Team Sports Nutrition and Training Guide
The training undertaken by committed sportsmen and women call for a high-energy diet. It needs to contain sufficient carbohydrate to fuel working muscles, lean protein to promote training adaptations and essential high quality fats necessary for health. A good daily diet helps your body adapt to the training you do, and ensures that you’re well fuelled for training and fast recovery. The information here explains what you need to do to get it right, starting with hydration.

**How to Stay Hydrated**

Water typically accounts for 60% of your total body mass, and play numerous roles within the body including the transport of nutrients, and helping to regulate body temperature. Water requirements vary from person to person depending on a variety of factors, and therefore fluid intake is highly individual.

A simple indicator of your hydration status is to check the colour and volume of your urine. If your urine is pale in colour and plentiful in volume you are probably well hydrated. If it is dark in colour and low in volume, or you notice you haven’t been to the toilet in a while, then you are most likely dehydrated. There are a few other ways to monitor your hydration status too:

**How to Check Your Hydration**

Ask yourself these questions to check your hydration:

- Am I thirsty?
- Is my urine dark in colour?
- Is my body weight noticeably lower than yesterday?

Answering “yes” to any of these questions may indicate inadequate hydration

**How to Stay Hydrated**

- Water should be your main source of fluid during the day
- Little and often is the key
- Continually monitor your hydration status via the colour and volume of your urine

**Carbohydrate: What to Eat Each Day**

The energy required for team sports comes from the carbohydrate that you store in your muscle, liver and blood. Here’s how to make sure you eat enough of the right stuff.
Carbohydrates

Carbohydrate is stored in your body in relatively small amounts and soon becomes depleted after prolonged strenuous exercise. Your daily requirements will depend on the intensity of your training and competition schedule. Here are some general guidelines which you should try out, and then learn from experience to make small adjustments to tailor them to your needs.

During periods of training and competition you need 5 to 7 grams of carbohydrate per kg of body weight per day. For a 75kg athlete, that’s around 425 grams of carbohydrate each day. To give you an idea, the following foods contain 50 grams of carbohydrate:

- 2 medium/large bananas
- 1 large bowl (60g) breakfast cereal
- 200 to 250g cooked pasta/ rice
- 1 large potato (250g)

However during lower intensity training periods a slightly lower carbohydrate intake is recommended, 2 to 3 grams of carbohydrate per kg of body weight per day. This will avoid unnecessary weight gain.

During periods of training and competition (moderate to high intensity, 1-3 hours/day) you need 6 to 10 grams of carbohydrate per kg of body weight per day. For a 70kg athlete, that’s around 400-700 grams of carbohydrate each day. To give you an idea, the following foods contain 50 grams of carbohydrate:

- 2 medium/large bananas
- 1 large bowl (60g) breakfast cereal
- 200 to 250g cooked pasta/ rice
- 1 large potato (250g)

Carbohydrate Tips

Nail your carbohydrate needs with these pearls of nutritional wisdom:

1. Eat well before and after big workouts, but less on days when you don’t exercise. High protein and vegetable meals will fill you up more on rest days.
2. Avoid refined sugary carbohydrates and opt for ones that are nutrient dense carbohydrates such as fruits, vegetables and whole grains.
3. Brightly coloured fruits and vegetables are rich in nutrients. Eat a variety of colours.
4. Stirfries and soups are a tasty way to increase your vegetable consumption.
5. Bulky, high fibre foods such as vegetables are low in calories, but will help to fill you up.
6. Look out for hidden calories. Fizzy drinks, milkshakes and take-away coffees are all good examples, and sometimes contain more calories than a chocolate bar.
7. Don’t be fooled into thinking “low-fat” products are low in calories. They often contain lots of sugar to help them taste good.

8. Try using a smartphone app to track your calories burned from training versus your calories consumed. Even a couple of weeks of this will help you make more educated food choices.

**Protein: What to Eat Each Day**

Whether it’s for lean body mass or to help you adapt better to training, good protein is an essential part of your diet. Here’s how to make it work for you:

Protein is the major structural component of all the cells in your body, so it’s vital for growth and maintenance. Proteins that contain all of the essential amino acids are referred to as complete or high quality proteins. Examples of these are eggs, milk and meat. Grains and beans generally do not contain all the essential amino acids, but you can often obtain them by combining foods (for example rice and beans).

Protein requirements for team sport players can be more than double that of a sedentary person. You should aim to consume approximately 1.3 to 1.8 grams of protein per kg of your body mass per day.

Protein requirements can be met through a healthy balanced diet and don’t necessarily need to be supplemented. A 75kg athlete should look to consume 100 to 130g of protein per day. To give you an idea, here are some foods that contain 20 grams of protein:

- 3 medium eggs
- 600 ml of cow’s milk
- 400g of baked beans
- 100g of fish or chicken

**Fats: What to Eat Each Day**

Fat isn’t all bad. In fact it’s an essential part of any athletes’ diet. Here’s how to leave the bad ones behind and get your fill of the health-boosting ones.

Fats have many important functions in the body including the transport of vitamins, providing fuel for cells, and protecting your vital organs. Unlike carbohydrates, we can store large quantities of fat, although over-consumption can lead to unwanted increases in body weight.

**Fat Tips**

- Saturated fats are solid at room temperature and excessive consumption should be avoided.
- Dietary fat should come predominately from nuts, seeds, avocado, olive oils and oily fish.
Game Day Fuelling For Team Sports

You've done the training, you've rested for the big game and now it is crunch time. All you need to do now is get your game-day nutrition right, so that you can perform at your very best. Here's how:

In all team sports, the margins between victory and defeat are often very small. What you eat and drink leading up to and on game day will affect your performance, so it's important that you get it right. Passages of high-intensity work are followed by periods of low-intensity activities such as standing, walking, and jogging. So a players' ability to perform this kind of work with short recoveries can be an important determinant of performance. Team sports also combine a complex combination of skill and cognitive activities which will be impaired if you ignore your nutrition. Thankfully, breaks in play are incorporated, providing opportunities for recovery and also for fluids and carbohydrates to be consumed.

“There have been a number of research studies since the 1960’s looking at carbohydrate and fluid intake before, during and after a match. Carbohydrate has been shown to be the main energy source during sport, and maintaining a good level is crucial to maximising performance. The research shows that topping up your energy levels and drinking adequate fluids can improve sprints, distance covered, skill performance and post-session recovery.” - James Carter, Sports Scientist, Gatorade Sports Science Institute

The information here will help you formulate your own nutrition strategy, but before going any further it's important to consider some important influencing factors that can influence it, and how you might work around them:

Factors that affect your game day nutritional strategy:

- How far do you need to travel for the game?
- How long is the game or will you play several games?
- How many opportunities are there to drink or take on carbohydrates?
- What will the range of temperatures be?
- Will fuel be readily available at half time and afterwards?

Once you've thought about these factors, you can start to plan what you will eat and drink before, during and after a game. Let's start with BEFORE.

Fuel Up BEFORE a Big Game

Your main goal before a game is to start adequately fuelled and hydrated. Not only will this help you perform on game day, but a similar strategy could also help you get the most out of your training sessions.
What to Eat Beforehand

The term “Team Sports” covers a wide range of game situations, from short events lasting 30 minutes to long matches that might involve extra time. Each has slightly different nutritional requirements, but the main principles remain the same.

No matter how long your match is, you should always eat a high carbohydrate meal 2 to 4 hours before exercise to ensure optimal glycogen stores, which is the body's primary energy source. This meal should contain between 100 to 200 grams of carbohydrates, depending on your size, how long you’re playing for and how hard you work during play.

This pre-match meal should be low in protein, fibre and fat to minimise the risk of gastrointestinal discomfort. To give you an idea, the following foods contain 50 grams of carbohydrate:

- 2 medium/large bananas
- 1 large bowl (60 g) breakfast cereal

What to Drink Beforehand

Starting a game dehydrated can impair your performance. Here are some tips to make sure this doesn’t happen:

- Slowly drink 5 ml fluid per kg of your body weight 2-4 hours before exercise, for example: 400 ml for an 80 kg athlete.
- Consume foods or drinks that contain sodium (salt) to help stimulate thirst and retain the consumed fluids.
- Monitor your urine colour and volume as a simple indicator of hydration status – if your urine is dark in colour and low in volume you need to drink more

Ask yourself these questions in the hours leading up to exercise

- Am I thirsty?
- Is my urine dark in colour?
- Is my body weight noticeably lower than yesterday?

Answering “yes” to any of these questions may indicate inadequate hydration

Examples of What to Eat and Drink Before A Game

Enjoy one of these menu’s two to four hours before a big game to make sure you’re well fuelled and watered.
Sample Meals

**Menu 1:**
- 50g Rolled Oats with 350ml skimmed milk
- 1 Bagel with 30g light cream cheese
- 330ml Orange Juice and 1 medium banana

*Nutritional Information: 680kcal; 145g carbohydrate; 32g protein*

**Menu 2:**
- 1 bagel with 100g sliced turkey breast and mustard
- 330ml Orange Juice and 1 medium banana
- 500ml Gatorade Perform

*Nutritional Information: 737kcal; 134g carbohydrate; 36g protein*

**Menu 3:**
- 100g penne pasta with 1 chicken breast and 100g pasta sauce
- 1 slice of white bread
- 330ml orange juice

*Nutritional Information: 777kcal; 135g carbohydrate; 37g protein*

15 mins before the game

As opportunities to consume energy and fluid are restricted to breaks in play, consuming carbohydrates shortly before exercise will start to meet the fuelling demands of the match.

**GATORADE PRIME**

The science doesn't lie, and research has proved it: preparing before exercise can have a big impact on your performance. Simply put: the better you prepare, the better you'll perform.

Gatorade PRIME is designed to provide a convenient and easily digestible source of carbohydrate energy shortly before exercise.

*Nutritional Information: 118ml; 24g carbohydrate; 106mg sodium*
Nutrition for Short Games (30 to 60mins)

Your game day nutrition is important, even for short games. Here’s what you should consume, and why.

Even if it seems like a short game it’s still important to eat properly beforehand. This is mainly for recovery, which will help your training over the next few days. So eating a sensible pre match meal is a good habit to get into.

During games under an hour, you don’t need to take on extra liquid or carbohydrate and the chances of you being able to do that are limited anyway. However, it certainly wouldn’t hurt to take a quick swig of sports drink at half time. There has been research on the effects of mouth rinsing with a sports drink that shows small performance benefits even in events lasting under an hour.

“Even in short events, your key focus should be your pre-match nutrition. You should start in a good state of hydration and also with adequate stores of muscle glycogen from consuming enough carbohydrate. Make sure you follow the same pre exercise nutrition that you would for any sport or any match duration.” - James Carter, Sports Scientist, Gatorade Sports Science Institute

Nutrition for games lasting from 60 minutes to 2-hours

The longer and more intense a match, the more crucial that your game-day nutrition becomes. Here’s what to eat and drink for games lasting up to two hours:

“During a full length match you’ll experience significant depletion of your carbohydrate stores. For example, recreational midfield footballers can cover around 8 to 9 km during a match, while professional players can easily cover 10-12 km. You also need to factor in a warm-up, plus the potential for extra time in cup matches.” - James Carter, Sports Scientist, Gatorade Sports Science Institute

The fact that your carbohydrate energy stores may run out means you need to make full use of any stoppages and the half time break to take on a sports drink, an energy gel or whatever you’re used to using as your carbohydrate source. Aim for at least 30 g of carbohydrate per hour, and if you can tolerate more it certainly wouldn’t hurt.

Nutrition for All Day Tournaments

During day-long tournaments you might play in several high intensity matches, without much time to recover between them. Nutrition becomes crucial to your performance, so here’s how to make sure you optimise yours.

Specifically, during play you should aim to consume 30g of carbohydrate per hour, even if that comprises of 20 minutes of play and 40 minutes of waiting for the next game. A good example would be a bottle of sports drink, which usually contains around 30 g of carbohydrate as well as electrolytes to drive fluid retention. This should help make sure you start subsequent games with enough energy.
“Gatorade has been formulated over a number of years of rigorous testing with athletes to make sure that the quantity and type of carbohydrate is right. The most favourable rate of gastric emptying to help optimise carbohydrate, as well as fluid delivery to the bloodstream and to the working muscles is a solution of 6 to 8% carbohydrate, and Gatorade has that.” - James Carter, Sports Scientist, Gatorade Sports Science Institute

Nutrition for Batting Sports

Batting sports such as cricket and baseball add another dimension to game-day nutrition, although the same principles apply as they do with any team sport. Here are some points to consider.

For batting sports, your game day nutrition depends on how active you are at any given time. Many batting sports incorporate extended periods of inactivity, where there isn’t such a need to be constantly refuelling. However, it’s still important to begin the day with a carbohydrate based meal, two to four hours before you may be called into action. Hydration is always important to, so aim to keep sipping a drink.

During periods of activity, for example bowling, pitching or batting, you should make the most of any breaks to keep your energy and fluid levels topped up. This could involve sipping 100-200 ml of sports drink or taking on board any carbohydrate that you’re comfortable with, be it a drink, energy gels, a banana or an energy bar. However, a fluid source makes a good choice because you are meeting two goals in one: fluid and carbohydrate replacement.

This is especially important if you’ve been active for a long time without a break. If you’re feeling tired during these times it won’t do you any harm to try and halt play somehow. Elite cricketers sometimes call for a change of equipment or for physiotherapy, and use it as an opportunity to sip on a sports drink. Sports such as cricket also have scheduled breaks in play and these are great opportunities to replace lost fluid and energy. If you have a longer break in play, say two or three hours, you should look to have a small meal containing around 100 g of carbohydrate. This might be your mid-tournament meal, and will get you back to where you were at the beginning of the day.

“You should practice your match day nutrition in training, preferably in pre-season. If you turn up to a big game and start trying to consume 30-40 g of carbohydrate for the first time ever, the chances are you’ll feel sick and play badly. So give yourself plenty of time beforehand to get used to it.” - James Carter, Sports Scientist, Gatorade Sports Science Institute
The margin between victory and defeat is often very small. Diet affects performance, and it is your day-to-day nutrition that supports your training and this will ultimately improve your performance.

There are a number of factors that can affect your nutritional strategy:

- How far do you need to travel for the game?
- How many opportunities are there to drink or take on carbohydrates?
- What will the range of temperatures be?
- Is food readily available after exercise?
- How many games are you playing: is it a one-off game or a tournament format?

**Background**

Most team sports can be described as moderate-to-long duration exercise. However, they differ from prolonged, continuous moderate-to-high intensity exercise in a number of key ways, and therefore the nutritional challenges vary.

Team sports involve passages of high-intensity work, such as sprinting and jumping, followed by periods of low-intensity activities, such as standing, walking, and jogging. Players' ability to perform repeated sprints with short duration recovery in between is an important determinant of performance in intermittent team sports.

Breaks in play are also incorporated which provide suitable opportunities for recovery and also for the intake of fluids and carbohydrates.

Finally, team sports also combine a complex combination of physical, skill-based and cognitive activities which can be impaired if proper nutritional strategies are not implemented and maintained.

**BEFORE**

The goal is to start exercise adequately fuelled and hydrated. Not only will this help you perform on game day, but it will also help you get the most out of your training.

**Fuelling**

Eating before exercise tops up the body's carbohydrate stores (glycogen), especially if exercising in the morning. It also helps to maintain blood sugar levels which can help improve performance.

- The pre-event meal should be eaten 2-4 hours beforehand
- Contain between 100 to 200 grams of carbohydrates (2 g carbohydrate per kg body weight)
- Be low in protein, fibre and fat to minimise the risk of gastro-intestinal discomfort and increase carbohydrate delivery to the muscles.

Use these recommendations to help determine what works for best for you! Hydration Starting exercise dehydrated can contribute to impaired exercise performance. As such, use these guidelines to help you optimise training and competition:
• Slowly drink 5 ml fluid per kg of your body weight 2-4 hours before exercise1, for example: 400 ml for an 80 kg athlete.
• Consuming foods or drinks that contain sodium (salt) will also help to stimulate thirst and retain the consumed fluids1.
• Monitoring your urine colour and volume is a simple indicator of hydration status – if your urine is dark in colour and low in volume you need to drink more.

Ask yourself these questions in the hours leading up to exercise:

• Am I thirsty?
• Is my urine dark in colour?
• Is my body weight noticeably lower than yesterday?

Answering “yes” to any of these questions may indicate inadequate hydration. However, it is important to take on board your pre-exercise fluid with at least 45 min gap separating intake from exercise (preferably longer). This should allow ample time for you to void any accumulated urine.

Use the handy poster on the next page to ensure that you’re always adequately hydrated before a session:
Are You **Hydrated?**

If your urine is pale like lemonade, that’s a sign of proper hydration.
If it’s dark like apple juice, you need more fluids.

Gatorade contains carbohydrates and electrolytes to hydrate and provide energy to working muscles.
Enjoy one of these menu’s 2 – 4 hours before exercise to make sure you are well fuelled:

**Sample Meals**

**Menu 1:**
- 50g Rolled Oats with 350ml skimmed milk
- 1 Bagel with 30g light cream cheese
- 330ml Orange Juice and 1 medium banana

*Nutritional Information: 680kcal; 145g carbohydrate; 32g protein*

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DURING

There is plenty of scientific research explaining what you should eat and drink during exercise. However, every athlete is different and what works for one may not work for another. Therefore, your game-day nutrition should be based on the following recommendations and tailored to what works for you. Remember - breaks in play are an ideal opportunity to implement both fuelling and hydration strategies.

Hydration

When we exercise heat is produced, and the main mechanism by which the body loses this heat is by evaporation of sweat on the body’s surface. If we do not replace the fluid that is lost as sweat you become dehydrated.

Therefore, the goal of drinking during exercise is to prevent excessive dehydration (2-3% body weight loss) and changes in electrolyte balance as a consequence of sweating\(^1\), without drinking so much that you actually gain weight. Here is a guide to estimate your sweat rate:

1. Weigh yourself before training
2. Weigh yourself after training, and subtract the weight of any drinks you consumed
3. 1 kg of weight loss equals 1 litre of fluid loss. This should give you an idea of your sweat rate and, therefore, your required drinking rate during exercise to maintain your body weight within 2-3% of your starting weight
4. Do it several times to see how your body reacts at varying intensities and in different weather conditions.

Following these recommendations should ensure that you drink enough fluids to prevent dehydration without over-drinking as this could put you at risk of a rare but serious condition called hyponatremia (low blood sodium concentrations)\(^4\)

Are You a Salty Sweater?

Some athletes lose more sodium in their sweat than others. These athletes may need to supplement their sodium intake during exercise:

- Do they get a salty taste of sweat in their mouth when they train and race?
- Do they get eye irritation from salt getting in their eyes?
- Are salt stains visible on clothing worn during training or races?

GATORADE PERFORM

As an athlete, you need to maintain your performance during exercise.

Gatorade PERFORM has been scientifically proven to help athletes replace fluids, refuel working muscles and replenish electrolytes during activity.

Nutritional Information: 500ml: 30g carbohydrate; 250mg sodium

Gatorade Team Sports Training and Nutrition Guide
**Fuel Requirements**

The energy needed for high-intensity efforts is provided predominately from the carbohydrate that is already stored within your body and the carbohydrate that you take on board during exercise.

However, our bodies cannot store large quantities of carbohydrate, and these stores become depleted. It is therefore important to take on board carbohydrate, in the form of a sports drink, gel or bar (this is down to individual preference and tolerance).

**POST TRAINING/EVENT**

**Foods and Fluids**

The nutritional challenges after exercise include the need to rehydrate, replenish carbohydrate stores, restore electrolyte imbalances and to rebuild and repair muscle tissue with protein.

After exercise it is recommended to drink 1.5 L of fluid for each kg of body weight lost. So if you lose 2 kg of body weight then you should drink 3 litres of fluid to ensure rehydration.

Consuming foods and drinks containing sodium will stimulate thirst and promote fluid retention allowing for a speedier return to fluid balance.

Ingesting protein after exercise provides the amino acids needed to promote training adaptations. Approximately 15-20 g protein is sufficient to stimulate muscle repair and promote muscle building after exercise.

As carbohydrate stores are depleted during prolonged endurance exercise it is recommended to consume 1 - 1.5 g per kg body mass of carbohydrate over several hours. For a 70 kg athlete that is 70-105 g carbohydrate.

**Recovery food and fluid examples:**

Immediately after exercise:

Food or drink containing protein, carbohydrate, fluid and electrolytes to start the recovery process.
GATORADE RECOVER

Nutrition is a vital part of your recovery process.

Gatorade RECOVER is a protein, carbohydrate and electrolyte drink that provides hydration and muscle-recovery benefit after a challenging workout. RECOVER has the consistency and great taste you'd expect from Gatorade to help you to prepare for the next challenge.

Nutritional Information: 500ml; 14g carbohydrate; 16g protein; 250mg sodium

Reference List