

Genetic link to fatal health condition could aid future treatment

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Thousands of lives could be saved every year after it was discovered a fatal cardiovascular condition could be linked to four genes, research has found.

A 10-year project, led by a Leicester surgeon, looked at 10,000 people worldwide and found those who had suffered an abdominal aortic aneurysm (AAA) had four genes in common.

It is hoped that the findings could help doctors understand more about the condition, which can lead to fatal internal bleeding if left untreated.

Professor Matt Bown, a vascular surgeon from the University of Leicester and the NIHR Leicester Cardiovascular Biomedical Research Unit (BRU) and Honorary Consultant Vascular Surgeon, University Hospitals of Leicester NHS Trust, said: "Abdominal aortic aneurysm commonly affects the older population and can only be treated by surgery.

"Early detection is key to this condition which, if left untreated, can become a ticking time bomb for patients. Thousands of people die from burst AAAs each year yet about one in five men do not attend their free screening appointments so we can't detect if there may be a problem.

"The discovery of the four genes, which is the culmination of more than a decade of a global research effort, could help us determine those at risk much earlier. If we are able to do this, then we could potentially

save thousands of lives."

The research, which has been published in the journal *Circulation Research*, was funded by the Wellcome Trust and the British Heart Foundation (BHF) and supported by the NIHR Leicester Cardiovascular BRU.

It also involved institutions from New Zealand, South Africa, Poland, Belgium, The Netherlands, Iceland, Australia, Denmark, Italy, Saudi Arabia, Estonia, Germany, Sweden and the USA.

As part of the study, researchers compared the genes of people with AAAs to those without.

A new research programme, funded by the British Heart Foundation, will now investigate whether the four common genes affect the speed at which the AAAs grow.

In order to continue with their work, they are asking for men who have been found to have an AAA by screening to provide blood samples.

In the UK men aged 65 or over are invited to attend a free aneurysm screening appointment.

Professor Jeremy Pearson, Associate Medical Director at the British Heart Foundation, which part-funded the genetic study and is funding Professor Bown's current research programme, said: "The only available treatment for [abdominal aortic aneurysms](#) is surgery, which is expensive and can be risky. We desperately need to find new ways of treating aneurysms, but can only do so by learning more about how and why they grow.

"The discovery of four new [genes](#) associated with these aneurysms will

enable us to explore their function, and could provide a potential target for treatments.

Provided by University of Leicester

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