

CORTISOL

Introduction:

Cortisol is a steroid hormone produced by two adrenal glands which are regulated by Pituitary gland. It is also known as “stress hormone” because it mainly helps regulate your body’s response to stress. Cortisol is also needed for the “fight and flight” response, which is a healthy, natural response to perceived threats. It works with certain parts of the brain to control mood, motivation, and fear.

Importance of Cortisol:

- Regulate blood Pressure
- Control sleep/wake cycle
- Suppress and reduce inflammation
- Manage your body’s use of carbohydrates, fats and proteins
- Boost energy to handle stress and restore balance

Cortisol and Diabetes:

Cortisol is among the “glucose-counter-regulator hormones which increase blood sugar. It makes fat and muscle cells resistant to the action of insulin and enhances the production of glucose by the liver via gluconeogenesis. The hormone makes it harder for insulin to work properly, known as insulin resistance.

Cortisol increases insulin resistance and induces Type 2 Diabetes through activation of lipolysis and release of free fatty acid to produce energy for the body. This process is essential for survival situations and increases appetite. Additionally, high cortisol levels can create cravings for sweet, fatty and salty foods. High cortisol increases blood sugar levels and insulin production. High levels of cortisol and insulin will cause weight gain and belly fat.

Cortisol Laboratory Test:

A Cortisol test measures the level of cortisol in the blood, urine or saliva to check if the levels are normal.

Normally cortisol levels vary during the day. It peaks in the morning to boost the body to start the day right, and declines throughout the day, reaching its lowest level around midnight to allow for restful sleep.

Type of Specimen:

- Fasting is not required
- Serum Sample
- Urine Sample

Interpretation of Test Results:

Different testing laboratories may have different normal ranges.

	MORNING CORTISOL	EVENING CORTISOL
NORMAL RANGES	185-624nmol/L	<276 nmol/L

The table below are symptoms for cortisol abnormalities:

	LOW LEVEL (Hypocortisolism)	HIGH LEVEL (Hypercortisolism)
CAUSES	Addison's Disease Infection or Adrenal Hemorrhage Hypopituitarism	Cushing's syndrome Steroid Medication Tumors
SYMPTOMS	<ul style="list-style-type: none"> Fatigue Unintentional weight loss Poor appetite Low Blood Pressure (Hypotension) Abnormal Menstrual periods Dehydration Nausea and vomiting or diarrhea 	<ul style="list-style-type: none"> Weight Gain (face and abdomen) Fatty deposits between shoulder blades Muscle weakness (upper arms and thigh) High blood sugar (Type 2 DM) High Blood Pressure (Hypertension) Wide, purple stretch marks on abdomen Excessive hair growth (Hirsutism)

Cortisol Management:

- Maintain good quality of sleep
- Maintain regular exercise and healthy lifestyle
- Limit stress and practice deep breathing exercise
- Maintain healthy relationships
- Enjoy yourself and laugh often

References:

- www.webmd.com
- my.clevelandclinic.org Diabetes Education Onlin