The assigned paper examined the association between acetaminophen and coffee with childhood asthma. This study was performed using data collected through the Danish National Birth Cohort which included a questionnaire and three phone interviews. The authors’ conclusions stated that, once adjusted for confounders, acetaminophen usage increased the risk of offspring asthma (HR=1.16, 95% CI: 1.11-1.22), while coffee was shown to slightly decrease the risk of offspring asthma (HR=0.94, 95% CI: 0.90-0.99), but they did not find strong evidence of effect measure modification of acetaminophen use on offspring asthma by coffee consumption.

While detailed information is not provided in reference to the survey tools, both questionnaire and interviews, one can suggest that these tools and/or the way they were actually administered could have introduced systemic differences across all observations, also known as measurement bias. A hypothetical situation representing this would be if the questions used to assess coffee drinking were not administered in the way the researchers hoped and many women were not aware that their morning “mug” of coffee should actually be counted as two cups in this study. This would lead to a systematic underrepresentation of coffee drinking in this study, therefore biasing our study towards the null, decreasing the effect that actually exists in the sample.

The study used an extensive list of confounders which are described in the paper. For the authors to have determined that these variables should be classified as confounders they needed to show that each possible confounder is associated with both the outcome and exposure, followed by confirming that this variable does not lie on the causal pathway, and finally, test the confounder by performing a stratified analysis to determine if there is any difference by stratum, if not, the variable is a confounder. While the associations themselves are not shown, and therefore are not verifiable, it is possible to check the authors’ logic in terms of the confounders not being on the causal pathway, and such an examination does confirm that none of these confounders lie on the causal pathway. It is also essential to note that the authors discuss missing confounders, specifically those that have an impact on caffeine consumption. Considering this study is looking at caffeine intake and using coffee as an indicator for caffeine, it is extremely concerning that other significant sources of caffeine were not included in this analysis, the results need to be interpreted with this factor in mind.