



Eating Actively

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Key Topics

- Balanced healthy eating for athletes
- Good nutrition should form an important part of your preparation for running a marathon. Just as you will plan aspects of your training such as increasing your distance training and improving your training time you will also need to plan your diet carefully
- **Carbohydrates**
- Protein
- Fat
- Vitamins
- **Hydration**



Balanced Healthy Eating

Use the Food Pyramid to plan your healthy food choices every day and watch your portion size

Choose very small amounts



Fats, High Fat/Sugar Snacks, Foods and Drinks

Use Sparingly

1 oz low fat spread or 1/2 oz butter/margarine

Choose fats high in monounsaturates or polyunsaturates.

Limit fried foods to 1-2 times a week.

Only have small amounts of high fat/sugar snacks and drinks and not too often.

Choose any 2



Meat, Fish, Eggs & Alternatives

1 Serving =

2 oz cooked lean meat or poultry

3 oz cooked fish

2 eggs

2 oz cheese

3 oz nuts

Choose lean cuts of meats.

Eat oily fish.

Choose any 3



Milk, Cheese & Yogurt

1 Serving =

1/3 pint of milk

1 carton of yogurt

Milk pudding made with

1/3 pint of milk

1oz cheese

Choose low fat varieties.

Choose any 5



Fruit & Vegetables

1 Serving =

1 small glass of fruit juice

1 medium sized fresh fruit, e.g. apple, orange, banana

2 small sized fresh fruit, e.g. plums, mandarins, kiwi

3-4 dessertspoons cooked vegetable or salad, including peas and beans

Small bowl of homemade vegetable soup

3 dessertspoons cooked or tinned fruit (not in syrup)

Choose green leafy vegetables and citrus fruit frequently.

Fruit juice only counts for one serving, each day.

Choose any 6+



Bread, Cereals & Potatoes

1 Serving =

1 bowl of cereal

1 slice of bread

3 dessertspoons of cooked pasta or rice

1 medium boiled or baked potato

Eat these foods at each meal – high fibre is best.

Drink water regularly - at least 8 cups a day

Folic Acid - An essential ingredient in making a baby. You can get Folic Acid from green leafy vegetables but if there is any possibility that you could become pregnant then you should be taking a Folic Acid tablet (400 micrograms per day).

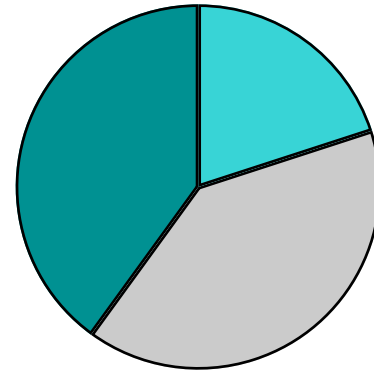
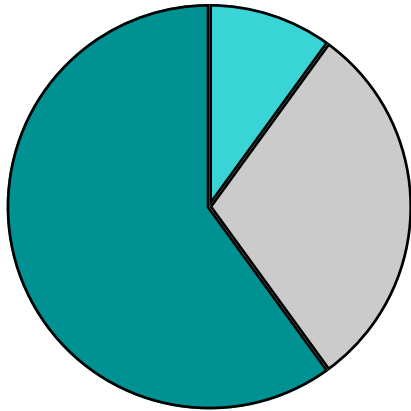
Both athletes and non athletes need the same nutrients...

- carbohydrate, protein, fat, vitamins, mineral and water, but they need to consume them in different quantities and proportions.
 - Carbohydrate, protein and fat (along with alcohol) provide energy.
 - 1g of carbohydrate = 4 kcal (calories)
 - 1g of protein = 4 kcal
 - 1g of fat = 9 kcal
 - 1g of alcohol = 7 kcal
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- Vitamins and minerals do not provide energy, but are needed in very small amounts to enable the body to perform efficiently and effectively.



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Athletes are different



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Percent contribution to energy to perform activity

- 1500 m race (4 – 6 minutes) 94% from carbohydrates and 6% from ATP/CP
- 10 km race (32 – 40 minutes) 100% carbohydrates
- Marathon (2.5 – 3 hr) 75% carbohydrates, 20% fat and 5% from other
- Longer endurance (5.5 – 7 hr) 35% carbohydrates and 65% fat



Every Day Eating – Energy Requirements

- 2500 calories a day for a man
- 2000 calories a day for a woman

- Running burns 720 calories an hour for a man and around 600 calories an hour for a woman
- We have around 2000 cal of energy in the form of carbohydrates in our muscle stores (we have unlimited stores of fat but this is harder to convert to energy)

- Each gram of carbohydrate gives you 4 calories.

- **You need to eat a lot of high carb foods!**



Carbohydrates

- **Carbohydrate intake, along with fluid intake is probably one of the most important factors in predicting your athletic potential**
- It is provided by eating sweet or starchy food
- A gram of carbohydrate provides 4 kcal (17 kJ)
- Carbohydrate is stored in the muscles as glycogen
- **The higher the intensity of exercise the larger the proportion of energy coming from carbohydrates**
- In the human body we only have around 300-400g of glycogen stored. (around 2000 calories)



- Carbohydrate (CHO) is the most efficient form of energy and all athletes are recommended to follow a high carbohydrate diet. Carbohydrate-rich foods include bread, crackers and bagels; pasta, noodles, rice and couscous; breakfast cereals; fruit and milk.
- The longer you spend training the more carbohydrate you need. The table below will help you calculate your daily carbohydrate needs.
- **Duration of Training CHO needs**
 - 1-2 hours/day 6-7g CHO/Kg body weight/day
 - 2-4 hours/day 7-8g CHO/Kg body weight/day
 - 4+ hours/day 8-10g CHO/Kg body weight/day
- 9stone (57 kg) = 2-4 hrs training- 400g carbs
- 11stone (70 kg) = 2-4 hrs training- 490g carbs



Carbohydrate Rich Foods

- **Breakfast**

- *40 grams cereal* –
- Bran flakes – 27.7 g
- Corn flakes – 34.3 g
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- *A slice of toast*
- Brown bread – 15.9 g
- White bread – 17.7 g
- Soda farls – 70.9g
- Pancakes – 35g/100 g
- Glass of orange juice (200 ml) – 16.2 g

- **Snacks**

- Bagels – 38 g
- Scones (with jam) – 25.3 (33.6) g
- Pretzels (1 oz, 28g) – 23.7 g
- Crackers (each) – 5g
- Apple – 11.8 g
- Banana – 23.2 g
- Fig rolls – 5.3 g
- Fruit pastilles (per pack) – 25.9 g
- Raisins (30g) – 20.7 g



Carbohydrate Rich Foods

- **Drinks**
- Can of coke – 34.6 g
- Lucozade Sport – 6.4g/100ml
- **Lunch**
- Bap (6 “ diameter) – 55.2 g
- Roll – 24.6 g
- **Dinner**
- Pasta (230g serving) – 42.5 g
- Rice (180g serving) – 55.6 g
- Potatoes (180 g, 3 medium potatoes) – 30.6 g



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Can be difficult! Some examples

If you are finding it difficult to eat the large amounts of carbohydrate recommended for sport, sports drinks, some of which contain up to 50g CHO per can will help meet your carbohydrate needs.

Sweets and confectionery bars also have a high carbohydrate content and can be used occasionally but remember they don't have many other useful nutrients

- The following foods contain 50g CHO and will be helpful as snacks between meals to help top up your carbohydrate needs:
- 6 jaffa cakes; • Large bowl of cereal; • 5 fig rolls; • 1 Mars bar; • 2 cans Lucozade Sport; • 1 can of Gatorade NRG.



Tips on Carbohydrates

- Low glycaemic index foods may enhance endurance performance - bananas, pasta, milk, yoghurt, All Bran, oranges, apples, beans and lentils, chocolate.
- Make high carb. foods as nutrient rich as possible
- Make carb. rich foods as palatable as possible
- Compactness and ease of consumption are the most important attributes
- Fibre rich foods are not necessarily the most appropriate choice pre race.
- Small portion may encourage continuous nibbling.



Timing of intake

- **The days before an event or match**
- Eat a high carbohydrate diet in the days leading up to the race, especially on the day before
- combine this with a concurrent, gradual decline in training.

- **On the day of the marathon**
- Eat a high carbohydrate breakfast.
- The most important meal is one eaten 2-4 hours before the event (6-7am)
- This meal should provide 1-4 grams of carbohydrate per Kg body weight.



Carbohydrate Intake During Exercise

- **Taking on board additional carbohydrate during exercise can prolong exercise and increase glucose availability.**
- You should consume additional carbohydrate during exercise – 30-60 grams/hour.
- This is best delivered as fluids of 4-8% sugar for rapid delivery of water and glucose to the body.
 - 500 ml bottle of sports drink per hour
 - 1-2 gels per hour
 - 2 bananas
 - 1-2 breakfast or sports bars



Carbohydrate Intake After Exercise

- **The period right after exercise is a rapid phase of glycogen synthesis.**
- Due to:
 - 1) Increased insulin sensitivity
 - 2) Extremely low levels of glycogen
- To enhance early recover at least 1 gram per kg body weight within 30 minutes.
- There is a window in time lasting approximately 2 hours when glycogen recovery is at it's maximum, after that it declines by 50% over the next 2 hours.
- **Practical issues?**



Protein

- When you are training or during a race your body is being stressed during the running training process and will need to repair itself.
- Runners will often train day after day without rest, and in so doing the muscle damage will become cumulative. To combat the effects of heavy run training and to help maintain muscle strength make sure that you eat plenty of protein – ideally around 1 to 1.5g per pound of bodyweight.



Facts About Fat

- **High fat diet leads to deterioration of endurance performance when compared to a high carb. diet.**
- Fats:
 - Provide a concentrated source of energy (9 kcal/g)
 - Help build our body tissues
 - Contain essential fat soluble vitamins - A,D,E & K
- **Unlike glycogen there is always enough body fat available for exercise**
- **An athletes diet should contain no more than 30% energy from fat.**



Practical Tips

- **Check the labels - look for < 5g fat per serving**
- Watch how you cook - grill, poach, bake, steam, microwave or casserole instead of frying or roasting.
- Choose lean meat and trim off visible fat. Choose poultry and fish more often than red meat.
- Use smaller amounts of meat in composite dishes - replace with veg, potatoes, pulses or meat alternatives
- Reduce your intake of pies, pastries, sausages, burgers and chips. Watch your intake of biscuits, cakes and desserts.
- Choose low fat dairy products



Hydration

- **Drinking is just as important as eating.**
- 42 litres in a 70 kg body
- Even a small % loss can impair exercise performance.
- Lose 2-3 litres in a tough session
- Hot weather, clothing and rate of exercise influence sweating rate.
- **Thirst is not a good indicator of dehydration and individuals often stop drinking before they are rehydrated**



When To Drink

- Drink a variety of fluids throughout the day
- Start your training session or race fully hydrated
- Continue drinking up to 30 minutes before running
- Try to drink up to 250 ml of fluid every 15 minutes during the race
- During and after exercise drinks should provide both water and electrolytes to replace sweat loss as well as carbs. for energy



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Alcohol and Exercise

- It delays rehydration
- It may increase risk of hypoglycaemia following a training session



Leading up to the Marathon

- 3-4 days prior to the race –
 - Carbohydrate loading
- To maximise muscle glycogen a diet providing 7-10 grams of carbohydrate per kg body weight per day
- 420 - 600 grams in a 60 kg woman
- 500 – 720 grams in a 72 kg man



On the Day of The Marathon

- A meal should be ingested 2-4 hours before the race
- High carb snack 1.5 hours before depending on ability to digest food
- Drink throughout morning of the race less than 10% sugar
- During the last hour before the race no more than 300 ml with sugar content 5% every 15 minutes
- You should experiment with your drinking habits everyone can tolerate different amounts



Vitamins and Minerals

- Vitamins control all sorts of processes in the body.
 - Key question - How do you know you are getting enough and do I need a supplement, particularly for sport?
 - **If you are eating a balanced diet, containing plenty of fruits and vegetables (5 a day), plenty of whole grain foods you will be getting all the vitamins you need.**
 - There is little evidence that needs are increased during sports and exercise.
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- **B vitamins - Folic acid, B12**
 - **Calcium**
 - **Iron**



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Sports supplements

- **Sports drinks: Good for refuelling and also hydration**
- Choose isotonic drinks
- Isotonic drinks have a fluid concentration similar to that of the blood. Therefore it is quickly absorbed into the blood stream, helping to prevent dehydration and also providing energy in the form of simple sugars as well as electrolytes such as sodium which you lose when you sweat
- Watch out for caffeine- can enhance performance in some people but can have a diuretic effect or side effects such as cramps, nausea
- **Gels: Good for endurance exercise**
- Can be convenient and easy to use. Useful for long distances. Watch out for cramp- you need water to process the carbohydrates in most gels and it will take it from any source including muscles so drink water



Thank You

Any questions?



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