

Yogurt the Most Natural and Healthy Probiotic: History Reveals

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Editorial

This article seeks to increase science and public awareness of the indispensable health implications of yogurt as a natural abundant probiotic, food and medicine. The word 'yogurt' is originally Turkish, describing a curdled or a coagulated milk product resulted from bacterial fermentation. These bacteria, named yogurt cultures, ferment lactose to lactic acid and process milk proteins towards special texture and nutritional exclusivities. Cow milk contains casein as the main protein for yogurt making. Nonetheless, milk from other species (camel, buffalo, equidae, yak, sheep and goats) are increasingly utilized to produce nutritionally branded dairy products including yogurt with functional properties [1-4].

Yogurt, by definition, is generated with a culture of *Lactobacillus delbrueckii* subsp. *bulgaricus* and *Streptococcus thermophilus* bacteria. Other *lactobacilli* and *bifidobacteria* may also be added during the fermentation or post-culturing. There are countries (e.g., Swiss) that require yogurt to contain known amount of colony-forming microorganisms. In some western countries, milk is heated up to 80°C to remove and inactivate its undesirable bacteria. This is also to denature milk proteins to be set together instead of forming curds. In some world regions such as parts of Iran, India and Bangladesh, curds are the preferred form and thus milk is boiled rather than pasteurized. Then, milk is cooled down to about 45°C, followed by adding the bacterial culture, and maintaining the temperature for 3-7 hours to permit safe and secure fermentation. Noteworthy, from an educational probiotic and health perspective, the fermentation procedure may not have significant impacts on the functional quality of the yogurt produced.

Being a priority for today's medical and nutritional sciences, probiotics are increasingly considered as functional natural foods. However, it must be noted that all probiotics are not as health-improving as they are advertised [5]. But, one notion deserves the credit that yogurt as the most natural and healthy probiotic owns plenty to discuss about. Beneficial probiotics are in fact live microorganisms offering numerous health-improving effects. Investigations suggest that selected probiotics, specially those of yogurt, improve digestive and metabolic health and immunity. As a result, they might cease oncogenic reactions and reduce or postpone cancer occurrence [5-7].

As a limitation, clinical studies involving probiotics are usually done with one or very few strains. However, health-promoting effects of probiotics may well be strain-specific [6]. It should not be presumed that different strains of *Lactobacillus* will be similarly beneficial. Individuals suffering from specific health issues ought to search for specific products according to their particular issue [8]. Yogurt hosts the most natural glories as far as probiotics are concerned and no other food either enriched or natural may be as favorable as yogurt to human

health. Critically, alterations in physical and chemical properties of foods during processing (e.g. baking, beveraging, fermenting, filtering) mostly destroy or remove the microorganisms, making the final product not very efficacious as a source of real probiotics. But, this is usually not the case in yogurt. The history speaks for yogurt. Evidence indicates milk culturing and fermenting as early as 2000 BC in the Iranian-Indo cultures. Yogurt was not used only as a food but also as an irreplaceable medicine [9,10].

Nutritionally, yogurt is resourceful in essential amino acids, calcium, vitamin D, riboflavin, vitamin B6 and vitamin B12 [10,11]. Its nutritional advantages overpass those of milk. Lactose-intolerant people tolerate yogurt because of lactose conversion to glucose and galactose, and indeed through fermentation to lactic acid. The varying content of fat in yogurt offers flexibility in consumption by different healthy and diseased groups. Uniquely, yogurt is invaluable for infants and elderly with a narrow list of tolerable food choices. What makes yogurt irreplaceable is its balanced nature of protein, fats, carbohydrates, and minerals. Yogurt in the elderly intestines reduces *bifidobacteria* and consequently limits growth of toxin-producing and oncogenic microbes. Yogurt can help prevent osteoporosis and high blood pressure [12]. Yogurt also promotes gut and vaginal health. It is recommended to consume yogurt pre-meal and with-meal as a working strategy to induce satiety and prevent energy over-intake and obesity.

Studies involving meta-analysis of several double blind experiments demonstrated that consuming yogurt with probiotic strains for 15-60 days decreased total serum cholesterol by 4% and serum LDL by 5% [13]. Other larger studies conducted for longer periods (e.g., six months) found significant increases in serum HDL (from 50 to 62 mg/dL) and improvements in LDL/HDL ratios after prolonged intake of yogurt with probiotic strains [14].

Appreciating the nutritional profits and health implications of yogurt as a functional food, preventive medicine, and residence treatment in the new times requires persistent and transparent public education.

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