

ITT Hormone Reserve

Description	Insulin-induced hypoglycaemia produces a rapid release of growth hormone and of ACTH, and thereby of cortisol.
Indication	The insulin tolerance test (ITT) may be used to assess growth hormone release and/or the hypothalamic-pituitary-adrenal axis.
Additional Info	Insulin tolerance tests should not be performed on patients > 60 years of age, or if there is a history of myocardial ischaemia or epilepsy. The combined pituitary function test-glucagon test is preferable in children.
Concurrent Tests	Combined pituitary function test (+GnRH, +TRH)
Dietary Requirements	The patient must be fasted overnight with only water to drink. Discontinue replacement hydrocortisone for 12 hours prior to the test and 24 hours for other preparations.
Interpretation	<p>Adequate hypoglycaemia must be achieved, glucose < 2.2 mmol/L for the test to be valid.</p> <p><u>GH response</u></p> <ul style="list-style-type: none"> • Peak GH > 6.7 ug/L excludes GH deficiency • Peak GH 3.4-6.7 ug /L suggests impaired GH reserve • Peak GH < 3.4 ug/L suggests GH deficiency, repeat test indicated <p><u>Cortisol response</u></p> <ul style="list-style-type: none"> • Peak cortisol > 550 nmol/L suggests an intact HPA axis and adequate adrenal reserve
Collection Conditions	The patient should lie down during the test, and an intravenous cannula inserted 30 minutes before giving insulin. At time zero, 0.05-0.30 U/kg insulin should be given intravenously. Venous blood samples are collected at 0, 30, 60, 90 and 120 minutes into fluoride oxalate tubes for plasma glucose and plain serum tubes for growth hormone and cortisol.
Frequency of testing	Multiple determinations inappropriate