

Probiotics

Introduction

Probiotic bacteria are live organisms which occur naturally in fermented food products such as milk, yoghurt, kefir, sauerkraut, cabbage kimchee, and soy bean-based miso and natto, and can also be purchased as powders, gelatin capsules, and liquids. The main commercially used species are *Lactobacillus acidophilus*, *Bifidobacterium bifidum* and *L.casei imunitass*[®] cultures. However, food (especially yoghurt and milk) is the best option for probiotic intake due to the live microorganism content.

Suggested health benefits that have been associated with the consumption of probiotics include improved intestinal tract health, enhanced immune system, enhancement of the bioavailability of nutrients, reduced lactose intolerance, and reduced risk of specific cancers such as colon cancer.

Probiotics work because the growth and metabolism of probiotics help inhibit the production of “bad” bacteria and reduce this bacteria’s harmful effects as well as antigens, toxins and carcinogens in the gut. In addition, probiotics are known to interact with the gut-associated lymphoid tissue, leading to positive effects on the immune system.

Research in athletic populations and in particular the effects of probiotics on sport performance are extremely limited and inconclusive, and no performance benefits have been found to date. Based on the current evidence, the use of probiotics does not appear to have any ergogenic effect or enhance athletic performance.

Proposed benefits of probiotics use among athletes

- Probiotics may reduce the number of sick days an athlete experiences when training for endurance running events.
- Probiotics may reduce the severity of respiratory infection and gastrointestinal disturbance when they occur.
- Probiotics may assist with immune function in fatigued athletes.
- No adverse effects have reported in the studies assessing probiotic ingestion among athletes.
- There is currently no evidence to suggest that the use of probiotics may enhance athletics performance.

Practical guidelines for the use of probiotics

Proposed dosage for probiotic consumption

There are currently no recommended dosage guidelines, though most studies report effective dosages of 1-10 billion bacteria per day. Australian studies have shown that athletes easily tolerate doses of 2 billion bacteria per day.

Concerns about probiotic use

- There are currently no recommended dosage guidelines.
- Limited control over the quality of probiotic supplements.
- The concentration of probiotic bacteria varies significantly among food sources.
- Though the risk associated with probiotic use is extremely low, there have been reports of endocarditis and septicaemia in severely immune compromised individuals.
- There is limited research into the impact probiotics have on gastrointestinal disorders such as irritable bowel syndrome, inflammatory disease, coeliac disease or other gastrointestinal diseases, therefore consultation with your medical practitioner if you suffer any of these conditions is necessary.

Possible contamination

- With any nutritional supplement there is always the risk of contamination in the manufacturing process, which could lead to a supplement containing substances that are not listed on the label.
- Athletes are advised to check that any supplement they choose to take has been tested for containing any banned substances.
- The legal clause 'strict liability' means that an athlete is responsible for any and all substances that may appear in his or her urine or blood in a doping test.
- It is always advisable to seek professional advice from a Sports Dietitian/Nutritionist regarding any nutrition supplement.

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