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HYPOGLYCEMIA TYPE I AND TYPE II

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We have had numerous questions regarding an article that appeared in a previous issue of the **Newsletter** asking us to explain our classification of hypoglycemia, Type I and Type II. Since low blood sugar is not always found with the symptoms of hypoglycemia, perhaps a better term to describe hypoglycemia is an abnormal drop of blood sugar levels significant enough to cause symptoms, as many patients can have symptoms in the absence of low blood glucose levels.

High protein diets, which are widely recommended for individuals with hypoglycemia, may alleviate the symptoms in many, but may worsen the symptoms in others and even contribute to anxiety. Although perplexing, this can be explained through analysis of individual metabolic types.

Hypoglycemia occurs in both the fast and slow metabolic types. Even though the symptoms may be the same in both, the mechanisms are completely different. Therefore treatment based upon a person's symptoms alone may not always be wise.

HYPOGLYCEMIA - TYPE I

Type I hypoglycemia is found in slow metabolic types. Usually there is a reduction in serum glucose produced by the suppression of glucose by insulin. Any factor that produces a sharp increase in blood sugar will trigger an insulin response. In the case of the slow metabolizer, the glucose rise can be initiated by the consumption of refined sugars and juices. As the insulin release increases to compensate for the large glucose load, the blood level is then reduced. If this condition becomes chronic, the insulin stimulation may become exaggerated or overcompensate, resulting in a sharp decline in glucose below normal. Sensitivity to high glycemic index foods (see article "Glycemic Response and Calcium" Vol.2, No.2), including fats from dairy products such as milk and cheeses, will eventually develop. The fact that dairy products can contribute to hypoglycemia is not widely recognized. However in individuals with a slow metabolic rate, glucogenesis is low and is further suppressed by fats.

Insulin will also increase the excretion of chromium from the body. A chromium deficiency results in a decrease in insulin sensitivity along with a further increase in insulin stimulation or release. This of course will eventually lead to adult onset diabetes if not controlled. However, before this occurs a *cellular hypoglycemia* can develop in which glucose may not cross into the cells in adequate amounts even though blood levels are normal or high, due to the decrease in insulin sensitivity. Cellular hypoglycemia can be present even if the serum glucose is elevated above normal with accompanying hypoglycemic symptoms.

It is essential for people with Type I hypoglycemia to maintain a high protein diet low in fats and refined sugar. Increasing the metabolic rate and balance can control - and eventually eliminate - the hypoglycemic syndrome.

HYPOGLYCEMIA - TYPE II

Type II hypoglycemia is commonly found in the fast metabolic types. Generally speaking the fast metabolizer maintains a high normal or above normal blood glucose level. The hypoglycemic symptoms are associated with a precipitous drop in glucose but not always below normal levels.

As an example the fast metabolic type can have a glucose level of 160 Mg/DL. or more, and it can drop to normal (70 or 80 mg/DL.) in a short time. Even though this level is within normal, the fifty percent drop can bring on symptoms of hypoglycemia.

The fast metabolizer has a high endocrine activity that contributes to an increase in gluconeogenesis, raising blood sugar production. Insulin secretion may not be produced in large enough quantities to compensate for the amount of glucose produced; therefore, the blood glucose may not drop below normal.

Many factors can contribute to an increase in an already fast metabolic rate. The metabolic rate and glucose production are enhanced by the intake of low fat, high protein, or high carbohydrate diet in the fast metabolizer, and therefore can contribute to Type II hypoglycemia. This will of course also eventually lead to diabetes.

In order to control type II hypoglycemia, the diet should be adjusted to include adequate amounts of fats relative to protein and carbohydrates. Exclusive high protein diets will exacerbate this type of hypoglycemia, due to their accelerating effect on the metabolic rate. Fats reduce the excessive metabolic rate and provide energy that can be utilized more slowly over long periods. This also helps to control the blood sugar level due to a more even release of glucose from the liver resulting in a lessening of the large swings in blood sugar.

CONCLUSION

A myriad of symptoms are associated with hypoglycemia. One person may exhibit them all, while another will only exhibit a few. Hypoglycemia has also been associated with many conditions. By understanding the different mechanisms involved, we can observe its many diverse manifestations or effects.

In summary, the slow metabolic types exhibit Type I hypoglycemia characterized by blood sugar swings that fall below normal levels. Since sugar is the source of energy, the slow metabolizer will therefore be drawn to eating simple or even complex carbohydrates in order to maintain their blood sugar and energy levels.

The fast metabolizer is experiencing Type II hypoglycemia, having a high blood sugar that may drop fifty percent or more in a very short period. In an effort to maintain a constant level of energy, he will be drawn to consuming carbohydrates and proteins. As alcohol is also a rich source of energy, it is not uncommon to find fast metabolic types becoming addicted to alcohol. They rarely become inebriated since they can metabolize alcohol very readily and quickly. The fast metabolizer is also sensitive to the effects of stress, and stress will cause a rise in glucose levels. Individuals with Type II hypoglycemia will often become addicted to stress in order to maintain a high blood sugar. This type of individual is frequently referred to as a "workaholic", or having Type A behavior.



Type I hypoglycemic individuals will attempt to maintain blood sugar by consuming more sugar in various forms since the liver does a poor job of producing glucose. Individuals with type II hypoglycemia who produce excessive glucose via the liver will attempt to maintain their glucose levels by means of further stimulating production. Thus we can see why people with the same condition can develop different symptoms, personalities, habits, addictions and peculiarities.

Hair tissue mineral analysis (HTMA) lends itself well to recognizing metabolic types and the different mechanisms involved in the development of hypoglycemia.