Adding covariates to our model

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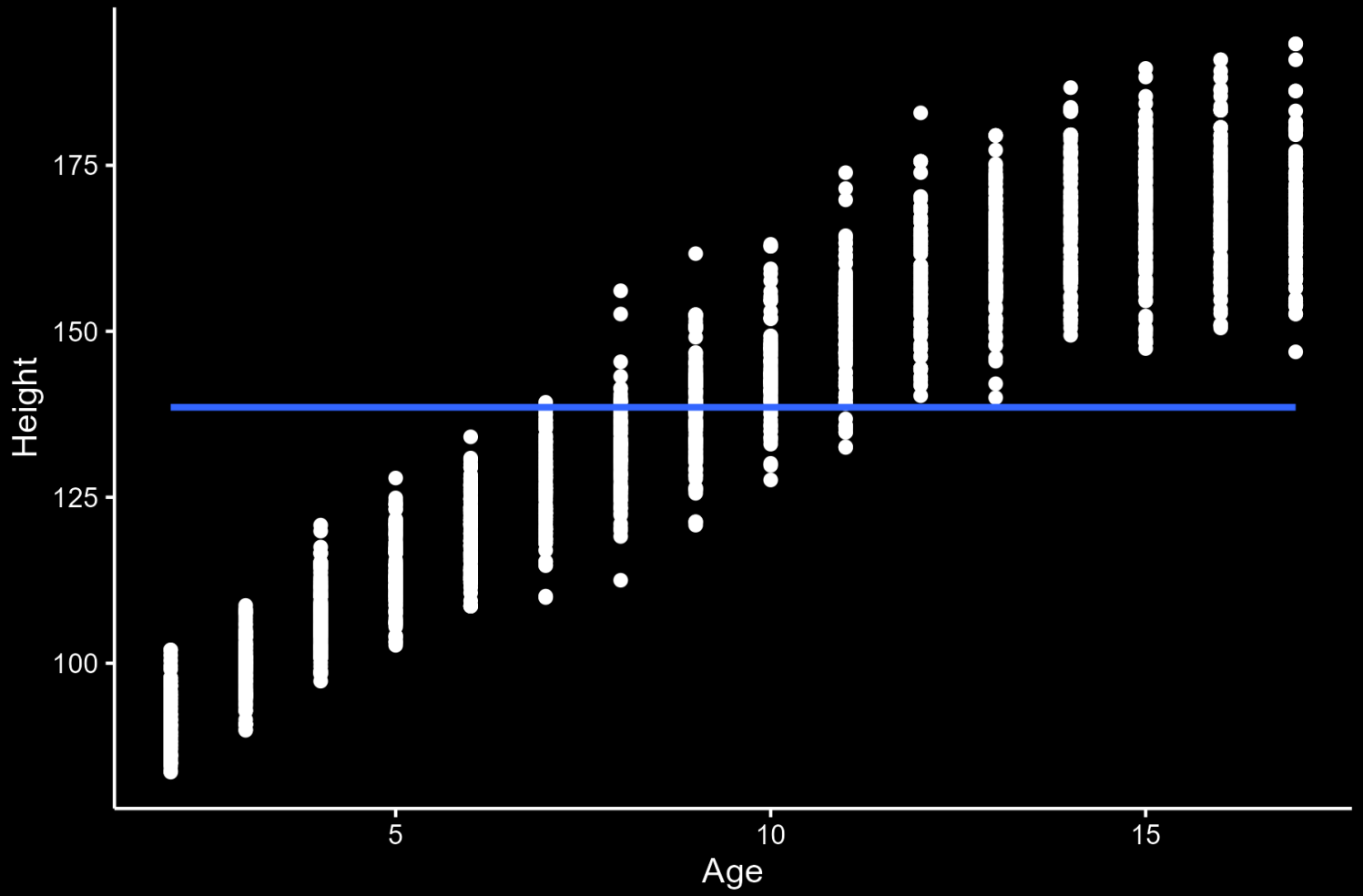

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Adding age to our model

- Intercept model: $Y_i = \beta_0 + \epsilon_i$
- Age model: $Y_i = \beta_0 + \beta_1 X_i + \epsilon_i$

Unit: cm

Regression coefficient for age on height
Unit: cm/year
Interpretation: Yearly growth of children

Age of children i
Unit: year

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Model: $Y_i = \beta_0 + \beta_1 X_i + \epsilon_i$

(next video)

Fitted values: $\hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_i$

Regression line: $y = \hat{\beta}_0 + \hat{\beta}_1 x$

$$= 86.3\ cm + 5.46 \frac{cm}{year} x$$

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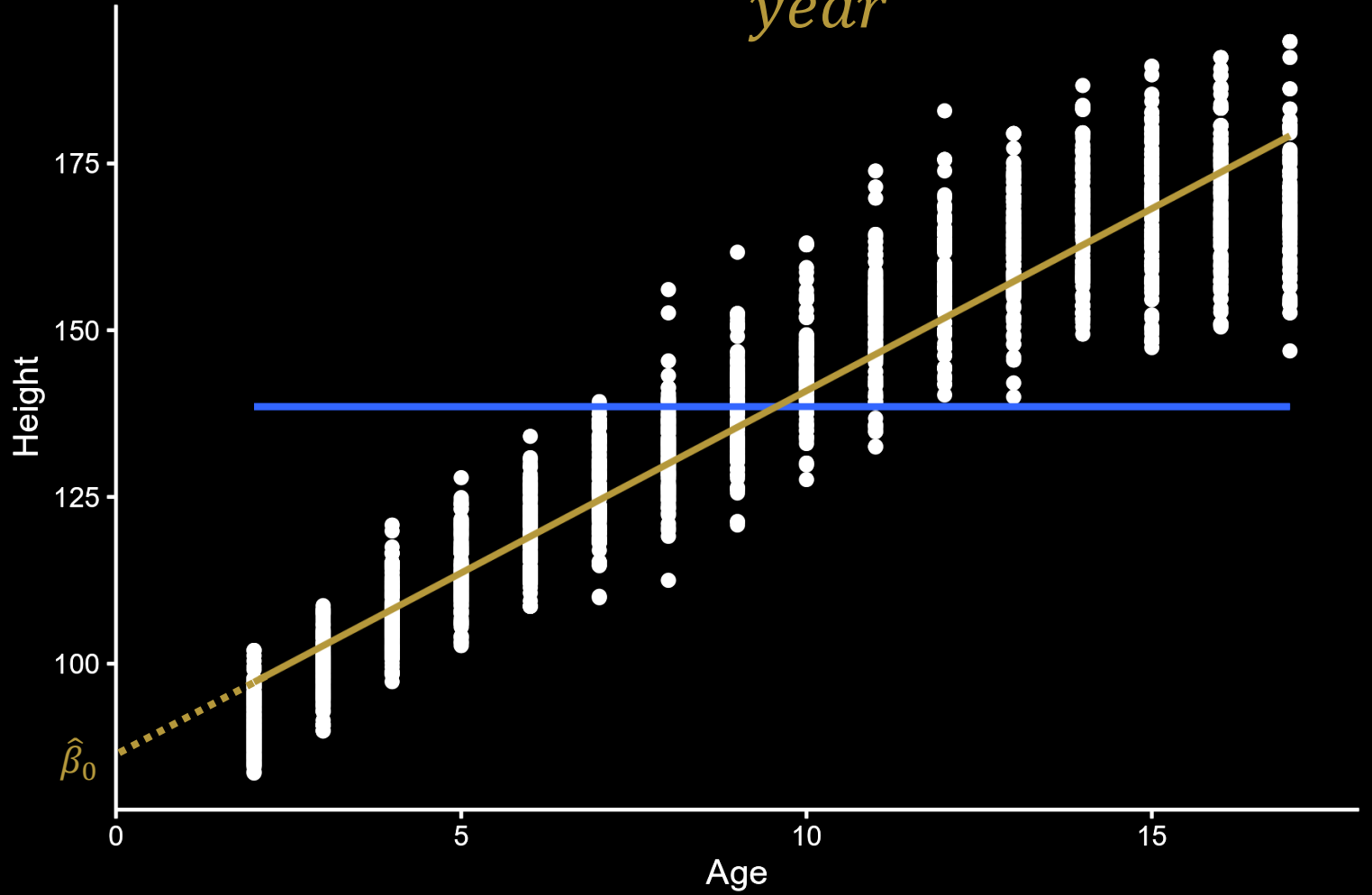
$$y = 86.3\ cm + 5.46 \frac{cm}{year} x$$



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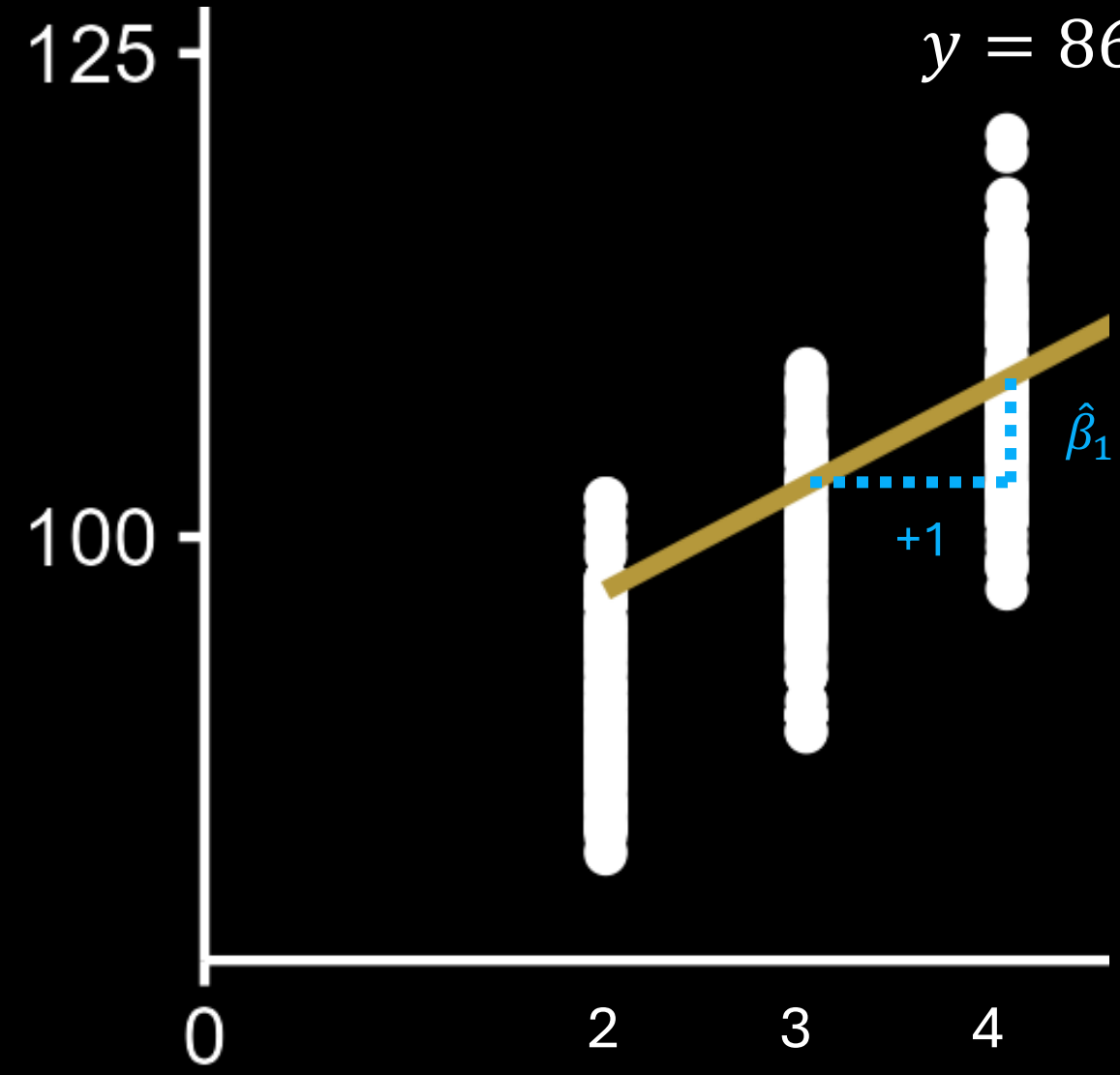
$$y = 86.3\ cm + 5.46\ \frac{cm}{year}\ x$$



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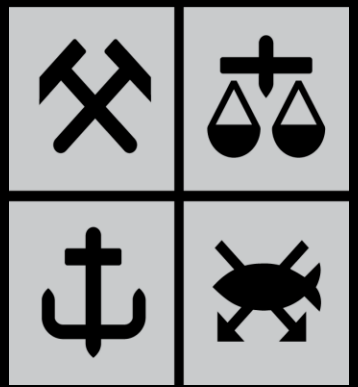

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