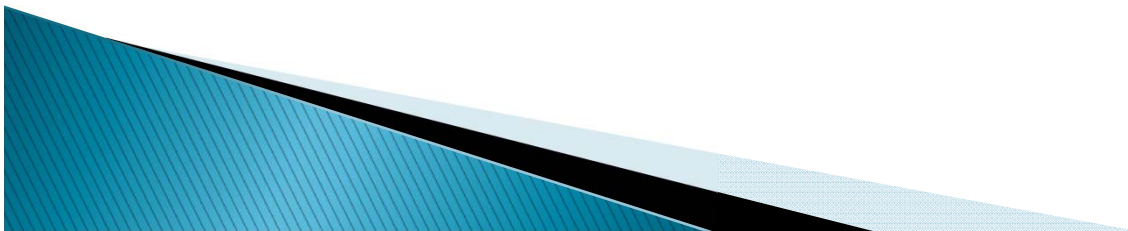


Examples: Causality Vs. Correlation



Example:

People are told to run around in a dark room for 5 minutes

▶ Observation:

- Men are found to have many more head injuries than women

▶ Conclusion:

- Women see better in the dark?
- Men are more reckless runners?

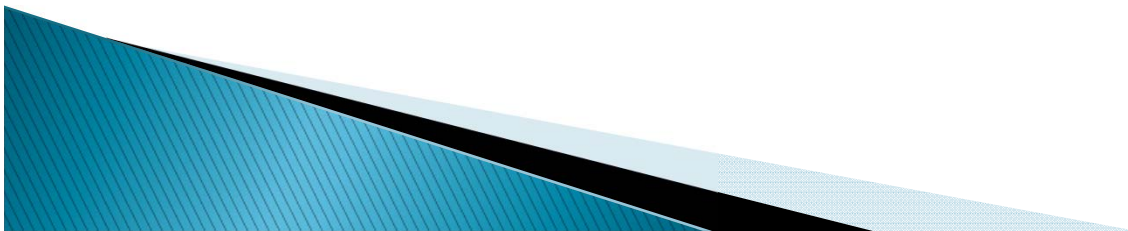


Example:

Women who smoke have babies that are 600 grams under weight on average

▶ Problem:

- Is it smoking or unobserved factors that are correlated with smoking



Example: Effectiveness of Side-Impact Airbags

- ▶ Cars with side impact airbags have lower injury severities
- ▶ Problem:
 - People owning side-impact airbag are not a random sample of the population (likely safer drivers)



Example: Effectiveness of Motorcycle Safety Course

- ▶ People who take motorcycle safety courses have higher crash rates
- ▶ Problem:
 - People taking the course are not a random sample of the population (likely less skilled)



Example:

Study finds high-income daycare children have same achievement levels as stay-home children

- ▶ **Conclusion:** High-income day care is not impeding progress
- ▶ **Problem:**
 - People participating in high-income day care probably should have higher achievement rates

