

The aim of this resource is to build a bank of knowledge that can be used throughout the course as well as at the end for review.

A favoured layout is to print two slides per A3 sheet; many students find the large visual style manageable, engaging and valuable as a supplement to other notes and resources.



On print-outs, fill in the blanks as you work your way through the slides

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Diet and Nutrition

Nutrition plays a vital role in supporting the training and performance demands in sport. Healthy and balanced food choices help to ensure that the athlete has enough energy, which will improve training and performance and promote recovery.

KEY WORDS

Healthy, balanced diet

Nutrient

It is recommended that each day, an adult's healthy, balanced diet should contain approximately:

- _____ calories for females.
- _____ calories for males.

 and consist of ...

- ___ % carbohydrate.
- ___ % protein.
- no more than ___ % fat.
- '___ -a-day' fruit and vegetables to provide minerals, vitamins and fibre.
- ___ litres of water.

Sports Supplement

The food we eat can be divided into 7 food groups.

Definition

Write one food group in each circle.

7

1

2

For each food group you need to know ...

- where we get it from.
- its function.
- its importance to performance in sport.

6

3

5

4

Fill in the definitions in the boxes.

Add in an example of the type of food that provides each nutrient.





Diet and Nutrition



Food group	Function	Importance to sports performance	Where do we get it from?	
Carbohydrate	- provide muscles with their main source of fuel for ATP resynthesis. - starches are stored as _____ in the _____ and _____. - sugars are stored as _____ in the _____.	- glycogen and glucose are broken down in the _____ glycolytic system and the _____ system. - they are the only fuel that can be broken down both _____ and _____. - athletes will eat a diet _____ in carbohydrate. - endurance athletes will c_____ l_____ before an event.	Starches	Sugars
Proteins	- proteins are made of amino acids. - there are _____ essential amino acids for human life. - amino acids build and repair _____.	_____ athletes require more protein than _____ athletes. - a healthy diet will provide enough protein to meet any increased requirement. There is no need for s_____. - a diet with too much protein and not enough carbohydrate means protein will be used to fuel ATP resynthesis rather than to build _____.		
Fats – 2 types unsaturated fats: - healthy fats - reduce _____ cholesterol and risk of _____. _____ at room temperature. saturated fats: - unhealthy fats - increase _____ cholesterol and risk of _____. _____ at room temperature.	- provide muscles with a source of fuel for ATP production in _____ exercise. - helps the body absorb v_____. - forms a protective cushion for i_____ o_____.	- fats are broken down to FFAs and glycerol. FFAs are broken down further to provide energy for _____ intensity _____ exercise. - the amount of fat an athlete requires depends on their total energy _____, their body composition goals and their sport. - athletes should consume moderate amounts of _____ fats and a reduced intake of _____ fats.	Unsaturated	Saturated



Diet and Nutrition



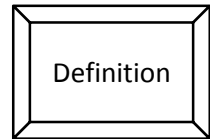
Food group	Function	Importance to sports performance	Where do we get it from?
Minerals	Vitamins and minerals: - boost the i_____ s_____. - support normal g_____ and d_____. - help cells and organs to f_____ healthily.	Examples: _____ - builds strong bones. iron – helps _____ carry oxygen. _____ – promotes muscle and nerve function.	
Vitamins	There are 2 types of vitamins: _____ soluble (A,D,E,K) - dissolve in _____ and can be stored in body. _____ soluble (C, B) - need to dissolve in _____ before absorption. and can not be stored.	Examples: A – aids growth and development. B – helps make red blood cells & convert glycogen to energy. C – forms collagen for healthy bones. D – strengthens bones. K – promotes blood clotting.	
Fibre	- made of the in _____ compounds of plants. - keeps the _____ system healthy.	can prevent: _____. _____. _____.	
Water	the body consists of 60%-70% water. It helps regulate: - body temperature. - heart rate. - transport of essential nutrients.	Effective hydration is crucial to sports performance. A state of dehydration: _____ perceived effort. _____ performance. _____ concentration & judgment.	

1.4



Fill in the definitions in the boxes.

Energy intake, energy expenditure and energy balance



Energy intake (EI)	Energy expenditure (EE)	Energy balance	Basal metabolic rate (BMR)	Resting metabolic rate (RMR)	simple formula to calculate daily RMR = <u>weight in kg</u> 22

Example

Using METs to calculate energy expenditure during 1 hour of hockey.

- an athlete will **calculate their daily RMR**.
e.g. an athlete who weighs 74 kg, RMR = (approx) _____ calories per day.
- divide daily RMR by 24**, to calculate an hourly RMR.
e.g. (approx) _____ calories per hour when resting.
- multiply hourly RMR by the MET value** to calculate the energy expenditure for one hour of that physical activity.
e.g. athlete plays 1 hour of hockey, energy expenditure = _____ x _____ = _____ calories.



Fill in the gaps.

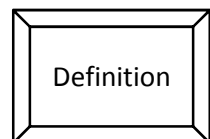
Calculate the energy expenditure if the same athlete played 1 hour of golf.



Complete the calculation

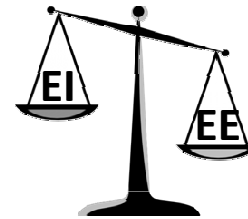


Fill in the definitions in the boxes.

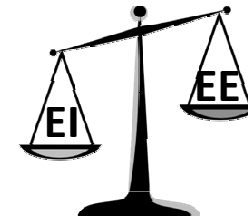


Thermic effect	Metabolic equivalent (MET)

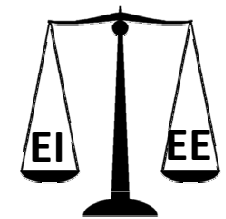
Energy balance



- EI _____ EE
- weight _____
- _____ energy balance.
- e.g.



- EI _____ EE
- weight _____
- _____ energy balance.
- e.g.



- EI _____ EE
- weight _____
- _____ energy balance.
- e.g.



Give an example..

Facts and figures

1 MET is where $VO_2 = 3.5\text{ml/kg/hr}$ = the **equivalent** of sitting quietly.

2-5 METs is moderate intensity exercise e.g. light cycling = 3 METs
golf = 4.5 METs

6+ METs is higher intensity exercise e.g. hockey = 8 METs
basketball = 9 METs