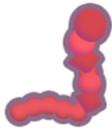


Building

PROTEINS



The role of nutrients in the body is sometimes compared to that of the parts of a house.

The energy nutrients play the role of heating and electricity, but we also need structural elements to hold the house up, such as the walls and roof. These elements represent our bones, muscles and organs, for example.

The body's cells are made of protein, which is why these are referred to as **structural nutrients**. Proteins play an important role throughout our lives, but especially when we are growing as we have to produce new tissue. Proteins are made of chains of amino acids with very precise roles.



LIPIDS AND MINERALS



Lipids are also components of cells. This is particularly the case for specific **essential fatty acids**. These fatty acids are vital to our health but we are unable produce them. Omega 3 is one essential fatty acid. Some fats are particularly important for children's development and growth. This is particularly true of the brain as it is primarily composed of lipids.

Minerals are often considered as being a part of body maintenance and function. **Calcium** plays a key role in body structure as is needed to build bones. **Phosphorous** and **magnesium** also play a part in the process of building bones.

2.3.2 Building

What is the role of proteins in the body?

- Building
- Hydration
- Function

Which parts of a house illustrate the role of proteins?

- The walls and the roof
- The shutters
- Heating

Proteins are made up of...

- amino acids
- simple carbohydrates
- fatty acids

Apart from calcium, which other minerals play a role in the ossification process?

- Manganese and zinc
- Sodium and chlorine
- Phosphorous and magnesium

The human body can produce essential fatty acids such as omega-3.

- True
- False

Omega-3s are...

- lipids
- proteins
- minerals

The brain mainly consists of...

- lipids
- proteins
- carbohydrates

Proteins are...

- structural elements
- demolition elements
- freezing elements

Calcium plays an important...

- structural role
- hydration role
- deterioration role

How much of the human body is made up of minerals?

- 50%
- 20%
- 4%

Answers

What is the role of proteins in the body?

- Building**
Well done! Proteins play a structural role.
- Hydration**
Wrong! Drinks are responsible for this.
- Function**
Wrong! Many other nutrients perform this role.

Which parts of a house illustrate the role of proteins?

- The walls and the roof**
Well done! Just like these structural parts of a house, proteins help build your body.
- The shutters**
Wrong! Proteins are structural elements.
- Heating**
Wrong! Proteins are structural elements.

Proteins are made up of...

- amino acids**
Well done! You are right. Proteins are made up of sequences of amino acids.
- simple carbohydrates**
Wrong! Complex carbohydrates comprise simple carbohydrates.
- fatty acids**
Wrong! Fatty acids are components of lipids.

Apart from calcium, which other minerals play a role in the ossification process?

- Manganese and zinc**
Wrong! These are mainly concentrated in your liver.
- Sodium and chlorine**
Wrong! Their particular role is to keep your body hydrated.
- Phosphorous and magnesium**
Well done! Just like calcium, phosphorous and magnesium play a role in the ossification process.

The human body can produce essential fatty acids such as omega-3.

- True**
Wrong! Try again!
- False**
Well done! Your body does not produce essential fatty acids. They are found in food.

Omega-3s are...

- lipids**
Well done! Omega-3 fatty acids are essential to help children develop and grow.
- proteins**
Wrong! Try again! Omega-3s are found in oils and fish for example.
- minerals**
Wrong! Try again! Omega-3s are found in oils and fish for example.

The brain mainly consists of...

- lipids**
Well done! Your brain mainly comprises lipids.
- proteins**
Wrong! Try again!
- carbohydrates**
Wrong! Try again!

Proteins are...

- structural elements**
Well done! Proteins are components of organs and muscles. This is why they are called structural elements.
- demolition elements**
Wrong! Try again!
- freezing elements**
Wrong! Try again!

Calcium plays an important...

- structural role**
Well done! Calcium is a component of bones and teeth.
- hydration role**
Wrong! Water fulfils this role.
- deterioration role**
Wrong! It is a component of bones and teeth.

How much of the human body is made up of minerals?

- 50%**
Wrong! That's far too much.
- 20%**
Wrong! It's less than that.
- 4%**
Well done! Minerals make up around 4% of body mass and have an important role to play.

What role do nutrients perform?

[14-16 years old]

Answer the following questions.

1. What are the two main roles of proteins?

2. What is the calorific value of lipids?

3. Can the body store nutrients that provide energy?

4. Which energy nutrients do you use at the beginning of any physical exercise?

5. What is the difference between water-soluble and liposoluble vitamins?

6. What role does vitamin C play?

7. Name three minerals.

8. In which parts of the body can you find a large amount of calcium?

9. What role does dietary fibre play?

10. How is water eliminated from the body?
