Leese G, Waddell T, Atherton P, Wackerhage H, Taylor PM, Rennie MJ: Anabolic signaling deficits underlie amino acid resistance of wasting, aging muscle. The FASEB journal: official publication of the Federation of American Societies for Experimental Biology 2005, 19:422–424.
[2] Katsanos CS, Kobayashi H, Sheffield-Moore M, Aarsland A, Wolfe RR: A high proportion of leucine is required for optimal stimulation of the rate of muscle protein synthesis by essential amino acids in the elderly. Am J Physiol Endocrinol Metab 2006, 291:E381–E387.
[3] Churchward-Venne, T. A., Burd, N. A., & Phillips, S. M. (2012). Nutritional regulation of muscle protein synthesis with resistance exercise: strategies to enhance anabolism. Nutrition & metabolism, 9(1), 40. https://doi.org/10.1186/1743-7075-9-40
[4] Burd NA, Yang Y, Moore DR, Tang JE, Tarnopolsky MA, Phillips SM: Greater stimulation of myofibrillar protein synthesis with ingestion of whey protein isolate v. micellar casein at rest and after resistance exercise in elderly men. Br J Nutr 2012, :1–5.
[5] Tang JE, Moore DR, Kujbida GW, Tarnopolsky MA, Phillips SM: Ingestion of whey hydrolysate, casein, or soy protein isolate: effects on mixed muscle protein synthesis at rest and following resistance exercise in young men. J Appl Physiol 2009, 107:987–992.
[6] Wilkinson SB, Tarnopolsky MA, Macdonald MJ, Macdonald JR, Armstrong D, Phillips SM: Consumption of fluid skim milk promotes greater muscle protein accretion after resistance exercise than does consumption of an isonitrogenous and isoenergetic soy-protein beverage. Am J Clin Nutr 2007, 85:1031–1040.

Where the 25-Gram Framework Begins to Break Down: Exercise Models & Muscle Demand

WHOLE-BODY RESISTANCE EXERCISE INCREASES AMINO ACID DEMAND

Greater muscle activation increases amino acid uptake across tissues. [1]

Exercised muscle incorporates more dietary amino acids than rested muscle. [2]

40 G PROTEIN OUTPERFORMS 20 G AFTER WHOLE-BODY EXERCISE

Myofibrillar protein synthesis was ~20% higher with 40 g vs 20 g whey. [3]

PROTEIN SOURCE AFFECTS MPS INDEPENDENT OF TOTAL PROTEIN

Whey stimulated greater MPS than micellar casein in elderly men at the same dose. [4]

Differences were driven by faster aminoacidemia and higher leucine availability.

KEY LEARNING → When more muscle is engaged the demand for amino acids can exceed what 20–25 grams of protein can provide, resulting in greater muscle protein synthesis with higher protein amounts.

[1] Phillips SM, Tipton KD, Aarsland A, Wolf SE, Wolfe RR: Mixed muscle protein synthesis and breakdown after resistance exercise in humans. Am J Physiol 1997, 273:E99–E107.
[2] Pennings B, Boirie Y, Senden JM, Gijsen AP, Kuipers H, van Loon LJ: Whey protein stimulates postprandial muscle protein accretion more effectively than do casein and casein hydrolysate in older men. Am J ClinNutr 2011, 93:997–1005.
[3] Macnaughton, L. S., Wardle, S. L., Witard, O. C., McGlory, C., Hamilton, D. L., Jeromson, S., Lawrence, C. E., Wallis, G. A., & Tipton, K. D. (2016). The response of muscle protein synthesis following whole-body resistance exercise is greater following 40 g than 20 g of ingested whey protein. Physiological reports, 4(15), e12893. https://doi.org/10.14814/phy2.12893
[4] Burd NA, Yang Y, Moore DR, Tang JE, Tarnopolsky MA, Phillips SM: Greater stimulation of myofibrillar protein synthesis with ingestion of whey protein isolate v. micellar casein at rest and after resistance exercise in elderly men. Br J Nutr 2012, :1–5

Consumer Education Strategy

1

Highlight protein type and quality

Protein source and essential amino acid content matter as much as total grams.

2

Emphasize recovery and muscle support, not just grams

Higher protein per serving can better support recovery after full-body or intense workouts.

3

Keep the focus on dairy proteins and their advantages

Communicate the limitations of PDCAAS, the advantages of DIAAS, and the importance of educating consumers on type of protein vs DV%.

4

Reframe “more protein” as functional, not wasted

Protein above 25 g can still be used effectively to support muscle protein synthesis.

5

Move beyond a one-size-fits-all protein number

25 g is not a universal limit, protein needs vary by age, activity, training style and individual goals.

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Practical Implications, Takeaways, and Future Research

- ✓ **Make protein targets context-specific**
  Adjust serving targets beyond 25 g for whole-body training, older adults, and recovery needs.
- ✓ **Optimize for protein quality**
  Formulate around essential amino acids and leucine delivery—not just total protein.
- ✓ **Update education to reflect new evidence**
  Refresh guidance, sales training, and FAQs to show when higher protein servings are beneficial.
- ✓ **Support claims with relevant testing**
  Use product-specific research (dose, protein type, exercise model) to validate efficacy and messaging.
- ✓ **Prioritize real-world research needs**
  Study mixed meals, diverse age groups, whole-body exercise, and long-term outcomes to refine recommendations.

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THANK YOU!