

Title: **The changing roles and understanding about dietary protein for life-long health**

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**Abstract:**

Protein is probably the single dietary component that evokes the widest array of complex scientific, economic, environmental and political reactions. Protein is viewed as the most expensive component of the diet and the conventional wisdom is to use the least amount.

Current dietary protein guidelines relate to efficiency of amino acid usage. Measurements reflect traditional animal sciences concepts of maximum growth for the least cost and guidelines for understanding of protein quantity and quality and are based on short-term cost/benefit measurements of nitrogen retention or amino acid oxidation.

However, changes in modern society have extended lifespan and altered daily physical activity. Diets have changed with addition of processed grains providing increased amounts of high glycemic carbohydrates and hydrogenated omega-6 vegetable oils. The net outcomes are world-wide epidemics of obesity, metabolic syndrome and diabetes.

This presentation will address new knowledge about the importance of protein distribution throughout the day, the importance of protein quantity and quality at breakfast, and the importance of leucine-rich animal proteins to maintain skeletal muscle mass and body composition. Diets that focus on leucine and providing > 1.2 g of total protein/kg body weight, or more importantly, a minimum of 30 g of protein at each meal, have been shown to be effective for protection of muscle health and long-term weight management.

This new understanding about protein and essential amino acids leads to a new framework for developing diet concepts for long-term health.