

Check your understanding



1 Why don't doctors just give antibiotics to every child with diarrhea?

Antibiotics work only against bacteria! Diarrhea can be caused by viruses and parasites in which case antibiotics won't work, sometimes they can even make things worse! Also, we have millions of beneficial bacteria in our body that are very important for our well-being. These would be also be likely killed off by the antibiotics. Antibiotics should be prescribed with caution due to increasing antibiotic resistance (this means that in some time in the future all antibiotics could be useless).

2 You invented a new test method for detection of Cholera, a dangerous bacterial disease. You correctly recognized 95 out of 100 positive samples and out of 100 negative samples you wrongly found 1 positive. What is your new test sensitivity? And specificity?

You have 95 true positive and 5 false negative, the sensitivity is $95 / (95 + 5) = 95\%$. You have 99 true negative and 1 false positive, the specificity is 99%.

3 A tick bit you and you did a Lyme disease laboratory test. It turned out negative but then you see the test's sensitivity is 60%, what does this mean?

There is still some chance (not that small) that you have the disease.

4 Sometimes you can catch bacteria and viruses, transmitted through the fecal-oral route even when you wash your hands. Why?

The food you eat might be contaminated; the water you drink might not be properly treated; sometimes insect vectors like flies can spread the disease.