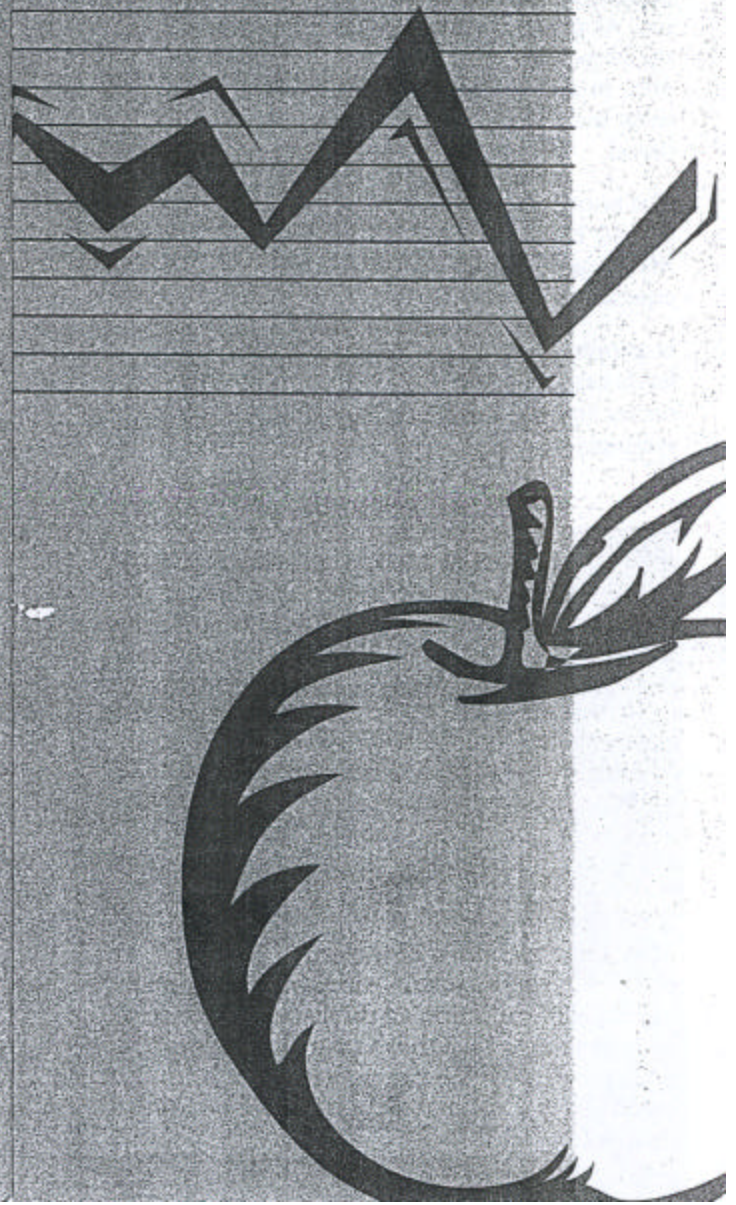


Reactive and Fasting Hypoglycemia



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What Is Hypoglycemia?

Hypoglycemia means low blood glucose (sugar). Glucose is the substance that our bodies use for energy. After eating, food is broken down into glucose and enters the bloodstream. As the level of glucose in the blood rises, the pancreas responds by releasing a hormone called insulin.

Insulin allows glucose to leave the bloodstream and enter body cells, where it is used for energy. Some glucose is also stored in the liver and muscles for later use. As this process happens and the level of glucose in the blood falls, the amount of insulin in the blood also falls. In this way, glucose and insulin work together so there is never too much or too little glucose in the blood.

The normal level of glucose in the blood is between 60 and 110 milligrams of glucose per deciliter (mg/dL). Maintaining this level is important because body cells, especially brain cells, need glucose to work properly.

In people who experience hypoglycemia, blood glucose levels can fall below normal. When this happens, the nerves and brain do not receive enough glucose and symptoms occur.

What Are the Symptoms?

The symptoms of hypoglycemia are different for each person, but tend to be the same for any one person. They include:

- sweating
- feeling warm
- difficulty speaking
- dizziness
- inability to concentrate
- hunger
- drowsiness
- anxiety
- confusion
- nausea
- trembling
- headaches

Some of these same symptoms can be triggered by other things, such as anxiety or stress. The only way to know if it is truly hypoglycemia is to measure your blood glucose when you feel symptoms. This is done by testing a small blood sample. If your blood glucose is normal, hypoglycemia is not the cause. If your blood glucose is below normal and the symptoms disappear when food is eaten, hypoglycemia probably is the cause of these symptoms.

What Causes Hypoglycemia?

There are two types of hypoglycemia: fasting and reactive. In fasting hypoglycemia symptoms appear when the person goes without food for eight or more hours. Fasting hypoglycemia also can be caused by certain underlying diseases that upset the body's ability to balance blood glucose.

The second type, reactive hypoglycemia, is characterized by blood glucose levels falling too low within a few hours after eating. This may happen because too much insulin is released in response to eating, and the insulin takes too much glucose out of the blood. This type of hypoglycemia rarely has a serious underlying cause.

Hypoglycemia can also be caused by:

- drinking alcohol on an empty stomach or after prolonged exercise
- poor eating habits such as skipping meals or eating excessive amounts of carbohydrate foods
- eating large amounts of foods after certain types of stomach surgery
- taking too much insulin or oral diabetes medication (this applies only to people who have diabetes)
- conditions such as tumors of the pancreas, failure of the pituitary or adrenal glands, or severe liver disease (these conditions are rare)



How Is Hypoglycemia Treated?

To treat the immediate symptoms of hypoglycemia, you need to eat foods or beverages containing carbohydrate. Carbohydrate foods are easily changed into glucose by the body. Eating them raises blood glucose levels and relieves symptoms. Carbohydrate foods include:

- starches such as breads and cereals
- fruits and fruit juices
- milk and yogurt
- foods containing sugar

Some foods that may help you feel better quickly are 1 cup milk, ½ cup orange juice, ½ cup regular soda pop, or 3 sugar packets.

If an underlying health problem is causing your hypoglycemia, your health care provider will help you determine the best treatment.

How Can I Avoid Symptoms?

You can avoid the symptoms of hypoglycemia by making a few simple changes in your eating habits and by planning your meals.

Eat five to six small meals or snacks each day.

Eating several small meals each day rather than two or three large ones helps regulate the amount of glucose in your bloodstream. Eat consistently at the same times each day, and avoid skipping meals.

Spread your intake of carbohydrate foods throughout the day. Eating large amounts of carbohydrate at one time can stimulate the release of large amounts of insulin, which can cause blood glucose levels to drop. It is appropriate for most people to eat two to four servings of carbohydrate food at each meal and one to two servings at each snack.

Avoid foods that contain large amounts of carbohydrate. Examples of these foods are: regular soda pop, syrup, candy, regular fruited yogurt, pies, and cakes.

Avoid beverages and foods containing caffeine. Caffeine can cause the same symptoms as hypoglycemia.

Limit or avoid alcoholic beverages. Drinking alcohol on an empty stomach can lower your blood glucose level. If you choose to drink alcohol, do so in moderation (one or two drinks no more than twice a week) and always eat food along with it.

What Should I Eat?

Good Choices

Starch

Whole grains (brown rice, barley, buckwheat, bulgur, wild rice, oatmeal, cornmeal)
Whole grain breads and crackers
Unsweetened cereals
Pasta (spaghetti, macaroni, etc.)
Bagels and breadsticks
Starchy vegetables (squash, corn, potatoes)

Fruit

Fresh or dried fruits
Fruits canned in juice or light syrup
100% fruit juice

Milk

Skim or 1% milk
Evaporated skim milk
Lowfat or nonfat plain or fruited yogurt (made with sugar substitute)

Vegetables

Fresh, frozen, or canned plain vegetables

Meat and Meat Substitutes

Lean beef, lamb, pork, veal, and poultry
Fish and shellfish
Low-fat luncheon meats and cheeses
Eggs, lentils, cooked dried peas and beans
Peanut butter

Fats and Oils

Monounsaturated (canola, olive, and peanut) and polyunsaturated (safflower, sunflower, corn, soybean) liquid oils
Margarine with a liquid oil as the first label ingredient
Peanuts and other nuts

Beverages

Diet (sugar-free), caffeine-free soda pop
Mineral water

Other

Sugar substitutes
Low-sugar jam, jelly, and syrup
Unsweetened gelatins
Spices, herbs, and condiments

Use Less Often

Sweet rolls and pastries
Presweetened cereals
Pies, cakes, cookies, and other sweet desserts

Fruit drinks and punches
Fruits canned in heavy syrup

Whole, 2%, and chocolate milk
Regular fruited yogurt
Ice cream

Vegetables with sauce or glaze

Meats or meat substitutes with high-fat or sweetened
sauce or gravy
Regular luncheon meats and cheeses
Fried chicken or fish

Saturated fats (butter, lard, coconut oil, palm oil, palm
kernel oil, shortening)

Regular soda pop and other sweetened beverages
Drinks containing caffeine
Alcoholic beverages

Sugar (table, brown, powdered)
Honey, jam, jelly, preserves, syrup, molasses, candy
Regular gelatin

Sample Menu

(approximately 1550 calories)

Breakfast

(3-4 carbohydrate servings)

½ cup oatmeal*
1 slice whole wheat toast*
1 small orange*
½ cup skim milk*
1 tsp margarine

Morning Snack

(1-2 carbohydrate servings)

8 oz light fruited yogurt*

Lunch

(2-3 carbohydrate servings)

2 oz lean beef
2 slices rye bread*
1 cup soup*
lettuce and tomato salad
1 cup skim milk*
1 Tbsp light salad dressing

Afternoon Snack

(1-2 carbohydrate servings)

4-5 crackers* and 1 small apple*

Dinner

(3-4 carbohydrate servings)

3 oz baked chicken
1 small baked potato*
1 small whole wheat roll*
1 cup green beans
Tossed salad
1 cup skim milk*
1 tsp margarine
1 Tbsp light salad dressing

Evening Snack

(1-2 carbohydrate servings)

3-6 cups popcorn*

*Indicates carbohydrate foods