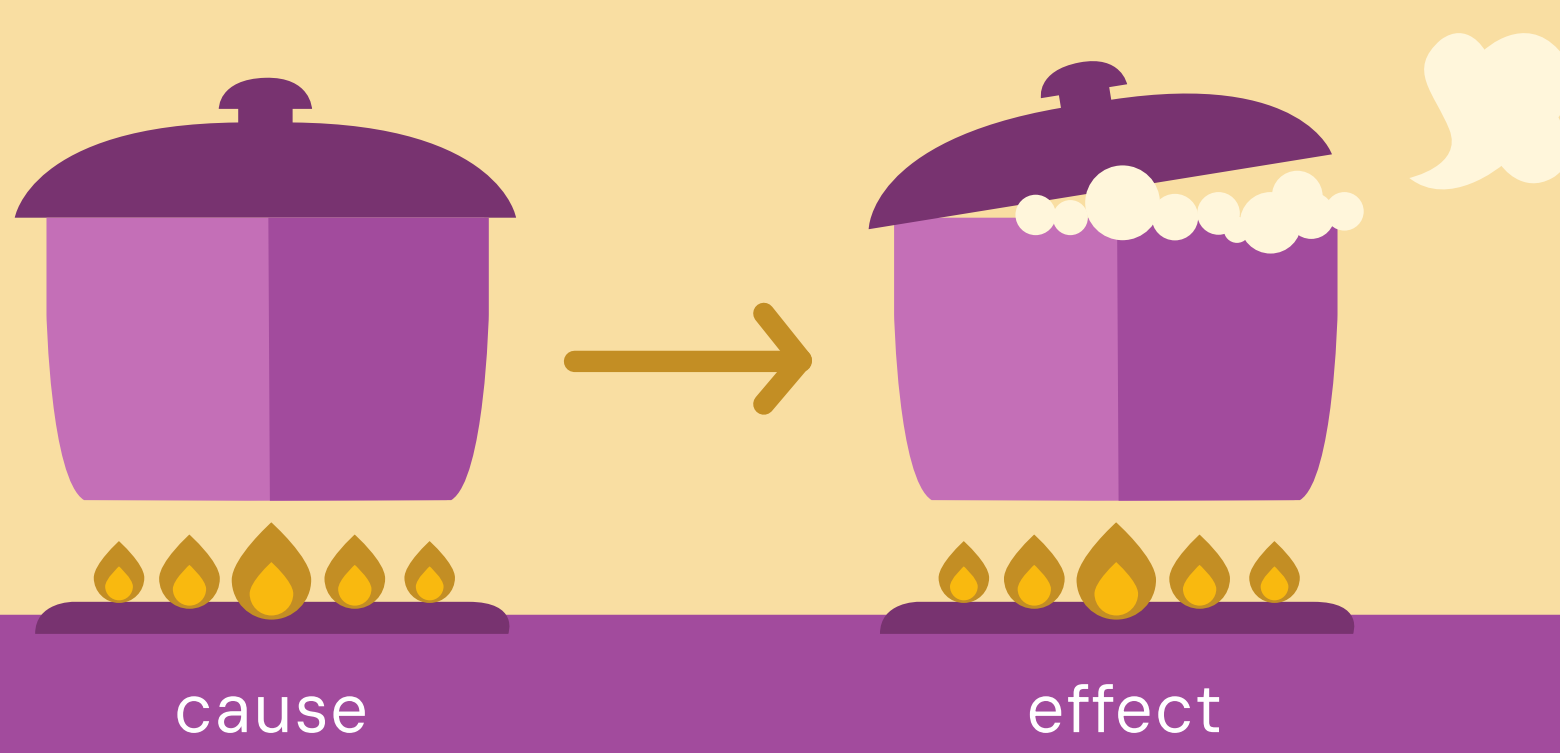


CORRELATION VS. CAUSATION



CAUSATION

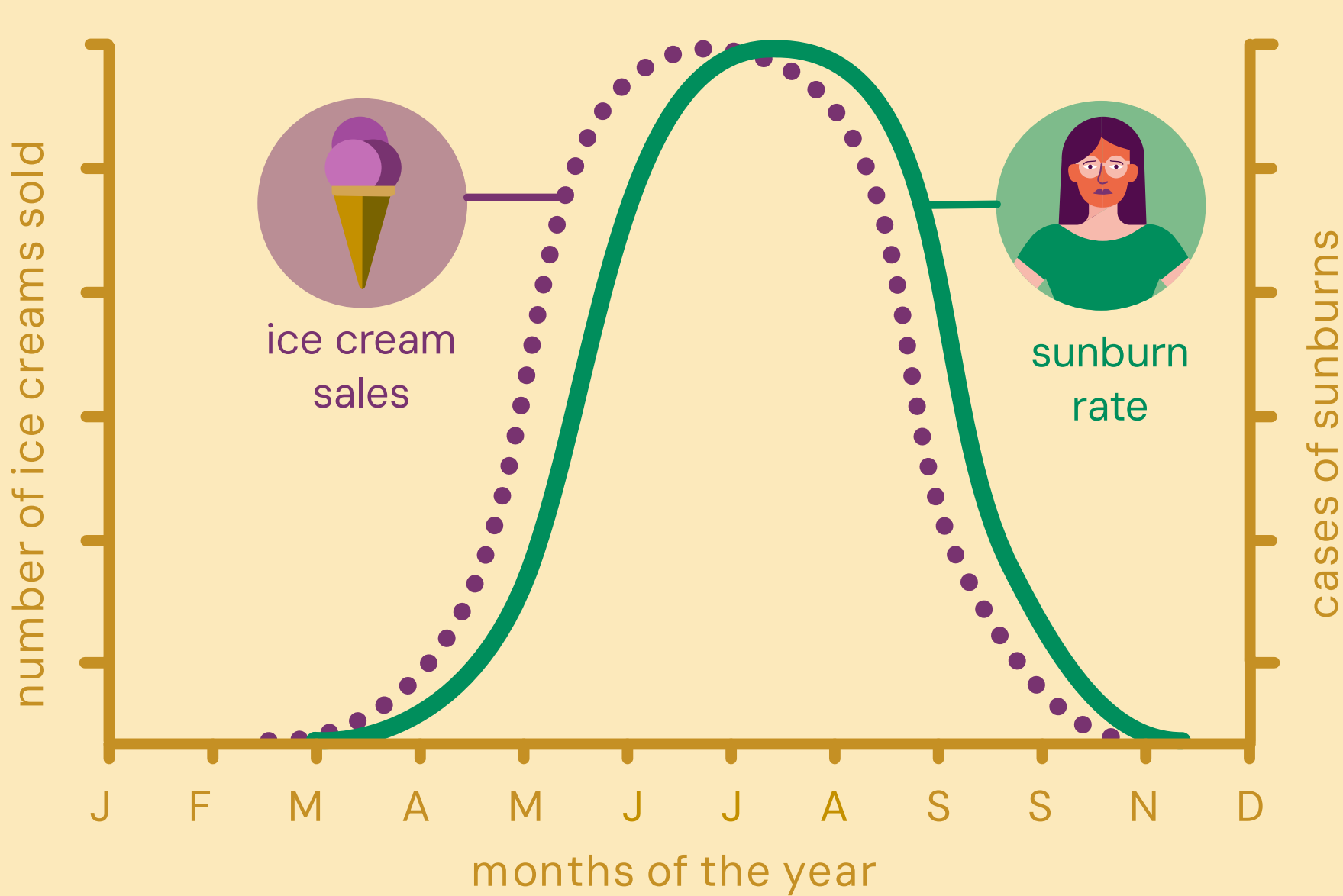
when one thing (a cause) causes another thing to happen (an effect)



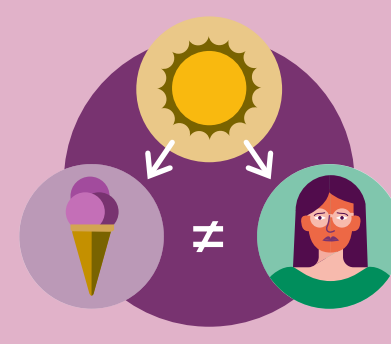
CORRELATION

when two or more things appear to be related

Example 1: ice cream sales correlate with sunburn rates

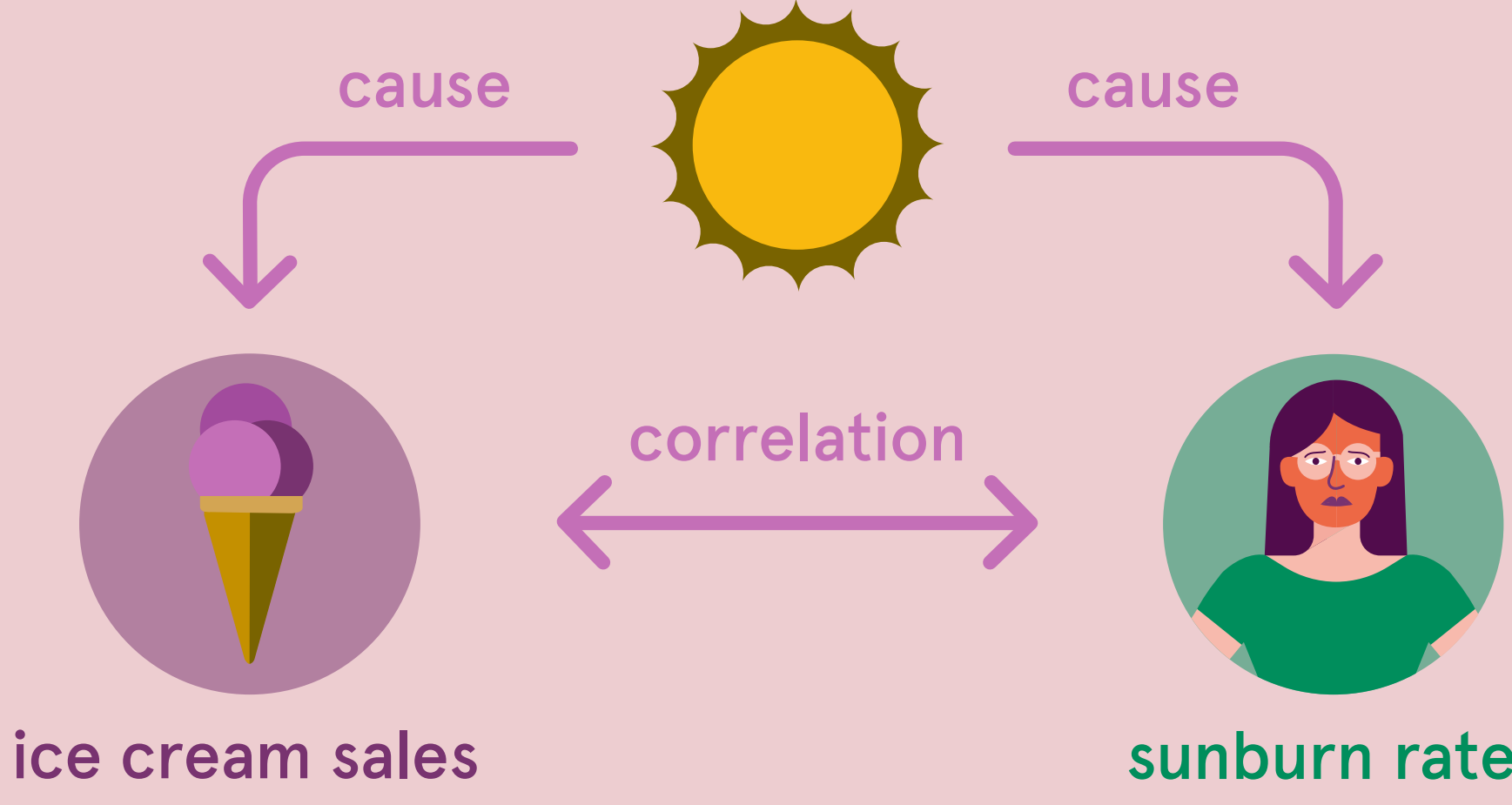


Does this mean eating ice cream causes sunburns?

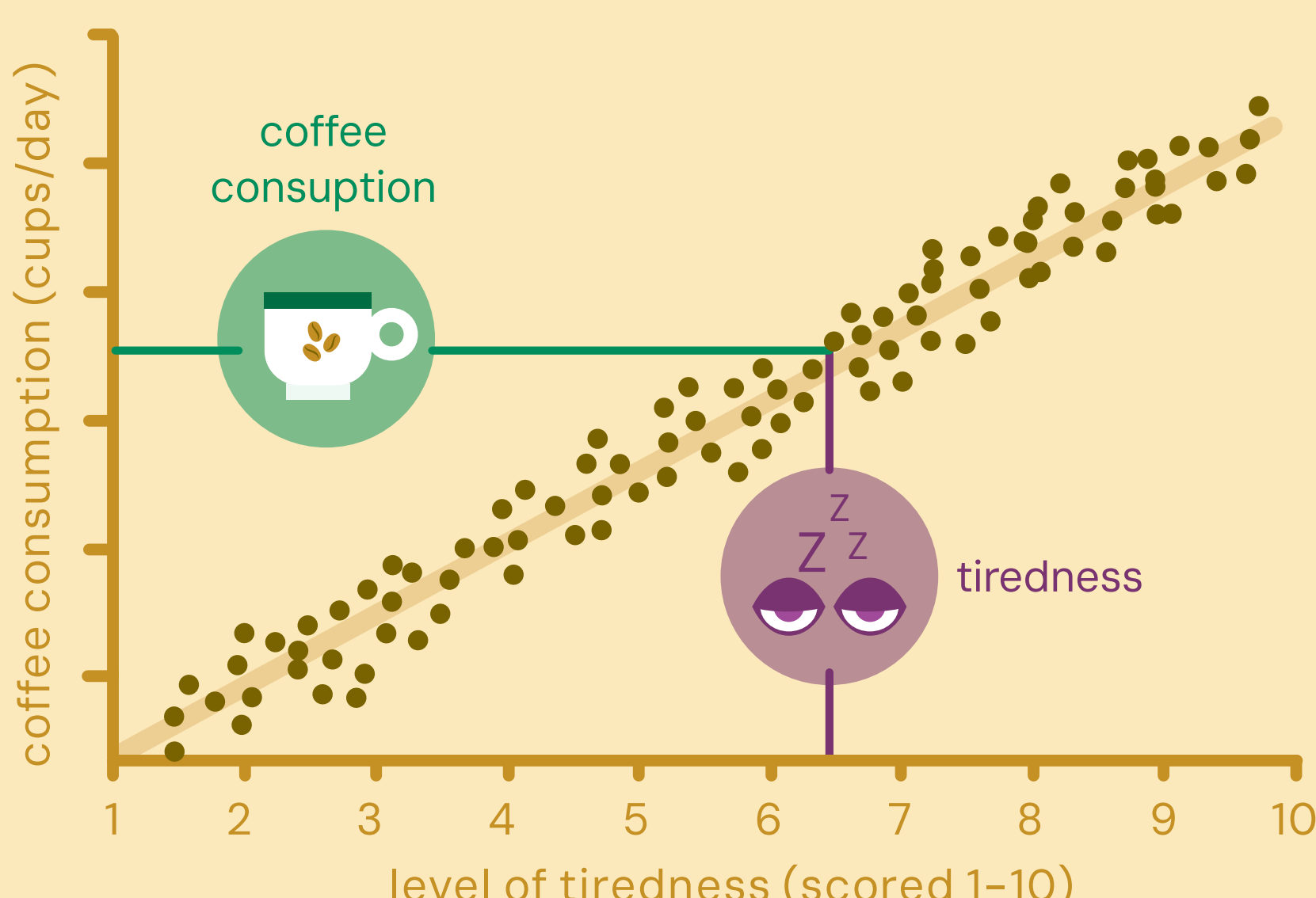


This example can be explained by a third factor that influences both.

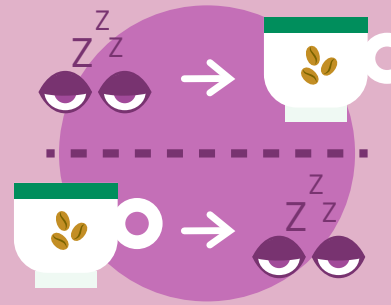
Sunny weather increases both ice cream consumption and the likelihood of getting a sunburn.



Example 2: coffee consumption correlates with tiredness



Does this mean coffee makes people more tired?

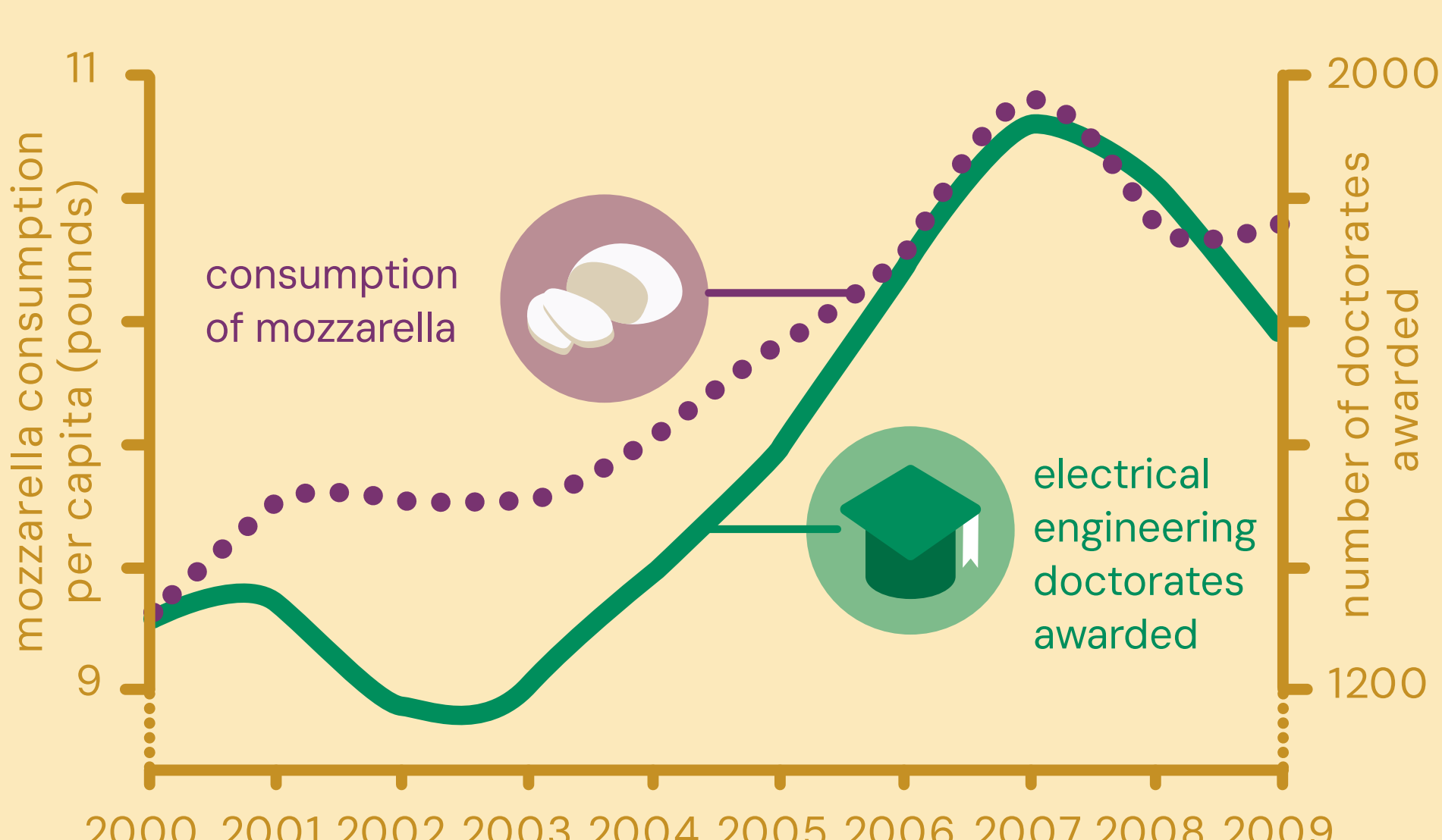


This example shows a reverse association.

People who feel more tired may drink more coffee to stay alert, creating the appearance that coffee causes tiredness.



Example 3: mozzarella consumption correlates with doctorates awarded



Source: USDA & National Science Foundation, tylervigen.com



Does this mean mozzarella helps you study?



This example shows a pure coincidence.

A correlation just means there's a relationship, but it doesn't prove cause and effect.