

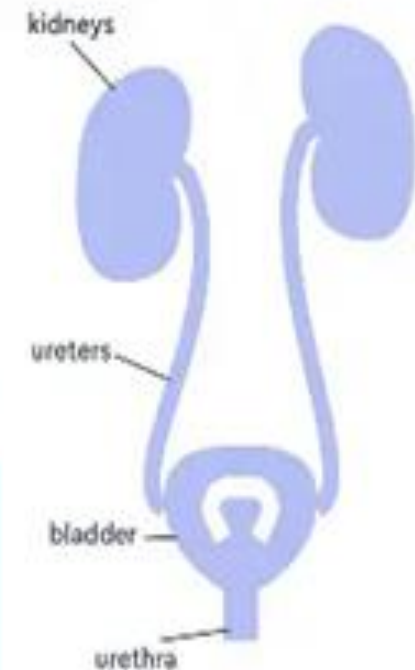


Al- Mustaqbal College University
kidney dialysis
Anatomy
2nd stage

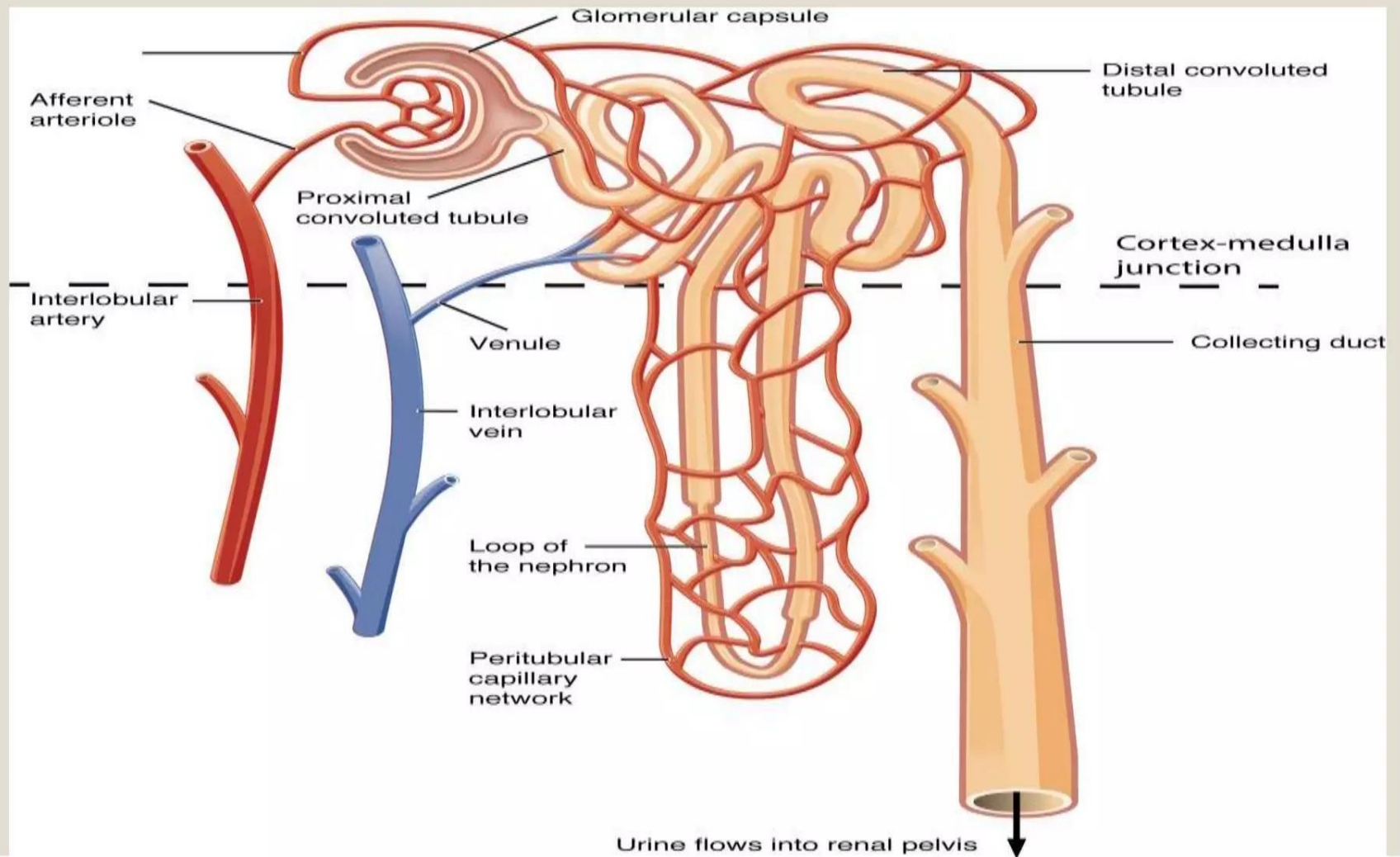


BY:--
Dr .Roaa Nashat AL-Saffar

Ureter,Bladder, Urethral
anatomy



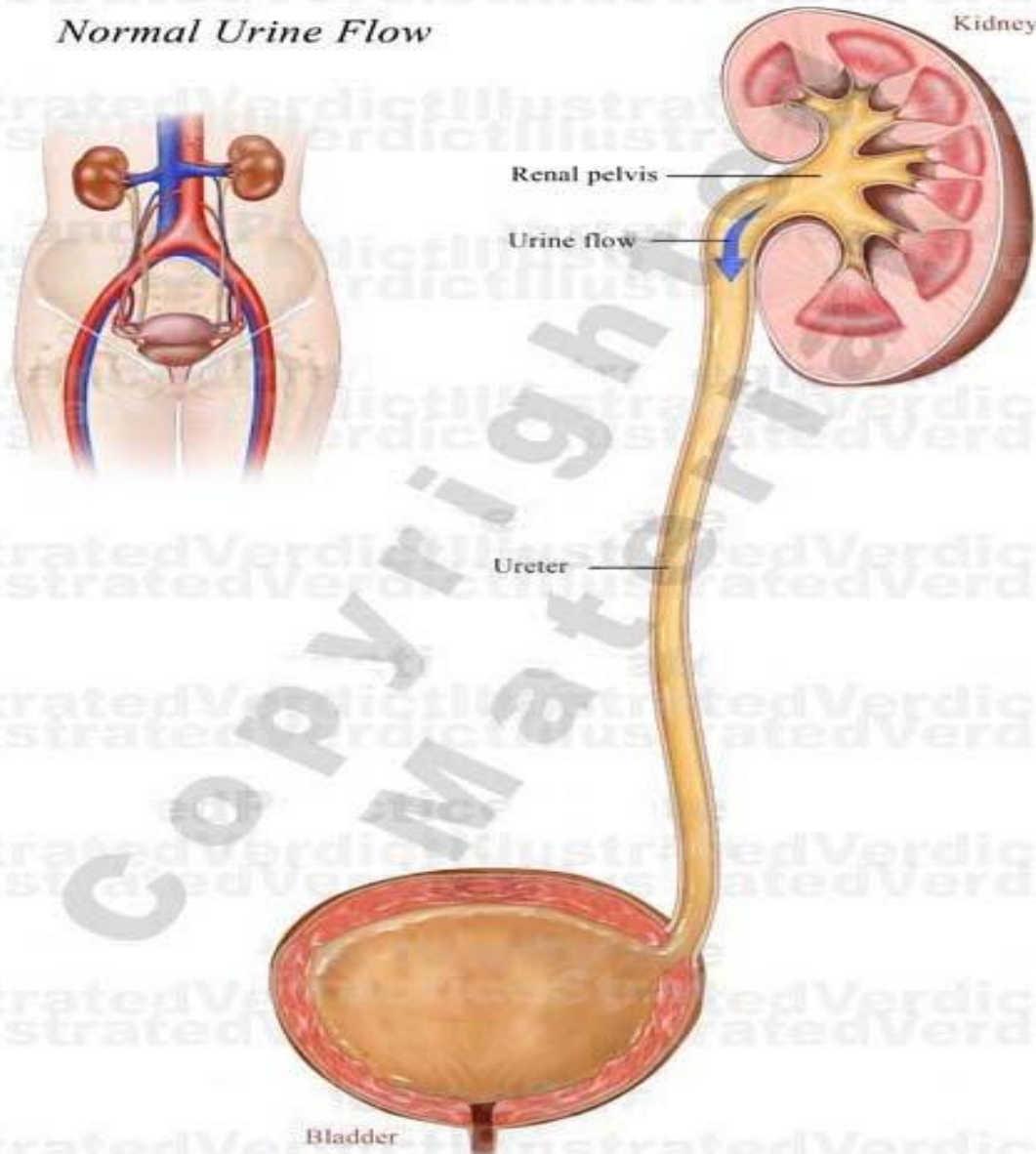
THE NEPHRON



URETERS

- Long fibromuscular tubes, 25 cm in length
- Retroperitoneal
- Originate at the renal pelvis
- Extend inferiorly to enter the posterolateral wall of the base of the urinary bladder
- **Function:** transport urine from the kidneys to the urinary bladder

Normal Urine Flow

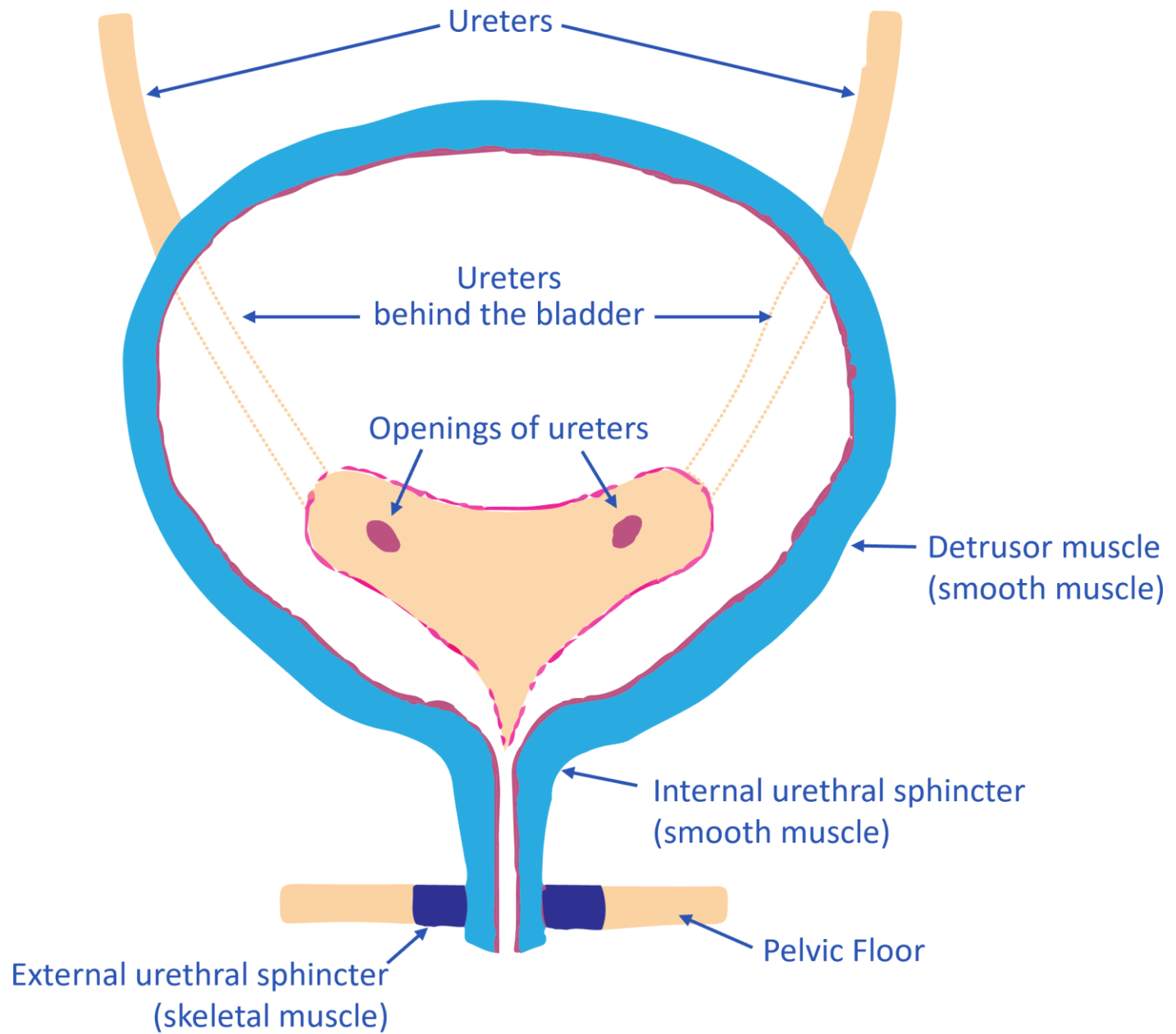


URINARY BLADDER

- Expandable muscle container
- Serves as reservoir for urine
- Located posterior to the pubic symphysis
- **Trigone** :triangular area of the urinary bladder wall
- Connects the two ureteral openings and the urethral opening
- **Functions** as a funnel that directs urine into the urethra as the bladder wall contracts

URINARY BLADDER

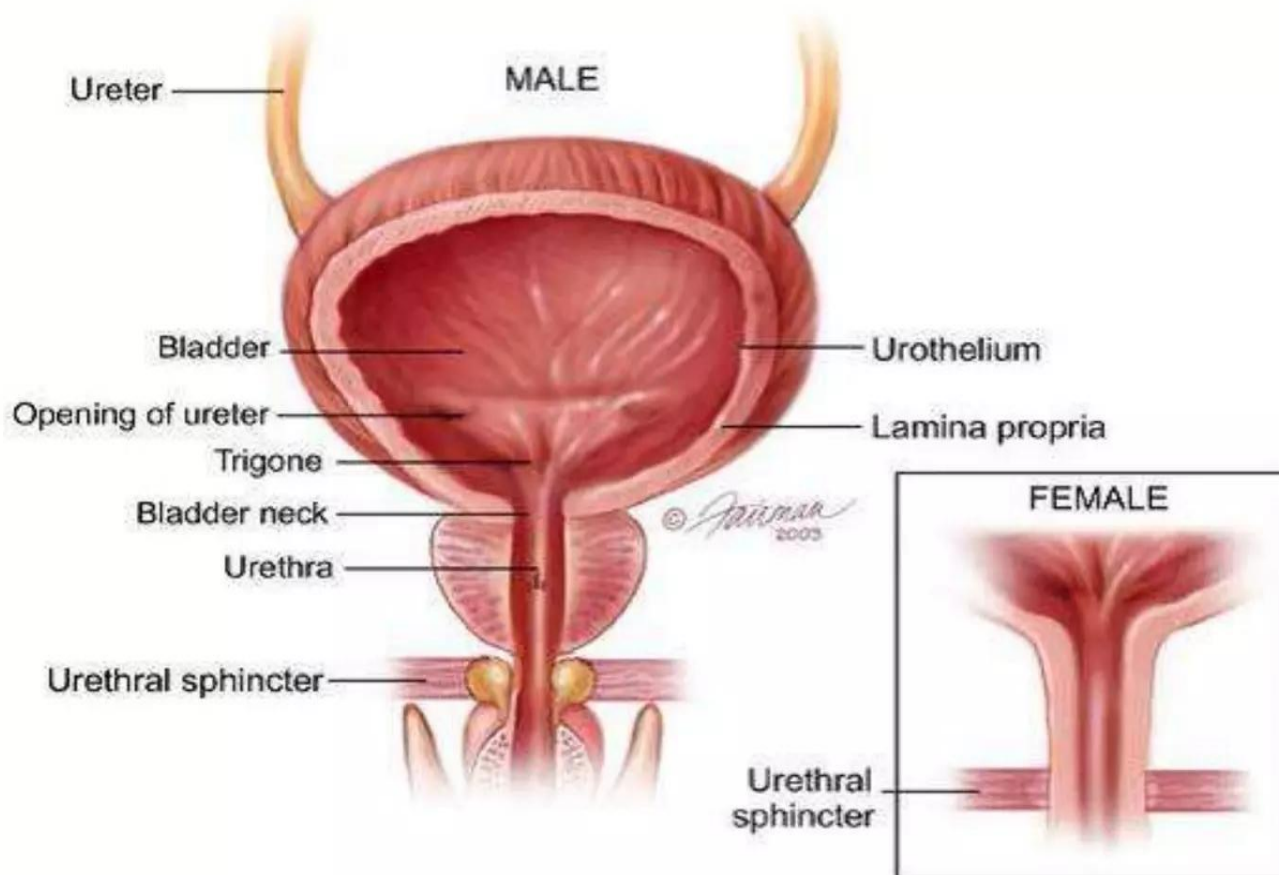
- ❖ Detrusor muscle – 3 layered smooth muscle
- ❖ Internal urethral sphincter – made up of smooth muscle
 - Involuntary control
 - Controlled by the autonomic nervous system
- ❖ External urethral sphincter- skeletal muscle
 - Voluntary control
 - The muscle children learn to control when they are toilet trained



URINARY BLADDER

- ❖ Bladder capacity is 400-600ml
- ❖ At 200-400ml we become conscious of the need to urinate
 - Stretch receptors initiate micturition reflex.
 - Micturition is the action of urination.
- During micturition:
 - Detrusor muscle contracts
 - Muscles of pelvic floor and abdominal wall contract
 - External urinary sphincter relaxes and urine moves from bladder to the outside

URINARY BLADDER

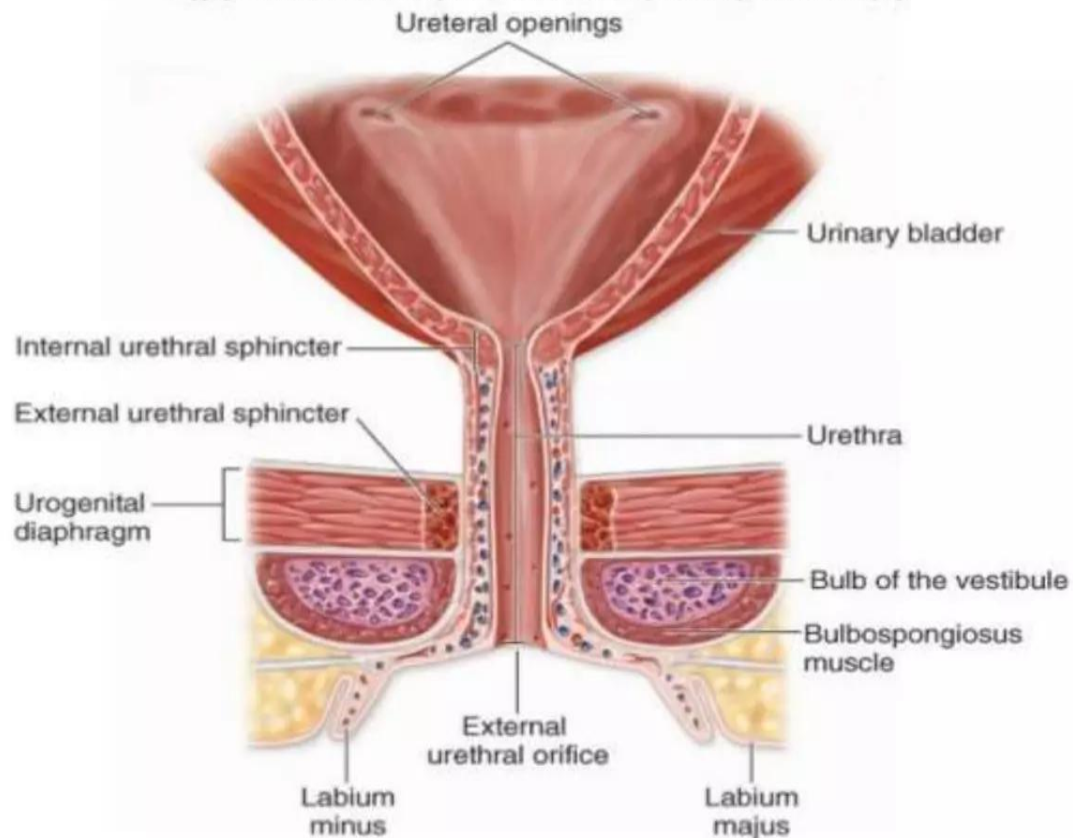


URETHRA

- Fibromuscular tube
- Conducts urine to the exterior of the body
- Has two sphincters: internal and external
- **Female urethra:** 3-5 cm long
- The external urethral orifice is located in the anterior vaginal wall, between the clitoris and the vaginal opening

FEMALE URETHRA

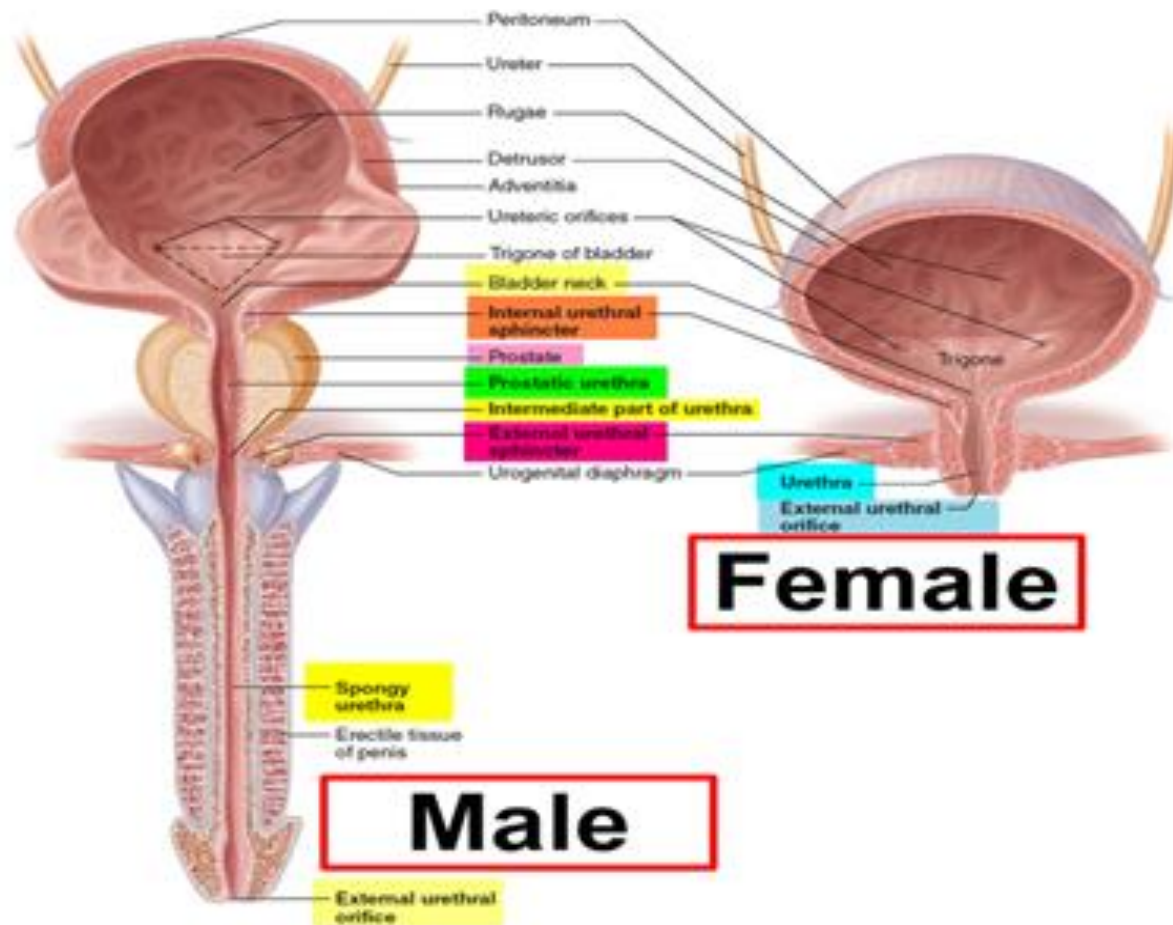
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(a) Female urethra

URETHRA

- **Male urethra:** passageway for both urine and semen
- Approximately 18-20 cm long
- Has 3 segments:
 - i. **Prostatic** urethra : 3-4 cm long
 - ii. **Membranous** urethra- shortest portion
 - iii. **Spongy/penile** urethra: longest part, 15 cm
- Encased within a cylinder of erectile tissue known as the corpus spongiosum
- Extends to the external urethral orifice



REVIEW QUESTIONS

1. The right kidney is slightly lower than the left kidney because?
 - a. It is slightly smaller
 - b. It is displaced by the liver
 - c. It is displaced by the heart
 - d. It needs protection of the lower ribs

REVIEW QUESTIONS

2. The renal pyramids are separated from each other by extensions of the renal cortex called?
 - a. Medullary cortices
 - b. Renal columns
 - c. Renal medulla
 - d. Minor calyces

THANK YOU