

phase of therapy includes PN as the primary source of nutrition. The second phase is the introduction of enteral feeding, which usually begins as soon as possible after surgery. Elemental formulas containing glucose, sucrose and glucose polymers, hydrolyzed proteins, and medium-chain triglycerides facilitate absorption. Usually these formulas are given by continuous infusion through an NG or gastrostomy tube. As the enteral feedings are advanced, the PN solution is decreased in terms of calories, amount of fluid, and total hours of infusion per day. If enteral feedings are tolerated, oral feedings should be attempted to minimize oral aversion and preserve oral skills ([Goulet, Olieman, Ksiazyk, et al, 2013](#)).

The final phase of nutritional support occurs when growth and development are sustained. When PN is discontinued, there is a risk of nutritional deficiency secondary to malabsorption of fat-soluble vitamins (A, D, E, and K) and trace minerals (iron, selenium, and zinc). Serum vitamin and mineral levels should be monitored closely and supplemented enterally, if needed. Pharmacologic agents have been used to reduce secretory losses. H₂ blockers, PPIs, and octreotide inhibit gastric or pancreatic secretion. Cholestyramine is often prescribed to improve diarrhea that is associated with bile salt malabsorption. Growth factors have also been used to hasten adaptation and to enhance mucosal growth, but these uses are still experimental and results are controversial ([Uko, Radhakrishnan, and Alkhouri, 2012](#)).

Numerous complications are associated with SBS and long-term PN. Infectious, metabolic, and technical complications can occur. Sepsis can occur after improper care of the catheter. The GI tract can also be a source of microbial seeding of the catheter. Bowel atrophy may foster increased intestinal permeability of bacteria. A lack of adequate sites for central lines may become a significant problem for the child in need of long-term PN. Hepatic dysfunction, hepatomegaly with abnormal LFTs, and cholestasis may also occur ([Soden, 2010](#)).

Bacterial overgrowth is likely to occur when the ileocecal valve is absent or when stasis exists as a result of a partial obstruction or a dilated segment of bowel with poor motility. Alternating cycles of broad-spectrum antibiotics are used to reduce bacterial overgrowth. This treatment may also decrease the risk of bacterial translocation and subsequent central venous catheter infections. Other