**Discovery of blood pressure genes could help prevent heart disease**

by Sam Wong   
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**Two major studies published this week in** [***Nature***](http://www.nature.com/nature/journal/vaop/ncurrent/full/nature10405.html) **and** [***Nature Genetics***](http://www.nature.com/ng/journal/vaop/ncurrent/full/ng.922.html) **have identified a total of 23 gene regions associated with measures of blood pressure.**

**The findings, from the International Consortium for Blood Pressure Genome-Wide Association Studies, represent a major advance in our understanding of the inherited influences on blood pressure and offer new potential therapeutic targets for prevention of heart disease and stroke – the biggest cause of death worldwide.**

[Around a billion people worldwide have hypertension](http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_4-2-2011-9-39-0), defined as a systolic blood pressure above 140 millimetres of mercury (mmHg) or a diastolic blood pressure above 90 mmHg.

So far, genetic studies have looked for variants associated with these measures of blood pressure, but other measures are also predictive of hypertension and heart disease.

Pulse pressure is the difference between systolic and diastolic pressure and mean arterial pressure is a weighted average of the two.

The new study [published in Nature Genetics](http://www.nature.com/ng/journal/vaop/ncurrent/full/ng.922.html), led by scientists from Imperial College London, the University of Leicester and Erasmus University Medical Centre in Rotterdam, has identified four gene regions associated with pulse pressure, two linked with mean arterial pressure and one with both traits.

The analysis was based on data from over 120,000 people of European ancestry in 35 previous studies.

[Professor Paul Elliott](http://www1.imperial.ac.uk/medicine/people/p.elliott/), from the [School of Public Health](http://www1.imperial.ac.uk/publichealth/) at Imperial College London, said: "Pulse pressure is a marker of the stiffness of the arteries that carry blood from the heart round the body.

Our results could help understanding about the genetic mechanisms underlying relationships of pulse pressure with risk of heart disease and stroke."

A study of over 270,000 people by the same consortium [published in Nature](http://www.nature.com/nature/journal/vaop/ncurrent/full/nature10405.html) has identified 16 gene regions associated with systolic and diastolic blood pressure.

The combined effect of these variations on blood pressure is similar to the effect of a standard blood pressure-lowering medicine.

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