

Feeding into cardiometabolic health



Although Western societies are mesmerized by the power of new anti-obesity drugs, we must not forget how diet can affect metabolic outcomes. In this Focus issue, and accompanying web collection, we showcase a series of Reviews, Comments and original research articles that present up-to-date evidence on how dietary interventions can affect cardiometabolic health.

The study and treatment of obesity have been revolutionized with the development of new incretin-like drugs such as semaglutide and liraglutide, given the impressive cardiometabolic benefits associated with their use. However, these drugs still carry many unknowns, such as whether they can sustain weight loss in the long term, and their safety data are still limited. Therefore, the effect of healthy lifestyle choices on cardiometabolic health should not be disregarded, which emphasizes the continued relevance of research in nutrition and dietary interventions.

To this end, we have put together a [Collection](#) of research published in *Nature Metabolism* and participating journals (*Nature Communications*, *npj Metabolic Health and Disease* and *Scientific Reports*) that is related to dietary interventions for preserving cardiometabolic health, with content from preclinical models to human studies and randomized clinical trials, as well as Reviews and commentaries that feed into this discussion.

For our clinically minded readers, we include two pieces that discuss preferred approaches to studying personalized nutrition: Cuparencu et al. [describe](#) more precise ways to determine biomarkers of food intake, whereas the [Comment](#) from Guess focuses on how to consider ‘big data’ studies for making more-individualized dietary recommendations. Given the large variability found across studies, we also feature a [Comment](#) by Varady and Chow that highlights best practices for conducting time-restricted-eating trials in humans.

Our collection also includes experimental studies carried out in humans, such as a [Resource](#) that describes plasma proteome adaptations to seven days of water-only fasting; a randomized clinical trial that [demonstrates](#) the weight loss effect of resistant starch intake, through changing the gut microbiome

composition; and a study that [shows](#) how ethnicity affects adipocyte morphology and translates into different metabolic responses to weight gain.

On the more mechanistic end of the spectrum, a [Review](#) by Schneider et al. provides insight into the interplay between diet and the gut microbiome and how it affects cognitive and emotional outcomes, specifically in the context of neuropsychiatric disorders. Feeding into such mechanistic discussions, research in animal models, for example, [unravels](#) how a ketogenic diet can reduce calorie absorption and promote weight loss through changes in bile acid composition, and [reveals](#) how the amino acid leucine, derived from dietary proteins, increases cardiovascular disease risk.

At a time when the focus on weight loss increasingly relies on pharmaceutical solutions, we hope that the broad scope covered within this Collection inspires researchers across fields to further our understanding of the mechanisms that underlie metabolic improvement as a result of dietary interventions.

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