



GENERAL EXAMINATION

4.5. Dehydration Examination

Ramazan KOZAN¹

Definition

The circulatory system relies on maintaining a specific volume of intravascular fluid along with an appropriate pressure to effectively perform its functions. When the effective circulating volume decreases, it is often referred to as *dehydration*.

This reduction in intravascular fluid can hinder the circulatory system's ability to support vital physiological processes and deliver nutrients and oxygen to tissues throughout the body.

Pathophysiology

The reasons for dehydration can be categorized physiologically under three main headings (Table 1):

1. Hypovolemic dehydration: Both the effective circulating volume and the total body fluid have decreased. The majority of cases of dehydration occur through this mechanism.

¹ M.D., Assoc. Professor, Department of General Surgery, Gazi University Medical Faculty, dr.kozan@hotmail.com, ORCID iD: 0000-0002-3835-8759

Table 3. Signs of Dehydration Level.

Clinic Condition	Dehydration Level		
	Mild	Moderate	Severe
General Condition	Normal, Well	Irritable Lethargic	Lethargic, confusion, pre-shock
Mental status	Normal	Norma Lethargic	Lethargic-coma
Weight Loss	<5	5-10	>10
Fluid Deficit	%50	%50-100	>%100
Thirst	None	Present, Desire to drink water	Present, But can drink very little or unable to drink
Eyes	Normal	Sunken	Deeply sunken
Tears	Present	Absent	Absent, dry
Tongue	Moist	Dry	Very dry
Oral Mucosa	Slightly dry	Dry	Very Dry
Skin (Turgor)	Returns quickly	Returns slowly	Returns very slowly (>2 sec)
Skin (Tonus)	Normal	Reduced	Reduced
Blood Pressure	Normal	Orthostatic hypotension	Hypotension
Pulse Volume	Normal	Slightly reduced	Filiform, Impalpable
Pulse Rate	Normal	Tachycardic	Tachycardic
Capillary Refill	Normal <2 sec	2-3 sec	>3 sec
Extremities	Warm, Normal	Pale, Cold	Cyanotic
Urinary Output	Normal	<0.5 ml/kg/hour	Anuria
Urinary Density	1020	1020-1030	>1030
Respiratory Rate	Normal	Tachypneic	Tachypneic, hyperpneic

References

1. Jameson L, Fauci A, Kasper D, Hauser S, Longo D, Loscalzo J (Eds). (2018). Harrison's Principles of Internal Medicine, 20e. McGraw-Hill.
2. Taylor K, Jones EB. Adult Dehydration. (2023). In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.