

* Probability *

* BAYES, Rule *

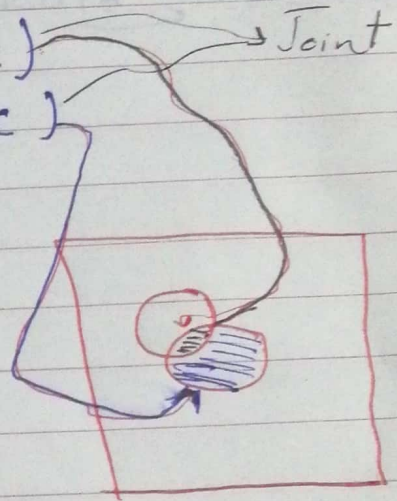
* Positive if you have \rightarrow sensitivity* negative if you don't have \rightarrow specificity

* تسمى هذه القاعدة لاحتساب احتمال من قبل وجود احتمال ما

$$\begin{aligned}
 & \text{Joint} \\
 & P(C|Pos) = P(C) \cdot P(Pos|C) \\
 & P(\neg C|Pos) = P(\neg C) \cdot P(Pos|\neg C)
 \end{aligned}$$

$$\text{normalizer} = 0.009 + 0.099 = 0.108$$

← احتماليه وجود Cancel بالفضل



$$\begin{aligned}
 & \text{* Posterior: } P(C|Pos) = \frac{0.009}{0.108} = 0.0833 \\
 & P(\neg C|Pos) = 0.9167 = \frac{0.099}{0.108}
 \end{aligned}$$

$$1 = \text{مجموع الاحتمالات}$$

(Just introduction)

$$* P(\neg C) = 1 - P(C) \quad \checkmark$$

$$* P(\text{Neg}|C) = 1 - P(\text{Pos}|C) \quad \checkmark$$

$$* P(\text{Pos}|\neg C) = 1 - P(\text{Neg}|\neg C) \quad \checkmark$$

نفي $\rightarrow \text{Test} = \text{Neg}$

$$\hookrightarrow \text{normalizer} = P(C|\text{Neg}) + P(\neg C|\text{Neg}) \quad \checkmark$$

$$\text{الاحتمال النهائي} \quad * \text{Posterior} = \frac{P(C|\text{Neg})}{\text{normalizer}} \quad \frac{P(\neg C|\text{Neg})}{\text{normalizer}}$$

مجموع الاحتمالات (1)

(Finally)

