

Energy use, diet, nutrition and hydration



UNTAMED
EDUCATION

2.1.3 Health, fitness and well-being

Basal Metabolic Rate

Fats

Vitamins

Carbohydrates

Macronutrients

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Energy Balance

Micronutrients

Minerals

Proteins

Fibre

Water



1. Basal metabolic rate

The rate at which we burn calories for energy is called our _____ **metabolic rate**.

- ▶ Physical activity can _____ our basal metabolic rate so we need to consume more calories.
- ▶ When we eat is also important.
- ▶ Ensure you leave at least **two** hours after and before exercise.
- ▶ During exercise you can consume _____ quantities that are easily digested.
- ▶ After activity you should consume plenty of **liquids** and after a period a balanced meal.

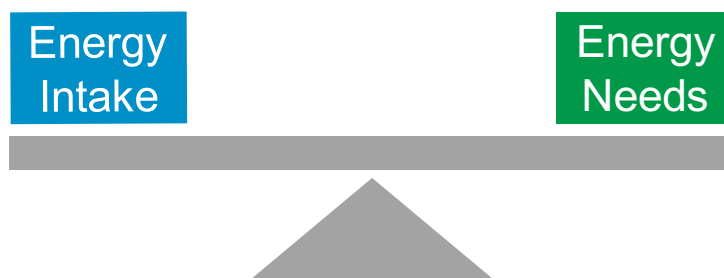


2. Energy

Average females need _____ **kcal/day** and males need _____ **kcal/day**.

This may vary depending on the following factors:

- ▶ _____ need more energy than young **children**.
- ▶ _____ tend to need more energy than **females**.
- ▶ _____ need more energy than **non-athletes**.
- ▶ People with _____ lifestyles need more energy than people with **non-active** lifestyles.
- ▶ _____ people need more than **shorter** people.



To maintain **energy** _____ the food intake needs to match energy needs.

An increase in energy intake can result in **weight** _____.

An increase in energy needs without an increase in energy intake will result in weight **loss**.



3. Macronutrients

► Macronutrients are the types of food we need in large amounts. These include:

- _____
- _____
- _____

4. Carbohydrates

Why are they important?

- Provide the most ready source of _____.
- Allows the athlete to perform for longer and is used for _____ events such as cycling and marathon running.



Sources of food

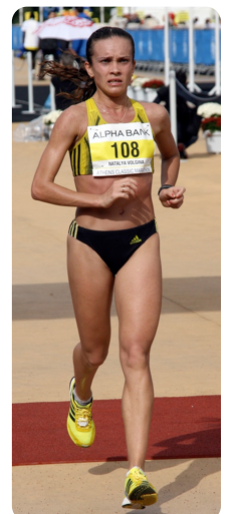
- _____ **carbohydrates** - Bread, rice, pasta and potatoes.
- _____ **sugars** - Sweets and cakes.

Useful sources of energy

- Over _____ **of our energy needs** are taken from carbohydrates, athletes need even more.

Carbohydrate loading is a technique used by endurance athletes to maximise their carbohydrate stores.

- This involves eating **high carbohydrate meals** 24 hours before the day of the competition.
- This helps maximise the _____ **stores**.
- One downside is this can leave the performer feeling heavy and sluggish.
- It should, however, _____ the effects of fatigue.





5. Protein

Why are they important?

- ▶ They provide amino acids that **build** _____ **tissues** to make the body stronger.
- ▶ They _____ muscle tissue.

Sources of food

- ▶ Meat, eggs and nuts.

Useful sources of energy

- ▶ Protein provides a **small amount of** _____ if needed.

Power and strength athletes need to build muscle. To assist them they combine training with a **high** _____ **diet**.

- ▶ They should consume 1.2 - 1.7 grams per kilogram of body weight.
- ▶ A high protein diet is also used during the _____ from an injury.
- ▶ This kind of diet can also help athletes who need to lose weight.



6. Fats

Why are they important?

- ▶ Provide large amounts of **energy**.
- ▶ They contain essential **fatty** _____ that the body needs to function.
- ▶ _____ the body against the cold.

Sources of food

- ▶ _____ **fats** - Butter, cheese, ice cream and fatty meats.
- ▶ _____ **fats** - Avocado, nuts, soybean and olive oils.

Useful sources of energy

- ▶ Fats provide **50%** or more of our energy needs.
- ▶ They can only be used at low intensities when oxygen is in _____ supply.





7. Micronutrients

- ▶ Micronutrients are chemical substances that are essential to normal _____ and _____.
- ▶ **Vitamins**
- ▶ **Minerals**

8. Vitamins and minerals

Why are they important?

- ▶ **Aid growth.**
- ▶ Boost our _____ system.
- ▶ Regulate body functions.

Sources of food

- ▶ Vegetables and fruit.

Useful sources of energy

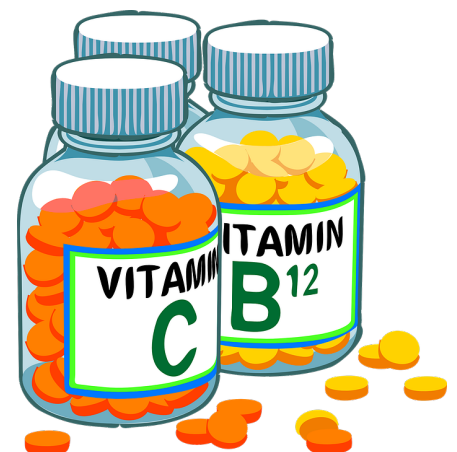
- ▶ Vitamins and minerals do **not** generate any energy.

Important vitamins

- ▶ **B3** and **B6** help with gaseous exchange.
- ▶ Vitamin **C** assists with exercise induced asthma.
- ▶ Vitamin **D** assists with mood and energy regeneration.
- ▶ Vitamin **E** reduces the risk of pneumonia.

Important minerals

- ▶ _____
- ▶ **Iron**
- ▶ _____
- ▶ **Magnesium**
- ▶ **Zinc**
- ▶ _____





9. Water 2-2.5 litres

Why is it important?

- ▶ Incorrect water balance can cause _____.
- ▶ _____ joints.
- ▶ Removes _____ **products**.
- ▶ _____ temperature.

Sources of food

- ▶ Water can be found in most _____ and _____ products but the best way to hydrate is to drink it directly.

Useful sources of energy

- ▶ Water provides **no** energy but it does aid the chemical reactions that release energy.



10. Fibre/roughage

Why is it important?

- ▶ It pushes your food along your _____ preventing constipation.
- ▶ It absorbs _____ wastes from digested foods.
- ▶ Makes you feel full.

Sources of food

- ▶ Fruit, vegetables, bread and cereals.

Useful sources of energy

- ▶ Fibre is **not** a source of energy.



11. Optimum Weight

The four main factors that influence your _____ **weight**.

1. _____ - Men have a higher **muscle mass** and skeleton so have a higher optimum weight.
2. _____ - Increased height results in a **larger skeleton** and a higher optimum.



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3. _____ **girth** - Increased **muscle mass** results in a higher optimum weight.
4. _____ **structure** - A high **bone** _____ increases the optimum weight.

Different athletes have different optimum body weights. Here we can see the different body types of these athletes.

