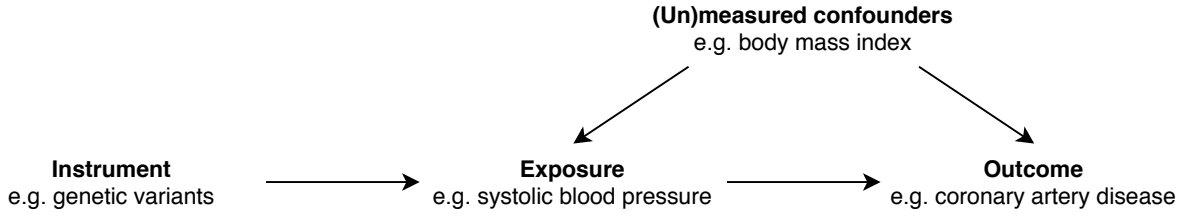

Three assumptions are required for Mendelian randomization:
(i) Relevance – the instrument must associate with the exposure
(ii) Independence – the instrument and the outcome must have no common causes
(iii) Exclusion restriction – the instrument must only affect the outcome through the exposure

A further assumption is also required to obtain a point estimate for the causal effect. Examples include:
Monotonicity – the exposure is a monotonic (i.e. always increasing or always decreasing) function of the instrument
Effect homogeneity – the effect of the exposure on the outcome is the same for all individuals