

Sexual Identity Hard-Wired by Genetics - Study

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LOS ANGELES (Reuters) - Sexual identity is wired into the genes, which discounts the concept that homosexuality and transgender sexuality are a choice, California researchers reported on Monday.

"Our findings may help answer an important question -- why do we feel male or female?" Dr. Eric Vilain, a genetics professor at the University of California, Los Angeles School of Medicine, said in a statement. "Sexual identity is rooted in every person's biology before birth and springs from a variation in our individual genome."

His team has identified 54 genes in mice that may explain why male and female brains look and function differently.

Since the 1970s, scientists have believed that estrogen and testosterone were wholly responsible for sexually organizing the brain. Recent evidence, however, indicates that hormones cannot explain everything about the sexual differences between male and female brains.

Published in the latest edition of the journal *Molecular Brain Research*, the UCLA discovery may also offer physicians an improved tool for gender assignment of babies born with ambiguous genitalia.

Mild cases of malformed genitalia occur in 1 percent of all births -- about 3 million cases. More severe cases -- where doctors can't inform parents whether they had a boy or girl -- occur in one in 3,000 births.

"If physicians could predict the gender of newborns with ambiguous genitalia at birth, we would make less mistakes in gender assignment," Vilain said.

Using two genetic testing methods, the researchers compared the production of genes in male and female brains in embryonic mice -- long before the animals developed sex organs.

They found 54 genes produced in different amounts in male and female mouse brains, prior to hormonal influence. Eighteen of the genes were produced at higher levels in the male brains; 36 were produced at higher

levels in the female brains.

"We discovered that the male and female brains differed in many measurable ways, including anatomy and function." Vilain said.

For example, the two hemispheres of the brain appeared more symmetrical in females than in males. According to Vilain, the symmetry may improve communication between both sides of the brain, leading to enhanced verbal expressiveness in females.

"This anatomical difference may explain why women can sometimes articulate their feelings more easily than men," he said.

The scientists plan to conduct further studies to determine the specific role for each of the 54 genes they identified.

"Our findings may explain why we feel male or female, regardless of our actual anatomy," said Vilain. "These discoveries lend credence to the idea that being transgender --- feeling that one has been born into the body of the wrong sex -- is a state of mind.