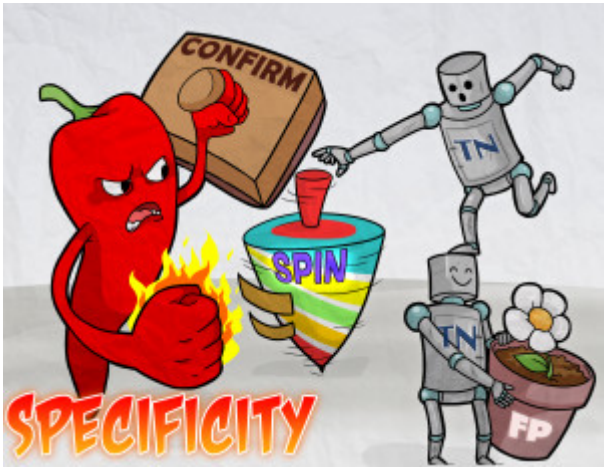
Specificity

Sensitivity and specificity are statistical measures that indicate how well a specific test can measure the presence of a specific disease. Ideally, a perfect test or predictor would be 100% sensitive and 100% specific, meaning that the test would predict all people from the sick group as sick and not predict anyone from the healthy group as sick. However for any test, there is usually a trade-off between the measures. Specificity relates to the test's ability to identify negative results. It is the proportion of patients that are known not to have the disease who will test negative for it. The formula for identifying specificity equals the number of true negatives divided by the (number of true negatives + number of false positives). Highly specific tests rarely miss negative outcomes so they can be considered reliable when their test result is positive. Therefore, a positve result from a test with high specificity means a high probability of the presence of disease. Tests with high specificity are often used to "rule in" disease and can be remembered by the word SPIN for specificity "rules in". Because there are few false positives in diseases with high specificity, they are often used as confirmatory tests for the presence of disease.



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Characteristics

Rules In

(SPIN) Spinning-top for SP rules IN

Highly specific tests rarely miss negative outcomes so they can be considered reliable when their test is positive. Therefore, tests with high specificity are often used to "rule in" disease and can be remembered by the word SPIN for specificity rules in.

Confirmatory Test

Confirm Stamp

Because there are few false positives in diseases with high specificity, they are often used as confirmatory tests for the presence of disease.

Formula

TN / (TN + FP)

(TN) Tin-man top of another (TN) Tin-man with (FP) Flower Pot

The formula for specificity equals the number of true negatives divided by (true negatives plus false positives).

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