This tutorial is going to teach you about blinding. Now, blinding-- we don't mean blinding in the visual sense. That would be bad. But blinding is one of those principles of experimental design whereby the subjects don't know what treatments they're going to receive.

When we randomize an experiment, we do it to reduce bias. However it's possible that we can give these subjects subtle clues regarding what treatment they're receiving. And we don't want the people to know what they're receiving, because it might be incentive for them to either stay on the treatment-- if it's a drug-- or go off the treatment, if they think they're not getting the real drug.

Also, it may be true that people with an agenda might want to bend the results in their favor. They might want to make the results of an experiment seem more positive than maybe they really are. This idea of the experimenter wanting to bend the results in their favor is called the experimenter.

To counteract both of those two ideas, we implement a strategy called blinding. And basically what it means is no one is aware of who is receiving what treatment. Somebody is, behind the scenes, but no one either directly involved in the experiment, or taking any of the treatments, knows what treatments they're receiving.

So for instance, if a subject knows that he's going to the treatment group for a drug, that may influence her behavior. So what we do is we give the treatment group a pill, and we give the control group a pill. The only difference is this pill has the active treatment in it, and this one doesn't. Ideally when you open them up, they would look the same on the inside, too, but this is for visual purposes.

Inside the first capsule, there's the actual drug. And that's received by the treatment group. Whereas, there's a fake drug-- this is usually some kind of a sugar or something, something that makes the person in the control group feel like they're actually taking something, when maybe they're really not.

A lot of the times, experiments are what we call double-blind. Double-blind experiments means that the subjects don't know what treatment they're receiving, nor does anyone who has any contact with them. This can eliminate both the bias due to a subject thinking they know what group they're in, and the experimenter effect of someone trying to bend the results to their favor, because they don't know if they're bending someone in the treatment group toward the positive response-- which would, I guess, be in their favor-- or someone in the control group, which would not really be in their favor. So it's not of any benefit to try and steer someone one way or the other.

There are times when a double-blind study, which is probably the ideal type of study, is just not feasible. Suppose that the study that we're talking about is an exercise study-- whether or not exercise is effective for weight loss.

Now, people are going to know if they're exercising or not. However, the experimenters don't need to know who was assigned exercise and who was assigned not to exercise. It can still be single-blind, because the experimenters don't know. The researchers were blinded, even though the subjects weren't.

And you can also have experiments where the subjects are blinded, but the researcher aren't. So you can have a couple of different types of single-blind experiment. Although double-blind is ideal, if you can swing it.

And so to recap, blinding is a big deal. It's something we would really like to do if we can. It's a powerful tool in preventing all sorts of biases-- like the experimenter effect.

Different studies allow for different levels of blinding. Ideally we'd like to go double-blind. If that's not feasible, we can go, usually, single-blind.

And so we talked about the experimenter effect, how bad that is. We talked about blinding, and how that can help to ease some of those biases. And then we talked about the difference between double-blind experiments-- where nobody who has contact with the subject, or the subjects, knows who's getting what-- and single-blind, where only one group doesn't know who's getting what.

Good luck, and we'll see you next time.