



## Signs and Symptoms of Dehydration

- Dryness of the skin, hands, armpits, eyes, oral mucosa
- Cracked lips
- Loss of skin elasticity (poor turgor)
- Longitudinal tongue furrows
- Difficulty swallowing
- Sunken eyes
- Pressure injuries
- Sleepy or tired
- Thirsty
- Decreased, concentrated (dark), or absent urine output
- Muscle weakness/cramps
- Headache
- Dizzy or lightheaded
- ADL Decline
- Change in mental status/increased confusion/agitation
- Delirium
- Constipation
- Postural/orthostatic hypotension
- Recent rapid weight loss (3-5 pounds in short time)
- Tachycardia (fast heart rate)
- Increased concentration of serum sodium and osmolality in the blood (see table)
- Coma or death

LAB TEST	NORMAL	IMPENDING DEHYDRATION	DEHYDRATION
BUN/creatinine ratio	20-24		>25
Hematocrit (male)	42%-52%		>52%
Hematocrit (female)	35%-47%		>47%
Serum osmolality	<295 mmol/kg	295-300 mmol/kg	>300 mmol/kg
Serum sodium	135-145 mEq/L		>150 mEq/L
Urine osmolality	500-700 mOsm/kg	700-1050 mOsm/kg	>1050 mOsm/kg
Urine specific gravity	1.005-1.019	1.020-1.029	>1.029
Urine color	Pale yellow	Dark yellow	Greenish-brown
Amount of urine		800-1200 cc/day	<800 cc/day
Est. Serum Osmolarity = 1.86 x (Na + K) + 1.15 x glucose + urea + 14 (all measured in mmol/L)			

## **Risk Factors for Dehydration**

- Age 85+
- Gender: Female
- Dependence in activities of daily living (ADLs)
- Semi-dependent (e.g. needs prompting or assist; hand dexterity problems)
- Refuses to drink or decreased thirst perception
- Impaired cognition/dementia/Alzheimer's Disease
- Communication problems
- Mental illness
- Intellectually or developmentally disabled
- Four or more chronic conditions (e.g. stroke, diabetes, renal disease)
- Uncontrolled diabetes
- Decreased renal function
- Four or more medications (e.g. diuretics, laxatives, antipsychotics)
- Swallowing difficulty
- Use of thickened liquids or therapeutic diets
- Enteral nutrition/hydration and/or IV fluids
- Infection/fever/vomiting/diarrhea/UTI
- Purposeful restriction of fluid intake
- Inadequate food or fluid intake
- Depression and loneliness
- Terminal illness
- Lack of family or social support
- Environment: Hot weather
- Restraints or other environmental factors that may hinder access to fluids

## **Staff and Facility Risk Factors for Dehydration**

- Lack of staff education and understanding of the importance of hydration or the detrimental consequences of dehydration. Incorrectly believing that withholding fluids will control incontinence.
- Inadequate staffing and/or supervision to have adequate time to properly position and offer additional beverages or assist with drinking.
- Few fluid ingestion opportunities provided by staff including before, during and between meals. Or the converse, being too persistent in encouraging hydration may make drinking fluids burdensome.
- Insufficient hydration plan/program to ensure needed fluids are provided throughout the day, including beverages they prefer at the preferred temperature and in the preferred type of container. Hydration care should be a pleasurable and social experience.