

Hormonal imbalances is responsible for obesity

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Abstract

One of main concern of human health is obesity. This research is based on quantitative method since obesity rate increased in past decades resulting increase in chronic diseases such as diabetes, many studies about obesity and how calorie system works (**Body fat gained = Calories In – Calories Out**) published. A Research in 2013 by "The American Journal of Clinical Nutrition" indicate different effect of micronutrients on hormonal regulation of body leading to change in metabolism. When blood glucose level is high, pancreas release insulin and in case of low glucose it release glucagon.

Insulin is responsible for accumulation of fat by acting as eat more and fat storage hormone. The body store glucose as glycogen in live and muscle cell but it has limit and to prevent hyperglycemia store excess amount as triacylglycerol in adipose tissue. As a result of high blood glucose insulin level increase. Insulin is responsible for accumulation of fat by stimulating enzymes that are responsible for storage of fat in adipose tissue and even worse it inhibits all other hormones such as glucagon and Growth hormone known as fat burning hormone to prevent body from using glycogen and fat storage and adding to those storage also according to research published in 2013 on "The American Journal of Clinical Nutrition" indicate high glycemic carbohydrate increase activity in area of brain responsible for rewarding and craving.

Body fat gained = Calories In – Calories Out. This is the first law of thermodynamic but not working for human health because body spend less energy when you take lower calories. Metabolism can change based on many factors like how your hormones work, also calories of different foods are not same. According to research basal metabolic rate can change by 40% It's not about calories, it's about how your body respond to the food for example studies shows organic eggs contain more omega 3 than GMO eggs; omega-3 increase insulin sensitivity through regulation secretion of adipokines and decrease insulin resistance (IR).

Studies indicate not organic and GMO product increase IR, VLDL level, estrogen level, cortisol level and saturated fats. Studies on diabetes patient shows IR inhibit leptin signal (leptin produce by fat cell to send signal to brain that there are already fat storages in body) and keep insulin level high in body leading to accumulating fats in adipose tissue, also make people stuck into eating and craving cycle. Therefore to prevent and treat obesity we need to manipulate metabolic hormones; Fortunately there is a method to do that which is called intermittent fasting (IF). IF is a pattern of eating it doesn't tell you what to eat but tells you when to eat for 16/8 meaning you eat only during 8 hours a day and other 16 hours you can only drink water. Generally there are 2sets of hormone when it comes to weight first those responsible for weight gain and second for weight

loss. According to Guyton medical physiology all aspects of fat metabolism are greatly enhanced in the absence of insulin so we should create an absence of insulin to lose weight. A research on 23 obese people doing IF decrease in insulin resistance because Insulin resistance depends on high level of insulin and persistence of it so when you are fasting there is no insulin secretion and with help of fasting you can break through persistence of insulin level. Also increase insulin sensitivity by increase in circulating adiponectin and regulate hormones associated with hunger such as leptin and gherlin as result treat craving cycle.

To sum up compare to a century ago people now keep adding snakes into the diet as result insulin level become high through whole day to decrease blood glucose level and store fat but main concern is that high level of insulin through whole day make the body to develop resistance against it known as insulin resistance which is main reason of increase obesity in past decades. To solve this problem science came with idea of intermittent fasting which provide small window of 6 hour eating as result insulin secretion limited and regulate insulin resistance leading to treating of obesity and associated disease.