

Growing evidence supports the protein leverage hypothesis as a significant mechanism driving obesity, study finds

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Humans, like many other species, regulate protein intake more strongly than any other dietary component and so if protein is diluted there is a

compensatory increase in food intake. The hypothesis proposes that the dilution of protein in modern-day diets by fat and carbohydrate-rich processed foods is driving increased energy intake as the body seeks to satisfy its natural protein drive—eating unnecessary calories until it does so.

This paper, resulting from the Royal Society Discussion Meeting held in London last October and now published in the *Philosophical Transactions of the Royal Society B: Biological Sciences*, shows that observational, experimental and mechanistic research increasingly supports protein leverage as a significant mechanism driving obesity.

The authors outline published studies that span mechanisms of protein appetite to show how the protein leverage effect interacts with industrially processed food environments and with changes in protein requirements across the life-course to increase the risk of obesity. These include, for example, changing requirements for protein at certain life stages (such as the transition to menopause), as well as a combined impact with changes in activity levels or energy expenditure (e.g., retiring athletes or young people moving towards more sedentary lifestyles).

Because data indicate that children and adolescents also show protein leverage, the authors discuss the potential impact of exposure to a high-protein diet in preconception or [early life](#) (for example through some infant formula feeds) in potentially setting up increased protein requirements and greater susceptibility to lower protein, processed diets in later years.

With WHO declaring obesity as the largest health threat facing humanity, the authors argue that there needs to be a focus on integrative approaches that examine how various contributors interact in obesity, rather than looking at them as competing explanations. This will also

help researchers and policymakers understand how to move the field forward and identify which causes might be most relevant to tackling the rising obesity epidemic.

The authors conclude, "It is only through situating specific nutrients and [biological factors](#) within their broader context that we can hope to identify sustainable intervention points for slowing and reversing the incidence of obesity and associated complications."

This article is part of a discussion meeting issue "Causes of obesity: theories, conjectures and evidence (Part II)."

More information: Protein appetite as an integrator in the obesity system: the protein leverage hypothesis, *Philosophical Transactions of the Royal Society B: Biological Sciences* (2023). [DOI: 10.1098/rstb.2022.0212](#). [royalsocietypublishing.org/doi/10.1098/rstb.2022.0212.R2](#)

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