

Exercises:

1. A 46-year-old woman who presents to your office for a well-woman examination. She informs you that her 51-year-old friend was diagnosed with breast cancer one month ago and that she is worried about getting breast cancer. On further inquiry, you learn that she delivered her only child when she was 32 years of age and has no family history for breast cancer. She does not perform breast self-examinations and has never had a mammogram. She asks for your advice on breast cancer screening.

Q. Calculate the sensitivity, specificity, and positive and negative predictive values for mammography screening test.

	Has Disease	Does not have disease	
Abnormal (Positive) Test	84	17	101
Normal (Negative) Test	12	110	122
	96	127	

- Sensitivity =
- Specificity =
- Positive Predictive Value =
- Negative Predictive Value =

2. A 42 years old man requests that you, as his primary care physician, to take a Prostate Cancer Screening (PSA) test. His father was diagnosed with prostate cancer at age 67.

Q. What is the sensitivity and specificity of a PSA for detecting prostatic cancer? Is this test good at ruling out pathology? why or why not?

PSA	Pathology		Total
	Abnormal (+)	Normal (-)	
Abnormal (+) Test	231	32	263
Normal (-) Test	27	54	81
Total	258	86	344

1. Evaluate the following measures:

Sensitivity =

Specificity =

2. Is the test good at ruling out pathology? Why or why not?

3. You have been visited by a 39-year-old pregnant woman (about 11 weeks pregnant). She is concerned about her age and conceiving with a baby with Dawn Syndrome. You booked her for an appointment for first trimester fetal nuchal translucency scan.

Q. Is this screening scan for Down Syndrome useful? What is your interpretation?

Screening Test	Affected Fetus	Unaffected Fetus	Total
Abnormal (+) Test	9	351	360
Normal (-) Test	1	4,449	4,450
Total	10	4,800	4,810

1. Evaluate the following measures:

Sensitivity =

Specificity =

False positive rate =

False negative rate =

2. Interpretations: