

## Five new genes linked to Alzheimer's

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Scientists said Sunday they had uncovered five genes linked to the onset of Alzheimer's disease, doubling the number of genetic variants known to favour the commonest form of dementia.

The findings, published in the journal *Nature Genetics*, may provide clues on the causes of this incurable and complex disease and help doctors predict who is most at risk, they said.

In the largest such studies to date, some 300 scientists in two consortia combed the genomes of 54,000 people -- some afflicted, others not -- to tease out the newly identified genetic variations.

The two projects started out independently but later swapped their data, enabling each group to confirm the overall findings.

"Prior to these studies, there were five accepted late-onset [genes](#)," said Gerard Schellenberg, a researcher at the University of Pennsylvania School of Medicine and the main architect of one of the studies.

"Now there are five more -- MS4A, ABCA7, CD33, EPHA1 and CD2AP," he said in an email exchange.

Identifying which snippets of DNA contribute to Alzheimer's boosts our understanding of the role of inheritance in its onset, Schellenberg said, adding that others surely remained to be found.

But, he added, "the biggest contribution will be in helping to understand

the underlying mechanism that causes Alzheimer's. These genes highlight new pathways that are critical to the disease process."

Over the course of the illness, unwanted proteins form plaque in some areas of the brain, ultimately destroying neurons and leading to irreversible brain damage. Typically, symptoms include [memory loss](#), erratic behaviour and eventually full-on [dementia](#).

The ultimate aim, said Schellenberg, is creating drugs that can stop or even prevent this progression.

Toward that goal, "molecular biologists who work on disease mechanisms now need to figure out exactly how these new genes plug into the Alzheimer's process," he said.

Current treatments, he added, are only "marginally effective" in masking symptoms or slowing the disease's inexorable advance.

Alzheimer's affects 13 percent of people over 65, and up to 50 percent of those over 85.

As populations in rich countries age, the number of sufferers worldwide is set to double to more than 65 million by 2030, placing a huge burden on health care systems, experts forecast.

Ninety percent of Alzheimer's cases are so-called "late-onset", affecting people over the age of 65. The likelihood of developing this form doubles every five years.

**More information:** 'Common Variant at ABCA7, MS4A6A/MS4A4E, EPHA1, CD33 and CD2AP are associated with Alzheimer's disease' is published in *Nature Genetics*.

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