

Were You Born To Be a Sports Star?

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Article

CHICAGO, Illinois (Achieve3000, April 27, 2011). Were you born to be an elite athlete? Makers of a genetic test claim that for less than \$200, they can answer that question. But could such an analysis negatively affect the ambitions of hopeful sports superstars?

In recent years, scientists have identified several genes—in particular one called ACTN3—that may play a role in determining athletic performance. A variant form of ACTN3 triggers the production of a protein that affects fast-twitch muscle activity and has been linked with quick bursts of strength. These qualities are important for activities such as sprinting.

A handful of companies advertise mail-order test kits for determining whether children possess this variant form of ACTN3. The test kit sold online by Atlas Sports Genetics (ASG) costs \$169. It consists of two swabs. Customers use the swabs to scrape cells from the inside of the cheek. Customers mail back the used swabs and receive the results several days later. Nat Carruthers is ASG's operations president. According to Carruthers, the company has sold several hundred test kits since it began advertising them in 2008.

Bradley Marston of Bountiful, Utah, is an ASG customer. Marston purchased the test for his 10-year-old daughter Elizabeth. Elizabeth has played soccer since age 4 and has exceptional on-field skills. Marston was curious to learn whether his daughter possessed the variant form of ACTN3. However, Marston was concerned about getting a negative test result. He feared his talented daughter might give up her dream of someday becoming an Olympic athlete.

"She told me, 'Well, Daddy, I'd just have to try harder,'" Marston said, and so he went ahead with the test.

Marston was cautious in his approach to the test. He carefully prepared his daughter for whatever the results might reveal. But is such an analysis a good idea for everyone?

Supporters of the test, including advertisers of the product and many parents, say the answer is yes. They claim that the test can help parents steer their children toward sports that require the quick bursts of strength triggered by ACTN3.

"Our goal is to help people become the athlete they were born to be," said ASG's Carruthers.

But skeptics disagree. They argue that the test raises ethical questions. The results could potentially rob perfectly capable youngsters of a chance to enjoy activities of their choice. These may be non-athletic activities or sports that do not require those quick bursts of strength.



Photo credit: AP Photo/George Frey

A new genetics test can help parents determine whether their kids are likely to be skilled at certain sports.

"This is recreational genetics with a real serious potential for harm," said pediatrician Dr. Lainie Friedman Ross. "People are going to think, 'If my kid has this, I'm going to have to push real hard. If my kid doesn't have it, I'm going to give up before I start,'" Ross said. Instead, she said, parents should "let kids follow their dreams."

Skeptics also argue that the science of how genes influence athletic ability is in its infancy and that advertisers' claims are based on gross assumptions. University of Maryland researcher Stephen Roth specializes in genetics. Roth has studied ACTN3 and found that roughly 80 percent of people worldwide possess the variant form of the gene that affects muscle activity. However, a tiny percentage of these people become elite athletes. This fact underscores that it takes more than genes to make a sports star. In addition, some of the people who lack the gene variant *do* excel in sports, Roth said. He cited a Spanish long jumper who made it to the Olympics despite not having the variation of the gene.

As for Elizabeth Marston, her test showed that she does in fact possess the quick-strength variant of ACTN3. The young soccer player is happy with the results. Still, she knows it will take more than genes to attain her goal of competing in the Olympics.

"I think I would have to train hard," Elizabeth said.

The Associated Press contributed to this story.

Dictionary

elite (*adjective*) best of a group

ethical (*adjective*) having to do with what is right and what is wrong

negatively (*adverb*) in a bad way

skeptic (*noun*) a person who doubts

variant (*adjective*) relating to something that differs slightly from what is normal