

FOOD FOR RUGBY

NUTRITION FUNDAMENTALS

“

Something as simple as having the right foods at the right times can be the difference between winning and losing. Nutrition can either make a good athlete great, or a great athlete good.

”



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01. THE IMPORTANCE OF SPORTS NUTRITION

Nutrition is the process by which our bodies take in and use the food we eat, and the way that it influences our health.

Nutrition plays a big role in your health and wellbeing. Better nutrition is related to improved health, stronger immunity, lower risk of disease, and longevity (WHO). The foods that you eat provide the nutrients and energy your body needs to keep your body healthy and functioning. As an athlete, your energy demands are high, therefore the foods you eat and how you fuel your body will also play a big part in your performance on the rugby pitch.

Learning the basics of performance nutrition can help you optimise your health and maximise your athletic performance by:

- 🥕 **Improving health** and **avoiding nutrient deficiencies** through the provision of a diet that is adequate, balanced, varied, and sufficient.
- 🥕 **Achieving optimal body composition** for your given position.
- 🥕 **Recovering from training** sessions and matches.
- 🥕 **Maximising adaptations** to training through periodised nutrition.
- 🥕 **Improving match day performance.**



02. A BALANCED DIET

Daily nutrition should come from a variety of foods in order to get all the different nutrients that you need. Including the following food groups on a regular basis is a great starting point: **grains, fruits, dairy, vegetables, healthy fats, lean proteins, legumes and pulses.**

Nutrients are generally classified in **macronutrients** and **micronutrients**. Macronutrients supply energy (measured in calories) and provide the building blocks for muscles and tissues. These include carbohydrates, proteins, and fats. On the other hand, micronutrients do not provide energy but are essential to maintain good health. These include all the vitamins and minerals.

Your requirements for each of these nutrients will vary depend on many factors, including: body weight, age, gender, personal goals, training and competition goals, and training and competition demands.

Below you can find a general guide to the main nutrients but if you want to find out what your specific requirements are it is always best to consult with a registered nutrition professional on the **Sport and Nutrition Register (SENr)** that will be able to consider your individual needs and provide a detailed strategy to achieve your goals.







03. MACRONUTRIENTS

A. CARBOHYDRATES

Carbohydrates are your body's main source of energy during exercise and key for good athletic performance.









FUNCTIONS

-  Source of energy (4 kcal per gram)
-  Predominant fuel during high-intensity exercise (such as during a rugby match)
-  Provides energy used by brain and red blood cells
-  Source of dietary fibre which is important for gut and overall health



FOOD SOURCES

-  Grains: oats, rice, bread, wheat, pasta
-  Starchy vegetables: potatoes, sweet potato
-  Beans and pulses: all kinds of beans, lentils, chickpeas
-  Fruits: bananas, mango, berries, citrus fruits, melon
-  Dairy: milk, yoghurt, cheese
-  Sweets and sugars: bake goods, jam, candy, chocolate bars, syrups



TIMING

For optimal rugby performance, the timing on which you eat carbohydrates is important. Visit the [Nutrition for Training](#) and [Match Day Nutrition](#) toolkits to understand more about your carbohydrate needs around your training and competition cycles.

Loading for match day:

Eating an increased amount of carbohydrates the day or days before a match can help you increase your muscle glycogen (carbohydrate) stores, which will result in improved match performance.

Pre-exercise meal:

A high-carbohydrate meal consumed 3 to 4 hours before high-intensity training sessions or kick-off can help top-up your muscle and liver glycogen (carbohydrate) stores.

During exercise:

Consuming additional carbohydrates during a match or an intense training session can also help improve performance. This can be in the form of beverages such as sport drinks, or snacks, such as fruits, bars or specialised products (carbohydrate gels, chews, or gummies)

Post-exercise:

After a match or an intense training session, your glycogen (carbohydrate) stores are likely low or even depleted. Consuming a good amount of carbohydrates in your post-exercise meal will help you replenish your fuel stores so you are ready for your next training session.



Your daily carbohydrate requirements will change everyday depending on your training and competition demands.

Use your body mass (in kilograms) and the guidelines below to calculate your carbohydrate needs depending on your meal or daily goal:



CALCULATOR

Light training day **<3 g/kg**

Moderate training day **3-5 g/kg**

Hard training day **4-6 g/kg**

Match day -1 **> 6 g/kg**

Match day breakfast **1-3 g/kg**

Pre-match meal **1-2 g/kg**

During match **30-60 g/h**

Post-match meal **1.2 g/kg/h**



TIP: Add 20 g of protein to enhance carbohydrate storage

Match day +1 **4-6 g/kg**

EXAMPLE: *On a moderate training day, a 100 kg athlete would need anywhere from 300 to 500 grams of carbohydrates, and on the day before a match (MD-1), the same athlete would ideally need at least 600 grams of carbohydrates.*



B. PROTEINS

Proteins are the building blocks for all your muscles and body tissues.



FUNCTIONS



Provide structure to every cell in the human body!



They form neurotransmitters, hormones, immune cells, DNA, and RNA.



FOOD SOURCES



Meats and animal products: beef, chicken, pork, eggs, cheese, milk, yoghurt



Beans and pulses: beans, chickpeas, lentils



Soy products: tofu, tempeh, natto, soy milk



Nuts and seeds: peanuts, almonds, cashews, walnuts, pumpkin seeds, chia seeds



TIMING

In order to promote maximal rates of muscle protein synthesis, rather than having 2 or 3 large meals, it is recommended that protein is consumed throughout the day, especially before and after exercise. Instead of focusing on the total amount of protein, aim to eat a “regular” amount of protein across the course of the day (e.g. 25 to 40 grams of protein every 3 to 4 hours).



TOTAL

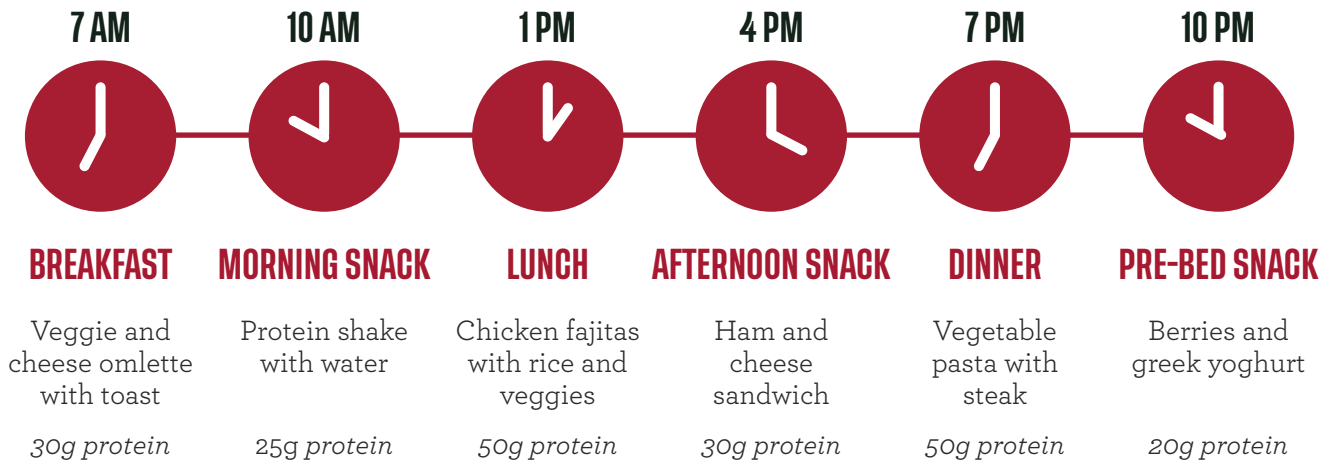
Your daily protein requirements should usually remain consistent on a daily basis, regardless of training or competition schedules. You can use your body mass (in kilograms) to calculate your daily protein needs:



CALCULATOR

1.5 to 2.0 g/kg of body weight per day

EXAMPLE: A 100-kg rugby player should be getting around 150 to 200 g of protein everyday. This is what a day in meals would look like:







C. FATS

Fats serve as an important energy storage and an protection for vital organs in our bodies.








FUNCTIONS

-  Protection of vital organs such as heart, liver, spleen, kidneys, brain, and spinal cord.
-  Helps absorb fat soluble vitamins (A, D, E, and K).
-  Function as precursor of important hormones
-  Makes food tastier!



FOOD SOURCES

-  Oils and butters: olive oil, butter
-  Meats and animal products: beef, chicken, pork, bacon, milk, cheese
-  Fish and seafood: salmon, tuna, mackerel
-  Nuts and seeds: peanuts, almonds, cashews, walnuts, pumpkin seeds, chia seeds
-  Some fruits: coconut, avocado, olives



TIMING

Timing of fat intake should not be a huge concern. Aim to distribute your total fat intake throughout the day and avoid having meals high in fat too close to a match or a training session.



TOTAL

Your daily fat requirements can vary depending on your total energy intake targets and body composition goals. General guidelines for athletes recommend avoiding fat intakes below 20% of total energy intakes to ensure adequate intake of fat-soluble vitamins and essential fatty acids. You can use your body mass (in kilograms) to calculate your daily fat needs:



CALCULATOR

0.8 to 1.4 g/kg of body weight per day

EXAMPLE: Depending on individual goals and energy intake targets, a 100 kg athlete would need anywhere from 80 to 140 grams of fats per day.



04. MICRONUTRIENTS

Micronutrients are compounds that are required in small quantities (<1g) to maintain normal physiological function. These do not supply energy but play essential roles in our metabolism.

A. VITAMINS



PLAYS A ROLE IN

Immune function, growth and development, vision.



FOOD SOURCES

Beef liver, pate, sweet potato, spinach, carrots, cantaloupe, red peppers.



PLAYS A ROLE IN

Synthesis of collagen, L-carnitine. Antioxidant.



FOOD SOURCES

Red and green peppers, oranges and citrus fruits, kiwifruit, strawberries, broccoli.



PLAYS A ROLE IN

Bone health, immune function.



FOOD SOURCES

Mainly from sun exposure. Salmon, egg, sardines, trout, cod liver oil.



PLAYS A ROLE IN

Antioxidant and immune function.



FOOD SOURCES

Sunflower seeds, almonds, hazelnuts, peanuts and peanut butter.

VITAMIN K

PLAYS A ROLE IN

Blood clotting.

FOOD SOURCES




Natto, collards, turnips, spinach, kale, broccoli, soybeans, carrots, edamame, okra.

VITAMIN B-COMPLEX

PLAYS A ROLE IN

These vitamins are involved in many metabolic processes and have important specific roles in our bodies.

These include:

-  thiamine (B1)
-  riboflavin (B2)
-  niacin (B3)
-  pantothenic acid
-  vitamin B6
-  biotin (B7)
-  folate and folic acid, and cyanocobalamin (B12).

FOOD SOURCES

B1: Peas, nuts, wholegrain breads.

B2: Milk, eggs, mushrooms, yoghurt.

B3: meat, fish, wheat, eggs.

PA: chicken, beef, liver, eggs, avocado.

B6: pork, poultry, peanuts, oats, bananas, milk.

Folic acid: broccoli, brussel sprouts, leafy greens, chickpeas and kidney beans.

B12: meat, fish, eggs, milk, cheese, fortified cereals.



B. MINERALS

Minerals are essential inorganic compounds stored in various tissues that are crucial for normal physiological function. Some of the key minerals to keep in mind as they are more likely to be deficient during low calorie diets are calcium, iron, and zinc. Iron levels in particular should be monitored regularly (1 to 4 times per year) especially in female players and athletes following a vegan or vegetarian diet.

Visit [Food for Rugby](#) and the toolkits on the [Female Athlete](#) and [Special Considerations](#) (plant-based diets) to learn more!

CALCIUM

Milk, cheese, dairy foods, green leafy vegetables, and fortified foods.

IRON

Red meat, dried fruit, beans, and nuts.

ZINC

Milk, shellfish, cheese, and bread.



05. HYDRATION AND ELECTROLYTES

During rugby training and matches your body will lose water through sweat to regulate your body temperature, and if it is not adequately replaced can rapidly lead to dehydration. Dehydration can cause decrements in physical and mental performance, therefore good hydration strategies should be followed to ensure you maintain optimal performance through the game.

To ensure pre-exercise hydration, players should consume 5 to 7 ml per kg of body weight of fluid at least 4 hours before exercise and further 3 to 5 ml per kg 2 hours before exercise.

EXAMPLE: *A 100 kg athlete should drink 500 to 700 ml of fluid 4 hours before exercise and 300 to 500 ml of fluid 2 hours before exercise.*

To offset the negative effects of dehydration on performance during exercise, the American College of Sports Medicine advises fluid ingestion at a rate that limits body mass loss to <2% of pre-exercise values.

EXAMPLE: *A 100 kg athlete should aim to limit water losses to 2 kg in a single exercise session. Losses larger than 2 kg can negatively affect performance.*



TIP: *The consumption of sports drinks during exercise may also be beneficial given that they not only contain electrolytes but also additional carbohydrates.*



TIP: *Choose cold drinks or slushies. Cold beverages are not only more palatable, but are beneficial to reduce the rise in body temperature during exercise.*

After training or competition, the goal is to replace any fluid and electrolyte loss incurred by the exercise session. Current guidelines recommend 1.5 kg of fluid for every 1 kg of fluid lost, consumed over time (as opposed to large boluses) to maximise fluid retention.

Do you know how much water you lose during a match or a training session? You can easily find out by weighing yourself before and after an exercise session! The difference in weight will be mostly from water losses.



TIP: Make sure you use your nude body weight and take into account any drinks you had during the exercise session.



06. 5 TOP TIPS FOR HEALTH AND WELLNESS

Here are our 5 top tips to help you maintain the right level of health and wellness.

- 1** A 'food first' approach should always be the foundation of every athlete's diet. Eating a **variety of healthy food** will ensure that you are consuming the right balance and amount of nutrients to support optimal health and performance.
- 2** A range of **colourful fruit and vegetables** should be consumed daily as different colours contain varying micronutrients all of which are vital for sustaining healthy bodily function alongside providing the potential to aid performance.
- 3** **Eat protein with every meal.** Aim to have 30 to 40 g of protein on a regular basis (every 3 to 4 hours) to support recovery from training and muscle growth.
- 4** As a general 'rule of thumb', **consume 2.0 to 2.5 litres of fluid per day**, increasing as training intensity increases. A simple suggestion would be to habitually carry a water bottle and drink consistently throughout the day.
- 5** Supplements are exactly what they say – supplement to a balanced diet. **Supplements should only be prescribed by qualified nutritionists**, dependent upon individual athlete circumstances. There are a lot of products in the market that are untested, unwarranted and do not support rugby performance and therefore should be avoided at all cost.

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