		Condition (as determined by "Gold standard")		
		Positive	***Negative***	
Test outcome	***Positive***	**True Positive**	**False Positive** (Type I error)	→ Positive predictive value $= \frac{\Sigma \text{ True Positive}}{\Sigma \text{ Test outcome Positive}}$
	Negative	**False Negative** (Type II error)	**True Negative**	→ Negative predictive value $= \frac{\Sigma \text{ True Negative}}{\Sigma \text{ Test outcome Negative}}$
		↓ Sensitivity $= \frac{\Sigma \text{ True Positive}}{\Sigma \text{ Condition Positive}}$	↓ Specificity $= \frac{\Sigma \text{ True Negative}}{\Sigma \text{ Condition Negative}}$	

A worked example

The fecal occult blood (FOB) screen test was used in 2030 people to look for bowel cancer:

		Patients with bowel cancer (as confirmed on endoscopy)		
		Positive	***Negative***	
Fecal occult blood screen test outcome	***Positive***	**True Positive (TP) = 20**	**False Positive (FP) = 180**	→ Positive predictive value = TP / (TP + FP) = 20 / (20 + 180) = 20 / 200 **= 10%**
	Negative	**False Negative (FN) = 10**	**True Negative (TN) = 1820**	→ Negative predictive value = TN / (FN + TN) = 1820 / (10 + 1820) = 1820 / 1830 **≈ 99.5%**
		↓ Sensitivity = TP / (TP + FN) = 20 / (20 + 10) = 20 / 30 **≈ 66.67%**	↓ Specificity = TN / (FP + TN) = 1820 / (180 + 1820) = 1820 / 2000 **= 91%**	

Related calculations

- False positive rate (α) = FP / (FP + TN) = 180 / (180 + 1820) = 9% = 1 − specificity
- False negative rate (β) = FN / (TP + FN) = 10 / (20 + 10) = 33% = 1 − sensitivity
- Power = sensitivity = 1 − β
- Likelihood ratio positive = sensitivity / (1 − specificity) = 66.67% / (1 − 91%) = 7.4
- Likelihood ratio negative = (1 − sensitivity) / specificity = (1 − 66.67%) / 91% = 0.37

Hence with large numbers of false positives and few false negatives, a positive FOB screen test is in itself poor at confirming cancer (PPV = 10%) and further investigations must be undertaken; it did, however, correctly identify 66.7% of all cancers (the sensitivity). However as a screening test, a negative result is very good at reassuring that a patient does not have cancer (NPV = 99.5%) and at this initial screen correctly identifies 91% of those who do not have cancer (the specificity).

Note: This template is used as a portion of the articles on sensitivity, specificity, likelihood ratios in diagnostic testing, etc. See those articles for additional citations.