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Microbiome contribution and metabolite intervention in post-dieting weight regain

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Despite the effectiveness of commonly used dietary weight reduction strategies, the majority of dieters fail to maintain the reduced weight in the long run. Recently, we uncovered a contribution of the intestinal microbiome to post-dieting weight regain by flavonoid-mediated regulation of energy expenditure. We identified a stable microbial composition that persists after obesity and promotes faster weight regain after high-fat diet (HFD) re-exposure. Furthermore, we demonstrated that fecal microbiome transplantation as well as flavonoid supplementation ameliorates the secondary weight gain. Additionally, we developed a machine learning-based algorithm based on 16S rRNA data for the accurate prediction of weight-regain. Our data therefore suggest a possible implication of microbiome and metabolome in the personalized prediction and treatment of post-dieting weight regain.

Biography

Lenka Dohnalová has completed her BSc from University of Chemical Technology Prague, where she is currently pursuing her Master's studies. She has spent 1.5 years as a Visiting Student in the lab of Eran Elinav at the Weizmann Institute of Science, where she investigated the role of the intestinal microbiome in metabolism and immunity.

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