

## 營養神經科學與飲食障礙症

Nutritional neurosciences and eating disorder

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A growing body of studies support the concept of bidirectional signaling within the brain – gut axis in the pathophysiology of obesity and type 2 diabetes. Signaling from the brain through the autonomic nervous system and the hypothalamic – pituitary – adrenal axis influences many gastrointestinal processes, including motility and transit, fluid and mucus secretion, immune activation, intestinal permeability and relative gut microbial abundance, as well gene expression patterns in certain gut microorganisms. Conversely, the gut microbiota can communicate with the brain via hundreds of metabolites, which are sensed by specialized cells in the gut. Perturbations at any level of the brain-gut axis, resulting in compromised inhibitory mechanisms that normally regulate food intake, can bias ingestive behaviors towards predominantly hedonic-driven eating behaviors, cravings and overeating. In addition, specific brain regions and neurocircuits contribute towards the orchestration of metabolic fluxes between peripheral tissues. Nutrition partitioning, the appropriate utilization, storage and conversion of nutrients in peripheral tissues, is a process to adapt to nutritional and metabolic challenges. Maladaptation to nutrient excess in nutrition partitioning have detrimental effects on glucose and lipid homeostasis, and contribute to the development of obesity and type 2 diabetes.