

# Rat study shows gut microbes play a role in colon cancer susceptibility

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The microscopic organisms that live in our gut do more than help us digest food. A new study in rats bolsters a growing body of evidence that the complex mix of microorganisms found in the gut, known as gut microbiota, could influence a person's likelihood of developing colon cancer.

Previous studies in humans have shown that cancer is associated with changes in gut microbiota. In the new study, researchers from the University of Missouri in Columbia used rats to further explore the possible relationship between cancer and bacteria in the gut. They implanted embryos from a strain of rats genetically engineered to develop [colon cancer](#) into the wombs of three other strains of rats, each with distinct gut microbiota: F344/NHsd (F344), LEW/SsNHsd (LEW), and CrI:SD (SD).

By 1.5 months, the microbiota of the pups, which typically develop tumors by 2 to 4 months of age, resembled that of their surrogate mothers. The researchers looked for tumors when the pups had reached 6 months of age and found that rats with the LEW microbiota developed significantly fewer tumors than the other strains. In fact, two of the rats with the LEW strain gut microbiota did not develop [colon tumors](#) at all. The researchers also found more tumors in the [rats](#) with the F344 gut microbiota that had higher levels of *Peptococcaceae* and *Akkermansia muciniphila* bacteria in their guts. Overall, findings from this study provide new insight into the role of [gut microbiota](#) as a modulator and a predictor of cancer in this rat model.

Susheel Busi will present this research from 2:30-2:45 p.m. during the Cancer and Immunology Symposium in Crystal Ballroom G1 as part of The Allied Genetics Conference, Orlando World Center Marriott, Orlando, Florida.

Provided by Genetics Society of America

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