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**Gut microbiota signatures of vulnerability to food addiction**

*Samulėnaitė S, García-Blanco A, Mayneris-Perxachs J, et al. Gut microbiota signatures of vulnerability to food addiction in mice and humans. Gut 2024; 73(11): 1799-1815. doi: 10.1136/gutjnl-2023-331445.*

The gut microbiota comprises of diverse microbes which supports both physiological and neurobiological functions. Gut dysbiosis has been shown to be associated with addictive behaviours. Food addiction though a controversial topic, consists off compulsive eating due to adaptive changes in central reward centre and is linked to obesity. Growing evidence shows gut dysbiosis could lead to food addiction, yet it requires further human-to-animal translation research to design the potential treatments. Samulėnaitė *et al.,* investigated the role of gut microbiome in mechanisms related to food addiction. They adapted the Yale Food Addiction Scale (YFAS) 2.0, to classify food addiction in humans and mice, and assessed their gut microbiota to determine its association with this behavioural disorder. From a larger cohort, 11 non-addicted and 13 addicted mice were selected. The human cohort included 15 middle-aged obese patients and 13 matched non-obese controls. Both animal and human cohorts exhibited similar gut microbiota signatures related to food addiction. Findings indicated potential harmful effects from *Proteobacteria* and protective effects from *Actinobacteria*. Notably, addicted humans showed a reduced abundance of *Blautia wexlerae*, while addicted mice had reduced *Blautia* genus levels. Supplementing with non-digestible carbohydrates (lactulose and rhamnose), which promote *Blautia* growth, significantly increased *Blautia* levels in mice faeces, resulting in notable improvements in food addiction. Additionally, administering *Blautia wexlerae* orally provided similar positive effects, supporting its role as a beneficial microbe in reducing food addiction symptoms. The study highlights the translation link between gut microbiome and food addiction and potential future therapeutic options.