

**ST. JOHNSTONE FC  
YOUTH ACADEMY**

***EAT TO COMPETE  
PERFORMANCE NUTRITION  
BOOKLET***

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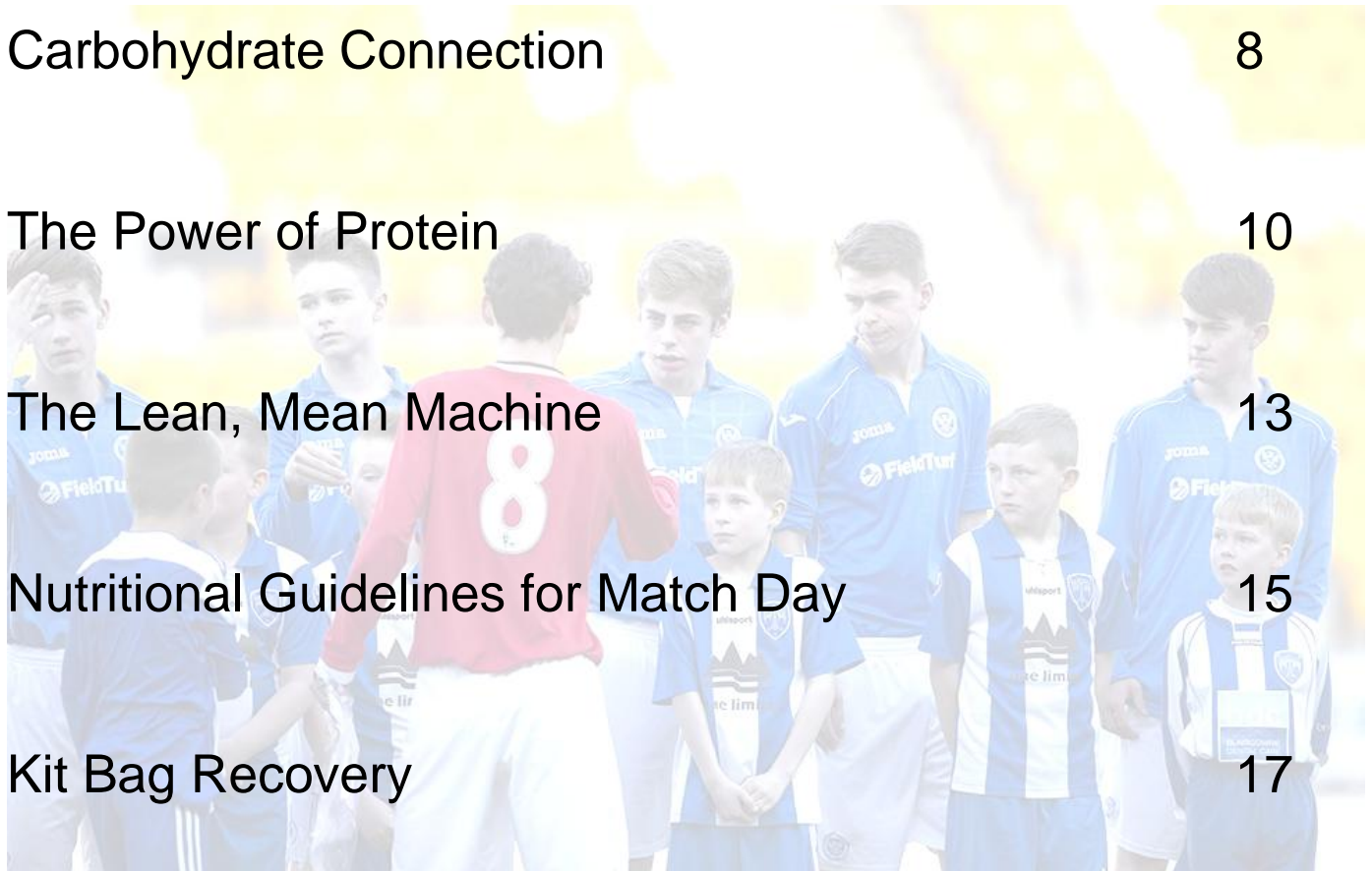
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# EAT TO COMPETE

Performance Nutrition



## Eating and Drinking for Action

Your body needs fuel and fluids to stay alive and to allow your muscles to work during exercise. You get fuel and fluid from the foods and drink you take in everyday.

Energy, which is measured in calories, comes from nutrients in food known as carbohydrate, protein and fat. Food also contains smaller amounts of substances called vitamins and minerals, which are needed for your body to work properly and prevent illness.

Eating the right foods and enough of them will help to keep you healthy and perform well in your sport. To do this, you need to eat a variety of foods to make sure you are getting all the nutrients you need. To help you do this, look at the picture of foods opposite that are arranged in a circle.

The amount you eat will depend on your age and your activity level – your appetite is your guide so don't go hungry!

The carbohydrates group gives you energy and vitamins and minerals and you should try to eat foods from this group 6 to 8 times a day. Sugary foods are also carbohydrates, but are not as nutritious as foods like bread, cereals, pasta or rice. You can include some sweet foods, but don't let them take place of more nutritious choices.



Fruit and vegetables are full of vitamins and minerals that are needed to protect the body against illness as well as helping to make energy available from your food. You should aim to eat from this group 5 times a day. This might seem like a lot, but you can include them in different ways:

- Fruit juices
- Fruit on top of your breakfast cereal
- Tinned fruit
- Vegetables in stews and soups
- Fruit smoothies – milk, yogurt and fruit liquidised in a blender





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Protein is needed to allow the body to grow, to make hormones and enzymes that control body functions and to make antibodies which fight germs and illnesses. Muscles are also made of protein, so a good intake of these foods is needed to allow them to grow. Meat, fish, poultry and eggs are excellent sources of protein, but if you are a vegetarian, you can get protein from peas, beans and pulses too.



Foods in the fats group include oil and spreads, dairy products such as milk, cheese and yogurt. Dairy products are high in calcium, which is essential for bones to grow and stay strong and they also give protein and vitamins. Try to include 2 to 3 servings of dairy produce every day. Examples of healthy fats to include are olive



oil, sunflower oil, sesame and flax oils. Nuts and seeds are also sources of good fats - sprinkle some on your breakfast cereals.

Drinking is just as important as eating and exercise is thirsty work. Over half your body weight is made up of water, and keeping it topped up is essential for it to work properly. During exercise, you lose water through your skin as sweat, which is the body's way of keeping cool. If you don't keep your body's water levels up, you will become dehydrated and you won't perform at your best, and you may start to feel unwell.

Try to drink 6 to 8 glasses of fluid everyday - include water, diluted squash and fruit juices. If you drink sweet fizzy drinks, only take them at mealtimes as they are less likely to cause as much harm to your teeth than if you drink them between meals.



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During exercise, you should drink small amounts regularly and don't wait until you are thirsty. The hotter the weather, the more you need to drink. Make sure you have your water bottle with you, filled up with a drink that you like the taste of - either water, diluted fruit squash or diluted sports drinks.

An easy way to check that you have enough fluid on board is the 'pee test' - look at the colour of your pee! The lighter the colour, the better.

## Fitting your eating and drinking around your training and matches

What and when you eat and drink is important to make sure that

- you have plenty of fluid on board
- your muscles are well fuelled up before exercise
- you refuel your muscles after exercise, ready for the next session.

## Eating and drinking before training or matches

The foods to focus on are in the carbohydrate group. These are the foods that give energy that is most easily used by your muscles during exercise. How much you eat and what you eat will depend on when you eat it - look at the boxes below to get some ideas.

## Pre-exercise meals - 2 to 3 hours before training or matches, taken with a drink

- ✓ Pasta with tomato-based sauce with meat, fish or beans
- ✓ Baked potato with cheese, tuna or baked beans
- ✓ Sandwich or roll filled with chicken, egg, tuna or peanut butter
- ✓ Rice or noodles with chicken or lentils
- ✓ Meat or fish, vegetables and potatoes
- ✓ Baked beans on toast

## Pre-exercise snacks - 1 to 2 hours before training or matches, taken with a drink

- ✓ Yogurt and fresh fruit
- ✓ Pancakes and syrup or jam
- ✓ Jam sandwich
- ✓ Cereal bar
- ✓ Breakfast cereal with milk or yogurt and banana
- ✓ Fruit and a glass of milk
- ✓ Soup and bread

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## Eating and drinking during training

If you are at all-day training sessions, you will need to have snacks and drinks for break times. Remember to drink during your training session as well. If you are travelling away from home, bring some food for the journey.

Snacks are needed to keep up your energy levels, be handy to have in your kit bag, and be quick and easy to eat.

Check out the box for ideas for foods to bring with you.

## Snacks for short breaks during training

- ✓ Water, diluted fruit juices, squash or sports drinks
- ✓ Sandwiches or filled rolls
- ✓ Bananas, grapes, apples
- ✓ Sultanas, raisins, dried apricots
- ✓ Fruit loaf, pancakes
- ✓ Biscuits like jaffa cakes and fig rolls
- ✓ Cereal and energy bars
- ✓ Yogurt drinks

## Eating and drinking after training or matches

After exercise, you need to keep drinking to replace the water lost as sweat during exercise, and eat to replace the energy you have used up - a bit like refilling your petrol tank after completing a long journey. The sooner you eat the better; your muscles are like sponges in the first hour after exercise and they soak up carbohydrate that is then converted into glycogen and stored. Always take a drink after exercise too. Here are some ideas...

## Recovery Snacks - taken with a drink

- ✓ Fresh fruit - bananas, apples, grapes
- ✓ Fruit yogurt or yogurt drink
- ✓ Bread or roll with honey or jam
- ✓ Pancakes
- ✓ Tub of custard or rice
- ✓ Fruit loaf
- ✓ Biscuits - digestives, jaffa cakes, fig rolls
- ✓ Cereal bars



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## Recovery meals - taken with a drink

- ✓ Baked beans on toast
- ✓ Baked potatoes with meat or cheese
- ✓ Pasta or rice with meat or cheese and tomato based sauce
- ✓ Meat or fish, vegetables and potatoes
- ✓ Desserts such as fruit crumble, yogurts, ice cream and custards

## Putting it all together

- A** remember to eat a variety of different foods to make sure you are getting all you need to grow, stay well and perform well in your sport
- A** look at the circle of foods again and make sure you are eating foods from all the groups
- A** your appetite is your guide to how much to eat - don't go hungry, but don't fill up on a lot of sugary and fatty foods!
- A** take snacks in your diet to be well fuelled up before training and matches and to replace energy after exercise
- A** drink plenty of water, diluted juices and squash everyday and especially during and



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## Carbohydrate Connection

Carbohydrate is one of the nutrients found in food and it is a major fuel or energy provider in everyday diets. It also plays an important role in exercise - it is the major fuel to allow the muscles to work hard.

Carbohydrates are chains of glucose or sugar units. Some carbohydrate in food is made up of short chains of sugar units, and are recognised as sugary foods such as jams, sweets, chocolate and soft drinks, where other carbohydrates are made up of long complicated chains of sugars and are called starches eg bread, potatoes, cereals and pasta.

All carbohydrates are broken down by digestion into sugar and are then absorbed into the blood. Carbohydrate is then stored in the muscles and liver as glycogen. Muscle glycogen is a major fuel provider for that muscle to work during exercise, especially when training or playing hard.

The body has a limited amount of space to store glycogen, and it can be used up quickly during long training sessions. Running out of glycogen during training can mean that you will feel tired, and that will affect your performance. So it is very important to refill your stores regularly, to make sure you have enough fuel to allow you

to work hard in the next session. The way you do this is to include carbohydrate-rich foods at each meal, and to pay particular attention to recovery.

### How to make sure you have a good carbohydrate intake:

- Focus your meals on starchy carbohydrate foods like potatoes, bread, pasta, rice, noodles and breakfast cereals
- Take a high carbohydrate snack between meals
- Use thick slices of bread
- Include potatoes - boiled, mashed or baked - more regularly than chips
- Add fruit to your breakfast cereal
- Make up your own high carb smoothie - add fresh, tinned or frozen fruit to some yogurt, and add some honey

### Get the timing right...

One of the aims when you go to training or a match is to be well fuelled up. This means you should eat something about 1 to 3 hours before your session and this should contain carbohydrate to top up your glycogen stores. How much you eat will depend on when you eat it - look at the boxes overleaf for some ideas.





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## Pre-exercise meals - 2 to 3 hours before training, taken with a drink

- ✓ Pasta with tomato-based sauce with meat, fish or beans
- ✓ Baked potato with cheese, tuna or baked beans
- ✓ Sandwich or roll filled with chicken, egg, tuna or peanut butter
- ✓ Rice or noodles with chicken or lentils
- ✓ Meat, vegetables and potatoes



## Pre-exercise snacks - 1 to 2 hours before training, taken with a drink

- ✓ Yogurt and fresh fruit
- ✓ Pancakes and syrup or jam
- ✓ Jam sandwich
- ✓ Cereal bar
- ✓ Breakfast cereal with milk or yoghurt and banana
- ✓ Fruit and a glass of milk
- ✓ Soup and bread



## Refuel to Recover...

After hard training sessions or matches, your glycogen stores will be low. They need to be refilled to be ready for your next session...which is probably not too long away. Your muscles are like sponges in the first hour after hard exercise and they can soak up carbohydrate quicker at this time, which speeds up recovery. The amount you need will depend on your weight and how long and hard the session was. Here are a few ideas to keep you going:

## Recovery Snacks - taken with a drink

- ✓ Fresh fruit - bananas, apples, grapes
- ✓ Fruit yogurt or yogurt drink
- ✓ Bread or roll with chicken or ham
- ✓ Pancakes
- ✓ Tub of custard or rice
- ✓ Fruit loaf
- ✓ Biscuits - digestives, jaffa cakes, fig rolls
- ✓ Cereal bars



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## The Power of Protein

Protein has essential roles in the body and is a nutrient that is found in many animal and plant foods. Dietary protein has two possible fates - it can either be used in growth and repair (e.g. muscle, haemoglobin or antibodies) or burned for energy like carbohydrate and fat. About 15% of body weight is made up of protein, and most of this is found in skeletal muscle, which explains the importance of protein for football players.

The protein we eat is made up of 20 amino acids (building blocks); the process of digestion breaks down dietary protein into its amino acids, which are then absorbed and reassembled to make various kinds of human protein such as muscle, connective tissue and proteins for the immune system.

Protein activity in the body is in a constant state of change; when dietary protein is insufficient, muscle protein can be broken down to provide amino acids for essential body functions such as immune function. This explains why muscle mass is often lost during times of stress, disease or poor nutrition. On the other hand, when dietary protein is in plentiful supply, muscle mass can be maintained or increased.

### Do football players need more protein?

In a word, yes. Strength and power is generated by muscles and strength athletes benefit from maximising muscle mass. However it is not as simple as just loading up on protein foods or supplements without considering the diet as a whole. Research has shown that even though protein requirements of football players are higher than those of in-active people, there is a limit to the amount of protein that the body can use to increase muscle strength – amounts above about 1.8g/ kg body weight will generally be stored as fat. What is more important is the timing of protein intake, that is, when protein is eaten in relation to your training schedules.



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## Timing of intake

Straight after hard training is when muscle protein synthesis is increased. Therefore it is important that the right raw materials are available to maximise this. However increasing protein intake at the expense of carbohydrate is a bad strategy for players in heavy training, because without sufficient carbohydrate, the muscle glycogen stores cannot be refuelled and energy available for the next exercise session will suffer. So the ideal recipe is to take both carbohydrate and protein straight after hard sessions, to maximise muscle conditioning and start refuelling. In addition to this plan, players should include protein at all other meal times to ensure a steady supply of amino acids to body cells.

## How much do you need?

Multiply your body weight (in kilos) by 1.4. This will give you a guide to how many grams of protein you should aim for while in hard training.

### For example:

Your weight = 75kg

Your daily protein goal = 105g

Look at the tables opposite to add up how you get on with your protein intake.

## Ready Reckoner of protein foods

Food portions containing approximately 20g of animal protein

Animal source	Approx weight		Calories	Handy measure
Beef, lamb, pork	75g	3oz	115	2 medium slices
Turkey, chicken	75g	3oz	105	1 small fillet
Grilled liver	100g	4oz	190	2 tablespoons
Grilled fish	100g	4oz	95	1 small fillet
Grilled fish fingers	100g	4oz	200	6 fish fingers
Salmon in brine	100g	4oz	165	1 small tin
Tuna in brine	100g	4oz	100	1 small tin
Prawns	100g	4oz	105	2 tablespoons
Eggs	-	-	240	3 medium size
Cheddar cheese	75g	3oz	300	2 matchbox size pieces
Edam cheese	75g	3oz	230	2 matchbox size pieces
Cottage cheese	150g	3oz	150	4 tablespoons
Milk, all types	600ml		280	1 Pint
Yogurt, low fat	500g	20oz	450	4 cartons

Food portions containing approximately 10g of vegetable protein

Vegetable source	Approx weight		Calories	Handy measure
Nuts eg peanuts, cashews	50g	2oz	295	1 medium packet
Seeds eg sunflower, sesame	50g	2oz	290	4 tablespoons
Baked beans	200g	8oz	160	4 tablespoons
Kidney beans/split peas/lentils	150g	6oz	150	5 tablespoons cooked
Tofu (soya bean curd)	125g	5oz	90	1/2 packet
Soya milk	350ml		110	approx 2/3 pint
Peanut butter	50g	2oz	310	1 1/2 tablespoons
Bread	125g	5oz	270	4 large slices
Pasta eg spaghetti	250g	9oz	260	8 tablespoons cooked
Noodles	450g	16oz	280	12 tablespoons cooked
Rice	450g	16oz	555	12 tablespoons cooked
Potatoes	600g	21oz	480	8 medium
Cornflakes	125g	5oz	460	2 large bowls
Weetabix	100g	4oz	340	5 weetabix
Digestive biscuits	100g	4oz	700	9 biscuits



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## Type of protein

There is much debate on what the best type of protein is. Whey protein and casein are the two major types of protein found in milk, and are often the ones used in protein supplements. All animal protein (from milk, eggs, meat, fish and poultry) provide the highest quality rating of food sources. However many plant and cereal foods (breads, cereals, peas, beans, pulses, nuts) also contain significant amounts of protein, but need to be combined to produce the same quality as animal sources. A food-based approach to meeting protein requirements should be the focus for all football players.

## Protein supplements

These are popular with players trying to increase muscle size. Whereas it is accepted that players need more protein than the general public, there is no evidence that supplements offer advantages over dietary sources of protein. The mistake players often make is to take a protein supplement at the expense of carbohydrate straight after training; what is needed at this time is both protein and carbohydrate. This should be taken as ordinary food and fluids.

## Are very high protein intakes harmful?

There is not much evidence to show that high protein intakes are harmful, but there are concerns around the effects they can have on hydration and bone health. Very high protein intakes increase water and calcium loss due to the increased excretion of protein wasteproducts through the kidneys. Often high protein intakes result in players not consuming enough carbohydrates foods to support their fuel needs for intensive training



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## The Lean, Mean Machine

To maximise your performance capacity, players need to be training and competing at the optimal weight. By maintaining your optimal weight, you will be able to be as fast and powerful as you possibly can be.

For example, if you consider a Formula 1 car, the chassis should be as light as possible, but the engine should be powerful to maximise speed. In the same sense, your body should be as light as your frame will allow (i.e. a low body fat percentage) and you should be as strong and powerful as you can be in relation to your body mass.



If you consider the energy requirement of training and competition, you need to consume additional calories to replenish energy stores.

### How do you do this?

The best way to do this is to control your calorie intake. You need to strike a balance between taking in enough energy to fuel training, competition and importantly, GROWTH. The table below shows the recommended calorie intake for NORMAL bodily function at different ages. You should notice though that these values DO NOT take into consideration energy expended during exercise.

Activity	Energy Expenditure
Easy 90 min training session	500-600 kcals
Intense 90 min training session	600-900 kcals
Match	900-1200 kcals
Gym session	200-250 kcals

**\*\* Bear in mind that heavier players will burn more energy during exercise than lighter players \*\***

### What to watch out for to avoid excessive body fat formation

Players should avoid eating too much SUGARY FOODS and TREATS and foods high in SATURATED FAT. It is ok to eat treats once or twice a day but avoid eating too much and concentrate on eating a healthy balanced diet with plenty of fruit and vegetables

Age, years	Male (kcal/day)	Female (kcal/day)
4-6	1800	1800
7-10	2000	2000
11-14	2500	2200
15-18	3000	2200

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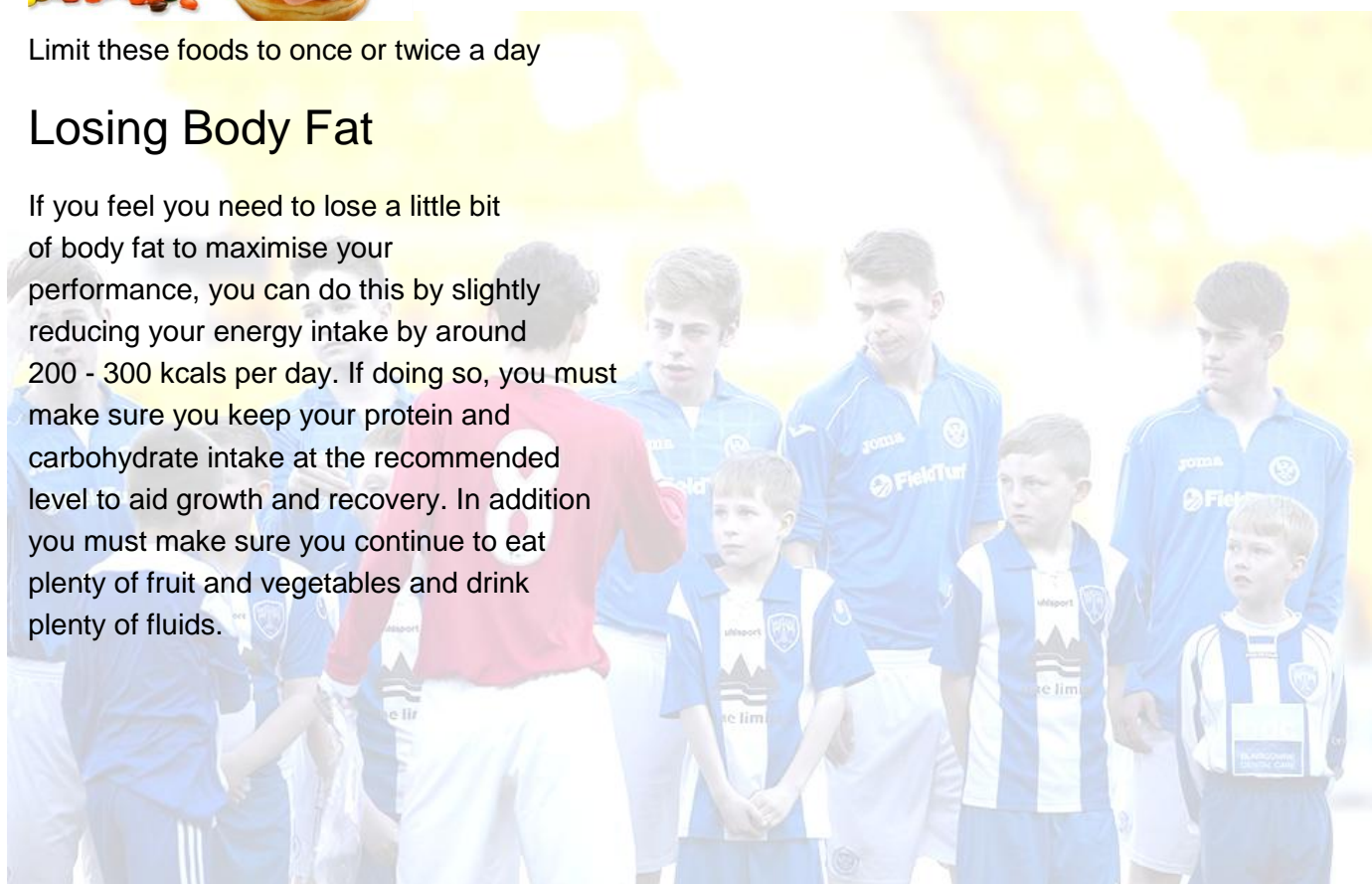
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Limit these foods to once or twice a day

## Losing Body Fat

If you feel you need to lose a little bit of body fat to maximise your performance, you can do this by slightly reducing your energy intake by around 200 - 300 kcals per day. If doing so, you must make sure you keep your protein and carbohydrate intake at the recommended level to aid growth and recovery. In addition you must make sure you continue to eat plenty of fruit and vegetables and drink plenty of fluids.





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## Nutritional Guidelines for Match Day

Preparation for a big game begins well in advance of kick-off. The day before a match, you should increase your energy (calorie) intake and ensure that you are well hydrated. On match day, the foods you eat should be familiar to you and contain lots of energy. Fuelling and hydrating well before, during and after matches is crucial in every player's preparation.

This fact sheet will give you suggestions of good food choices for match day - it's important to try your match day plan out in training so you know what works best for you.

### Early Kick-Off (e.g. before 12noon)

With an early kick-off, your opportunities to fuel-up are limited. You should eat a high energy breakfast 3 - 4 hours before the match which should provide lots of carbohydrates and fluids. Use high energy, quickly digested carbohydrate foods 1 hour before the match to boost your energy levels.

MEAL	FOOD
------	------

#### Breakfast

##### Choose two options:

- High fibre cereal with chopped banana, honey and milk
- Scrambled eggs on whole grain toast with yogurt
- High carbohydrate smoothie (see smoothie factsheet)
- Porridge made on milk with honey and fruit
- Ham omelette with toast
- Pancakes, honey, banana and yogurt
- Large pot low fat yogurt, glass fruit juice and handful dried fruit



#### 1 hour before match

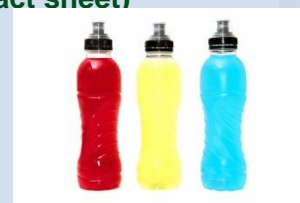
- Easily digested foods and fluids e.g. orange juice, cereal bars, sports drinks, white bread, banana, jam, honey, pancakes (see snack list fact sheet)



Late Kick-Off  
As well as having a meal before kick-off

#### During match

- Isotonic sports drinks or diluted fruit squash or water.
- Half time - jelly babies, jaffa cakes, cereal bar, fluids



#### Recovery post match (within ½ hour of coming off field)

##### Choose at least one option:

- 500mls flavoured milk drink (e.g. Yazoo, Avonmore) and cereal bar
- White bread sandwich with ham or jam or peanut butter
- 200mls of drinking yogurt and banana
- 2 tubs of yogurt and handful of sultanas or raisins
- Drink plenty of fluids during recovery



ME

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## Late Kick-Off (e.g. after 2pm)

As well as having a high carbohydrate breakfast, it is important that you manage to eat again before kick-off e.g. have breakfast at 8am and eat again at 11am if your kick-off is at 2pm.

MEAL	FOOD
<b>Breakfast</b> 	Choose one option: <ul style="list-style-type: none"> <li>- High fibre cereal with chopped banana, honey and milk, glass of fruit juice</li> <li>- Scrambled eggs with 3-4 sliced whole grain toast, yogurt and dried fruit</li> <li>- High carbohydrate smoothie (see smoothie factsheet), pancakes with honey</li> <li>- Porridge made on milk with honey and fruit, high carbohydrate smoothie</li> <li>- Ham omelette with 3-4 slices wholegrain toast, large glass fruit juice</li> <li>- 3-4 slices toast, nutella, banana and glass of milk</li> </ul> 
<b>Lunch (about 3 hours before kick-off)</b> 	<ul style="list-style-type: none"> <li>- Large serve of high fibre carbohydrates i.e. brown pasta, basmati rice, potatoes, brown bread - whichever you find comfortable pre match</li> <li>- Team this up with meat and a low fat sauce e.g. spaghetti bolognaise, tuna and light mayonnaise, bacon and pasta sauce, chicken with low fat cheese</li> </ul> <p>If you cannot eat foods before a match, take a high energy smoothie instead, but you need to practice eating</p>
<b>During match</b>	Isotonic sports drinks or diluted fruit squash or water. Half time - jelly babies, jaffa cakes, cereal bar, fluids  
<b>Recovery post match (within 1/2 hour of coming off field)</b> 	Choose at least one option: <ul style="list-style-type: none"> <li>• Pint skimmed milk</li> <li>• Pretzels/snack-a-jacks/home-made pasta pot and cereal bar</li> <li>• 200mls of drinking yogurt and banana</li> <li>• Bread sandwich with meat filling and fruit juice</li> <li>• Drink plenty of fluids during recovery</li> </ul> 



## Kit Bag Recovery

The main fuel used in high intensity exercise is carbohydrate, which is stored as glycogen in muscles and the liver. Hard training and intense matches use a lot of your glycogen stores, and these must be replaced if you are to have enough energy for the next session. So re-fuelling is a priority during the recovery period. Eating protein in recovery is also important to provide the right raw materials for muscle growth, repair and health. Fluid will

also be lost when you sweat so re-hydrating is another thing you have to remember when your training or match is over.

You may not feel like eating after hard exercise, so you need to choose foods that are easy to eat and drink, as well as being handy to keep in your kit bag. The more you practise eating after training and matches the easier it will get

Check out these ideas for changing room recovery snacks - be organized and have them with you.

### SNACKS & DRINKS

- |                  |   |
|------------------|---|
| <b>Re-fuel 1</b> | 300mls of flavoured milk drink + cereal bar + juice drink           |
| <b>Re-fuel 2</b> | 300mls of yogurt drink + large banana + juice drink                 |
| <b>Re-fuel 3</b> | Breakfast cereal (takeaway tub) + 300mls milk + juice drink         |
| <b>Re-fuel 4</b> | Chicken sandwich + juice drink                                      |
| <b>Re-fuel 5</b> | 2 tubs of yogurt + cereal bar + juice drink                         |
| <b>Re-fuel 6</b> | 1 tub of Muller Rice + large banana + juice drink                   |
| <b>Re-fuel 7</b> | 300mls milk + 2 pancakes  |
| <b>Re-fuel 8</b> | 300mls yogurt-type smoothie or milkshake +<br>a handful of sultanas |





## Go with the flow...the facts about fluids

Fluid is a vital part of exercise. In fact, fluid is vital for life and makes up about 60% of body weight. Good hydration helps to maintain an efficient cooling system and keeps the kidneys, respiratory system and cardiovascular system working. However when exercise is added into the equation, fluid becomes more important and more complicated to calculate.

During exercise, muscles only use about 25% of the energy for work, with the rest released as heat - which is why exercise makes you hot! Heat from the working muscles is transferred to the blood. The blood flow to the skin is increased and heat is lost by evaporation - sweating. Sweat comes from water in the blood, so you need to replace this vital fluid to prevent dehydration.

### How much do you need?

You can work out your basic daily fluid needs by multiplying your body weight in kilos by 50mls, for example, a player who weighs 75kg will need almost 4 litres of fluid a day to stay well hydrated ( $75 \times 50 = 3750\text{mls}$ ). Fluid is anything liquid, so includes water, juices, milk, tea and coffee.

Food can also contain some fluid (eg fruit, vegetables), but most of our fluids come from the liquids we drink. On top of this, you will need to take more in to deal with the amount of sweat you lose during an exercise session - and this varies a lot between players.

The fluid needed for a specific training session will depend on sweat rate, session length, surrounding temperature and humidity and intensity. Everyone sweats but some sweat more than others. The easiest way to get an estimate of how much sweat you lose is to weigh yourself before and after exercise. Each kilo of weight loss is equal to a litre of fluid lost. However, you will also lose fluid as urine, so you should drink 1  $\frac{1}{2}$  litres of fluid for every 1 kilo of weight lost.



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## What to drink?

Which fluid you opt for depends on how hard you exercise, and for how long. It is important that you choose a flavour that you like to encourage you to drink more. If you're exercising at low-to-moderate intensity for less than an hour, then water is fine. If you are working out for more than an hour, then a fluid with some carbohydrate for fuel, and sodium (salt) for improved absorption is recommended. There are a whole range of sports drinks available that are generally divided into 3 types:

### Hypotonic

These contain very small amounts of carbohydrate – about 2 to 5g per 100mls – and electrolytes such as sodium and potassium.

Some players find these more palatable during hard sessions and matches. Examples available in Scotland are Lucozade Hydro Active and Powerade Lite; there may be others that fall into this category

### Isotonic

These contain around 5 to 8g of carbohydrate per 100mls and sodium and potassium. They provide fuel and can be used before, during and after exercise. Examples are Powerade, Lucozade Sport and Club Energise Sport.

### Hypertonic

These drinks have a high carbohydrate content – above 8g carbohydrate per 100mls – and are designed as a refuelling drink rather than for hydration.



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Drinking commercial sports drinks can work out to be expensive, so another option is to make your own home-made drink - the following recipes should help.

## Hypotonic drinks

<i>Recipe 1</i>	<i>Recipe 2</i>
100mls fruit squash	250mls fruit juice
900mls water	750mls water
pinch of salt	pinch of salt

## Isotonic drinks

<i>Recipe 1</i>	<i>Recipe 2</i>
200mls fruit squash	500mls fruit juice
800mls water	500mls water
pinch of salt	pinch of salt

## Hypertonic drinks

<i>Recipe 1</i>
400mls fruit squash
1 litre water
pinch of salt

## Is it possible to drink too much?

Technically, yes it is. There is a problem called hyponatraemia which occurs when the concentration of sodium in the blood falls to an abnormally low level. This can be caused by drinking excessive amounts of fluid that contain no sodium. This is only likely to be a potential problem in endurance events of longer than 4 hours, particularly when undertaken in hot conditions where sweat rates are very high, and water is taken in large volumes. This problem has never been reported in football.

However it is good practice to use a drink that contains some sodium (either home made or commercial) when exercising for long periods, especially in the heat.

A useful way to check your hydration quickly is the Pee test. Quite simply looking at the colour of urine shows how well or poorly hydrated a player is. To show good hydration, the urine should be a pale straw colour; the darker the colour, the more dehydrated you are.



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## Dehydration - the ugly facts

- Any degree of dehydration will impair your performance. With every level of dehydration, there is an increase in your heart rate and body temperature. This also makes the exercise session feel much harder.
- The effects of dehydration are most noticeable when exercise is done in a hot and humid environment.
- Dehydration reduces mental functioning and skill co-ordination, so dehydration will have an extra impact on your skills and decision making.
- High levels of dehydration increase the risk of nausea, vomiting and diarrhoea during exercise and slows down the rate you can absorb fluids.

It is impossible 'train' or 'toughen up' your body to handle dehydration so don't bother trying

## Practice makes perfect

Follow these guidelines to develop a fluid plan that suits you.

- ✓ Always take a full drinks bottle to training and competitions.
- ✓ Choose a drink that you like. Cool drinks are more refreshing and palatable.
- ✓ Practice your drinking routines in training.
- ✓ Always start an exercise session well hydrated. Drink 300 – 500mls of fluid before your session.
- ✓ Aim to drink regularly to offset fluid losses - this will be governed by the rules of your sport, but make the most of all opportunities such as injury time, half time and natural breaks. Remember the more you sweat, the more you need to drink.
- ✓ Start rehydrating after exercise - how much fluid you need will depend on how much you have lost in sweat.
- ✓ When travelling, take extra drinks with you. Air travel, air conditioning and altitude will all increase your fluid requirements.



## Top Tips for Good Hydration

Aim to be well hydrated by knowing how much you should drink every day – look at the fact sheet on fluids to find out how much you need

- ✓ Know the warning signs of dehydration
  - Thirsty
  - Headaches
  - Dark coloured urine
- ✓ Always take a full drinks bottle to training and matches
- ✓ Choose a drink that you like
- ✓ Practice taking fluids during training
- ✓ Drink often during sessions; don't wait until you are thirsty
- ✓ Don't share your bottle with other players – infections get passed on very easily
- ✓ Start rehydrating after sessions – the more you sweat, the more you need to drink

