

Liquid Meal Supplements

Supplement Overview

- > Carbohydrate-rich, moderate protein, low-fat powder (or liquid) for mixing with water or milk to provide an energy and nutrient-rich dietary supplement.
- > Typically, fortified with a range of vitamins and minerals.

Products and protocols

- > A range of liquid meal supplements is available. Differentiating characteristics include the amount/type of key macronutrients protein and carbohydrate, fat and fibre content, flavors, fortification with vitamins and minerals and the presence of other “active ingredients”.
- > Can be used as ready-to-drink liquid, mixed as single ingredient drink with milk or water, or fortification of a multi-ingredient drink (e.g. smoothie or milk shake).
- > When used to achieve goals of sports nutrition, may enhance training adaptations or competition outcomes.

Table 1: Nutritional composition of a range of liquid meal supplements available in Australia

Liquid meal supplements	Single Serve	Flavours	Energy (kJ)	Protein (g)	Carbo-hydrate (g)	Fat (g)	Calcium (mg)	Iron (mg)	Fibre (g)
Powdered products									
PowerBar Protein Plus	65g powder + 200 ml skim milk	Chocolate	1315	22	54	0	658	5	0
PowerBar Protein Plus	65 g powder with water	Chocolate	1020	15	44	0	400	5	0
Sustagen Sport	60 g powder + 200 ml water	Chocolate, vanilla	940	15	39	1	400	6	0
Ensure	46 g powder + 200 ml water	Vanilla	840	8	26	6	201	2	2
Ready to drink products									
Gatorade G series Recover	500 ml bottle	Mixed berry, Lemon-Lime	312	16	14	0	100	0	0
Sustagen	250 ml tetra	Dutch Choc	1050	12.5	41.2	3.7	400	3	0
Conventional UHT-treated flavoured milks									
Up & Go	250 mL tetra	Chocolate, Vanilla, Banana, Strawberry	800	9	28	4	285	NA	4
So Good	250 mL tetra	Chocolate, Vanilla	625	8	21	4	300	NA	0

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Situations for Use in Sport

Can be used in a number of scenarios to provide a practical form of energy and blend of macronutrients

- Following key training sessions or competition, to provide targeted amounts of protein and carbohydrate to simultaneously promote repair/adaptation and refueling
 - Resistance training
 - Quality prolonged/high intensity training sessions
 - Strenuous competition events
- Situations requiring energy/macronutrient intake without need to prepare or eating additional food or meals:
 - Program to increase lean body mass
 - Heavy training loads
 - Growth spurts
 - Appetite suppression
- Replacement of normal food intake to supply energy and nutrient needs while reducing gastrointestinal contents and body mass:
 - Low residue meal plan for “making weight” or reducing body mass prior to competition
 - Low residue meal plan to reduce need for bowel movement on day of event.
 - Pre-event meal for athletes with high risk of gastrointestinal upset
- Portable, non-perishable and easily prepared meal or snack:
 - Environments with minimal facilities for food preparation/storage
 - Travel to countries with inadequate or hard to access food supply, or where food hygiene may be a concern
 - (Typically) Travel to interstate/international destinations without contravening customs regulations.
Note: this should be checked prior to departure. Powder forms may be preferred when it is important to reduce luggage weight or comply with restrictions on carriage of liquids during air travel

Concerns Associated with Supplement Use

- Liquid meal supplements can often be overused, leading to inappropriate replacement of whole foods and over-reliance on an expensive alternative. **Food sources should always be considered as the first option for meals and snacks.**
- Compact form may lead to over-consumption of kilojoules and unwanted weight gain
- Low-residue weight making strategy may not be effective if the athlete is already restricting dietary intake and has reduced gastrointestinal contents. Athletes should always seek the advice of a Sports Dietitian before undertaking any dietary strategies to make weight.
- Failure to follow the instructions for drink preparation may produce a drink that does not achieve the energy and nutrient profile needed to achieve a specific dietary goal.
- Lactose-free product should be chosen where athlete is lactose intolerant.

This Fact Sheet was prepared by AIS Sports Nutrition as part of the Sports Supplement Framework (www.ausport.gov.au/ais/nutrition/supplements). Note that a Fact Sheet with additional information on this topic is available for Members of the Sports Supplement Framework via the Clearinghouse.

The Sports Supplement Framework has been designed to provide a framework for NSO athletes and specific Sports Supplement Programs may be available to NSO athletes through their NSO. All attempts are made to stay abreast of scientific knowledge and of WADA issues related to anti-doping. It is recommended that other athletes and groups should seek independent advice before using any supplement, and that all athletes consult the WADA List of Prohibited Substances and Methods before making decisions about the use of supplement products.

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