

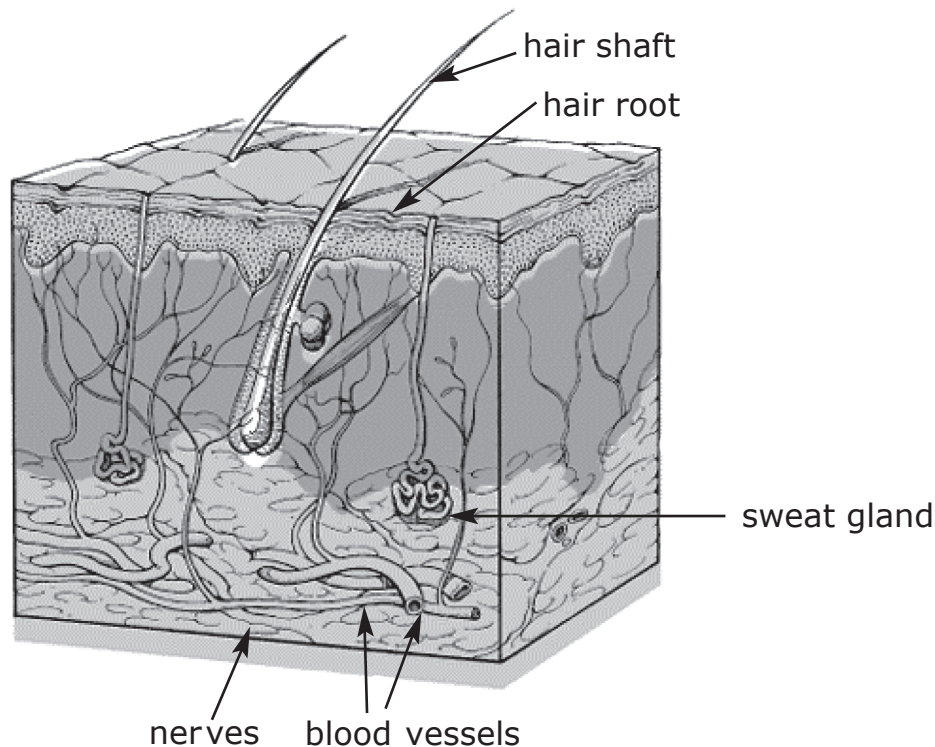
The Science Behind Sports Drinks

Most athletes know the importance of staying **hydrated**. This term refers to giving the body enough water.

Sports drinks can be helpful, especially when you exercise for longer than one hour. Take a look at some of the science behind the ingredients in sports drinks. Most contain carbohydrates, electrolytes, water, and salt.

1. What does hydrated mean?

Sweat glands are found on almost every part of the body. The size of the glands varies. They are especially large in those regions where you perspire the most.



Your body temperature increases when you are active. Sweating is one way that your body uses to maintain a normal body temperature of 37°C. The cooling takes place because heat is required to evaporate water from the skin.

Sweating can involve huge water losses. For example, an athlete working in a hot, humid environment can lose as much as 2 litres of water per hour through sweat. Here is what can happen if body fluids are not replaced.

Percent of Body Weight Lost as Sweat	Effect on the Human Body
2%	impaired performance
4%	capacity for muscular work declines
5%	heat exhaustion
7%	hallucinations
10%	circulatory collapse and heat stroke, maybe death

2. Why do most people sweat when they are exercising?

3. What can happen to a person who loses 10% of body weight by sweating?

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The key to good hydration is drinking water before, during, and after any form of exercise. The water in sports drinks is absorbed through the small intestine. Sports drinks also contain salt (sodium chloride). Small amounts of salt help to increase the absorption rate of water. Salt also increases an athlete's desire to drink.

4. What is the key to good hydration?

5. Why are small amounts of salt added to sports drinks?

Sweating involves more than the loss of water. Electrolytes are also lost.

Electrolytes are minerals such as chloride, calcium, sodium, and potassium. These minerals are needed to pass messages along the nerves and to balance water levels in the body. Electrolytes in a sports drink help absorb water from the intestine and reduce the amount of urine that is produced.

6. List four electrolytes found in the human body.

- | | |
|-----------------|-----------------|
| a) _____ | b) _____ |
| c) _____ | d) _____ |