Is Perfect Pitch All in the Genes?

Study suggests genetics may be behind ability to know the tone of a musical note.

- *E-mail this article*
- *Subscribe to news*
- *Printer friendly version*

By Ed Edelson
HealthDay Reporter

(SOURCES: Jane Gitschier, Ph.D., professor of medicine, University of California, San Francisco; Diana Deutsch, Ph.D., professor of psychology, University of California, San Diego; Aug. 27-31, 2007, *Proceedings of the National Academy of Sciences*)

THURSDAY, Aug. 30 (HealthDay News) -- A Web-based do-it-yourself study has found evidence for a possible genetic basis for absolute pitch, the rare ability to identify the pitch of a musical note without other notes as reference, researchers report.

"We asked, 'What is the chance that a sibling of a person with absolute pitch also has absolute pitch?', " said study lead author Jane Gitschier, a professor of medicine at the University of California, San Francisco. "Both in our study and others, there appears to be an eight- to 14-fold increase in the likelihood. Our goal is to get at what the genes are."

To reach that goal, Gitschier and her colleagues are asking participants who demonstrate what musicians prefer to call absolute pitch -- rather than perfect pitch -- to send in samples of their DNA to aid in the search for the purported genes.

Most people have so-called "relative pitch" and are able to identify a pitch when it is surrounded by pitches at nearby levels. Among musicians, Mozart was said to have had perfect pitch, allowing him to copy the works of other composers in his childhood years.

The new study, published in this week's *Proceedings of the National Academy of Sciences*, covers data from 2,213 people who went to the Web site of the University of California Genetics of Absolute Pitch Study. They were asked to identify both pure tones from a synthesizer and piano tones, and also to complete an accompanying survey. Of those who filled all the requirements, 981 were found to have perfect pitch, Gitschier said.

One expected finding from the study is that pitch perception changes with age, as older people err in the "sharp" direction, she said.

"We also discovered that in the subjects who entered the study, absolute pitch appears to be an all-or-none phenomenon," Gitschier said. "People are either really good at it or not good at all."

But the study's design hits a sour note with Diana Deutsch, a professor of psychology at the University of California, San Diego, who has done extensive research on perfect pitch. Her basic criticism is the lack of controls built into the study.

"There were no controls for dishonesty. A person who did the study could be sitting by a synthesizer," Deutsch said.

Also, "they [the researchers] didn't control for language," she said. "My articles have shown that language is important, particularly tonal languages such as Mandarin. Japanese also relies on pitch to alter meaning, as do certain dialects of Korean."

The genetic link is also suspect in Deutsch's eyes. "People who have a strong family background in music are more likely to acquire perfect pitch," she said. "Certainly, the matter of family background is important."

Whatever its cause, perfect pitch fascinates many people. Gitschier said, adding that she has been inundated with inquiries about the study.

More information

The study is continuing, and you can participate by going to the Web site of the University of California, San Francisco. EXIT Disclaimer

stories. For more information on health topics in the news, visit the healthfinder.gov health library.

National Health Information Center
P.O. Box 1133, Washington, DC 20013-1133