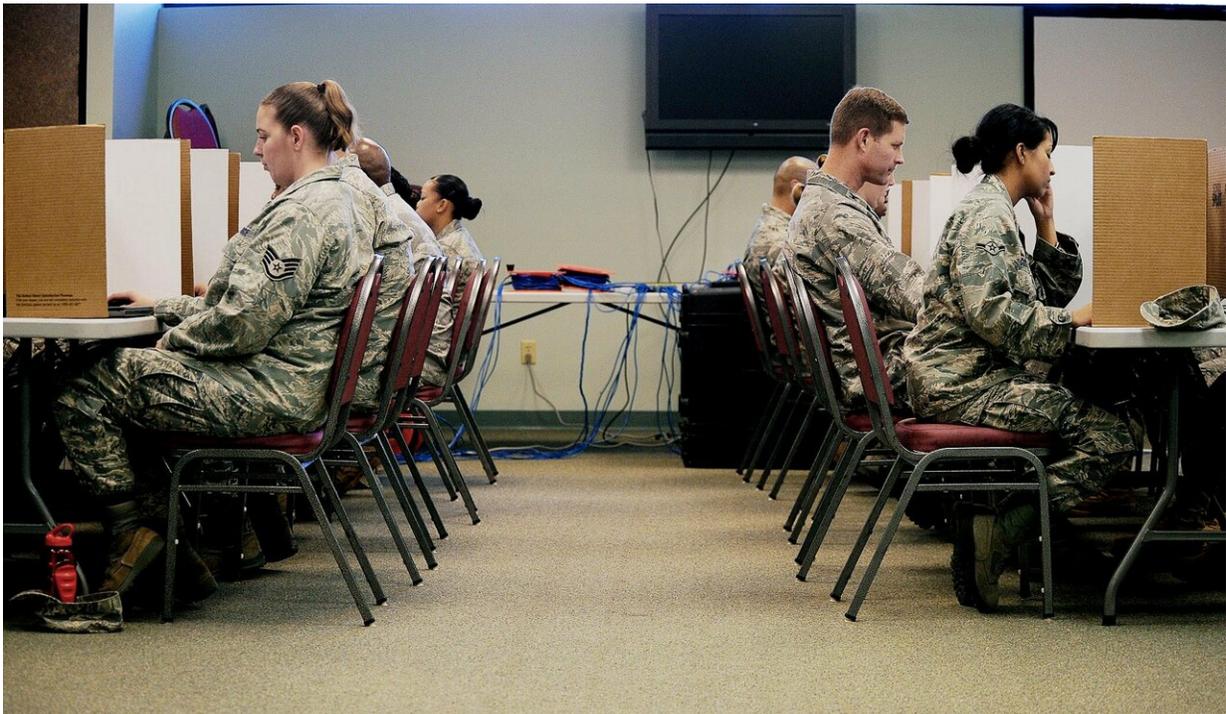


# Genetic test for cognitive performance developed by Air Force

March 21 2019, by Troy Carter

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Airmen test their memory skills at Moody Air Force Base before deploying.  
Credit: Joshua Green/Air Force

A research psychologist at the Air Force Research Laboratory can predict your mental performance from a cheek swab or blood sample.

Kevin D. Schmidt of the 711th Human Performance Wing invented the

new tool, which compares a snip of the person's FTCD gene (formimidoyltransferase cyclodeaminase) against a [cognitive model](#) that includes data from visual memory tests.

Scientific studies have associated the C allele of the rs914246 [single nucleotide polymorphism](#) in the FTCD gene with improved working memory performance of younger people, ages 18 to 27 years.

FTCD is an enzyme that helps our bodies create amino acid glutamate and vitamin folate, which are neurotransmitters critical for brain adaption, spatial learning, and overall cognitive ability.

Based on the results of the test, the person could be prescribed dietary supplements of folate or glutamate, cognitive exercises, or an improvement modification of the person's DNA using the CRISPR/Cas9 gene-editing technique.

The invention was made public in a [U.S. patent application](#) on Thursday filed by the Air Force. The document included data and analysis from testing 642 human subjects and a detailed description of genetic profiling methods.

In coordination with the Air Force technology transfer office, TechLink, the Department of Defense's partnership intermediary, is helping [private companies](#) understand how they can turn the invention into new products.

Through licensing agreements, businesses can obtain the intellectual property rights to make and sell the test to military and commercial customers.

Joan Wu-Singel, senior technology manager at TechLink, has been helping companies license inventions in the 711th Human Performance

Wing's sizeable patent portfolio for several years.

She said the DNA test clearly had value in the civilian marketplace.

"People who can process and retain information better than their peers can be put in jobs that require fast thinking and complex problem-solving, or it can be used as a diagnostic for training and diet," Wu-Singel said. "It's another tool in the chest for recruiters who have to find the best candidates."

Provided by TechLink

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