

Year 8 Food Home Learning 1



Name:

Class:

Task: Learning about Micronutrients and Macronutrients helps us understand their importances to not only help our bodies thrive, but also survive. Read the following information and answer the questions below.

Macronutrients

Macronutrients provide energy. The macronutrients are:

- carbohydrate;
- protein;
- fat.

Macronutrients are measured in grams (g).

Energy from food

- Energy intake is measured in joules (J) or kilojoules (kJ), but many people are more familiar with Calories (kcal).
- Different macronutrients, and alcohol, provide different amounts of energy.

Protein

- Made up of building blocks called amino acids.
- There are 20 amino acids found in protein.
- Eight amino acids have to be provided by the diet (called essential amino acids).

The essential amino acids (EAAs) are isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine.

In young children, additional amino acids, e.g. histidine and tyrosine, are sometimes considered to be essential (or 'conditionally essential') because they may be unable to make enough to meet their needs.

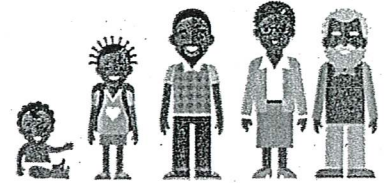
Recommendations

- 0.75g/kg bodyweight/day in adults.

Sources:

Animal sources: meat; poultry; fish; eggs; milk; dairy food.

Plant sources: soya; nuts; seeds; pulses, e.g. beans, lentils; mycoprotein.



Carbohydrate

All types of carbohydrate are compounds of carbon, hydrogen and oxygen. They can be divided into three main groups according to the size of the molecule.

These three types are:

- monosaccharides (e.g. glucose);
- disaccharides (e.g. lactose);
- polysaccharide (e.g. sucrose).

The two types main of carbohydrate that provide dietary energy are starch and sugars. Dietary fibre is also a type of carbohydrate.

Starchy carbohydrate is an important source of energy.

Starchy foods - we should be choosing wholegrain versions of starchy foods where possible.

Recommendations

- Total carbohydrate - around 50% of daily food energy.
- Free sugars include all sugars added to foods plus sugars naturally present in honey, syrups and unsweetened fruit juice (<5% daily food energy).
- Fibre is a term used for plant-based carbohydrates that are not digested in the small intestine (30g/day for adults).

Fat

Sources of fat include:

- saturated fat;
- monounsaturated fat;
- polyunsaturated fat.

Fats can be saturated, when they have no double bonds, monounsaturated, when they have one double bond, or polyunsaturated, when they have more than one double bond.

Recommendations

- <35% energy, Saturated fat <11% energy.

A high saturated fat intake is linked with high blood cholesterol levels.

Sources:

Saturated fat: fatty cuts of meat; skin of poultry; butter; hard cheese; biscuits, cakes and pastries; chocolate.

Monounsaturated fat: edible oils especially olive oil; avocados; nuts.

Polyunsaturated fatty acids: edible oils especially sunflower oil; seeds; margarine; spreadable fats made from vegetable oils and oily fish.

Micronutrients are needed in the body in tiny amounts. They do not provide energy, but are required for a number of important processes in the body.

There are two main groups of micronutrients:

- vitamins;
- minerals and trace elements.

Micronutrients are measured in milligrams (mg) and micrograms (μg) with $1\text{mg} = 0.001\text{g}$ and $1\mu\text{g} = 0.001\text{mg}$.

Micronutrient recommendations

People have different requirements for each micronutrient, according to their:

- age;
- gender;
- physiological state (e.g. pregnancy)

Vitamins

Vitamins are nutrients required by the body in small amounts, for a variety of essential processes. Most vitamins cannot be made by the body, so need to be provided in the diet.

Vitamins are grouped into:

- fat-soluble vitamins (vitamins A, D, E and K);
- water-soluble vitamins (B vitamins and vitamin C).

Minerals

Minerals are inorganic substances required by the body in small amounts for a variety of different functions. The body requires different amounts for each mineral. Some minerals are required in larger amounts, while others are needed in very small amounts and are called 'trace elements'.

Hydration

- Aim to drink 6-8 glasses of fluid every day.
- Water, lower fat milk and sugar-free drinks including tea and coffee all count.
- Fruit juice and smoothies also count but should be limited to no more than a combined total of 150ml per day.

20% of water is provided by food such as soups, yogurts, fruit and vegetables.

The other 80% is provided by drinks such as water, milk and juice. Drinking too much water can lead to 'water intoxication' with potentially life threatening hyponatremia. This is caused when the concentration of sodium in the blood gets too low.

Nutrient	Function	Sources	Nutrient	Function	Sources
Vitamin A	Helps the immune system to work as it should and with vision.	Liver, cheese, eggs, dark green leafy vegetables and orange-coloured fruits and vegetables.	Calcium	Helps to build and maintain strong bones and teeth.	Dairy, calcium-fortified dairy-alternatives, canned fish (where soft bones are eaten) and bread.
Vitamins B	Thiamin, riboflavin, niacin, folate, and vitamin B12 have a range of functions within the body.	Different for each B Vitamin.	Iron	Helps to make red blood cells, which carry oxygen around the body.	Offal, red meat, beans, pulses, nuts and seeds, fish, quinoa, wholemeal bread and dried fruit.
Vitamin C	Helps to protect cells from damage and with the formation of collagen.	Fruit (especially citrus fruits), green vegetables, peppers and tomatoes.	Phosphorus	Helps to build strong bones and teeth and helps to release energy from food.	Red meat, poultry, fish, milk, cheese, yogurt, eggs, bread and wholegrains.
Vitamin D	Helps the body to absorb calcium & helps to keep bones strong.	Oily fish, eggs, fortified breakfast cereals and fat spreads.	Sodium	Helps regulate the water content in the body.	Very small amounts found in foods. Often added as salt.

1. What are the three macronutrients that provide energy?

2. How is energy intake from food measured?

3. What are proteins made of, and how many amino acids are found in proteins?

4. Which eight amino acids are considered essential for adults?

5. What are the primary animal sources of protein?

6. What are the three main groups of carbohydrates?

7. What percentage of daily food energy should come from carbohydrates?

8. What are the recommended daily intake percentages for total fat and saturated fat?

9. What are the two main groups of micronutrients?

10. What is the daily hydration recommendation for fluid intake?

RS HOME LEARNING - Year 8 Knowledge Organiser: The Life of Jesus



Key Concepts

- **Jesus of Nazareth:** A Jewish teacher and the central figure of Christianity, believed by Christians to be the Son of God and the Messiah.
 - **Messiah:** The promised savior and deliverer of the Jewish people, believed by Christians to be Jesus.
 - **Gospels:** The four books in the New Testament (Matthew, Mark, Luke, and John) that describe the life, teachings, death, and resurrection of Jesus.
 - **Disciples:** The 12 close followers of Jesus, who were chosen to spread his teachings.
 - **Miracles:** Supernatural acts performed by Jesus, such as healing the sick, walking on water, and raising the dead.
 - **Crucifixion:** The method of execution used to kill Jesus, where he was nailed to a cross as a punishment.
 - **Resurrection:** Christians believe that after Jesus died, he rose from the dead on the third day, symbolizing victory over death.
 - **Ascension:** Jesus' rise to Heaven, witnessed by his disciples, 40 days after his resurrection.
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Key Events in the Life of Jesus

1. **Birth of Jesus** (c. 4–6 BCE): Born in Bethlehem to Mary and Joseph, believed by Christians to be born of a virgin.
2. **Baptism by John the Baptist** (c. 27–29 CE): Jesus is baptized in the River Jordan, marking the start of his public ministry.
3. **Temptation in the Wilderness** (c. 27–29 CE): Jesus fasts for 40 days and resists temptations from Satan.
4. **The Sermon on the Mount** (c. 28–30 CE): Jesus teaches about love, forgiveness, and the Kingdom of God.
5. **Miracles** (c. 28–30 CE): Jesus performs healings, raises the dead, walks on water, and feeds thousands.
6. **The Last Supper** (c. 30 CE): Jesus shares his final meal with his disciples before his crucifixion, establishing the practice of Communion.
7. **Crucifixion** (c. 30–33 CE): Jesus is arrested, tried, and sentenced to death by crucifixion.
8. **Resurrection** (c. 30–33 CE): Jesus rises from the dead on the third day after his crucifixion.
9. **Ascension** (c. 33 CE): Jesus ascends to Heaven in front of his disciples, signifying the end of his earthly ministry.

Key Vocabulary

- **Parables:** Short, simple stories used by Jesus to teach moral or spiritual lessons.
 - **Crucifixion:** A brutal form of Roman execution in which the condemned person is nailed to a cross.
 - **Resurrection:** The belief that Jesus rose from the dead after his crucifixion.
 - **Kingdom of God:** A concept Jesus spoke of, referring to God's reign and a spiritual realm of peace and justice.
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Summary

Jesus' life, teachings, death, and resurrection are foundational to Christian beliefs. His messages of love, forgiveness, and the coming Kingdom of God continue to inspire millions. The key events of his life—his birth, baptism, ministry, crucifixion, resurrection, and ascension—mark the fulfillment of God's plan for humanity's salvation.

Home Learning - Read and use the information to answer the questions below. You will be tested on these in the next lesson. Write in full sentences:

1. Who was Jesus, and why is he important in Christianity?
2. What were some of the main teachings of Jesus?
3. What was the significance of Jesus' baptism by John the Baptist?
4. How did Jesus demonstrate his divine power through miracles? Give two examples.
5. What is the Sermon on the Mount, and why is it important?
6. What happened during the Last Supper, and why is it important for Christians?
7. Why was Jesus crucified, and what does this event mean to Christians?
8. What do Christians believe about the resurrection of Jesus?
9. What is the significance of Jesus' ascension into Heaven?
10. What role did the disciples play in Jesus' life and ministry?