Predictive value of testing changes with prevalence

When testing 100,000 asymptomatic individuals using a rapid antigen detection test with 58.1% sensitivity and 98.9% specificity*, the proportion of false-positive and false-negative test results will vary according to the prevalence of SARS-CoV-2 infection.

If prevalence is 10% (10,000 infections), approx. 1 in 7 positive results will be a false positive; 1 in 22 negative results will be a false negative.

10,000 infected out of 100,000

93,200 Negative test results
6,800 Positive test results
4,190 False negatives
990 False positives

If prevalence is 0.5% (500 infections), approx. 4 in 5 positive results will be a false positive; 1 in 470 negative results will be a false negative.

500 infected out of 100,000

98,615 Negative test results
1,385 Positive test results
209 False negatives
1094 False positives