

## **Fermentation and beneficial microbes**

### **What Is Fermentation**

Fermentation is an ancient technique of preserving food. The process is still used today to produce foods like wine, cheese, and yogurt. Fermented foods are rich in beneficial probiotics and have been associated with a range of health benefits from better digestion to stronger immunity.

Fermentation is a natural process through which microorganisms like yeast and bacteria convert carbohydrate such as starch and sugar into alcohol or acids. The alcohol or acids act as a natural preservative and give fermented foods a distinct taste and acidity. Fermentation also promotes the growth of beneficial bacteria, known as probiotics.

### **Health Benefits of Fermented Foods**

A number of health benefits are associated with fermentation. In fact, fermented foods are often more nutritious than their unfermented form. Fermented foods may promote:

- **Improves Digestive Health:** The probiotics produced during fermentation can help restore the balance of friendly bacteria in your gut and may improve some digestive problems. Evidence suggests that probiotics can reduce uncomfortable symptoms of irritable bowel syndrome (IBS). Moreover, fermented foods may also reduce the

severity of diarrhea, bloating, gas, and constipation. For these reasons, adding fermented foods to your diet may be useful if you regularly experience gut issues.

- **Increases Your Immune System:** The bacteria that live in your gut have a significant impact on your immune system. Due to their high probiotic content, fermented foods can give your immune system an improvement and reduce your risk of infections like the common cold. Consuming probiotic-rich foods may also help you recover faster when you're sick. Additionally, many fermented foods are rich in vitamin C, iron, and zinc all of which are proven to contribute to a stronger immune system.
- **Makes food easier to digest:** Fermentation helps break down nutrients in food, making them easier to digest than their unfermented counterparts. For example, lactose — the natural sugar in milk — is broken down during fermentation into simpler sugars — glucose and galactose. As a result, those with lactose intolerance are generally fine eating fermented dairy like yogurt. In addition, fermentation helps break down and destroy antinutrients — such as phytates and lectins — which are compounds found in seeds, nuts, grains, and legumes that interfere with the nutrient absorption. Therefore, consuming fermented beans or legumes like tempeh increases the absorption of beneficial nutrients, making them more nutritious than unfermented alternatives.
- **Mental health:** A few studies have linked the probiotic strains *Lactobacillus helveticus* and *Bifidobacterium longum* to a

reduction in symptoms of anxiety and depression. Both probiotics are found in fermented foods.

- **Weight loss:** While more research is needed, some studies have found links between certain probiotic strains including *Lactobacillus rhamnosus* and *Lactobacillus gasseri* and weight loss and decreased belly fat.
- **Heart health:** Fermented foods have been associated with a lower risk of heart disease. Probiotics may also modestly reduce blood pressure and help lower total and “bad” LDL cholesterol.

## **Common Fermented Foods:**

There are many different types of fermented foods consumed around the world, including:

Kefir is a fermented dairy product that may improve lactose digestion, decrease inflammation, and boost bone health.

Tempeh is made from fermented soybeans. It's high in probiotics and contains compounds that may act as antioxidants and help improve heart health.

Natto is a fermented soybean product. Its high fiber content may promote regularity and help prevent bone loss. It also produces an enzyme that can help reduce blood pressure and help dissolve blood clots.

Kombucha is a fermented tea. It could help protect the liver, decrease blood sugar, and reduce levels of cholesterol and triglycerides.

Miso is a seasoning made from fermented soybeans. It's been associated with improved heart health and reduced risk of certain cancers.

Kimchi is made from fermented vegetables such as cabbage or radishes. it may help reduce insulin resistance and blood cholesterol.

Sauerkraut is made from shredded cabbage that's been fermented. It's high in antioxidants that are important for eye health, and it's easy to add to many dishes.

Probiotic yogurt is made from fermented milk. It's high in nutrients and could help reduce body weight, lower blood pressure, and improve bone health.

### **Safety and Side Effects**

Fermented foods may cause some initial side effects, such as gas and bloating. In addition, some products may contain high levels of added sugar, salt, and fat so it's important to read nutrition labels to make sure you're making a healthy choice.