



St Vincent's Hospital



## **First scientific study showing effects of growth hormone on athletes**

**Embargoed until 5:00 pm US Eastern time on 3 May (7:00 am on 4 May Sydney time)**

Australian researchers have published the results of a study, for the first time showing a positive effect of growth hormone on athletic performance.

It showed a .4 second improvement in a 10-second sprint, enough to turn a last-place Olympic athlete in a sprint event – running or swimming - into a Gold medal winner.

The study justifies growth hormone being a banned substance, even though evidence of its performance enhancing effect has been very poor until now.

Growth hormone, produced naturally in the body, is important for growth and metabolism. Injectable growth hormone is available for people who have growth hormone deficiency. Many athletes use the drug because they believe that it bulks up their muscles and improves their physical performance (growth hormone "doping"). Until this study, no scientific research had been undertaken to show that growth hormone improves physical performance.

Researchers at Sydney's Garvan Institute of Medical Research demonstrated that growth hormone increases an athlete's ability to sprint on a bicycle, but has no effects on fitness, weight lifting or jumping. The effect on sprint capacity nearly doubled in men who received testosterone injections in addition to growth hormone supplementation.

The study looked at 103 healthy recreational athletes, aged 18 to 40 years, who had engaged in regular athletic training for at least a year. It was double-blind and placebo-controlled, meaning that neither the investigators nor the participants knew who was receiving the drug or dummy injections (salt water).

Professor Ken Ho, head of pituitary research at Garvan, as well as Chairman of the Department of Endocrinology at St. Vincent's Hospital, undertook the project with Drs Udo Meinhardt and Anne Nelson, as members of a larger team. Their findings are published today in the prestigious international journal, *Annals of Internal Medicine*.

"Those athletes given growth hormone improved their sprint capacity by 4-5%," said Professor Ho.

"Growth hormone recipients did not increase their muscle mass. They did, however, retain body fluid and experienced swelling and joint pain, unlike those who received salt water injections."

“We used lower doses of growth hormone than athletes are reported to use, and for a shorter time. We can speculate, therefore, that the drug's effects on performance might be greater than shown in this study, and its side effects might be more serious.”

“In conclusion, growth hormone increases athletic sprinting when given alone or in combination with testosterone. This is the first demonstration of improvement in a selective aspect of physical performance with growth hormone. We believe that this effect may bring a competitive advantage to athletes engaging in sprint events.”

This work was funded by the World Anti-Doping Agency.

## **ABOUT GARVAN**

The Garvan Institute of Medical Research was founded in 1963. Initially a research department of St Vincent's Hospital in Sydney, it is now one of Australia's largest medical research institutions with nearly 500 scientists, students and support staff. Garvan's main research programs are: Cancer, Diabetes & Obesity, Immunology and Inflammation and Neuroscience. Garvan's mission is to make significant contributions to medical science that will change the directions of science and medicine and have major impacts on human health. The outcome of Garvan's discoveries is the development of better methods of diagnosis, treatment, and ultimately, prevention of disease.

## **MEDIA ENQUIRIES**

Alison Heather  
Science Communications Manager  
Garvan Institute of Medical Research  
+61 2 9295 8128  
+61 434 071 326  
a.heather "at" garvan.org.au

OR

David Faktor,  
Manager Public Affairs & Communications  
St Vincents & Mater Health  
+61 2 8382 2866  
+61 405 497 510  
dfaktor@stvincents.com.au