Hello, class.

If you remember from the different forms of non-experimental research, we've got things like a correlational study. The correlational study examines data from different sources, and it draws conclusions about how different psychological phenomena are related, or relate to outside factors. This might be something like-- we might look at stress and yoga, and yoga's affects on reducing stress. Or we might take a look at teens and their use of social media. So we're taking different factors, and trying to examine the relationship between them.

This is commonly used in media, as well as in psychology itself. So it's good to know for your own lives, as well as for the course of this class.

Now a correlation, in the correlational study, means how closely related different events, behaviors, or variables are to each other. How much do they actually relate? Remember, a variable is anything that can be changed, and can be measured, or can affect research.

For, example variables that we might study are amount of sleep, age, or test scores.

We're going to talk about the effects of correlation through the rest of this lesson.

There are two different factors that we want to determine when we talk about correlation. That's the strength of the correlation, and the direction.

First, the strength of a correlation means how strong the relationship is between those two factors. In other words, how closely related are they to each other. This can be represented in two different ways.

Mathematically, we could represent this by what's called the correlational coefficient. This is a scale of positive 1, all the way to negative 1, and all of the decimals in between. It seems very math-y but it's pretty straightforward. The closer you are to either plus 1, or negative 1, the stronger your relationship is. The closer you are to zero-- in the middle-- the weaker your relationship is.

For example, if I had a 0.8 relationship between two variables, I would say that that's very strong, because it's close to 1. Similarly, if I had a -0.8, it'd be very close to -1, and that would also be really strong. But if I had 0.1, which is very close to zero, I would say that's a very weak relationship, and chances are, the two things that I'm studying probably aren't related to each other. One probably doesn't cause the other one to happen in any way.

Visually, we represent this when we plot out the relationships onto a graph. We look to see how close the information is to forming a line of some sort. The more spread out it is, the more likely it is that there's no

relationship.

Let's say I'm measuring sleep and scores on a test. When I look at this relationship, I say, well there's no line, so chances are sleep doesn't affect our scores on a test.

Meanwhile, on this one, you see how close these dots are to forming a line. I would say this is a very strong relationship between these. So chances are they are related. There is correlation between those two.

Besides strength, we also talk about the direction of the relationship between the two. Which is to say, how are they related to each other.

I'm going to use straight lines here. Remember, it can also be plotted out like this, but this is just a bit easier to visualize.

So there can be a positive relationship, or a positive correlation, which is when one factor increases, the other one also gets bigger, or increases. For example, when somebody gets more sleep-- when the amount of sleep goes up-- their test scores also go up. So there's a positive correlation between sleep and test scores. On the other hand, we might have a negative correlation, which isn't necessarily to say it's bad in any way. It's just a different kind of relationship. A different direction. A negative correlation says that when one goes up, the other one decreases.

For example, when I talk about somebody's age-- which is down here-- when somebody gets older, the amount of sleep that they need gets smaller. So when somebody is very young, they need lots of sleep. When somebody is older, they might need less sleep. This would be a negative correlation between those two factors.

It's important to realize, when we talk about correlation, that correlation does not equal causation. This is important to remember, so I'll say it one more time. Correlation does not equal causation. So just because we find a relationship between two different factors, doesn't say that one causes the other one to happen. Or there might be another place entirely. It just says that there is some kind of causation going on. A good example of this is, when we look at an increase in ice cream sales, we also notice that there's an increase in crime. And this is something that's been studied. The more ice cream that we sell, the more crime there is. So do we say that ice cream makes people violent? No. In fact, there's a completely different factor that's affecting that, that we're not even considering, which is temperature. Temperature makes people want to eat ice cream. Temperature makes people more violent, more apt to do crimes.

So you see, just because we see a relationship, doesn't mean that there's causation. Other experimental methods, like experiments, prove this. This is the kind of things that we need to actually prove that there is some

kind of causation.