



FERMENTED FOODS

BENEFICIAL BACTERIA

The human gastrointestinal tract (GIT), including the mouth, esophagus, stomach and intestines, is home to an incredible population of beneficial bacteria responsible for the complex, symbiotic network which maintains regularity and balance in our digestive and immune systems. This microflora is introduced at birth and continues to develop as we age, as long as our diets are balanced to provide proper nourishment. In this way, we might think of ourselves as individual ecosystems relying on a probiotic population to keep us healthy. Aside from promoting balance, these bacteria defend against the illness and infection caused by harmful bacteria which may thrive where beneficial colonies are lacking.

Common beneficial bacteria:

- *Lactobacillus acidophilus* — Works in the small intestine, strongly probiotic
- *Bifidobacterium bifidum* — Works in the large intestine, strongly probiotic
- *Lactobacillus reuteri* — One of the fastest colonizing probiotics available
- *Streptococcus thermophilus* — Beneficial to GIT function, found in cultured foods, especially yogurt
- *Lactobacillus delbrueckii* — Helps with lactose intolerance, beneficial to immune function
- *Lactobacillus bulgaricus* — Subspecies of *L. delbrueckii*, ferments lactose

BRIEF HISTORY

For thousands of years, ethnic cuisines across the world have included fermented foods with every meal as condiments, beverages, breads and protein sources. Beneficial bacteria and yeasts have been an understood necessity in these traditional diets. Prior to refrigeration and pasteurization, fermentation allowed food to be stored and preserved for later use, preventing spoilage by the natural defenses of lactic acid producing bacteria. Fermentation breaks down the fats, proteins and carbohydrates in food before we eat, and while not all fermented foods are “probiotic” with an ability to colonize the intestine, they do provide enzyme-rich, nutrient-rich foods that are easily digested and healthy to eat it. In addition, eating lacto-fermented foods with a meal can boost the nutrient level of all the other foods in that meal.

HOW WE ENDANGERED OUR INNER ECOLOGY

While many cultures continue to practice the ancient culinary art of fermentation, modern food processing has limited the availability of such foods. After the introduction of pasteurization, refrigeration, refining and factory food processing, an ideal of sterilization became the standard of food production. While these techniques contribute to public health in many aspects, they also eliminate important natural enzymes, bacteria and yeasts which provide nourishment to our internal microflora. Many of us have become accustomed to symptoms of indigestion through our exposure to sterilized and highly processed foods. Furthermore, our preconceived notion that all bacteria are inherently bad has led to overuse of antibacterial soap and antibiotic medication for ourselves as well as in the meat and dairy industry. These treatments may have occasional necessities, but as a regular presence in our lives they degrade our beneficial bacteria populations and increase the risk of creating treatment-resistant strains of highly virulent bacteria. It is important to maintain a healthy gut flora with a variety of raw, cultured, fermented and probiotic foods for the symbiosis our health depends upon.

HEALTH BENEFITS

A healthy colony of beneficial microorganisms in the GIT can:

- Maintain a healthy digestive system
- Replenish lost or damaged beneficial bacteria
- Protect the body from pathogenic bacterial infection and illness
- Reduce symptoms of diarrhea and constipation
- Promote balance of alkalinity and acidity in the intestine
- Provide support to the immune system
- Support overall homeostasis

Supplementary Intake

Especially helpful to those using antibiotic medication or combating digestive illness, a variety of probiotic supplements are available, usually consisting of *L. acidophilus* and *B. bifidum* in combination with other strains and species of bacteria. These supplements are commonly recommended by health and medical specialists from both clinical and holistic fields, and may be used in recovery or regulation of microflora colonies. Potency of supplements varies, and different levels may be used depending on the type of treatment desired. Probiotic supplements may be taken to compensate for or boost the efficiency of cultured foods in the diet.

Sources

A Consumer's Guide to Probiotics
by S.K. Dash, Ph. D

The Art of Fermentation and Wild Fermentation
by Sandor Ellix Katz

On Food and Cooking
by Harold McGee

Natural Food Antimicrobial Systems
by A.S. Naidu

Nourishing Traditions by Sally Fallon
Whole Foods Companion
by Dianne Onstad

Healing with Whole Foods
by Paul Pitchford

Full Moon Feast
by Jessica Prentice

**SACRAMENTO NATURAL
FOODS CO-OP**



**OPEN DAILY FOR YOU
2820 R ST • SAC.COOP
WHERE LOCAL MATTERS MOST**



FERMENTED FOODS

Fermented Foods

MISO is made by adding an enzymatic culture to a base of soybeans and, often, a grain (wheat, barley or rice). Salt and water are the only other ingredients in natural miso. Through aging, the enzymes reduce the proteins, starches and fats into amino acids, simple sugars and fatty acids. It also contains lactobacillus bacteria which aid in digestion. Miso is used as a soup base but is also good in sauces, gravies, dips, spreads, dressings and marinades. Always use unpasteurized miso, and don't boil it; high temperatures will kill the beneficial microorganisms. Miso is a superb source of easily-assimilated complete vegetable protein.

TEMPEH is an ancient Indonesian staple made from cooked, split, fermented soybeans bound together with a mold that makes soy easier to digest. It is an excellent source of protein, calcium and iron, and acts as an antibiotic to increase the body's resistance to infections.

PICKLES can be made from a wide range of vegetables (and sometimes fruits, nuts, seeds, animal products and other ingredients) that are lactofermented using salt, temperature and a controlled environment. Most modern pickles, however, are made using vinegars and/or heat processing, which limits or eliminates the beneficial bacteria and enzymes that result from lacto-fermentation. Check the label to ensure pickles are fermented.

KIMCHI is a traditional Korean lacto-fermented condiment made of cabbage and other vegetables and seasoned with salt, garlic, ginger and chili peppers. Most Asian diets include a daily portion of some kind of pickled vegetable. Lacto-fermentation occurs when sugars and starches are converted to lactic acid by the lactobacilli that are prevalent in vegetables and fruits. The proliferation of lactobacilli in fermented vegetables enhances their digestibility and increases vitamin levels.

updated 12/6/16

♻️ PRINTED ON 100% RECYCLED PAPER

UMEBOSHI are salty, sour lacto-fermented pickled fruit (ume) from Japan. Most closely related to an apricot, they are highly alkaline and used to neutralize fatigue, stimulate the digestive system and promote the elimination of toxins. They are valued for their natural antibiotic properties and ability to regulate intestinal health.

SAUERKRAUT is cabbage that has been salted and lacto-fermented over a period of weeks. Latin American cultures make a version of sauerkraut called curtido. The beneficial bacteria abundant in sauerkraut produce numerous helpful enzymes as well as antibiotic and anti-carcinogenic substances. The main by-product, lactic acid, not only keeps vegetables and fruits in a state of preservation but also promotes the growth of healthy flora throughout the intestine.

KOMBUCHA is a culture of symbiotic beneficial bacteria and yeasts which originated in China nearly 2,000 years ago. This culture is brewed with tea and sugar and fermented into a sweet and sour, slightly effervescent drink. Kombucha contains many amino acids and B vitamins in addition to its bountiful population of beneficial microorganisms, and is believed to be an excellent stimulant to digestion and the immune system.

Other probiotic beverages are available including kvass, rejuvelac and Kevita.

Cultured Dairy Products

Yogurt and kefir consist of milk that has been inoculated with live bacterial cultures that convert the milk's lactose sugar into lactic acid. For people who have difficulty digesting the lactose in milk, these products may be easier to digest because the live, active cultures produce lactase, which pre-digests the lactose.

YOGURT has been made in cultures around the world for thousands of years. The bacteria traditionally used to make yogurt are responsible for improved intestinal health and increased functioning. To enjoy the health benefits of yogurt, make sure that the yogurt you buy contains live, active cultures (all of the yogurt varieties available at the Co-op do). Yogurts made with soy milk, almond, rice and coconut milk are also available and contain the same active cultures.

KEFIR, like yogurt, is a cultured milk product usually tolerable to those with lactose intolerance. Kefir contains bacterial strains that remain viable in the digestive system, increasing the likelihood of intestinal colonization of beneficial bacteria. The Co-op also offers kefirs made with goat milk and coconut water.

TRY THIS!

Sauerkraut is the easiest place to start experimenting with fermentation.

All you need is cabbage, salt, water, a clean towel, a rubber band and a jar or crock.

Recipe adapted from

Nourishing Traditions by Sally Fallon

Makes 1 quart

1 medium cabbage, cored and shredded
2 tablespoons sea salt

In a large bowl, mix shredded cabbage with salt. Pound the cabbage with a wooden pounder or a potato masher, or massage with your hands, mixing in the salt for about 10 minutes so that the cabbage begins to release its juices.

Place in a quart-sized, wide-mouth mason jar and press down firmly with a pounder or your fist until juices come to the top of the cabbage. Use a small plate to press the cabbage down so that it's submerged under the juice. Then place a weight (such as a small jar full of water) to keep the cabbage submerged at least 1 inch.

Cover with a clean cloth tightened with a rubber band around the top of the jar. Keep at room temperature for about a week before transferring to cold storage, skimming off any scum that appears at the top. The sauerkraut may be eaten immediately, but it improves with age.