

Machine learning for the diagnosis of acute coronary syndrome using a 12-lead ECG: a systematic review

ECG interpretation for acute coronary syndrome is difficult:

68.5% POOLED ACCURACY
(Up to 4% missed)



Question: Can machine learning (ML) help?

A systematic review was performed:



- P** Adults with symptoms concerning for ACS
- I** ML algorithms
- C** Clinicians or non-ML based software
- O** Diagnostic accuracy

X ML without comparator, unclear clinical context, non 12-lead ECG, ML algorithm using other clinical datas

Ten studies were included:



ACCURACY
ML was more sensitive but less specific than clinicians on non-ML-based software

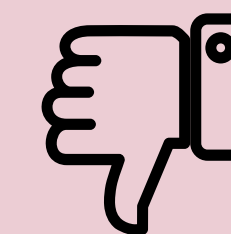
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NEXT STEPS

More rigorous primary research is needed to demonstrate ML benefit, as its popularity grows



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QUALITY OF EVIDENCE
Studies were heterogeneous and with limited sample sizes. Risk of bias in some studies is high.

Take Home Message: ML models can complement physician ECG interpretation, though use caution in relying solely on them.

Zwornth et al. *CJEM*. Oct 2023

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Infographic by: S Wilson, MD



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