

Fasting Diet Sparks Remarkable Brain Transformations

Description

In a pivotal development aimed at addressing the persistent obesity epidemic, researchers have uncovered that intermittent calorie restriction not only induces substantial changes in both the gut and brain but may also provide novel avenues for sustaining a healthy weight.

A cohort of 25 obese volunteers participated in a structured intermittent energy restriction (IER) program over a span of 62 days, which involved meticulous regulation of caloric intake alongside fasting periods.

The results of the study were noteworthy: participants experienced an average weight loss of 7.6 kilograms (16.8 pounds), equating to 7.8 percent of their initial body weight. Furthermore, the investigation revealed discernible alterations in the activity of brain regions implicated in obesity, along with transformations in gut microbiota composition.

Qiang Zeng, a health researcher from the Second Medical Center and National Clinical Research Center for Geriatric Diseases in China, noted, "This study demonstrates that an IER diet significantly alters the human brain-gut-microbiome axis." He emphasized the dynamic interplay between changes observed in the gut microbiome and the activation patterns of addiction-related brain regions throughout and following weight loss.

Food on a wooden plate

An IER diet requires calculated control of calorie consumption and selective fasting. ([vetrestudio/Canva](#))

While the precise mechanisms underlying these changes remain elusive, the profound connection between gut and brain signifies that targeted interventions in specific brain regions may help regulate appetite and food consumption.

Functional magnetic resonance imaging (fMRI) scans highlighted alterations in brain regions crucial for appetite regulation and addiction, including the inferior frontal orbital gyrus. Notably, specific bacterial strains such as *Coprococcus comes* and *Eubacterium hallii* exhibited negative correlations with activity in this pivotal area.

Xiaoning Wang, a medical scientist, elaborated, "The gut microbiome interacts with the brain in a multifaceted and bidirectional manner." The microbiome synthesizes neurotransmitters and neurotoxins that influence the brain, while the brain's regulatory mechanisms impact eating behaviors, which in turn reshape the gut microbiome's composition.

As over a billion individuals globally are affected by obesity—heightening their susceptibility to various health complications, from cancer to cardiovascular diseases—insights into the intricate dependency between brain and gut may significantly advance obesity prevention and management strategies.

Ultimately, the pivotal inquiry lies in understanding the specific pathways of communication between the gut microbiome and brain in the context of obesity, especially during weight loss.



Vocabulary List:

1. **Cohort** /'kəʊhɔ:rt/ (noun): A group of people with a common characteristic or experience often used in research studies.
2. **Intermittent** /,ɪntər'mɪtnt/ (adjective): Occurring at irregular intervals; not continuous or steady.
3. **Microbiota** /,maɪ.kroʊ.bi'əʊ.tə/ (noun): The community of microorganisms living in a particular habitat such as the human gut.
4. **Transformations** /træns.fɔ:r'meɪ.fənz/ (noun): Significant changes in form structure or appearance.
5. **Regulation** /,rɛg.jʊ'leɪ.fən/ (noun): The act of controlling or governing a process often through laws or guidelines.
6. **Susceptibility** /sə,sɛp.tə'bɪl.ɪ.ti/ (noun): The state of being likely to be influenced or harmed by a particular factor.

Answer

CATEGORY

1. Health - LEVEL5

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