

26. Solution: C

Let:

S = Event of a smoker

C = Event of a circulation problem

Then we are given that  $P[C] = 0.25$  and  $P[S | C] = 2 P[S | C^c]$

Now applying Bayes' Theorem, we find that  $P[C | S] = \frac{P[S | C]P[C]}{P[S | C]P[C] + P[S | C^c](P[C^c])}$

$$= \frac{2P[S | C^c]P[C]}{2P[S | C^c]P[C] + P[S | C^c](1 - P[C])} = \frac{2(0.25)}{2(0.25) + 0.75} = \frac{2}{2 + 3} = \frac{2}{5} .$$