

The signs and symptoms of hypoglycemia are caused by both increased adrenergic activity and impaired brain function. The increased adrenergic nervous system activity plus increased secretion of catecholamines produces nervousness, pallor, tremulousness, palpitations, sweating, and hunger (Cryer, 2008). Weakness, dizziness, headache, drowsiness, irritability, loss of coordination, seizures, and coma are more severe responses and reflect CNS glucose deprivation and the body's attempts to elevate the serum glucose levels.

It is often difficult to distinguish between hyperglycemia and a hypoglycemic reaction (Table 28-4). Because the symptoms are similar and usually begin with changes in behavior, the simplest way to differentiate between the two is to test the blood glucose level. The blood glucose level is low in hypoglycemia, but in hyperglycemia, the glucose level is significantly elevated. Urinary ketones may be present after hypoglycemia as a result of starvation ketone production. In doubtful situations, it is safer to give the child some simple carbohydrate. This will help alleviate the symptoms in the case of hypoglycemia but will do little harm if the child is hyperglycemic.

**TABLE 28-4**

**Comparison of Manifestations of Hypoglycemia and Hyperglycemia**

| Variable         | Hypoglycemia   | Hyperglycemia                      |
|------------------|--|------------------------------------|
| Onset            | Rapid (minutes)  | Gradual (days)                     |
| Mood             | Labile, irritable, nervous, weepy  | Lethargic                          |
| Mental status    | Difficulty concentrating, speaking, focusing, coordinating<br>Nightmares | Dulled sensorium<br>Confusion      |
| Inward feeling   | Shaky feeling  | Thirst                             |
|                  | Hunger   | Weakness                           |
|                  | Headache   | Nausea and vomiting                |
|                  | Dizziness  | Abdominal pain                     |
| Skin             | Pallor<br>Sweating   | Flushed<br>Signs of dehydration    |
| Mucous membranes | Normal   | Dry, crusty                        |
| Respirations     | Shallow, normal  | Deep, rapid (Kussmaul)             |
| Pulse            | Tachycardia, palpitations  | Less rapid, weak                   |
| Breath odor      | Normal   | Fruity, acetone                    |
| Neurologic       | Tremors  | Diminished reflexes<br>Paresthesia |
| Ominous signs    | Late: Hyperreflexia, dilated pupils, seizure                             | Acidosis, coma                     |