

Med 341 Lectures

Topic: Water and Sodium Disorders

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Introduction:

Homeostasis is very important to maintain cell function and survival. Body fluid water and sodium contents are under strict physiological control. Disorders of Water and Sodium can lead to cellular dysfunction. In this lecture we will recognize the normal control systems for body water and sodium contents and the dysregulation that can happen to them.

Key Outlines:

1. Homeostasis of body water and sodium content
2. Hypo- and Hypervolemia is total body sodium content disorder
3. Hypo- and Hypernatremia is total body water content disorder

Intended Learning Outcomes:

By the end of this lecture the student should be able to:

1. Recognize the systems that control body sodium and water contents
2. Differentiate between total body sodium content (volume status) and serum sodium concentration (Hypo- and Hypernatremia)
3. Use the different types of IV fluids in clinical practice
4. Calculate the water deficit in Hypernatremia
5. Explain the workup of Hyponatremia

Recommended Books and Articles:

1. Book: Guyton & Hall Textbook of Medical Physiology.
2. Book: Fluid, Electrolyte and Acid-Base Disorders: Clinical Evaluation and Management. By Alluru Reddi. Download free from: <http://www.springer.com/gp/book/9781461490821>
3. Article: Fluid Management in Adults and Children: Core Curriculum 2014. AJKD. <http://dx.doi.org/10.1053/j.ajkd.2013.10.044>
4. Article: Clinical practice guideline on diagnosis and treatment of hyponatremia. EJE. <http://www.eje-online.org/content/170/3/G1.full.pdf+html>