

# INSULIN

## What is insulin?

Insulin is a naturally occurring hormone that is secreted by the cells of the pancreas in response to high blood sugar levels. When blood sugar is high, insulin is released to reduce glucose levels in the body and prevent the liver from releasing glucose. Insulin plays a role in the metabolism of carbohydrates, fats and proteins.

Insulin is normally prescribed for the treatment of diabetes, and is administered to assist in the regulation of blood sugar.

Insulin is banned for non-medical purposes under the Olympic Movement's *World Anti-Doping Code Prohibited Classes of Substances and Prohibited Methods*. The legitimate use of insulin in sport to treat insulin dependent diabetes requires a therapeutic use exemption from a recognised therapeutic use exemption committee.

## What are the perceived benefits?

Insulin may be illegally used in conjunction with anabolic steroids, in an attempt to increase muscle growth and definition. Body builders use it in the belief it will enhance the storage of greater amounts of carbohydrates and amino acids inside muscle cells.

## What are the side effects and potential problems?

It is debatable whether the perceived benefits can be achieved. The chances of harmful side effects are great and possibly fatal.

Insulin is a potentially dangerous drug. Its use can cause low blood sugar (hypoglycaemia) which may cause shaking, nausea, weakness, shortness of breath, drowsiness, coma, brain damage and death.

## 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.