

## 13\_4\_TwoWay\_ANOVA

Michael Sullivan

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```
Table13 <-  
read.csv("https://sullystats.github.io/Stats7e/Data/Ch13/Table13.csv")  
head(Table13,n=5)
```

```
##      Age      Drug HDL  
## 1 18 to 39 Placebo  4  
## 2 18 to 39 Placebo  3  
## 3 18 to 39 Placebo -1  
## 4 18 to 39   5 mg  9  
## 5 18 to 39   5 mg  5
```

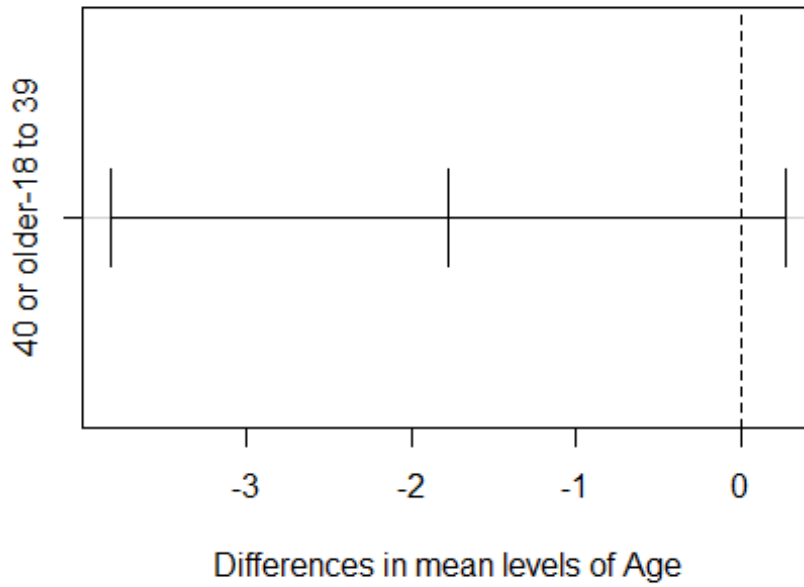
To perform Tukey's Test, enter the following command:

```
TukeyHSD(aov(HDL ~ Age + Drug,data=Table13))  
  
## Tukey multiple comparisons of means  
## 95% family-wise confidence level  
##  
## Fit: aov(formula = HDL ~ Age + Drug, data = Table13)  
##  
## $Age  
##          diff          lwr          upr      p adj  
## 40 or older-18 to 39 -1.777778 -3.825815 0.2702594 0.0837608  
##  
## $Drug  
##          diff          lwr          upr      p adj  
## 5 mg-10 mg    -4.166667 -7.22757 -1.105763 0.0082090  
## Placebo-10 mg -8.333333 -11.39424 -5.272430 0.0000144  
## Placebo-5 mg  -4.166667 -7.22757 -1.105763 0.0082090
```

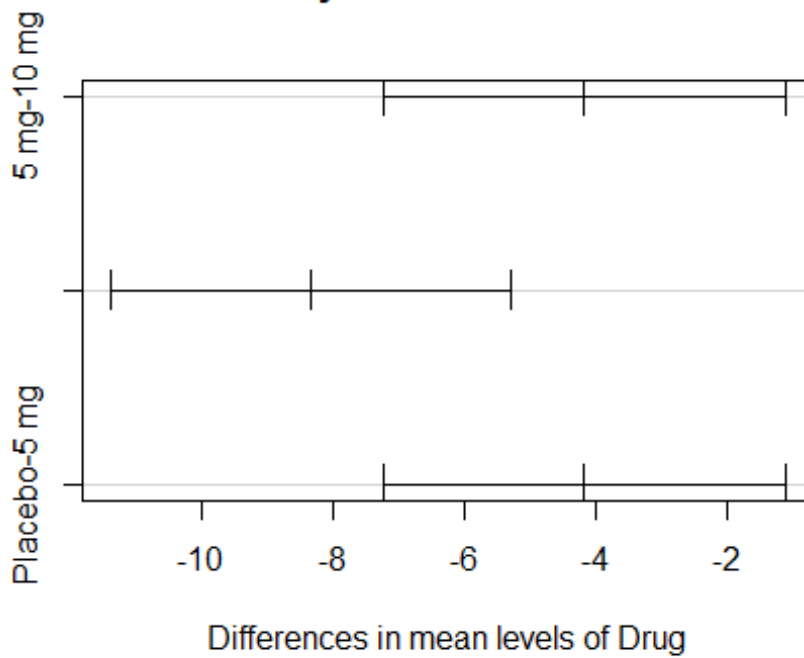
To plot the results of Tukey's Test, enter the following command:

```
tukey <- TukeyHSD(aov(HDL ~ Age + Drug,data=Table13))  
plot(tukey)
```

### 95% family-wise confidence level



### 95% family-wise confidence level



### Mosaic

With Mosaic, it is not necessary to create an `aov_object`. Instead, the Tukey Test can be done directly. Don't forget to access the Mosaic library.

```

library(mosaic)

TukeyHSD(HDL ~ Age + Drug,data=Table13)

## Tukey multiple comparisons of means
## 95% family-wise confidence level
##
## Fit: aov(formula = x)
##
## $Age
##              diff          lwr          upr      p adj
## 40 or older-18 to 39 -1.777778 -3.825815  0.2702594 0.0837608
##
## $Drug
##              diff          lwr          upr      p adj
## 5 mg-10 mg      -4.166667 -7.22757  -1.105763 0.0082090
## Placebo-10 mg  -8.333333 -11.39424 -5.272430 0.0000144
## Placebo-5 mg   -4.166667 -7.22757  -1.105763 0.0082090

```

To plot the results of Tukey's Test, enter the following commands:

```

tukey <- TukeyHSD(HDL ~ Age + Drug,data=Table13)
mplot(tukey)

```

