and detailed fashion, thereby enhancing the ability to detect subtle changes in neurologic status over time. Descriptions of behaviors should be simple, objective, and easily interpreted—for example: "Drowsy but awake and conversationally rational/oriented"; "Sleepy but arousable with vigorous physical stimuli; pressure to nail base of right hand results in upper extremity flexion/lower extremity extension."

Vital Signs

Pulse, respiration, and blood pressure provide information regarding the adequacy of circulation and the possible underlying cause of altered consciousness. Autonomic activity is most intensively disturbed in cases of deep coma or brainstem lesions.

Body temperature is often elevated, and sometimes the elevation may be extreme. High temperature is most frequently a sign of an acute infectious process or heat stroke but may also be caused by ingestion of some drugs (especially salicylates, alcohol, and barbiturates) or by intracranial bleeding, especially subarachnoid hemorrhage. Hypothalamic involvement may cause elevated or decreased temperature. Serious infection may produce hypothermia.

The pulse is variable and may be rapid, slow and bounding, or feeble. Blood pressure may be normal, elevated, or very low. The Cushing reflex, or pressor response, causes a slowing of the pulse and an increase in blood pressure and is uncommon in children; when it occurs, it is a very late sign of increased ICP. Medications may also affect the vital signs. For assessment purposes, actual changes in pulse and blood pressure are more important than the direction of the change.

Respirations are often slow, deep, and irregular. Slow, deep breathing is often seen in heavy sleep caused by sedatives, after seizures, or in cerebral infections. Slow, shallow breathing may result from sedatives or opioids. Hyperventilation (deep and rapid respirations) is usually a result of metabolic acidosis or abnormal stimulation of the respiratory center in the medulla caused by salicylate poisoning, hepatic coma, or Reye syndrome (RS).

Breathing patterns have been described with a number of terms (e.g., apneustic, cluster, ataxic, Cheyne-Stokes). However, it is better to describe what is being observed rather than to place a label on it,