Supplementary material

Algorithm of the Basque Country risk engine (BASCORE)

The BASCORE calculates 2 and 5-year probabilities of fatal and non-fatal coronary heart disease RCHD(t), and fatal and non-fatal 2 and 5-year probabilities cardiovascular disease RCVD(t), with t=2 or 5. Based on the model, the CHD t-year risks RCHD(t) can be estimated by means of the following formula (for t=2 or 5 years):

\[ RCHD(t) = 1 - S_0(t) \times e^r, \]

where: \( S_0(t=2) = 0.9830590 \) if SBP < 140 or \( S_0(t=2) = 0.9711625 \) otherwise, \( S_0(t=5) = 0.9235156 \) if SBP< 140 or \( S_0(t=5) = 0.908658 \) otherwise and \( r = 0.03544 \times (age - 63) + 0.03632 \times Sex + 0.55636 \times \text{ratio of non-HDL to HDL cholesterol} + 0.21468 \times (\text{HbA1c} - 6.5/48\text{mmol/mol}). \)

Based on the model, the CVD t-year risks RCVD(t) can be estimated by means of the following formula (for t=2 or 5 years):

\[ RCVD(t) = 1 - S_0(t) \times e^r, \]

Where: \( S_0(t=2)=0.9259117, S_0(t=5) = 0.7628002 \) and \( r = 0.054693 \times (age - 63) - 0.211664 \times Sex + 0.172381 \times (\text{ratio of non-HDL to HDL cholesterol} - 4.2) + 0.019909 \times (\text{SBP} - 137) + 0.179784 \times (\text{HbA1c} - 6.5/48\text{mmol/mol})-0.448472 \times \text{tobacco}. \)

Regarding the involved variables, ratio of non-HDL to HDL cholesterol (≥5=1, <5=0), sex (woman=1, man=0) and tobacco (No smoker=1, smoker=0) are considered in both models.

Abbreviations

SBP \quad \text{Systolic blood pressure}
RCVD \quad \text{Cardiovascular risk}
RCHD \quad \text{Coronary heart disease risk}