

Keeping the crunch in low-fat chips

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Dr Heather Smyth and Professor Jason Stokes keeping the crunch in low fat potato chips. Credit: University of Queensland

University of Queensland chemical engineers have developed a new method to analyze the physical characteristics of potato chips in a bid to develop a tastier low-fat snack.

Professor Jason Stokes said while a low-fat potato [chip](#) might reduce guilt, many people don't find the texture as appealing.

"A key challenge in the [food industry](#) is reducing the amount of sodium, added sugar and saturated fat without sacrificing the taste, flavor, texture and mouthfeel in [food](#) and drink," Professor Stokes said.

"Even subtle changes in the composition of processed food and drink can alter the consumer's acceptability of a product for reasons that are not well understood, which compromises healthy choices."

Professor Stokes worked with flavor scientists including senior research fellow Dr. Heather Smyth, U.S. researcher Dr. Stefan Baier—now at Motif Ingredients—and former UQ postdoctoral researcher Dr. Michael Boehm who now works at PepsiCo, Inc.

The team has been developing a more objective method of analyzing the [potato chips](#) at four stages of simulated eating.

"We wanted to simulate the entire eating process, from first bite, to the break down and softening of chip particles and finally swallowing the clumped mass of chip particles," he said.

The researchers used the results to design a lower-fat chip coated in a thin layer of seasoning oil, which contained a small amount of a food emulsifier.

In tests with sensory panelists, the seasoning oil made the low-fat chip more closely resemble the greasiness of a full-fat one, but it only added 0.5 percent more oil to the low-fat product.

Professor Stokes said he had worked with all manner of food and drink.

"Whether they be considered solids, powders, soft solids, semi-fluids or liquids, primarily the aim is to improve the efficiency of ingredients in oral processing and improve health benefits.

"We also aim to consider the challenges in emerging areas that include the rise of consumer interest in plant-based foods and proteins."

Provided by University of Queensland

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