



Hypoglycemia, Reactive Hypoglycemia, or Abnormal Glucose Tolerance

Hypoglycemia is a very common problem that may produce classic symptoms such as fatigue, headaches and anxiety, or contribute to a range of other disorders. Although often thought of as low blood sugar, it is really a weakness in blood sugar regulation. If there is a question about whether you have hypoglycemia, you could get a five-hour glucose tolerance test (GTT). In addition to being abnormal if the blood sugar goes too low, you may have hypoglycemia if: (a) the blood sugar goes too high after drinking the glucose solution; (b) if it drops too quickly (usually more than 80 mg/dl in one hour); (c) if you have two peaks from the GTT; or (d) if you have significant symptoms.

This handout is designed to give you more information so that you can control hypoglycemia or at least minimize its effect. Within traditional medicine, hypoglycemia is controversial and not often considered, except in extreme circumstances. This is largely because there are a range of GTT patterns that may be involved and a range of symptoms, many of them that can be attributed to significant stress.

Hypoglycemia Symptoms include:

- Fatigue
- Anxiety
- Irritability before meals
- Headaches
- Heart palpitations
- Light-headedness
- Depression
- Poor concentration

Hypoglycemia Causes include:

- Too much sugar
- Too much stress
- Too much caffeine
- Too much carbohydrate
(eg. bread, pasta, fruit/juice)
- Missing meals
- Inadequate nutrients that
regulate blood sugar
- Not enough exercise

Background Information

Hormonal Effects

Although several hormones are important in the regulation of blood sugar, insulin is the most important. It is released from the pancreas in response to rising blood sugar and helps to move the sugar from the blood into tissues where it is used for energy. Many practitioners believe that hypoglycemia and its significant blood sugar fluctuations can, over time, lead to type 2 Diabetes (adult onset) if not properly addressed.

Adrenaline also affects blood sugar regulation. Under stress, it is released by the adrenal glands and one of its effects is to cause the breakdown of glycogen (a storage form of sugar found in the liver and muscle), causing blood sugar to rise and making it available as an energy source for the heart and other tissues – the classic “fight or flight” response. Also, when you go too long without eating and blood sugar drops, adrenaline is released. Although not well documented by research, it is thought that stress and adrenaline are major causes of hypoglycemia.

Insulin Resistance, Glycemic Load and Glycemic Index

You should also know and understand carbohydrate metabolism issues. The Glycemic Index of Foods refers to the amount that blood sugar will rise after having eaten a standard amount of a specific carbohydrate-containing food. Glycemic Load includes glycemic index plus the quantity of carbohydrate in the food or at the meal. Finally, Insulin Resistance assesses how efficiently insulin moves glucose into tissues.

In general:

- The more refined or processed the food, the more quickly the blood sugar and insulin will rise.
- The more fiber in the food, the slower the blood sugar and insulin will.
- Carbohydrate effect on blood sugar and insulin is less when it is part of a mixed meal balanced with protein and fat.
- Fruit sugar produces less of an increase in blood sugar than that of other sugars.

Nutritional and General Guidelines for Hypoglycemia Treatment:

- Cut out or minimize all sugars – this includes all sugars found in desserts and snacks, those that are added in manufacturing and even those that are natural (e.g. honey and maple syrup) and those found naturally in foods such as milk (lactose) and fruit (fructose).
- Eat at least three meals or times per day (you may need to eat 5-6 times/day).
- Eat a good breakfast.
- Cut out or minimize caffeine. (Caffeine causes adrenaline to be released.)
- Balance meals so that approximately one-third of the meal is protein, one-third is low carbohydrate vegetables (e.g. salads, broccoli, onions, green beans, etc.) and one-third or less is high carbohydrate complex carbohydrates (e.g. grains, beans, starchy vegetables, pasta, etc.).
- Consider the level of dietary fat which is best for you – you may need more.
- Minimize stress if possible.
- Utilize stress management techniques everyday even if just for 10 minutes – you should feel at least a little better so find something(s) you like and that work(s) (e.g. stretching, exercise, biofeedback, yoga, tai chi, meditation, relaxation/guided imagery tapes, etc.). You may need exercise and a relaxation technique everyday.
- Nutritional supplementation – the minerals chromium (200 µg 2-3 times per day) and magnesium (150 mg, 2-3 times/day) are most important. Other potentially helpful supplements include biotin, zinc, fenugreek, B complex vitamins and possibly others.

Each individual's circumstances are different, and all of the contributing factors and causes need to be carefully evaluated and addressed to make sure that the approach will work best for you.

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