

Depression and anxiety for IBD patients may be related to vascular barrier in the choroid plexus closing

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Micrograph showing inflammation of the large bowel in a case of inflammatory bowel disease. Colonic biopsy. Credit: Wikipedia/CC BY-SA 3.0

A team of researchers affiliated with multiple institutions in Italy has found a possible connection between depression and anxiety for IBD patients and the vascular barrier in the brain choroid plexus closing. In their paper published in the journal *Science*, the group describes their study of the gut-brain axis response to inflammation and its link to psychiatric illnesses.

Prior research has shown that many people with [inflammatory bowel disease](#) (IBD) also experience anxiety and depression. While some have suggested such disorders are a natural reaction to people experiencing an unpleasant ailment, others have suggested there may be a more physical reason. In this new effort, the researchers looked at what happens to other parts of the body when inflammation in the gut due to IBD arises. To learn more about it, the researchers studied IBD mouse models.

In studying the lab mice, the researchers found that when inflammation strikes the gut due to IBD, the body reacts in ways to prevent the inflammation from spreading to other parts of the body. One such response, they found, was closure of the vascular [barrier](#) in the choroid plexus of the [brain](#)—a group of cells that produce cerebrospinal fluid for the central nervous system and also serve as a barrier preventing material from moving between blood vessels and the cerebrospinal fluid.

This, they found, led to communication disruptions between several organs in the body and because of that possibly hindrance of some brain functions. Testing of mice with a closed vascular barrier in the choroid

plexus showed a loss of short-term memory and behavior associated with anxiety. The researchers suggest their study shows that at least some depression and [anxiety](#) in IBD patients may be due to closure of the choroid plexus. They also suggest their results could lead to other research efforts involved in studying problems with the central nervous system. They conclude by noting that if further study shows that closure of the [choroid plexus](#) leads to psychiatric ailments, it might be possible to develop therapeutic options to prevent such closure while still preventing [inflammation](#) from the gut spreading to the brain.

More information: Sara Carloni et al, Identification of a choroid plexus vascular barrier closing during intestinal inflammation, *Science* (2021). [DOI: 10.1126/science.abc6108](https://doi.org/10.1126/science.abc6108)

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