



# PRODUCTS FOR TREATING LOW BLOOD GLUCOSE

**If you take insulin, you've heard it a thousand times: Always be prepared for low blood glucose.**

LOW BLOOD GLUCOSE

**LOW BLOOD GLUCOSE** (hypoglycemia) occurs when one's blood glucose level drops below so-called "normal" levels. Blood glucose is usually considered to be approaching low levels when it drops below 70 milligrams per deciliter (mg/dl).

A drop in blood glucose can occur when you take too much insulin or oral medications; eat too little food or inadequate nutrients to cover your insulin or oral medication; don't eat at the appropriate time; or get more physical activity than you're prepared for. And sometimes, hypoglycemia can occur for no apparent reason.

People with diabetes frequently recognize their own unique symptoms signaling this condition. Common symptoms of low blood glucose include shakiness, sweats, tingling lips, sudden mood swings, irritability, hunger, fatigue, weakness, poor coordination, paleness, loss of concentration, or even unconsciousness.

Experts recommend that you check your blood glucose before treating low blood glucose—just to confirm that your symptoms are indeed being caused by a drop in blood glucose and not something else, like nervousness over a speech you have to give,

a big job interview, or a math test. However, always treat for low blood glucose when you can't check or when you're in doubt. And if you can check but you're feeling really low, it's probably better to treat for low blood glucose and then check your blood within the next couple of minutes.

Treating low blood glucose means eating 15 grams of a fast-acting carbohydrate. If you don't feel better after 15 or 20 minutes, check your blood glucose again. If it's still below 70 mg/dl, take another 15 grams of carbohydrate. If this doesn't bring your blood glucose above 70 mg/dl, you may need help. Either call your doctor or go to the emergency room.

Your doctor, diabetes educator, or dietitian may have recommended that you keep a supply of a sugar source at home, in your office, and in your glove compartment if you drive. In addition, always carry a product with fast-acting carbohydrate in your pocket or purse. Some common sources are fruit juices, raisins, fruit, or a couple of pieces of hard candy.

If you are wondering if you should spend money on commercial glucose tablets or gels, consider these three points.

**How Fast It Works.** Manufacturers of

these products claim their products work faster than food in treating low blood glucose. A little basic information will help you understand their argument.

Most candy, including candy you're likely to carry for low blood glucose, is made from a variety of sugars, with sucrose (table sugar) being the most common ingredient. Glucose is the sugar that affects blood glucose the most. Sucrose, or table sugar, is half glucose and half fructose. Fructose has a lesser and slower effect on blood glucose. Therefore, the immediate effect of 15 grams of glucose tablets on blood glucose levels can be roughly equivalent to that of 30 grams of sucrose.

Since many sucrose-containing foods also have a fair amount of fat, you may be getting four times as many calories from a candy bar as from glucose tabs or gel. Also, fat slows digestion, and this slows down the effects of the sugar.

(Note: Because the type 2 medications Precose [acarbose] and Glyset [miglitol] slow the digestion of complex sugars, people who take these drugs should *always* treat low blood glucose with pure glucose.)

**Form.** Another possible advantage of manufacturers' products is the form they come in. Because tablets or gels seem more like drugs or medications than candy, you're not tempted to snack on them. The sugary foods you might keep around to treat low blood glucose can be a constant temptation because such foods seem like treats.

## Over-The-Counter Products

For meal replacement, blood glucose stabilization, and preventing low blood glucose.

### Products To Prevent Low Blood Glucose

**ExtendBar** (Clinical Products, Ltd.) Provides a continuous glucose supply for up to 9 hours to help stabilize blood glucose. Contains uncooked cornstarch, a substance clinically proven to prevent low blood glucose for up to 9 hours. Effective overnight, during/after exercise, or when going too long between meals. Various flavors, including sugar-free and gluten-free flavors.

### Products To Lessen The Risk Of Low Blood Glucose

**Glucerna Shakes and Weight-Loss Shakes** (Abbott Laboratories, Ross Products Division) Designed for people with diabetes. Glucerna shakes are for snacks or to be used in conjunction with a prescribed diet. Weight-loss shakes are for meal replacement. Clinically shown to help manage blood glucose levels. Contain carbohydrates that are digested slowly to help minimize peaks in blood glucose. Various flavors.

**GlucoBurst Diabetic Drink** (PBM Products, LLC) Enriched with antioxidants, L-Arginine, and DHA, helps maintain blood glucose levels and provides nutrients beneficial for circulatory health. Does not contain fructose. Lactose and gluten free. Flavors: vanilla, chocolate, and strawberry. Sold in 8-oz., ready-to-drink containers.

**Enterex Diabetic Drink** (Victus, Inc.) Complete and balanced nutrition with no sugar added, specifically designed for people living with diabetes or those requiring sugar-free meal replacement. Does not contain fructose, saccharin, or aspartame. Contains sucralose (Splenda), a noncaloric sweetener that does not require insulin for its metabolism. Contains 3.4 grams of fiber and 0.5 grams of saturated fat per 8-oz. serving. Lactose and gluten free. Flavors: vanilla, chocolate, and strawberry. Sold in 8-oz., ready-to-drink containers.

Although the commercial products don't taste bad, you are not likely to confuse them with something to nibble on. If you find it hard to resist sweets, the commercial product could be a better choice.

Another advantage to the

commercial product is that you know how much to take. The most common mistake people make when dealing with low blood glucose is overtreating it. By doing this, they risk pushing their blood glucose levels too high.

## OVER-THE-COUNTER PRODUCTS FOR TREATING LOW BLOOD GLUCOSE

Product Name (Manufacturer/Distributor)	Carbohydrate/Dose	Calories	Form
<b>BD Glucose Tablets</b> (BD)	5 g/tablet, serving size 3 tabs	20	Orange-flavored tablets.
<b>Dex4 Glucose Gel</b> (Can-Am Care, LLC)	15 g/tube	70 (entire tube)	Resealable tube with gel level indicator with 5-, 10-, and 15-g increments. Fruit punch flavor.
<b>Dex4 Glucose Tablets</b> (Can-Am Care, LLC)	4 g/tablet	15	Sour apple, assorted fruit, tropical blast, and strawberry cream quick-dissolve tablets.
<b>Glucoburst Glucose Gel</b> (PBM Products, LLC)	15 g/dose (1 dose per packet)	70	Natural arctic cherry-flavored gel.
<b>Glutose 45</b> [three-dose] (Paddock Laboratories)	15 g/dose (3-dose resealable tube)	60 per dose	Improved lemon-flavored gel.
<b>Glutose 15</b> [unit dose] (Paddock Laboratories)	15 g/dose (1 dose per tube)	60	Improved lemon flavored gel, grape-flavored gel.
<b>Various store brand glucose tablets and gel</b> (Can-Am Care, LLC)	4 g/tablet, 15 g/tube (resealable)	15 per dose for tablets; 70 per 15-g gel	<b>Tablets:</b> 10-count tubes and 50-count bottles. Gel: three resealable tubes per carton. <b>Flavors:</b> raspberry, orange, grape, watermelon, sour apple, assorted fruit, strawberry cream quick-dissolve, and fruit punch. Available at Wal-Mart (ReliOn), Kroger, Good Neighbor, Kmart (Value Plus), CVS, and other various store brands.

It's hard to figure how much fruit juice to drink, or how many pieces of candy to eat when you need sugar quickly, especially if low blood glucose has impaired your judgment. But the commercial tablet or gel has the dosage clearly written on the package. (Note that one tablet from one manufacturer may not provide the same dose as one tablet from another manufacturer.)

**Cost.** In most cases, the commercial products cost more than sugar cubes, honey, or fruit juice. Their exact cost will depend on what you pay for a box and how much of the product you need to handle low blood glucose.

Whether you decide to use a food or a commercial product, be sure to have some form of carbohydrates containing glucose handy

wherever you are. Many starches, such as crackers or bread, raise blood glucose as quickly as sucrose, and can also be used to treat low blood glucose.

Never give a person who has lost consciousness anything to eat or drink. He or she should be given a glucagon injection. If glucagon is not available, call an emergency number (such as 911); the unconscious person must be taken to the nearest emergency room immediately.

### New Products

Several commercial products are available that contain ingredients that are designed to either aid in the prevention of hypoglycemia or lessen the rise in blood glucose after meals or snacks.

Diabetes snack bars designed to

help prevent hypoglycemia provide a more sustained release of glucose because they contain uncooked cornstarch, a type of carbohydrate that may cause a delayed rise in blood glucose. Clinical studies have shown these snack bars to be effective in reducing episodes of hypoglycemia, particularly at night.

Snack bars and beverages that claim to reduce blood glucose surges also contain carbohydrate (starch) that is digested and absorbed at a slower rate. Diabetic snack bars and beverages are not to be used to treat hypoglycemia because they might not raise blood glucose levels as quickly as the glucose in other carbohydrate sources.

Your health care team can answer questions about recognizing and treating low blood glucose and about preventing hypoglycemia. ▲