

Growth Hormone

Sounds impressive, doesn't it? Those two words conjure up all kind of illusions that this drug will work wonders. The use of Growth Hormone (GH) appears to be on the increase. I see this on a daily basis in the needle exchange where I work and also in my private practice.

The reality is that it will not make you massive. GH does impart anabolic effects and is known to increase both the size and number of muscle cells. Compared to testosterone, however, its results are far less marked. In fact, any increase in size is largely water retention which fails to equate to an increase in strength or performance. It's also bloody expensive.

The primary use for GH in bodybuilding circles is for its ability to promote fat loss.

Commonly reported doses are between 2-4 IU daily. It is a drug which needs to be reconstituted with bacteriostatic water prior to injection. Do not use sterile water as the GH will rapidly degrade and be rendered useless. Once reconstituted it must be refrigerated, never frozen.

The injection of GH is into fat, ideally around the abdomen and the sites rotated. This is to prevent the skin around the injection area becoming uneven or lumpy. Other injection sites may prevent the release of GH into circulation.

The natural release of GH is pulsatile, meaning it is entered into circulation in varying stages and quantities throughout the day. These surges occur repeated throughout the day and night with deep sleep being a potent stimulus for GH secretion. The concentrations of GH may fluctuate 10 – 100 fold throughout the day. This makes measuring GH levels a very tricky business.

Luckily, GH is converted, primarily by the liver, to Insulin-like Growth Factor-1 (IGF-1) which is relatively stable throughout the day. It is IGF-1 levels which can determine a satisfactory level of GH. Indeed it is an ideal way to determine if your GH is the real deal, but this should ideally be established by blood testing prior to GH use and after commencement to assess if the IGF-1 levels have risen, which they should. IGF-1 mediates most of the anabolic effects of GH, stimulating the uptake of amino acids and protein synthesis.

It is not unknown for HCG to be sold as GH. They look much the same and both require reconstitution. If you have a positive pregnancy test it's not GH.

The following information regarding the possible side effects of GH use is taken directly from PACKAGE LEAFLET: INFORMATION FOR THE USER GENOTROPIN® 5.3 mg and 12 mg. (1 mg is about 3 IU)

Note well that what follows is specifically aimed for those who are prescribed GH at medically monitored doses for specific conditions. Not for those who take GH for image or performance enhancing reasons, but is a good indication. That cohort may experience side effects more frequently as they're already producing adequate amounts of GH naturally and adding even more. Not to mention UGL products, which can be under/over dosed, counterfeit or fake.

“Common side effects (likely to occur in fewer than 1 in 10 patients) include:

Formation of antibodies to the injected growth hormone but these do not seem to stop the growth hormone from working.

- Numbness / tingling,
- Stiffness in the arms and legs, joint pain, muscle pain,
- Water retention (which shows as puffy fingers or swollen ankles). These symptoms may be seen for a short time at the start of treatment, but they disappear spontaneously or when the dosage is lowered.

Uncommon side effects (likely to occur in fewer than 1 in 100 patients) include:

- Pain or burning sensation in the hands or underarms (known as Carpal Tunnel Syndrome).

Rare side effects (likely to occur in fewer than 1 in 1,000 patients) include:

- Type 2 diabetes mellitus,
- Increased intracranial pressure (which causes symptoms such as strong headache, visual disturbances or vomiting)."

Some underground lab products have chains of either 190 or 192 amino acids long, rather than the 191 present in legitimate GH. These inferior products are significantly more likely to lead to the formation of antibodies. This results in immunity which stops the product from working.

In the manufacturers Summary of Product Characteristics, a thyroid function test is recommended to assess for any pre-existing hypothyroidism. GH can (but not always) reduce the conversion of the less active T4 thyroid hormone to the more powerful T3 variant.

GH in high quantities or durations will result in growth of internal organs and bones, particularly in the face, hands and feet (it is prescribed for children with dwarfism after all). This is because its receptors are not exclusive to muscles. The gut has an abundance of them. The distended gut look is not a good one.

Insulin resistance with progression to type II diabetes is possible due to impaired glucose tolerance from GH use. Paradoxically, large doses can initially lead to hypoglycaemia (low blood sugar), then hyperglycaemia (high blood sugar). Glucose testing is recommended. Most pharmacies sell finger prick blood sugar testing kits for a modest price.

In regards to anabolic steroid use and GH production, the elevated level of testosterone translates into elevated oestrogen, which in turn can raise GH secretion. Many think oestrogen is a very bad thing. And indeed excessive amounts are troublesome (bitch tits, anyone?). However, taking Tamoxifen (a selective estrogen receptor modulator or SERM) or an aromatase inhibitor will result in decreased GH and IGF-1 levels. The message is clear; only take as little testosterone as required to prevent oestrogen related symptoms occurring in the first place. That way you benefit from fewer side effects and take fewer drugs which will inevitably cock things up even further.

Vitruvian Man

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