4. ↑ na & k chann in apical mem (synth & opening)
5. ↑ synth & conc na/k pumps on basolat memb - ATP pump
6. Reab na , secret k
7. H2o follow na

Mech 2: ↑ na reab in PCT
A. cAMP & IP3 secondary sign cascade
B. ↑ expression na, h transporter on apical memb
C. ↑ expression na, k pump on basolat memb
D. ↑nahco3 transporter on basolateral memb
E. Blocks na leak to tubule fluid
F. H2o follow na

Mech 4: vasocostriction
1. Angiotensin II binds its receptor
2. Activates GCPR
3. Activating IP3/Ca secondary messenger signalling cascade - myosin contraction

Mech 5: ↑ ADHV secretion from hypothalamus
Angiotensin II indirectly
a) ↑ h2o reab
   - ↑ h2o perm in DCT & collecting duct
   - ↑ urea reab in collecting duct
   - ↑ na reab in ascending limb
b) vasocostriction

RENIN-ANGIOTENSINOGEN-ANGIOTENSIN SYSTEM SUMMARY
- Renin released in response to low blood and glomerular pressure (afferent arteriole press, by baroreceptors - symp response, low tubular press nacl)
- Renin sets off proteolytic cascade - angiotensin II & aldosterone signalling
- Results in ↑ symp tone, ↑ na reab (and II & aldo), vasoconstriction & ADH secretion

Sensory essential & needs to be regulated because...
- Primary solute in extracellular fluids
- Used to transport other solutes (reabsorp in PCT)
- Critical to function of excitable cells (AP)
- High blood Na = hypernatremia
- Low blood Na = hyponatremia
- Na filtered then reab in nephron - little secreted

Aldosterone regulation Na K levels
1. Aldosterone secreted in response to low serum Na (regulator) & high K
2. Aldosterone passes → principle cells of DCT & collecting duct
3. Binds & activates mineralocorticoid receptor
4. ↑ na & k channels in apical memb (synth & opening)
5. ↑ synth & concentration na/k pumps on baso memb
6. Reab na , secretion k

Diuretics
Act directly / Indirectly on na reab - apart from mannitol rest block na reab
1. Blocks carbonic anhydrase
   - ↑ nahco3 excretion
2. Osmotic diuretic
   - ↑ h2o excretion
3. Blocks na-k-cl cotransporter
   - ↑ na excretion
   - ↑ k excretion
   - ↑ cl excretion
4. Blocks na-cl transporter
   - ↑ na excretion
5. Antagonises aldosterone receptor
   - ↑ na excretion
   - ↑ k rentention

High BP & ANP (Atrial Natriuretic Peptide)
High plasma vol → stretch recep in atrium walls → TANP secretion
1. Dilates afferent arteriole & constricts efferent arteriole - ↑ glom press
2. Closes na channels in principle cells - ↓ na absorption