Hypotheses and significance tests

In the first video we'll talk about **statistical hypotheses**. They form the main ingredients of the method of **significance testing**. A statistical hypothesis is an expectation about a population. Usually it is formulated as a claim that a population parameter takes a particular value or falls within a specific range of values. On the basis of information from a sample we assess if a hypothesis makes sense or not. The significance test is, just like the confidence interval, a method of **inferential statistics**. Each significance test is based on two hypotheses: the **null hypothesis** and the **alternative hypothesis**. If you do a significance test, you assume that the null hypothesis is true unless your data provide strong evidence against it.

In the second video we'll demonstrate how you can conduct a **significance test about a population proportion**. If we conduct a significance test we assume that the population value we're interested in has a certain value and assess if it is likely that the sample we have collected actually comes from a population with this assumed parameter value. Important concepts are **test statistic**, **P-value**, **significance level** and **rejection region**. We'll also discuss the difference between **one- and two-tailed tests**.

In the third video in this section we'll show you how you can conduct a **significance test about a population mean**. An important difference with a test about a proportion is that we use the **t-distribution** instead of the **z-distribution**.