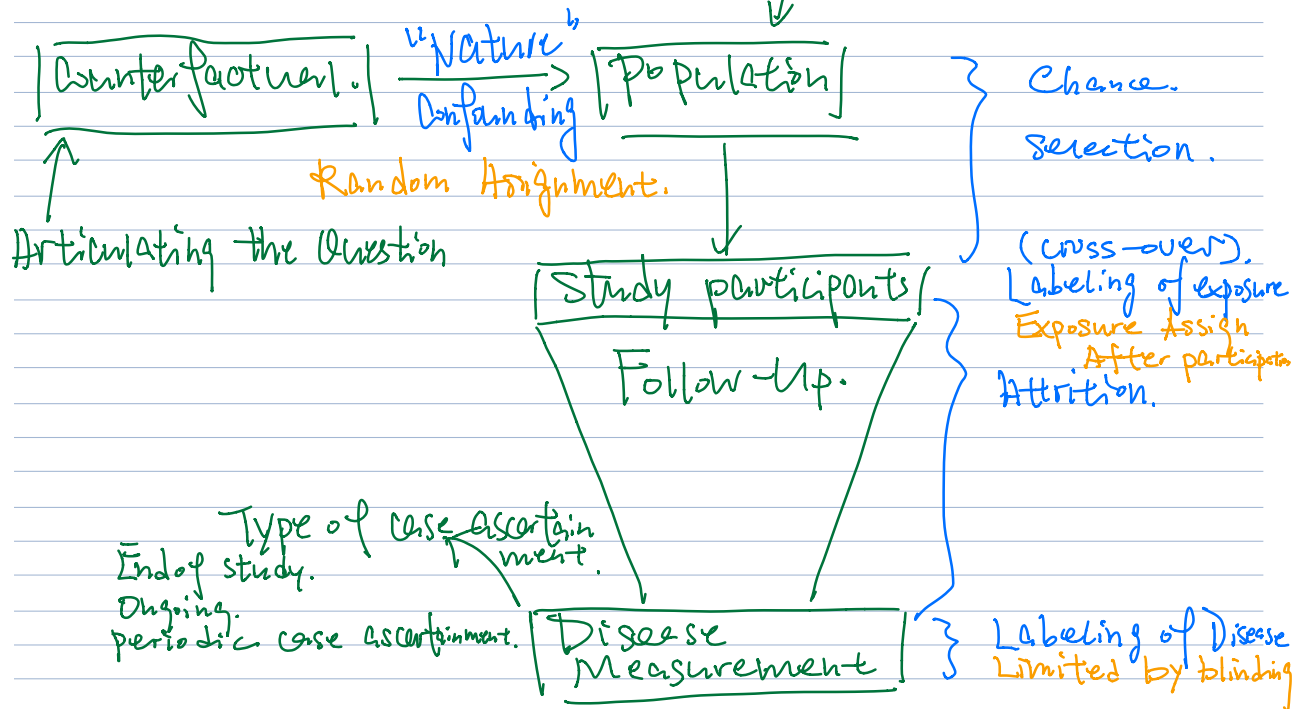
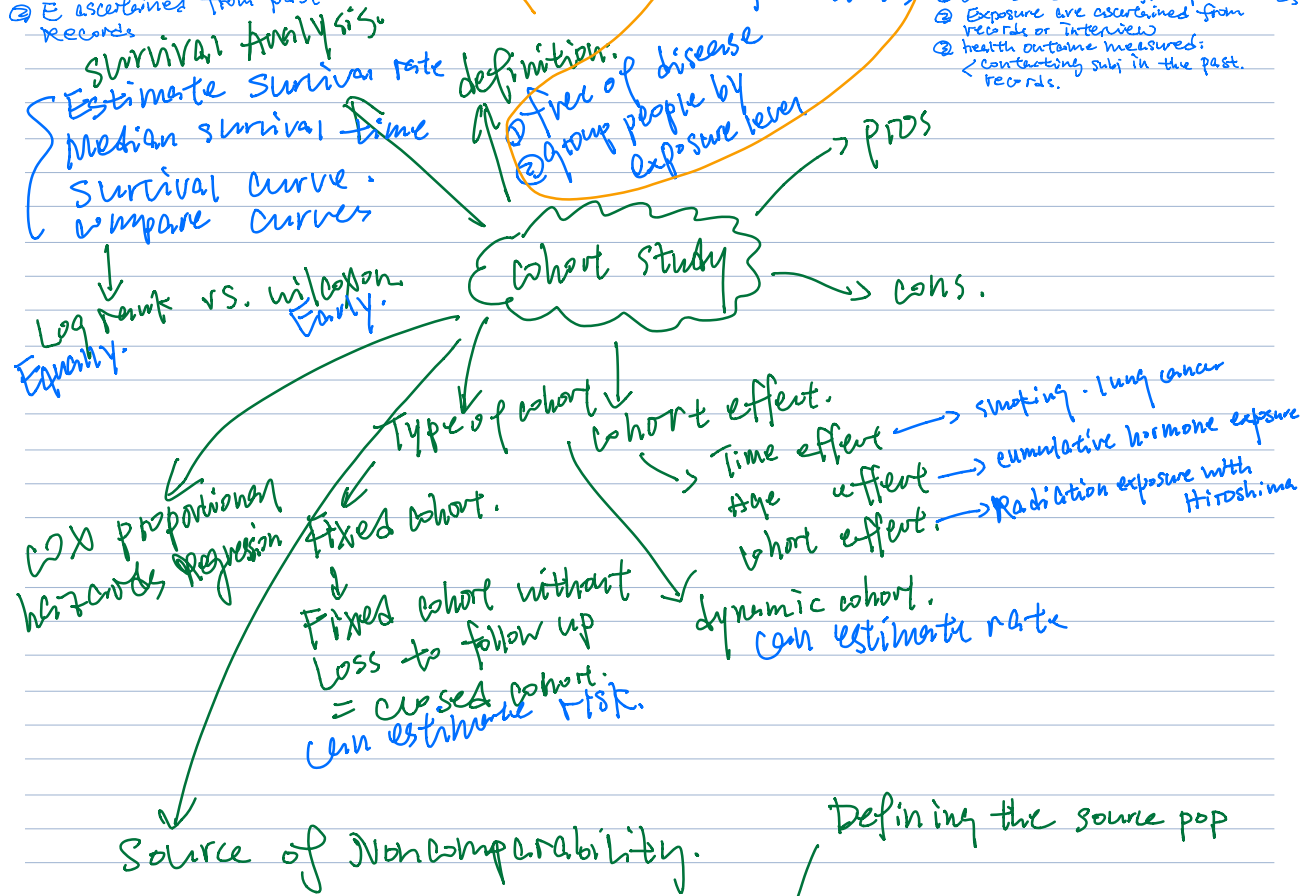


- Ambi-directional!**
- ① assemble from past
 - ② E ascertained from past records
 - ③ outcome ascertained both retro and prospectively
- prospective**
- ② Follow overtime for outcomes
- retrospective:**
- When the study is started, both E and D will have already occurred
- ① cohort assemble from past records
 - ② Exposure are ascertained from records or interviews
 - ③ health outcome measured: contacting subj. in the past records.





Problems in causal Explanation.

Construct validity. External validity

Treatment is a mediator of Assignment and disease

Identify causal partners

Non compliance.
Association tw Assignment and disease
≠ Association tw treatment and disease

RCT: high mark in CI
Low mark in CE



Ethical considerations

Junk food \rightarrow BMI.

Students with greater health consciousness self select to participate

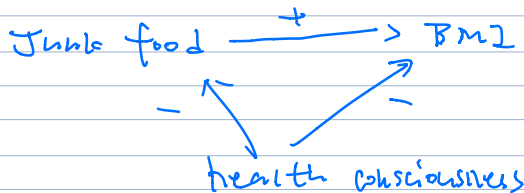
Selection bias. \rightarrow Individuals select themselves into the study based on the confounder

Direction of the bias depends on

self health consciousness

the direct of the effect of the confounder on the exposure and disease

the direct of the effect of the selection by confounder in the study.



— Should we exclude people with diseases at baseline?

wouldn't be necessary. unless reverse causation.
As long as same exclusion/inclusion criteria for E+ / E-.
cons: power, cost, generalizability.
People with other diseases may affect

now they report different variables.
e.g. Lung cancer people

if in a hospital based cohort, people might be more likely to be with lung cancer, which might affects ***