

# Scientists discover a curable cause for some cases of high blood pressure

August 5 2013

---



Credit: jasleen\_kaur from flickr

Five per cent of high blood pressure cases are caused by small nodules on hormone gland; now scientists have developed a scan which enables rapid diagnosis.

Scientists have identified small, benign nodules in the hormone-producing adrenal gland which commonly cause high blood pressure (hypertension). If diagnosed at a young age, the nodules (small tumours) can be easily removed - avoiding the need for a life-time of [blood pressure drugs](#). The research was published today, 04 August, in the journal *Nature Genetics*.

Since the discovery of the adrenal gland hormone, aldosterone, at the Middlesex Hospital, London in the 1950's, adrenal tumours have been recognised as a rare cause of hypertension (diagnosed in fewer than 1 in 100 patients). Aldosterone stimulates the kidneys to retain more salt than is good for the body, and drives up blood pressure. More recent studies, in Brisbane, Australia and Padua, Italy, suggested that the adrenal tumours might be diagnosed in 1-in-20 patients, using CT scans to X-ray the [adrenal glands](#).

However, new research led by clinical pharmacologists from the University of Cambridge and Addenbrooke's Hospital found that there are smaller, [benign tumours](#), or nodules, that cause hypertension and which are not visible using traditional CT scans. They now estimate that these nodules are responsible for 5 per cent of high blood pressure cases.

The researchers used state-of-the-art gene sequencing to show that nine out of ten small nodules have gene mutations which allow excess sodium and calcium into the adrenal cells and stimulate excess production of the aldosterone hormone. These mutations proved that the small nodules are a real hypertension-causing phenomenon. Additionally, the Cambridge team developed a modified PET-CT scan which enables the rapid diagnosis of these hormone-secreting nodules which are too small to see on a standard CT scan.

Morris Brown, Professor of Clinical Pharmacology from the University of Cambridge and Honorary Consultant Physician at Addenbrooke's Hospital, said: "This tremendous collaboration among laboratories in four European countries illustrates how gene technology can be used to identify specific causes for common diseases which can now be cured rather than requiring life-long drug treatment."

Professor Jeremy Pearson, Associate Medical Director at the British Heart Foundation (BHF), which part-funded the study, said: "Standard

techniques are limited for detecting small adrenal nodules. But this brand-new combination of genetic testing and high-tech scanning will allow clinicians to work out quickly and accurately if someone has high blood pressure as a result of these problems with their adrenal gland.

"It is an exciting development, as this group of patients can be completely cured of high [blood pressure](#) once they have been identified, so the quicker they are diagnosed the better."

**More information:** *Nature Genetics* (2013) doi:10.1038/ng.2716

Provided by University of Cambridge

Citation: Scientists discover a curable cause for some cases of high blood pressure (2013, August 5) retrieved 18 April 2024 from <https://medicalxpress.com/news/2013-08-scientists-curable-cases-high-blood.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.