

**TABLE 2.** FORMULAS FOR USE IN MANAGING HYPERNATREMIA AND CHARACTERISTICS OF INFUSATES.

FORMULA*	CLINICAL USE
1. Change in serum Na <sup>+</sup> = $\frac{\text{infusate Na}^+ - \text{serum Na}^+}{\text{total body water} + 1}$	Estimate the effect of 1 liter of any infusate on serum Na <sup>+</sup>
2. Change in serum Na <sup>+</sup> = $\frac{(\text{infusate Na}^+ + \text{infusate K}^+) - \text{serum Na}^+}{\text{total body water} + 1}$	Estimate the effect of 1 liter of any infusate containing Na <sup>+</sup> and K <sup>+</sup> on serum Na <sup>+</sup>

  

INFUSATE	INFUSATE Na <sup>+</sup> mmol per liter	EXTRACELLULAR-FLUID DISTRIBUTION %
5% Dextrose in water	0	40
0.2% Sodium chloride in 5% dextrose in water	34	55
0.45% Sodium chloride in water	77	73
Ringer's lactate	130	97
0.9% Sodium chloride in water	154	100

\*The numerator in formula 1 is a simplification of the expression (infusate Na<sup>+</sup> - serum Na<sup>+</sup>) × 1 liter, with the value yielded by the equation in millimoles per liter.<sup>8</sup> The estimated total body water (in liters) is calculated as a fraction of body weight. The fraction is 0.6 in children; 0.6 and 0.5 in nonelderly men and women, respectively; and 0.5 and 0.45 in elderly men and women, respectively.<sup>27</sup> Normally, extracellular and intracellular fluids account for 40 and 60 percent of total body water, respectively.<sup>27</sup>