

Discuss the uses of water in the body!!!

Water has a very important role in the lives of all living organisms.

Our bodies are nearly 60% water. All life evolved in water, and therefore all chemical reactions and the structure of all molecules that make up the body require water. Water is the single most essential molecule for life.

Water also is a convenient transport system, explaining why fluids (for example, blood) transport nutrients and many other things throughout our bodies.

As I have mentioned before, the human body consists mostly of water: 60% of the body, 75% of the blood, 78% of the muscles and 92% of the brain. The body therefore relies very heavily on water to function properly. Water regulates body temperature, is responsible for the transport of nutrients and wastes around the body and is very important in maintaining a healthy and balanced homeostasis (control & regulation of the body's functions).

Without food the average human can survive up to 40 days; without water you cannot survive for more than 3 days. When the body loses water this is known as dehydration. If the water is not replaced at the required levels, it can have serious results: drowsiness, loss of concentration, headaches, kidney failure, liver damage and in extreme cases death. Water is lost through the skin and the amount depends on the level of activity of the body and the external conditions. The skin also forms the body's barrier against the forces of the environment: sun, cold, heat,

wind, salt and pollutants. The skin therefore requires constant attention and care to ensure the strength as well as the vitality and appearance of this essential barrier.

What happens to your body when you're dehydrated?

- Your brain won't work properly - you'll be groggy, slow, and feel out of it
 - You'll lose muscle tone
- Your kidneys won't be able to function; toxins and wastes will back up in your body, making you feel generally crummy
- You'll have trouble regulating your body temperature; you may feel overheated, or you may feel chronically cold and unable to get warm.
 - You'll get constipated
- Fats stored in your body won't get used up or metabolised
- You'll think you're hungry all the time, and so you'll be likely to eat more
 - Your skin will get dry, itchy, and saggy

A daily intake of 2-3 litres of water for the average person.

This intake should be greater depending on weight and the activity level of the individual.

Most importantly in very hot condition dehydration increases enormously, both in the sun and also in air-conditioned environments. However, most people only drink when they are thirsty: this is a mistake as thirst is the sign of the body being very short of water and it should be consumed long before the pangs of thirst arrive. Soft drinks are not appropriate for this replenishment of the body's water supply as they often contain sugar and caffeine both of which increase the level of metabolism and lead to further dehydration. Thinking of water as the oil for the engine and considering the value of one's health and well being, you should give your body the very best water

that you can.

As important as water is to the human body and essential for our survival, good quality, pure, natural drinking water is very rare on this planet. Although 70% of the planet is covered with water, only approximately 2% is freshwater suitable for drinking, the rest being predominantly salt or seawater. If one discounts the freshwater trapped as ice in the Polar Regions, this leaves us with only 0.0075% of all the water on this planet that is suitable for drinking. This small proportion varies enormously in quality.

Hence the importance of 'water education' for us to know exactly what our bodies need and exactly what kind of water we are drinking.

Virtually all chemical reactions in life processes take place in solution in water. Some organisms can live in a dormant and desiccated state for long periods of time but require water to become active. Water is present both inside and outside cells. In the body of a mammal for example although it is about 70% water by weight, about 46% (approximately 2/3) is inside cells, and about 23% (approx. 1/3) is present outside cells in blood plasma and other body fluids.

With enzyme assistance the addition and subtraction of water molecules enables the construction and demolition of carbohydrates, fats and proteins.

Water molecules, assisted by enzymes, can be 'pushed' into certain molecules to split them into smaller sub-units.

This process is known as hydrolysis.

During it parts of a water molecule are added to the two separated parts. Carbohydrates, fats and proteins can be split in this way.

*Large carbohydrates such as starch can be split to form smaller carbohydrates such as glucose.

*Fats or lipids can be split into glycerol and other molecules including chemicals called fatty acids.

*Proteins can be split into the building blocks from which they were constructed, namely amino acids.

In a reverse way, enzymes can assist with the removal of water molecules enabling some small molecules to join together to form large ones. This process is called condensation and can be looked upon as condensing two or more molecules together to make one molecule.

By removing water at a molecular level:

*simple sugars like glucose can be joined together to form complex carbohydrates such as starch,

*glycerol and certain other molecules can form fats or lipids and

*amino acids can be joined together to make protein.

So concluding this essay- it is pretty obvious and clear to see that the importance of water within the human body is extremely essential and without water in our lives we simply would not be alive.



