

resistance and insulin deficiency, with unstable glucose homeostasis in the presence of acute lung infection and treatment. Children with CFRD require close monitoring of blood glucose and administration of insulin, diet and exercise management, and quarterly glycosylated hemoglobin (A1C) measurements. Children with CF may be at increased risk for glucose management problems as a result of decreased nutrient absorption, anorexia, and severity of pulmonary illness. The prevalence of CFRD increases with age, and there is increased morbidity and mortality among children with CFRD compared to those without. Microvascular complications, such as retinopathy and nephropathy, may occur in children and adolescents with CFRD ([O'Riordan, Dattani, and Hindmarsh, 2010](#)). However, ketoacidosis is reported to be rare in individuals with CFRD ([Egan, Green, and Voynow, 2016](#)). Children with CFRD should perform self-blood glucose monitoring (SBGM) three times daily and should be on an insulin regimen. Target glucose levels should be the same as for any other patient with diabetes. There is no evidence that oral glycemic agents are effective. During acute CF exacerbations, the nondiabetic child should be monitored closely for hyperglycemia; glycosylated hemoglobin is reportedly a poor predictor of CFRD, so an oral glucose tolerance test is the preferred screening tool ([Moran, Brunzell, Cohen, et al, 2010](#)).

Bone health is of concern in children and adults with CF. The pancreatic insufficiency of CF and chronic steroid use present potential risks for less than optimum bone growth in such children. Assessment of bone health by history and bone mass density evaluation should be considered in assessing the child's (8 years old and older) health status to detect and prevent osteoporosis and osteopenia.

Prognosis

The median survival age for the CF patient is 40 years, and approximately 50% of patients are 18 and older ([Cystic Fibrosis Foundation, 2015](#)). Lung, heart, pancreas, and liver transplantation have increased survival rates among some CF patients. Heart/lung and double-lung procedures have been successfully performed in children with advanced pulmonary vascular disease and hypoxia. The obstacles surrounding this technique are availability of donated