

Global. Collaborative. Science-Driven.

Dairy Research Consortium (DRC) members network with industry peers and the scientific community across the globe, sharing research ideas and collaborating to fund pre-competitive projects of importance to the global dairy community, thereby leveraging spending on shared goals and avoiding duplicate efforts. The concerted efforts of DRC members provides a forum to efficiently and effectively respond to research needs and enable intellectual exchange that supports individual DRC members in the development of their respective research plans.





Milk is a naturally nutritious food which can be transformed into many different products and ingredients. Consumption of milk and dairy products, as part of a sustainable dietary pattern, is associated with improved health throughout life.

Dairy Research Consortium’s Mission: To unite the global dairy research effort on human nutrition and health by facilitating collaboration of pre-competitive research that promotes a widespread enhancement of knowledge in the field of dairy nutrition, thereby enabling dairy to remain a critical contributor to future sustainable food systems.

Dairy Research Consortium’s Vision: The valuable contribution of dairy products to healthy, sustainable food systems is recognized by all.

DRC Strategy Focus Areas:

- 1. Sustainable diets and sustainable food systems**
- 2. The dairy matrix**
- 3. Dairy proteins**

DRC’s research strategy focuses on these areas in order to fulfill its vision and mission. Select projects contribute to improved understanding by generating data via systematic reviews, observational trials, clinical studies, or any research design deemed appropriate to answer a particular research question.

Moreover, DRC members actively update research status documents and monitor nutrition and health issues to identify new challenges and opportunities to be addressed by the global dairy sector. DRC determines the best way to inform the broader dairy community of these developments through reviews, position papers, workshops, and knowledge databases. It is the ambition of DRC to support research that generates data/information to inform consumers, customers, health professionals, policy makers, NGOs, and the scientific community of the important role of dairy foods in health and wellbeing.

Sustainable Diets and Sustainable Food Systems



It is acknowledged that dairy is an integral part of sustainable diets and sustainable food systems.

Dairy plays an important positive role in sustainable diets, which encompass the nutritional value of foods, as well as the environmental, socio-cultural, and economic aspects of food production and consumption. However, animal-sourced foods, including dairy, are often recommended for reduced consumption in sustainable food systems due to perceived negative health implications, environmental impacts, and issues of animal health and welfare, with little consideration paid to the metrics used to determine the impacts of a given food.

When seeking to identify sustainable eating patterns, it is necessary to consider all four aspects of sustainable food systems: Nutrition, Environment, Social and Economic, in the context of equity, where tradeoffs between domains are realistically assessed.

To advance our understanding of the potential role of dairy in sustainable diets and sustainable food systems, DRC has set the following goal and objectives.

Goal

Provide scientific evidence to further establish the role of dairy foods as a positive part of sustainable diets and sustainable food systems.

Objectives

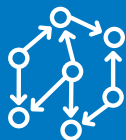
- 1.1. To study, assess and develop science-based models/metrics that account for the interaction and integration of multiple domains of sustainability.
- 1.2 To provide evidence to support dairy's place in sustainable dietary patterns with emphasis on nutrition and health impacts, while being mindful of all four domains.

Definitions and Effects

Sustainable Diet | Diets with low environmental impacts, which contribute to food and nutrition security and to a healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems; culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources (FAO, 2012. Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action. <http://www.fao.org/docrep/016/13004e/13004e.pdf>).

Sustainable Food Systems | A sustainable food system (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised (FAO, 2018. Sustainable Food Systems, Concepts and Framework. www.fao.org/3/ca2079en.pdf).

Dairy Matrix



The potential of the dairy matrix on health and nutrition is demonstrated by providing validated data emphasizing that dairy is more than just the sum of its individual components.

Traditionally, the nutritional evaluation of foods and their impact on human health have been based on the presence or absence of individual nutrients and/or bioactives. However, a growing body of evidence indicates that this reductionist approach falls short when it comes to assessing the holistic impact of foods. For instance, the impact of milk and dairy consumption on health outcomes is not fully explained by only assessing individual nutrients like calcium or protein, and/or the presence of potential bioactive constituents. Nutrient-nutrient interactions and factors related to the chemical composition of foods also needs to be considered. Understanding the food matrix when assessing a food's impact on health and predicting risk of disease is essential.

Dairy foods, depending on how they are produced and manufactured, vary considerably in their physical state and structure. In addition, quantities and profiles of essential nutrients, bioactives and other constituents all serve to create diverse and complex food matrices. As such, the complexity and diversity of dairy matrices are associated with heterogeneous impacts on health, depending on the food. Consequently, a much more nuanced understanding of the role of dairy on health outcomes is needed to develop meaningful dietary recommendations going forward.

The following goal and objectives are proposed to advance understanding of the potential role of the dairy matrix in explaining health benefits or disease mitigation in humans:

Goal

To improve the scientific understanding of the dairy matrix effects on human health and prevention of disease.

Objectives

- 2.1 To assess how dairy foods and different dairy matrices may impact health outcomes and disease biomarkers as single foods, as part of whole meals, and/or as components of different dietary patterns in various population subgroups.
- 2.2 To understand and identify the differential health effects and nutritional attributes – including nutrient release, bioavailability and interaction with gut microbiome – of dairy products and different dairy matrices.

Definitions and Effects

The Food Matrix | The food matrix refers to the physical structure of whole foods, together with their nutritional components and bioactive factors that work synergistically to impact health and disease.

The Dairy Matrix | The dairy matrix describes the unique combination of nutrients and other components in dairy, as well as the diverse physical structure of products such as milk, cheese, and yogurt, and how these factors interact to produce the overall effect of dairy foods on health.

The Dairy Matrix Effect | The dairy matrix effect includes the biological outcomes imparted by the dairy matrix, such as its impact on the bioavailability of nutrients and the synergistic or antagonistic health effects of dairy foods, as well as the impact of the dairy matrix on whole meals or whole diets.

Dairy Proteins



Dairy is recognized as one of the most complete, affordable and accessible sources of high-quality protein to meet nutritional requirements in health and disease prevention.

Dairy is one of the most complete sources of protein in terms of quality and bioavailability. Dairy proteins are key to growth, development and maintenance of musculoskeletal health. Globally, the consumption of adequate amounts of high-quality protein sources like dairy is a concern, and not everyone is able to consume sufficient amounts of high-quality protein. The reasons for this vary and can be related to a lack of information, understanding, availability, affordability and accessibility of high-quality protein sources.

The demand for nutrient-dense foods and high-quality protein sources remains strong globally. Dairy is pivotal in complementing low-quality protein diets that are primarily based on local (plant) crops. In this way, dairy helps to ensure optimal protein and nutrient availability. Sufficient high-quality protein is also vital to maintaining health in vulnerable groups with increased protein needs, such as the elderly, children, physically active people, women of child-bearing age, and pregnant women.

A better understanding of the importance of protein quantity and quality to optimally support health in different demographic groups is essential to further identifying the role of dairy in the transition to a more sustainable food system.

To advance our understanding of the value of protein from dairy, the following goal and objectives are proposed:

Goal

Ensure that dairy is recognized as a naturally occurring, superior source of high-quality protein that efficiently enhances the overall quality of healthy and sustainable dietary patterns.

Objectives

- 3.1 Demonstrate the bioavailability and/or potential health benefits of protein in a dairy matrix compared to other food matrices.
- 3.2 Gain acknowledgment of Digestible Indispensable Amino Acid Score (DIAAS) as the global method of choice when assessing protein quality.
- 3.3 Support research that addresses the protein requirements in different demographics to determine optimal protein intakes.
- 3.4 Demonstrate the complementary value of dairy as a protein source to increase the quality of a plant-based dietary pattern.

Definitions and Effects

Protein Quality | Protein quality is determined by a combination of the quantity and digestibility of essential amino acids in a food, which provides dietary protein in correct ratios to meet the physiological needs of the body.

The Protein Transition | The protein transition is defined as rebalancing the consumption between animal and alternative protein sources (plants, aquaculture, insects, or cell-based proteins) with the aim of generating a more sustainable food system.

DRC Guiding Principles for Research Funding



Guiding Principles for Research Funding are designed to protect the integrity and credibility of the scientific research conducted and funded under the auspices of the DRC.

Scope:

DRC funds research in order to respond to research gaps related to the role of dairy products in nutrition, health and sustainability. All research funded by the DRC is subject to the principles in order to ensure the quality and the independence of the research. DRC members must apply the principles when DRC is involved in funding collaborative projects.

General Principles:

- The research must be designed objectively according to accepted principles of scientific inquiry. The research design should be based on clearly stated a priori hypotheses and must answer the appropriate questions rather than favor a particular outcome.
- Prior to commencement of the research, the research team should enter into a written agreement that indicates the researchers will use their best efforts to obtain publication of the research findings.
- The principal investigator maintains control of all aspects of the research and has the final decision on the design and conduct of the research; the collection, management, analyses and interpretation of the data; and the preparation and approval of the peer-reviewed manuscript.
- DRC will be invited to submit comments on a research article that has been funded by DRC, subject to the caveat that the principal investigator has the final decision on the content of the article.
- The principal investigator must ensure that publications do not favor certain outcomes or that unfavorable findings are withheld from the scientific community.
- Control of the data rests with the principal investigator but all data and statistical analysis are available to DRC members and appropriate auditors/reviewers.
- Responsibility for the protection and security of the raw research data rests with the principal investigator.



Transparency:

- DRC does not offer remuneration geared to the outcome of a research project.
- Full disclosure of all financial interests in a research project is required in all publications and conference presentations by researchers as well as by the funding organizations.
- The principal investigator is not allowed to participate in undisclosed paid authorship arrangements in DRC-funded publications or presentations.
- When academic researchers work for contract research organizations (CRO) or act as contract researchers, they must make clear statements about their affiliation and require that such researchers publish only under the auspices of the CRO.
- Clinical trials must be registered in a recognized Clinical Trial Registry.
- The ambition is to achieve 100% publication submission rate among DRC funded studies within six months of filing a final report.
- These principles will be reviewed every five years or as needed.

Dairy Research Consortium

In 2011, six dairy organizations from across the globe formed the Dairy Research Consortium, a partnership to accelerate pre-competitive research on the role of dairy products in nutrition and health. The founding partners, all of whom are significant funders of dairy research, include:



dutch dairy association

The Global Dairy Platform serves as the DRC secretariat.



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