

* Diagnostic accuracy of test:

- predicted by
- ① Sensitivity and specificity
 - ② Predictive values
 - ③ ROC curve.

① Sensitivity and specificity of test :-

Sensitivity → fraction of those in a specified group that the test correctly predicts

Specificity → fraction of those in a specified group that the test correctly predicts

	True test	-ve test
pt is diseased	True positive (TP)	False -ve (FP)
pt is NOT diseased	False +ve (FP)	True -ve (TN)

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

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

Qualitative Test (i.e. positive (-ve results))

↓
have assay cut-off

cut-off value selected to ↑ sensitivity

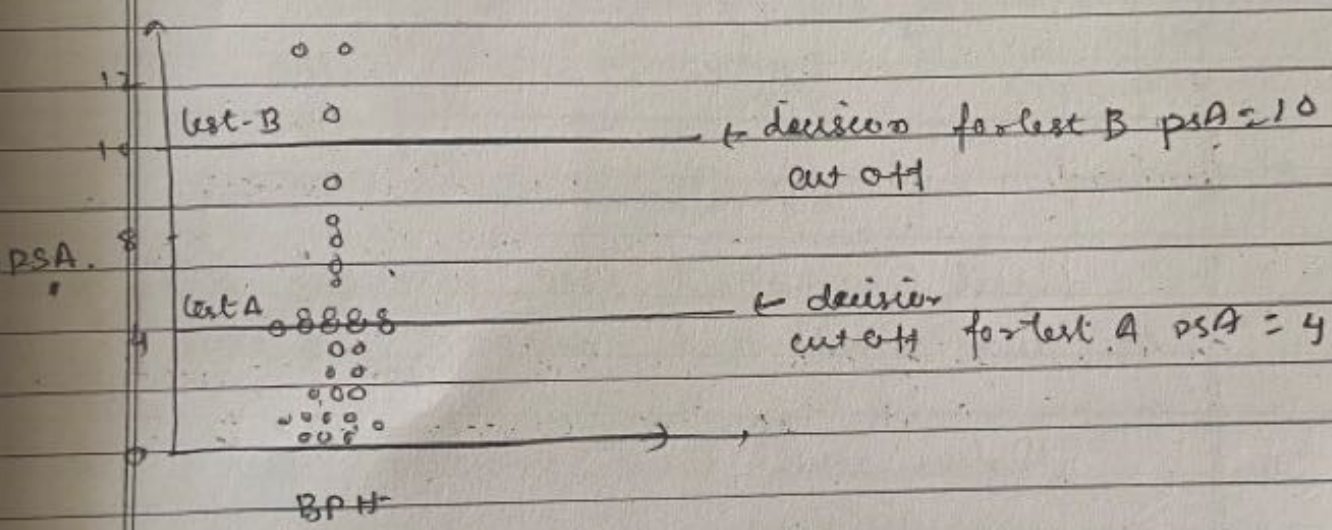
↓
specificity will be compromised

cut off value maximised to ↑ specificity

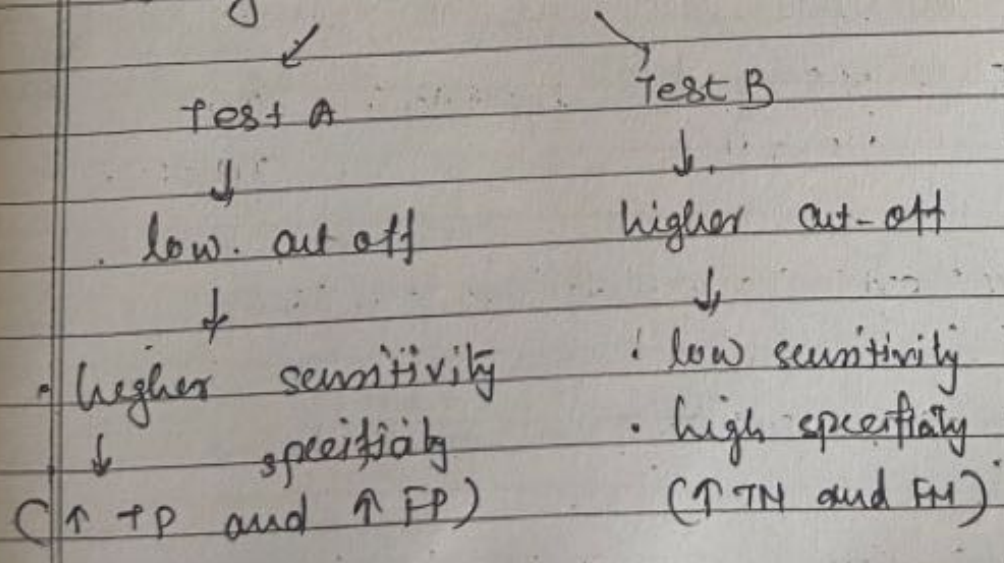
↓
sensitivity will be compromised

Example:- out-off value for ^{PSA} ~~ACT~~ being 45 will
 → the sensitivity of method but ↓ spec
 specificity as many individuals \bar{c} (H) hepatic
 functions will be considered as ab (H) LFT.

give
 PSA example
 instead ACT.

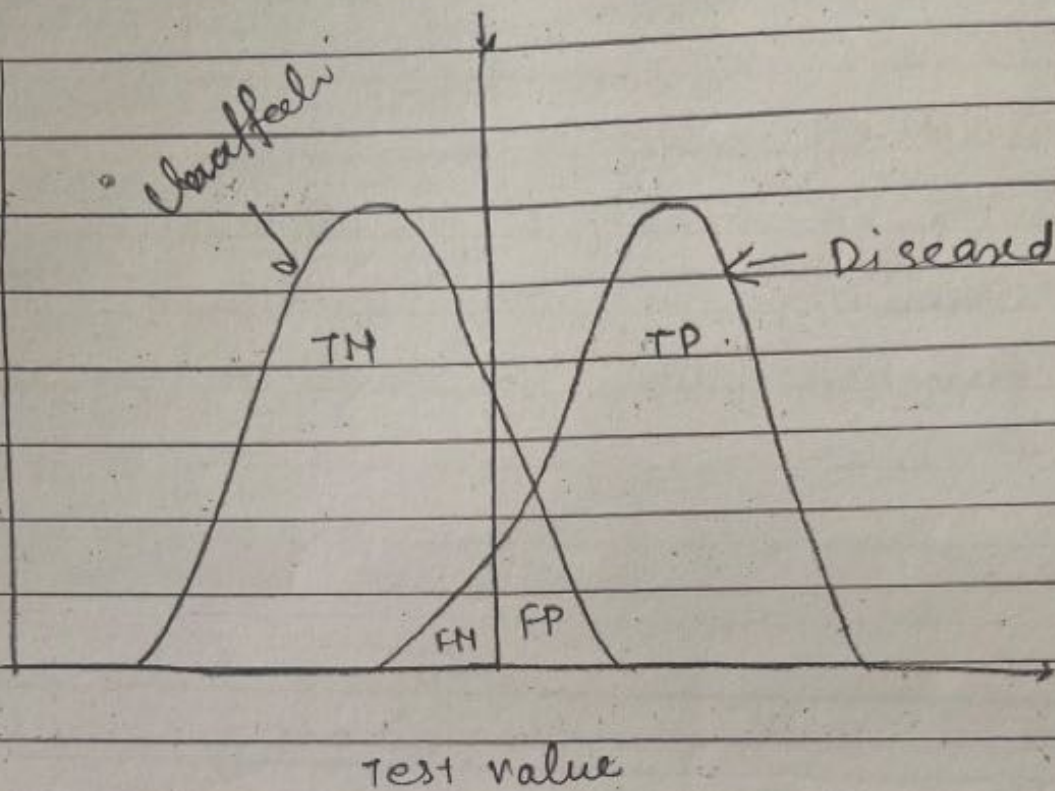


- PSA conc. in pt \bar{c} BPH (Dot plot)
- 2 test (test A and B), Both measure PSA level
 having different decision cut off



decision cut off

fraction of subjects



highly hypothetical test showing distribution of unaffected and diseased population



Higher result than decision cut-off - considered as diseased



• Raising cut-off → FP ↓
 → FN ↑

• extremely low cut off → 100% sensitivity
 extremely high " → 100% specificity