Fermented foods contain microorganisms, such as bacteria and yeasts, that use the nutrients in the food as an energy source.

The result is a transformation of the original food into one with organic acids and other compounds beneficial for health.

Fermented foods have a unique flavor that is tangy, pungent, and aromatic.

There are dozens of fermented foods ranging from drinks to side dishes.

Gastrointestinal Health

Fermented foods have the ability to improve the function of the gastrointestinal system.

This improvement is due to the ability of fermented foods to increase the amount of helpful bacteria in the gut.

These bacteria are able to digest food, fight off harmful bacteria, and lessen symptoms of constipation and diarrhea.
**Global Cultures**

Fermentation is an ancient practice used to preserve food. In traditional fermentation, salt plays a crucial role in creating an environment that is conducive towards good bacteria and preventing growth of harmful pathogens.

Intentional fermentation is thought to have first occurred in the Fertile Crescent area of the Middle East in 6000 B.C. Since then virtually every culture has at least one fermented food: kimchi from Korea; chutneys from India; and garii, fermented cassava, from West Africa.

**Science of Probiotics**

Probiotics have been shown to contribute to a proper microbial balance, which helps to support the immune system and reduce inflammation in the gut.

Probiotic consumption may help to reduce complications relating to the gastrointestinal tract including irritable bowel syndrome (IBS), ulcerative colitis, Crohn’s disease, and diarrhea.

**Integrative Medicine**

Integrative medicine is a holistic approach to healthcare, that takes into account the whole person, including body and mind in the healing process. A major component of integrative medicine is gut health and its relationship to diseases.

Registered Dietitians working with an integrative medicine team often encourage consuming probiotics, preferably though food, to reintroduce helpful bacteria and thus facilitate optimal digestive function. The connection between fermented foods and health can be traced back to both ancient Rome and China. (Reference #1)
Prebiotics

Prebiotics are not bacteria themselves, but natural, non-digestible food components that helpful bacteria can use as an energy source and proliferate from. Prebiotics thus improve digestive health, and also may enhance calcium absorption.

Sources of prebiotics in foods include bananas, whole wheat foods, and vegetables such as leeks, asparagus, and artichokes. (Reference #2)

Probiotics

Probiotics are helpful bacteria that naturally occur in the gut that digest and breakdown food. They give a boost to the current bacteria and help to balance gut flora. Probiotics can improve gastrointestinal health and immunity, as well as prevent specific allergy symptoms.

Food sources of probiotics include fermented dairy products such as kefir, yogurt, and aged cheeses. Non-dairy fermented foods that contain probiotics include kimchi, sauerkraut, miso, and tempeh. (Reference #2)

Kefir vs. Yogurt

Kefir and yogurt are both fermented milk products that contain probiotics that facilitate optimal gut health. However, the process by which these foods are fermented differs.

Yogurt is fermented by bacteria that can digest the lactose sugar in milk.

Kefir is fermented by both bacteria and yeast that are present together as “kefir grains” which are a gelatinous culture. It’s important to shake the bottle well to distribute the grains and make the kefir creamy, smooth, and easy to drink.

Consuming fermented dairy products may lower the risk of developing high blood pressure. (Reference #1)
Kimchi

Kimchi is a traditional side dish from Korea made from various vegetables, but commonly nappa cabbage and daikon radishes, with various spices that have been lacto-fermented.

Lacto-fermentation is a process in which foods are submerged in salt water and are fermented by lactobacillus bacteria.

Lactic acid bacteria provide benefits to human health, such as improved digestion of lactose and prevention of intestinal infections.

Kimchi may have the ability to improve mental functioning due to increasing the expression of a gene responsible for regulating psychological stress and anxiety. (References #3 and #4)

Pickles

Pickling begins when vegetables are immersed in a salty, acidic brine. Over time, micro-organisms turn the sugars in the vegetables into lactic acid, leading to the notorious sharp flavor.

Cucumbers are a common vegetable of choice to pickle, but other vegetables can work as well such as onions, peppers, and beets.

Pickles are a source of probiotics, which can help to improve digestion and enhance the availability of nutrients in our foods and drinks. (Reference #6)

Apple Cider Vinegar

Vinegar is said to originate as far back as 400 B.C. in Greece, when Hippocrates used it as a medicinal treatment.

Apple cider vinegar has subtle fruit notes that can add flavor to salad dressings and sauces.

The process begins by crushing apples into juice, adding yeast, and letting it ferment in barrels.

Research suggests apple cider vinegar can help to control blood sugars after a sugary meal. Also, apple cider vinegar has polyphenols, a potential cancer-fighting nutrient. (Reference #7)
What is Kombucha?

Kombucha is a sugared tea that has been fermented via a symbiotic culture of bacteria and yeast, or a SCOBY for short.

The SCOBY is a mat-like pellicle, or tea fungus, that feeds off the sugar and replicates each fermentation cycle.

It's thought that kombucha originated in China some 2000 years ago.

In terms of flavor, Kombucha is mildly acidic, fruity, sour and effervescent.

Although kombucha has flavor on its own, it comes in various other flavors with fruit juices and herbs like ginger added for a more dynamic taste.

Kombucha Benefits

Kombucha has been shown to help with digestion, prevent microbial infections, and even have a positive influence on cholesterol levels.

Kombucha is made with green, black, or oolong tea, which have beneficial antioxidants. Antioxidants are helpful compounds that stop free radicals which are harmful compounds that cause cell damage.

Kombucha tea actually has more antioxidants than regular tea due to the acidic environment and enzymes from the yeast and bacteria culture that break large antioxidants into many small antioxidants. (Reference #5)

Where to Purchase Kombucha

Kombucha can be found in most grocery stores in the organic section with the refrigerated foods.

A local company called Unity Vibration makes hand-crafted, artisanal kombucha teas.

Visit unityvibrationkombucha.com for more information and where to find stores that sell their product near you.
Making kombucha is rather quick and simple. However, you will need to obtain a SCOBY from a friend to start a new batch, or purchase one online. Other ingredients are tea (black, green, or oolong), sugar, and a glass vessel.

**Directions**

1) Fill vessel with 2 cups of plain kombucha tea if available to kick start the brew.
2) Boil 1 gallon of water, add 1 cup of sugar, and wait till it dissolves.
3) Steep 8 teabags for 5 minutes in the water.
4) Let cool to room temperature and then add to vessel.
5) Carefully slide SCOBY in the vessel and store with cover that allows air to pass through (paper towel or cheesecloth).
6) Wait and let ferment for 7-10 days.
7) Bottle and enjoy! (Kombucha is stable for 1 month in refrigerator.)

*Some quick notes about home-brewing*

- Check for any growth of mold; is rare but sometimes happens if contamination occurs.
- The SCOBY will replicate each cycle, so dispose of the old one on the bottom, and use the new one on top for the next batch.

**Flavor Ideas**

Flavors should be added to the individual bottles to prevent any contamination of the SCOBY and vessel.

Try adding a touch of fruit juice such as orange juice or pomegranate juice for a tropical flavor. Alternatively, try adding actual fruit, such as blueberries and strawberries, and filter before serving.

Cut up a few ginger root slices and mint leaves and let sit with the kombucha overnight to give it a little spice.
**Sauerkraut Recipe**

Sauerkraut is a traditional fermented cabbage dish from Germany commonly served as a side or as a condiment on bratwurst.

**Directions**

1) Slice 2 large cabbages and place into a large mixing bowl.

2) Add 2 tablespoons of salt and 1 tablespoon of caraway seeds, mix together.

3) Place the mixture into glass canning jars and cover with a paper towel secured by a rubber band.

4) Let ferment in a cool dark place for 3-4 weeks, replace top with a lid, and enjoy!

Store in refrigerator and eat within 2 months.

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**Strawberry Banana Kefir Smoothie Recipe**

Kefir is more liquid and pourable than yogurt, and thus can be used to make smoothies without the addition of milk. This is a recipe for a strawberry banana smoothie, but any fruit in these proportions will blend well.

**Directions (Serves 1)**

1) Cut 1 large banana into several slices.

2) Measure out 1 cup of strawberries, cut off the leaves, and then slice a few times.

3) Measure out 1 cup of plain kefir.

4) Place all in a blender, blend till smooth, and pour into a glass.
Thank you for reading!

I hope you discovered new information relating to fermented foods and encourage you to incorporate these wonderful fermented foods in your diet.

References


6.) http://www.pbs.org/food/the-history-kitchen/history-pickles/

7.) http://www.theleangreenbean.com/all-about-apple-cider-vinegar/

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