**Type I and type II errors**

Earlier, you learned that you can use a hypothesis test to help determine if your results are statistically significant, or if they occurred by chance. However, because hypothesis testing is based on probability, there’s always a chance of drawing the wrong conclusion about the null hypothesis. In hypothesis testing, there are two types of errors you can make when drawing a conclusion: a Type I error and a Type II error.

In this reading, we’ll discuss the difference between Type I and Type II errors, and the risks involved in making each error.

**Errors in statistical decision-making**

Let’s review the steps for conducting a hypothesis test:

1. State the null hypothesis and the alternative hypothesis.
2. Choose a significance level.
3. Find the p-value.
4. Reject or fail to reject the null hypothesis.

When you decide to reject or fail to reject the null hypothesis, there are four possible outcomes–two represent correct choices, and two represent errors. You can:

* Reject the null hypothesis when it’s actually true (**Type I error)**
* Reject the null hypothesis when it’s actually false (Correct)
* Fail to reject the null hypothesis when it’s actually true (Correct)
* Fail to reject the null hypothesis when it’s actually false (**Type II error**)