

Growth Horm IGF Res. 2009 Aug;19(4):369-74. Epub 2009 May 30.

Detection of GH abuse in sport: Past, present and future.

Barroso O, Schamasch P, Rabin O.

Science Department, World Anti-Doping Agency (WADA), 800 Place Victoria, Montreal, Quebec, H4Z 1B7, Canada. osquel.barroso@wada-ama.org

Due to its considered performance enhancing effects, human growth hormone (hGH) is abused as a doping agent in sport. Its misuse also carries potentially serious side effects to a person's health. Consequently, hGH and its releasing factors are prohibited in sport, as established in the Prohibited List which is updated and published yearly by the World Anti-Doping Agency (WADA). In order to fight the menace that hGH doping poses to the spirit of sport and to the health of athletes, the sport movement and the anti-doping authorities, initially led by the International Olympic Committee (IOC) and later by WADA, have put substantial efforts into developing tests for its detection. Currently, a primary analytical approach, the isoform differential immunoassay, has been implemented in WADA-accredited laboratories. In parallel, a second, indirect approach for the detection of hGH abuse, based on the quantification of hGH-associated biological markers, has been developed. The final aim is to combine both methodologies to improve the sensitivity and expand the time window to detect doping with hGH. In addition, novel analytical procedures, based on proteomic and genomic technologies as well as the use of mass spectrometry-based methods of detection, are being investigated for future application in hGH anti-doping tests.

PMID: 19482501 [PubMed - indexed for MEDLINE]