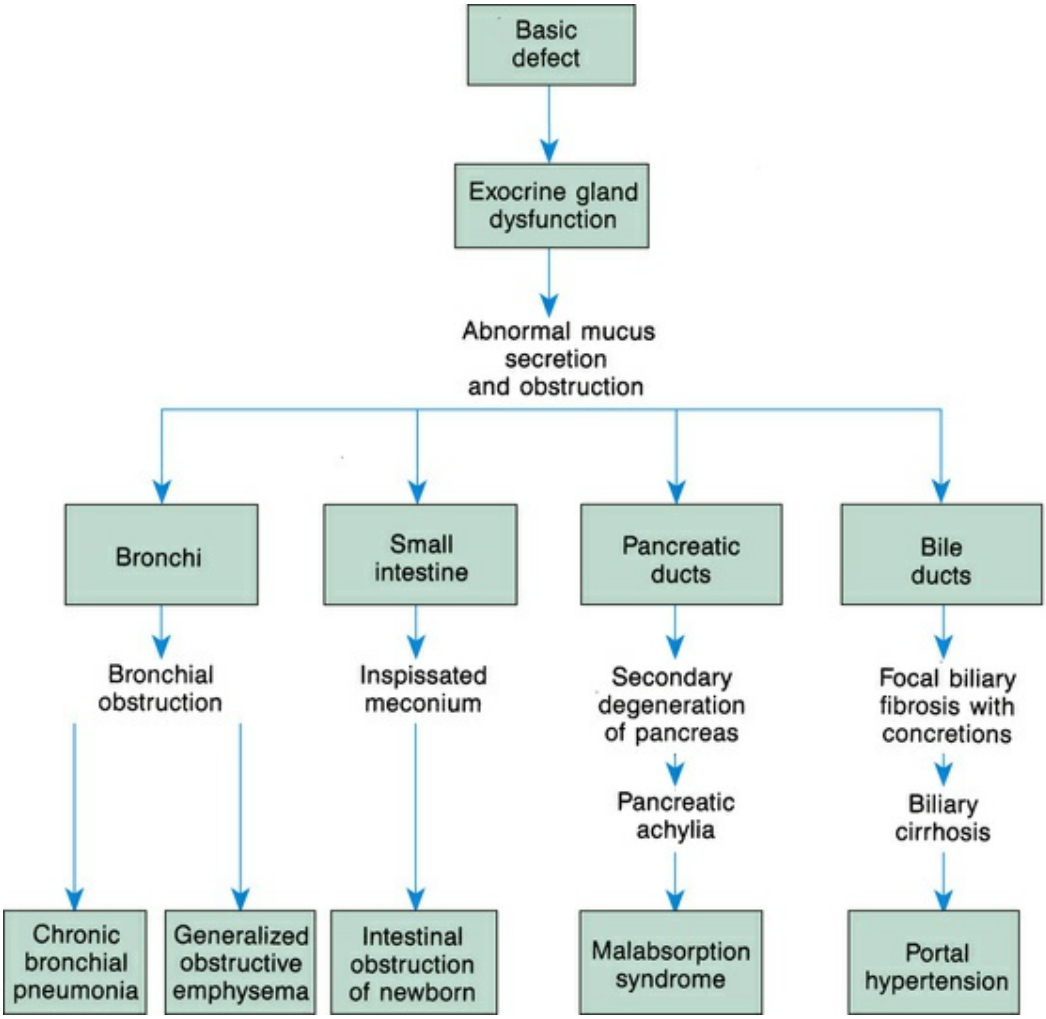

FIG 21-10 Various effects of exocrine gland dysfunction in cystic fibrosis (CF).

In the pancreas, the thick secretions block the ducts, eventually causing **pancreatic fibrosis**. This blockage prevents essential pancreatic enzymes from reaching the duodenum, which causes marked impairment in the digestion and absorption of nutrients. The disturbed function is reflected in bulky stools that are frothy from undigested fat (**steatorrhea**) and foul smelling from putrefied protein (**azotorrhea**).

The incidence of diabetes mellitus (cystic fibrosis–related diabetes [CFRD]) is greater in CF children than in the general population, which may be caused by changes in pancreatic architecture and diminished blood supply over time. CFRD is reported to be the most common complication associated with CF; by age 30 years, approximately 50% of people with CF will develop diabetes, which is associated with increased morbidity (sixfold) and mortality and