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## Wrap-Up (Type I and Type II Errors)

It is important to remember to take into consideration the possibility of the occurrence of Type I or Type II error, when drawing conclusions from hypothesis tests. Thus:

- Whenever there is a failure to reject the null hypothesis, it is possible that a Type II error has occurred. Thus, it is concluded from the results of the study, that there are no significant differences, even though, in reality, there are significant differences.
- Whenever the null hypothesis is rejected, it is possible that a Type I error has been committed. That is, it is concluded from the results of the study, that there are significant differences, when, in reality, there are no differences.

However, it is not possible to know when either Type I or Type II error has occurred.

	We reject the $H_0$ (accept $H_a$ )	We fail to reject the $H_0$ (not enough evidence to accept $H_a$ )
$H_0$ is true	Type I error	Correct Decision
$H_0$ is false ( $H_a$ is true)	Correct Decision	Type II error

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