

NaHCO_3 is administered in amounts adequate to alkalinize the urine (urine pH >7.5) and to maintain urine output. Raising urine pH from 6.5 to 7.5 increases salicylate clearance fivefold. Patients with coexisting respiratory alkalosis should also receive NaHCO_3 cautiously to avoid excessive alkalemia. Acetazolamide may be administered in the face of alkalemia, when an alkaline diuresis cannot be achieved, or to ameliorate volume overload associated with NaHCO_3 administration. Acetazolamide may cause systemic metabolic acidosis if the excreted HCO_3^- is not replaced, a circumstance that can markedly reduce salicylate clearance. Hypokalemia should be anticipated with vigorous bicarbonate therapy and should be treated promptly and aggressively. Glucose-containing fluids should be administered because of the danger of hypoglycemia. Excessive insensible fluid losses may cause severe volume depletion and hypernatremia. If renal failure prevents rapid clearance of salicylate, hemodialysis should be performed against a standard bicarbonate dialysate ($[\text{HCO}_3^-] = 30\text{--}35 \text{ meq/L}$).

ALCOHOLS Under most physiologic conditions, sodium, urea, and glucose generate the osmotic pressure of blood. Plasma osmolality is calculated according to the following expression: $P_{\text{osm}} = 2\text{Na}^+ + \text{Glu} + \text{BUN}$ (all in mmol/L), or, using conventional laboratory values in which glucose and BUN are expressed in mg/dL: $P_{\text{osm}} = 2\text{Na}^+ + \text{Glu}/18 + \text{BUN}/2.8$. The calculated and determined osmolality should agree within 10–15 mmol/kg H_2O . When the measured osmolality exceeds the calculated osmolality by >10–15 mmol/kg H_2O , one of two circumstances prevails. Either the serum sodium is spuriously low, as with hyperlipidemia or hyperproteinemia (pseudohyponatremia), or osmolytes other than sodium salts, glucose, or urea have accumulated in plasma. Examples of such osmolytes include mannitol, radiocontrast media, ethanol, isopropyl alcohol, ethylene glycol, propylene glycol, methanol, and acetone. In this situation, the difference between the calculated osmolality and the measured osmolality (*osmolar gap*) is proportional to the concentration of the unmeasured solute. With an appropriate clinical