linear_models

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Linear Regression Models in R

1 1 Linear Regression Models

In [ ]:
```
## Below is the code for simulating the child height, weight, and age data

library(ggplot2)
library(plotly)

set.seed(137)

n <- 500

beta0 <- 80
beta1 <- 3.5
beta2 <- 2.0

age <- rnorm(n, 3.5, 1.5)
weight <- rnorm(n, 16, 3)
height <- beta0 + beta1*age + beta2*weight + rnorm(n, 8, 3.5)

ds <- data.frame(age, weight, height)

## We can use the plot_ly() function to generate a 3-d plot
plot_ly(ds, x = ~age, y = ~weight, z = ~height, marker = list(symbol = 'circle',
                                                              size = 5,
                                                              color = "blueviolet"))
```

1.1 1.1 Linear Regression Models (Review)

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + ... + \beta_p x_{ip} + \varepsilon_i$$

- Outcome variable (y) is continuous - Can have one or many predictor variables - Predictors can be continuous or categorical - Examples: + Estimating effect square footage on home price
+ Effect of age and weight on blood pressure