

CHECK YOUR KNOWLEDGE OF CONFOUNDING

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Week 8 - Confounding



Intellectually curious?

Question: The larger a randomized trial, the less the possibility for confounding. Why? Does this logic also apply to non-experimental studies? Why?

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Answer: The larger the trial, the smaller the baseline differences, because of the law of large numbers. **Therefore the larger the trial the less the amount of confounding that can be expected.** In contrast, in a non-experimental study, with no random assignment, **larger observational study sizes do not lead to less confounding**, because the differences between the exposed and unexposed groups with respect to potential confounding factors do not depend on the size of the study.



Intellectually curious?

Question: Suppose that an investigator conducting an RCT of an old and a new treatment examines baseline characteristics of the subjects (such as age, sex, stage of disease, and so forth) that might be confounding factors and finds that the two groups are significantly different with respect to several characteristics. A significance test is a test of the null hypothesis, which is a hypothesis that chance alone can account for the observed difference. What is the explanation for baseline differences in a randomized trial? What implication does that explanation have for dealing with these differences?



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Answer: If the trial randomly assigns participants to the study groups, then any baseline differences are a consequence of the random assignment, so chance (the null hypothesis) accounts for all baseline differences. As a result, the significance test does not make any sense, because the null hypothesis is already known to be true. With respect to the control of confounding, it does not matter whether the baseline differences are caused by chance or not - any substantial confounding should be controlled.