

**ABSTRACT**

***Comparison of Blood Glucose Level Elevation  
between Saccharin and Glucose Consumption***

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**Background:** Excessive glucose index food consumption without nutrition balance can cause metabolic disruption. At first, Non-Nutritive Sweetener used for patients with diabetes now is widely used in food product even used by consumer as additive or sugar substitute. Many research has show that people who consume NNS tend to have high Body Mass index and waist circumference, even though NNS hasn't been proofed to cause weight gain. Research in 2014 showed that saccharin can cause elevation in blood glucose level up to abnormal level which suspected to be caused by disequilibrium in gut microbiota.

**Objective:** The aim of this study is to compare blood glucose elevation between saccharin and glucose consumption.

**Method:** This research is an experimental, quantitative research methods using pretest-posttest control group approach. The population of this study was all medical student of Universitas Airlangga class 2014 who have normal BMI and didn't have disorder that affect blood glucose level. The amount of the sample were 31 students. In this research, subjects were divided to 3 groups. Before the observation, subjects were fasting for 8 hours with allowance to drink water. Researcher took blood sample with sterile lancet and put it in specific test strip and using glucometer. Those specimens were for determining fasting blood glucose level. After that, the first group were given 5mg/kgBW saccharin solution and the second group were given 75grams glucose solution, the control group were only given drink water. Later, blood glucose level was measured again after 15, 30, 60, and 120 minutes. Data were analyzed with SPSS using independent t-test to compare the result for each group.

**Result:** The result of this research shows that there's a difference on blood glucose level between group that consumed saccharin and group that consumed glucose ( $p < 0,025$ ) which the elevation of blood glucose level in the group that consumed glucose were higher than in the group that consumed saccharin. Comparison between group that consumed saccharin and control group were not significantly different ( $p > 0,025$ )

**Keywords:** Saccharin, Non-Nutritive Sweetener, blood glucose level, blood glucose regulation