

# INSULIN-LIKE GROWTH FACTOR (IGF-1)

## What is Insulin-like Growth Factor (IGF-1)?

IGF-1 is a naturally occurring growth factor or hormone that stimulates many processes in the body. It is the hormone through which human growth hormone (hGH) exerts most of its growth promoting effects.

IGF-1's chemical structure is similar to that of insulin, so in very high quantities it can produce the same effects as insulin (such as low blood sugar, or 'hypoglycaemia').

IGF-1 is legitimately produced for research purposes and is used by pharmaceutical companies to stimulate cell growth in cell cultures. Some overseas pharmaceutical companies have also been trialing the use of IGF-1 for human therapeutic purposes, however some clinical trials have been discontinued because of significant side effects.

It is illegal to use IGF-1 without a prescription in Australia. IGF-1 is banned under the Olympic Movement's *World Anti-Doping Code Prohibited Classes of Substances and Prohibited Methods*.

## What are the perceived benefits?

It has been reported that some athletes use IGF-1 in an attempt to increase muscle bulk, reduce muscle cell breakdown and reduce body fat in the belief it will have the same effects as insulin in insulin-dependent diabetics.

IGF-1 is being used alone and in conjunction with other substances to promote the growth of skeletal muscle ('anabolic effects') and to reduce body fat ('catabolic effects').

## What are the side effects and potential harms?

There is no evidence to support the belief that IGF-1 produces performance or image enhancing effects. High doses carry the risk of significant adverse effects.

Due to its insulin-like properties, IGF-1 can have serious and potentially fatal health effects including:

- o Diabetic (hypoglycaemic) coma
- o Heart palpitations (tachycardia)
- o Facial nerve pain or paralysis (Bells Palsy)
- o Swelling of the hands

## Risks of counterfeit products

IGF-1 is expensive and is produced in strictly limited quantities so it is doubtful that the substances bought on the blackmarket would be authentic IGF-1. Although some legitimate IGF-1 preparations for medical use may be diverted to the blackmarket, counterfeits may have few, if any, active ingredients and carry the risk of contamination.



## Injecting risks

Where needles, vials or other equipment are shared, there may be traces of blood, increasing the risk of transmission of blood-borne viruses (such as hepatitis or HIV).

Where the skin has not been properly cleaned, dirt or bacteria may inadvertently enter the bloodstream, carrying risk of infection, inflammation and damage to blood vessels. Injecting an unsterile substance also carries risks of infection or poisoning. In severe cases, infections from injecting can cause thrombosis, ulcers and gangrene.

Injecting into small muscle groups increases the risks of injecting into veins and nerves.

