Sucrose Goes Glucose

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In the body, sucrose is broken down into glucose and fructose, and this process in catalyzed by an enzyme referred to as sucrase in humans and invertase in plants and yeasts. As a result of such carbohydrates being broken down into glucose, a person's blood glucose level normally goes up after they eat. This project was designed to investigate the concentrations of sucrose and glucose in different foods and how the conversion of sucrose to glucose with the aid of invertase affects the quantity of glucose that is actually digested. I hypothesized that syrup would have the highest original concentration of sucrose, and the invertase would greatly increase the amount of glucose actually digested because syrup is known to have high sucrose content. Upon testing the different foods, I allowed all samples to become room temperature and tested the concentration of glucose in the fixed amount of samples before and after adding invertase for a set time period. It was concluded that the presence of invertase to catalyze the breakdown of sucrose into glucose greatly affects the amount of glucose that we digest in food. Honey and maple syrup had the highest amount of sucrose while the soft drink and spaghetti sauce had the highest glucose concentrations before adding the enzyme, and the soft drink had the greatest amount of glucose after being exposed to invertase. Meanwhile, ranch dressing converted sucrose to glucose the fastest. In all, the presence of enzymes greatly affects the conversion of sucrose to glucose, sometimes doubling the glucose content in foods upon digestion.

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