

**A blood test threshold for
diagnosing heart failure
in general practice is
reviewed**

**School for
Primary Care
Research**

STUDY SUMMARY

NHS

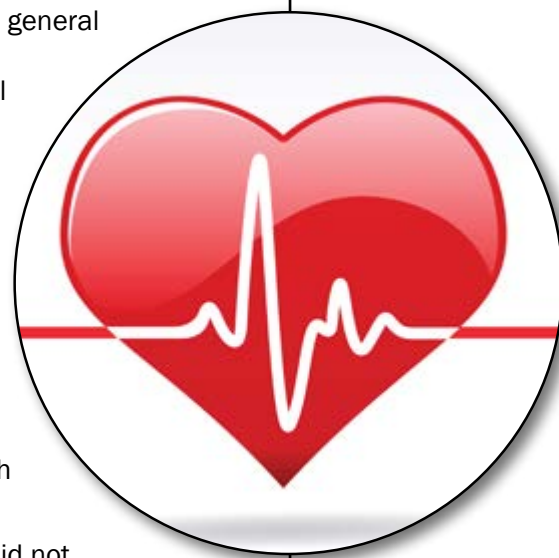
**National Institute for
Health Research**

Symptoms of breathlessness, fatigue, and ankle swelling are common in general practice but deciding which patients are likely to have heart failure is challenging. Researchers aimed to evaluate the performance of a clinical decision rule (CDR), with or without N-Terminal pro-B type natriuretic peptide (NT-proBNP) assay, for identifying heart failure.

The trial included a sample of people presenting to their GP with suspected heart failure. It aimed to see which method was best for identifying those who needed referral: the blood test alone; clinical decision rules based on clinical symptoms; or the combination of both.

The blood test alone at the 125 pg/ml cut-off correctly identified 94% of people with heart failure but led to 50% of people who did not have heart failure being referred for further investigation. This threshold is lower than the level currently recommended by NICE (≥ 400 pg/ml), which could miss up to one in five people.

Clinical decision rules used alone or in combination with the blood test did not improve detection rates. However, the lower cut-off would also mean that one in two people without heart failure would be referred for unnecessary expensive tests.



Primary care REFerral for Echocardiogram (REFER) in heart failure: a diagnostic accuracy study



Issue:

Symptoms of breathlessness, fatigue, and ankle swelling are common in general practice but deciding which patients are likely to have heart failure is challenging.

What we did:

We evaluated the performance of a clinical decision rule (CDR), with or without N-Terminal pro-B type natriuretic peptide (NT-proBNP) assay, for identifying heart failure.

Patients aged 55 years and over, presenting with shortness of breath, lethargy, or ankle oedema, from 28 general practices in England participated.

What we found:

At the low threshold of NT-proBNP <125 pg/ml, natriuretic peptide testing alone was better than a validated CDR+NT-proBNP in determining which patients presenting with symptoms went on to have a diagnosis of heart failure. The higher NT-proBNP threshold of 400 pg/ml may mean more than one in five patients with heart failure are not appropriately referred. Guideline natriuretic peptide thresholds may need to be revised.

Publication:

Primary care REFerral for Echocardiogram (REFER) in heart failure: a diagnostic accuracy study. Clare J Taylor, Andrea K Roalfe, Rachel Iles, FD Richard Hobbs. The REFER investigators, P Barton, J Deeks, D McCahon, MR Cowie, G Sutton, RC Davis, J Mant, T McDonagh and L Tait. Br J Gen Pract 2017; 67 (655): e94-e102. DOI: <https://doi.org/10.3399/bjgp16X688393>