

Specific IQ genes still elusive, latest hunt finds

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John Olsen shows a picture himself with his biological mother Pat Holmes at his home in Orange Calif. on Monday, August 8, 2011. Olsen, who was adopted at birth, attributes his brainpower to his genes. In his late 20s, Olsen took a genius test and scored high enough to get accepted into Mensa, the high IQ group. (AP Photo/Nick Ut)

(AP) -- Scientists who hunt for "intelligence genes" used to think there were fewer than half a dozen of them.

In recent years, they determined there may be at least 1,000 - each with just a tiny effect on the differences in people's IQ. A study released Tuesday found new evidence that many genes play a role in [intelligence](#), but scientists still couldn't pinpoint the specific genes involved.

"It's been kind of a shock to the system that it hasn't worked," said psychologist Eric Turkheimer at the University of Virginia, who had no role in the study. "We can't find the effects of any individual genes that are large enough to seem worth worrying about."

Previous work involving twins and adopted children has found that genes have a significant influence on differences in IQ scores, producing about half the difference between adults in general. The influence of genes on IQ appears to grow from childhood to [adulthood](#).

Scientists have come to realize that, as with height, differences in intelligence come not from a few genes, but rather the overall effect of many genes, each with only tiny influence. That makes them hard to tease out.

The new DNA study, reported online Tuesday in the journal [Molecular Psychiatry](#), came to similar conclusions. Many genes work together to shape intelligence much like the different instruments of an orchestra that play in sync. Unless there's a soloist playing, it's often difficult to decipher the contributions of individual instruments.

As important as genes are in determining intelligence, they don't act alone and the role of one's upbringing and experiences cannot be ignored.

So why do researchers care so much about the relationship between genes and intelligence?

Our memory, [reasoning skills](#) and thinking abilities tend to decline as we age, some faster than others. Understanding the genetics of intelligence may someday help researchers gain a better handle on mind-robbing diseases such as Alzheimer's.

The new work was done by I.J. Deary of the University of Edinburgh in Scotland and colleagues in several countries.

The team wanted to find out "whether [genetic](#) differences that we could test on people's DNA could explain some of the reasons that people have different intelligence test scores," Deary said in an email.

Researchers didn't ID any genes affecting IQ. But they estimated that they found a genetic influence that accounts for at least 40 percent to 50 percent of the differences on intelligence test scores in the 3,511 unrelated adults in their study who were tested on knowledge and problem-solving skills.

They focused on more than 500,000 places in the participants' DNA, looking for evidence that IQ-influencing genes lay close to those places. They concluded that the overall effect was coming from many scattered genetic differences, each of only small influence.

The latest work adds to evidence that even the most powerful of these has only weak influence. Deary said that future studies will probably need to involve millions of people to detect the genetic effects.

Robert Plomin of the Institute of Psychiatry in London, who's looked for intelligence-related genes for 15 years but didn't participate in the new study, isn't surprised by the latest findings.

"We've got a century of twin and adoption studies," such as those comparing twins reared in different families, that support the notion that

about half of IQ differences come from DNA, he said.

Plomin said this doesn't mean half of a person's intelligence is due to genes nor does such a genetic influence imply that a person's intelligence is fixed.

Turkheimer, the Virginia psychologist, thinks other types of research such as brain scans might have better luck in understanding what intelligence is.

Those methods are better than "pinning your hopes on adding together a bunch" of small effects from individual genes, he said.

John Olsen, of Orange, Calif., who was adopted at birth, attributes his brainpower to his [genes](#). As a kid, he always wondered where his inquisitiveness came from. School bored him and there were no lively debates at the dinner table growing up.

"I was a bit of a challenge," he recalled. "I was very curious and like a lot of intelligent people always asked, 'Why?'"

In his late 20s, Olsen took a genius test and scored high enough to get accepted into Mensa, the high IQ group. A telephone call from a long-lost aunt several years ago led to a reunion with his biological mother.

Olsen soon discovered his mother had the same curiosity and liked to ask probing questions. He also learned his maternal grandmother was fond of one-line comebacks and "was wickedly smart till the day she died."

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