Homework #1 (20pts total) Name\_\_\_\_Yuxuan Chen\_\_\_\_\_\_\_\_\_\_\_

Due 1/19 1pm

1. (5pts) Complete survey: <https://www.surveymonkey.com/r/JS3HK7H>
2. Read from canvas: Hommel, E et al. “Effect of captopril on kidney function in insulin-dependent diabetic patients with nephropathy.” *British medical journal (Clinical research ed.)* vol. 293,6545 (1986): 467-70. doi:10.1136/bmj.293.6545.467
3. (15 pts) A randomized clinical trial was reported by Hommel et  
   al. (1986) in which insulin-dependent patients with diabetic nephropathy were randomized to receive either Captopril, a drug intended to reduce blood pressure, or a placebo. The systolic blood pressure was measured before randomization, giving a baseline value, and then again after one week of treatment. The data file contains 4 columns:

Text

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This was a small clinical trial with 16 participants. The research question is straightforward: *Was the intervention effective in reducing systolic blood pressure?*

**Summarize and graph the data to show the differences between the 2 treatments. Perform a statistical test and write 1-2 sentences on the conclusion and interpretation.**

**INCLUDE in canvas submission: One word document including your graph, analysis and brief conclusion.**

**Summary:**

The average systolic pressure of patients who received captopril dropped by 12.67, whereas the average systolic pressure of patients who received placebo dropped by 4.71.

Chart, box and whisker chart

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**Statistical test:**

The Wilcoxon’s nonparametric test is used to test whether the intervention is effective in reducing systolic blood pressure.

**Conclusion and interpretation:**

The decrease in systolic pressure is significantly greater in the patients who received captopril. The intervention is effective in reducing systolic blood pressure (p-value=0.02176).