DAIRY PROTEIN: WHEN ENOUGH PROTEIN IS NOT ENOUGH

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As higher-protein diets for health and wellness continues to rise, “how much” and “which kind of proteins,” are often-asked questions. Understanding optimal levels and types of proteins for the people who need it most can help food formulators meet consumer demand for better, personalized nutrition.

In 2019, the 13th Asian Congress of Nutrition (ACN) 2019 was held in Bali, Indonesia, nutrition researchers from North America and Asia shared scientific findings on the role of dairy proteins in supporting healthy aging and weight management goals to optimize sustained wellbeing across genders and life stages. Researchers also shed light on a growing body of evidence suggesting that current dietary protein recommendations are underestimated for certain vulnerable population groups such as seniors, as well as for athletes and people trying to manage their weight.
“The branched chain amino acids (BCAAs), and in particular leucine, have demonstrated to be particularly efficient in maximizing muscle synthesis. In the sports nutrition sector and for its dedicated customers, this counts as common knowledge. BCAA awareness has the potential to seep into the mainstream consumer base of high protein products, resulting in front-of-pack labels stating the BCAA content.”

CURRENT GUIDELINES TOO LOW?

At ACN, Dr. Stuart Phillips, Professor, Kinesiology, McMaster University, Canada, introduced multifaceted research findings, corroborating that actual protein requirements in older persons appear to be at least 50 percent more than current recommendations. He cited both experimental trials and observational data showing that higher protein intakes are associated with greater muscle mass and better muscle function with aging. In alignment with his 2018 study published in Advances in Nutrition together with Drs. Daniel A. Traylor and Stefan H.M. Gorissen, Dr. Phillips proposed that the recommendation be updated. At ACN, Dr. Phillips proposed that older individuals consume ≥ 1.2 grams of protein per kilogram of body weight daily, up from the current World Health Organization (WHO) and some other health organizations’ guidelines that adults should consume 0.8 grams of protein per kilogram of body weight per day.

He also proposed that there should be an emphasis on the intake of the amino acid leucine, which plays a central role in stimulating skeletal muscle anabolism.

Recommended dietary allowances for important nutrients, such as protein, have traditionally been established in terms of minimum amounts necessary to avoid nutritional deficiencies rather than to optimize specific health outcomes reflective of today’s rapidly aging society, in particular, the mitigation of sarcopenia. Sarcopenia, the age-related loss of muscle and function, is a progressive process that can be characterized by approximately three to eight percent reduction in lean muscle mass per decade after 30 years of age. Maintaining muscle mass, strength and functionality are important to avoid a domino effect of consequences – decreased activity, increased risk of falls, loss of autonomy and increased dependency.
These protein intake gaps present a key opportunity for manufacturers, but with many types of animal, plant and single-cell proteins being marketed for use, choosing the right protein ingredient is imperative for food and beverage formulators to deliver the consistent appearance, taste and functionality that consumers want in addition to nutritional attributes.

**PROTEIN QUALITY MATTERS**

Protein is an essential nutrient the body needs to build and maintain muscle. While all animal and most plant foods naturally contain some protein, not all proteins are created equal. High-quality proteins are those that provide all the essential amino acids (EAAs) the body needs to function properly.

At ACN, experts further introduced how dairy proteins stand out as a high quality, complete source of EAAs. In contrast, many plant based proteins are not considered complete sources, as they do not contain all the essential amino acids.

Whey protein also stands out for branched-chain amino acid (BCAA) content, especially as a leading source of leucine which stimulates the initiation of muscle protein synthesis. While other foods may also contain leucine, the amount of food product consumed and corresponding caloric intake would be higher, making whey protein a convenient and efficient choice for health.
“BCAAs are also likely to gain increasing relevance among mature consumers, including the elderly, for the purpose of sarcopenia prevention.”

WHY CONSUMERS NEED MORE
Beyond essential nutrient delivery, dairy proteins can provide a variety of health and wellness benefits when added to products like ready-to-drink shakes, snack bars and even meals. Research shows higher-protein diets, which can be achieved by adding dairy ingredients like milk and whey protein into popular foods and beverages across cultures, may help people promote muscle repair and recovery after exercise, maintain a healthy weight, curb hunger, build lean muscle (when combined with regular resistance training and exercise), enhance exercise recovery, and maintain muscle mass as they age.

Aging is also associated with reduced food intake and a predisposition to undernutrition. Because dairy proteins may help protect against age-related muscle loss, they provide another opportunity for food and beverage manufacturers to help meet the needs of an aging population.

Also at ACN, Dr. Jung Eun Kim, Assistant Professor, Food Science & Technology Programme, National University of Singapore, further presented findings on the benefits of whey protein for middle aged and older adults from a bodyweight and composition perspective, complementing exercise for healthier aging and lifestyles. She relayed that middle aged, overweight and obese adults who paired exercise training with a higher-protein diet (more than one gram of protein per kilogram per day) supplemented with whey protein, maintained body weight while reducing fat mass and increasing lean body mass. Her findings showed that when mobility-limited older adults participated in resistance training and supplemented their diets with whey protein, they experienced greater increases in lean mass, muscle strength and mid-thigh cross-sectional area.
MUSCLE TONE OVER BULK
Dr. Kim additionally addressed a common misconception, emphasizing that women can consume whey protein without worrying about gaining bulky muscle. She referenced a recent systematic review and meta-analysis suggesting that whey protein supplementation improves body composition by modestly increasing lean mass, and this improvement is more robust during weight loss in women, referring to a body toning effect rather than increased bulkiness.

CONSUMPTION TIMING MATTERS
While protein consumption is important, there is a limit to the amount of protein the body can use at once. Some experts, such as Dr. Douglas Paddon-Jones, Professor in Aging and Health at the University of Texas Medical Branch, recommends consuming 25-30 grams of high-quality protein spaced throughout the day at each meal.

As many people tend to eat the least amount of protein at breakfast, adding dairy proteins to popular breakfast foods is a simple way to help boost protein intake and fill the protein gap at breakfast. Among the commercially available packaged breakfast foods with dairy proteins are oatmeal, pancakes, waffles, smoothies and ready-to-drink coffee beverages, alongside higher-protein yogurts such as Greek-style options.
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dynamic and continuing to diversify, demand for dairy proteins
is not at risk of collapsing. The sports nutrition sector, in
particular, values dairy proteins for their high degree of efficacy
when it comes to post-exercise recovery and muscle building.
For committed athletes, it’s the results that count, and dairy
delivers.”

VERSATILE NUTRITION
Dairy proteins (including whey and milk proteins) are
versatile ingredients that can boost the quality of protein
content of foods and beverages with ease, including
meals, beverages, gels, snacks and desserts. Their neutral
flavor complements the items to which they are added,
whether Western-style foods like yogurt and smoothies or
even popular Asian breakfast foods, such as congee.

In addition to flavor, whey and milk proteins are naturally
found in cow’s milk and are uniquely positioned to add
nutrition to foods that aren’t naturally high in protein
without compromising enjoyment.

OPPORTUNITY FOR PRODUCT INNOVATION
As consumer health consciousness continues to climb
across the world, the US dairy industry continues its long-
term commitment to not only share the science-backed
nutritional advantages of US Dairy but to also expand
the enjoyment of nutritious, delicious and sustainably
produced dairy proteins and ingredients.

To provide consumers with more options, manufacturers
are developing innovative products that incorporate dairy
proteins into various snacks, nutrition bars, baking mixes,
beverages, everyday meals and more.

Vikki Nicholson-West is Senior Vice President of Global
Ingredient Marketing for the US Dairy Export Council.
What’s Next?

- The branched chain amino acids (BCAAs), and in particular leucine, have demonstrated to be particularly efficient in maximizing muscle synthesis. In the sports nutrition sector and for its dedicated customers, this counts as common knowledge. BCAA awareness has the potential to seep into the mainstream consumer base of high protein products, resulting in front-of-pack labels stating the BCAA content.

- BCAAs are also likely to gain increasing relevance among mature consumers, including the elderly, for the purpose of sarcopenia prevention.

- Although the market for plant based proteins is currently highly dynamic and continuing to diversify, demand for dairy proteins is not at risk of collapsing. The sports nutrition sector, in particular, values dairy proteins for their high degree of efficacy when it comes to post-exercise recovery and muscle building. For committed athletes, it's the results that count, and dairy delivers.
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