

Size really does not matter when it comes to high blood pressure

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Removing one of the tiniest organs in the body has shown to provide effective treatment for high blood pressure. The discovery, made by University of Bristol researchers and published in *Nature Communications*, could revolutionise treatment of the world's biggest silent killer.

The carotid body—a small nodule (no larger than a rice grain) found on the side of each [carotid artery](#)—appears to be a major culprit in the development and regulation of high blood pressure.

Researchers, led by British Heart Foundation (BHF)-funded researcher Professor Julian Paton, found that by removing the carotid body connection to the brain in rodents with high blood pressure, blood pressure fell and remained low.

Professor Paton, from Bristol's School of Physiology and Pharmacology, said: "We knew that these tiny organs behaved differently in conditions of hypertension but had absolutely no idea that they contributed so massively to the generation of high blood pressure; this is really most exciting."

Normally, the carotid body acts to regulate the amount of oxygen and carbon-dioxide in the blood. They are stimulated when oxygen levels fall in your blood as occurs when you hold your breath. This causes a dramatic increase in breathing and blood pressure until [blood oxygen levels](#) are restored. This response comes about through a nervous

connection between the carotid body and the brain.

Professor Paton commented: "Despite its small size the carotid body has the highest [blood flow](#) of any organ in the body. Its influence on blood pressure likely reflects the priority of protecting the brain with enough blood flow."

The team's work on carotid body research started in the late 1990's and their recent discovery has since led to a human clinical trial at the Bristol Heart Institute of which the results are expected at the end of the year.

Professor Paton added: "This is an extremely proud moment for my research team as it is rare that this type of research can so quickly fuel a human clinical trial. I am delighted that Bristol was chosen as a site for this important trial."

Professor Jeremy Pearson, Associate Medical Director at the BHF, which part-funded the research, said: "For around one in fifty people with high blood pressure, taking pills does not help their condition. This research, in rats, has found that blocking special nerve endings in the neck significantly reduces [blood pressure](#)."

"This breakthrough has already kicked-off a small trial to find out whether this treatment is safe and effective in people with [high blood pressure](#) resistant to medication. This potential new treatment has real promise to help this hard-to-treat group of patients."

More information: Paper: [dx.doi.org/10.1038/NCOMMS3395](https://doi.org/10.1038/NCOMMS3395)

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