

Sensitivity and Specificity

1. Davidson et al. examined the performance of colour Doppler ultrasound in the diagnosis of deep vein thrombosis (DVT) in patients undergoing elective surgery, with disappointing results. They reported the following 2x2 table showing the results of the ultrasound tests versus the gold standard of venography.

.	Venography +	Venography -
colour Doppler ultrasound indicates DVT +	8	23
colour Doppler ultrasound indicates DVT -	13	275

- a. What is the sensitivity and specificity of the ultrasound tests versus venography as a gold standard?
- b. What are the odds of DVT in the sample? From these odds calculate the prevalence.

2. Imagine that you are designing a new diagnostic test for a disease. Your motivation is to detect the disease early in its course so that it can be treated more effectively. The disease must be treated surgically, and the surgical procedure used for this disease is itself very risky. Based on this information, would you prefer that your new diagnostic test be highly sensitive or highly specific?