

accomplished by specially trained technicians. Specially trained nurses should change the solution and tubing and redress the infusion using meticulous aseptic precautions. In some institutions, this may be a nursing responsibility. If so, the procedure is carried out according to hospital protocol.

The infusion is maintained at a constant rate by means of an infusion pump to ensure the proper concentrations of glucose and amino acids. Accurate calculation of the rate is required to deliver a measured amount in a given length of time. Because alterations in flow rate are relatively common, the drip should be checked frequently to ensure an even, continuous infusion. The TPN infusion rate should not be increased or decreased without the practitioner being informed because alterations can cause hyperglycemia or hypoglycemia.

General assessments, such as vital signs, input and output measurements, and checking results of laboratory tests, facilitate early detection of infection or fluid and electrolyte imbalance. Additional amounts of potassium and sodium chloride are often required in hyperalimentation; therefore, observation for signs of potassium or sodium deficit or excess is part of nursing care. This is rarely a problem except in children with reduced renal function or metabolic defects. Hyperglycemia may occur during the first day or two as the child adapts to the high-glucose load of the hyperalimentation solution. Although hyperglycemia occurs infrequently, insulin may be required to help the body adjust. When this occurs, nursing responsibilities include blood glucose testing. To prevent hypoglycemia when the hyperalimentation is disconnected, the rate of the infusion and the amount of insulin are decreased gradually.

Family Teaching and Home Care

When alternative feedings are needed for an extended period, the family needs to learn how to feed the child with an NG, gastrostomy, or TPN feeding regimen. The same principles apply as discussed earlier in this chapter for compliance, especially in terms of education, and in [Chapter 19](#) for discharge planning and home care. Plan ample time for the family to learn and perform the procedures under supervision before they assume full