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What is a Cox model?

- A **Cox model** is a **statistical technique** for exploring the relationship between the **survival** of a patient and several explanatory variables.
- **Survival analysis** is concerned with studying the time between entry to a study and a subsequent event (such as death).
- A Cox model provides **an estimate of the treatment effect on survival** after **adjustment** for other explanatory variables. In addition, it allows us to estimate the hazard (or risk) of death for an individual, given their prognostic variables.
- A Cox model must be fitted using an appropriate computer program (such as SAS, STATA or SPSS). The final model from a **Cox regression analysis** will yield an equation for the hazard as a function of several explanatory variables.
- Interpreting the Cox model involves examining the coefficients for each explanatory variable. A **positive regression coefficient** for an explanatory variable means that the hazard is higher, and thus the prognosis worse. Conversely, a **negative regression coefficient** implies a better prognosis for patients with higher values of that variable.

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