Treating IBS with cognitive-behavioral therapy induces changes in the brain-gut-microbiome axis

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Video Byte

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Abstract

Irritable bowel syndrome (IBS) is a common, painful disorder that – by definition – lacks clear physical pathology, and its symptoms are often influenced by psychological factors like intense worry and hypervigilance. In fact, brain-targeted treatments like cognitive-behavioral therapy (CBT) have been effective at reducing IBS symptoms. However, little is known about the impact of the pre-treatment gut microbiome or if CBT influences the gut-microbiome-brain axis. Thus, researchers recently explored those questions in patients undergoing a CBT regimen designed to treat IBS. Patients who would later have a significant reduction in IBS symptoms had a distinct microbiome from patients who did not respond to treatment, and a random forests classifier based on the most prevalent bacterial groups could accurately predict the response to CBT. While there were small pre-treatment differences between brain network connectivity for ‘responders’ and ‘non-responders’, the significant difference was how much the connectivity changed after treatment. Responders had more changes in functional and structural connectivity than non-responders. While larger studies are needed, these results demonstrate that CBT alters key components of the brain-gut-microbiome axis in IBS patients and highlights the potential for identifying patients who will respond to CBT prior to treatment based on their microbiome.