



INSULIN RESISTANCE INDEX

Insulin resistance (IR) is a pathological condition in which cells fail to respond to the normal actions of the hormone insulin normally produced by the pancreas. When the body produces insulin under conditions of insulin resistance, the cells in the body are resistant to the insulin and are unable to use it as effectively, leading to high blood sugar and beta cell dysfunction.

*This test measures **fasting insulin and fasting glucose**, and expresses its relation in a HOMA-IR score.*

Insulin Resistance

Insulin resistance (IR) is a condition characterised by resistance to the effects of insulin at a cellular level. Thus, the normal metabolic response to a given amount of insulin is reduced. Muscle and adipose tissue require increasing greater amounts of insulin to transfer sugars from the bloodstream; hence, higher levels of pancreatic insulin synthesis are required in order to maintain normal blood glucose levels. Over time, as insulin resistance increases, pancreatic cells can no longer continue to supply the quantities of insulin required, and hence both fasting and post-prandial glucose levels rise. Increasing HOMA scores reflect this reality. This resistance is seen in relation to both the body's own (endogenous) insulin production, as well as resistance to the effects of exogenous insulin administered by injection. Eventually, the patient will become a Type II diabetic, and require medical intervention and ongoing treatment.

Predisposing Factors

- Genetics – a strong family history of diabetes is a major risk factor for high levels of insulin resistance
- Too much food, particularly high GI carbohydrates including excessive alcohol consumption
- Lack of regular aerobic and anaerobic exercise
- Stress – high cortisol will oppose effects of insulin
- Nutritional deficiencies – particularly chromium, vanadium, magnesium and copper

Insulin Resistance (HOMA SCORE) Results

Insulin resistance is calculated from both the fasting insulin and fasting glucose results.

RESISTANCE LEVEL	HOMA SCORE
Normal	< 2.5
Mild	2.6 – 4.9
Moderate	5.0 – 7.4
Severe	7.5

INSULIN RESISTANCE INDEX (serum) [Test code: 1109]

❖ Fasting Glucose, Insulin, HOMA-IR score

Other insulin tests available

- **Glycosylated Haemoglobin (HbA1c) [6006]:** HbA1c
- **Insulin [6008]:** Insulin

Phone 03 2727 7434 for further details
www.MalaysiaLaboratory.com