



Fermented foods for health?

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Fermented foods have been consumed for centuries across the globe. Recently, they have become trendy. What exactly are fermented foods? Are they good for our health?

What are fermented foods?

Fermented foods have been produced and consumed since the beginning of civilization.¹ Our ancestors fermented milk, meat, and vegetables, to preserve them over long periods of time.²

Thousands of different types of fermented foods are eaten around the world, making up 5-40% of the human diet.³ Many regions have their own specific traditional fermented foods, like yoghurt, cheeses, crème fraiche, fermented sausage, sourdough bread, soy sauce, fish sauce, or beverages like kefir (fermented milk), kombucha (fermented tea), beer, wine, kvass. Examples of others include miso (fermented soybeans) from Japan, kimchi (spicy fermented cabbage) from South Korea, sauerkraut (fermented cabbage) from Germany, or Surströmming (fermented herring) from Sweden.⁴ And that's just the beginning.

With modern methods of food preservation, the need to ferment foods for the sole purpose of preservation is reduced. Also, due to changes in food culture, traditions of fermenting foods declined in many communities.⁵ Lately however, fermented foods have regained popularity, partly due to their exciting tastes and textures, and partly due to their health-promoting potential.

How are fermented foods made?

Fermentation is a natural process where microorganisms, bacteria or fungi, use food as a substrate to grow, turning thereby some of the energy rich nutrients, like carbohydrates, into by-products, like alcohols or organic acids.¹ In some cases, fermentation takes place due to naturally-occurring microorganisms, like with sauerkraut, where we just need to provide them with good growing

conditions. In others, cultures of microorganisms are added to start the fermentation process, like when making yoghurt or bread.

The fermentation process gives food unique flavours and textures. Fermenting milk with lactic acid bacteria produces foods such as yoghurt, which is thick and has a tangy taste. Sauerkraut and kimchi, popular traditional foods on two sides of the globe, are made by fermenting cabbage using bacteria, and adding spices or seasonings. This turns cabbage into a whole new food that can last for months, with a softer texture and an interesting pungent taste. At least six months of microbial work turns soybeans into miso, a thick paste, used to spice up savoury dishes.

What are the health benefits of fermented foods? And how do they work?

Fermented foods could provide health benefits beyond basic nutrition. Scientists are still investigating how exactly they affect our bodies and health. Fermented dairy products may help reduce the risk of cardiovascular disease. Eating yoghurt is also associated with a healthy body weight and protecting against type 2 diabetes.^{6,7,8}

Fermenting can improve the quality and digestibility of protein, increase the content of B vitamins, and vitamin C, and increase the bioavailability of minerals like iron and zinc.^{3,9,10,11}

Some people may also find fermented foods easier to digest. For example, bread that is fermented can be easier to digest for people with irritable bowel syndrome.¹³ Also, those with problems digesting lactose can tolerate yoghurt well, as the bacteria used helps to make the lactose easier to digest.¹⁴

Some fermented foods contain live microorganisms, of which some are 'probiotic' (for example many yoghurts), which may promote gut health.¹² The numbers of live microorganisms in the gut increases when we eat fermented foods, which is likely to be beneficial. This is an emerging area of research, which needs more scientific evidence. Read our Food Today article for more about the role of gut microorganisms in human health.

Are fermented foods safe?

Foods marketed in Europe must legally be safe for consumption.¹⁵ Fermented foods with beneficial microorganisms, for instance *Lactobacillus*, are safe to eat. Interestingly, the fermentation process can actually enhance food safety by reducing the growth of harmful microorganisms. But, as with all foods, illness can result if disease-causing microorganisms contaminate the food, for instance through poor hygiene or incorrect storage.

When fermenting at home, it is important to follow basic food hygiene rules (rinsing produce, hand washing, using clean utensils, containers and surfaces). Tried and tested recipes should always be followed, as the ingredient ratios will have been optimised to get the right acidity levels for maximising safety.¹⁶

So, what is the recommendation? Should we consume fermented foods for health?

Fermented foods have been part of the human diet for centuries and positively impact on health in many ways. However, they are currently not recommended as a specific food category in food guides across the world. There are suggestions that these foods should be included in future revisions of food guides.⁴

If you haven't tried fermented foods before, you could start by putting yoghurt in smoothies, having a miso soup for lunch, or a serving of sauerkraut alongside your dinner, snacking on toasted sourdough bread with cheese, or drinking a refreshing kefir. Eating fermented foods can add diverse and satisfying flavours and textures to our diet.

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laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food