

Water, Electrolyte, and Acid-Base Balance
Chapter Study Guide (C27) - Tortora
Hot List Questions

1. What are the components of our body fluid that must be regulated?
2. What are the two main water compartments in the human body? How may we further subdivide the non-cellular volume?
3. What do we call the force that is able to move water across a plasma membrane?
4. What will happen to a water molecule if an ion crosses the plasma membrane?
5. What is water balance? What is the benchmark volume for water balance?
6. How is the sense that tells us we need to gain water?
7. How are the sources of our water gains and water losses?
8. Where is the thirst center located? How do we sense dehydration?
9. What is antidiuretic hormone and aldosterone functions? Mode of action?
10. How may fluid excesses from drinking hypotonic water effect your body? What tissues are at greatest risk? Why?
11. What are the major intracellular and extracellular cations and anions?
12. What is the difference between a salt and an acid?
13. What is the difference between a strong acid and a weak acid (give examples)? What is the difference between a strong base and a weak base (give examples)?
14. What is a buffer?
15. What is the difference between a physiological buffers and a chemical buffers?
16. What are the three major chemical buffer systems?
17. What are the two physiologic buffer systems?
18. What is acidosis and alkalosis?
19. What is the difference between respiratory acidosis and respiratory alkalosis?
20. What is the difference between metabolic acidosis and metabolic alkalosis?
21. What is pH? What is the range of the pH scale? What number is the strongest acid? What number is the strongest base? What is neutral? What is blood pH?
22. Why is it critical that we regulate pH? Think about proteins! Think about displacement of ions across the plasma membrane!
23. What wil happen to pH if you hyperventilate? If you hypoventilate?
24. What will happen to the respiratory rate if you hyperventilate? If you hypoventilate?