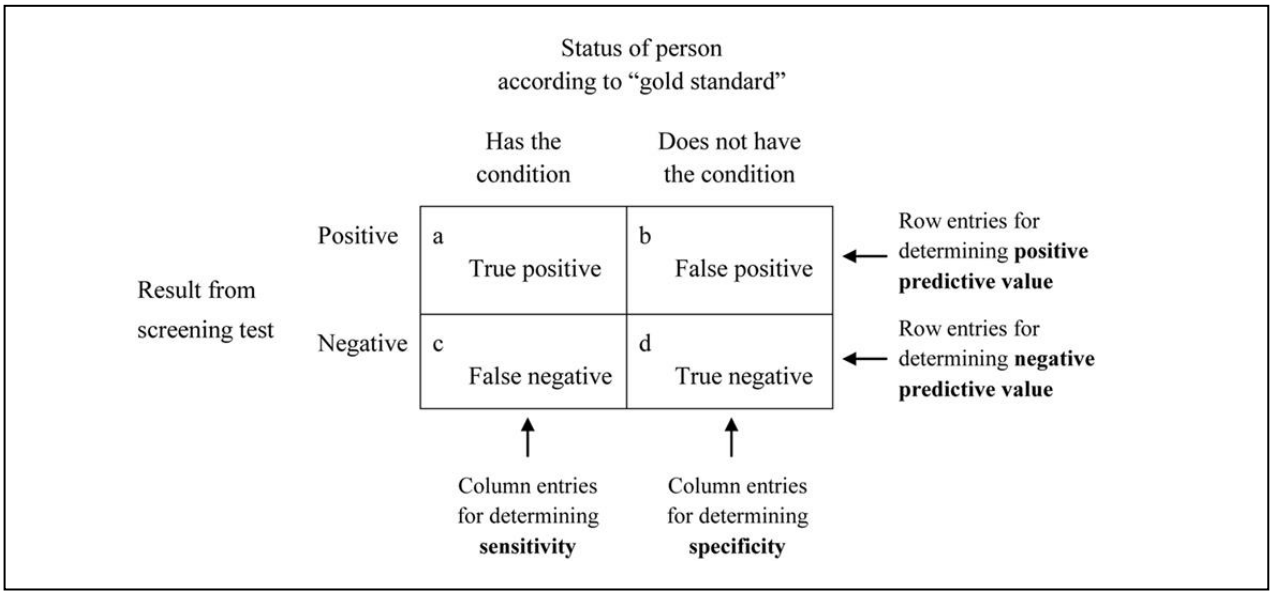
STATISTICAL CONCEPTS:

SENSITIVITY & SPECIFICITY

The following concepts are often used in **diagnostic studies** when you want to test the **validity of a new test** compared to a 'gold standard' test.

Sensitivity Ability of a test to correctly identify people <u>with</u> a disease (true positive). If a test has low sensitivity, it will falsely identify people as <u>not</u> having a disease when they really do (false negative)	
***Specificity*:** Ability of a test to correctly identify people <u>without</u> a disease (true negative). If a test has low specificity, it will falsely identify people as having a disease when they really don't (false positives)	
Positive predictive value (PPV) probability that the disease is present when the test is positive.	*PPV and NPV* ***influenced by prevalence*** *of the outcome in the population tested and may be more useful for screening tests.*
Negative predictive value (NPV) probability that the disease is not present when the test is negative.	

Ideally you want tests to have sensitivity and specificity that are as high as possible. The figure[1] below depicts the relationship of these concepts:



For more information watch the following 5min videos:

Sensitivity and Specificity (Linked here)

Positive & Negative Predictive Values Linked here

[1]= Figure taken from Trevethan, R., (2017). Sensitivity, Specificity, and Predictive Values: Foundations, Pliabilities, and Pitfalls in Research and Practice, Frontiers in Public Health, 5, 307.