200 —

True prevalence is 150

150 —

ASD cases per 10,000

100 —

80% of ASD cases respond for Study B screening

50 —

60% of ASD cases respond for Study A screening

Population screening   Diagnostic confirmation   Prevalence estimation

If screening response rate is 60% overall but true rate is higher among ASD cases, Study B overestimates prevalence, weighting by overall response rate:

$$84 \times \frac{1}{0.6} \times \frac{1}{0.7} = 200$$

If screening response rate is 60% overall and for both ASD and non−ASD cases, Study A accurately estimates prevalence, weighting by overall response rate:

$$63 \times \frac{1}{0.6} \times \frac{1}{0.7} = 150$$