Introduction

Good nutrition for rugby players is essential for meeting the physical demands of training regimes, and for achieving peak performance on match days. The advice to follow outlines general guidelines to promote positive nutrition for players in order to improve sporting performance and aid general health and well-being.

Nutritionally adequate diets for rugby players must be incorporated into part of daily living. It is important to trial new nutrition plans during training, rather than during competitions. This will enable you to identify which strategies are suitable and realistic for optimising your performance.

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Nutritionally adequate diets for rugby players must be incorporated into part of daily living. It is important to trial new nutrition plans during training, rather than during competitions. This will enable you to identify which strategies are suitable and realistic for optimising your performance.

Generally rugby players should have a diet providing the following;

Fat 10-15%

Protein 20-25%

Carbohydrates 60-65%

**Carbohydrates**

Rugby players heavily rely on a carbohydrate (CHO) rich diet to provide the muscles with enough energy for an optimal power-endurance performance. Carbohydrates are stored in the body as glycogen, which is then broken down for energy during exercise. Intermittent bursts of power, followed by bouts of rest during matches can severely deplete glycogen stores in rugby players, therefore refuelling at half-time is essential. Foods rich in carbohydrates include rice, pasta, potatoes and bread, which should form the bulk of your caloric intake.

**How Much?**

A rugby player’s diet should consist of approximately 60-65% carbohydrates. The amount of carbohydrates required by players can vary depending on the amount of training completed, as well as their body composition. Current guidelines suggest;

* Consume approximately 5-7g of carbohydrate a day per kilogram of your body weight. This is based upon two sessions of 90 minute rugby training sessions and one match, per week.
* Consume approximately 8-10g of carbohydrate a day per kilogram of your body weight. This is based upon completing two 90 minute rugby training sessions and one match per week, with additional strength training sessions and/or speed drills.

**What Type?**

The type of carbohydrate can vary in their rate of absorption, digestion and influence on blood sugar levels. Glycaemic index (GI) is a measurement of how carbohydrate containing foods affect blood glucose levels. Foods with different GI levels should be consumed at certain times when preparing for a competition, in order to optimize your performance.

**Protein**

A rugby player’s diet should consist of approximately 10-15% of protein. Protein is essential for the growth and repair of muscle damage caused by exercise. Rugby players require additional protein than average people due to their increased needs of muscle repair after weight training, and to optimize muscle strength for the contact nature of the game.

It is crucial to point out that although good muscle strength, power and size is beneficial for the high-intensity nature of the sport, players should not become obsessed with becoming bigger and adopt unhealthy approaches in doing so. Players can negatively impact their strength and power if incorrect approaches are taken. Body weight goals should be made according to your weight, body type and level of playing.

Protein is not an ideal source of energy for rugby players – However it does help to optimize carbohydrate storage in the form of glycogen. If too much protein is consumed, it can be metabolised and stored as fat, and the rest will be metabolised into urea or other toxic by-products which must be excreted. This can increase urine levels and cause over-use of the kidneys and result in dehydration.

**How Much?**

Specific protein requirements can vary between individuals depending on their physical activity levels and body composition. General recommendations for protein intake amongst players are the following;

* Strength athletes require 1.5-2.0g per kg of body weight a day.
* Players who want to maintain or increase their muscle mass could consume between 2.0-2.2g per kg of body weight a day. This is considered a high intake and should only be undertaken if the player is regularly training at high intensities.

**What Type?**

Protein is formed of small substances called amino acids. Of the 20 known amino acids, 8 are considered ‘essential amino acids’, which means that cannot be produced by the body and must be obtained through food. Protein is present in both animal and plant sources. Neither animal or plant sources are inferior/superior; it is the quantity of essential amino acids that is important. Therefore, a vegetarian diet can be equally as rich in protein.

Good animal sources of protein include;

* Lean Beef
* Chicken
* Turkey
* Salmon and Tuna
* Eggs
* Cottage Cheese

Ensure that you monitor your intake of fat when consuming animal sources as a high saturated fat intake can have an adverse effect on health.

Good plant sources of protein include:

* Beans
* Lentils
* Peanuts

**Protein Supplements**

It has been strongly recognised that well-nourished athletes consuming a nutritionally balanced diet are meeting the recommended intake for protein, without additional protein supplementation. However, players may consider protein shakes to supplement deficiencies for achieving specific goals. For example research has identified the benefits of whey protein supplementation and greater protein intakes for greater increases in lean body mass and muscle size.

**Fat**

Rugby player’s diet should consist of approximately 10-15% fat. When carbohydrate stores are low, energy is produced from the body’s fat stores – however this should **not** be the primary source of energy. There are different types of fats that must be considered:

* **Saturated Fats** – Generally considered as ‘bad’ fat. Diets high in saturated fat is most commonly associated with negative health conditions such as heart disease and type 2 diabetes. Saturated fat is most common meat and dairy products. Players should keep saturated fat intake to a minimum, especially when consuming large amounts of protein from animal sources.
* **Poly-unsaturated Fats** – Known as ‘good’ fats due to their health promoting qualities. Polyunsaturated fats include the fatty acids omega 3 and omega 6 which are found in sunflower oils and spreads. Both are important for boosting the immune system and helping with brain functioning, enabling peak sports performance. Sources of omega 3 and omega 6 include vegetable oils and oils from cold-water fish including salmon, sardines, trout, mackerel and tuna.

**Helpful tips for Fat Intake**

* Try to increase intake of polyunsaturated fats by consuming at least 2 portions of oily fish a week.
* Change the method of cooking meat sources – Grill, steam or bake foods rather than deep frying.
* Cut off any visible fat on meat sources.
* Snack on mixed nuts and seeds – Try adding mixed nuts to meals such as porridge, cereals, salads or serve with fresh fruit and low-fat yoghurt.
* Use fresh herb for seasoning rather than butter or spreads.
* Use olive oil for cooking rather than butter or lard.
* Avoid fatty foods before, and immediately after exercise to avoid gastric discomfort.

**Hydration**

Adequate hydration is crucial for ensuring peak performance at all stages throughout training and competitions. Poor hydration status can affect both physical and mental functions. For example, good hydration status increases blood flow which activates the sweating mechanism to cool the skin.

Water is the primary fluid for hydrating; however sports drinks also play an important role for replenishing carbohydrate stores during matches, and replacing electrolytes lost through sweat.

Fluid loss from the body can peak at 3L per hour, so fluids much be replaced at higher rate it is lost at. Thirst is a bad indicator of hydration status for rugby players. Players should consider the following hydration guidelines and tools:

**Helpful Hydration Tips:**

Sports drinks can be expensive to purchase on a regular basis. The following tips demonstrate how to make home-made sports drinks using water, fruit juice and salt.

* **Hypotonic Drink** (Low in Carbohydrates) – Mix 250ml of any fruit juice with 750ml of water and a pinch of table salt.

When? Hypotonic drinks are perfect for maintaining good hydration status as they have a slightly better flavour than ordinary water, without adding too many calories.

* **Isotonic Drink** (Moderate in Carbohydrates) – Mix 500ml of any fruit juice with 500ml of water and a pinch of table salt.

When? Isotonic drinks are ideal before, during and after rugby matches because they contain a moderate quantity of carbohydrates for immediately preserving and replenishing carbohydrates and electrolytes lost through exercise.

* **Hypertonic Drink** (High in Carbohydrates) – Mix 750ml of any fruit juice with 20ml of water and a pinch of table salt.

When? Hypotonic drinks are ideal for reloading immediately after a match because of their high carbohydrate content.

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