

# Bleeding hearts predict future heart failure

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Credit: University of Glasgow

The amount a heart 'bleeds' following a heart attack can predict the severity of future heart failure, according to research presented today by a University of Glasgow academic at the British Cardiovascular Conference, in Manchester.

Bleeding, or bruising in the [heart](#), affects over 40 per cent of people who suffer from a heart attack. The researchers have now found that this injury is associated with a higher risk of developing [heart failure](#) in the months following a heart attack.

There are 188,000 hospital episodes attributed to heart attack in the UK each year – that's one around every three minutes. But although around 7 out of 10 people now survive a heart attack, many are left with heart failure.

The British Heart Foundation-funded study found that bleeding was linked to a 2.6 times greater risk of adverse remodelling, where the heart muscle changes shape, which is a precursor to heart failure. It is also linked to a six times greater risk of either death or heart failure following a heart attack.

The researchers also validated a test for use at the time of heart attack treatment to rule-in or rule-out heart muscle bleeding, and the likelihood of survival free of heart failure. This information would be useful to doctors to identify patients who are at risk of adverse outcome for more intensive treatment. The findings will pave the way to find new treatments to prevent bleeding following a heart attack and the subsequent onset of heart failure.

MRI imaging, a non-invasive scan, can be used after a heart attack to monitor heart muscle bleeding, which happens in phases. The first phase is in the 12 hours following a heart attack, and the second takes place within 2 to 3 days. This provides a window of opportunity to introduce treatments to prevent the second phase of bleeding, which could reduce or prevent the later onset of heart failure.

Over half a million people in the UK are living with heart failure. The most common cause of heart failure is a heart attack, which causes irreparable damage to the heart and leads to heart failure. The condition can leave people disabled with a poor quality of life, unable to do simple everyday tasks such as climb the stairs or go to the shops.

Professor Colin Berry, from the University of Glasgow, who led the

study said: "This research has provided us with a new understanding of [heart muscle](#) injury and how it develops. We can now focus our research on developing new treatments to reduce the level of this injury following a heart attack.

"The study has also presented a new way of identifying those at a higher risk of heart failure before the condition develops. This knowledge can be used to identify those most in need of interventions and monitoring earlier."

Professor Jeremy Pearson, Associate Medical Director at the British Heart Foundation, which funded the research, said: "Heart failure is an incurable condition which is associated with a reduced quality of life and a lower life expectancy. This exciting research has found a new characteristic related to heart attacks which could be used to treat people following a [heart attack](#), to cut their risk of developing heart failure.

"The British Heart Foundation is committed to funding research to cure heart failure, but this study represents a promising new opportunity to develop new treatments to prevent the onset of heart failure and reduce the burden of the disease."

Provided by University of Glasgow

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