

# [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