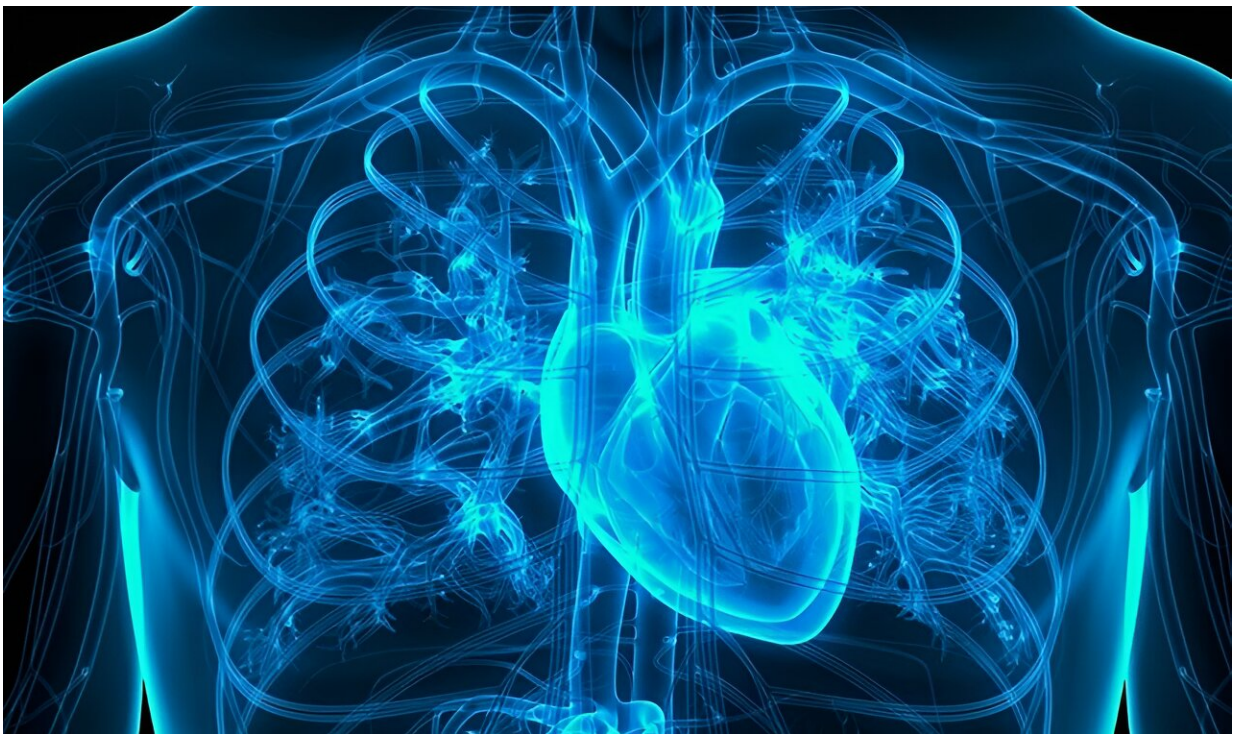


Deep-learning model based on chest X-ray helps predict MACE

March 26 2024, by Elana Gotkine



A deep-learning model based on a chest radiograph (CXR) for cardiovascular disease (CVD) risk (CXR CVD-Risk) predicts major

adverse cardiovascular events (MACE) beyond the clinical standard, according to a study [published](#) in the *Annals of Internal Medicine*.

Jakob Weiss, M.D., from Massachusetts General Hospital and Harvard Medical School in Boston, and colleagues developed and tested CXR CVD-Risk, which estimates 10-year risk for MACE from routine CXR, and compared the performance to that of the traditional atherosclerotic CVD (ASCVD) risk score. The CXR CVD-Risk model was developed using data from a cancer screening trial and was externally validated in 8,869 outpatients with unknown ASCVD risk and 2,132 outpatients with known ASCVD risk.

The researchers found that after adjustment for [risk factors](#), the 10-year risk for MACE was higher for those with a risk of 7.5% or higher as predicted by CXR CVD-Risk among 8,869 outpatients with unknown ASCVD risk (adjusted hazard ratio, 1.73). CXR CVD-Risk predicted MACE beyond the traditional ASCVD [risk score](#) in the additional 2,132 outpatients with known ASCVD risk (adjusted hazard ratio, 1.88).

"Opportunistic screening of CXRs may help identify individuals at high risk for [cardiovascular disease](#), prompting risk factor assessment and targeted prevention," the authors write.

More information: Jakob Weiss et al, Deep Learning to Estimate Cardiovascular Risk From Chest Radiographs, *Annals of Internal Medicine* (2024). [DOI: 10.7326/M23-1898](https://doi.org/10.7326/M23-1898)

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