

# Predicting heart disease: The future of CVD risk assessment



Cardiovascular disease (CVD) is the leading global cause of mortality<sup>1-3</sup>



Ischemic heart disease (IHD, also termed coronary artery/heart disease) accounts for half of CVD deaths<sup>4</sup>



50% of all IHD deaths are not preceded by any disease symptoms<sup>5</sup>



## Global IHD in 2019<sup>4</sup>

- 197** million cases
  - 9** million deaths
  - 182** million DALYs\*
- \*Disability-adjusted life years

## Areas with the highest burden:

- Central and South Asia
- Eastern Europe
- Pacific Islands
- North Africa
- Middle East



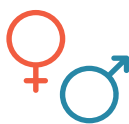
## Current screening strategies assess overall CVD risk, none are specific to IHD<sup>1,6</sup> Over 350 risk stratification models have been developed globally:<sup>7</sup>

- The CVD endpoint predicted is defined in >70 different ways<sup>7</sup>
- The risk factors assessed range from 2-80<sup>7</sup>
- The most commonly assessed risk factors include:<sup>7</sup>

Age



Sex



Blood pressure



Cholesterol



Smoking status



Diabetes



- The predictive accuracy is roughly 75%<sup>7</sup>
- Few are valid for use in South American, African, Asian and disadvantaged populations<sup>7,8</sup>

## Potential circulatory biomarkers to improve risk prediction



### Markers of arterial inflammation

- High sensitivity C-reactive protein (hs-CRP)

### Oxidised lipid particles that trigger atherosclerosis

- Apolipoprotein A (ApoA)
- Apolipoprotein B (ApoB)
- Lipoprotein (a) or Lp(a)

### Markers of arterial thrombosis

- Lipoprotein-associated phospholipase A2 (Lp-PLA2)
- Homocysteine

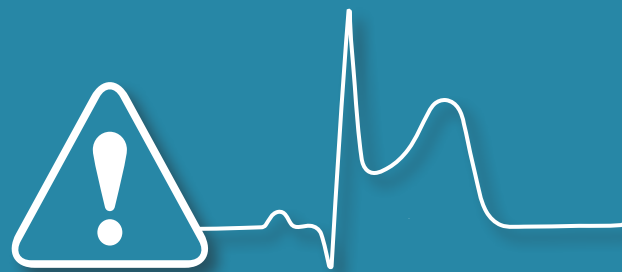
### Markers of myocardial damage

- High sensitivity cardiac troponin (hs-cTn)

## Conclusion

hs-cTn appears to have the potential of improving risk prediction when added to standard models due to its cardiac specificity and strong risk association with IHD/ CVD development.

Further research is needed to refine understanding around its use and see whether it could be a viable addition to CVD screening and risk stratification. This includes ensuring accessibility and that it is cost-effective across diverse economies.



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