



KEEP YOUR ION THE BALL (1 OF 2)

BACKGROUND

Did you ever wonder why your sweat and tears taste salty? It's because the water that makes up nearly 70 percent of your body has salts dissolved in it. These salts—which include compounds of sodium, potassium, magnesium, and calcium—are necessary for good health. A loss of electrolytes, called an electrolyte imbalance, can slow down the transmission of nerve impulses, impair muscle function, and cause an irregular heartbeat.

Your body loses electrolytes when you sweat. Normally you get all the electrolytes you need from the food you eat. (Bananas and potatoes, for example, contain a lot of potassium.) Because they sweat a great deal, professional and endurance athletes can lose a large quantity of electrolytes during practice and competition. They will often turn to sports drinks to quickly restore the balance. That's because sports drinks contain a lot of sodium and potassium.

In this experiment you will test the conductivity (ability to conduct electricity) of a variety of beverages to see which ones contain a higher concentration of electrolytes. The beverage that has the highest concentration of electrolytes will have the greatest conductivity.

MATERIALS

6-volt battery

two 8-inch pieces of coated wire (18-22 gauge) with ends stripped

wire cutters

electrical tape

1 jumbo super-bright LED (light-emitting diode) available from Radio Shack

at least three beverages to test

paper cups, one for each beverage

