



## Rugby Coaching - Nutrition

### CARBOHYDRATE

Carbohydrate is the most important fuel for the working muscles during rugby, and should consequently make up the bulk of your diet. As shown above, this should be approximately 65% of the overall calorific intake. Whilst nutrition is a very individual thing, based upon metabolic rates and activity levels, a practical rule for you to follow is to ensure that you eat between 8 - 10 grams of carbohydrate per Kg body per day. This intake needs to be spread throughout the day. You should eat a variety of carbohydrate rich foods, in order to ensure a good mix of all essential nutrients, and it makes the diet more interesting!

Good sources of carbohydrate include breakfast cereals, all types of bread, oatcakes, rice cakes, cereal bars, Pasta, Rice, Potatoes (avoid chips, which have a high fat content), Corn based products, Pizza (be careful, as most toppings contain hidden fats), all types of bean, pulses, fruit & fruit juice.

Carbohydrates (carbs.) are classified according to the glycemic index (GI). Foods with a low glycemic index (also known as complex carbohydrates, the majority of those listed above) provide a steady, slow release of sugars into the blood, thus ensuring a more constant energy supply which the muscles can store ready for exercise. These foods should be eaten 3-4 hours before training or playing, to ensure that the muscle glycogen stores are loaded (a process not optimally achieved by consuming "simple sugars" close to performing). Conversely, high glycemic index foods (also known as simple sugars) provide a much quicker supply of sugars to the body, raising the blood sugar levels quite rapidly. Examples of such foods include cereal bars, bananas, jellybeans, Jaffacakes, and white bread. These foods are ideal for replacing muscle glycogen (the muscular carbohydrate store) after exercise.

Following exercise, not only are your glycogen stores depleted, but also there is a window of up to 2 hours when your body is optimally adjusted to replenish muscular glycogen stores. For this reason, you should aim to have 1g of carbohydrate per Kg body mass (or at least 50g, e.g. 2 large bananas) during this time period, and the same for every subsequent 2 hours until you sit down to eat a meal. If you prefer, drinking high-energy drinks, containing glucose, sucrose or maltodextrins in concentrations of 6ml/100ml can achieve this. These are different to the fluids that need to be drunk during exercise.

### PROTEIN

As an indication, Top-level rugby players need between 1.2 and 1.7 g of protein per Kg body mass per day. This is usually adequately achieved through a sensible and varied diet. Protein is of primary importance in the growth and development of the body, as well as being important in maintaining a healthy immune system. Table 1 details sources of protein in the diet. It should be remembered however that some of these foods are high in fat content, and that vegetable protein is usually of a lower quality than animal protein.

#### **Good sources of protein in the diet:**

<b>Animal</b>	<b>Vegetable</b>
Meat, poultry, offal	Beans - baked, haricot, kidney, etc
Fish	Pulses
Eggs (protein in the whites)	Nuts and seeds
Milk, cheese, yoghurt	Soya products
	Bread, potatoes, pasta, rice, cereals

### FATS

Fats form an essential part of a healthy diet. However, given that even the leanest players have large reserves of fat, there is no need to consume a lot of fat in the diet. Whilst many fats are easy to see, and therefore avoid (e.g. cream, dripping, butter, fat on meat), much of the fat players intake through their diet is not so obvious.



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Such fats are hidden in sauces that accompany foods; in meat, especially red meat; in the oils that food is cooked in; within nuts and seeds and also in products containing milk, such as cheese or chocolate.

*Practical hints to decrease the fat content of your diet include:*

- Buy low fat varieties where available.
- Use low fat spread only in small amounts (if at all).
- Avoid whole milk, cream, evaporated or condensed milk.
- Keep pastry products to a minimum.
- Eat less red meat: Replace with white meat or vegetables.
- Be careful of hidden fat in sauces.
- Trim excess fat off meat.
- Boil, grill, and microwave rather than roast or fry.

Using food labels on products will help you to select appropriate foods to eat. These will show you the amount of fat per 100g of product, and the amount per average serving. Try to choose, where possible, the lowest fat content food. For example, if you require a mid-afternoon snack, a typical Cornish pasty may have 35g of fat, whereas a Tuna and salad sandwich may only have 5.4g. Such information would also be important in calculating your daily protein and carbohydrate sources.

The sensible rule with fat products is one of moderation. Whilst it is important to have the occasional binge, it is equally important that this does not become a habit. Fueling the body appropriately, and maintaining body weight, are essential components of top level performance.

### **WHEN TO EAT**

The process of digestion is an active one, and therefore calories are burned up in the process. Therefore, it is better for smaller meals to be eaten more frequently than larger meals less often. This also helps to ensure that the body has a relatively constant supply of energy. You should eat a meal of high G.I. foods 3-4 hours prior to a game, as detailed earlier. However, should you feel hungry prior to a game (or you feel that your blood sugar levels need to be topped up), foods that have a high G.I. but low fat content, and which will not rest heavily in the stomach, (for example, Jaffa cakes, or jelly babies) are good foods to consider. It is therefore good practice to take a packet of these to games with you for this purpose.

As a general rule of thumb, your metabolic rate begins to slow around 8pm. Therefore, any calories consumed after this time will not be burnt off. It is important however that you don't go to bed on an empty stomach if you haven't eaten a meal by this time. Because the metabolism slows overnight, it is important that you provide the body with a stimulus to "kick-start the system" in the morning, when the body has been a number of hours without food. Your eating pattern should therefore consist of a large (a relative term) breakfast, with small, frequent meals (not snacks) throughout the day, and a light meal in the early evening.

### **DRINKING FOR RUGBY**

Water is Essential to normal body function. For example, it has been shown that 5% of dehydration can lead to a 20% decrease in performance. During exercise, the major water loss from the body is through sweat. If you are unsure how much water you can lose during a training session (which will obviously be influenced by environmental conditions), weigh yourself before and after training (remembering to remove wet and sweaty clothing). Every Kg of weight lost is equal to 1 Litre of water lost through sweating. This water must be replaced, both during matches and training, and you should be practiced at both. Indeed, during rugby, keeping hydrated is more important than supplying fuel to the muscles.

Therefore careful consideration should be given to the drink that you are using to rehydrate yourself. Drinks



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that are too concentrated will slow the process of absorption from the gut into the body, and consequently contribute to any dehydration effect. The drink which you are using should be diluted to between 4 -8 ml of glucose / maltodextrin / electrolyte per 100ml of water. This is not always the strength recommended by the manufacturers on the cordial products. If you are unsure, remember that water is a much better option than an expensive sports drink that is mixed too strongly. As detailed earlier, after exercise, a different concentration of drink is required, in order to allow the delivery of carbohydrates to the body.

The bodies' mechanism of warning you that you are dehydrated is the feeling of thirst. Please note that this means that you are already dehydrated and not drinking enough. A good indicator of your hydration status in your urine. It should be clear and non-smelly, and you should be going to the toilet every 2-3 of hours.