Critical Appraisal Worksheet: Diagnostic Test Studies

SCREENING	
Does the study question match your question? Was the study design appropriate?	
VALIDITY	
Was the test evaluated on a full spectrum of patients (e.g., disease present/absent; symptoms mild/severe, early/late)?	
Did investigators compare the test to an appropriate, independent reference standard?	
Were those interpreting the test and reference standard blind to the other results?	
Was the same reference standard performed on all patients regardless of the results of the test under investigation?	

CLINICAL IMPORTANCE

		Target Disorder	
		Present	Absent
Test Result	Positive	True Positive (TP)	False Positive (FP)
	Negative	False Negative (FN)	True Negative (TN)

Sensitivity = $\frac{TP}{TP + FN}$

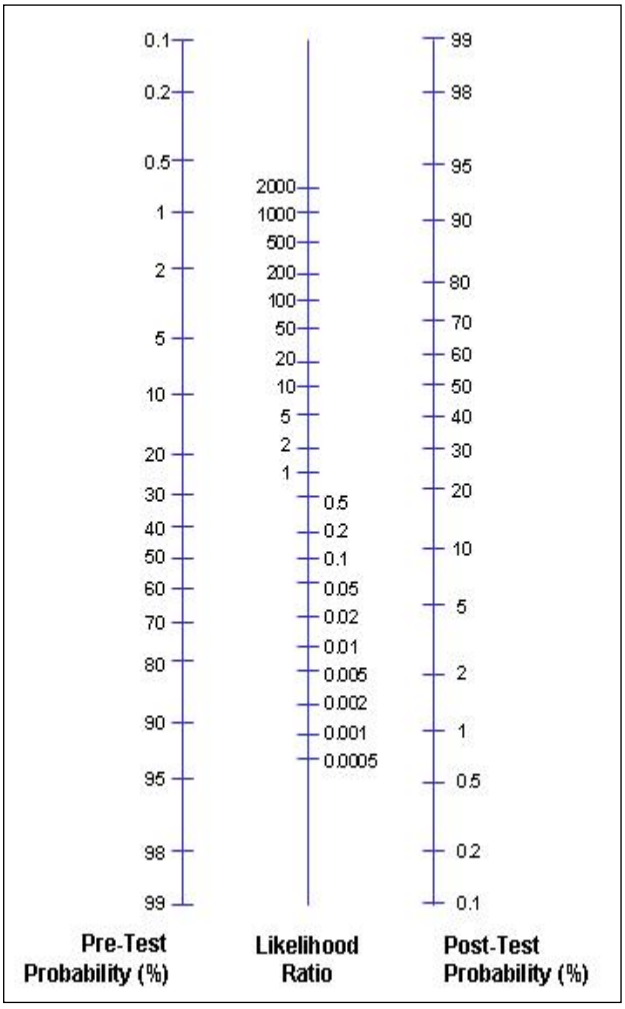
Specificity = $\frac{TN}{FP + TN}$

Likelihood ratio + (positive result) = $\frac{\text{sensitivity}}{1 - \text{specificity}}$

Likelihood ratio - (negative result) = $\frac{1 - \text{sensitivity}}{\text{specificity}}$

Adapted from: Heneghan, Carl and Badenoch, Douglas. ***Evidence-based Medicine Toolkit, 2nd edition****. Oxford: Blackwell Publishing; BMJ Books. 2006. p. 34.*

Nomogram for interpreting diagnostic test results (Likelihood ratio)



In this nomogram, a straight line drawn from a patient's **pre-test probability** of disease (which is estimated from experience, local data or published literature) through the **LR for the test result** that may be used, will point to the **post-test probability** of disease.

Adapted from Fagan TJ. Nomogram for Bayes's theorem *N Engl J Med* Jul 31, 1975; 293(5):257.

Diagnostic Test Calculator

http://araw.mede.uic.edu/cgi-bin/testcalc.pl

This interactive calculator can determine diagnostic test characteristics (sensitivity, specificity, likelihood ratios) and/or determine the post-test probability of disease given the pre-test probability and test characteristics. Given sample sizes, confidence intervals are also computed.