Global Disease Probability 0.1%

\[ p(D) = 0.1\% \]

\[ p(H) = 99.9\% \]

\[ p(S_1|D) = 100\% \]

\[ p(S_1|H) = 0.1\% \]

\[ p(\neg H) = 99.9\% \]

\[ p(S_1) = 0.2\% \]

Population 1,000

1 Disease

999 Healthy

\[ p(S_1) = 0.2\% \]

\[ p(\neg S_1) = 99.8\% \]

\[ p(D|S_1) = \frac{p(S_1|D)}{p(S_1)} \]

\[ \text{New Disease Probability} \]

\[ \text{"Prior" Disease Probability} \]

\[ = 0.1\% \]

\[ = 0.1\% \times 500 = 50\% \]