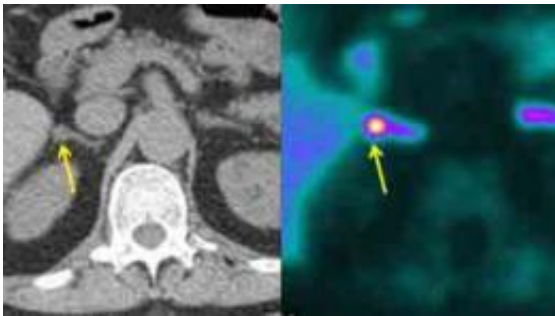


New test could help thousands of patients with high blood pressure

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Conn's adenoma. Credit: Morris Brown

A new test developed by researchers at the University of Cambridge could help doctors diagnose thousands of people with the most common curable cause of high blood pressure (hypertension). Research funded by the British Heart Foundation (BHF) and National Institute of Health Research (NIHR), showed a high-tech PET-CT scan could detect Conn's syndrome, which causes up to five per cent of hypertension cases.

Around 12 million people in the UK are diagnosed with [hypertension](#), a condition which greatly increases the risk of having a heart attack or stroke. For most people with hypertension there is no single underlying cause, but in a small minority there is a specific condition that causes [blood pressure](#) to rise. One of these conditions is called Conn's syndrome – the most common curable cause of high blood pressure.

Conn's syndrome is difficult to diagnose but an accurate diagnosis often leads to successful treatment. It's caused by a benign tumor called an adenoma – about the size of a 5-pence coin – in one of the adrenal glands, which lie close to the kidneys. The tumor causes the over-production of a key blood pressure-regulating hormone called aldosterone. It can be treated either by surgically removing an affected gland, or by using a drug to block the effects of aldosterone.

The new test, studied in 44 patients at Addenbrooke's Hospital in Cambridge, scans the abdomen using 'positron emission tomography with x-ray computer tomography' technology, better known as a PET-CT and more commonly used in cancer diagnosis. The researchers developed a special radioactive tracer called ^{11}C -metomidate, which lights up culprit adenomas in the scan. The test takes around 45 minutes.

The current standard test for Conn's syndrome relies on taking blood samples from a vein supplying the adrenal gland to measure the aldosterone level, a complex and difficult procedure which often fails to confirm the diagnosis. However, the researchers showed that their scan picked up adenomas causing hypertension in the majority of study patients, making it a potentially useful alternative to the standard test.

Morris Brown, Professor of Clinical Pharmacology at the University of Cambridge, who led the study, said: "We were excited to see our technique work so well, and shortcut the delays and discomforts associated with the alternative test. We're using PET-CT on our patients already, but we also plan a larger study to work out who will benefit the most. The test could be especially important for older patients – we often see growths in the adrenal glands during a routine [CT scan](#). Often these growths are not Conn's adenomas, but it's difficult to be sure and they create a lot of anxiety in patients and [doctors](#). In the future PET-CT could be a quick way to reassure a lot of patients without the need for detailed investigations."

Dr. Shannon Amoils, Research Advisor at the BHF, said: “Conn’s syndrome is the most common curable cause of high blood pressure. And although it affects only a small fraction of people with hypertension, it’s almost certainly more widespread than we previously thought. There are drugs that can control the [high blood pressure](#) caused by Conn’s syndrome, but the only cure is surgery, so making the diagnosis is very important. This new approach, using a PET-CT scan, offers real hope that more people with Conn’s syndrome will be accurately diagnosed in the future.”

Chris Wood, 56, who was diagnosed as having Conn’s syndrome by the new test, said: “When I had blood tests before, the results were never clear. I enrolled in Professor Brown’s study I had the scan, which took less than an hour, and immediately after the scan they showed me the pictures of the lump in my adrenal gland that was causing the problem. Getting the definitive diagnosis is fantastic because it removes all the worry, and because I’m on much much less medication than I had been for 15 years. I feel absolutely great.”

The study was published online in the *Journal of Clinical Endocrinology and Metabolism*.

Provided by University of Cambridge

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