

Physical science



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Physical science Question Outline for testing hypothesis Fast foods, such as French fries, are believed to have such effects as increased levels of body calories and increased body weight. It is therefore important to ascertain this correlation with focus on frequency of consumption and this study investigates the relationship between twice per week consumption and three times per week consumption with focus on 16 year olds. The following hypothesis is tested.

Sixteen-year-olds who eat French fries three times a week will gain more weight than those who eat French fries only twice a week.

Weekly frequency consumption of French fries is the independent variables in the study. This is because the researcher determines and fixes its values. In the case, its value is fixed at twice a week and three times a week. Weight gain is the dependent variable as its value is determined by another variable in the study, frequency of consumption.

The study will be implemented through an experimental design. This approach involves random selection of research participants who are then grouped into experimental and control groups. Placement into either experimental or control groups are also done randomly. Treatment is then applied on the experimental group and data collection and data analysis follows. The research design is preferred for the study because of its strength in evaluating correlation relationship. Existence of experimental and control groups establishes ground for comparisons. In the study, 150 16-year-olds will be recruited, randomly from an academic institution. They will be informed of the scope of the research and their consent, together with their parents' approval obtained. The students will be restrained from consuming French fries for two weeks and their weights measured. They will

then be organized into three groups of 30 participants each, by random selection. One group, the control group will be restrained from using French fries, another group will be restricted to two times per week consumption of French fries and the third group allowed to take French fries three times a week. Discipline to the assigned consumption rates will be monitored for four weeks.

I shall assume the full responsibility of designing and implementing the study. This will aim at ensuring diligence in implementation of the research design and elimination of potential bias that could arise from self-interest of a contracted party.

Data will then be collected for each group, after four weeks, and analysis for any significant difference in mean weight change across the groups done.

Two approaches will be used for data analysis. The first approach will investigate possible difference in individuals' weights before and after the four weeks of the experiment. Paired sample t-test will be used to test the null hypothesis that there is no significant difference in weights before and after consumption. Independent sample test will then be conducted across the three groups to investigate significance of differences in their mean weights. Establishing a significant difference would mean that the frequency of consumption per week is significant to body weight and the conclusion that sixteen year olds who eat French fries three times a week will gain weight than those who eat French fries only twice a week.

Works cited

Shannon, Thomas, and Kockler, Nicholas. An introduction to bioethics. New York, NY: Paulist Press, 2009. Print.