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Likely Connection Between Obsessive-Compulsive Disorder and the Gut Microbiome

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ATLANTA, Georgia – A rapidly emerging field of research indicates that approximately 100 trillion microbes and more than 3 million microbial genes in the human gut may play a significant role in human health and disease.^{1,2} It is also becoming evident that the intestinal microflora regulates brain function and behavior, and may thus influence the pathophysiology of various neuropsychiatric disorders including anxiety, depression, and autism.^{3,4}

Now, preliminary findings of research presented at the 2016 Annual Meeting of the American Psychiatric Association (APA) in Atlanta, Georgia, indicate a likely connection between obsessive-compulsive disorder (OCD) and a disrupted gut microbial milieu.⁵

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Lower abundance and diversity of microbial populations have been identified in individuals with obsessive-compulsive behavior.



This chronic, relatively common, and frequently debilitating psychiatric syndrome is characterized by recurrent intrusive thoughts (obsessions) that trigger anxiety and prompt repetitive mental or behavioral acts (compulsions) performed by the affected individual to control or diminish that anxiety. Despite intense research efforts and recent advances in understanding the condition, the exact etiology of OCD remains largely undefined, therapeutic agents are only modestly beneficial, and the clinical need is significant.⁶

Michael Van Ameringen, MD, a professor within the department of psychiatry and behavioral neurosciences at McMaster University in Hamilton, Ontario, Canada, and colleagues performed a microbiome analysis in untreated patients diagnosed with OCD (n=11) and compared the data to typical healthy volunteers (n=12). In addition, the study participants completed the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), the Obsessive-Compulsive Inventory-Revised (OCI-R), the Montgomery Asberg Depression Rating Scale (MADRS), and the Depression, Anxiety, and Stress Scale (DASS-21) diagnostic questionnaires; individuals with OCD scored significantly higher than control participants on all measures of OCD, depression, anxiety, and stress. It is worth noting that in this sample, comorbid generalized anxiety disorder (GAD), major depressive disorder (MDD), social anxiety disorder (SAD), attention-deficit/hyperactivity disorder (ADHD), or tic disorder was established in 40% to 60% of patients diagnosed with OCD.

The researchers extracted DNA from stool samples. They identified bacterial diversity using targeted high-throughput sequencing of the V3 region of the 16S rRNA gene, a well-established technique regarded as the gold standard in distinguishing bacterial subtypes. (The 16S rRNA gene is highly conserved between species of bacteria, and V3 is a hypervariable region that can be used to differentiate microbial communities.⁷)

In general, the samples collected from individuals diagnosed with OCD show lower abundance and lower diversity of microbial populations, as compared to the samples from typical control participants.

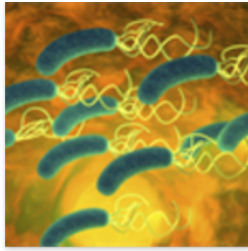
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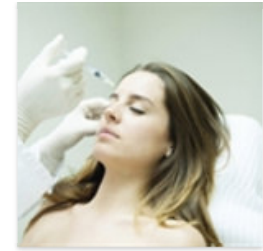
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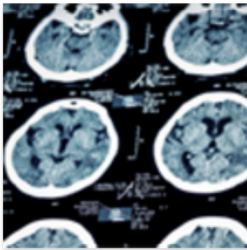


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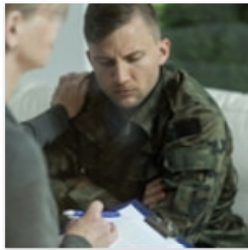


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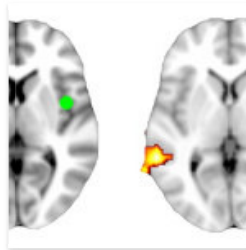
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