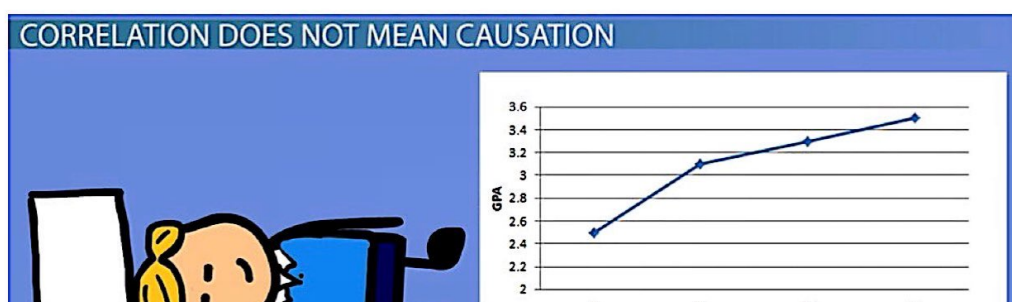
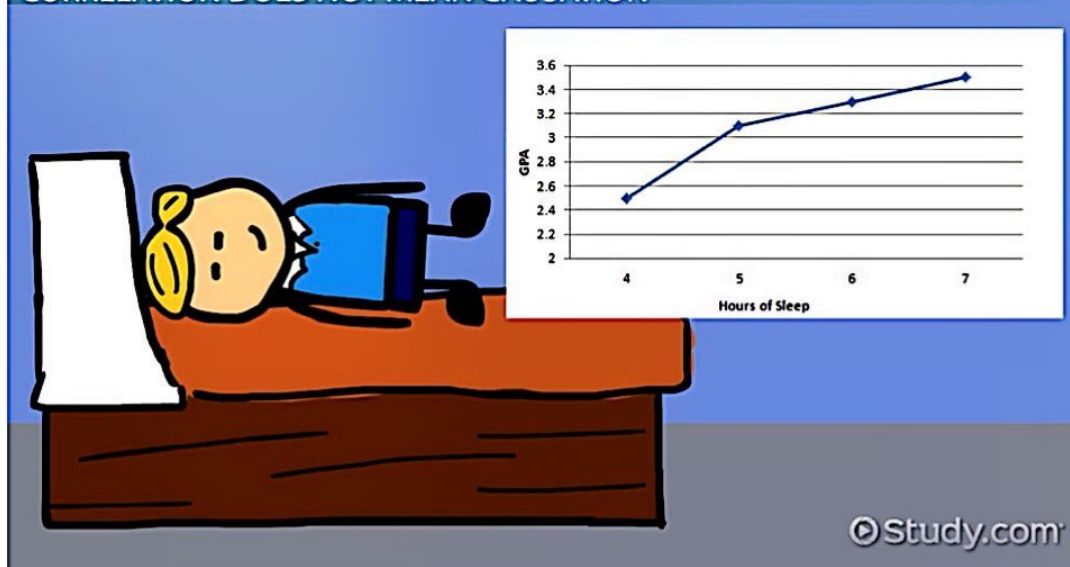


Causation is when there is a relationship between two events, and one is affected by the other. In this example the variables are the GPA and the hours of sleep. Even though there is a correlation between these two variables, there is no way to measure that the increase of sleep boosts someone's GPA. There could be other variables that could have an affect on why the GPA is higher. One example is maybe some of the students that go to bed at a decent hour and get good rest, have a higher consistent GPA to begin with. So, there is no way to know if these students even with less sleep to see if their GPA would be affected. Another example of why it would be hard to prove is that the hours of sleep are not the same for every individual. Some people have sleep disturbances such as sleep apnea, or asthma and they might have a hard time sleeping. So just because someone is in the bed for 8 hours, does not mean that they slept for 8 hours. This would be self-report data and would be hard to verify. Another variable would be that some colleges grade scales are different, such as allowing an A+ calculated in their GPA's. So, the GPA calculations would be hard to verify accurately for this study

There is a correlation between higher GPA's and more hours of sleep, but one does not cause the other



## CORRELATION DOES NOT MEAN CAUSATION



Another example of correlation would be stress and anxiety. This would be difficult measure because there is no way to measure how much stress someone is in. Some people have different ways of coping with stress and anxiety so their level of stress in their self-report data would be different than someone who does not cope well.

There is a correlation between stress and anxiety, but there is no way we can say that stress causes anxiety or anxiety causes stress.

Causation in Statistics: Definition & Examples. (2016). Retrieved from <https://study.com/academy/lesson/causation-in-statistics-definition-examples.html>

Curcio, G., Ferrara, M., & Gennaro, L. D. (2006). *Sleep loss, learning capacity and academic performance*. Sleep Medicine Reviews. [lirect.com/science/article/pii/S1087079205001231](https://www.lirect.com/science/article/pii/S1087079205001231)