

Study: Growth hormone can aid athletic performance

May 3 2010, By STEPHANIE NANO , Associated Press Writer

(AP) -- Researchers are reporting the first scientific evidence that a hormone banned in sports can boost athletic performance.

The improvement from human [growth hormone](#) was modest, and only in sprinting. It didn't increase strength or fitness. Athletes likely to benefit are those in sprint events like running or swimming that require a burst of energy, and where a split second can decide the winner, the Australian researchers said.

Human growth hormone, or HGH, is one of many substances banned by the Olympics and other sports even though there hasn't been any good proof that it can enhance performance. Previous studies in athletes have been small and brief.

The new research tested it in about 100 recreational athletes for two months.

"This is the first demonstration that growth hormone improves performance and justifies its ban in sport," said Dr. Ken Ho, who led the study at the Garvan Institute of Medical Research in Sydney.

Human growth hormone is made by the [pituitary gland](#) and promotes growth of bone and other tissue. A manufactured version is available, but its use is restricted to certain conditions in children and adults, including short stature, growth hormone deficiency and wasting from AIDS.

Growth hormone has been used by athletes in the belief that it builds muscle and improves performance. It's also harder to detect than other substances because it doesn't show up in urine tests. There's been a [blood test](#) for growth hormone since 2004, but it hasn't been used much outside competition.

In February, a British rugby player became the first athlete to be suspended for using growth hormone after he was tested. A few baseball players have admitted using growth hormone, including former home run king Mark McGwire who recently apologized for using it during his career.

The latest research involved 103 male and female recreational athletes between 18 and 40. For two months, they got injections of either growth hormone or salt water. Some of the men also got testosterone, which is also banned in sports and often used with growth hormone.

They lifted weights, jumped and rode exercise bikes to test their physical performance. Growth hormone didn't improve strength, power or endurance, the researchers said. The only improvement was for sprinting on a bicycle, a 4 percent increase in sprint capacity compared to those who didn't get the hormone. In men who also got testosterone shots, there was an 8 percent increase.

The researchers speculated that the boost from growth hormone alone is enough to shave off about half a second in a 10-second sprint over 100 meters. That little time "divides the winner from the last place finisher," said Ho.

The study volunteers who took growth hormone lost body fat and gained lean body mass, but it was mostly from water retention, not from bulking up muscle, the researchers reported in Tuesday's issue of the *Annals of Internal Medicine*.

Side effects included swelling and joint pain.

The researchers noted some limitations. They couldn't test the hormone in elite athletes for ethical reasons, and they used a smaller dose for a shorter time than reported for illegal use. Larger doses and longer use might have more impact and more serious side effects, they said.

"It's not a trivial thing to do a study like this. I think they did a very good job," said Dr. Andrew Hoffman of Stanford University, who was involved in a 2008 review of growth hormone research.

The director general of the World Anti-Doping Agency, which helped pay for the study, said the results aren't surprising to him and will disprove skeptics who don't think the hormone helps.

"There's been a huge amount of anecdotal evidence to indicate that it is of advantage, and a huge number of athletes have used it," said David Howman in a teleconference from Montreal.

Dr. Gary Wadler, who heads the committee that decides the agency's banned-substances list, said growth hormone usually isn't used alone. He said he's concerned that athletes will use the small boost from growth hormone to keep their testosterone use below detectable levels.

More information: WADA: <http://www.wada-ama.org/>
Annals: <http://www.annals.org/>

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