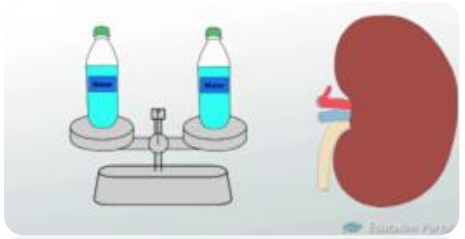
Osmolality in Serum and Urine

BCH 472



Serum osmolality

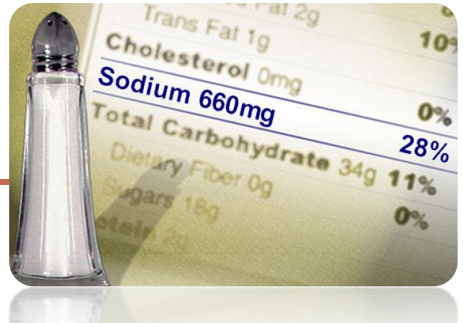
- The **osmolality** test provides a snapshot of the number of solutes (**concentration**) present in the blood (serum), urine, or stool.

- **Serum osmolality** is primarily ordered **to investigate hyponatremia** (low sodium in serum).

- **Higher** than normal levels may be due to:
- High sodium level (hypernatremia)

- **Lower** than normal levels may be due to:
- Low sodium level (hyponatremia)

- may be due to sodium loss through the urine or due to increased fluid in the bloodstream
- Increased fluid may be due to drinking excessive amounts of water or water retention.



Urine osmolality

- Urine osmolality is frequently ordered along with serum osmolality.
- This test helps **check your body's water balance** and to investigate increased and decreased urine output (**urine concentration**).

- **Increased urine output** may be due to increased fluid intake, lack of appropriate amounts of ADH, or due to diabetes, with increased glucose levels leading to increased urine output.

- **Decreased urine output** may be due to a variety of causes including decreased blood flow to the kidneys, an appropriate response to dehydration, or damage to tubular cells in the kidneys.

- Osmolality is a **more exact measurement** of urine concentration than the urine specific gravity test.

Urine osmolality

- **Greater-than-normal** (**concentrated urine**) measurements may indicate:
- Loss of body fluids (dehydration)

- **Lower-than-normal** (**diluted urine**) measurements may indicate:
- Kidney failure.

- **Osmolality is directly proportional to concentration**.

- **Osmometer**: is a device for measuring the osmotic strength of a solution.