

# Fermented Foods and Gut Health

By Laura LaValle, RD, LD

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When was the last time that you ate balao-balao, magou, nham or kimchi? If you have no idea what I'm talking about, join the club! Many people have never heard about or tried these fermented foods eaten around the world. Other fermented foods, which are more familiar to Westerners are yogurt, sauerkraut, and sourdough bread.

Throughout ancient history, fermented foods have played a role in sustaining thriving civilizations, and many cultures continue to consume these health-promoting traditional foods. While fermentation was used primarily as a way to preserve foods, ancient cultures also seemed to realize that they were very good for health, though they probably didn't know all the reason why. Many people today still do not fully appreciate the health benefits of fermented foods, and so do not include them in their diet.

Fermented foods contain the beneficial flora *Lactobacillus acidophilus*. They can be added to foods as a source of acidophilus and many foods contain the bacteria naturally. (For instance vegetables contain traces of beneficial bacteria from the soil they were grown in.)

The bacteria use the starches and sugars in foods as its food. In the process of metabolizing the sugars, the bacteria produce several byproducts. The main byproduct, lactic acid, actually preserves food because it inhibits other bacteria that cause foods to rot and putrefy.

Recent research validates that fermented foods aid in digestion, support immune function, and increase overall nutritional status by adding B vitamins and anti-inflammatory omega-3 fatty acids.<sup>1</sup> Consuming foods that contain live lacto-bacteria has protective benefits against harmful, pathogenic microorganisms.<sup>2</sup>

Another metabolic byproduct of probiotics is a variety of short chain fatty acids that are actually used as a source of fuel by intestinal cells. The combination of keeping the intestinal cells built up and functioning well, the increased nutrients, and the crowding out of pathogenic bacteria help boost our immune system. In short, fermented foods confer health benefits because they are a good source of beneficial bacteria -- and the list of benefits is very similar to that of probiotics.

Kimchi, a fermented spicy cabbage, is a staple food in Korea. Kimchi is very well-studied for its medicinal, antimicrobial, and anti-aging properties. For example, scientists found that chickens infected with avian flu started to recover after being fed a kimchi extract.<sup>3</sup>

Kimchi is available in many grocery stores today. But in the US, sauerkraut (fermented cabbage), tempeh (fermented whole soy bean), and kefir and yogurt (fermented milk) tend to be the most popular fermented foods.

If you want to fortify your immune defenses by adding fermented foods into your diet there are a couple of things you should be aware of. Cabbage, the starting material for sauerkraut is very high in glutamine, an amino acid that is also very beneficial to the gut. And because it is

somewhat predigested by the fermentation process, it is usually easier to digest than unfermented cabbage.

The sauerkraut you buy in the store may have little to no live active lacto-bacteria cultures because it is pasteurized, which kills bacteria. But you can make your own very easily (see my recipe below) to have sauerkraut that is actually a source of good bacteria.

If you are sensitive to cow's milk, be cautious of foods such as yogurts and kefir, because they do still contain the allergenic milk proteins. There are commercially available kefirs and yogurts made from goat's milk however. And finally, if you have low thyroid, limit the amount of soy food such as tempeh in your diet.

Fermented foods cannot only be a great source of variety in your diet, they can be an important way to build your intestinal health and immune defenses. If you find you can't acquire a fondness for fermented foods, you can always fall back on probiotic supplements that contain *Lactobacillus* and other beneficial bacteria.

## References

1. Gilliland, SE. Health and Nutritional Benefits from Lactic Acid Bacteria. Found online at [www.ncbi.nlm.nih.gov/pubmed/2271223](http://www.ncbi.nlm.nih.gov/pubmed/2271223).
2. Fallon, S. Lacto-Fermentation. From *Nourishing Traditions: The Cookbook that Challenges Politically Correct Nutrition and the Diet Dictocrats*, New Trends Publ., 1999.
3. Chazan, D. BBC News, March 2005, *Korean Dish "May Cure Bird Flu"*.

# Healthy Recipes:

## Homemade Sauerkraut

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One way to get good bacteria into your gut is by eating lacto-fermented foods. This crunchy sauerkraut is easy to make and a great accompaniment to any meat dish. Fermented foods such as sauerkraut are traditionally eaten almost like a condiment, small amounts with most meals.

**Serves:** 4

**Time to Table:** 4 days

### Healing Nutrient Spotlight

Excellent source of vitamin C

Good source of folate

### Ingredients\*

1 lb. shredded cabbage

1/2 tbs. sea salt

1 large glass jar (like Ball glass canning jar with a metal screw on lid)

*\*Select organic ingredients for optimal nutrition.*

### Preparation

Mix cabbage with salt. Pound cabbage with a meat pounder in large shatter-proof bowl until juices run from cabbage; the pounding will probably take about 20 minutes to produce enough juice. Transfer cabbage to the glass jar, pour the juice over the cabbage, and press the cabbage down until juices cover the cabbage by 1/2 inch.

Cover jar with lid and place it on plate on your kitchen counter for four days. The lid may become loose during the fermentation process and juices may run out of the jar onto the plate. However, if you try to leave about an inch of space at the top of jar, it can help prevent this. Check the lid periodically and tighten as needed.

You can place the jar in cool storage for up to six weeks to allow continued fermentation, or serve immediately and store in the refrigerator. Experts say that cabbage needs six months of fermentation for the best flavor, but experiment for yourself and enjoy this great tasting food.

Because this process doesn't use vinegar like commercial products, the flavor is not as pungent. This process can be used with other vegetables like beets and turnips. You can also add a little whey to enhance the fermentation. Whey can be obtained easily -- it is the liquid on top of plain yogurt when you buy it.

### Nutrition

27 calories, 1.4 g protein, 6 g carbohydrates, 3.5 g sugar, 3 g fiber, 145 IU vitamin A, .34 mg

niacin, .16 mg pantothenic acid, .11 mg vitamin B-6, 65 mcg folate, 50 mg vitamin C, 55 mg calcium, .64 mg iron, 17 mg magnesium, .18 mg manganese, 26 mg phosphorus, 280 mg potassium, 1.02 mcg selenium, 870 mg sodium, .20 mg zinc