***Module overview***

We’ve already discussed the fact that it’s common in epidemiology to be interested in the relationship between two things (e.g., exposure and outcome). However, it’s actually really common to investigate whether or not a third thing changes/modifies the relationship between the first two things. If the third thing does change the relationship between the first two things then we call it an ***effect modifier***. For example, we know there is a relationship between smoking and heart disease — people who smoke are more likely to develop heart disease. However, we may also want to investigate whether heavy alcohol consumption affects the relationship between smoking and heart disease. In this module, we’re going to discuss how you would go about doing such an investigation and how to interpret your findings.

***Module topics / Key Concepts***

* Effect measure modification
* Interaction

***Required Readings***

Please read the following textbook chapters **before** our next in-class lab session:

* Szklo, M., & Nieto, F. J. (2019). *Epidemiology: Beyond the Basics*. Burlington: Jones & Bartlett Learning.
  + Chapter 6
* Pearl J., & Mackenzie D. (2018). *The Book of Why: The New Science of Cause and Effect*. Basic Books.
  + Chapter 5. The Smoke-Filled Debate: Clearing the Air

***Optional supplemental material***

* [Hernán MA, Robins JM. *Causal Inference: What If*. CRC Press; 2020.](https://www.hsph.harvard.edu/miguel-hernan/causal-inference-book/)
* [Knol, M. J., & VanderWeele, T. J. (2012). Recommendations for presenting analyses of effect modification and interaction. *International Journal of Epidemiology*, *41*(2), 514–520. https://doi.org/10.1093/ije/dyr218](https://doi.org/10.1093/ije/dyr218)

***Assignments***

1. Check on learning quiz
2. Lab
3. Module quiz