

# Delaying fat digestion to curb appetite

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Institute of Food Research scientists have discovered an unexpected synergy that helps break down fat. The discovery provides a focus to find ways to slow down fat digestion, and ultimately to create food structures that induce satiety.

"Much of the fat in [processed foods](#) is eaten in the form of emulsions such as soups, yoghurt, ice cream and mayonnaise," said Dr Peter Wilde from the Institute of Food Research, an institute of BBSRC. "We are unpicking the mechanisms of digestion used to break them down so we can design fats in a rational way that are digested more slowly."

If the digestion of fat is delayed and [fatty acids](#) are able to reach the ileum, the final section of the small intestine, their presence stimulates satiety-inducing hormones.

IFR scientists have been experimenting with using protein layers to stabilise emulsions and delay fat digestion.

In this study, they found that a normally-stable whey protein is partially broken down when it is attached to the surface of an emulsion. When a surfactant is introduced, this acts synergistically with the fat, breaking down the protein layer even more effectively. With the barrier weakened, access is improved for the enzymes and bile salts that break down [fat](#).

"We are now experimenting with heat and [enzyme](#) treatments to reduce the [synergistic effect](#) and make the protein barrier stronger," said Dr

Wilde.

The scientists at the Institute of Food Research are the only scientists seeking the precise mechanisms by which emulsions behave under different conditions and how they are digested so they can be used to control satiety.

Provided by Norwich BioScience Institutes

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