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Water is a very vital component in the human body. The human body can stay for weeks without food but can only manage a few days without water. 58-78% of human bodies are composed of water, depending on the body size.

In a single day, the body requires about two to three liters of water. Approximately, 20% of this water is obtained from food, which means that the remaining amount needs to be drank directly (Guyton, 1991, p. 274). Nonetheless, this should not be the fixed rule for all people since various activities, professions and environments demand varied levels of body fluids. For instance, professional athletes more often than not do require more than the 2-3 liters a day while people in hot places require a higher water intake than those in cooler places.

This fluid is so vital in our bodies because virtually each body process needs it. Thirst is a very good pointer that one’s body is getting dehydrated and thus should not be ignored.

Functions of water in the body

Water is responsible for the general well-being of the human body; sixty percent of the body is basically water. The roles of this fluid in the body are mainly four: various forms of movement around the body, protection of various body organs, lubrication and body temperature regulation in order to fit to prevailing conditions (Jackson, 1985, p. 240). Digestion cannot take place effectively minus sufficient water. The fluid keeps the body hydrated while at the same time it assists digestion especially in the intestinal tract.

Food is enabled to flow freely through the system if it is contains adequate amounts of water. Absorption of vital nutrients in the intestinal tract also relies on the wetness of the digested food passing through. Effective ridding our bodies of wastes and other toxic substances also relies on the amount of water intake. Processes in the urinary tract, sweating and in getting rid of fecal matter rely on water (Koeppen, 2002, p. 108).

It has been proved that people suffering from kidney stones need to up their water intake in order to liquefy calcium in their urine thus reduce stone formation. Sufficient water also prevents urinary tract infections by cleaning out impurities. Persons who don’t take enough water daily experience problems of constipation every now and then. Various organs in the human body need protection for general comfort and wellbeing. Water plays a vital role in protecting eyes from shocks and dirt, protecting cells, protection of joints against compression through the synovial fluid, protection of fetuses within expectant women and protection of our mouths from choking (Koeppen, 2002, p.

108). . Organs in the body require sufficient lubrication for effective functionality and comfort. Our eyes and joints and mouths need constant lubrication, in which water is the major component.

Several forms of transportation need to be carried out within a normal and functional body. Water present in the blood is the transporter of oxygen and foods to all our body cells. Water also returns waste products such as carbon dioxide to the lungs and urine to the kidneys for excretions. Temperature

regulation is important for our bodies and it takes place with the help of water (Guyton, 1976, p.

424). In hot conditions, sweat glands that are located under the skin secrete sweat which is mainly water onto the surface. This water evaporates leaving a cooling effect behind and thus comfort for the body.

Effects on a body without sufficient water

Dehydration is defined as a loss of body weight of 1% or greater resulting from fluid loss. Timely signs that one is getting dehydrated include queasiness, dizziness, irritability and headaches while on normal duty or working out on a hot day. If one gets more dehydrated, then it can lead to dim vision and severe exhaustion (Koeppen, 2002, p. 109).

In fact, attention and concentration levels get reduced, together with short term memory. Any more fluid losses after this can lead to coma and eventually death. Blood plasma is normally 90% water and dehydration serves to lessen the amount of blood in the body which results in overworking the heart system. Working out turns out to be more labored since the body’s arrangements are not functioning as effectively as they do with the right hydration and performance ends up being affected negatively (Koeppen, 2002, p. 111).

How different electrolytes function within the body

Electrolytes refer to substances that separate in water to form positively and negatively charged ions that conduct an electrical current. In relation to the human body, these electrolytes are usually sodium, potassium and chloride.

These electrolytes serve to normalize fluid equilibriums and are vital in balancing acid and base amounts all through the body. The main functions of sodium include nerve transmission, contraction of muscles and maintaining fluid balance (Jackson, 1985, p. 246).

The main deficiency symptom of sodium deficiency is cramping of muscles. Those at risk of developing sodium deficiency are people who take a severely sodium limited diet and those who sweat excessively. High levels of sodium lead to hypertension in salt sensitive people. Potassium serves as the main positive intracellular ion.

It is also vital in nerve transmission, contraction of muscles and fluid balance within the body. Deficiency symptoms include a notably uneven heartbeat, exhaustion and cramping of muscles. The people who are vulnerable to this deficiency are those taking poor diets high in processed foods and the ones consuming thiazide diuretics. Excessive levels of potassium lead to an irregular heartbeat.

Chloride is the major negative extracellular ion and also aids in fluid steadiness in the body (Jackson, 1985, p. 246). There are usually no noticeable deficiency symptoms and there is no group of people that are specifically inclined to acquire it.

It also harbors no toxic effects to the body even if it is in excessive amounts.

Effects of alcohol and caffeine on hydration levels in the body

Too much alcohol and caffeinated drinks leads the individual taking them to pass water more. Consequently, the amount of fluids leaving the body is increased which in turn leads to dehydration followed by failure of the kidneys (Guyton, 1991, p. 278).

Steps that people need to take to ensure they do not get dehydrated

Intake of a good deal of regular tap water and vitamin packed water guards against dehydration. Individuals who exercise like athletes should not forget to take plenty of water before exercise, in the course of the exercise and after they are done in order to replenish the lost water (Guyton, 1991, p. 280).

Thirst is not a good indicator of dehydration. It should be a habit for everyone to drink water when they get up in the morning and throughout the day.

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