Urinary system

**Objectives:**

-Name and locate the organs of the urinary system.

- Describe the structure and functions of the kidney, ureters, bladder, and urethra.

- Describe how the kidneys produce urine.

- Pronounce, spell, define, and write the medical terms related to the urinary system.

- Describe common diseases of the urinary system.

**the urinary system**: filters waste products from the blood and excretes them

**Major organs of the urinary system.**

1.right kidney (KID-nee)

2.ureters (yoo-REE-terz)

3.urinary bladder (YOO-rih-nar-ee BLAH-der)

4.urethra (yoo-REE-thrah)

**Structure and function of the Urinary System**

**Kidneys**

* bean shaped structure.
* located at the back, one on each side of the lumbar vertebrae.
* filter the blood to remove waste products. waste products combine with water to form urine (YOO-rin).
* Urine flows out into the renal pelvis, dilated portion of ureter.
* maintain a proper balance of electrolytes, water, and acids within body fluids

**Ureter,Bladder,Urethra**

* ureters connect kidneys to urinary bladder
* Urine flows through ureters to urinary bladder.urine enters bladder through ureteral orifices (OR-ih- fis-ez)
* bladder stores urine. When bladder is full, urine squeezed out into urethra. voiding, urination, or micturition (mick-too-RIH- shun)

dysfunction of urinary bladder due to disease of nervous system is neurogenic (noor-oh-JEN-ick) bladder.

* The urethra carries urine out of the body

In females(4cm) long.

In males, (20 cm). The external opening urethra is urinary or urethral meatus )mee-AY-tuss).

***Urine Production in the Kidney***

Inside each kidney, **nephrons** (**NEF-**ronz). microscopic structures responsible for filtering blood, producing urine.

**glomerulus** (gloh**-MER-**yoo-luss), first part of nephron. It filters the blood of waste products and unnecessary nutrients.

The unwanted material combines with water to form urine.

The urine travels the length of the nephron and is excreted through the **collecting ducts**, ureters, and urethra to outside of body.

Notice the blood vessels around the nephron. These are called the **peritubular capillaries**.

**Pathology**

**nephrotic (neh-FROT-ick) Syndrome**

conditions involving damaged glomeruli and abnormal protein filtration.

When glomeruli damaged, protein filtered it should not be.

**hyperproteinuria** (**high**-per-**proh-**tee**-NOOR**-ee-ah), excessive protein in urine

**hypoproteinemia** (**high-**poh-**proh-**tee-**NEE-**mee-ah), decreased protein in the blood.

* **Acute renal failure** comes on suddenly and is of short duration.
* **Chronic renal failure** comes on gradually and is of long duration.
* **End-stage renal disease** (ESRD) is the final stage of renal failure. Without adequate filtration, the waste products build up in the blood and death occurs because of uremia.
* **Voiding Disorders:**  (Urinary Incontinence (in-**KON**-tih-nens)

Involuntary outflow of urine. Stress incontinence occurs when there is pressure on the bladder from coughing or laughing. Urge incontinence inability to stop flow of urine once urge.

* **Urinary retention**

Inability to empty completely during urination.

**catheterization** (**kath-**eh-ter-eye**-ZAY-**shun) insertion of a flexible tube (catheter) into the bladder to withdraw urine. The catheter is placed through the urethra and into the bladder