

# **Urinary System**

by Sophia

#### WHAT'S COVERED

In this lesson, you will learn to identify the structure and function of the urinary system. Specifically, this lesson will cover:

# 1. Urinary System Overview

The **urinary system** helps the body maintain homeostasis by filtering metabolic waste and excess materials (like water or electrolytes) from the blood and expelling them from the body. This process begins in the **kidneys**, two bean-shaped (but not bean-sized) organs in the upper abdomen that filter blood. The materials filtered from the blood make up a substance called **urine**, which is carried through the **ureters** to the **urinary bladder**, where it waits to be expelled from the body through the**urethra**.



## TERMS TO KNOW

#### **Urinary System**

An organ system that filters metabolic waste and excessive materials (like water and electrolytes) from the blood and expels them from the body; the major organs of the urinary system are the kidneys, ureters, urinary bladder, and urethra.

#### Kidneys

Two bean-shaped organs in the upper posterior abdominal cavity (retroperitoneal) that regulate the composition and volume of bodily fluids by filtering blood and creating urine.

#### Urine

A substance made up of metabolic waste and excess materials (like water and electrolytes) from the blood, created by the kidneys and expelled from the body.

#### Ureters

Tubular organs that carry urine from the kidneys to the urinary bladder.

#### **Urinary Bladder**

A sac-like organ that stores urine until it can be expelled from the body (a process called urination or micturition).

#### Urethra

A hollow, tubular organ that carries urine out of the body as it is expelled from the urinary bladder.

# 2. Urinary Homeostasis

You may recall from the Unit 1 tutorial on Homeostasis that the volume and composition of**extracellular fluids** needs to be carefully regulated. The urinary system maintains this necessary homeostasis by altering the composition of blood, which changes as the body takes in water and solutes (primarily through eating and drinking) or loses them (primarily through urine, feces, and sweat). If there is too much water, it gets filtered out by the kidneys. If there are too many solutes, they get filtered out. This process maintains the correct level, concentration, and pH of the extracellular fluids.

### TERM TO KNOW

#### **Extracellular Fluids**

Bodily fluids that are contained outside of cells; major examples include blood plasma, saliva, and interstitial fluid, which surrounds the outside of cells.

# SUMMARY

This lesson has been an **overview** of the structure and function of **the urinary system**, as well as **urinary homeostasis**.

Keep up the learning and have a great day!

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