

## Primary Polydipsia

Primary polydipsia is characterized by increased free water intake, which is commonly caused by psychiatric diseases and results in polyuria and hyponatremia. It can be diagnosed by normal or decreased plasma osmolality, decreased urine osmolality, and significant elevation of urine osmolality during the water deprivation test. The main management strategy is water restriction.



PLAY PICMONIC

### Characteristics

#### Increased Free Water Intake

##### Up-arrow Water

An increased water intake characterizes primary polydipsia. The patient may also consistently complain of a large volume of urine excreted which often exceeds 40-50 mL/kg body weight.

#### Psychiatric Diseases

##### Psycho in a Straight-jacket

Primary polydipsia can occur in patients with psychiatric illnesses, including bipolar disorder, schizophrenia, schizoaffective disorder, anxiety, and psychotic depression.

### Diagnosis

#### Hyponatremia

##### Hippo-salt-shaker

Hyponatremia can be present in primary polydipsia due to inadequacy of the kidney to excrete excess fluid resulting in retained water. Excess fluid intake also contributes to this. It is characterized by sodium levels less than 135 mEq/L.

#### Normal or Decreased Plasma Osmolality

##### Normal-sign Down-arrow Plasma-TV Ozzy-mole

Primary polydipsia presents with normal or decreased plasma osmolality ( $\leq 280$  mOsm/kg). This differentiates it from diabetes insipidus, which presents with an increased plasma osmolality ( $\geq 300$  mOsm/kg).

#### Decreased Urine Osmolality

##### Down-arrow Urinal Ozzy-mole

Primary polydipsia patients present with dilute urine. Labs will reveal a decreased urine osmolality (less than 100 mOsm/kg). Urine osmolality will be less than serum osmolality.

## Water Deprivation Test

[Water-bottle Restricted-belt Test-tubes](#)

Water restriction through a water deprivation test will cause a significant rise in urine osmolality ( $>700$  mOsm/kg) in normal physiology and primary polydipsia. This will distinguish primary polydipsia from diabetes insipidus, which presents with no change or only a slight increase in urine osmolality.

## Management

### Water Restriction

[Water-bottle Restricted-belt](#)

Water restriction is the ideal treatment for patients with primary polydipsia.