

variable in individual infants and children. A more accurate means of describing dehydration is to reflect acute loss (time frame of ≤ 48 hours) in milliliters per kilogram of body weight. For example, a loss of 50 ml/kg is considered to be a mild fluid loss, but a loss of 100 ml/kg produces severe dehydration.

A detailed history is the first step when assessing for dehydration. Parent reports of fluid intake, urine output, diarrhea, and emesis can aid in the identification of dehydration. In addition, parents are asked about tears; a child who is able to produce tears is less likely to have moderate or severe dehydration (Churgay and Aftab, 2012a). Clinical signs provide clues to the extent of dehydration (Table 22-3). Weight is the most important determinant of the percent of total body fluid loss in infants and younger children. However, often the pre-illness weight is unknown. Other predictors of fluid loss include a changing level of consciousness (irritability to lethargy), altered response to stimuli, decreased skin elasticity and turgor, prolonged capillary refill (>2 seconds), increased heart rate, and sunken eyes and fontanel. The earliest detectable sign is usually tachycardia followed by dry skin and mucous membranes, sunken fontanel, signs of circulatory failure (coolness and mottling of extremities), loss of skin elasticity, and prolonged capillary filling time (Table 22-4). There is evidence that the clinical signs of prolonged capillary refill time, abnormal skin turgor, and abnormal respiratory pattern are most useful in predicting dehydration in children (Churgay and Aftab, 2012a).

TABLE 22-3
Evaluating Extent of Dehydration

Clinical Signs	LEVEL OF DEHYDRATION		
	Mild	Moderate	Severe
Weight loss – infants	3% to 5%	6% to 9%	$\geq 10\%$
Weight loss – children	3% to 4%	6% to 8%	10%
Pulse	Normal	Slightly increased	Very increased
Respiratory rate	Normal	Slight tachypnea (rapid)	Hyperpnea (deep and rapid)
Blood pressure	Normal	Normal to orthostatic (>10 mm Hg change)	Orthostatic to shock
Behavior	Normal	Irritable, more thirsty	Hyperirritable to lethargic
Thirst	Slight	Moderate	Intense