

clinical manifestations must be evaluated. Important clinical manifestations include changing sensorium (irritability to lethargy); decreased response to stimuli; integumentary changes (decreased elasticity and turgor); prolonged capillary refill; increased heart rate; sunken eyes; and, in infants, sunken fontanel. Using multiple predictors increases the sensitivity of assessing the fluid deficit. Objective signs of dehydration are present at a fluid deficit of less than 5%.

Laboratory data are useful only when results are significantly abnormal. Urine specific gravity and blood urea nitrogen (BUN) measurements are unreliable assessments for determining dehydration in children ([Churgay and Aftab, 2012a](#)). However, a serum bicarbonate level (>17 mEq/L) reduces the chances of dehydration, whereas a bicarbonate level of less than 13 mEq/L increases the chance of dehydration requiring IV intervention ([Churgay and Aftab, 2012a](#)). Shock, tachycardia, and very low blood pressure are common features of severe depletion of ECF volume (see [Shock, Chapter 23](#)).

Therapeutic Management

Medical management is directed at correcting the fluid imbalance and treating the underlying cause. When the child is alert, awake, and not in danger, correction of dehydration may be attempted with oral fluid administration. Mild cases of dehydration can be managed at home by this method. Several commercial rehydration fluids are available for use. Oral rehydration management consists of replacement of fluid loss over 4 to 6 hours, replacement of continuing losses, and provision for maintenance fluid requirements. In general, a mildly dehydrated child may be given 50 ml/kg of oral rehydration solution (ORS), whereas the child with moderate dehydration may be given 100 ml/kg of ORS. The child with fluid losses from diarrhea or vomiting may be given an additional 10 ml/kg for each stool or vomitus ([Churgay and Aftab, 2012b](#)). Amounts and rates are determined from body weight and the severity of dehydration and are increased if rehydration is incomplete or if excess losses continue, until the child is well hydrated and the basic problem is under control.

The child may not be thirsty even though dehydrated and may refuse oral fluids initially for fear of continued emesis (if occurring)