

Analysis of The Effect of Vitamin C on Tooth Growth in Guinea Pigs

Cody Collie-Szach

2022-06-17

Data Description

The response is the length of odontoblasts (cells responsible for tooth growth) in 60 guinea pigs. Each animal received one of three dose levels of vitamin C (0.5, 1, and 2 mg/day) by one of two delivery methods, orange juice or ascorbic acid (a form of vitamin C and coded as VC).

```
dim(ToothGrowth)
```

```
## [1] 60 3
```

```
head(ToothGrowth)
```

```
##      len supp dose
## 1   4.2   VC  0.5
## 2  11.5   VC  0.5
## 3   7.3   VC  0.5
## 4   5.8   VC  0.5
## 5   6.4   VC  0.5
## 6  10.0   VC  0.5
```

Descriptive Statistics

```
summary(ToothGrowth)
```

```
##           len           supp           dose
## Min.      : 4.20   OJ:30   Min.      :0.500
## 1st Qu.:13.07   VC:30   1st Qu.:0.500
## Median :19.25           Median :1.000
## Mean     :18.81           Mean   :1.167
## 3rd Qu.:25.27           3rd Qu.:2.000
## Max.     :33.90           Max.    :2.000
```

```
sd(ToothGrowth$len)
```

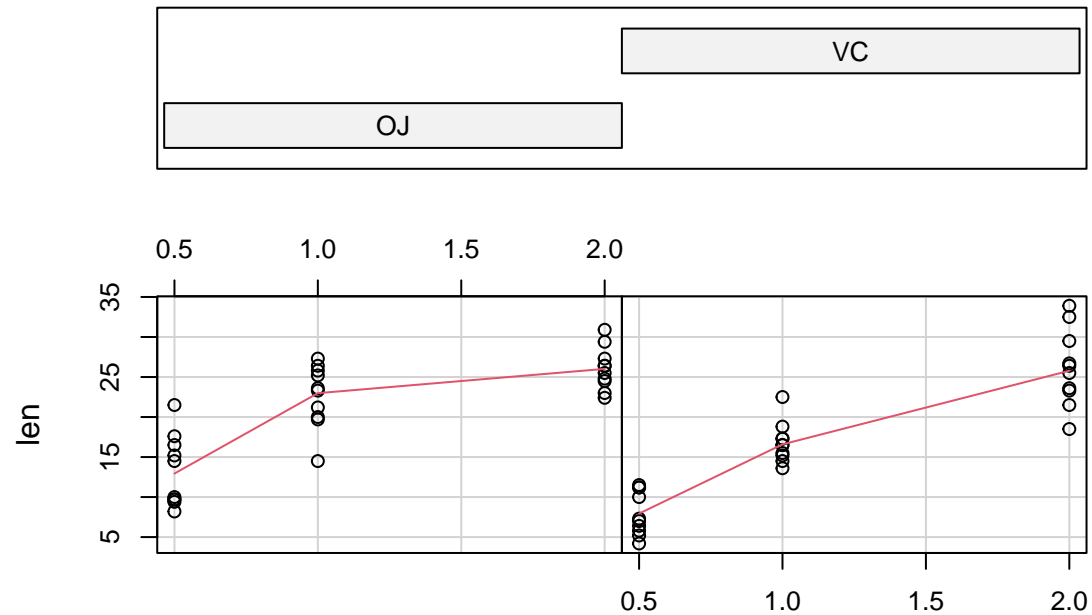
```
## [1] 7.649315
```

The average length the of tooth is 18.813333 and 7.6493152

Graphical Representation

```
require(graphics)
coplot(len ~ dose | supp, data = ToothGrowth, panel = panel.smooth,
       xlab = "ToothGrowth data: length vs dose, given type of supplement")
```

Given : supp



ToothGrowth data: length vs dose, given type of supplement