

Urinary System

I. Introduction

A. Functions

Excretion

Homeostasis

B. Water input / output

C. Protein metabolism

Strategies for nitrogen (NH_3) elimination (comparative physiology)

Dilution – fish

Insolubilization – reptiles & birds

Detoxification – conversion to urea - mammals

II. Human Urinary System

A. Structures

Kidneys

Ureters

Bladder

Urethra

B. Kidney

Renal arteries & veins

Renal cortex

Renal medulla (medullary pyramids)

Renal pelvis

Nephrons

Glomeruli

Tubules

Loops of Henle

Vasa recta

Function

Filtration

Reabsorption

Secretion

Excretion

“The Ultimate Garage Sale”

20% of cardiac output

Reabsorption efficiency

C. Hormonal control of kidney function

Antidiuretic hormone (ADH)

Aldosterone

D. Urine

Composition

Color