The Effects of Miraculin on Blood Glucose Levels as Compared to Sucrose, Saccharin, and Aspartame

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This experiment was designed to test the effects of miraculin on blood glucose levels when compared to sucrose, saccharin, and aspartame. For four consecutive days, ten test subjects pricked their fingers and tested their blood glucose levels. Test subjects were then asked to drink a sucrose, saccharin, aspartame, or miraculin and water mixture. After fifteen minutes, the ten test subjects tested their blood glucose levels again. Quantitative measurements were made using a glucometer, before and after sucrose, saccharin, aspartame, or miraculin was ingested. Data was recorded and a comparison was made between the difference in the initial blood glucose level and the blood glucose level after sucrose, saccharin, aspartame, or miraculin was ingested. When miraculin was compared to sucrose, one's blood glucose levels increased significantly with the use of sucrose and increased less significantly with the use of miraculin. When miraculin was compared to saccharin and aspartame, one’s blood glucose levels increased with the use of saccharin and aspartame and less significantly increased with the use of miraculin. This experiment provided evidence that miraculin is a natural, non-caloric glycoprotein that either increases one’s blood glucose levels less than artificial sweeteners, keeps one’s blood glucose levels constant, or decreases one’s blood glucose levels. Miraculin has numerous applications including diabetes, where it acts as a sweetener that does not raise one’s blood glucose levels. Research should also be continued on the effects of miraculin as a potential aid to patients undergoing chemotherapy who suffer from metallic taste dysgeusia.

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