

Growth Hormone Tests

Growth hormone stimulates nearly every tissue in the body and can be generally described as having an anabolic function. An adult-onset growth hormone deficiency is common, with 50% of 80 year olds having no detectable quantities of this molecule in their blood. A deficiency of GH presents as central obesity, diminished memory, impaired sleep, low libido, osteoporosis and cardiovascular disease. By diagnosing and treating the decline of GH age-related these changes in body composition, mood and overall quality of life can be ameliorated. Numerous studies using GH therapy in the aging population has shown improvements in lean muscle mass, total body fat, bone and cardiovascular parameters. Furthermore recent data confirms that restoring youthful levels of GH improve sleep, cognitive functions and mood.

Table 1: Symptoms and Conditions Associated with Adult-Onset Growth Hormone Deficiency

Atrophied jaw angle	Irritability
Central obesity	Low libido
Decreased muscle mass	Lower bone mineral density
Decreased self-esteem	Mental fatigue
Deep forehead lines	More atherosclerosis
Diminished memory	Poor body image
Emotional lability	Poor concentration
Fatigue	Reduced exercise capacity & increased recovery time
General muscle loss	Reduced quality of life
Impaired cardiac function	Sagging cheeks
Impaired sleep	Social isolation
Inability to lose weight with diet and exercise	Thinning hair, lips and skin
Insulin resistance	Worsening cholesterol

Growth Hormone

Growth hormone is a peptide hormone secreted from the anterior pituitary gland. Its secretion is regulated by two hypothalamic hormones; somatostatin, which inhibits GH secretion, and growth hormone releasing hormone (GHRH), which stimulates it. GH's secretion occurs in a pulsatile fashion, with the main peak occurring at 12-1am in healthy adults. Although it has a very short half-life, it stimulates insulin-like growth factor 1 (IGF1) production by the liver, which is much more stable and produces many of GH's physiological effects. The majority of IGF1 (98%) is bound to one of 6 binding proteins (IGFBP). IGFBP3 is the most abundant and important binding protein.

Growth Hormone Deficiency Symptoms

The symptoms of a growth hormone deficiency depend on the age of onset of this hormone imbalance. Whilst children typically present with short stature, adults have alterations in muscle, fat, bone and psychological parameters. Adult-onset growth hormone deficiency is common. At the age of 60, most individuals have only 25% of the GH they did at age 20. Furthermore, about 50% of 80 year olds have no detectable growth hormone. Therefore it is not surprising that the aging population experience the symptoms associated with a growth hormone deficiency such as central obesity, diminished memory, impaired sleep, low libido, osteoporosis and cardiovascular disease. This data therefore suggests that treating this hormonal imbalance will prevent or counteract the age-related changes in body composition, mood and overall quality of life. This has in fact been shown. Numerous studies using GH therapy in the aging population has shown improvements in lean muscle mass, total body fat, bone and cardiovascular parameters. Furthermore recent data confirms that restoring youthful levels of GH improve sleep, cognitive functions and mood

Growth Hormone Tests Available

- **Growth hormone (Urinary)**
- **Insulin-like growth factor-1 (IGF-1) & IGF Binding Protein-3 (IGFBP3) (Serum)**

Specimen Collection Requirements

IGF1 & IGFBP3: Either Serum or Blood collected in a SST (orange) vacutainer tube.

Growth Hormone (Urinary): Collect either a 24 hour or spot urine specimen. Then transfer a 10ml sample of this specimen into the monovette supplied for preservation and transportation to NutriPATH. When given the choice between a spot urine or a 24 hour urine specimen, the 24-hour collection is the preferable method. However, a spot urine specimen can be used in most cases if patient compliance is an issue.

Result Turnaround Time:

- **Serum:** Up to 8 working days after receipt of sample and test fee payment at NutriPATH.
- **Urine:** Up to 1 week after receipt of sample and test fee payment at NutriPATH.

How to order a test kit:

Phone Customer Service on 1300 688 522.



Phone **1300 688 522** for further details
www.nutripath.com.au