

## Division of Laboratory Medicine

Biochemistry

### Growth Hormone; hGH

Diagnosis and monitoring of growth disorders

#### General information

**Collection container:** Serum with gel separator (Sarstedt brown top, 4.9mL adults/1.1 mL paediatrics) or Serum (Sarstedt white top, 1.2 mL paediatrics only)

**Type and volume of sample:** 1.0 mL whole blood is required as a minimum volume.

Specimen transport/special precautions: The tubes should be thoroughly mixed before transport to the lab.

#### Laboratory information

**Method principle:** hGH is analysed on an automated instrument using a chemiluminescent immunoassay. Biological reference ranges: No reference ranges are provided as random single GH estimations are rarely helpful or informative due to the pulsatile release of the hormone.

#### GH responses to stimulation (arginine stimulation test/glucagon stimulation test):

Peak GH $\geq 7$ ug/L	A peak plasma GH concentration of $>7$ ug/L indicates a normal response to GH stimulation
Children Peak GH 5-6.9 ug/L	A peak plasma GH concentration of $<7$ ug/L may indicate an inadequate response to GH stimulation
Children and adolescents Peak GH $<5$ ug/L	A peak plasma GH concentration of $<5$ ug/L indicates a sub-normal response to GH stimulation
Adult Peak GH $<3$ ug/L	A peak plasma GH concentration $<3$ ug/L indicates a sub-normal response to GH stimulation

**Turnaround time:** 2 weeks

#### Clinical information

GH is released from the anterior pituitary in response to the hypothalamic hormone GHRH and also other stimuli such as hypoglycaemia. Its main role is to stimulate growth and cell reproduction, and growth hormone measurement is primarily used to diagnose and monitor the treatment of various growth disorders. GH levels undergo diurnal variation therefore a stimulation test is often performed to accurately assess the level of secretion.

Factors known to significantly affect the results: Grossly haemolysed samples are unsuitable for analysis

**(Last updated February 2016)**