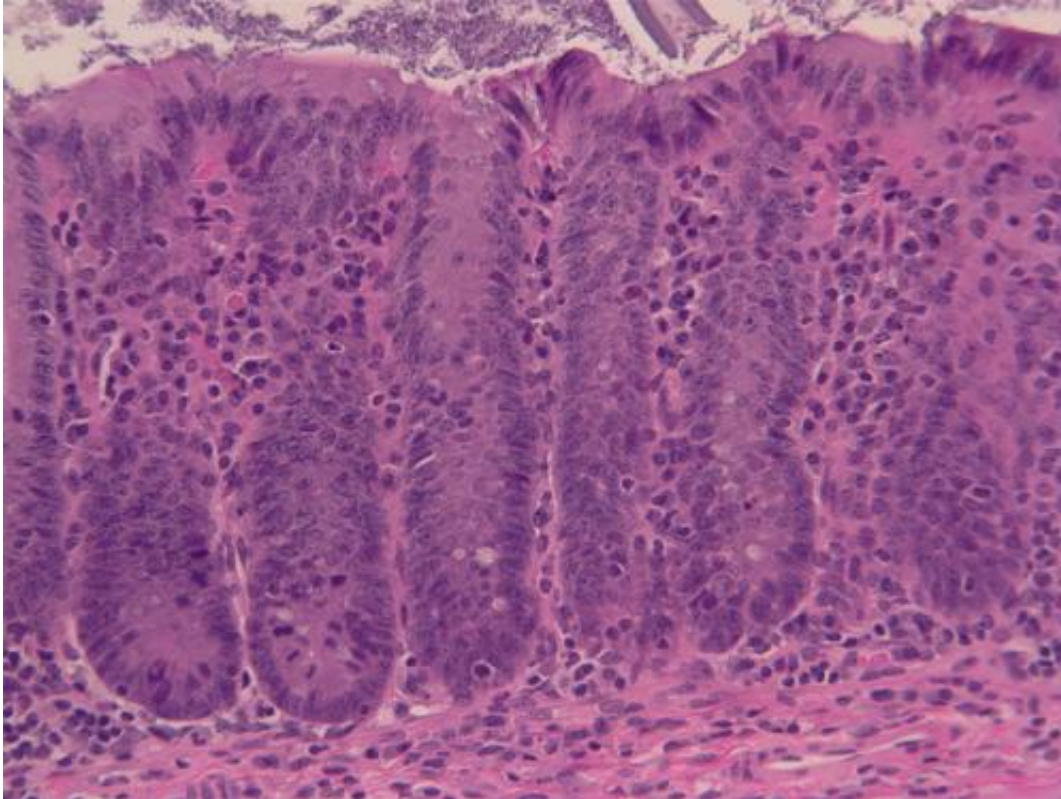


Females fend off gut diseases

June 11 2013



A microscopic image shows an inflamed intestine in a male mouse. MSU professor Laura McCabe and colleagues found that something about female mice seems to protect them from inflammatory bowel diseases. Credit: Michigan State University

At least among mice, females have innate protection from certain digestive conditions, according to a new Michigan State University study.

While it's tricky to draw conclusions for human health, the findings could eventually help scientists better understand and treat the 1.4 million Americans suffering from inflammatory bowel diseases, or IBD.

Crohn's disease and colitis, the two most common forms of IBD, involve abnormal functioning of the immune system that can damage the digestive tract, causing inflammation, diarrhea, constipation, abdominal pain and other symptoms.

For the study, researchers induced colitis by giving mice with [weakened immune systems](#) a dose of bacteria that can cause digestive trouble. After six weeks, the males had significantly more severe symptoms than the females and had more of the bacteria left in their guts. The males also showed more deterioration of their bones, which studies have linked to gut inflammation.

"It seems females are protected from bad bacteria-induced [bone loss](#), and it's because they have reduced gut inflammation," said co-author Laura McCabe, a professor in the MSU Departments of Physiology and Radiology. "When we looked at markers of inflammation in the male mice, they were really high, whereas the females didn't have that kind of bad response. They can somehow handle these nasty bacteria."

McCabe said while the new study is a step toward better understanding of IBD, it's not clear if women have the same kind of resistance to the condition as the [female mice](#). Indeed, much is still unknown about IBD, including what causes it. The imbalance of good and bad [gut bacteria](#) that the experiment simulated is one possible cause.

"We want to know what it is about female mice allowing them to be protected," she said. "If we can understand that, we might have a potential [therapeutic target](#) for people with IBD."

The study was funded by the Crohn's and Colitis Foundation of America and appears in the journal *Inflammatory Bowel Diseases*.

Provided by Michigan State University

Citation: Females fend off gut diseases (2013, June 11) retrieved 23 December 2022 from <https://medicalxpress.com/news/2013-06-females-fend-gut-diseases.html>

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