Abstract: The main role of carbohydrates in the human body is to provide energy. Carbohydrates should always be infused with PN (parenteral nutrition) in combination with amino acids and lipid emulsions to improve nitrogen balance. Glucose should be provided as a standard carbohydrate for PN, whereas the use of xylite is not generally recommended. Fructose solutions should not be used for PN. Approximately 60% of non-protein energy should be supplied as glucose with an intake of 3.0-3.5 g/kg body weight/day (2.1-2.4 mg/kg body weight/min). In patients with a high risk of hyperglycaemia (critically ill, diabetes, sepsis, or steroid therapy) an lower initial carbohydrate infusion rate of 1-2 g/kg body weight/day is recommended to achieve normoglycaemia. One should aim at reaching a blood glucose level of 80-110 mg/dL, and at least a glucose level<145 mg/dL should be achieved to reduce morbidity and mortality. Hyperglycaemia may require addition of an insulin infusion or a reduction (2.0-3.0 g/kg body weight/day) or even a temporary interruption of glucose infusion. Close monitoring of blood glucose levels is highly important.