



## Sodium

ADH, volume and hyponatremia

### True hyponatremia and ADH

No urine output with normal water intake



ADH irrelevant

Normal water intake with decreased urine output



ADH dependent\*

Compulsive water drinking with maximal but inadequate urine output



ADH suppressed

### True hyponatremia and ADH

Normal water intake with decreased urine output



ADH dependent\*

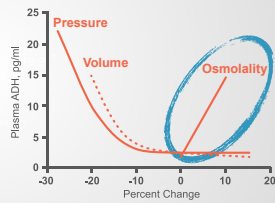


## Two physiologic stimuli for ADH release

~~Increased serum osmolality~~

Decreased perfusion

- ➡ Volume depletion
- ➡ Hypotension



## Hyponatremia due to volume depletion

GI losses

- ➡ Diarrhea
- ➡ Vomiting

Renal losses

- ➡ Diuretics



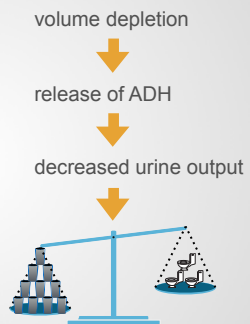
## Hyponatremia due to volume depletion

GI losses

- ➡ diarrhea
- ➡ vomiting

Renal losses

- ➡ diuretics



### Hyponatremia due to hypotension

heart failure → edema

cirrhosis → edema

nephrotic syndrome → edema



### Hyponatremia due to hypotension

heart failure → hypervolemia

cirrhosis → hypervolemia

nephrotic syndrome → hypervolemia

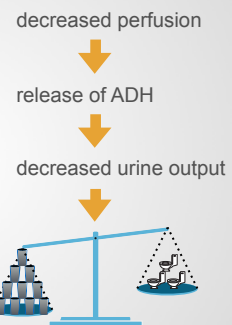


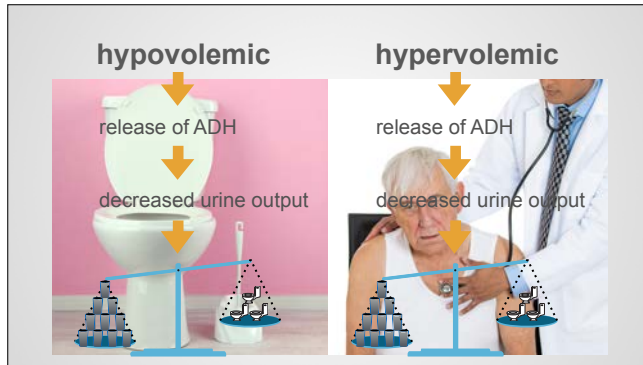
### Hyponatremia due to hypotension

heart failure

cirrhosis

nephrotic syndrome





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