



# DIET LO2

THE IMPORTANCE OF NUTRITION IN SPORT

## BEFORE YOU START LO2:

- You must ensure LO1 is COMPLETED.
- You must have made the changes I've written on your powerpoints – some of you I have typed the changes on, so read and amend yours carefully.
- **DON'T WRITE THE QUESTIONS AS TITLES** – you are not allowed. I've only just found this out.

# BEFORE / DURING / AFTER

- Athletes need to be mindful of the need to take on different amounts of food and water before, during and after training and competition.
- Before – stay hydrated, eat lots of carbohydrates for energy the days before, immediately before some sugars (e.g. fruits / sugary drink)
- During – stay hydrated, take on small amounts of carbs (energy gels, fruits eg bananas) this is especially important in marathons and triathlons etc.
- After – rehydrate, lots of carbohydrates and proteins 2 hours after to replenish energy stores and start repair of muscle tissue.

# CARBO - LOADING

- An endurance athlete would take on large amounts of complex carbohydrates in the 2 weeks leading up to an event. This means the body stores the glucose gained from the carbohydrates as glycogen in the liver and muscles.
- Pasta pasta pasta!!
- This is then used for energy in competition when the body is working at a high intensity.

# MO FARAH – 10,000M - CARBOHYDRATES

Time	Nutrient	Why?
1 – 2 days before	Lots of starchy complex carbohydrates – pasta, potatoes	Broken down into glucose – if this isn't immediately used it is stored as GLYCOGEN in the muscles and liver to be used in the race
Night before	Normal sized balanced meal, with extra carbohydrates	Energy for next 12 hours, top up glycogen stores
Breakfast – day of race	Cereal, wholemeal toast and boiled egg – carbohydrates and protein	Stomach not too full to cause discomfort, but slow release energy to fuel needs of the day
1 pm start of race	Simple sugary carbs – energy gels, sweets, fruit	Quick energy to start race at a high speed
5pm	Large meal of carbohydrates	Replenish glycogen stores

## WHAT ELSE?

- The athlete will have EXACTLY the same regime for taking on **water** and **protein**.
- The water will be taken on in small amounts during the race, especially if marathon or half marathon.
- Protein intake will be greatest after the event – why?

# IS IT DIFFERENT FOR DIFFERENT ACTIVITIES?

- Yes!
- An endurance athlete will carbo load (also called glycogen loading) – this is for people like marathon runners, tour de France cyclists etc
- A 400M sprinter won't carbo load. They will take on carbohydrates, but there is no need for the “loading” – they will never use enough of them in their race.
- A power lifter won't carbo load at all – they will eat protein heavy meals 5 – 7 meals every day.

## EXAMPLE DIETS:

- An endurance athlete:
- Will Carbo Load
- Will take on more fluid than a “normal” athlete because they will lose more (working for longer)
- Will have a low fat diet



## INTENSE ANAEROBIC ATHLETE:

- Will take on carbohydrates but not carbo load.
- Will need quick release energy as event can be over in less than 1 minute.
- Fruits, juices, etc.
- Low fat diet, they need to be lean.
- No real need for hydration during event.

# STRENGTH BASED ATHLETES

- Shot put / Weight Lifter etc
- Lots and lots of protein encouraging muscular hypertrophy (mass).
- No real need for hydration during event.

# DIETARY SUPPLEMENTS

- These provide nutrients that may be missing or being consumed in insufficient quantities.
- Athletes may take multi vitamins, protein powders or creatine phosphate. (You may have seen people at the gym with protein shakes or protein bars)
- They can help provide energy, growth of muscles in recovery or help burn off fat.
- They can sometimes be banned in some events – creatine levels are monitored and if they exceed a certain amount it can trigger a ban.
- There may also be health implications from long term use or overuse.

## EXAM PRACTICE?

- Which one of the following is the main function of carbohydrates?
- (A) To deliver oxygen to working muscles.
- (B) To provide energy for movement.
- (C) To enable bones to grow and repair.
- (D) To provide roughage for the digestive system.

# EXAM PRACTICE

- Give one possible consequence of a lack of hydration when performing in sport. (1)
  
- Carbohydrates are one component of a healthy diet.
- (i) Give three other components of a healthy diet.
- 1 .....
- 2 .....
- 3 .....

# EXAM PRACTICE

- Kim is trying to eat more healthily and be more physically active in order to lose weight.
- Justify which one of the following goals is most likely to help Kim achieve her goal.
- A. I will go to the gym whenever I can from now on.
- B. I will do more exercise and eat more healthy food on weekdays.
- C. I will go to the gym once a week for the next 10 weeks.