

Experts agree on new global definition of 'fermented foods'

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Only recently, with the availability of new scientific techniques for analyzing the nutritional properties and microbiological composition of fermented foods, have scientists begun to understand exactly how the unique flavors and textures are created and how these foods benefit human health. Interdisciplinary scientists have come together to create the first international consensus definition of fermented foods, published in *Nature Reviews Gastroenterology & Hepatology*. Credit: Dean Kaylan

Humans have consumed different types of fermented foods—from kimchi to yogurt—for thousands of years. Yet only recently, with the availability of new scientific techniques for analyzing their nutritional properties and microbiological composition, have scientists begun to understand exactly how the unique flavors and textures are created and how these foods benefit human health.

Now, 13 interdisciplinary scientists from the fields of microbiology, [food science](#) and technology, [family medicine](#), ecology, immunology, and microbial genetics have come together to create the first international consensus definition of fermented foods. Their paper, published in *Nature Reviews Gastroenterology & Hepatology*, defines fermented foods as: "foods made through desired microbial growth and enzymatic conversions of food components."

The authors take care to note the difference between probiotics and the live microbes associated with fermented foods. The word 'probiotic', they say, only applies in special cases where the fermented food retains live microorganisms at the time of consumption, and only when the microorganisms are defined and shown to provide a health benefit, as demonstrated in a scientific study.

"Many people think fermented foods are good for health—and that may be true, but the scientific studies required to prove it are limited and have mainly focused on certain fermented food types," says first author Maria Marco, Professor in the Department of Food Science and Technology at the University of California, Davis.

Co-author Bob Hutkins, Professor in the Department of Food Science and Technology at University of Nebraska, Lincoln—who has authored a well-known academic textbook on fermented foods—says, "We created this definition to cover the thousands of different types of fermented foods from all over the world, as a starting point for further

investigations into how these foods and their associated microbes affect human health."

The consensus panel discussion was organized in 2019 by the International Scientific Association for Probiotics and Prebiotics (ISAPP), a non-profit organization responsible for the published scientific consensus definitions of both probiotics (in 2014) and prebiotics (in 2017).

Mary Ellen Sanders, Executive Science Officer of ISAPP, says, "To date, different people have had different ideas of what constitutes a fermented [food](#). The new definition provides a clear concept that can be understood by the general public, industry members and regulators."

Currently, evidence for the positive health effects of fermented foods has relied more on epidemiological and population-based studies and less on randomized controlled trials. The authors expect that, in the years ahead, scientists will undertake more hypothesis-driven research on how different fermented foods from around the globe—derived from dairy products, fruit, vegetables, grains, and even meats—affect human physiology and enhance [human health](#).

More information: Maria L. Marco et al, The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on fermented foods, *Nature Reviews Gastroenterology & Hepatology* (2021). [DOI: 10.1038/s41575-020-00390-5](https://doi.org/10.1038/s41575-020-00390-5)

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