Confounding it can be adjusted during analysis if

Confounding occurs when there is a distortion of the association between an exposure and an outcome due to other factors (besides the outcome and exposure) among a study group that are also associated with both the outcome and the exposure being studied, but do not lie on the causal pathway.

It can be adjusted during analysis if information on potential confounders is available. When stratifying the data, potential confounders may be eliminated, which would highlight how the confounders may appear as factors that are a “ nuisance” and can account for all or part of an initial apparent association between an exposure and a disease, but when eliminated prevents this distortion of results. Example, if we were interested in looking for an association between coffee and lung cancer, then this association may be distorted at first by a third factor, smoking, if smokers are unevenly distributed between the two groups, and this factor of smoking may cause an initial appearance of an association between coffee and lung cancer, however when controlling for this factor by stratifying the data between smokers and non-smokers separately for each group it would help in showing that in fact in the absence of the confounder there is no actual significant association between the exposure and the outcome of interest. Effect modification on the other hand, is concerned with the causal effect of one exposure within subsets of the entire population. We say that a second variable (e. g., gender) is an effect modifier of the causal effect of the exposure (e. g.

, heart disease) on an outcome (e. g., death) given differences in stratum specific estimates (e. g., risk ratio, risk difference, odds ratio). In the case of

effect modification, the magnitude of the effect of an exposure on an outcome will vary according to the presence of a third factor, and if the third factor (e.

g. gender) modifies the causal effect of the exposure (e. g. disease) on the outcome (e.

g. death) then the causal effect will differ between populations with different gender distributions. Effect modification is associated with the outcome but not the exposure. Example, if we are interested in testing out a new treatment that has come out in the market, drug X; then if drug X works in females but does not work in males, it is an example of effect modification. When using stratification, we stratify the data between the two population subsets, and then can find that unlike confounders, it does not appear as a “ nuisance”, but actually provides useful information, that can help for example, identify groups of individuals who would benefit the most from an intervention, or whom findings could be generalized to.