

PHYSIOLOGY LAB

Urine Analysis

Goals

1. To be familiarize with the physical and chemical characters of normal urine
2. To be able to characterize unknown urine samples
3. To understand the importance of urine analysis

Background information

Importance of urine analysis

Can reveal diseases that have gone unnoticed such as diabetes mellitus, various forms of glomerulonephritis, and chronic urinary tract infections.

Cost-effective

Macroscopic analysis

Volume: About 1.5L per day

Polyuria, oliguria, and anuria

Turbidity: Clear

Pusuria

Color: Straw or amber color

Colorless, red (hematuria, hemoglobinuria), brown, white, and black

Order

Chemical analysis

pH: 6.0 to 7.4

Acidosis and alkalosis

Specific Gravity (sp gr): 1.003 to 1.030

Hyposthenuria and hypersthenuria

Protein: None

Proteinuria

Glucose: None

Glucosuria

Ketone: None

Ketonuria

Microscopic analysis

Cells

Epithelial cells: 1-3 cells per field

RBC: 0-1 per field

WBC: 0-3 per field

Sperm

Casts

WBC and RBC cast

Hyaline cast

Granular cast

Crystals

Dipstick method

Allows qualitative and semi-quantitative analysis within one minute

The color change on each segment of the strip is compared to the color chart