



Al-Mustansiriyah University
College of Medicine
Small Group Learning Committee

Scenario 5: Medical Physiology Department
Diagnosis: Regulation of body fluid Osmolality

A 27-year-old woman is being monitored in the intensive care unit (ICU) after she suffered from **head trauma** in a road traffic accident 3 days ago. She has undergone computed tomographic imaging (CT) of her head, which revealed **cerebral swelling** but no evidence of hemorrhage or brain herniation.

The patient has been in critical but stable condition. The nurse calls the physician because the patient has developed **hypernatremia** and has had a significant increase in dilute urine output. The findings are confirmed, and it is determined that the patient has central diabetes insipidus as a result of the head trauma.

The Objectives:

1. Know about the regulation and secretion of ADH.
2. Describe the cellular action of ADH.
3. Know how to calculate free-water clearance.

References:

- Guyton & Hall Textbook of Medical Physiology.
- Davidson's Principles and Practice of Medicine
- هذا مصدر مفيد جدا <https://patient.info/doctor/osmolality-osmolarity-and-fluid-homeostasis>
- وهذا ممكن تجدون اختصار للموضوع مفيد ايضاً <https://teachmephysiology.com/urinary-system/regulation/antidiuretic-hormone/>