

Fluid Compartments Homework  
BI-374, Spring '06, Dr. C. S. Tritt  
Due: 4/13 (Thursday)

In the following problems, calculate the “final” ICF and ECF volumes and osmolarity given the following initial conditions:

|            |                              |
|------------|------------------------------|
| ICF volume | 28.0 l                       |
| ECF volume | 14.0 l                       |
| Osmolarity | 290 mOsm/kg H <sub>2</sub> O |

Assume a constant density of 1.00 kg/l for the solution and neglect the mass of the solute so values of molality (moles/kg H<sub>2</sub>O) and molarity (moles/l of solution) are the same. Assume a period long enough for establishment of osmotic equilibrium but short enough that renal and other compensatory responses do not occur.

1. Addition of 2.0 l of 145 mOsm/l saline (NaCl).
2. Addition of 1.0 l of 580 mOsm/l of KCl.
3. Addition of 4.0 grams of NaCl.