

FERMENTED FOODS FACTSHEET



THE GUT MICROFLORA

We all house trillions of different bacteria and microbes in our bodies. Beneficial bacteria play an essential role as our first line of defence, in supporting efficient digestive function and supporting immunity. A number of factors can compromise an optimal balance of beneficial bacteria throughout the body, including antibiotic therapy, infection, stress, travel or a period of unhealthy nutrition. One potential solution to help to restore the natural balance of the resident gut microflora is to consume either foods or supplements containing live microorganisms.

THE HISTORY OF FERMENTED FOODS

Fermentation is an ancient form of preservation used before the invention of the refrigerator. Fermentation is the transformation of food by bacteria and fungi, and is said to make food more digestible and nutritious. Fermentation gives us many of our most basic staples; bread, cheese, chocolate, coffee, wine, beer, yogurt and cheese. However commercial fermentation is usually quick and the living microorganisms contained in these products can be destroyed during cooking or processing. In recent years the presence of, and therefore the benefits of, daily live fermented foods have largely disappeared from the Western diet, but we are beginning to see an increase in popularity.

FERMENTED DAIRY

Fermented dairy can come in common products such as yogurt, cheese, kefir and sour cream.

Kefir is a soured milk that is thought to originate from the Caucasus Mountains, long before 3,000 BC. Kefir grains are made up of a diverse range of yeasts and bacterial strains

and once strained (via a plastic sieve) are used again and again as a natural starter culture to ferment milk into the lactic acid probiotic drink. During fermentation at room temperature (1-7 days), the grains increase in size and number and if carefully preserved, may retain their activity for years.¹ Lactic acid bacteria are primarily responsible for the production of lactic acid, which results in a pH decrease and milk preservation.¹ Several studies have shown that kefir and its constituents have anti microbial, anti tumour, anti carcinogenic and immunomodulatory activity.¹ Fermentation of the milk sugar 'lactose' by the enzyme 'lactase' makes it easier to digest and suitable for lactose intolerance sufferers, with one study showing kefir to reduce perceived severity of flatulence by 54%.² Studies have shown kefir to improve the efficacy and tolerability of triple therapy in eradicating *Helicobacter pylori*³ and to protect against *Giardia intestinalis*⁴ and *E. coli* infection⁵.



FERMENTED VEGETABLES

Any vegetables can be fermented but traditional sauerkraut is usually made with white cabbage. Salt is rubbed into the vegetable to draw water out and create an intense vegetable juice. Salt is known to protect against the growth of putrefying microorganisms and favours the growth of beneficial bacteria. Fermented vegetables are said to improve digestion if eaten with a meal, particularly meals high in animal protein. Vegetable fermentation is known to begin the breakdown of the vegetables, particularly fermentable carbohydrates, making them easier to tolerate for those with sensitive IBS and intolerance to FODMAP foods. Many commercial sauerkrauts are pasteurised so lose their probiotic benefits. Numerous lactobacilli strains have been isolated from sauerkraut and have each been shown to have excellent tolerance to high concentrations of bile salt and acids,⁶ to adhere to intestinal cells,⁷ to have antimicrobial activity against *E. coli* and *Shigella*⁷ and to produce antibacterial bacteriocins⁸.

BASIC SAUERKRAUT RECIPE:



1. Thinly slice a cabbage and place in a bowl
2. Add about 1.5 tablespoons of Himalayan rock salt for each 1kg of cabbage
3. Rub the salt into the cabbage with your fingers or bash it with a wooden rolling pin to release juices for about 10 minutes
4. Transfer the vegetables into your fermentation dish, press down and cover with a plate that reaches the edge of the bowl and muslin cloth, or a cabbage leaf if using a kilner jar, and place a weight on top (a jam jar with liquid in will work)
5. If you do not have enough cabbage juice then add some cold salt water brine to ensure all the cabbage is fully submerged under the liquid. (This suppresses the oxygen available and ensures that mould is not able to grow).
6. The sauerkraut may be ready to consume in 1 week but can be left for longer for a deeper ferment
7. For storage, transfer to a glass jar and seal or close the kilner jar
8. Once opened I would store in the fridge and use within a month

HISTORY OF PROBIOTIC USE

Back in 1908, Elie Metchnikoff, an eminent scientist from Russia, attributed longevity of Balkan peasants to the consumption of yoghurt and soured milks. He proposed that intestinal bacteria could be improved by adding beneficial bacteria and went on to isolate, culture and consume the strains he had found in fermented dairy.

WHAT ARE PROBIOTIC SUPPLEMENTS?

Probiotics have been defined as 'live microorganisms which when administered in adequate amounts confer a health benefit on the host'.⁹ They are live bacteria that have been cultured in a laboratory and then commercially fermented. They are standardised to ensure quality and specified dose. This form of live microbial consumption is quicker and easier for the end consumer and, therefore, more common in our modern world. Live microbial supplements can complement

fermented foods to ensure a higher dose or to be taken on days when fermented foods have not been consumed. However, as food supplement and food derived live microorganisms are transient and remain in the gut for less than 2 weeks they need to be replenished regularly. Multi-strain is how live microorganisms are delivered in nature and with a range of different benefits should be able to help a more diverse range of gastrointestinal disorders.

References

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