

# [Anova](https://assignbuster.com/anova/)

Assignment 3 (Part 3) – Statistical Analysis of Data – ANOVA (One Way Analysis of Variance) A. Research Question: Is there a difference in the % water content between the groups of kidney exposed to varying times of ischemia?   
B. Null Hypothesis:   
There is no difference in the % water content between the group of kidneys exposed to varying times of ischemia. In other words, there is no effect of varying times of ischemia on % content of water in the group of kidneys. In symbolic form,   
H0: µ1 = µ2 = µ3 = µ4(all the means are equal)   
(1-Control, 2-30 min ischemia, 3-60-min ischemia, 4-120 min ischemia)   
The alternate hypothesis will be   
H1: Not all the means are equal (at least one mean is different)   
C. Summary of Results of Statistical Analysis   
Table 1: The % Water Content (Data)   
Control (no ischemia)   
30 min ischemia   
60 min ischemia   
120 min ischemia   
78. 5   
83. 0   
81. 8   
83. 5   
79. 2   
81. 9   
81. 1   
83. 5   
78. 9   
83. 0   
82. 3   
81. 4   
79. 7   
79. 8   
79. 7   
81. 5   
78. 6   
79. 0   
Table 2: Descriptive Statistics   
Ischemia   
n   
Mean (X)   
SEM   
St. Dev   
Minimum   
Maximum   
Q1   
Median   
Q3   
Control   
7   
79. 09   
0. 182   
0. 481   
78. 5   
79. 7   
78. 60   
79. 0   
79. 70   
30 min   
3   
82. 63   
0. 367   
0. 635   
81. 9   
83. 0   
81. 90   
83. 0   
83. 00   
60 min   
5   
81. 30   
0. 423   
0. 946   
79. 8   
82. 3   
80. 45   
81. 5   
82. 05   
120 min   
3   
82. 80   
0. 700   
1. 212   
81. 4   
83. 5   
81. 40   
83. 5   
83. 50   
Table 3: Analysis of Variance Table   
SourceSSdfMSF η2\*FCritpSignificant   
Between 43. 683314. 56123. 39. 833. 34