Linear regression is flexible!

Adding flexibility to our models

- The linear model we are using consists of making the parameters of probability distributions change according to some function
- The simplest function is a linear function

$$y_i \sim N(\mu_i, \sigma)$$
$$\mu_i = \alpha + \beta x_i$$

- Sometimes the relation between parameters and predictors is not linear
- We can use whatever functional shape we like, but it is useful to use transformations to linearize the relation

Linear regression is flexible!

Some simple transformations

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$$y_i \sim N(\mu_i, \sigma)$$
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$$log(y_i) \sim N(\mu_i, \sigma)$$
$$\mu_i = \alpha + \beta x_i$$

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- We can use whatever functional shape we like, but it is useful to use transformations to linearize the relation