

Leptin

This information is provided for informational purposes only and is not intended to diagnosis, treat, cure, or prevent disease. Abnormal test values falling outside the Normal Range will be printed in bold and noted in the "Flag" column. Abnormal values should be reviewed by your primary physician and a copy of all testing should be included in your medical record for future reference and comparison.

Leptin is a protein hormone with important effects in regulating body weight, metabolism and reproductive function. Leptin is expressed predominantly by fat (adipose) cells.

Smaller amounts of Leptin are also secreted by cells in the epithelium of the stomach and in the placenta. Leptin receptors are concentrated in areas of the hypothalamus known to be important in regulating body weight, as well as in T lymphocytes (an immune response white blood cell) and vascular endothelial cells (where plaque deposits occur). Elevated levels of Leptin in obese patients also correlate with the development of insulin resistance, elevated triglycerides, diabetes, and cold intolerance, while a decreased amount of Leptin correlates with depressed immune function, poor nutrition, and infertility. Thyroid dysfunction can also lead to abnormal serum Leptin levels.

Recent studies with obese and non-obese humans demonstrated the relationship of increased serum Leptin concentrations with an increased percentage of body fat. It appears that as fat cells increase in size due to accumulation of triglyceride, they synthesize more and more Leptin.

Leptin's effect on body weight is mediated through its effect on the hypothalamic centers that control feeding behavior, hunger, body temperature, and energy expenditure. The hypothalamus uses the Leptin concentration to determine need to eat and sends the appropriate hormonal signals. Patients with abnormal serum Leptin levels can also manifest diabetes, and show cold intolerance, depressed immune function and infertility.. **Blood concentrations of Leptin are usually increased in obese humans, suggesting that they are in some way insensitive to Leptin, rather than suffering from Leptin deficiency.**