

# Diagnostic Algorithm for Hypernatremia

Confirmed Hypernatremia (plasma Na+ > 145mmol/L)

Step 1: Assess Volume Status

**Hypovolemic**  
TBW ↓↓  
TBNa+ ↓

**Euvolemic**  
TBW ↓  
TBNa+ unchanged

**Hypervolemic**  
TBW ↑  
TBNa+ ↑↑

Step 2: Measure Urine Na+ and urine Osm

**RENAL LOSSES**  
(urine Na+ > 20, urine Osm 300-600)  
pharmacologic diuresis  
osmotic diuresis  
recovery phase of ATN

**EXTRA-RENAL LOSSES**  
(urine Na+ < 20, urine Osm >700)  
vomiting, diarrhea  
EC fistula output  
burns, profuse sweating

**RENAL LOSSES**  
(variable urine Na+; urine Osm <700)  
Diabetes insipidus  
Osmoreceptor dysfunction (hypodipsia)

**EXTRA-RENAL LOSSES**  
(variable urine Na+; urine Osm >700)  
insensible losses (respiratory, skin)

**SODIUM GAIN**  
(urine Na+ > 20)  
Hypertonic saline  
Hypertonic NaHCO3  
Salt tablets  
Hypertonic dialysis  
Mineralocorticoid Excess

