

movement. Because intracellular water and electrolytes move to and from the ECF compartment, any imbalance in the ICF is reflected by an imbalance in the ECF. Disturbances in the ECF involve either an excess or a deficit of fluid or electrolytes. Of these, fluid loss occurs more frequently.

Depletion of ECF, usually caused by gastroenteritis, is one of the most common problems encountered in infants and children. Until modern techniques for fluid replacement were perfected, gastroenteritis was one of the chief causes of infant mortality. Fluid and electrolyte problems related to specific diseases and their management are discussed throughout the book where appropriate. The major fluid disturbances, their usual causes, and clinical manifestations are listed in [Table 22-2](#). Problems of fluid and electrolyte disturbance always involve both water and electrolytes; therefore, replacement includes administration of both, calculated on the basis of ongoing processes and laboratory serum electrolyte values.

**TABLE 22-2**

**Disturbances of Select Fluid and Electrolyte Balance**

| Mechanisms and Situations   | Manifestations   | Management and Nursing Care  |
|---|--|--|
| <b>Water Depletion</b>  |  |  |
| Failure to absorb or reabsorb water<br>Complete or sudden cessation of intake or prolonged diminished intake: <ul style="list-style-type: none"> <li>• Neglect of intake by self or caregiver—confused, psychotic, unconscious, or helpless</li> <li>• Loss from GI tract—vomiting, diarrhea, NG suction, fistula</li> </ul> Disturbed body fluid chemistry: Inappropriate ADH secretion<br>Excessive renal excretion: Glycosuria (diabetes)<br>Loss through skin or lungs: <ul style="list-style-type: none"> <li>• Excessive perspiration or evaporation—febrile states, hyperventilation, increased ambient temperature, increased activity (BMR)</li> <li>• Impaired skin integrity—</li> </ul> | General symptoms depend to some extent on proportion of electrolytes lost with water<br>Thirst<br>Variable temperature—increased (infection)<br>Dry skin and mucous membranes<br>Poor skin turgor<br>Poor perfusion (decreased pulse, prolonged capillary refill time)<br>Weight loss<br>Fatigue<br>Diminished urinary output<br>Irritability and lethargy<br>Tachycardia<br>Tachypnea<br>Altered level of consciousness, disorientation<br>Laboratory findings: <ul style="list-style-type: none"> <li>• High urine specific gravity</li> <li>• Increased hematocrit</li> </ul> | Provide replacement of fluid losses commensurate with volume depletion.<br>Provide maintenance fluids and electrolytes.<br>Determine and correct cause of water depletion.<br>Measure fluid intake and output.<br>Monitor vital signs.<br>Monitor urine specific gravity.<br>Monitor body weight.<br>Monitor serum electrolytes. |