

Hyponatremia

Hypo: “under/beneath”

Natr: Prefix for Sodium

Emia: blood

Meaning of Hyponatremia: low sodium in the blood

Normal sodium levels: 134 to 145 mEq/L (<134 = hyponatremia)

Role of sodium in the body: An important electrolyte that helps regulate water inside and outside of the cell. Remember that water and sodium loves each other and where ever sodium goes so does water.

Learn about [Hypertonic, Hypotonic, & Isotonic Solutions](#). For example, in hyponatremia sodium outside of the cell is very low and this causes water to move inside the cell. In turn, the cell will swell and you will start to see problems in the body, especially with brain cells (confusion).

Sodium also play a role in muscle, nerves, and organ function.

Types of Hyponatremia

Euvolemic Hyponatremia is where the water in the body increases but the sodium stays the same. The causes include: **SIADH** (Syndrome of inappropriate antidiuretic hormone secretion) which is due to the increased amount of secretion of antidiuretic hormone. This hormone retains water in the body which dilutes sodium. Other causes: diabetes insipidus, adrenal insufficiency, Addison’s disease etc.

Hypovolemic Hyponatremia is where the patient has lost a lot of fluid and sodium. **Causes:** vomiting, diarrhea, NG suction, diuretic therapy, burns, sweating

Hypervolemic Hyponatremia is where the body has increased in fluid and sodium. However, sodium decreases due to dilution and because total body water and sodium are regulated independently in the body. **Causes:** congestive heart failure, kidney failure, IV infusion of saline, liver failure etc.

Causes of Hyponatremia

Remember “NO Na+”

Na⁺ excretion increased with renal problems, NG suction (GI system rich in sodium), vomiting, diuretics, sweating, diarrhea, decreased secretion of aldosterone (diabetes insipidus) (wasting sodium)

Overload of fluid with congestive heart failure, hypotonic fluids infusions, renal failure (dilutes sodium)

Na⁺ intake low through low salt diets or nothing by mouth

Antidiuretic hormone over secreted **SIADH (syndrome of inappropriate antidiuretic hormone secretion...remembers retains water in the body and this dilutes sodium)

Signs & Symptoms of Hyponatremia

Remember “SALT LOSS”

Seizures & Stupor

Abdominal cramping, attitude changes (confusion)

Lethargic

Tendon reflexes diminished, trouble concentrating (confused)

Loss of urine & appetite

Orthostatic hypotension, overactive bowel sounds

Shallow respirations (happens late due to skeletal muscle weakness)

Spasms of muscles

Nursing Interventions for Hyponatremia

- Watch cardiac, respiratory, neuro, renal, and GI status
- **Hypovolemic Hyponatremia:** give IV sodium chloride infusion to restore sodium and fluids (**3% Saline** hypertonic solution...harsh on the veins...given in ICU usually through central line very slowly...must watch for fluid overload)
- **Hypervolemic Hyponatremia:** Restrict fluid intake and in some cases administer diuretics to excretion the extra water rather than sodium to help concentrate the sodium. If the patient has renal impairment they may need dialysis.
- **Caused by SIADH or antidiuretic hormone problems:** fluid restriction or treated with an antidiuretic hormone antagonists called **Decloxylin** which is part of the tetracycline family (don't give with food especially **dairy or antacids**...bind to cations and this affect absorption).

- If patient takes **Lithium** remember to monitor drug levels because lithium excretion will be diminished and this can cause lithium toxicity.
- Instruct to **increase oral sodium intake** and some physicians may prescribe sodium tablets. Food rich in sodium include: bacon, butter canned food, cheese, hot dogs, lunch meat, processed food, table salt