

The screen interval for high cardiovascular disease risk should be individual

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According to a study published today by a Finnish-English research group, a switch from five-year screen intervals to individualized intervals could annually prevent 8 percent of myocardial infarcts and strokes

without increasing health care costs.

Current American Heart Association, European Society of Cardiology, and UK National Health Service guidelines recommend a five-year health check interval for screening of individuals at high cardiovascular [disease](#) risk. This health check covers measurement of a variety of risk factors including systolic blood pressure, cholesterol profile, blood glucose, and smoking status.

If lifestyle interventions are inadequate to reduce the risk, the guidelines recommend primary preventive medication such as statins. However, the five-year screenings are not based on direct research evidence.

According to a study published today in *The Lancet Public Health*, screening for high cardiovascular disease risk should be based on individual risk level. The authors conclude that this would be achieved without increased [health care costs](#). The study showed that current 5-year screening intervals were unnecessarily frequent for low-risk individuals and insufficiently frequent for intermediate-risk individuals.

"Our study shows that by optimizing the screening intervals, 8 percent of myocardial infarcts and strokes could be prevented without increase in health care costs. This means that during the next 20 years, in the English population aged now 40 to 64, the number of new myocardial infarcts or strokes prevented annually could reach 5000," says lead author Joni Lindbohm MD, Ph.D. from the University of Helsinki.

The authors estimated the optimal screening interval by following development of cardiovascular disease risk in 7000 English men and women who participated in the Whitehall II study. This study measured their cardiovascular disease risk factors according to the current guidelines in five-year intervals over a 22-year follow-up and collected data on cardiovascular diseases using national electronic [health](#) and death

records.

Those at low risk for cardiovascular diseases spent on average nine years in that risk category before moving to intermediate-low risk. The participants then spent on average 7 years in this next category before progressing to intermediate-high risk. However, the time spent in intermediate-high risk was only four years; after this, over 70 percent of participants progressed to the high-risk category that leads to consideration of preventive medication if lifestyle intervention is insufficient to reduce the risk.

An individualized screening interval would enable more effective cardiovascular disease prevention by means of lifestyle intervention or preventive medication, because of more timely detection of those at high risk.

"The results are promising, but national guidelines are rarely changed based on one study. The benefits of individualized [screening](#) intervals should be further studied in a randomized control trial before changing the guidelines emphasizes one of the authors, Professor Mika Kivimäki, Director of the Whitehall II study at University College London.

UK residents can determine their individual [cardiovascular disease](#) risk with the QRISK3 calculator that includes questions about age, sex, smoking, total cholesterol, HDL-cholesterol, [systolic blood pressure](#), antihypertensive medication, diabetes status, and variety of medical conditions.

More information: Joni V Lindbohm et al. 5-year versus risk-category-specific screening intervals for cardiovascular disease prevention: a cohort study, *The Lancet Public Health* (2019). [DOI: 10.1016/S2468-2667\(19\)30023-4](https://doi.org/10.1016/S2468-2667(19)30023-4)

The calculator is freely available from qrisk.org/three

Provided by University of Helsinki

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