Rugby Nutrition and Training Guide
The training undertaken by rugby players calls 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 you’re well fuelled for training and fast recovery. The information here explains what you need to do in order to make sure you’re getting it right, starting with hydration.

**How to Stay Hydrated**

Water typically accounts for 60% of your total body mass, and plays 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:

**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.

**Tips 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 and liver (glycogen) and as glucose in the blood. Here’s how to make sure you eat enough of the right stuff to ensure that your carbohydrate stores are stocked up before training and match day.

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 competition you need 5 to 7 grams of carbohydrate per kg of body weight per day. For a 90kg rugby player, that works out at around 550 grams of carbohydrate per 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.

**Eight essential 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. Stir fries 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 takeaway 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 smart-phone 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**

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

Your body needs protein for growth and maintenance, as it’s the major structural component of all cells in the body. Proteins that contain all of the essential amino acids are referred to as being 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 rugby 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 90kg player should look to consume 120 to 160g 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

Four Top Protein Tips - The best ways to include good quality proteins in your diet

- Choose lean sources of protein such as chicken or fish, and only eat fatty ones in moderation (such as spare ribs or burgers).
- Consume your protein in doses of 20 to 25 grams per serving (e.g three eggs).
- Equally space your protein meals throughout the day.
- Consuming protein before you go to bed can be an effective strategy for achieving your daily protein intake and can aid in the recovery process.

Fats: What to eat each day

Fat isn’t all bad. In fact it’s an essential part of a rugby player’s diet. Here’s how to leave the bad ones behind and eat enough 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

When training for an event it is important that you plan and practice your nutritional strategies in as much depth as your training.

“Elite rugby clubs recognise that a good day to day diet is essential, and that’s why they have their own nutritional support staff to help their players achieve this. For the rest of us it’s important to follow solid research-based guidelines like the ones set out here.” - Adrian Hodgson, Sports Scientist, Gatorade Sports Science Institute
You’ve done the training, you’ve polished your boots, you’ve rested, and now it’s 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 rugby, 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. Elite rugby clubs often have support staff to ensure their players get their nutrition spot on but recreational rugby players aren’t so fortunate. The old school approach is often to just turn up, play and recover after with a beer. It sounds like fun but it certainly won’t help you perform to your best level. This is why modern rugby players are more aware of the importance of nutrition for performance even if they don’t always know the best way to go about it.

“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.

**Match Day Questions**

Factors that affect your game day nutritional strategy:

1. How far do you need to travel to the match?
   A: ________________________________

2. How long is the match or will you play several matches?
   A: ________________________________

3. How many opportunities are there to drink or take on carbohydrates?
   A: ________________________________

4. What will the range of temperatures be?
   A: ________________________________

5. Will fuel be readily available at half time and afterwards?
   A: ________________________________
There's strong scientific evidence showing that carbohydrate helps athletes perform harder for longer, even if it's for less than an hour. There have also been tests done during real rugby training sessions showing that carbohydrate consumption improves the performance of drills and skills. So your main goal before a game is to start adequately fuelled and hydrated. Not only will this help you perform on game day, but the same approach can also help you get the most out of your training.

“Even though rugby isn’t a purely endurance based sport, the physiological and metabolic demands on players are huge. Rugby players are exercising at very high intensities throughout a game and as a result they are expending a lot of energy. The main source of this energy for rugby players is carbohydrate.” - Adrian Hodgson, Sports Scientist, Gatorade Sports Science Institute

What to Eat Beforehand (2–4 hours before)

Eating before exercise tops up the body’s carbohydrate stores, known as glycogen, and helps to maintain blood sugar levels which can improve performance. Your pre-event meal should be eaten 2 to 4 hours beforehand, so experiment with what works best for you. It should contain between 100 to 200 grams of carbohydrates, depending on your size and how hard you work on the pitch. This pre-match meal should be low in protein, fibre and fat to minimise the risk of gastrointestinal discomfort, which occurs due to the food being slowly digested.

Pre-Game Menu

Enjoy one of these menu’s two to four hours before a big game to make sure you’re well fuelled:

**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*

**What to Drink Beforehand (2–4 hours before)**

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

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?

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.

**GATORADE®**
Answering “yes” to any of these questions may indicate inadequate hydration. Here are some tips to ensure you start exercise hydrated:

1. Slowly drink 5-7 ml fluid per kg of your body weight, for example: 350-500ml for a 70kg athlete.
2. Consuming foods or drinks that contain sodium (salt) will also help to stimulate thirst and retain the consumed fluids.
3. 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.

**15 minutes before the match**

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*
There’s plenty of scientific research about 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 but also tailored around what works for you.

**What to Eat During a Game**

The energy needed for rugby comes predominantly from the carbohydrate that you store and the carbohydrate that you take on board during exercise. However, our bodies cannot store large quantities of carbohydrate, and these stores become depleted within approximately an hour (depending on how hard you play and what you ate beforehand). It is therefore important to consume carbohydrates during a match, such as a sports drink, gel or energy bar (this is down to individual preference).

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.

“Performing or training in a dehydrated state has been shown to increase the physiological demands on the body and cause fatigue. This is a situation that should be avoided by all rugby players and understanding the importance of fluid intake before, during and after exercise will help prevent dehydration.” - Adrian Hodgson, Sports Scientist, Gatorade Sports Science Institute
**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*

**What to Drink During a Game**

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The goal of drinking during exercise is to prevent excessive dehydration, but without drinking so much that you actually gain weight. To do this, you need to estimate your sweat rate.

**How to Estimate Your Sweat Rate:**

1. Weigh yourself before a game
2. Weigh yourself after the game 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
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. Over drinking can put you at risk of a rare but serious condition called hyponatremia, where you have low blood sodium concentrations, and can have similar side effects as dehydration.
Are You a Salty Sweater?

Some athletes lose more sodium (salt) in their sweat than others, which may put an athlete at risk of cramps during exercise. These athletes may benefit from additional sodium intake during exercise.

Telltale Signs of a Salty Sweater:

- Do you get a salty taste of sweat in your mouth when you train or compete?
- Do you get eye irritation from salt getting in your eyes?
- Are salt stains visible on clothing worn during training or matches?
The nutritional challenge after exercise is to re-hydrate, replenish carbohydrate stores and to rebuild and repair muscle by consuming protein.

After exercise you should drink 1.5 litres 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 re-hydration. This ‘extra’ fluid will account for the likely loss through urinary output and should commence as soon as you have finished exercise, but not all at once. Fluid should be consumed in small amounts for 2-3 hours until the figure is reached. Consuming foods and drinks containing salt will stimulate your thirst and promote fluid retention allowing for a speedier return to fluid balance.

Eating protein after exercise promotes training adaptations, so aim for 15-20g of a high quality protein such as milk protein, whey, egg or meat.

Your carbohydrate stores will be depleted after exercise and replenishing these is an important step in the recovery process. You should also aim to consume 1 - 1.5g per kg of body mass carbohydrates over several hours (For a 90kg athlete this equates to 90-135g carbohydrate). If rapid replenishment is required as you have another session or game that day, then aim to ingest high glycemic carbohydrates. However if you have ample time for recovery then the pattern and timing of carbohydrate intake is less critical.

**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

"The timing of your post-game nutrition is important. The best time to eat protein after exercise is as soon as possible, preferably within the first 30-minutes. A recovery drink might be a convenient way of doing this, and then combine it with a meal soon after. You don’t need huge amounts of protein after exercise – recent research suggests that just 20 to 25 grams is enough.” - Adrian Hodgson - Sports Scientist, Gatorade Sports Science Institute

Reference List