



بسم الله الرحمن الرحيم



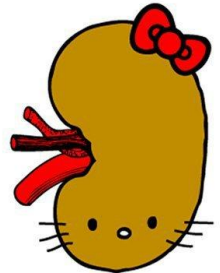
ureters, urinary bladder & urethra



objectives:

At the end of the lecture, students should be able to:

- Describe the course of ureter & identify the sites of ureteric constriction
- Describe the important relations & identify certain areas (trigone, uvula vesicae) in the base of urinary bladder.
- List the blood supply, lymphatic drainage & nerve supply of urinary bladder
- Differentiate between male & female urethra regarding length, course & function.



Hello Kidney

Ureters:

Length	25 – 30 cm
Tissue	muscular tube
Function	It transports urine from kidney to urinary bladder.
It is a continuation of	Begins as a continuation of renal pelvis
Course in abdomen	<p>It descends anterior to psoas major muscle (opposite the tips of lumbar transverse processes).</p> <p>It crosses the end (bifurcation) of common iliac artery to enter the pelvis.</p>
Course in pelvis and termination	<p>Runs downward & backward in front to internal iliac artery, reaches ischial spine. Turns forward and medially , enters the upper lateral angle of Base of urinary bladder.</p> <p>Passes obliquely through the wall of bladder for about $\frac{3}{4}$ inch before opening into the bladder cavity (valve-like part).</p>

Ureteric Constrictions

normally the Ureter has **three constrictions** which are the sites of **stone impaction and obstructions**. and they are:

- 1- At the **ureteropelvic junction**
- 2- At the **pelvic inlet crossing of common iliac artery**
- 3- At **site of entrance to bladder**

Ureteric Arterial Supply

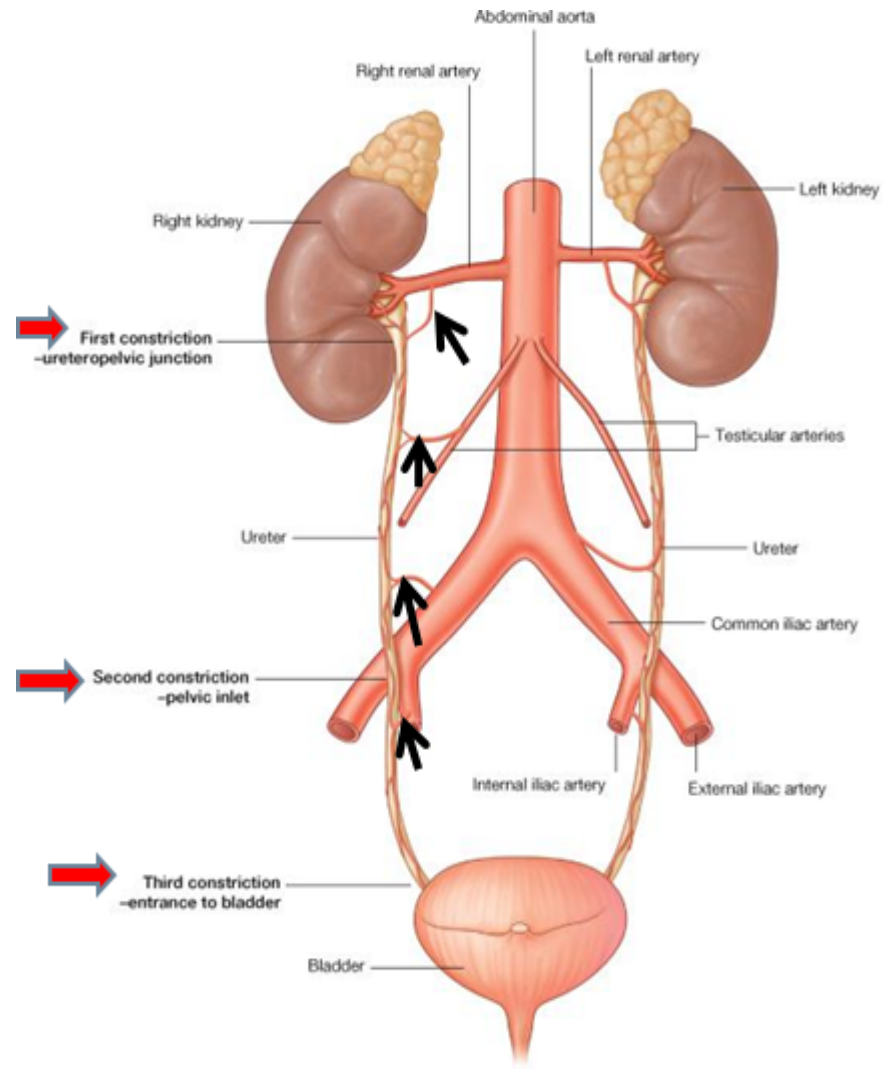
Ureter is supplied by multiple arteries throughout its course From above downward:

Renal artery

Gonadal artery

Common iliac artery

Internal iliac artery



to not to forget the arteries
I Read Good Comic

Urinary Bladder

Shape of bladder

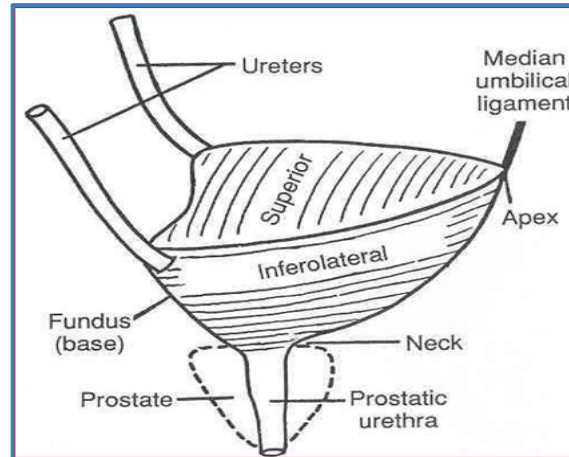
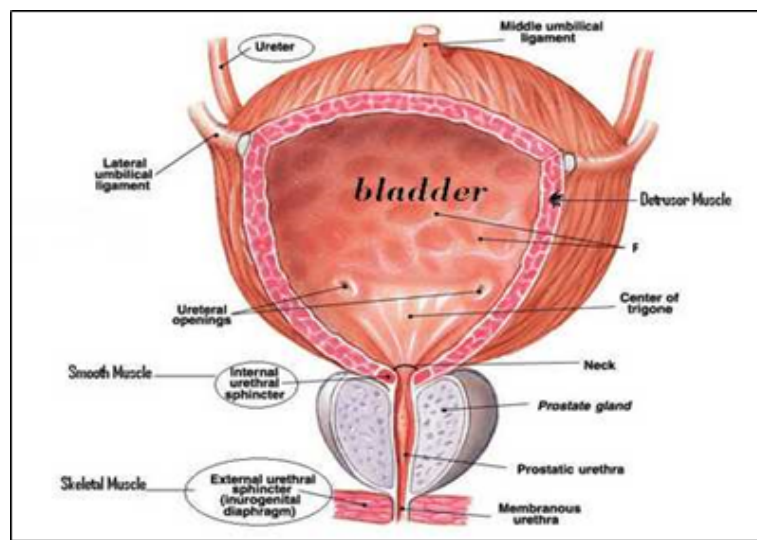
It has the shape of three-sided pyramid placed on one of its angle (NECK).

Hsa:

- An apex (directed anteriorly)
- A base (posterior surface)
- A superior surface
- Two inferolateral surfaces
- A neck

Location

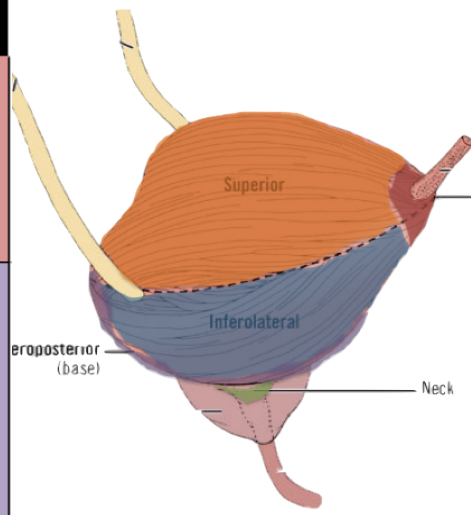
Located immediately behind the pubic symphysis



remember : Shape and relations of bladder vary according to the amount of urine it contains



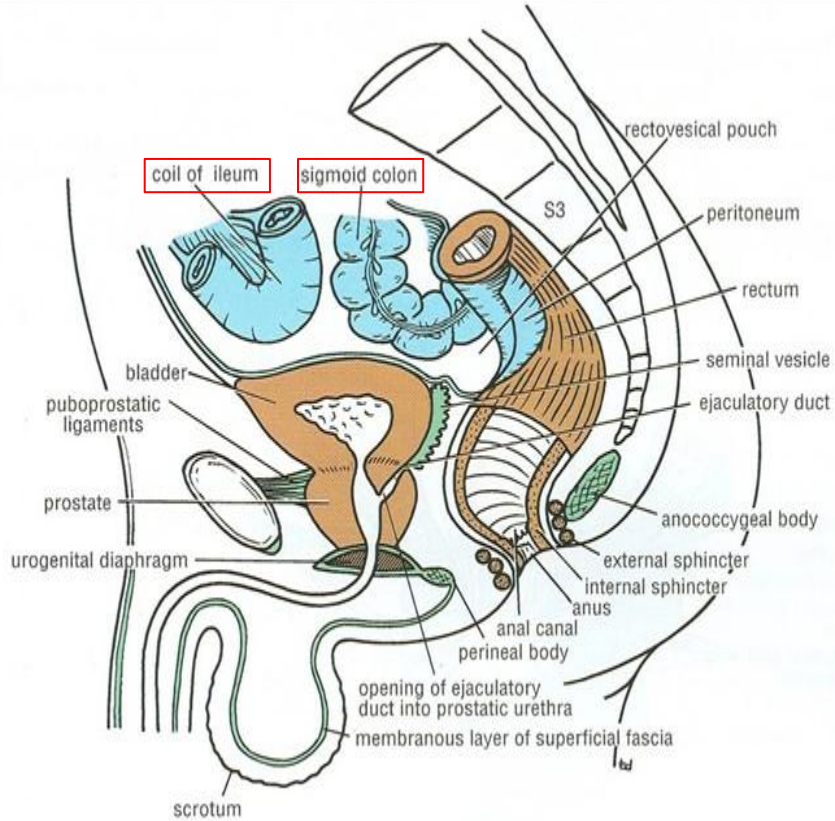
	Description	Relation
Apex	-Directed forward .	-Lies behind upper margin of Symphysis Pubis .
Posterior Surface (base)	- Triangular in shape.	- Lower part related to: * Males > Vas Deferentia & Seminal Vesicles . * Females > Vagina .
Superior Surface	-	Related to: * Males > Coils of Ileum or Sigmoid Colon . * Females > Uterus .
Inferolateral Surfaces	-	Related to: Retropubic fat
Neck	-Lies inferiorly . - Most fixed part of bladder.	-Related to lower border of Symphysis Pubis . * Males > Rests on upper surface of Prostate .



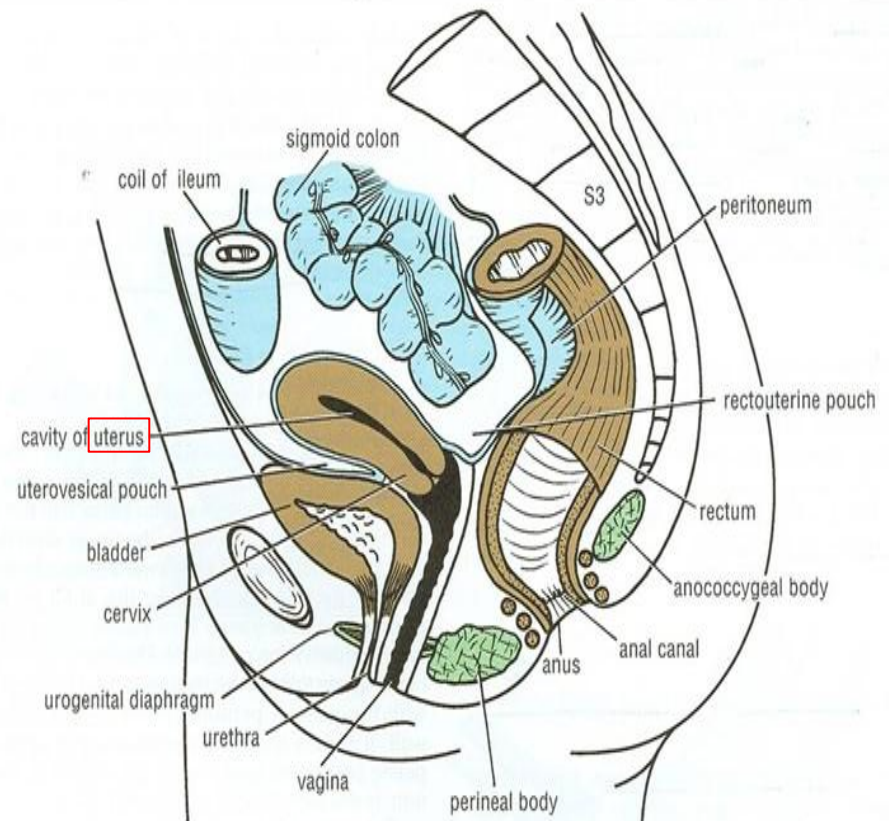
Retropubic Fat:

- Accommodates **distension** of bladder.
- Continuous with **Anterior Abdominal Wall**.
- Rupture** of bladder results in **escape of urine** to **Anterior Abdominal Wall**.

Male bladder



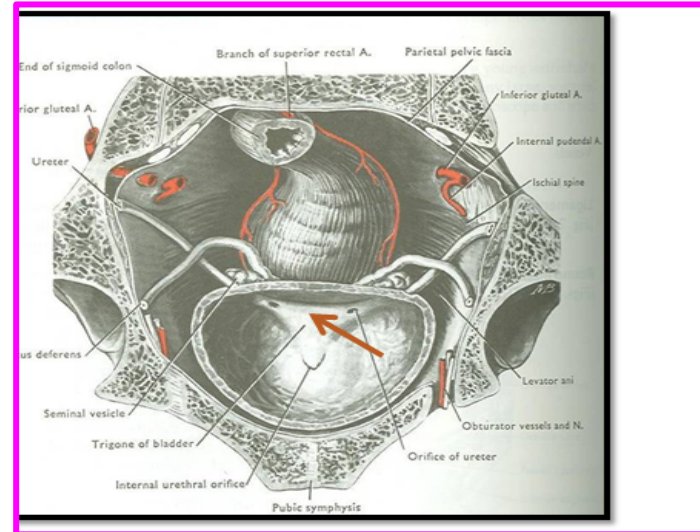
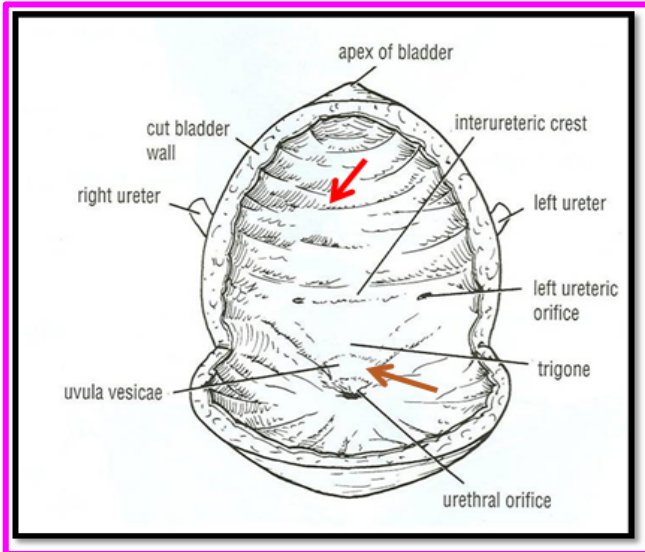
Female bladder



Interior of Urinary Bladder

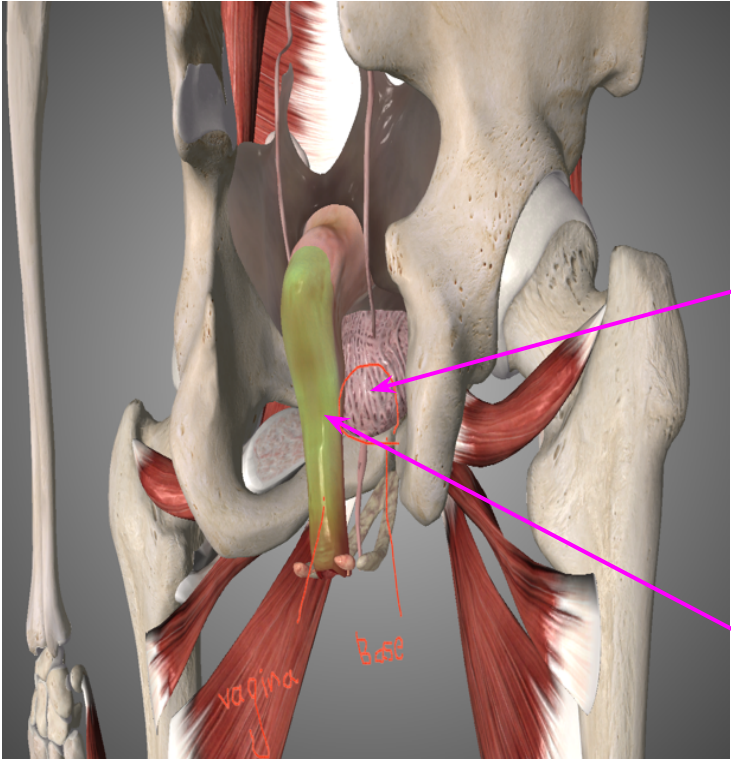
- Mucous membrane is **folded**.
- **Uvula vesicae**: elevation behind internal urethral orifice, produced by **median lobe of prostate gland**

Trigone: a triangular area in base of bladder bounded by the **2 ureteric orifices** & **internal urethral orifice**. Its mucous membrane is **elastic (not folded)**



BASE of urinary bladder (additional slide)

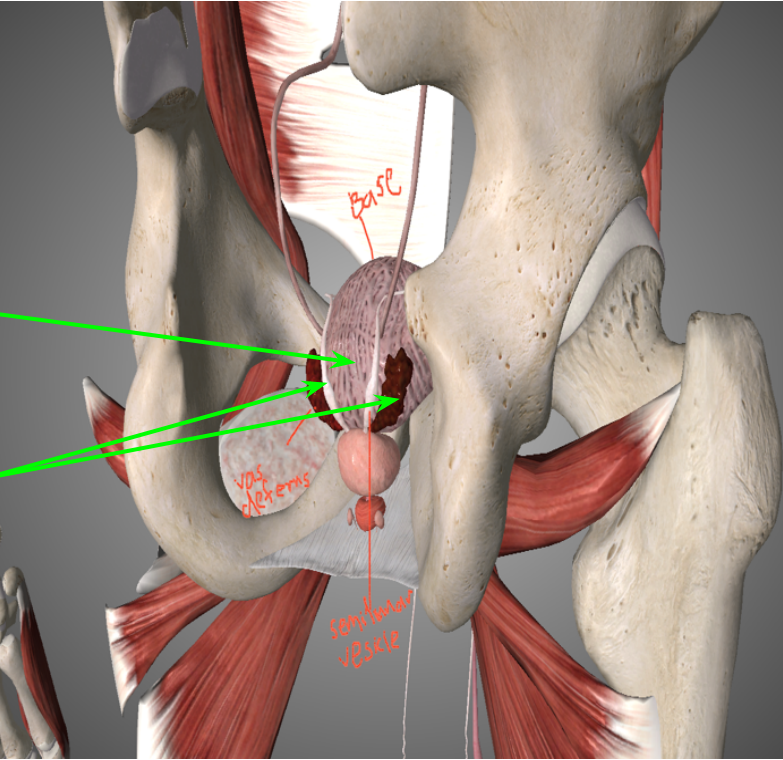
Female



Base

vagina

Male



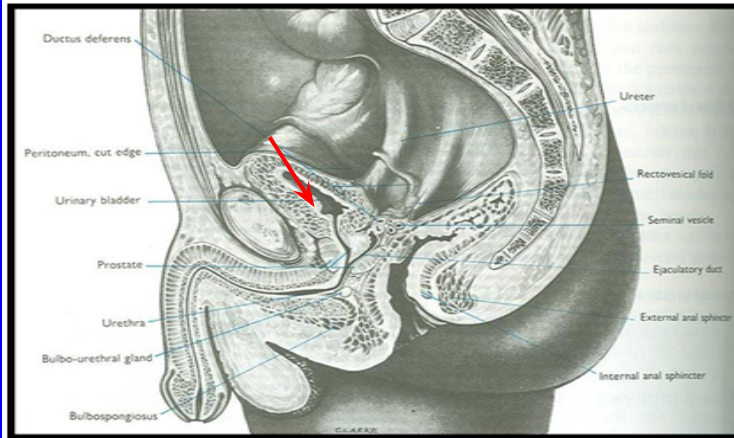
Base

vas deferens

URINARY BLADDER'S CAPACITY

Empty Bladder

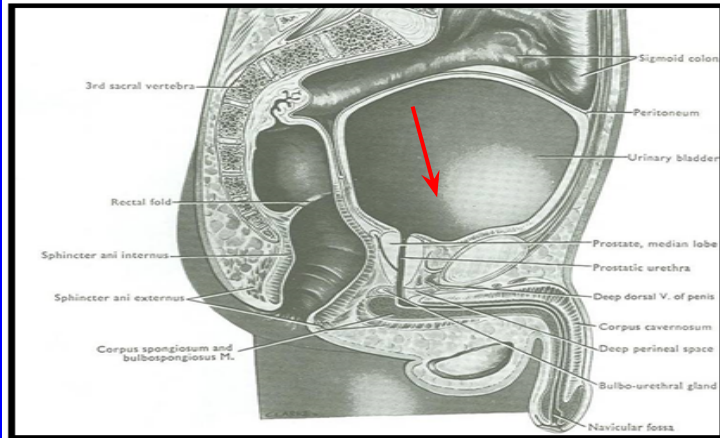
Accommodates from 300 – 500 ml of urine



Distended Bladder

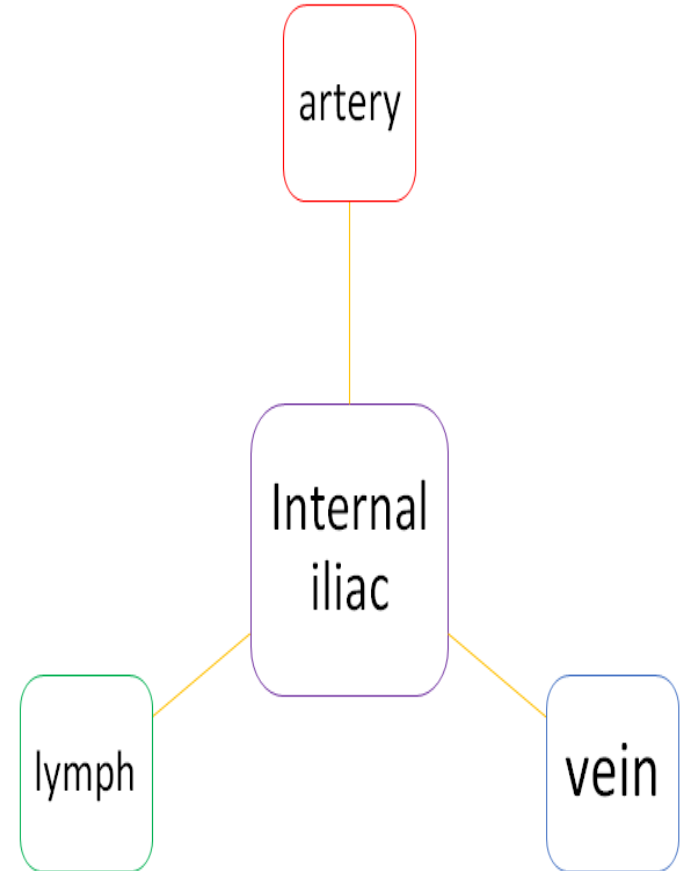
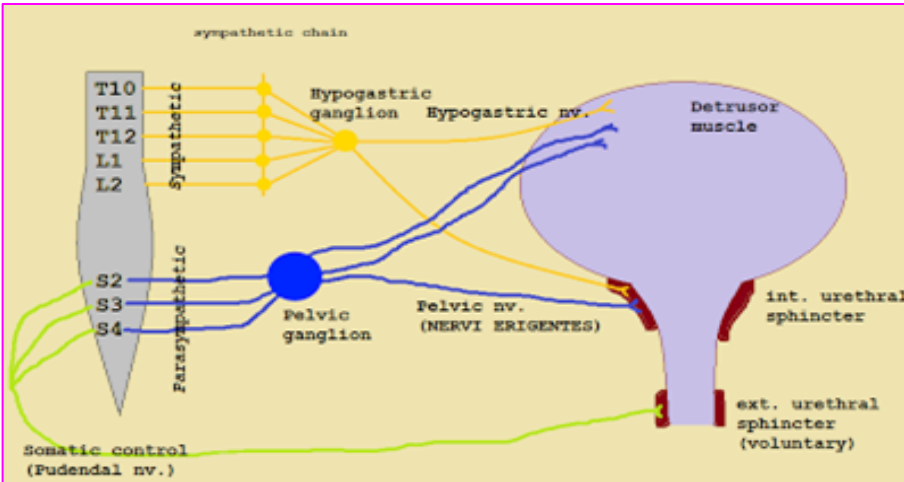
Is circular in shape

Bulges into abdominal cavity



Nerves, Blood & Lymphatics of Bladder

Sympathetic	Parasympathetic	Sensory
from L1,2	pelvic splanchnic nerves from S2, 3, 4	transmitting pain due to overdistention of bladder

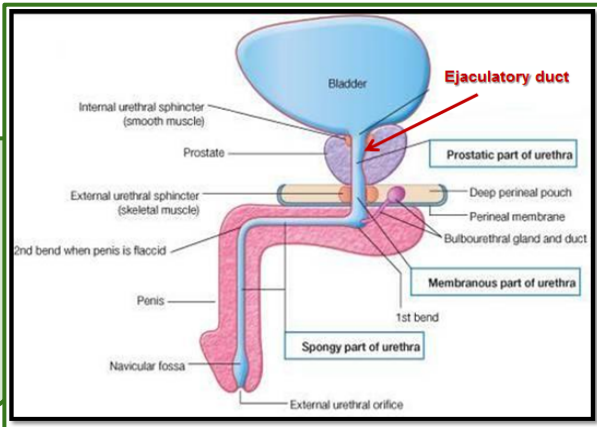


Urethra.

Male Urethra

(LENGTH: 20 CM)

- ❖ Extends from the neck of bladder to the external urethral orifice.
- ❖ Has two functions: 1-urinary. 2-genital functions
 - Divided into three parts: 1)Prostatic 2)Membranous 3)Penile



Female Urethra.

(LENGTH: 4 CM)

- Extends from neck of urinary bladder to open externally through the external urethral orifice (anterior to the vaginal opening)
- Has **only urinary function**

Prostatic urethra

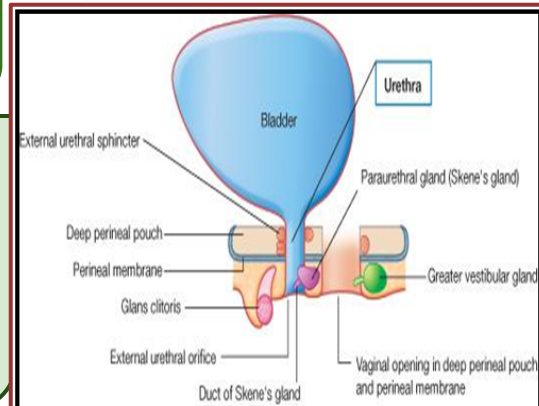
- # Length=3 cm
- # **Widest** & most dilatable
- # Extends from neck of bladder inside prostate gland
- # Structures openings into prostatic urethra:
 - Ejaculatory ducts:containing sperms & secretion of seminal vesicles
 - Ducts of prostate gland

Membranous urethra

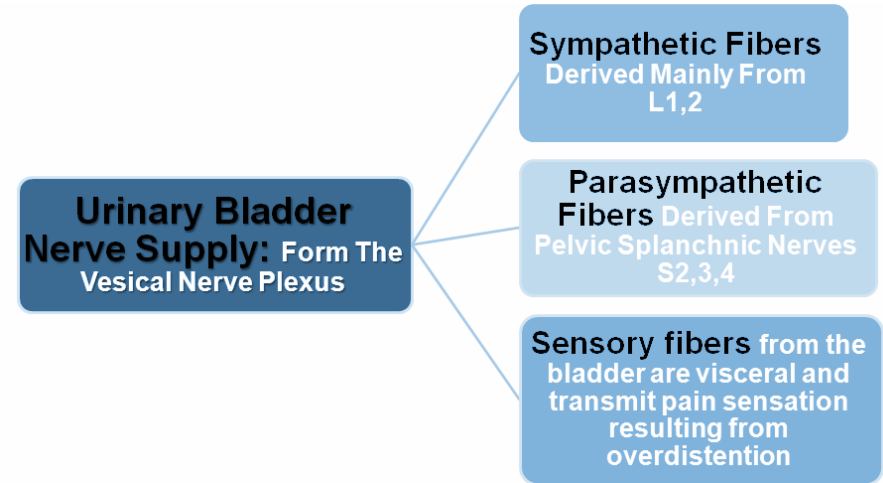
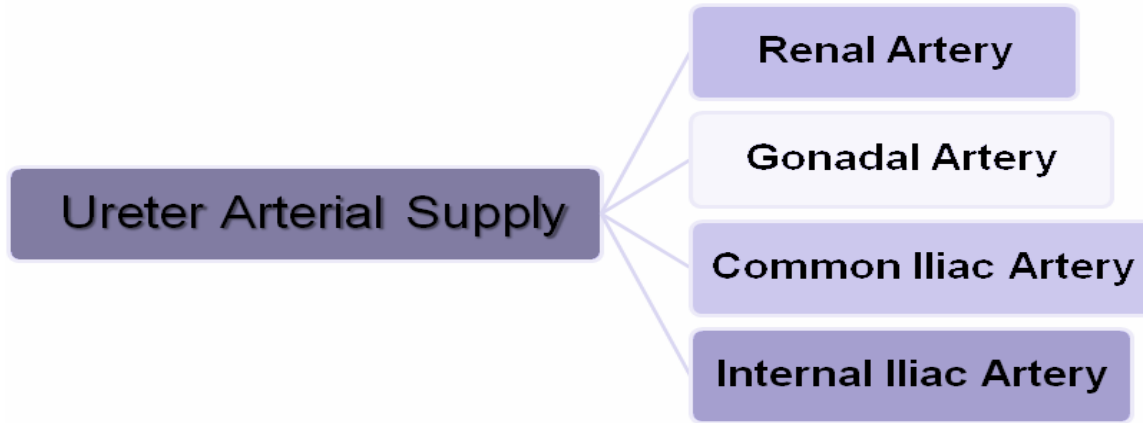
- # Length=1 cm
- # Surrounded by external urethral sphincter

Penile (spongy) urethra

- # Length=16 cm
- # Narrowest part of whole urethra
- # Extends inside penis & opens externally through external urethral orifice



Summary



MCQs

1-The apex of the urinary bladder is connected the umbilicus by:

- A. Allantoise
- B. Median umbilical ligament
- C. Umbilical cord
- D. Urachus

2-Lower part of the base of bladder in males related to:

- A.Vas deferentia
- B.Peritoneum
- C.Sigmoid colon
- D.All of the above

3-Rupture of bladder results in escape of urine to:

- A.Posterior abdominal wall
- B.Superior thoracic cage
- C.Anterior abdominal wall
- D.Remains in its place

4- Uvula vesicae is produced by:

- A.Median lobe of the prostate
- B.Lateral lobe of the prostate
- C.Anterior lobe of the prostate
- D.Superior lobe of the prostate

5-The most fixed part of the bladder :

- A.Superior surface
- B.Base
- C.Apex
- D.Neck

6. The normal capacity of bladder is about :

- A.100-200ml.
- B.300-500ml.
- C.500-800ml.
- D.1L .

7.Parasympathetic fibers of the urinary bladder are derived from:

- A. L1, L2
- B. S1, S2, S3
- C. L2, L3, L4
- D. S2, S3, S4

MCQs

8. which of the following is the narrowest part of the male urethra :

- A. Penile
- B. Membranous
- C. Prostatic
- D. Ejaculatory

9. Which of the following is the widest and most dilatable part of the male urethra:

- A. Penile
- B. Membranous
- C. Prostatic
- D. Ejaculatory

10. sympathetic fibers of the urinary bladder are derived from:

- A. L1, L2
- B. S1, S2, S3
- C. L2, L3, L4
- D. S2, S3, S4

11) The ureter is a:

- A- Muscular Tube .
- B- membranous Tube .

12) The ureter Descends to psoas major muscle

- A- Posterior.
- B- Anterior .
- C- Medial.
- D- Lateral.

13) Arterial supply of ureter:

- A- Renal artery & Gonadal artery.
- B- Common iliac artery
- C- Internal iliac artery
- D- All of the above.

- 1.B
- 2.A
- 3.C
- 4.A
- 5.D
- 6.B
- 7.D
- 8.A
- 9.C
- 10.A
- 11.A
- 12.B
- 13.D

Done by:

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فتون النمري

منى ناقل

خلود العنزي

الهام الغامدي

ملاك الختلان

Thank you for
treating me so
well.
I would hug
you but I don't
have arms.
I'm merely
just a
sentient
Kidney
after all.



Love your Kidney and drink Water.