

# 404 proposal

November 8, 2024

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“Project 404 Proposal”

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We are using the data set in kaggle which is aim at find [weight loss using different diet](#).

To conduct a factorial experiment to investigate the main and interaction effects of diet type and factors age and gender on weight loss among adults aged 16–60. This study aims to analyze how different combinations of diets and variables influence weight loss outcomes over a 6-week period, thereby identifying the most effective strategies for various population subgroups.

Variable Name	Levels of the Variable	Changes to Original Variable
person	1-78 stands for id for each person	drop this, not useful
gender	0 for female, 1 for male	None
Age(years old)	16-60	16-19(Adolescent), 20-39(Adults), 40-49(Middle-Aged Adults), 50-60(Elder Adults)
Height(cm)	Continuous 141cm-201cm	Calculate BMI with pre.weight
pre.Weight (kg)	Continuous 58kg-103kg (weight before the experiment)	categorize them as Underweight(<18.5), Healthy(18.5 - 25), Overweight(25 - 30), Obesity(>=30)
Diet	1(Placebo), 2(Keto), 3(Vegan)	None
weight6weeks (kg)	Continuous 53kg-103kg (weight after 6 weeks take diet)	Calculate BMI with Height
weightloss (kg)	Continuous (weight6weeks - pre.Weight)	None

1. The size of the total data set is 78.
2. Experiment units are the each person in the experiment.
3. Response variable is weight6weeks - pre.Weight corresponds to the weight loss, which is a continuous variable.
4. Treatments are the Diet with 3 levels.