**Problem Statement**

Blood glucose levels for obese patients have a mean of 100 with a standard deviation of 15. A researcher thinks that a diet high in raw cornstarch will have a positive effect on blood glucose levels. A sample of 36 patients who have tried the raw cornstarch diet have a mean glucose level of 108. Test the hypothesis that the raw cornstarch had an effect or not.

**Solution**

**Mean for blood glucose levels for obese patients (µ) =100**

**Standard deviation (σ) =15**

**Sample mean(X)=108**

**S=36**

Step1 :Null Hypothesis H0: μ=100

Alternative Hypothesis H1: μ > 100

Step2:- Setting the alpha value as α = 0.05 ie 5%

Since we would do a 2 tailed testing hence left rejection area is -2.5% and right rejection area is +2.5%

Non Rejection Area is 47.5% i.e. 0.475

Step 3: Zscore of 0.475 is 1.96

Hence -1.96 and +1.96

Z value =x-u/SD/√Sample

Z value= (X- **µ**)/ σ/√S=(108-100)/15/√36

Z value=8\*6/15=3.2

3.2 is greater than than Zscore calculated in Step3 .

3.2 > 1.96 hence this value falls in the rejection area and hence Null hypothesis is rejected and Alternate Hypothesis would be used.