

## Common additives in processed foods could cause inflammatory diseases

The ingredients that lend a smooth, stable consistency to ice cream, chocolate bars, and other packaged snacks may promote certain chronic inflammatory diseases. That's the claim of a new study, which finds increases in metabolic disease and intestinal inflammation in mice fed two common emulsifiers used in processed food. The authors are a long way from confirming similar effects in humans, but they suggest that these ingredients cause damage by disrupting the barrier between the immune system and the microbiome—the collection of microbes that inhabit our bodies.

Gut microbes [help us fight off infections](#) and [resist allergies](#), but there's one thing we don't want them to do: touch our intestinal lining.

In the work, published online in *Nature*, the researchers fed two common emulsifiers, CMC and polysorbate 80, to both a genetically susceptible mouse strain and wild-type mice—those without genetic mutations that would put them at increased risk of IBD or metabolic syndrome. Among the susceptible mice, eating or drinking emulsifiers for 12 weeks increased the risk of developing symptoms of colitis—a mouse model of the intestinal inflammation seen in humans with IBD—from 40 percent to 80 percent. The wild-type mice didn't develop colitis, but [showed low-grade inflammation in their intestines and several features of metabolic syndrome](#): slight weight gain, increased body fat and food intake, and higher blood sugar levels, which indicate poor glucose regulation associated with diabetes.

Relatively few studies to date have observed the effects of food additives on the microbiome in this level of detail.

Chassaing is careful not to cast these emulsifiers as the ultimate villain. His group is now preparing a more ambitious study that compares the microbiomes of people who completely avoid emulsifiers for several weeks with those on a standard Western diet.

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