Motor Neuron Experiment

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Loading Data & Cleaning For Experiment Attempt #1

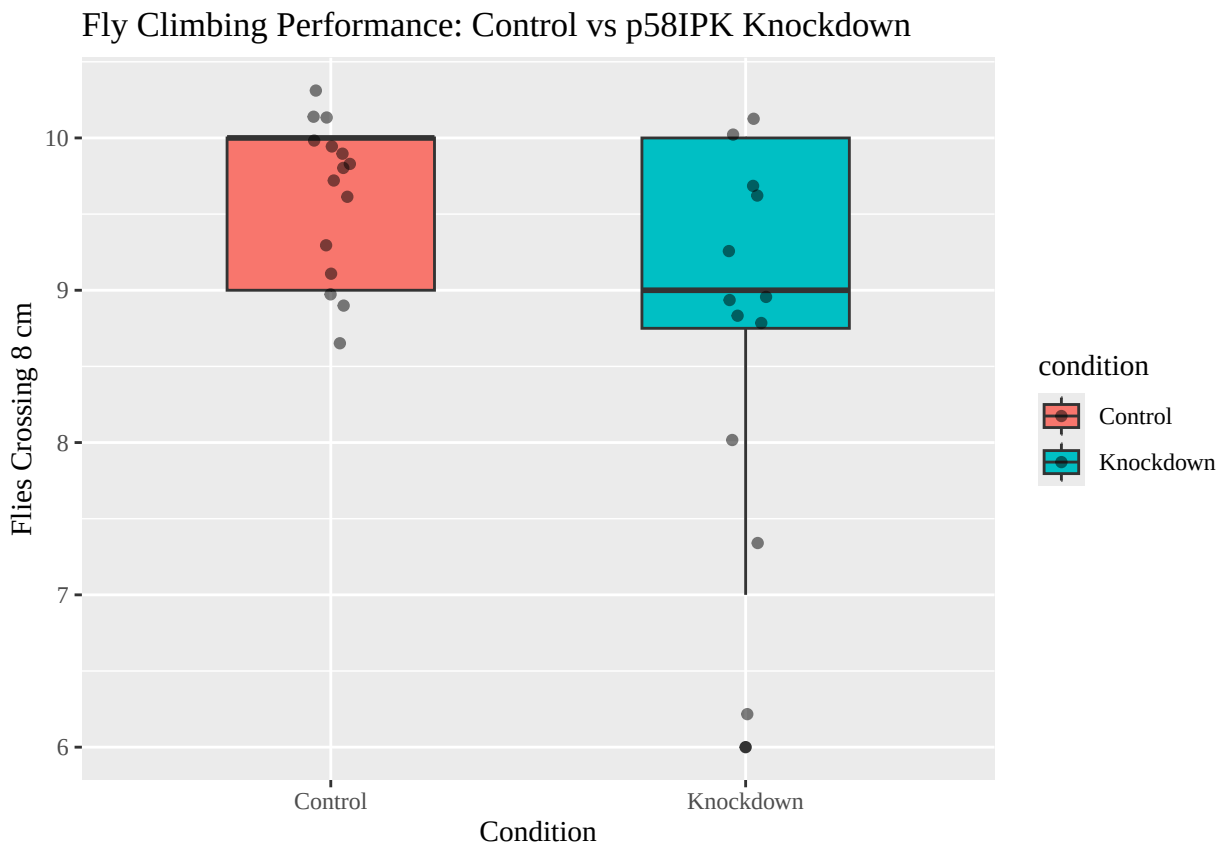
```
data.atmpt.1 <- read.csv("Motor Neuron Data/fly_motor_test_atmpt-1.csv")

data.clean.1 <- data.atmpt.1 %>%
clean_names() %>%
remove_empty(which = c("rows","cols")) %>%
na.omit(data)

data.clean.1.filtered <- data.clean.1 %>%
filter(flies_passed >= 8)
```

Statistical Analysis For Experiment Attempt #1

```
ggplot(data.clean.1, aes(x = condition, y = flies_passed, fill = condition)) +
  geom_boxplot(width = 0.5) +
  geom_jitter(width = 0.05, alpha = 0.50) +
  labs(title = "Fly Climbing Performance: Control vs p58IPK Knockdown",
       x = "Condition",
       y = "Flies Crossing 8 cm") +
  theme(text = element_text(family = "serif"))
```

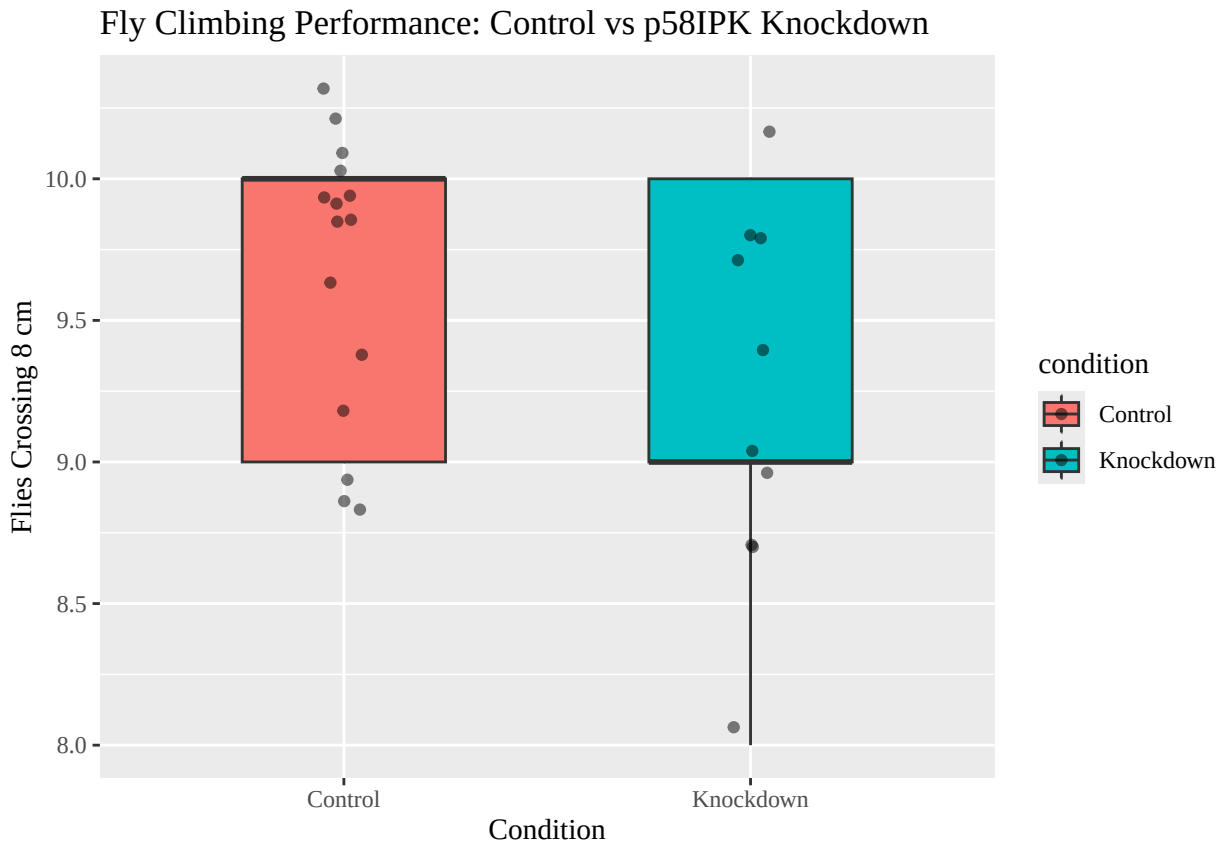



```
t.test(flies_passed ~ condition, data = data.clean.1, var.equal = FALSE)
```

```
##
##  Welch Two Sample t-test
##
## data:  flies_passed by condition
## t = 2.1537, df = 13.613, p-value = 0.0497
## alternative hypothesis: true difference in means between group Control and group Knockdown is not equ
## 95 percent confidence interval:
##  0.001244289 1.665422378
## sample estimates:
##   mean in group Control mean in group Knockdown
##                9.666667                8.833333
```

Statistical Analysis For Experiment Attempt #1 - Filtered

```
ggplot(data.clean.1.filtered, aes(x = condition, y = flies_passed, fill = condition)) +
  geom_boxplot(width = 0.5) +
  geom_jitter(width = 0.05, alpha = 0.50) +
  labs(title = "Fly Climbing Performance: Control vs p58IPK Knockdown",
       x = "Condition",
       y = "Flies Crossing 8 cm") +
  theme(text = element_text(family = "serif"))
```




```
t.test(flies_passed ~ condition, data = data.clean.1.filtered, var.equal = FALSE)
```

```
##
##  Welch Two Sample t-test
##
## data:  flies_passed by condition
## t = 1.4794, df = 15.18, p-value = 0.1595
## alternative hypothesis: true difference in means between group Control and group Knockdown is not equ
## 95 percent confidence interval:
##  -0.1610644  0.8943977
## sample estimates:
##   mean in group Control mean in group Knockdown
##                9.666667                9.300000
```

Loading Data & Cleaning For Experiment Attempt #2

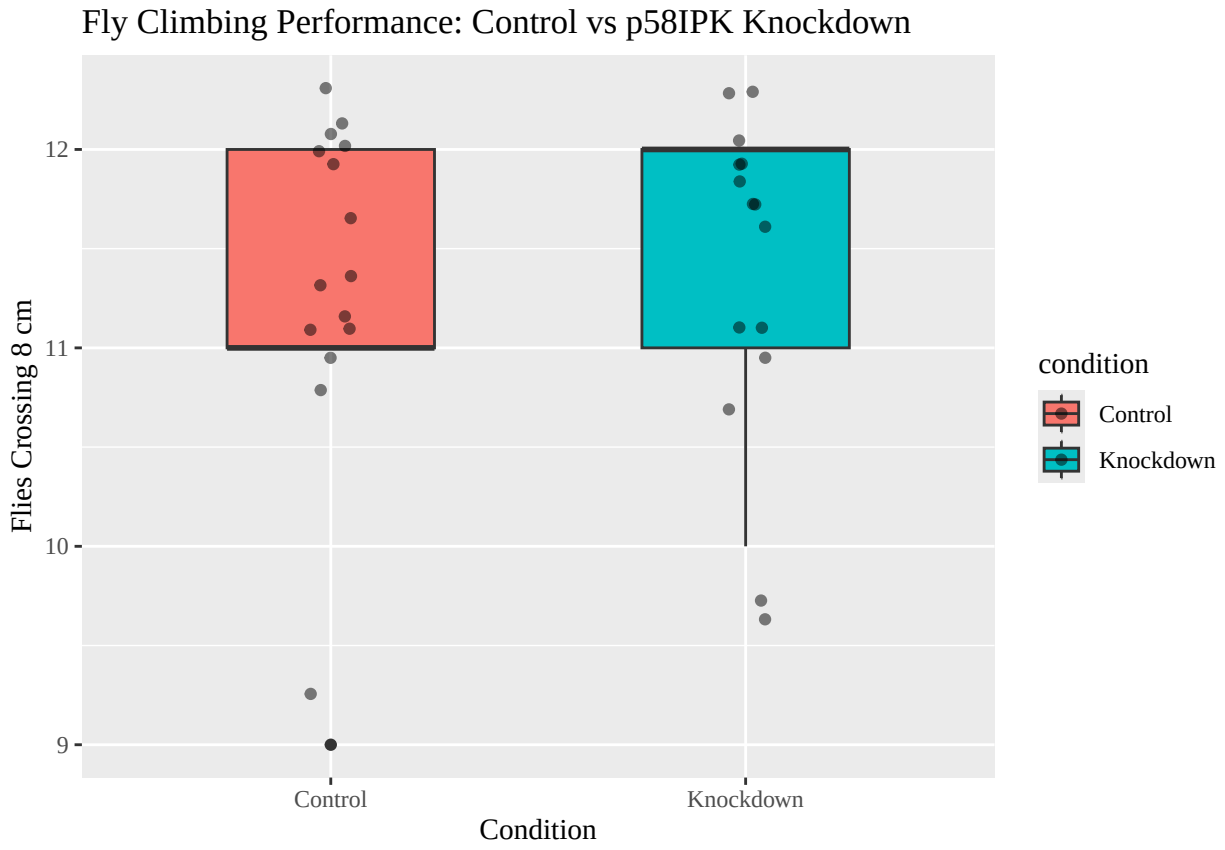
```
data.atmpt.2 <- read.csv("Motor Neuron Data/fly_motor_test_atmpt-2.csv")

data.clean.2 <- data.atmpt.2 %>%
clean_names() %>%
remove_empty(which = c("rows","cols")) %>%
na.omit(data)
```

```r
data.clean.2.filtered <- data.clean.2 %>%
filter(flies_passed >= 10)
```

Statistical Analysis For Experiment Attempt #2

```r
ggplot(data.clean.2, aes(x = condition, y = flies_passed, fill = condition)) +
  geom_boxplot(width = 0.5) +
  geom_jitter(width = 0.05, alpha = 0.50) +
  labs(title = "Fly Climbing Performance: Control vs p58IPK Knockdown",
       x = "Condition",
       y = "Flies Crossing 8 cm") +
  theme(text = element_text(family = "serif"))
```



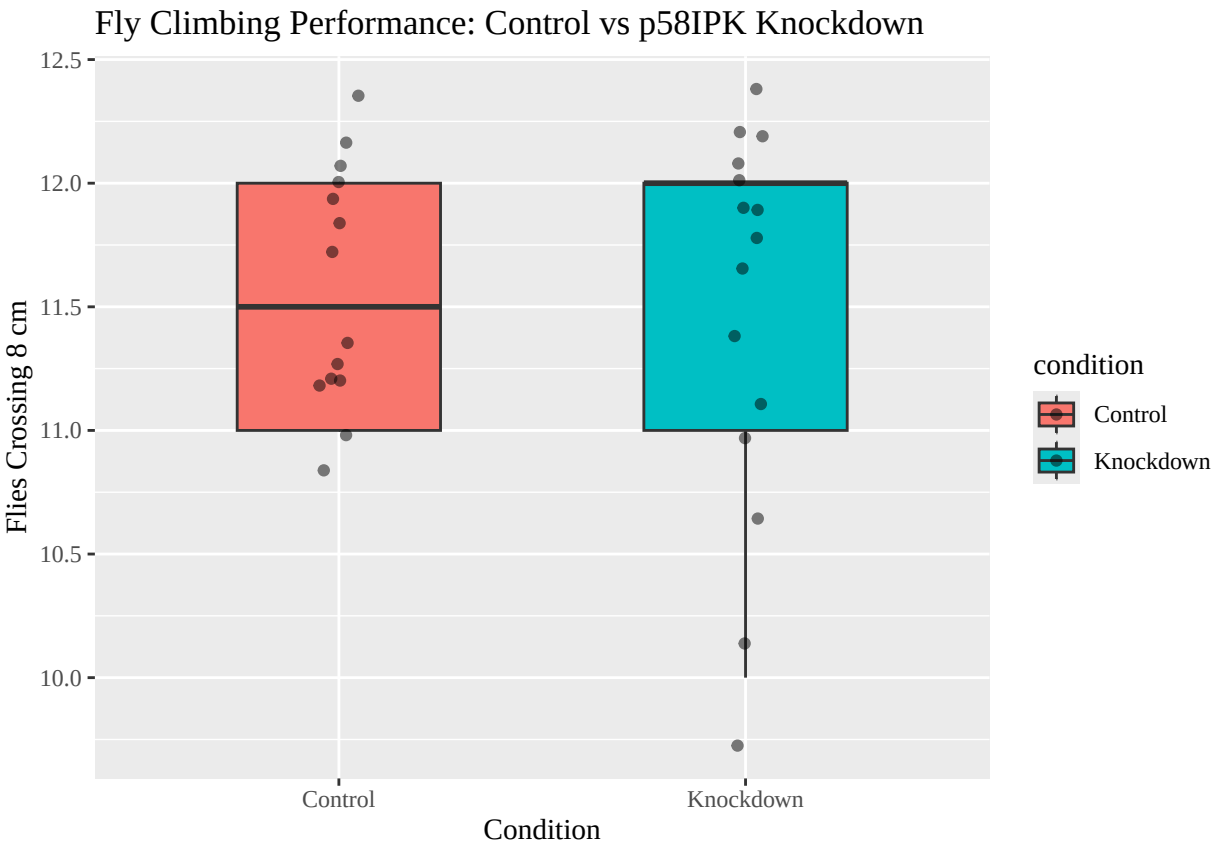

```r
t.test(flies_passed ~ condition, data = data.clean.2, var.equal = FALSE)
```

```
##
##  Welch Two Sample t-test
##
## data:  flies_passed by condition
## t = -0.46771, df = 27.756, p-value = 0.6436
## alternative hypothesis: true difference in means between group Control and group Knockdown is not eq
## 95 percent confidence interval:
```

```
##  -0.7175218  0.4508551
## sample estimates:
##   mean in group Control mean in group Knockdown
##                11.33333                11.46667
```

Statistical Analysis For Experiment Attempt #2 - Filtered

```
ggplot(data.clean.2.filtered, aes(x = condition, y = flies_passed, fill = condition)) +
  geom_boxplot(width = 0.5) +
  geom_jitter(width = 0.05, alpha = 0.50) +
  labs(title = "Fly Climbing Performance: Control vs p58IPK Knockdown",
       x = "Condition",
       y = "Flies Crossing 8 cm") +
  theme(text = element_text(family = "serif"))
```




```
t.test(flies_passed ~ condition, data = data.clean.2.filtered, var.equal = FALSE)
```

```
##
##  Welch Two Sample t-test
##
## data:  flies_passed by condition
## t = 0.14079, df = 25.076, p-value = 0.8892
## alternative hypothesis: true difference in means between group Control and group Knockdown is not eq
```

```
## 95 percent confidence interval:
##  -0.4542123  0.5208789
## sample estimates:
##   mean in group Control mean in group Knockdown
##                11.50000                11.46667
```