Fast Tip 15.1 Emergency Treatment of Hypoglycemia

If an insulin dose is too high and low blood glucose results, immediately give juice, oral glucose gel, or hard candy if the patient is awake. A physician may also order dextrose IV or glucagon IM or IV to correct low blood glucose levels, especially if the patient is not conscious.

Insta-Glucose (gel) or BD Glucose (chewable tablet) that they take by mouth at the first sign of hypoglycemia. If patients cannot tolerate anything by mouth or are unconscious, they may be given injections such as glucagon (GlucaGen).

Diabetes mellitus is a disease characterized by hyperglycemia, or excessive blood glucose. Diabetes is categorized as type 1 or type 2. In type 1 diabetes or **insulin-dependent diabetes mellitus (IDDM),** destruction of the beta cells of the pancreas causes a decrease or lack of insulin secretion. Insulin in a healthy body serves to move glucose into the body tissues where it is needed, to assist in all functions at the cellular level. When the insulin is missing, glucose is elevated in the blood and unavailable to the tissues. When insulin is unavailable to remove accumulating glucose from the bloodstream, cells excrete water to flush out the vessels and send the glucose to the kidneys. For this reason, signs and symptoms of hyperglycemia include increased urination (from diuresis), increased thirst (the cells are dehydrated), and increased hunger (glucose is in the bloodstream but does not make it into the cells that desperately need it). Worsening damage occurs in the eyes, kidneys, heart, and nerves as long as glucose levels are elevated. Eventually, body organs can become severely affected. Vision worsens, wounds do not heal normally, fingers and toes may become numb, and kidney functions may be impaired. When blood glucose is very high, the patient may become lethargic and exhibit fruity-smelling breath and ketoacidosis (inefficient burning of fat). This can lead to seizures, coma, and death. Although type 1 diabetes is typically diagnosed in childhood or adolescence, it can occur at any age. Genetics, virus exposure, and pancreatic injuries are the contributing factors to the development of this chronic disease.

In type 2 diabetes or **non–insulin-dependent diabetes mellitus (NIDDM),** patients are insulin resistant; that is, their bodies produce adequate amounts of insulin but it does not lower the glucose levels as expected. The pancreas responds by increasing its production of insulin. Eventually, the pancreas cannot keep up with the body's need for insulin. Genetics, a sedentary lifestyle, and obesity are the main contributing factors for type 2 diabetes. Type 1 and type 2 diabetes are summarized in Table 15-2.

Patients with type 1 diabetes require insulin for treatment, whereas patients with type 2 diabetes may be managed with diet alone or with oral diabetic (antihyperglycemic) agents. Some antihyperglycemic drugs encourage the pancreas to release insulin, and others encourage the liver to trigger the

TABLE 15.2 Types of Diabetes

Diabetes Type	Contributing Factors	Insulin Production	Treatment
Type 1: insulin-dependent diabetes mellitus (IDDM)	Family history, pancreatic trauma	Pancreas makes little or no insulin	Insulin is destroyed in the stomach, so patients are dependent on subcutaneously injectable insulin; diet modification and exercise
Type 2: non–insulin-dependent diabetes mellitus (NIDDM)	Family history, obesity, poor diet	Pancreas does not secrete enough insulin, or body does not use insulin properly; if dietary fat intake is excessive, pancreas may not be able to keep up with demand	Diet modification and exercise may be enough; if not, oral antihyperglycemic agents; if these do not work, insulin