

# Sustagen Sport Protocol

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### 1. What is Sustagen Sport?

Sustagen sport is a delicious low fat nutritious liquid meal used by all types of athletes to help to maximize training output, improve event performance [acute pre, balanced diet] and to aid all three elements of recovery; re-hydration, refuel and repair. SUSTAGEN SPORT will help you to feel fresh and energized for the next session and for everyday life.

SUSTAGEN SPORT is 98% fat free and is made from high biological value protein containing all of the essential amino acids. One serve provides over 14 grams protein and 39 grams carbohydrate, without any fibre or residue. SUSTAGEN SPORT contains a wide variety of vitamins and minerals to assist athletes to achieve optimal nutrition. One serve of SUSTAGEN SPORT contains \_ recommended daily allowance (RDI) for B group vitamins, and 50% RDI for Calcium and Iron. SS also provides a good source of antioxidants A, C & E. SUSTAGEN SPORT is low glycemic index (GI = 43) and comes in chocolate or vanilla powder, in both 450g and 900g cans.

### 2. Who can use SUSTAGEN SPORT? <sup>3</sup>

Whether you are involved in a team sport (such as football, netball, soccer, cricket, water polo, rowing or hockey), endurance sport (such as running, triathlon, cycling, mountain biking, hiking, mountaineering), athletics, resistance training, martial arts or even an occasional visit the gym, SUSTAGEN SPORT can help you. to meet a wide variety of your nutrition objectives outlined below.

### 3. How can SUSTAGEN SPORT help me?

There are many reasons why you need SUSTAGEN SPORT. Choose one of the following profiles to determine how SUSTAGEN SPORT can be helpful to you<sup>4</sup>. Are you:

#### A. Feeling flat during training? Keen to improve your performance during your training session and during your event?

Many athletes struggle to eat something before a morning session. You are not alone. Perhaps you prefer to maximize your sleep? Maybe you are concerned about additional calories? Perhaps you don't like training on a full stomach after eating your usual breakfast?

Clinical research shows that after an overnight fast, liver glycogen becomes depleted. During exercise, the muscles rely on glycogen for fuel, whilst the brain requires glucose (from glycogen breakdown) for concentration. By consuming a low fat carbohydrate rich drink 30-60minutes prior to exercise, you are able to top up liver glycogen stores so that you have enough energy for your session whilst

maintaining blood glucose levels for supply of fuel to the brain.<sup>5</sup> This is particularly important for training sessions / events first thing in the morning.

SUSTAGEN SPORT is ideal as a pre-event / pre-training meal as it only requires 30-60 minutes to digest, much quicker than the 1-2 hours required for a usual breakfast meal. Ideal characteristics of pre-exercise liquid meals, which are well documented in scientific literature, include:

Adequate energy from carbohydrate; one serve provides 39g carbohydrate, which, if consumed within a balanced diet, will be used as fuel for that session – it will not be stored as body fat so you do not need to worry about additional calories

Low fat so as to facilitate digestion. If you consume a meal / drink containing fat, this slows the digestion of the product down, meaning you will have to wait for longer before training to avoid indigestion. It is hard enough to get up for that session, let alone get up earlier! Also, dietary fat is not the preferred fuel source for training – carbohydrate is. One serve of SUSTAGEN SPORT contains only 0.7g fat so you are not consuming anything your body doesn't need.

Moderate protein for ease of digestion; there is also research to suggest that consumption of a small amount of protein (~6grams) before a strength training session may assist with bulking up<sup>6</sup> (see below)

Low fibre / residue, particularly for athletes who wish to minimize bloating, diarrhea, stomach cramps and abdominal discomfort during the session. SUSTAGEN SPORT is fibre free, giving you a flat stomach for your session.

Adequate fluid to maximize hydration. SUSTAGEN SPORT provides 165ml fluid when added to a glass of water or skim milk.

Low GI - for slow release of energy throughout the session. This is most relevant for sessions of 90 minutes duration or longer, particularly if it is difficult to consume foods / drinks within the session itself.<sup>7</sup>

Another reason you may be feeling "flat" is perhaps your training diet is not high enough in carbohydrate to fuel your training? The amount required depends on the level of activity you do on a daily basis. The following chart shows how much fuel you need daily to meet your needs for training.

Moderate duration, low intensity (e.g. jog, ride, swim, strength training, gym session)	5-7 g
Moderate to heavy endurance training (1-4 hrs / day)	7-12g
Extreme exercise program (4-6+ hours / day)	10-12+

For example a 60kg woman who is training for a 10km run, who runs or does cross training (gym, swim) daily would require a minimum of 420g carbohydrate each day to

ensure that she gets the most out of her training sessions, recovers well and feels energized for the rest of her life outside sport. By including SUSTAGEN SPORT daily either for lunch or as a mid afternoon snack before training, she will find it easier to meet her fuel requirements, whilst also receiving a top up of other nutrients that her body requires for peak performance.

## B. Following a resistance- training program hoping to bulk up? Taking protein powder? Hoping to get stronger?

Resistance training is hard work. It is important that you get as much benefit from your time spent training as you can.

Research suggests that eating a carbohydrate rich, moderate protein snack immediately before or after resistance training can optimize gains in lean body mass (hypertrophy) and therefore increase power and strength, by increasing production of anabolic hormones, reducing proteolysis and supplying amino acids for protein synthesis. It may be more effective to consume this protein in combination with carbohydrate in order to maximize hypertrophy, rather than to consume the protein in isolation<sup>8</sup>.

How much protein is needed to stimulate muscle protein synthesis? Only a small quantity, 6 - 12g of protein containing essential amino acids is required. One serve of SUSTAGEN SPORT provides just over 14 grams high quality protein, which is enough for bulking up. As this is consumed with carbohydrate, the rate of hypertrophy may be enhanced. In addition, you are consuming antioxidants, B group vitamins, iron and calcium for peak health.

What type of protein helps with bulking up? Net muscle protein synthesis results from essential amino acids (Eaa's) only. Muscle protein synthesis is higher with Eaa's compared with mixed amino acids. Eaa's include Leucine, Isoleucine, Valine, Lysine, Threonine, methionine, phenylalanine, tryptophan & histidine. Sustagen provides all of these Eaa's in one serve.

When should SUSTAGEN SPORT be consumed? Net protein synthesis is greatest if protein is consumed within 30 -60 minutes before the strength session or immediately afterwards (within 1 hour or as soon as practical). If you delay consumption of SUSTAGEN SPORT for more than 3 hours post training, this may be equivalent to 24 hours later. So, be stringent with your timing!

Why is SUSTAGEN SPORT better than protein powder? In order to synthesis muscle protein, your body needs essential amino acids supplied through diet. SUSTAGEN SPORT is made from non-fat dairy solids, so provides all of the essential amino acids required for bulking up. The combination of carbohydrate may enhance the rate of hypertrophy, so you may gain muscle bulk more quickly with SUSTAGEN SPORT than with pure protein powders. In addition, SUSTAGEN SPORT is an ethical, medical heritage product from Nestlé HealthCare Nutrition who is committed to providing safe, reliable, effective products.

Whilst bulking up is most effective within the acute phases of training (immediately after the strength session), it is also important to consume enough total protein during the

rest of the day. Sports Dietitians recommend 1.2 – 1.7g protein / kg body weight / day<sup>9</sup>. By including SUSTAGEN SPORT as a meal replacement after a late night match, whilst traveling or as a snack when you are time constrained, you will be sure to meet your daily protein requirements for training.

## C. Feeling tired? Wondering how you can improve your recovery between sessions?

After a heavy training session, sometimes it becomes difficult to think about what to eat. Sometimes you lose your appetite and need a quick fix – how often do you raid the candy bar? However, if you do not eat properly for recovery, you will continue to feel tired. Sports Dietitians prescribe recovery plans, which feature SUSTAGEN SPORT in order to meet all 3 goals for recovery.

The three nutrition goals essential for recovery are<sup>10</sup>:

Restoration of muscle & liver glycogen stores so that you can train effectively later that day or the next day (refueling)

Replacement of fluid & electrolytes that are lost in sweat (hydration)

Regeneration, repair & adaptation processes following the catabolic stress & damage caused by the exercise (repair).

#### Refueling

If you have less than 8 hours in-between your training sessions, you can maximize your glycogen stores by consuming 1.2 g / CHO / kg body mass per hour immediately after exercise. This is relevant to all sports (endurance and strength). Repeat this as small snacks for up to 4 hours. Drink one serve of SS within the first hour post exercise to obtain 39g carbohydrate.

If you have 24 hours between each session, refer to table 1 for your daily needs. Inclusion of SS as part of your training diet provides a nutritious source of carbohydrate. Note that research shows that fluids are just as effective as foods for glycogen re-synthesis.

#### Hydration

Replacement of sweat losses is critical for all types of athletes, no matter how long you have been exercising for. One serve of SUSTAGEN SPORT made with water provides 165 ml fluid<sup>11</sup>, assisting with hydration. If you are calorie restricted, you need to choose fluids that are multi-functional. Whilst sports drinks are designed for re-hydration, you would benefit from substituting just 165ml sports drink with SUSTAGEN SPORT in order to maximize recovery.

#### Repair

Similar nutrition rules apply for repair as for bulking up (above). All athletes can optimize muscle repair by consuming a carbohydrate rich, moderate protein snack within 1 hour of the session. One serve of SUSTAGEN SPORT provides enough high quality protein and carbohydrate

to maximize repair of muscles that have been under stress during high intensity resistance or endurance training.

If you are an endurance athlete you require less protein on a daily basis compared with team sport athletes or athletes following strength programs, as your major goal is to replace protein losses, synthesize enzymes and repair muscle protein damaged during intense training (as opposed to bulking up). Hence you only need 1.2 – 1.4 g /kg/day. SUSTAGEN SPORT can be used at other times of the day to help you to meet these goals.

#### **D. Need extra energy? Coming up to a heavy training load? Growth spurt? Poor appetite?**

Are you following a very demanding endurance program of up to 4-6 hours per day? Are you going through a growth spurt? Perhaps you have a very high metabolic rate and find it difficult to put on weight? Maybe you just can't find time to eat enough to get your through the day?

One serve of SUSTAGEN SPORT provides 940kJ when made with water, providing a very low fat nutritious option to boost energy intake without having to prepare additional meals. As it is fibre free, you will find it easy to drink and you will still have room for your usual meals. Include 1 –2 serves of SUSTAGEN SPORT per day to help to meet your high energy needs.

#### **E. Carbohydrate loading prior to an endurance event?**

For events lasting >90 minutes, carbohydrate loading is effective. Often it is difficult to consume such large amounts of carbohydrate (up to 7-10g / kg) due to feeling full. SUSTAGEN SPORT is useful as it is fibre free so not too filling, and can be consumed in larger than usual amounts during this period, as it contains nearly 39g of carbohydrate per serve, equivalent to 2 bananas.

#### **F. Participating in Ultra-Endurance events?**

The logistics of 24- hour events provide a challenge to meet your nutrition goals for peak performance. Electrolytes become important, as do the psychological and

satiety benefits of food. Convenience is critical. Carry SUSTAGEN SPORT in a small plastic bag in your jersey, to add to water when you have an opportunity. SUSTAGEN SPORT is a great meal replacement during these activities and provides relief from the vast volumes of sports drinks and water that you consume to meet fuel and fluid needs.

#### G. Want a flat stomach prior to event? Need to make weight? Suffer from gastrointestinal problems during your event or training?

As SUSTAGEN SPORT is fibre free, it is ideal to use as the basis of all meals and snacks 24 hours prior to weighing in for your event to help you to make weight (e.g. rowers, jockey's). Dancers, ice-skaters and gymnasts like to drink SUSTAGEN SPORT leading up to their events to minimize bloating. Endurance athletes and runners enjoy SUSTAGEN SPORT as a pre-event meal to help minimize any gastrointestinal issues that may hinder performance on the day.

#### H. Busy with little time for meal preparation? Traveling?

Many team sports are played late at night, making it difficult to consume the right types of foods for recovery. 1-2 serves of SUSTAGEN SPORT is an easy way to meet your nutritional needs, particularly if you are tired and have a poor appetite after the event. If you are traveling

to a foreign country, it is not easy to find meals late at night. Perhaps you don't have a fridge. At these times a reliable, non-perishable nutritious liquid meal such as SUSTAGEN SPORT can reduce the stress of finding low fat balanced meals.

#### I. On an energy restricted diet? Trying to lose weight?

If you are restricting your energy intake in order to achieve a goal weight, then it is important to select low fat nutritious meals. Replacement of 1 meal per day with SUSTAGEN SPORT may help you to achieve your goal weight whilst helping to meet your nutrition needs for training and recovery. SUSTAGEN SPORT is low Glycemic index, which means that it is slowly absorbed into the bloodstream, stimulating a delayed insulin response. Clinical research shows that the inclusion of low GI foods in a balanced diet can assist with weight loss and help control appetite.

#### 4. Why should I choose SUSTAGEN SPORT over other brands?

SUSTAGEN SPORT is a very well known brand that is trusted amongst athletes. Not only is it preferred over many other products due to the clinical support for the ingredients – it also tastes great!

SUSTAGEN SPORT is a versatile product that can be mixed with either milk or water. Therefore it can be consumed at the gym straight after a session, by adding cold water to the powder carried in a drink bottle. Alternatively, it can be made with boiling water and consumed hot.

SUSTAGEN SPORT is superior to protein supplements as it contains carbohydrate, the combination of which has been shown to assist with muscle repair, bulking up and muscle glycogen re-synthesis. It also contains specific vitamins and minerals needed by athletes due to the high demands of training. Protein powders do not contain carbohydrate or nutrients.

SUSTAGEN SPORT is fibre free, making it easier to digest and reducing the lead-time within which it can be consumed before an event. SUSTAGEN SPORT allows you to sleep in for longer. The lack of residue also makes it a better choice of product to prevent gastrointestinal problems such as bloating and cramping during the session.

#### 5. When should I not have SUSTAGEN SPORT?

For sessions < 30 minutes, there is no significant benefit of consuming fluid or food as it will not become available to the body within this time frame. However, if there are a number of sessions of 30 minutes duration (e.g. tennis, football) then hydration is the key nutrition factor between sessions.

During sessions of 30 – 60 minutes duration, the primary concern is fluid intake. Athletes need to be hydrated prior to the session then consume drinks regularly to replace sweat losses. A secondary concern is carbohydrate.

There is some evidence that an intake of 30- 60 g carbohydrate per hour can improve performance, given that it is provided in a concentration tolerated by the GI tract (<8% solution) and is not predominantly fructose. Sources of nutrition used and recommended

during sessions / events of this duration are Sports drinks of up to 8% concentration and water.

During exercise of high intensity, of 90 minutes duration or more, carbohydrate is the preferred fuel source for exercise and needs to be provided in a concentration, which maximizes absorption. Again, sports drinks are most appropriate here. However, SUSTAGEN SPORT is a more suitable choice as part of a recovery strategy.

#### **6. Who should not take SUSTAGEN SPORT?**

Athletes with lactose intolerance may find SUSTAGEN SPORT difficult to digest. However, preparations such as lactase enzyme tablets can be added to the drink to break down lactose, so that you can enjoy SUSTAGEN SPORT without any wind or cramps.

#### **7. How do I use SUSTAGEN SPORT?**

Simply add 3 scoops of powder to a glass of water, stir thoroughly and enjoy. SUSTAGEN SPORT is great if made up then chilled before serving. For additional energy, add to a glass of skim milk.

#### **8. FAQ's**

**Q) Isn't SUSTAGEN SPORT too high in carbohydrate?**

A) No. Carbohydrate is the preferred fuel for exercise, for concentration and for muscle glycogen restoration.

**Q) Should I use a sports drink or SUSTAGEN SPORT after training?**

A) If you are doing strength work or high intensity training and want to repair your muscle or bulk up, then SUSTAGEN SPORT is the most ideal choice. If you are doing some low intensity training that does not involve any resistance training, then a sports drink or water may be more suitable.

**Q) Why is low fat important before exercise?**

A) Fat slows down the absorption of nutrients across the gastrointestinal wall. So if you consume a product containing fat you will need longer to digest in (meaning you may have to get up earlier) before training.

**Q) How can I vary my SUSTAGEN SPORT?**

A) Sprinkle powder over ice cream, add to breakfast cereal or into a smoothie for additional nutrient boost.

**Q) Is SUSTAGEN SPORT a meal or a snack?**

A) This depends on your total energy needs. See your sports Dietitian for advice:

[www.sportsdietitians.com.au](http://www.sportsdietitians.com.au)