

Request from a Clinical Dietitian

MATH-516 Applied Statistics

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1 Statement

A clinical dietitian wants to compare two different diets, *A* and *B*, for diabetic patients

- She hypothesizes that diet *A* (Group 1) will be better than diet *B* (Group 2), in terms of lower blood glucose
- She plans to get a random sample of diabetic patients and randomly assign them to one of the two diets. At the end of the experiment, which lasts 6 weeks, a fasting blood glucose test will be conducted on each patient
- She also expects that the average difference in blood glucose measure between the two groups will be about 10 mg/dl

The dietitian wants to know the number of subjects needed in each group assuming equal sized groups

2 Project

Tasks:

- Write a report answering the dietitian request, to the best of your ability
- Keeping in mind that the dietitian has no background in statistics, please explain the most important technical terms, as well as the hypotheses on which you base your results
- Do you have any recommendation as to how the experiment can be modified to improve the accuracy of the comparison? This is more of a conceptual point rather than a technical one

Hints: After a thorough research in the matter, we found out that

- the standard deviation of blood glucose is typically around 15 mg/dl
- clinical dietitians usually consider a significance level at 5% and a power level at 80%