**Nephron Schematic**

**Blood Flow**

**Early Proximal Tubule**
- Isosm. absorpt.
- H₂O imp.
- Dilutes
- Na⁺Cl⁻ absorption

**Late Proximal Tubule**
- Isosm. absorpt.
- ~67% of Na⁺ and K⁺ reabsorbed
- New HCO₃⁻ (if NH₄⁺ excreted)

**Thin Ascending Limb**
- H₂O impermeable with ADH
- ~5% of Na⁺ reabsorbed

**Thick Ascending Limb**
- 25% of Na⁺ and 20% of K⁺ reabsorbed
- Furosemide blocks
- K⁺-sparing diuretics

**Late Distal Tubule & Collecting Duct**
- α-Intercalated & Principal Cells
  - H₂O imp. w/o ADH
  - H₂O permeable with ADH

**α-Intercalated**
- Reabsorb K⁺
- H⁺ excretion
- Aldosterone stim'd

**Principal Cell**
- Secrete K⁺
- Add aquaporin2

**New HCO₃⁻ absorbed**
- 85% of reabsorbed HCO₃⁻ (if CO₂ from tubule)

**New H₂CO₃ (if NH₄⁺ excreted)**
- NH₃ + H⁺ (excreted)

**Aldosterone increases # of:**
1. Na⁺ channels
2. Na⁺-K⁺-ATPase pumps
3. K⁺ channels

**Angiotensin II**
- Stimulated

**Aldosterone**
- Stimulated

**ADH (vasopressin)**
- Stimulated

**ANP**
- Stimulated

**Sympathetic (Norepi.)**
- Stimulated

**Vasodilator**
- Major effect
- Minor effect
  - insignificant, unless lots o' stim.

**Vasoconstrictor**
- Major effect
- Minor effect

**Find an error?**
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