

Small doses of resistant starch encourage the growth of beneficial gut fauna

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Consuming even modest amounts of resistant starch can lend a significant punch to the gut microbes that benefit human health, according to a new study by University of Nebraska-Lincoln food scientists.

As a type of carbohydrate that resists digestion in the [small intestine](#), [resistant starch](#) passes to the large intestine and gets metabolized by a wide array of microbes residing there.

The study's authors sought to increase levels of this starch in whole-wheat flour by subjecting it to seven cycles of cooking and freezing, which multiplied its proportion of resistant starch from 1 to 8 percent.

"We started this project partly because the dietary fibers in wheat are not fermented very well," said co-author Devin Rose, assistant professor of food science and technology development. "By kicking in some more resistant starch, we thought perhaps we would see some more of those benefits that we would hope for from dietary fiber."

Accordingly, the researchers also measured the presence of short-chain fatty acids produced when microbes—particularly bacteria—metabolize resistant starch in the colon. They found that the flour improved yields of the fatty acids acetate and propionate by 37 and 42 percent, respectively. Prior research suggests that these [fatty acids](#) stimulate the release of appetite-suppressing hormones and generally ease the digestive process.

The presence of resistant starch in the gut also encourages the growth of bacteria best suited for metabolizing it, Rose said.

Rose called the study's increase of resistant starch "substantial," but noted that 8 percent still represents a relatively low proportion. In this respect, the study actually reflects the natural occurrence of resistant starch in foods common to the typical diet, he said.

"There has been a lot of research on resistant starch showing that it's very beneficial, but natural sources of it are pretty low," said Rose. "When you think about healthy foods—like a whole-grain bread, pasta, even oatmeal—all of these are very low in resistant starch."

Yet Rose said the study's results suggest that even these small intakes of resistant starch warrant a place in the diets of those committed to eating well.

"The take-home message this study sends is that every little bit helps," he said. "To see a benefit, you don't have to go from A to Z; you might just go from A to C."

Provided by University of Nebraska-Lincoln

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