

STATISTICS 2
WS 2017 (Mag. Thomas Forstner)

Course-Number: 366.554

- 14) Consider the data from example 11 (“Salmonella data”) as pilot data. A two-sided one sample t-test with the reference value $\mu_0 = 15$ has shown no statistically significant difference. How large has the sample size to be, what there is a chance for discovering a statistically significant difference (type I error = 5%, type II error = 20%)?
- 15) A clinical dietician wants to compare two different diets, X and Y, for diabetic patients. She hypothesizes that diet X (Group 1) will be better than diet Y (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 clinical relevant difference in blood glucose measure between the two groups will be about 13 mg/dl. Furthermore, she also assumes the standard deviation of blood glucose distribution for diet A to be 15 and the standard deviation for diet B to be 18.

Estimate the sample size for this situation assuming equal sized groups. Choose appropriate values for the type I and type II error. Normality and variance homogeneity can be assumed.