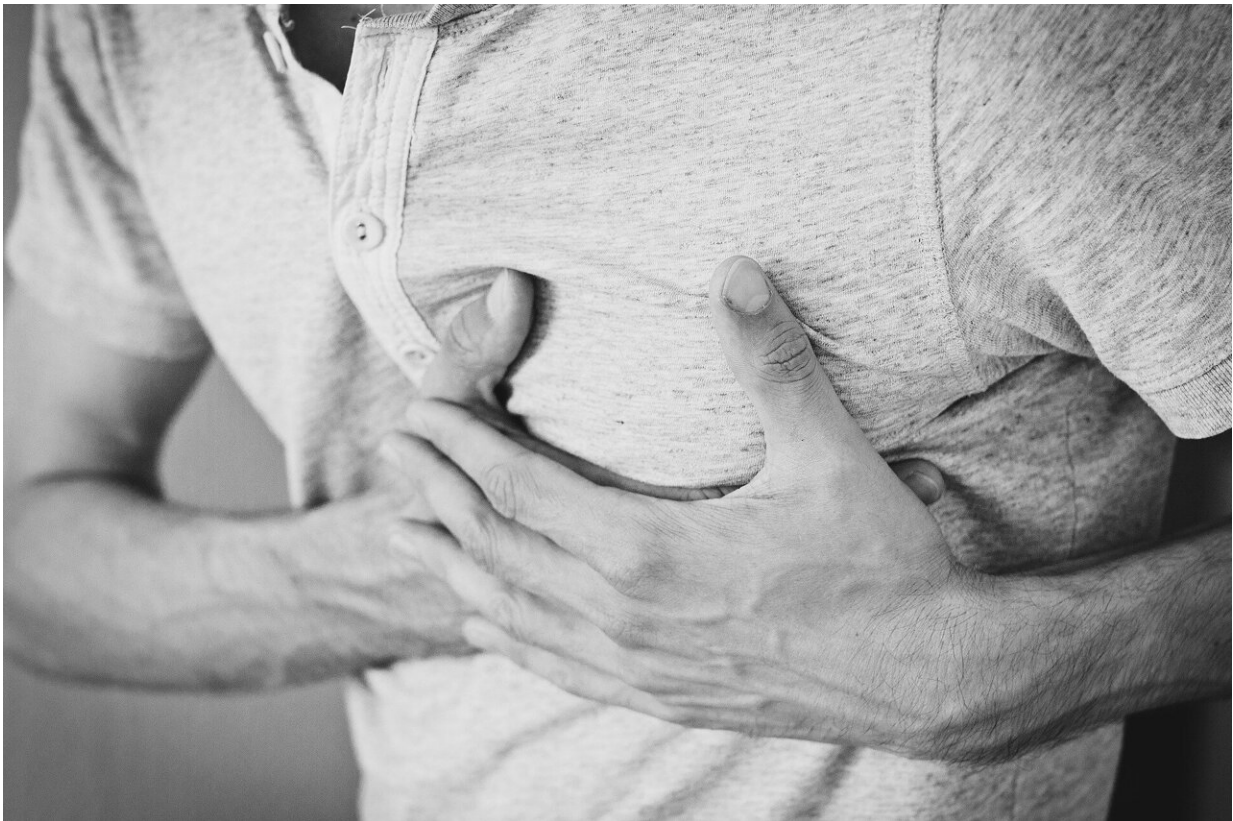


Act on mystery chest pain to reduce risk of heart attack, researchers urge

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Future heart attacks could be better prevented in people visiting their GP with unexplained chest pain, after Keele researchers developed the clearest picture yet of the factors that put them at higher risk. The research is published in the [*European Journal of Preventive Cardiology*](#).

It is estimated at least one million adults in the UK visit their GP because of [chest pain](#) every year. Despite undergoing tests, the cause will remain a mystery for many and they will not receive a diagnosis. Research has shown that people with this type of 'unattributed' chest pain are at higher risk of having future heart health problems than those without. Despite this, few receive preventative treatments.

Now, researchers at Keele University have identified the key risk factors that increase the likelihood of people with unattributed chest pain developing heart and circulatory diseases. The team hope their findings will help doctors to spot those at highest risk so they can offer preventative treatments, such as statins, and lifestyle advice to help stop future health problems like heart attacks before they strike.

The researchers developed risk calculators that would allow them to identify those at high risk of developing future heart and circulatory diseases and pinpoint the key factors influencing that risk.

These tools were developed and validated using anonymized information from the health records of over 600,000 people registered at GP practices in England who had unattributed chest pain between 2002 and 2018. All records used were linked to hospital and mortality data, allowing the researchers to track which patients went on to be admitted to hospital with [cardiovascular disease](#) or died. Median follow-up was at least five years.

This revealed that people with diabetes, [atrial fibrillation](#) (a common type of irregular heart rhythm) and treated [high blood pressure](#) were at highest risk of going on to develop heart and circulatory diseases.

Nearly half of those at highest risk smoked or were living with obesity. Modeling showed that if all current smokers living with obesity were supported to lose weight and quit smoking, the mean 10-year risk in this group would fall from nearly 22% to around 16%.

The research also suggests that GPs should be cautious about using current risk-prediction tools in this group, as they were shown to underestimate risk. When they compared their model to the existing QRISK3 risk calculator, the team found that one-third of the patients who had a 10-year risk of less than 10% according to QRISK3, had a more than 10% risk in their new model.

While more work will be needed if their risk calculator is to be used by doctors, the researchers say their findings highlight vital opportunities to identify those at highest risk of future heart and circulatory diseases and can help both doctors and patients to act early to stop these in their tracks.

Professor Mamas Mamas, Professor of Cardiology at Keele University and consultant cardiologist at University Hospitals of North Midlands NHS Trust, was one of the researchers involved in this study. He said, "Even without a diagnosis, chest pain should act as a warning sign that patients could benefit from taking steps to reduce their risk of future health problems.

"Here, we've shown that it is possible to identify people at high risk using just the information in their health records. We hope that these findings will be the first step towards better management of risk factors in this group, motivating patients to adopt a healthier lifestyle and

encouraging doctors to act early."

Professor Bryan Williams, chief scientific and medical officer at the British Heart Foundation, added, "Health data is a vital research resource that can transform how we address some of the biggest challenges in health care. By developing the clearest picture yet of factors that may put some people with mystery chest pain at greater risk, this research could help more people avoid future heart problems.

"At a time where the NHS is under extraordinary pressure, it's more important than ever to respond to early warning signs to prevent avoidable heart attacks and keep people well."

More information: Kelvin P Jordan et al, Determining cardiovascular risk in patients with unattributed chest pain in UK primary care: an electronic health record study, *European Journal of Preventive Cardiology* (2023). [DOI: 10.1093/eurjpc/zwad055](https://doi.org/10.1093/eurjpc/zwad055)

Provided by Keele University

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