

Faculty of Medicine



FYSL1311 Renal physiology and pathophysiology

[30h+14h exercises] 4 credits

This course is not taught in 2005-2006

Language: French

Level: First cycle

Aims

To teach the different aspects of renal physiology and integrate this knowledge into the pathophysiology of renal diseases and water/electrolytes disturbances.

Main themes

The course of renal physiology addresses the multiple roles of the kidney in regulating the body fluids composition and acid-base balance in the whole organism, as well as its involvement in blood pressure regulation, drug clearance, and hormonal regulation. The course also addresses in detail the functional anatomy and the molecular bases of the different regions of the nephron, as well as general concepts such as osmosis, transport mechanisms, and permeability across biological membranes. The theoretical notions are illustrated by clinical examples taken from the pathophysiology of kidney diseases, the pharmacology of common drugs, and the abnormalities in water and electrolytes handling. The teaching is completed by practical courses that use elements of clinical research and molecular mechanisms to integrate the theoretical concepts. One practical session is devoted to the analysis of the mechanisms of action of diuretics and vasopressin, and another one on the lower urinary tract and the mechanisms involved in the regulation of the miction.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

The courses of general physiology, biochemistry, histology and anatomy are prerequisites.

The evaluation is a written examination, including multiple-choice and open questions.

A special effort has been made to integrate the teaching with the other courses of physiology.

Reference : Boron and Boulpaep, Medical Physiology, Saunders.