

Background

Food processing and ultra-processed foods are receiving growing attention from consumers and policymakers. This is a timely topic as most Americans have poor quality diets and rates of chronic disease continue to rise. However, decisions and discussions about the impact of food processing on diet quality and overall health should be guided by strong scientific evidence.

What is Strong Scientific Evidence?

High-quality scientific evidence refers to relevant, rigorous research with sound research design and strong methods that minimize bias. Studies should be replicated to strengthen the validity of findings, and not all research is equal in terms of quality or feasibility for human nutrition. For example:

Systematic Reviews and meta-analyses

Synthesize and analyze the findings of multiple studies to provide a more precise estimate of the overall effect and a comprehensive overview of the evidence.

Randomized Controlled Trials (RCTs)

Randomly assign participants to receive different interventions (like dietary changes or supplements) to assess their impact on specific health outcomes. RCTs can establish causality, but they may not be the most appropriate or feasible approach for studying the long-term effects of specific foods or nutrients.

Observational Studies

Collect information (like people's dietary habits and health outcomes) without intervention. These studies can identify associations but cannot determine causality. Prospective cohort studies follow a population over time and are considered the strongest observational study design for minimizing bias and inferring causality.

Key Point: As each type of study presents strengths and challenges in determining the health effects of foods that people consume, it is important to critically evaluate the quality of evidence to ensure credible scientific research and data drives decision-making.

Gaps in Research: Ultra-Processed Foods





Foods contain complex structures of nutrients and other bioactive compounds that can be modified or impacted with differing levels of processing such as cooking, fermenting, preserving, or refining. Ultra-processed foods (UPFs) are widely discussed but lack a standard definition in research as well as strong scientific evidence on the relationship between UPFs and health outcomes.

Multiple organizations and subject matter experts have noted the need for further research on UPFs as well as a consensus food processing classification system. At the same time, discussions often intertwine processing methods, added ingredients and additives, thus causing further confusion when defining UPFs for the public.

Nutrient-Dense Dairy Foods, Processing and Health Outcomes

Not all processed foods are created equal, and some are shown to be beneficial to health. Milk and dairy foods can undergo a range of processing techniques, from pasteurization, which is critical to ensure the safety and quality of milk, to fermentation and adding components that result in many nutritious products. The presence of isolated nutrients such as added sugar, sodium or saturated fat does not make dairy foods less nutrient-dense; rather, processing methods create a wide variety of products available to meet people’s individual needs for taste, cost, accessibility and cultural traditions.

Dairy milk and the foods made from it, like cheese and yogurt, naturally provide a unique matrix of nutrients and bioactive components that contribute to health across the processing spectrum. Research has demonstrated that different dairy foods may contribute to health outcomes due to their unique structures and nutrient matrices:

<div>Cheese</div> <div></div>	A daily serving of cheese, regardless of fat level, was linked to reduced risk of mortality, heart disease and other health outcomes. ¹	<div>Yogurt</div> <div></div>	Eating yogurt has been linked with a range of health benefits, including a reduced risk for type 2 diabetes and less weight gain over time. ²
<div>Fermented Dairy</div> <div></div>	Fermented dairy food consumption was consistently associated with improved gastrointestinal health; reduced risk of breast cancer, colorectal cancer and type 2 diabetes; and improved weight maintenance, cardiovascular health and bone health. ²	<div>Flavored Milk</div> <div></div>	Research has found no association between flavored milk consumption and growth, body composition or risk of obesity in children and adolescents. Children who drank flavored milk consumed one extra serving of their recommended daily dairy servings. ^{3,4}

Assessing Foods' Nutrient Contributions and Diet Quality

Efforts to create policies and regulations based on subjective systems could result in consumer confusion and a negative perception of nutrient-dense foods. For instance, Nova, the most well-known food classification system, categorizes the healthfulness of foods based on processing and food additives and does not consider the nutritional quality of the foods.

Diet quality refers to the quantity and diversity of nutrients in a diet. A variety of tools can be used to assess diet quality. These tools help researchers and policymakers understand eating patterns, identify nutrient deficiencies and make policy decisions that can contribute to improving people’s eating habits and overall health.

Diet Quality Assessment Tools

Healthy Eating Index: Measures how well a set of foods aligns with the Dietary Guidelines for Americans.	Tufts Food Compass: Assesses and scores the healthfulness of a variety of foods and beverages.	Tufts FIM Guide: Offers an overview of how to address food and nutrition insecurity and improve diet quality through Food is Medicine interventions.
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Other factors that impact food choices include affordability, perishability and accessibility. **In 2023, 13.5% of U.S. households experienced food insecurity and lacked access to adequate nutritious food due to a lack of resources.** These factors should also be considered when selecting a classification system and defining UPFs to ensure policies enacted do not exacerbate hunger and malnutrition by further restricting access to affordable food.

References
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