

AIS SPORTS SUPPLEMENT FRAMEWORK

PROBIOTICS GROUP A



Probiotics are live microorganisms in foods or supplements that may have a beneficial effect on gut microbial balance, favourably influencing gut health. They have been used for many years in yoghurt and cultured dairy foods, kombucha and alcoholic fermentations. Probiotics are predominately used by athletes to reduce the risk of upper respiratory tract infections whilst travelling or during heavy training blocks.



Probiotics can be obtained from food or supplements



Lactobacillus acidophilus and bifidobacterium bifidum are the two main strains used in foods



Probiotics supplements can be shelf-stable (ideal for travel) or require refrigeration



The shelf-life of most probiotic foods is about 3-6 wks when kept at 4°C, and supplements about 12 mths



Commercial supplements claim up to 25 - 50 billion organisms per dosage

BENEFITS OF ENHANCING GUT HEALTH

> Beneficial effects of enhancing the range of gut microbiota may include improved:



RESPIRATORY HEALTH



IMMUNE HEALTH



NUTRIENT
ABSORPTION



LACTOSE TOLERANCE

> Preliminary research suggests possible benefits to body composition outcomes, plus a reduction in stress hormone levels and associated enhancement in mood and cognition.

The first step to improve gut microbiota diversity is increasing wholegrain and fibre intake through eating a variety of plant foods

FOOD FIRST PHILOSOPHY

> Dietary modification, particularly increasing wholegrain or fibre intake should be the first step to increase gut microbiota diversity, which can occur within a few days of adjusting intake. Only after this has been optimised, should consideration be given to probiotic supplementation.

> A large variety of wholegrains and fibre containing vegetables, nuts and legumes can be used to increase the diversity of bacteria in the gut. The larger the variety, the greater range of health benefits.

> Aim for upwards of 30 different foods each week across fruits, vegetables, grains, nuts and legumes.



Wholegrains



Fruits



Vegetables



Nuts



Legumes

> Probiotics can be obtained from both food and supplements, however the probiotic count is often unknown in foods, therefore it is not possible to assess dietary sufficiency for reducing upper respiratory tract infection. Probiotic foods may also be difficult for athletes to access whilst travelling, and most do not contain a minimum guarantee of viable bacteria in the final product.

> Probiotic rich foods include fermented foods such as; yoghurt, kimchi, sauerkraut, miso, cultured milk products, kefir, kombucha and tempeh. These may be a worthwhile addition to the diet for their other nutritional values e.g. protein and calcium, as well as potential added benefits relating to gut microbiota.



Yoghurt



Kimchi



Sauerkraut



Tempeh



Kefir



Kombucha



WHEN TO CONSIDER SUPPLEMENT USE?

> Only after manipulation of the diet to increase microbiota diversity should probiotics be considered. Probiotic supplementation may be beneficial for athletes:

- ✓ As a preventative approach to reduce upper respiratory tract illness prior to specific periods of training, competition or travel.
- ✓ In managing gastrointestinal problems experienced during heavy training or competition.
- ✓ Who are taking, or just finished a course of antibiotics, and who are unable to eat a high wholegrain/ high fibre diet to restore gut microbiome, (as beneficial gut bacteria are damaged by antibiotics).

HOW TO USE PROBIOTICS

- ✓ Many studies report effective dosages of 1 - 50 billion bacteria per day. Most athletes will safely tolerate dosages of up to 35 - 50 billion per day without side effect.
- ✓ Daily consumption is recommended as probiotics may pass through the gut.
- ✓ Begin at least 14 days before domestic or international travel, competition or elevated training load to allow for colonisation of bacteria in the gut.
- ✓ Trial in training first, as some athletes may experience mild side effects whilst the gut gets used to the new bacteria species. Building up to the recommended dose over a week or two may reduce side effects.
- ✓ If taking antibiotics for a short period of time, probiotics are best consumed two hours before or two hours after taking your antibiotic.

CONCERNS & CONSIDERATIONS



Mild side-effects of probiotic use may include: stomach rumbles, increased flatulence or changes in stool consistency in the first week of use.



Those with past history of gut issues such as coeliac disease or irritable bowel syndrome may be at greater risk of side-effects.



Follow product storage recommendations avoiding sudden changes in temperature, light and moisture to preserve live bacteria.



Some studies have reported low actual numbers of live bacteria species in supplement products, and the presence of some species not listed on the label.



Choose evidence-based probiotics that have been tested independently under controlled conditions. Discuss with your sports dietitian.



Benefits may be highly specific to certain individuals and scenarios for use. Further research is required regarding benefits to performance.



All supplements have a doping risk of some kind. Some supplements are riskier than others. Athletes should only use batch-tested supplements. The Sport Integrity Australia app provides a list of more than 400 batch-tested products. (www.sportintegrity.gov.au/what-we-do/supplements-sport).

While batch-tested products have the lowest risk of a product containing prohibited substances, they cannot offer you a guarantee. Before engaging in supplement use, you should refer to the specific supplement policies of your sport or institute and seek professional advice from an accredited sports dietitian (www.sportsdietitians.com.au). Athletes are reminded that they are responsible for all substances that enter their body under the 'strict liability' rules of the World Anti-Doping Code.