Acidosis/Alkalosis affects K+ because K+ and H+ exchange across the membrane. High H+ causes the cell to lose K+. Low H+ causes the cell to lose H+ and take up K+.

Acidosis

- pH < 7.35
- Alters shapes of proteins
- Hyperkalemia
- Hypercalcemia
- Diarrhea
- Renal disease
- Diabetes
- Hypoaldosteronism

**CAUSES**
- Diarrhea
- Hyperkalemia
- Hypercalcemia
- Renal disease
- Diabetes
- Hypoaldosteronism
- Diet
- Alcohol

**EFFECTS**
- Alters shapes of proteins
- Hyperkalemia
- Hypercalcemia
- Hypokalemia
- Hypocalcemia
- Loss of HCO3-

**CAUSES**
- Metabolic
- Impaired gas exchange
- Rapid shallow breathing
- Narcotic overdose
- Vomiting
- Diuretics
- Constipation
- Excess aldosterone
- Hypokalemia
- Hypocalcemia
- Loss of HCO3-

**COMPENSATION**
- Kidneys absorb and make HCO3-
- Kidneys secrete H+ and make HCO3-

3 solutions to acid/base imbalances are...

1. Chemical buffers
   - Bicarbonate-carbonic acid
   - Protein
   - Phosphate
2. Respiratory
   - Increase CO2, increase acid
   - Decrease CO2, decrease acid
3. Kidneys
   - High acid, increase acid
   - Low acid, decrease acid

**Acid [H+]**

High base = high pH

**COMPENSATION**
- Kidneys secrete HCO3-
- Kidneys secrete HCO3-

High acid = low pH

**COMPENSATION**
- Kidneys secrete HCO3-
- Kidneys secrete HCO3-

**CO2 + H2O ↔ H2CO3 ↔ H+ + HCO3-**

**CAUSES**
- Hyperventilation
- Tumors that affect respiration
- Altitude
- Psychoneurosis
- Vomiting
- Hypokalemia
- Diuretics
- Hypokalemia
- Constipation
- Loss of HCO3-
- Excess aldosterone

Acidosis/Alkalosis affects K+ because K+ and H+ exchange across the membrane. High H+ causes the cell to lose K+. Low H+ causes the cell to lose H+ and take up K+.

Acidosis/Alkalosis affects K+ because K+ and H+ exchange across the membrane. High H+ causes the cell to lose K+. Low H+ causes the cell to lose H+ and take up K+.

Acidosis/Alkalosis affects K+ because K+ and H+ exchange across the membrane. High H+ causes the cell to lose K+. Low H+ causes the cell to lose H+ and take up K+.

Acidosis/Alkalosis affects K+ because K+ and H+ exchange across the membrane. High H+ causes the cell to lose K+. Low H+ causes the cell to lose H+ and take up K+.

Acidosis/Alkalosis affects K+ because K+ and H+ exchange across the membrane. High H+ causes the cell to lose K+. Low H+ causes the cell to lose H+ and take up K+.