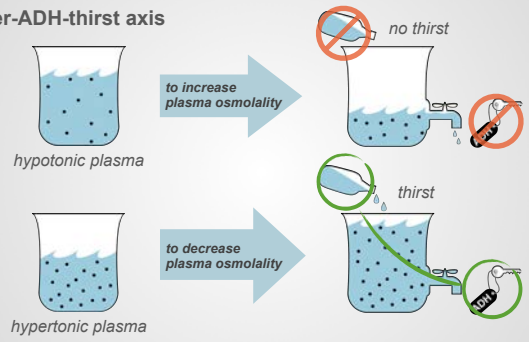
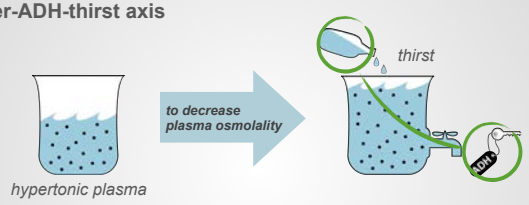
Hypernatremia

Defence against
increases in osmolality

Water-ADH-thirst axis



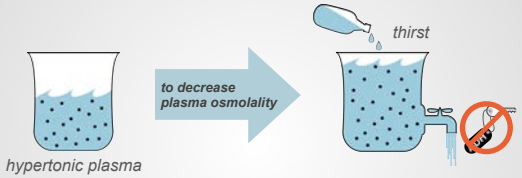
Water-ADH-thirst axis



When the osmolality rises increased thirst and ADH lowers the osmolality

Thirst is more important than ADH in preventing hypernatremia

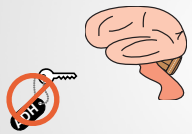
Water-ADH-thirst axis



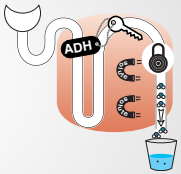
Diabetes insipidus is a condition with no ADH activity

Diabetes insipidus is a condition with no ADH activity

Diabetes insipidus comes in two flavors



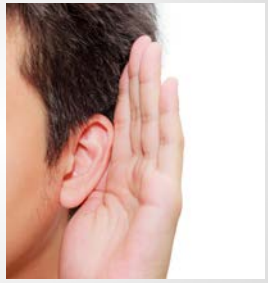
Central diabetes insipidus



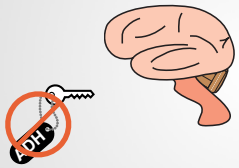
Nephrogenic diabetes insipidus

Central diabetes insipidus

Nephrogenic diabetes insipidus

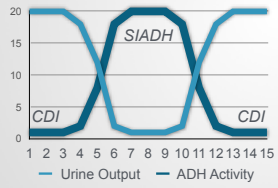


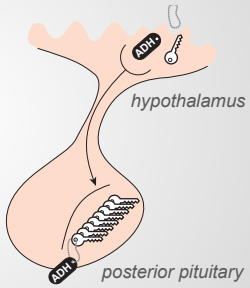
Central diabetes insipidus



- Neurosurgery
- Trauma
- Stroke, aneurysm
- Mass lesions
- Infections
- Granulomas
- Ischemia

Central diabetes insipidus and the triphasic response

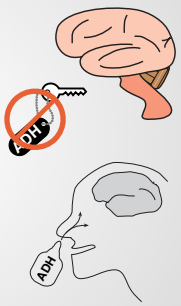




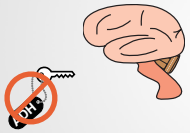
Central diabetes insipidus

Treating central DI is straight forward

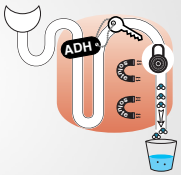
- ➡ Provide pharmaceutical ADH
- ➡ DDAVP



Diabetes insipidus comes in two flavors



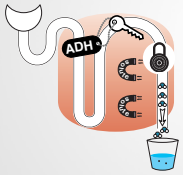
Central diabetes insipidus



Nephrogenic diabetes insipidus

Nephrogenic diabetes insipidus

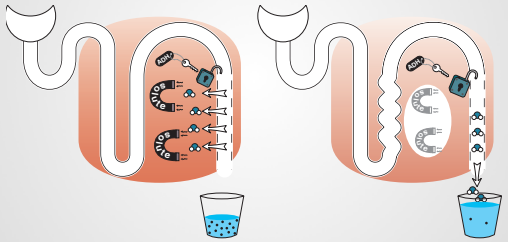
The kidney is unable to respond to ADH



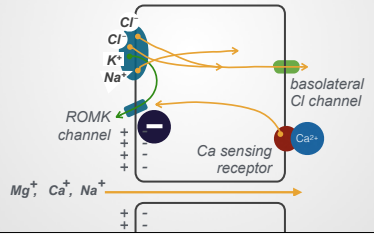
Nephrogenic diabetes insipidus

Congenital
Loop diuretics
Hypokalemia
Hypercalcemia
Lithium
ATN
Osmotic Diuresis

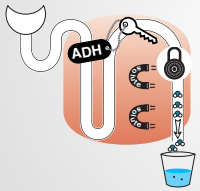
Nephrogenic diabetes insipidus: loop diuretics



Nephrogenic diabetes insipidus: hypercalcemia



Nephrogenic diabetes insipidus



Some are easy to treat

Loop diuretics:	*Stop the drug*
Hypokalemia:	*Correct the K*
Hypercalcemia:	*Correct the Ca*
ATN:	*Wait for the kidneys to heal*
Osmotic Diuresis:	*Correct the glucose*

Some are hard to treat

Lithium	*NSAIDs*
Congenital	*Thiazide diuretics*