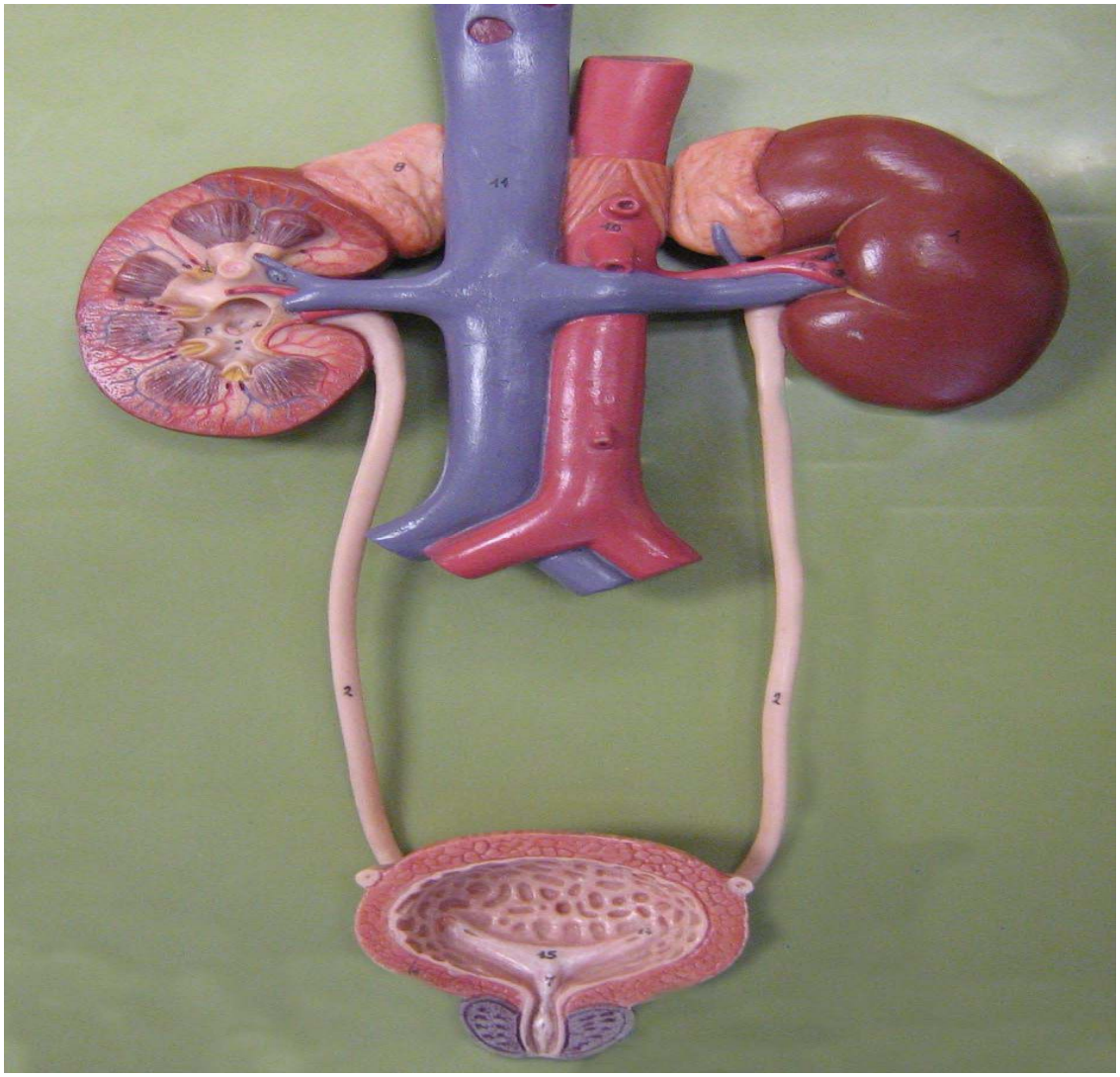
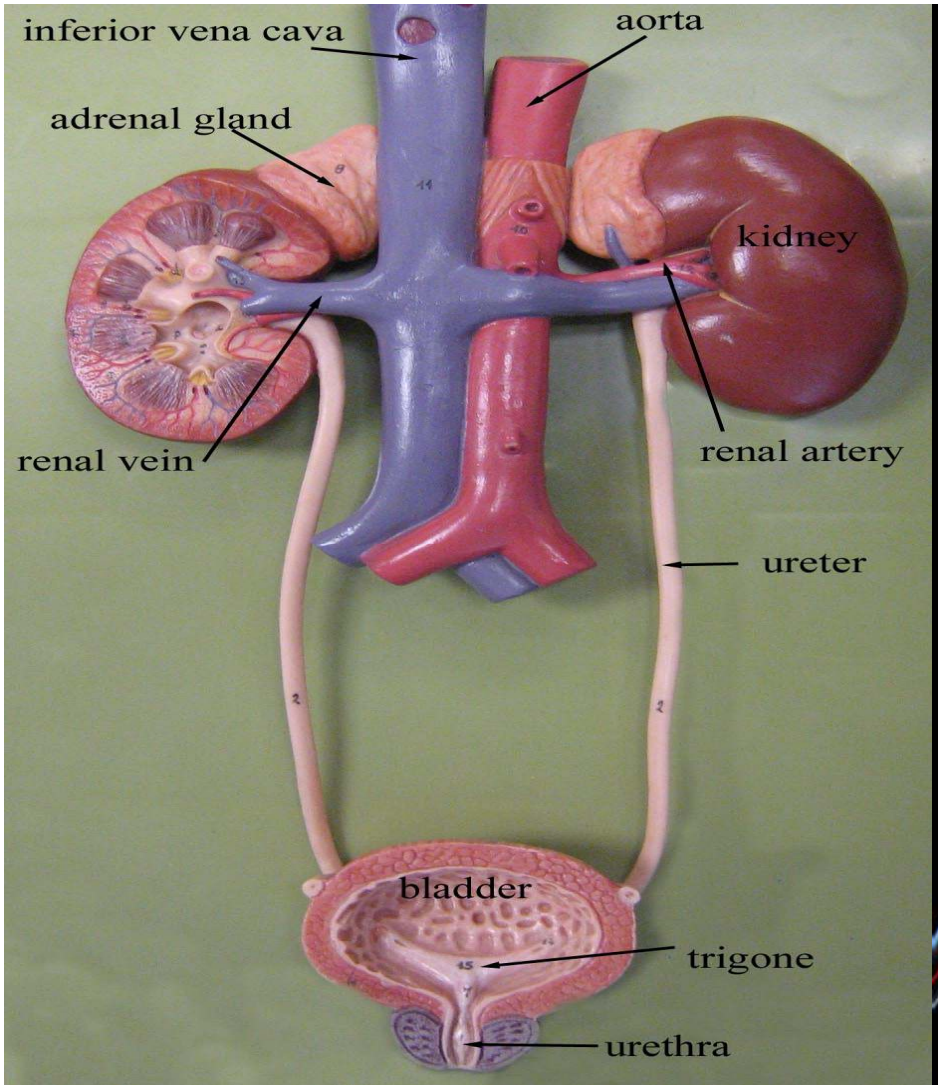
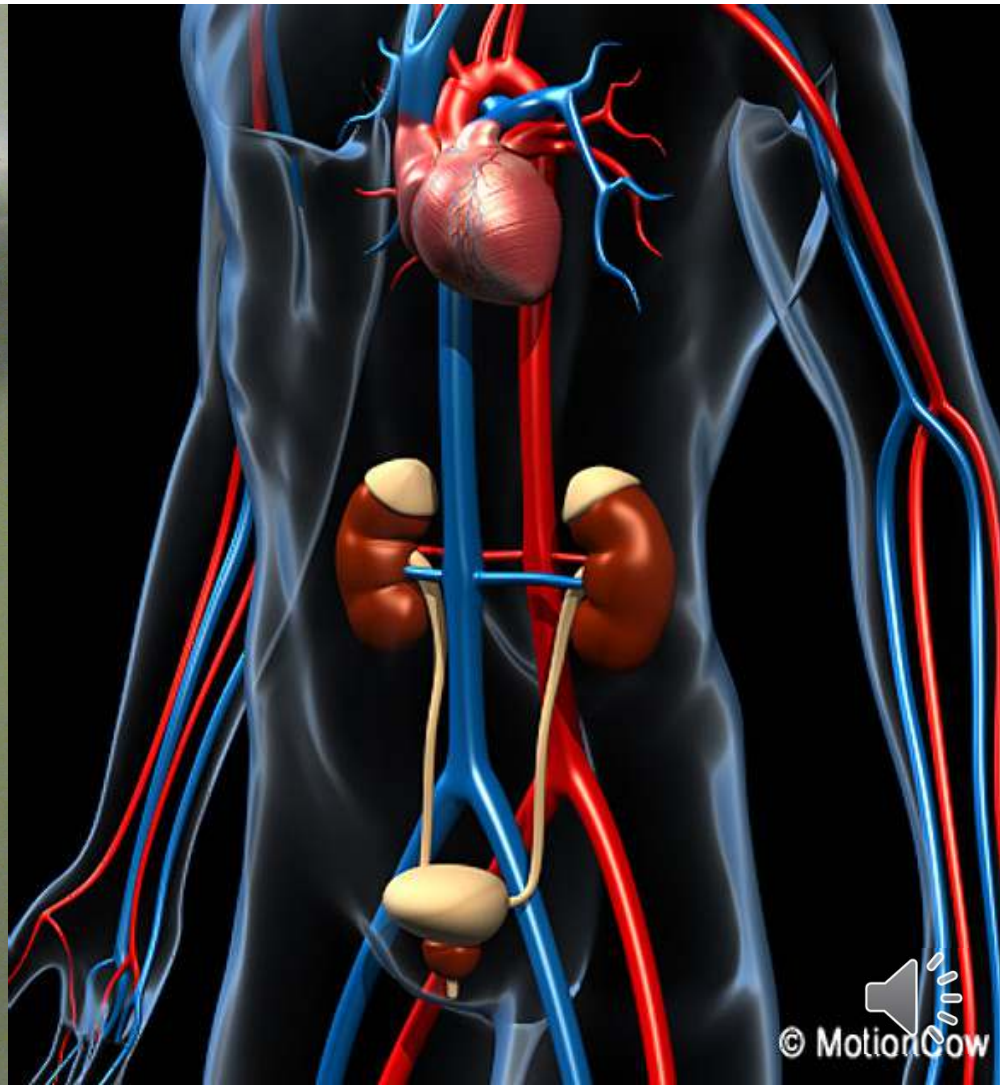
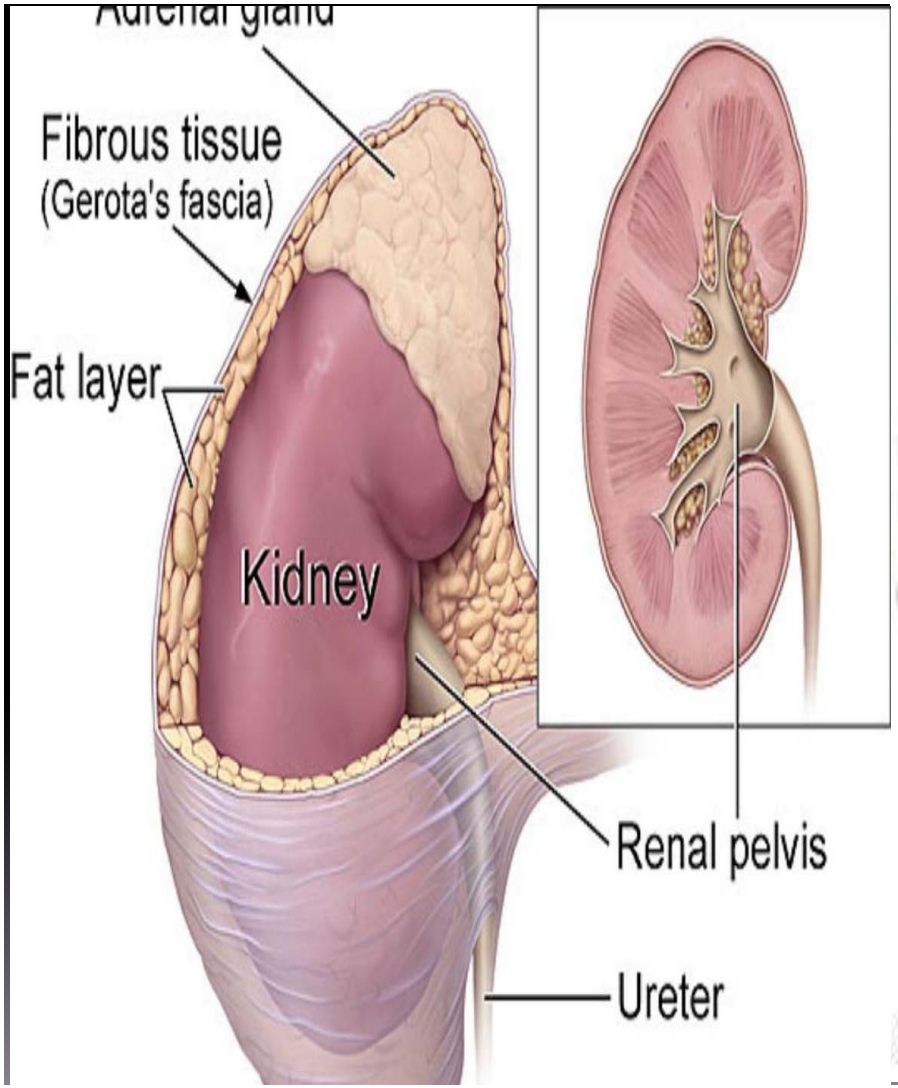
URINARY REPRODUCTIVE SYSTEM MODELS & HISTOLOGY

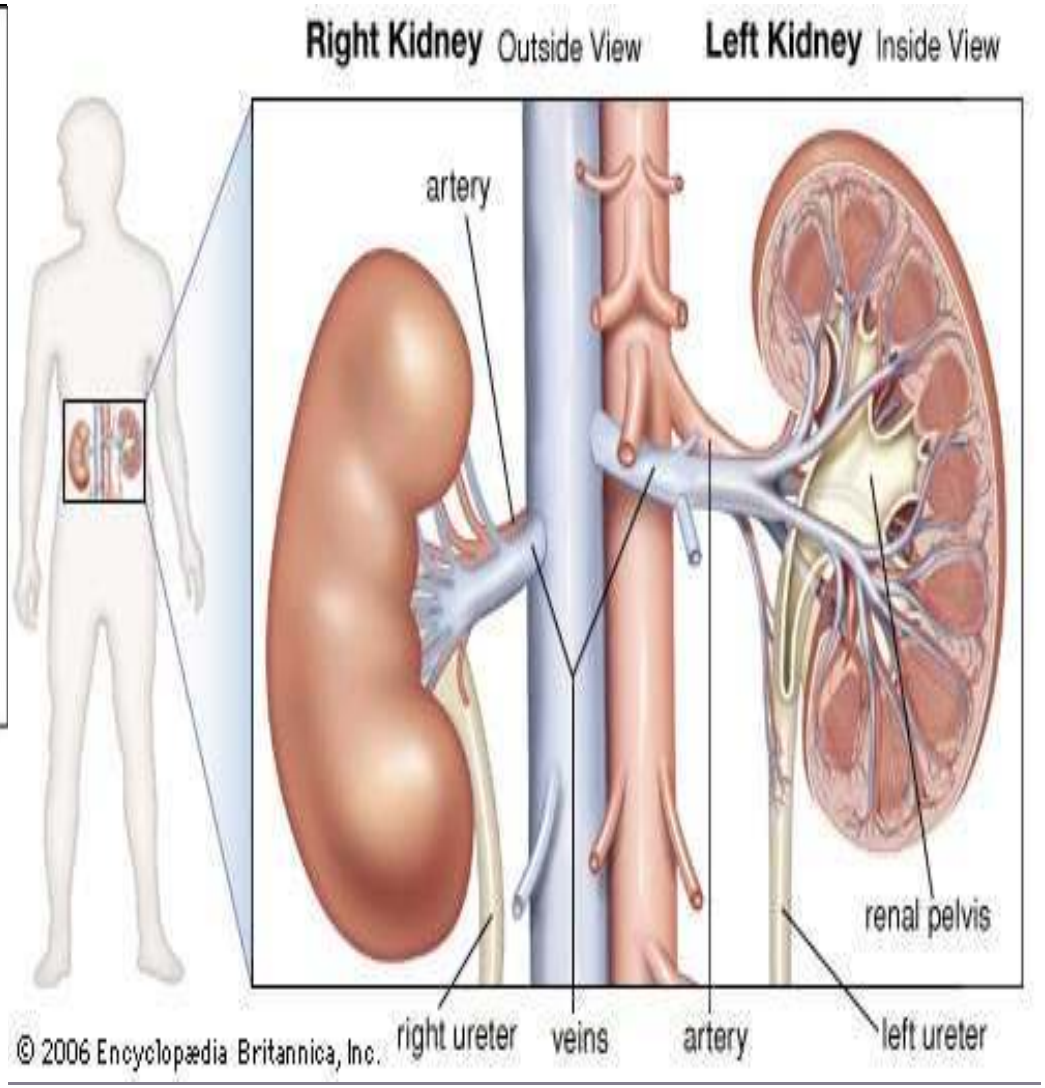
DH

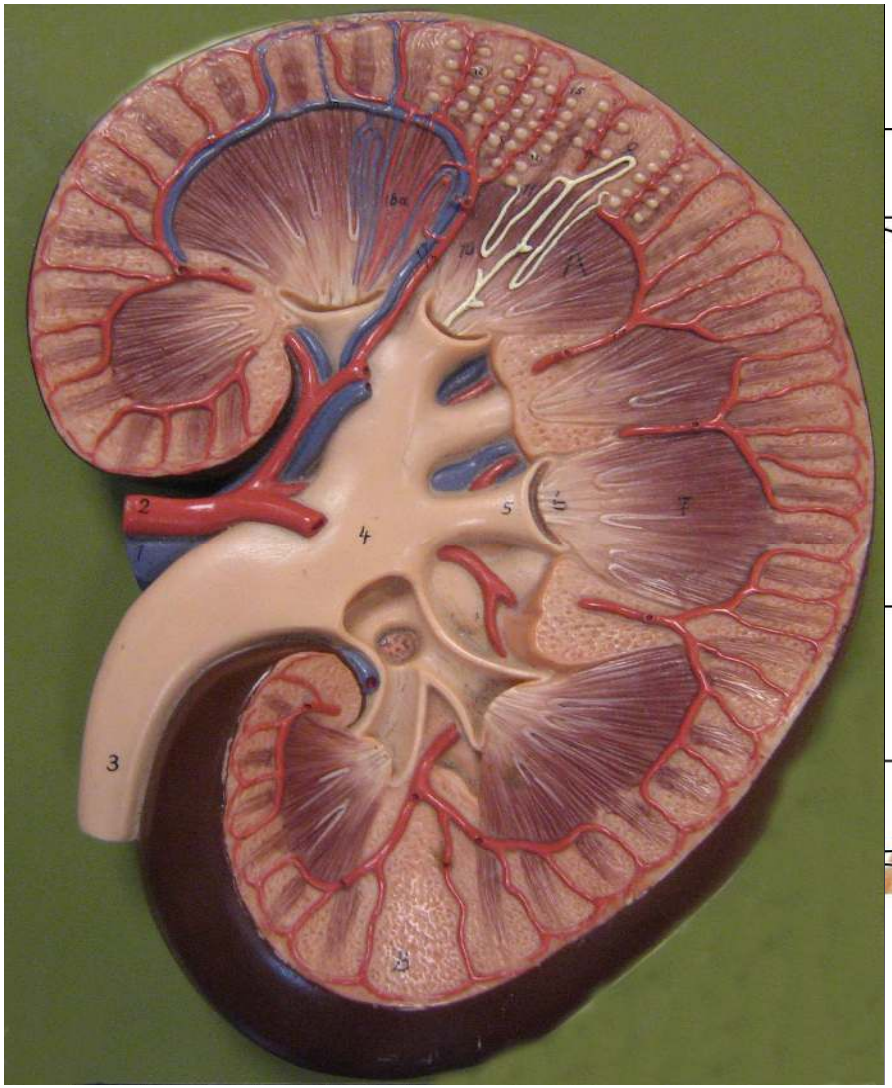

9
11
10
1
2
2
15
7

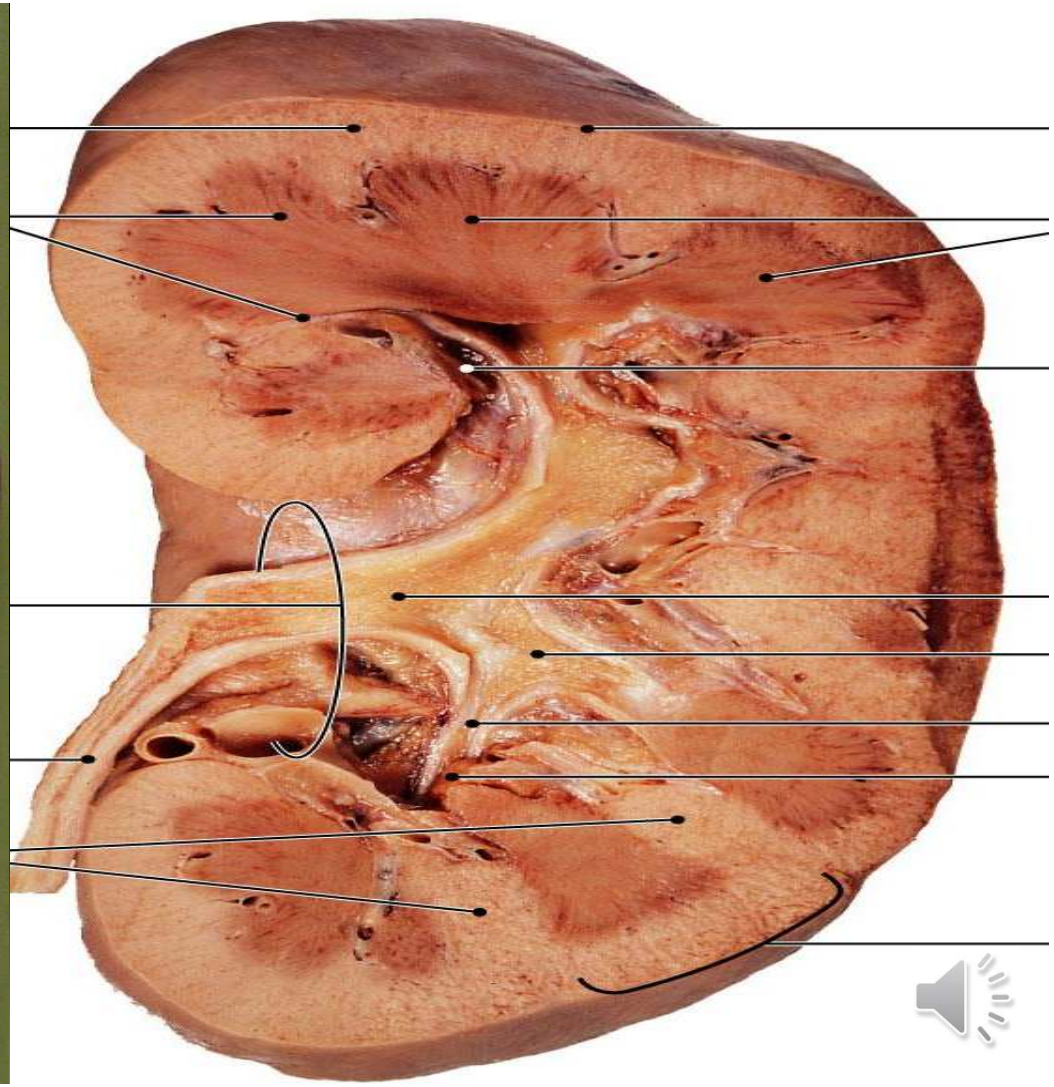

inferior vena cava
aorta
adrenal gland
kidney
renal vein
renal artery
ureter
bladder
trigone
urethra

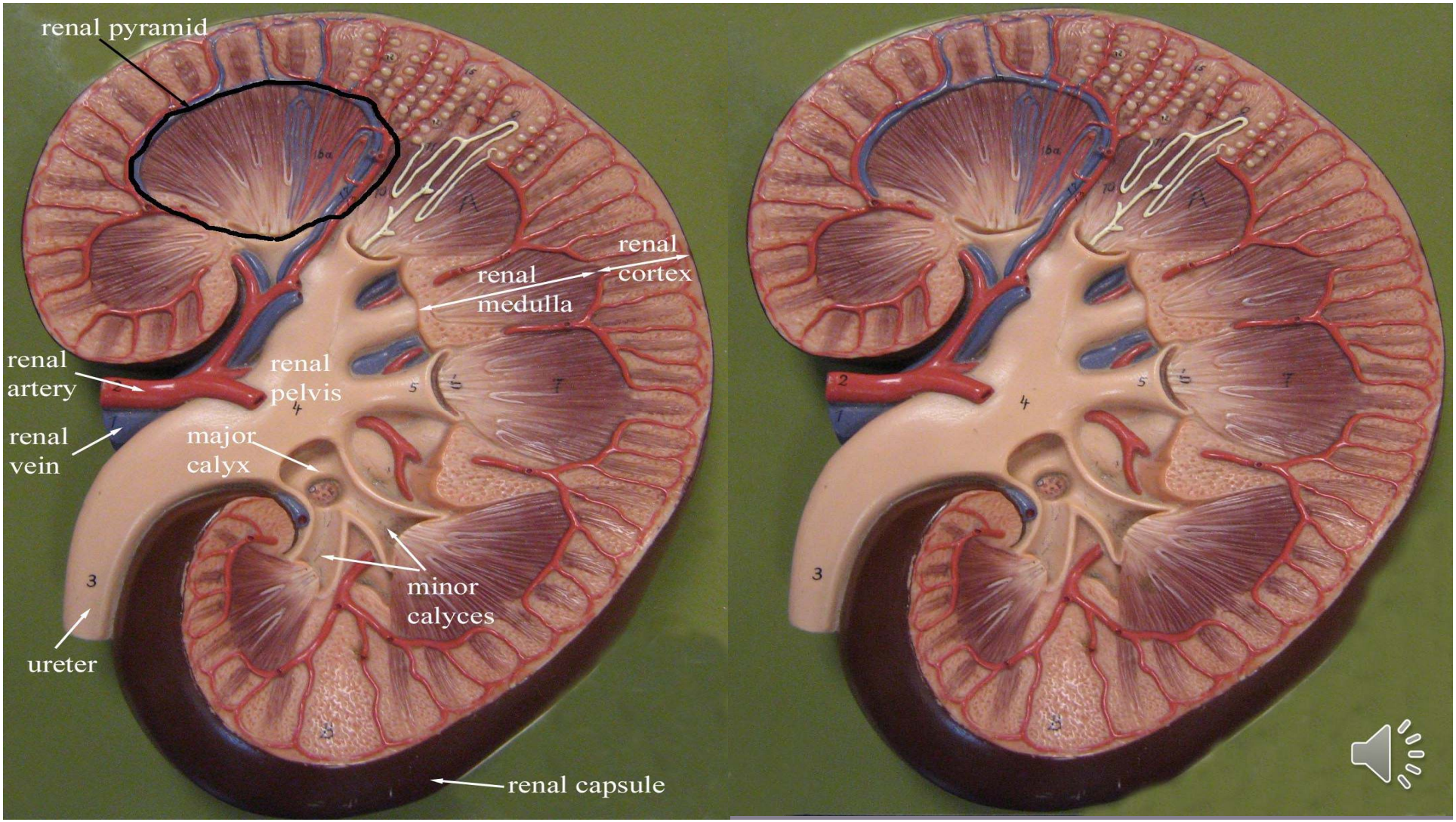

© MotionCow

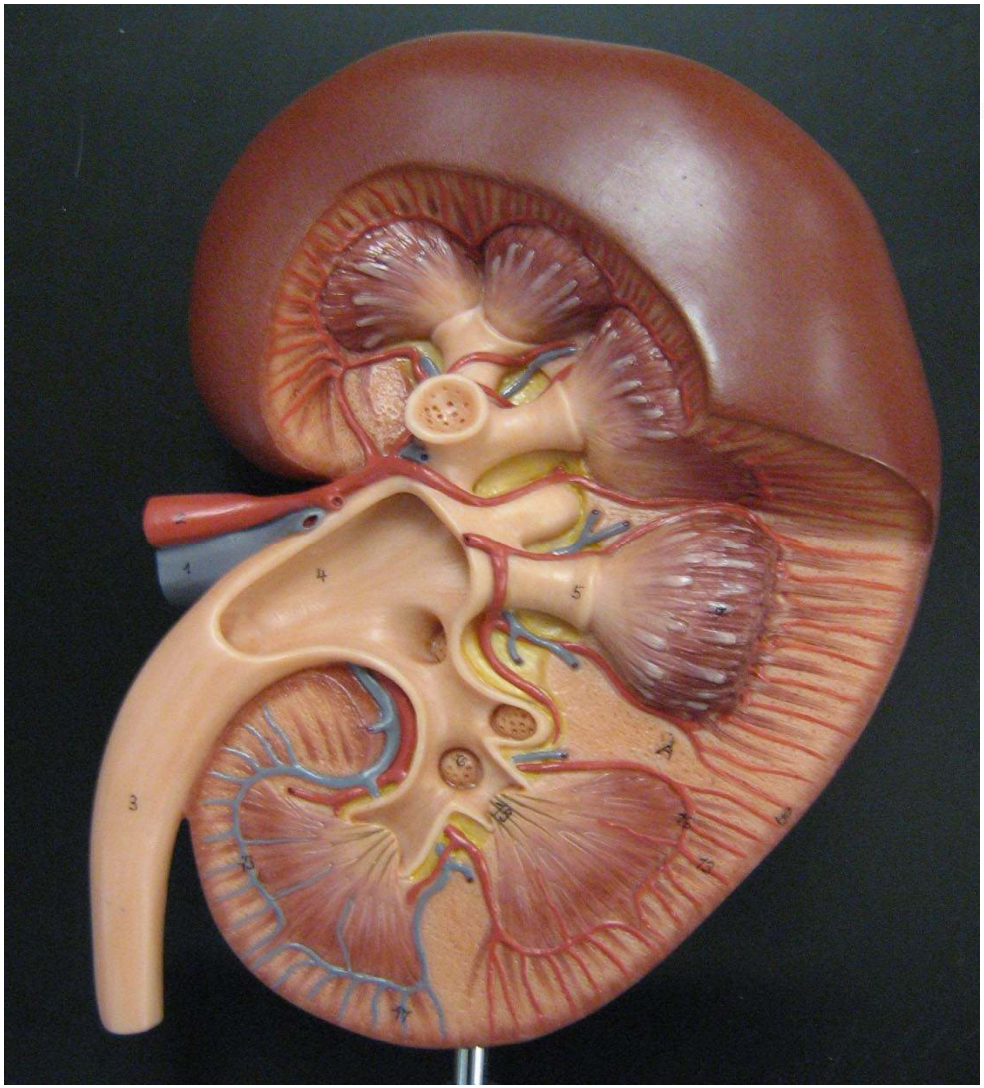

Adrenal gland
Fibrous tissue
(Gerota's fascia)
Fat layer
Kidney
Renal pelvis
Ureter

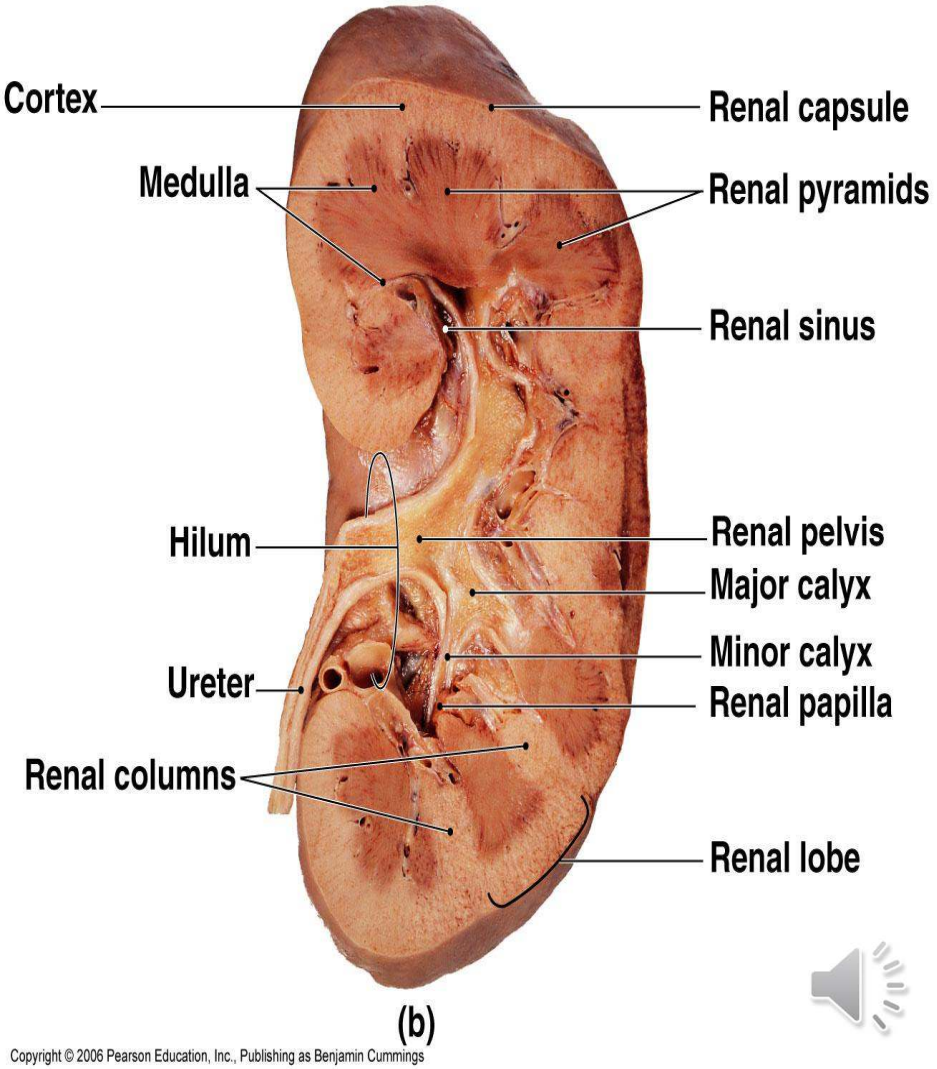

Right Kidney Outside View
Left Kidney Inside View
artery
renal pelvis
right ureter
veins
artery
left ureter
© 2006 Encyclopædia Britannica, Inc.

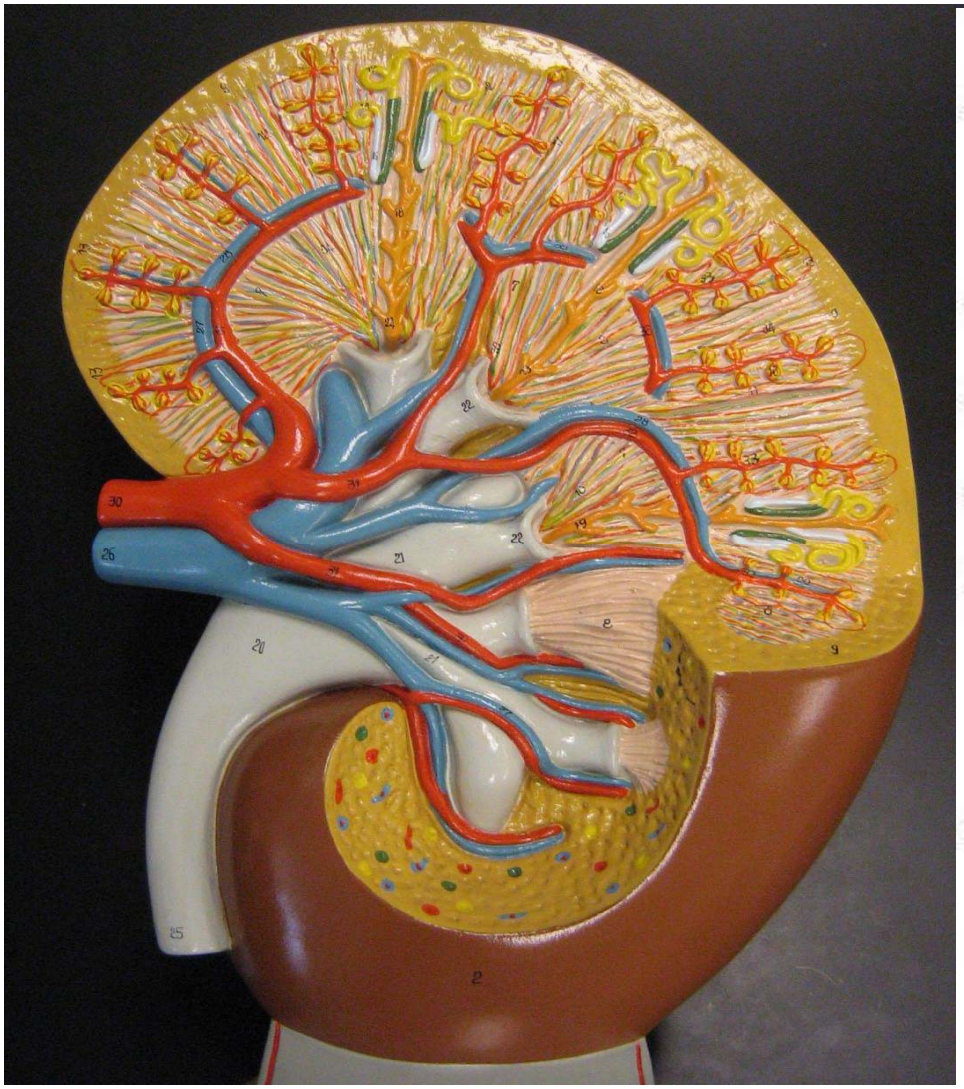

2
4
5
3

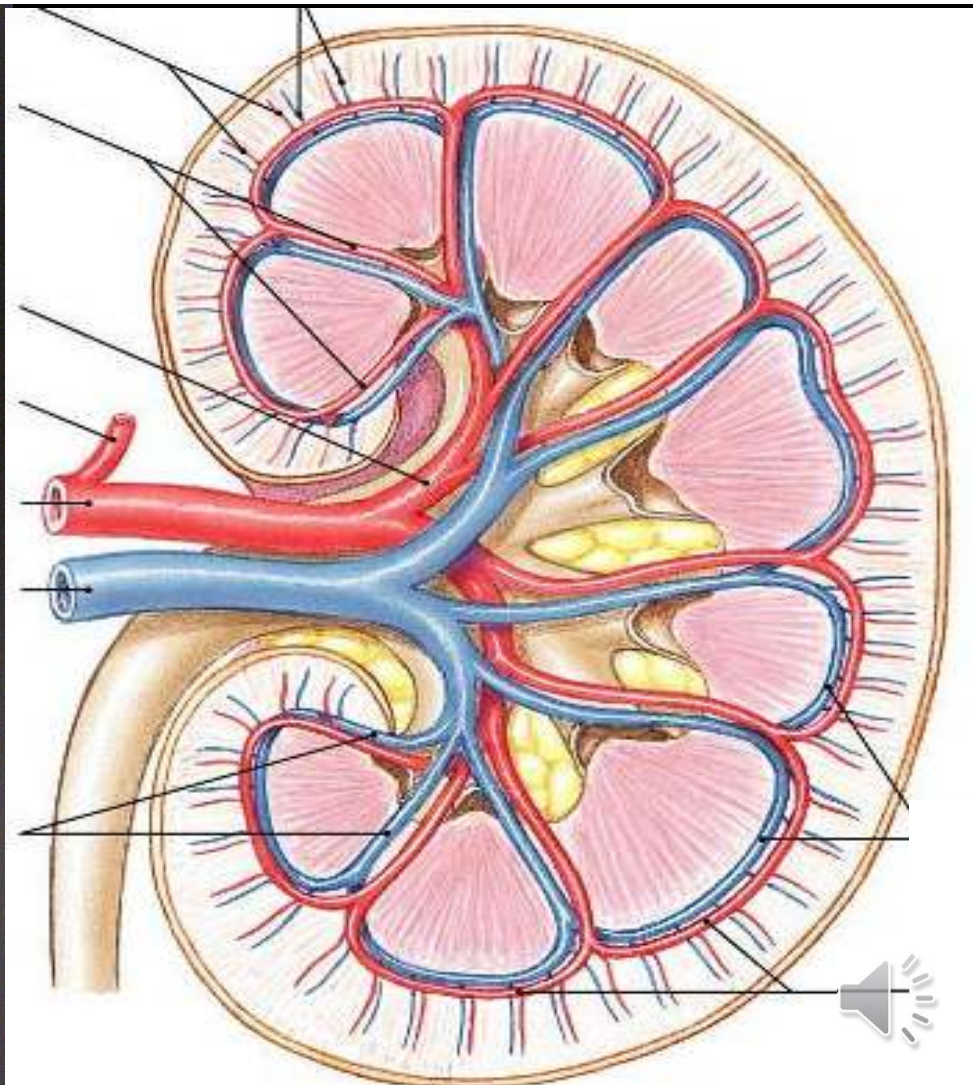


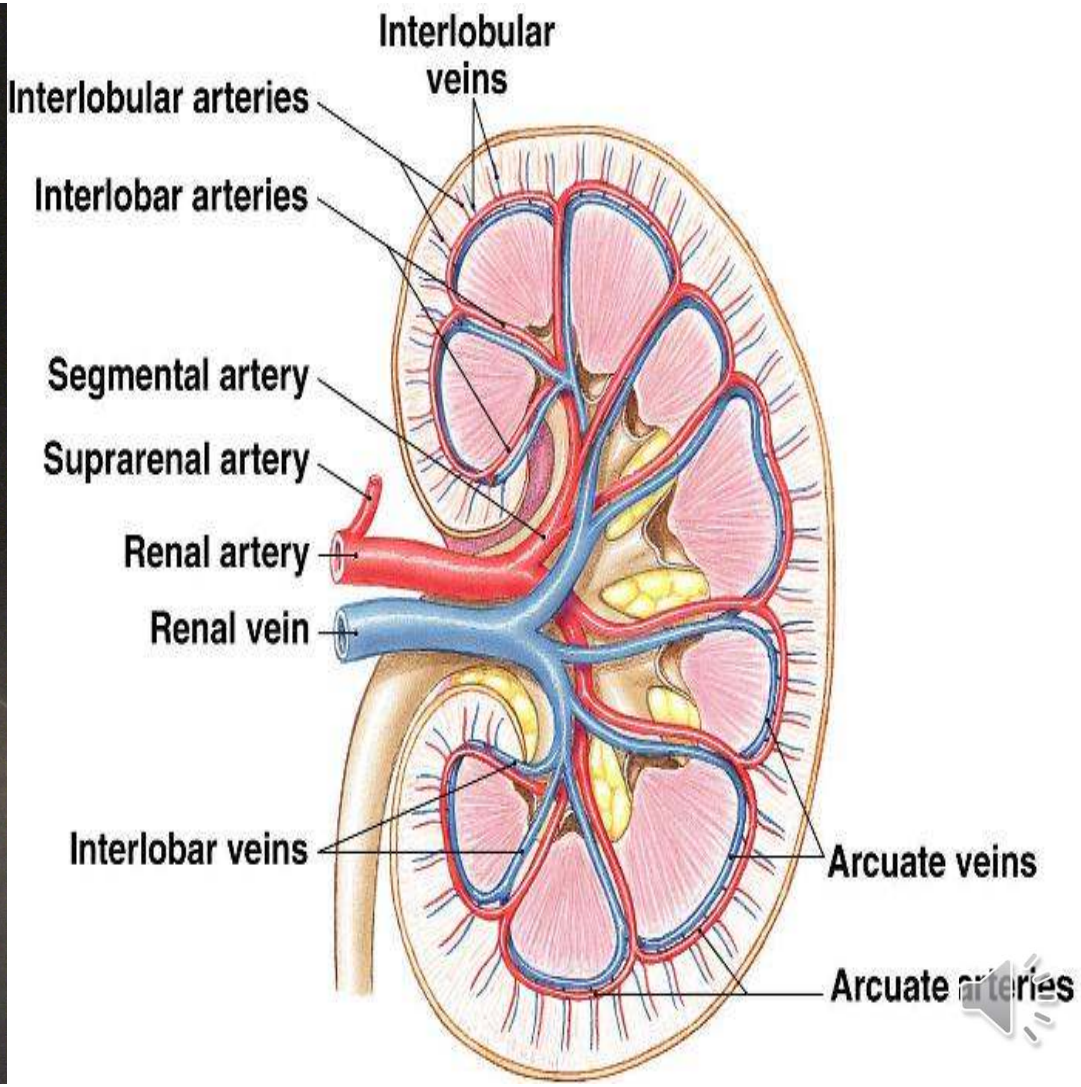

renal pyramid
renal cortex
renal medulla
renal artery
renal pelvis
renal vein
major calyx
minor calyces
ureter
renal capsule

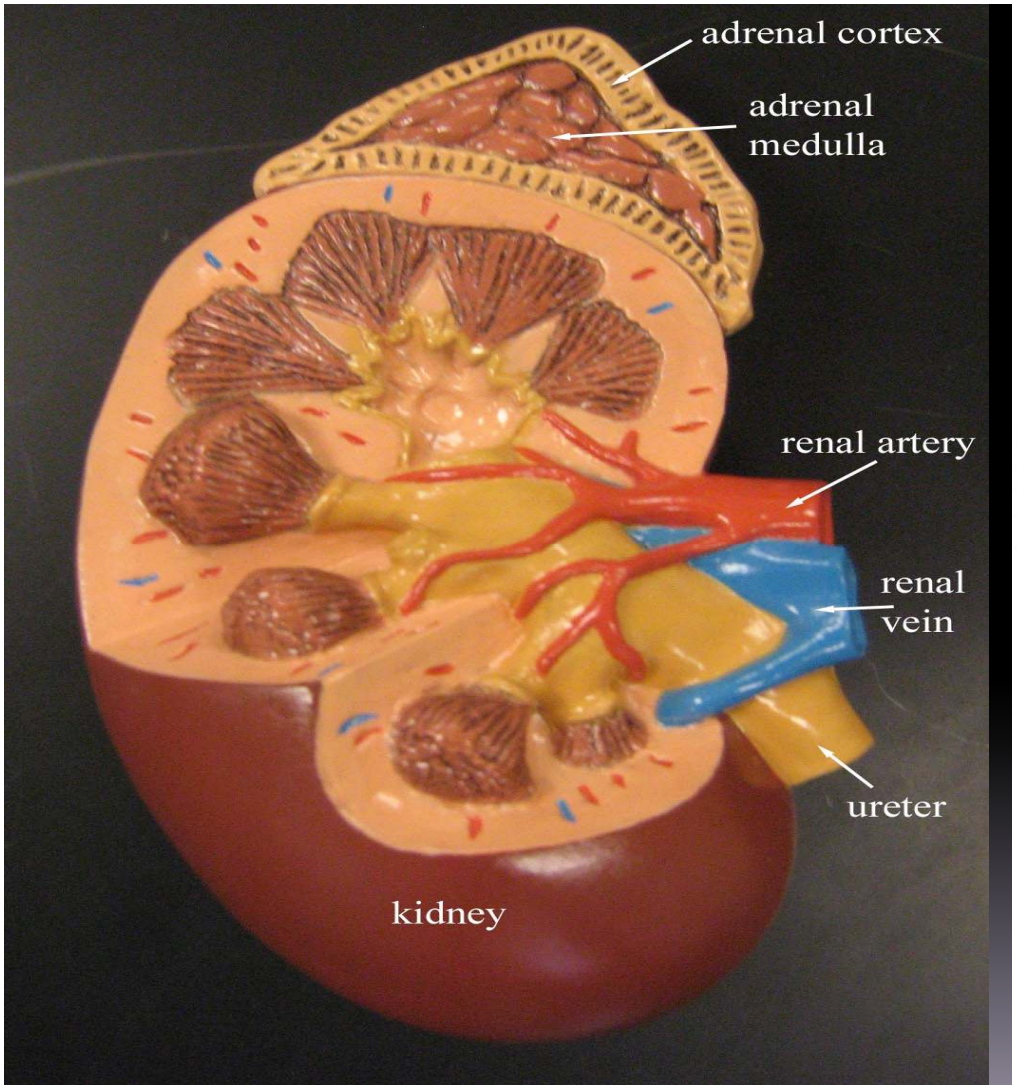


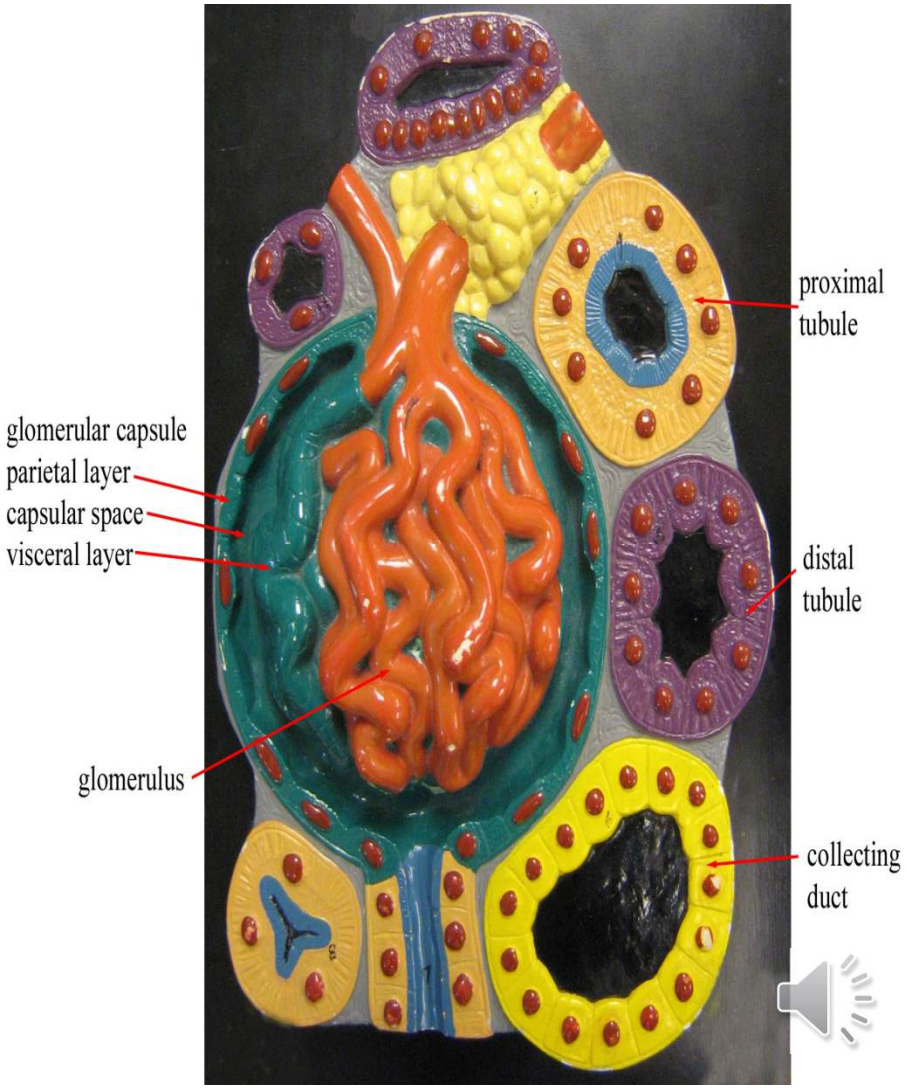


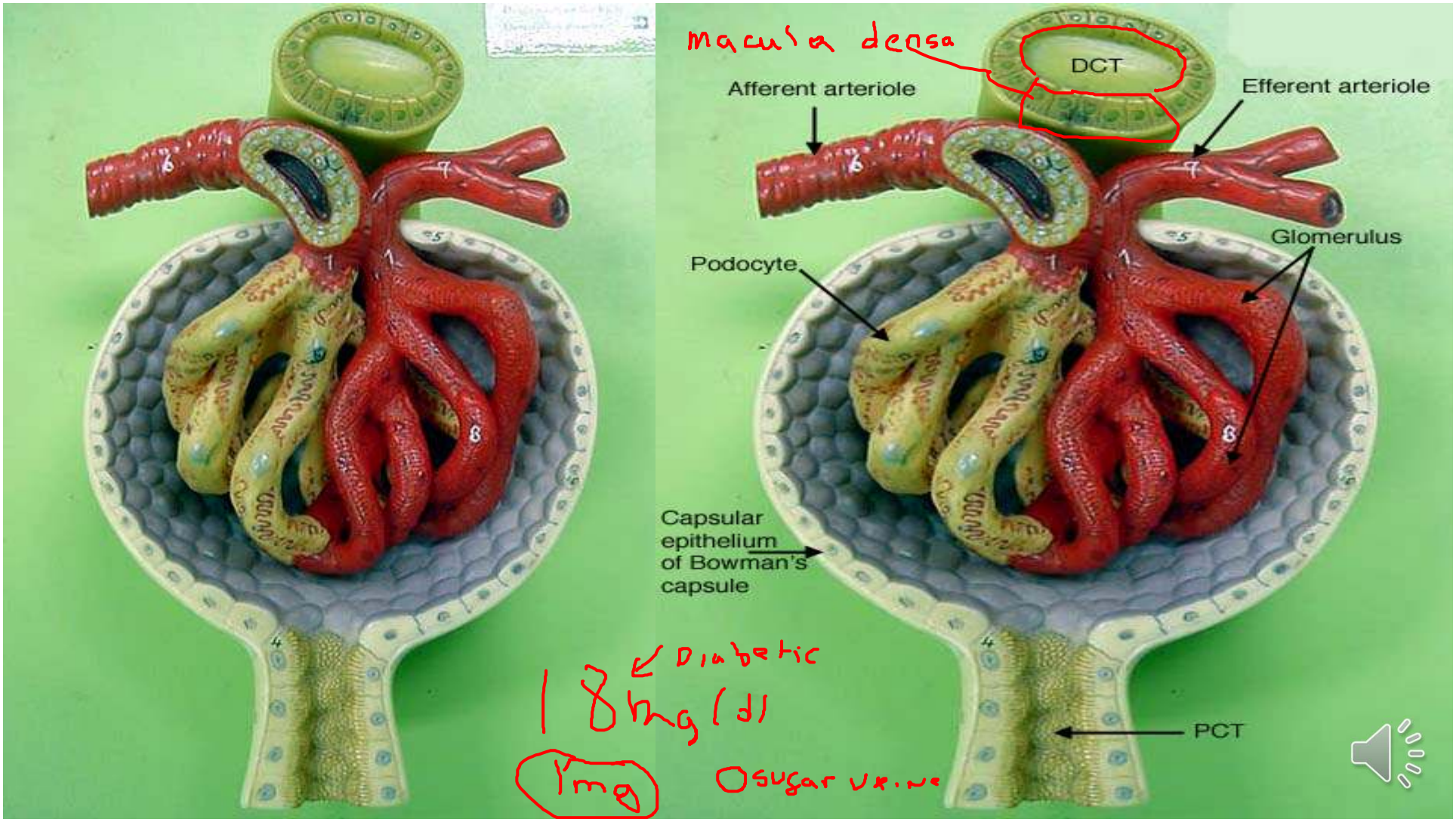


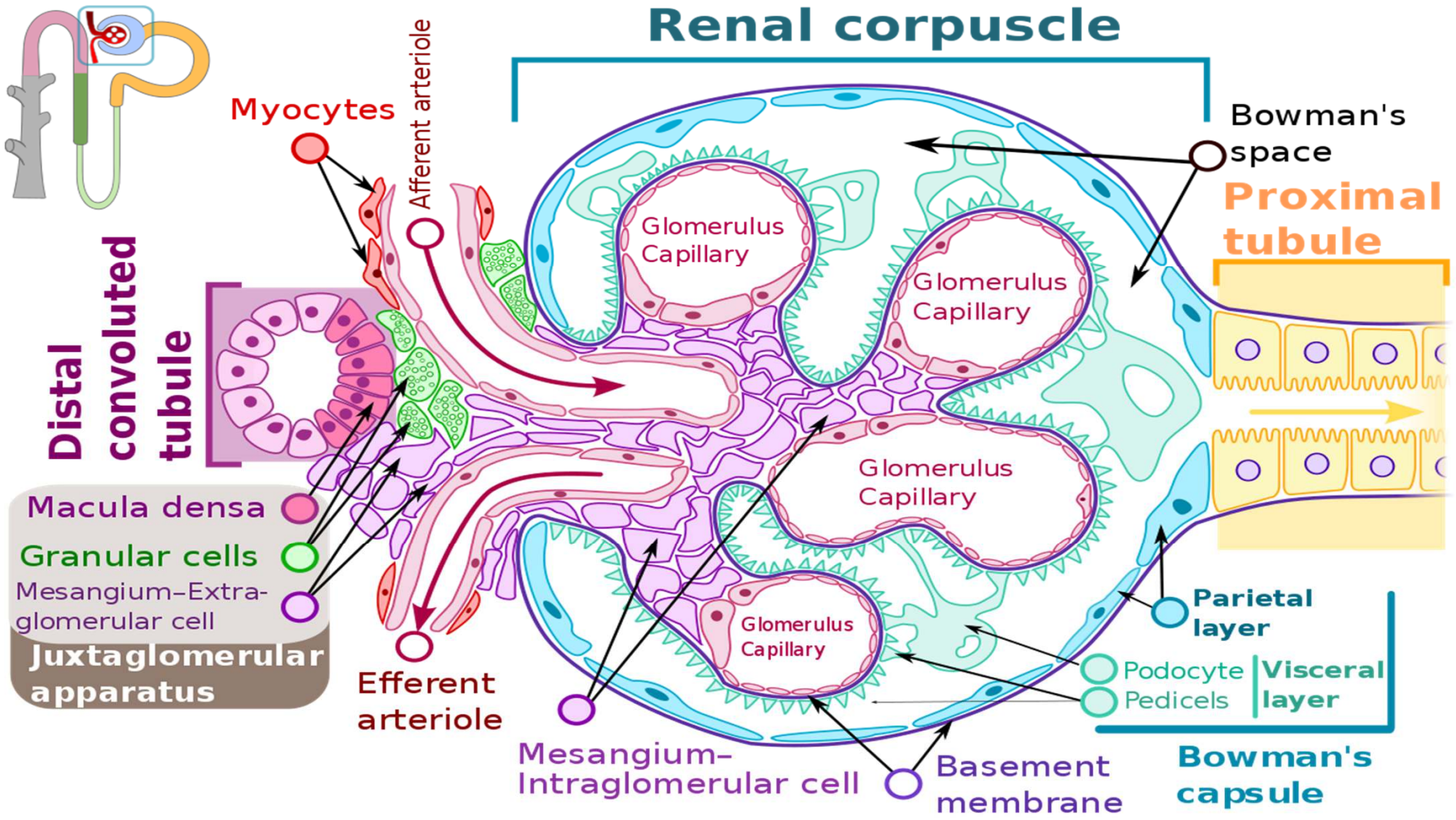


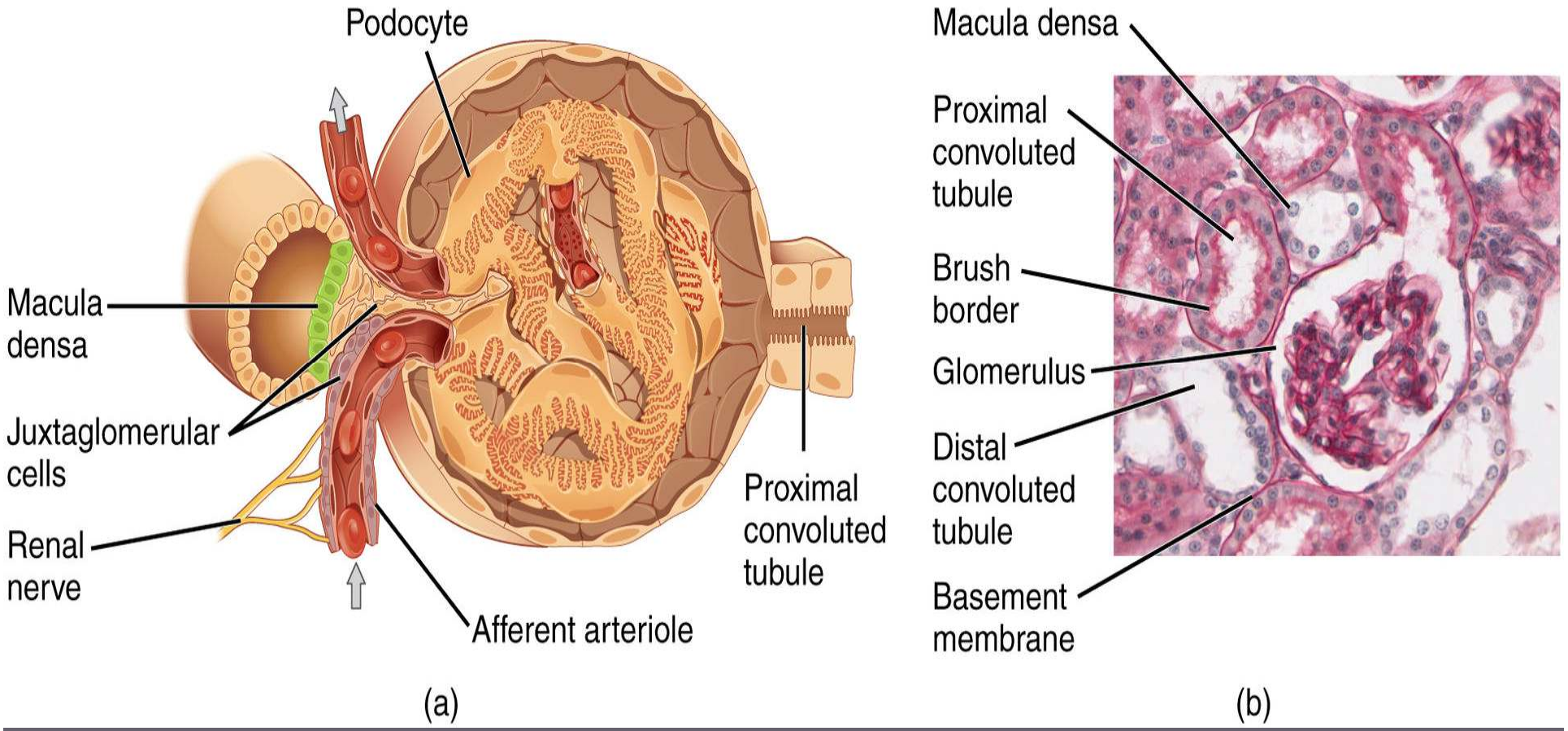

Interlobular veins
Interlobular arteries
Interlobar arteries
Segmental artery
Suprarenal artery
Renal artery
Renal vein
Interlobar veins
Arcuate veins
Arcuate arteries

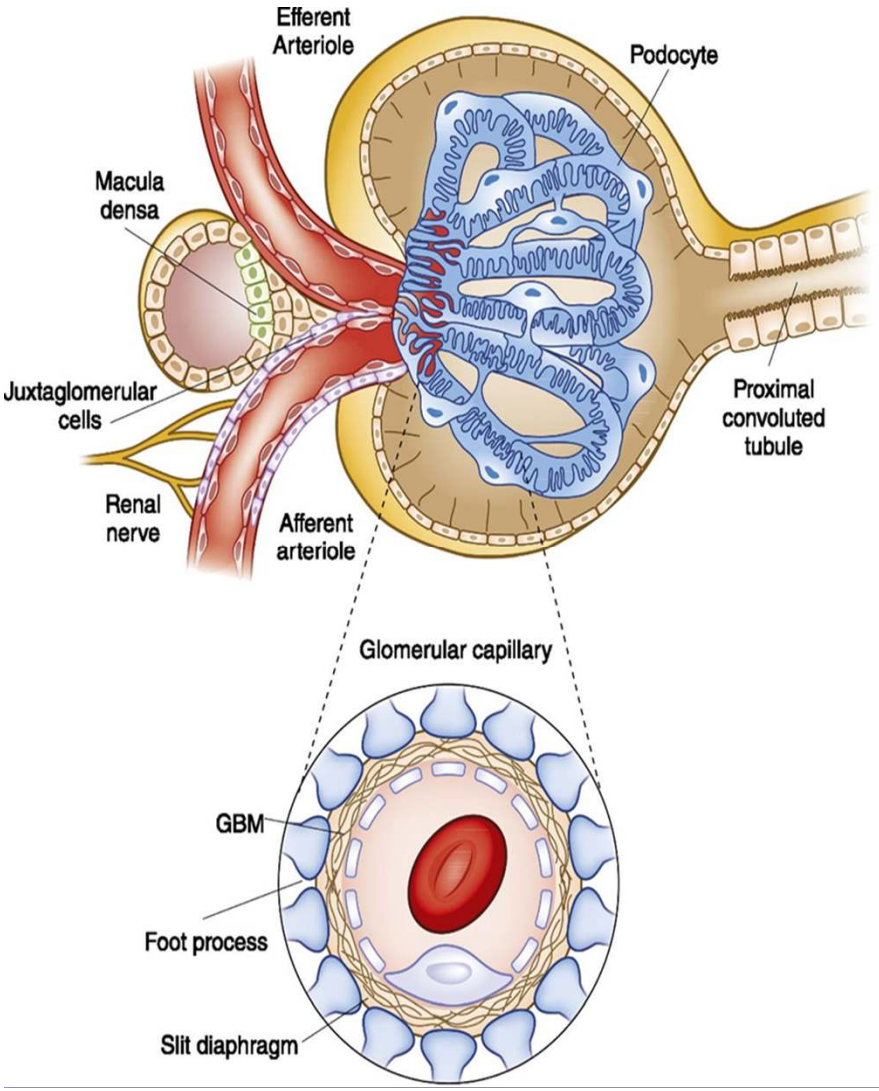

adrenal cortex
adrenal medulla
renal artery
renal vein
ureter
kidney

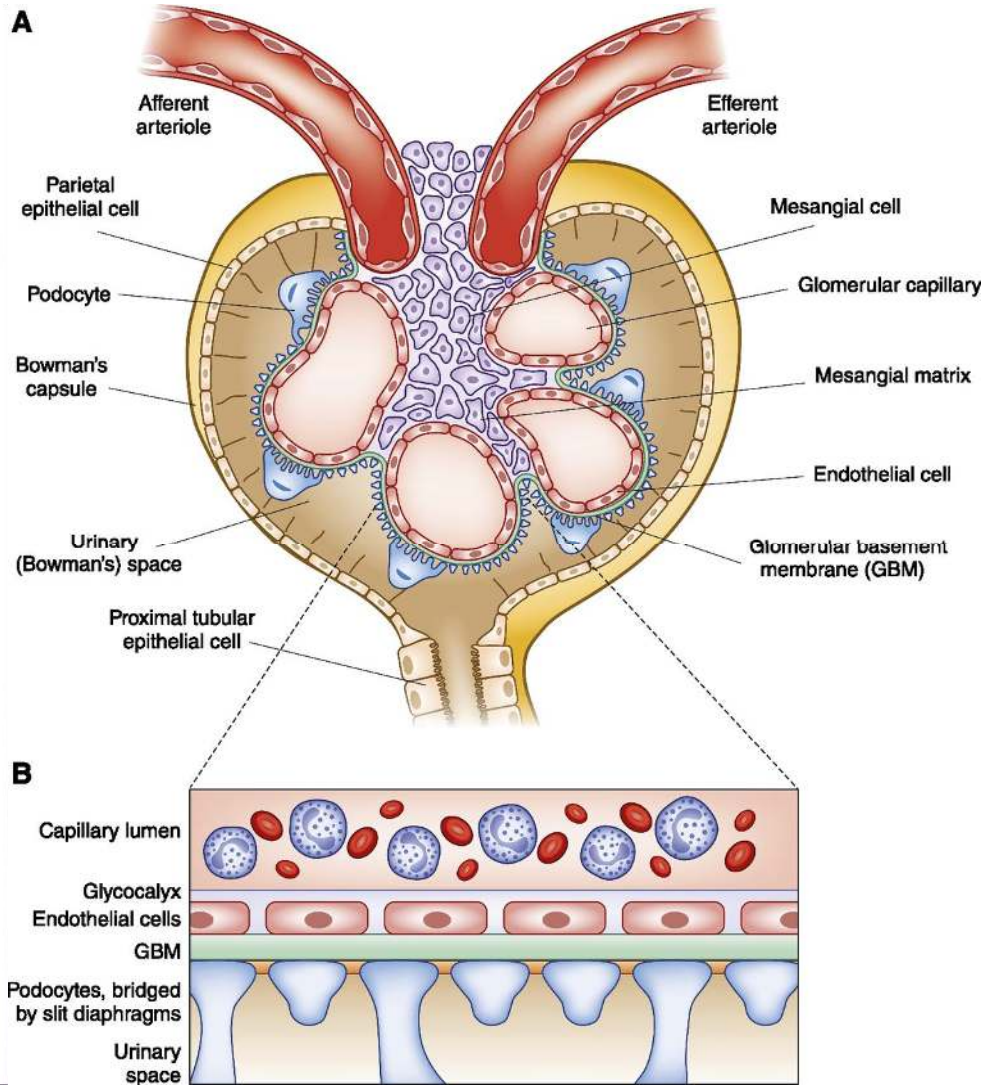

glomerular capsule
parietal layer
capsular space
visceral layer
glomerulus
proximal tubule
distal tubule
collecting duct

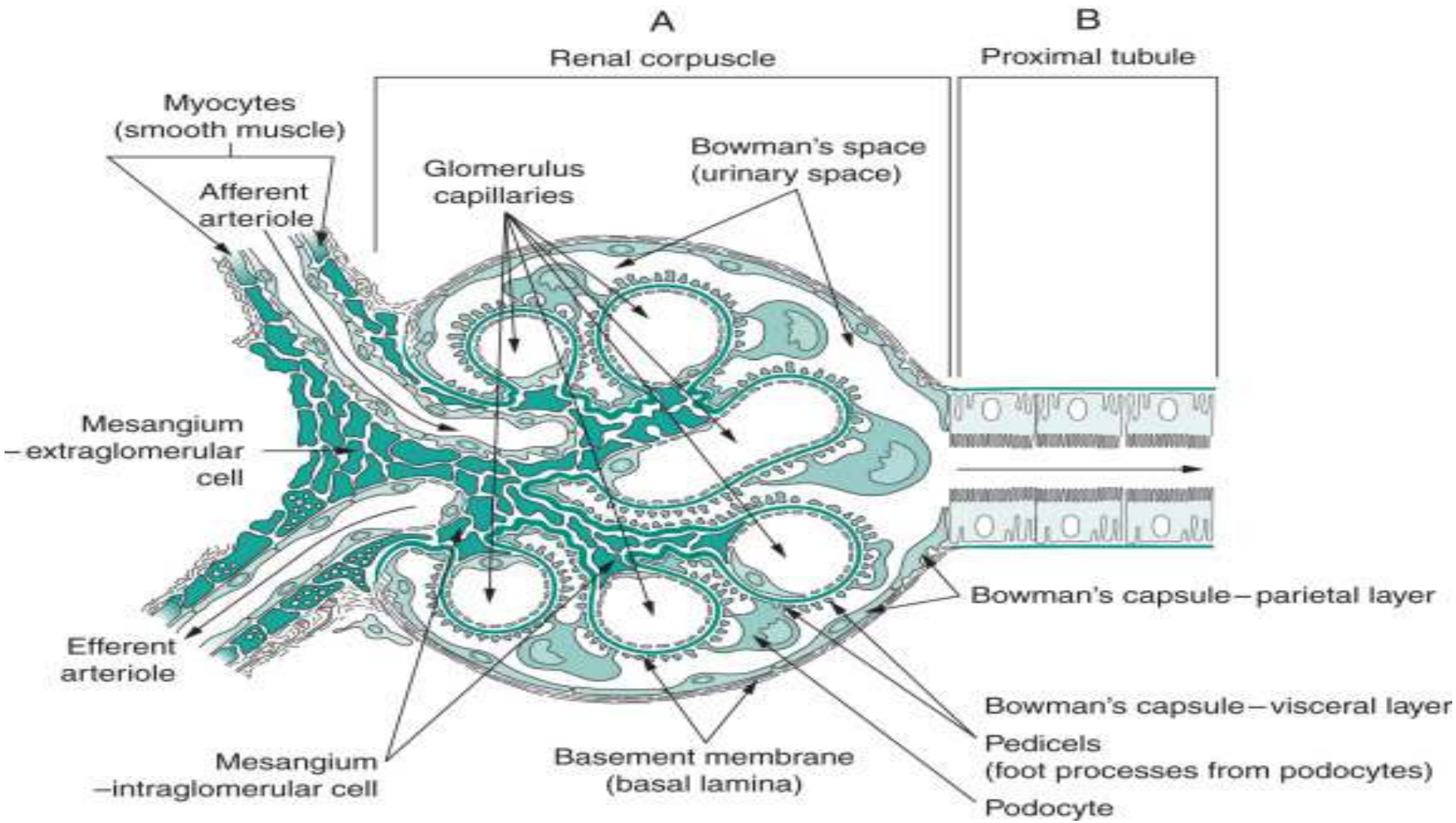

macula densa
DCT
Afferent arteriole
Efferent arteriole
Glomerulus
Podocyte
Capsular epithelium of Bowman's capsule
PCT
Diabetic
18mg/dl
1mg
Osugar urine

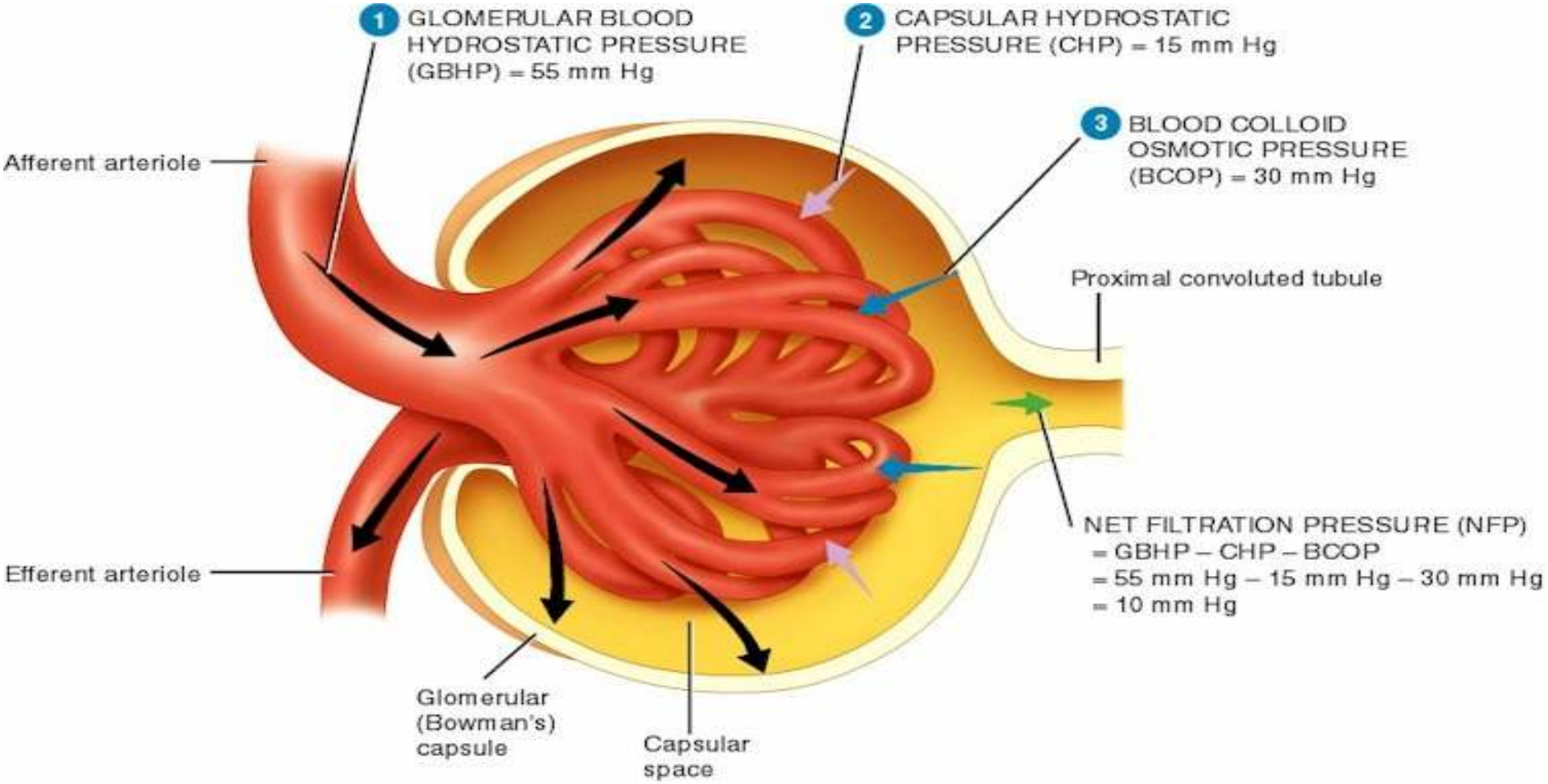

Renal corpuscle
Myocytes
Afferent arteriole
Bowman's space
Proximal tubule
Glomerulus Capillary
Glomerulus Capillary
Glomerulus Capillary
Glomerulus Capillary
Distal convoluted tubule
Macula densa
Granular cells
Mesangium–Extra-glomerular cell
Juxtaglomerular apparatus
Efferent arteriole
Mesangium–Intraglomerular cell
Basement membrane
Parietal layer
Podocyte Pedicels
Visceral layer
Bowman's capsule


Podocyte
Macula densa
Juxtaglomerular cells
Renal nerve
Afferent arteriole
Proximal convoluted tubule
(a)
Macula densa
Proximal convoluted tubule
Brush border
Glomerulus
Distal convoluted tubule
Basement membrane
(b)

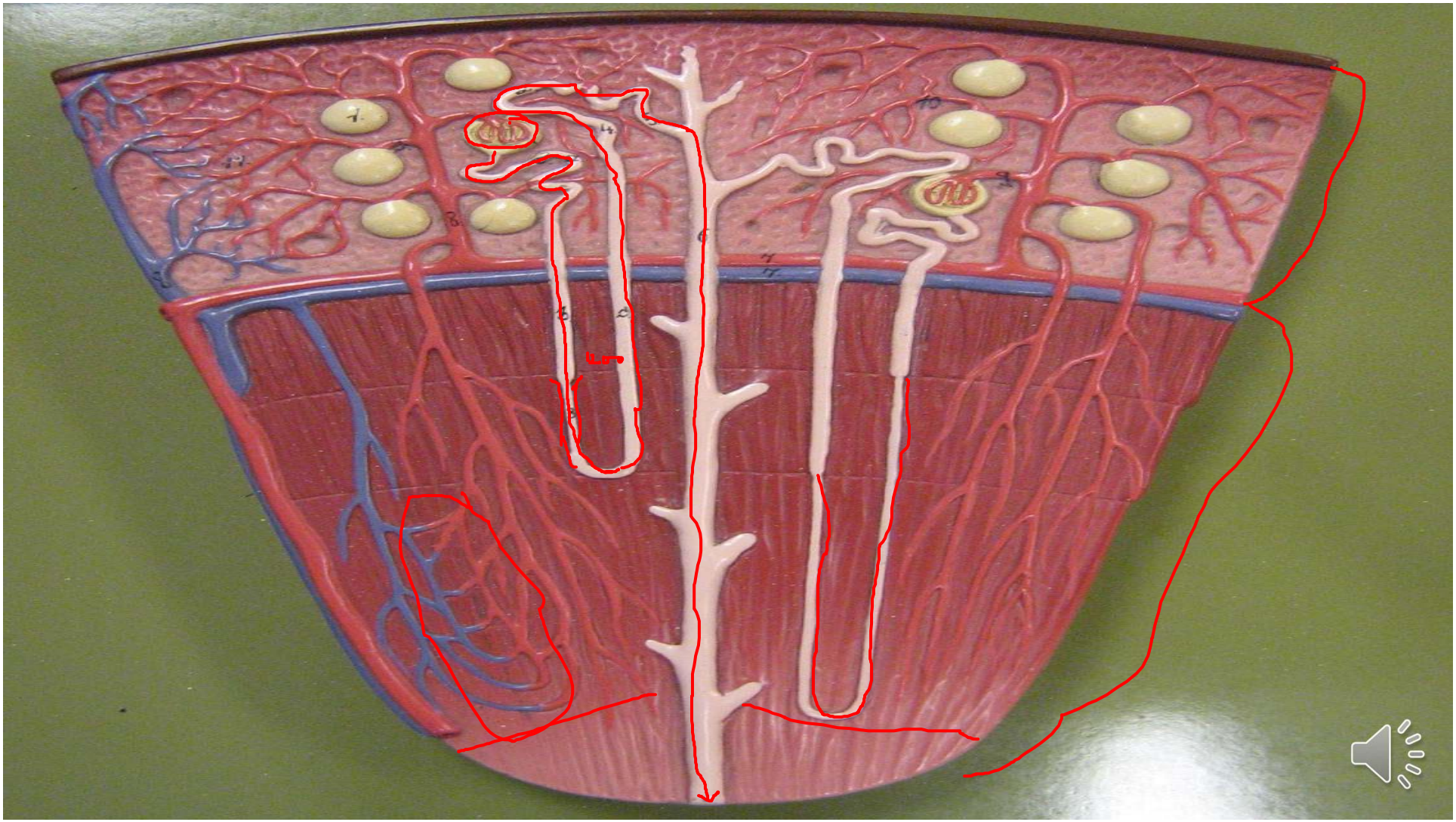

Efferent Arteriole
Podocyte
Macula densa
Juxtaglomerular cells
Renal nerve
Afferent arteriole
Proximal convoluted tubule
Glomerular capillary
GBM
Foot process
Slit diaphragm

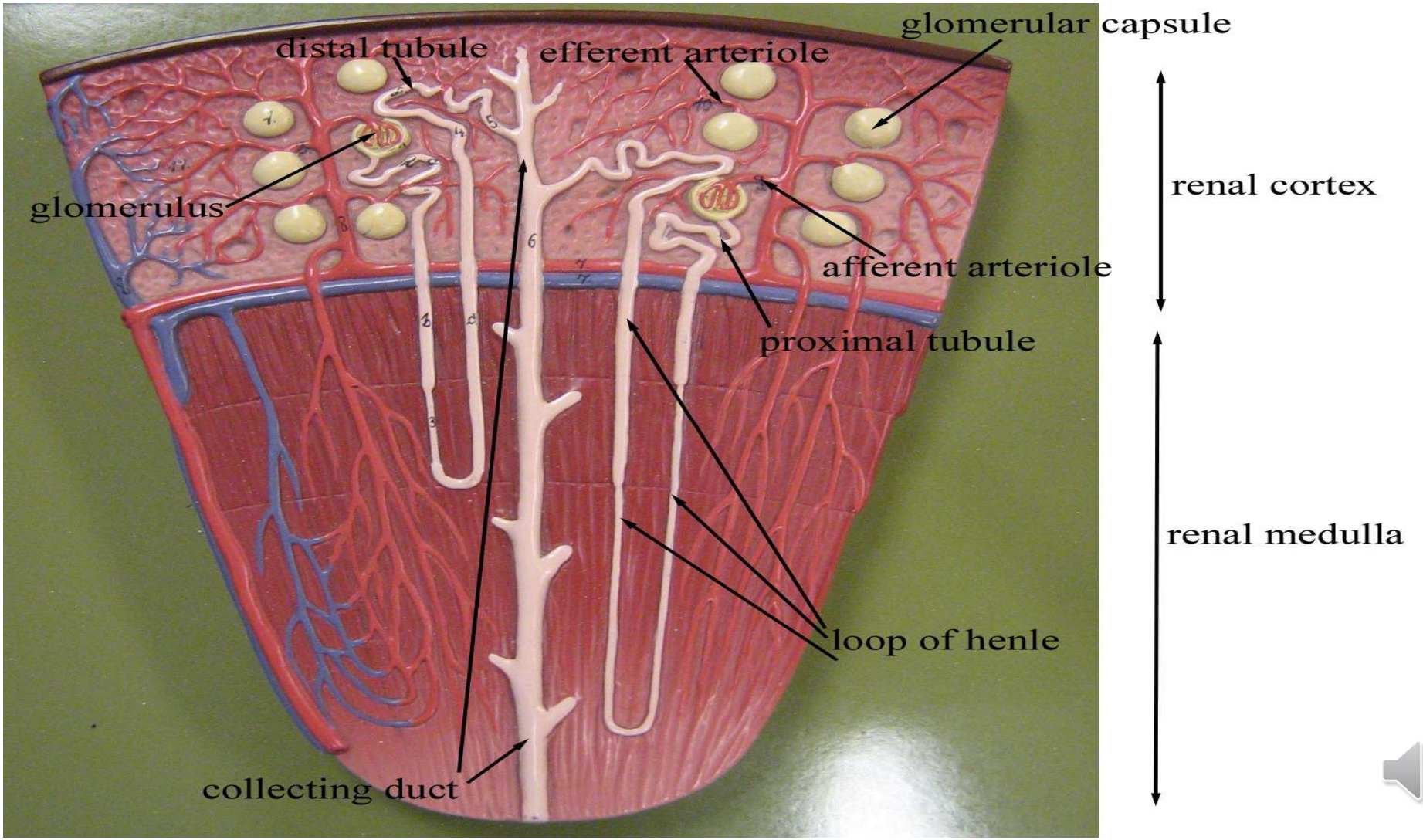

A
Afferent arteriole
Efferent arteriole
Parietal epithelial cell
Mesangial cell
Podocyte
Glomerular capillary
Bowman's capsule
Mesangial matrix
Endothelial cell
Urinary (Bowman's) space
Glomerular basement membrane (GBM)
Proximal tubular epithelial cell
B
Capillary lumen
Glycocalyx
Endothelial cells
GBM
Podocytes, bridged by slit diaphragms
Urinary space

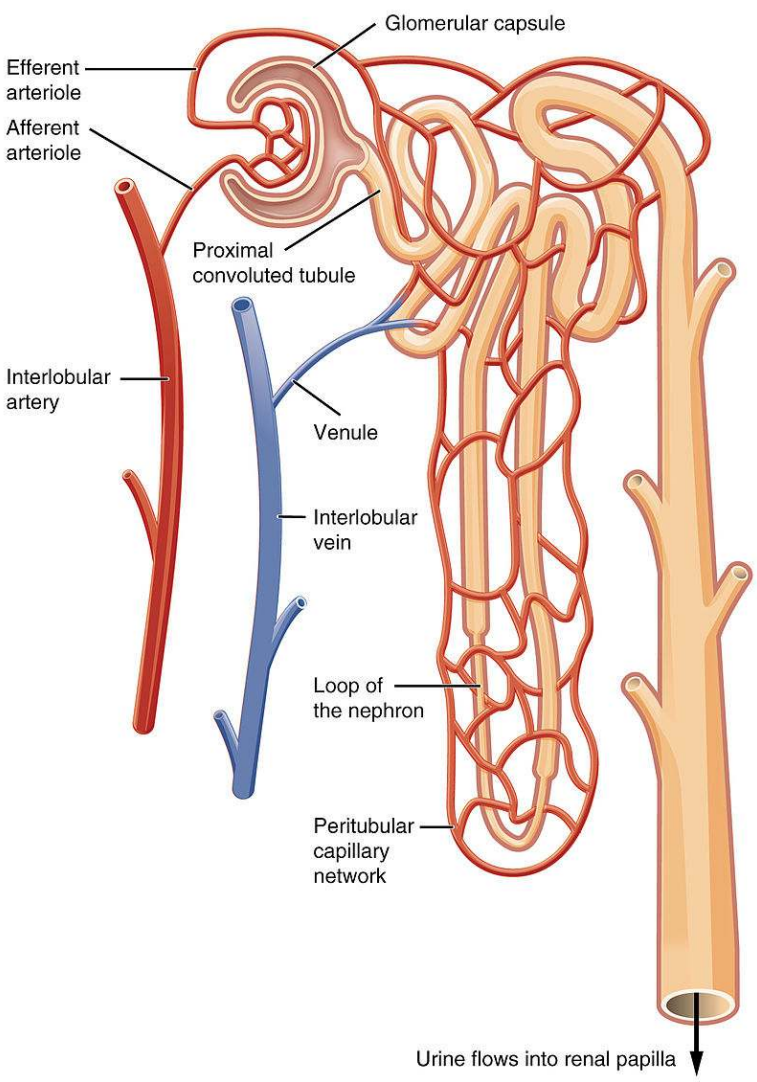

A
Renal corpuscle
B
Proximal tubule
Myocytes
(smooth muscle)
Afferent
arteriole
Glomerulus
capillaries
Bowman's space
(urinary space)
Mesangium
– extraglomerular
cell
Efferent
arteriole
Bowman's capsule – parietal layer
Bowman's capsule – visceral layer
Pedicels
(foot processes from podocytes)
Podocyte
Mesangium
– intraglomerular cell
Basement membrane
(basal lamina)

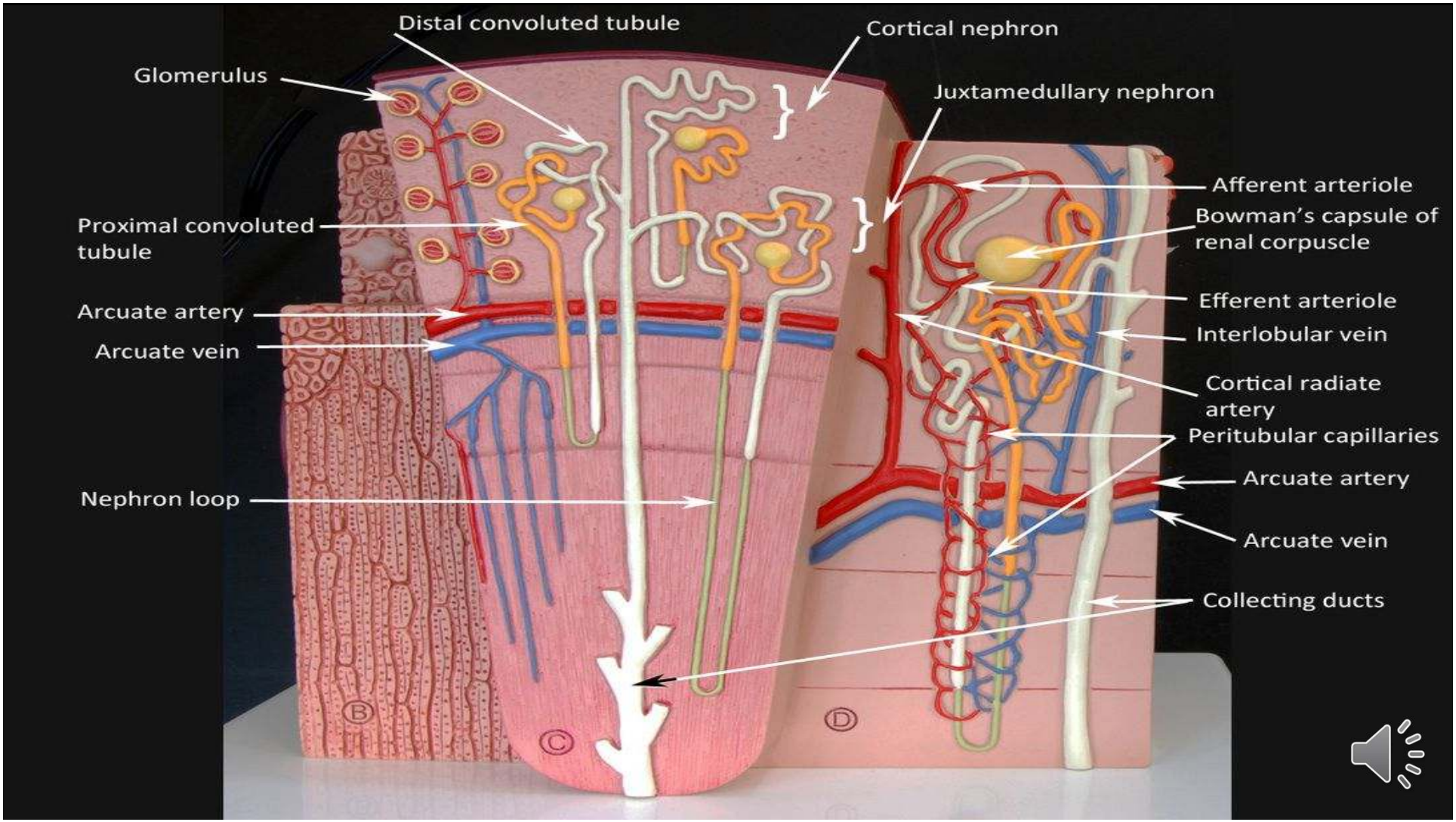

1 GLOMERULAR BLOOD HYDROSTATIC PRESSURE (GBHP) = 55 mm Hg
2 CAPSULAR HYDROSTATIC PRESSURE (CHP) = 15 mm Hg
3 BLOOD COLLOID OSMOTIC PRESSURE (BCOP) = 30 mm Hg
Afferent arteriole
Proximal convoluted tubule
NET FILTRATION PRESSURE (NFP)
= GBHP – CHP – BCOP
= 55 mm Hg – 15 mm Hg – 30 mm Hg
= 10 mm Hg
Efferent arteriole
Glomerular (Bowman's) capsule
Capsular space

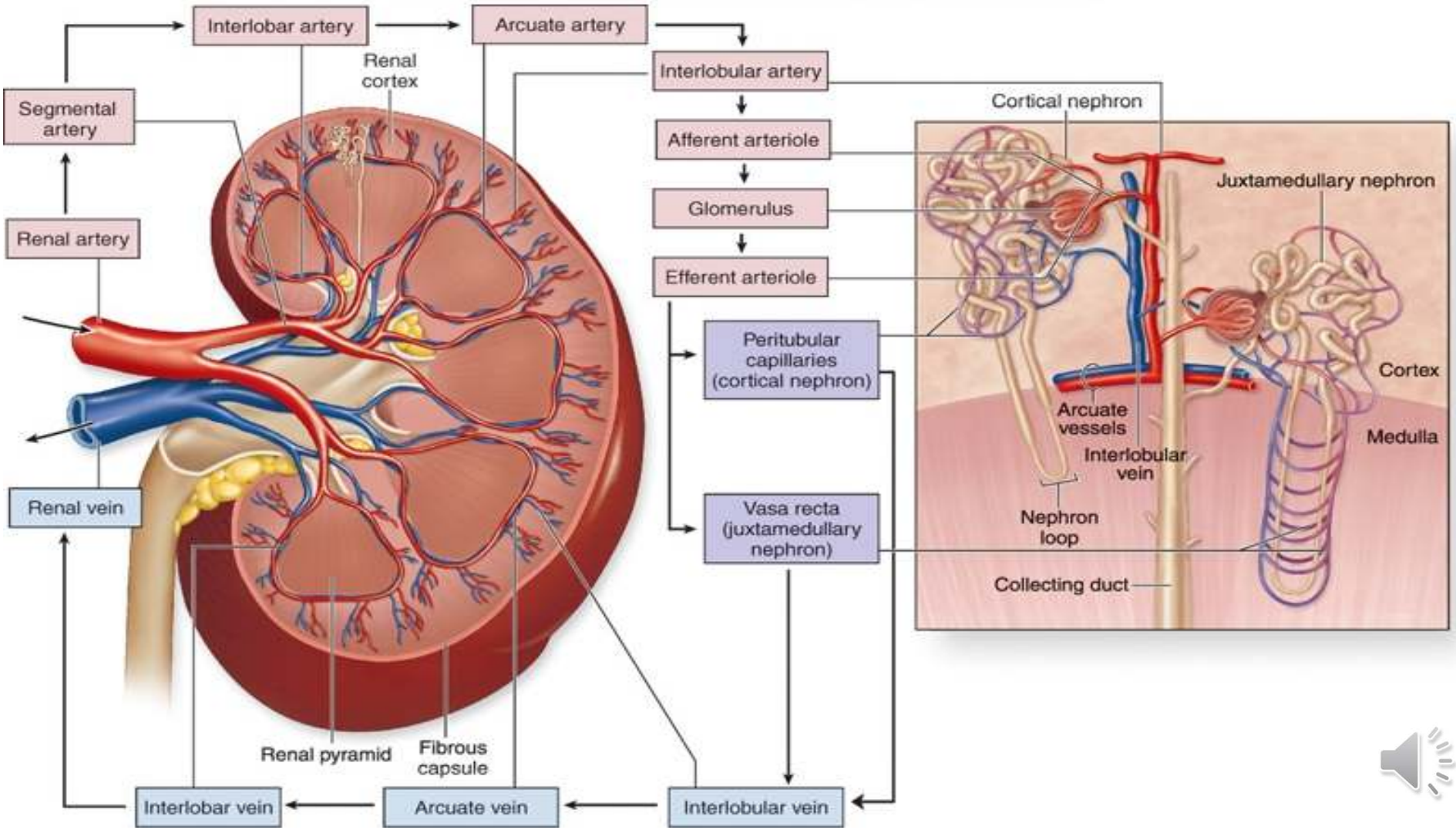
26.09



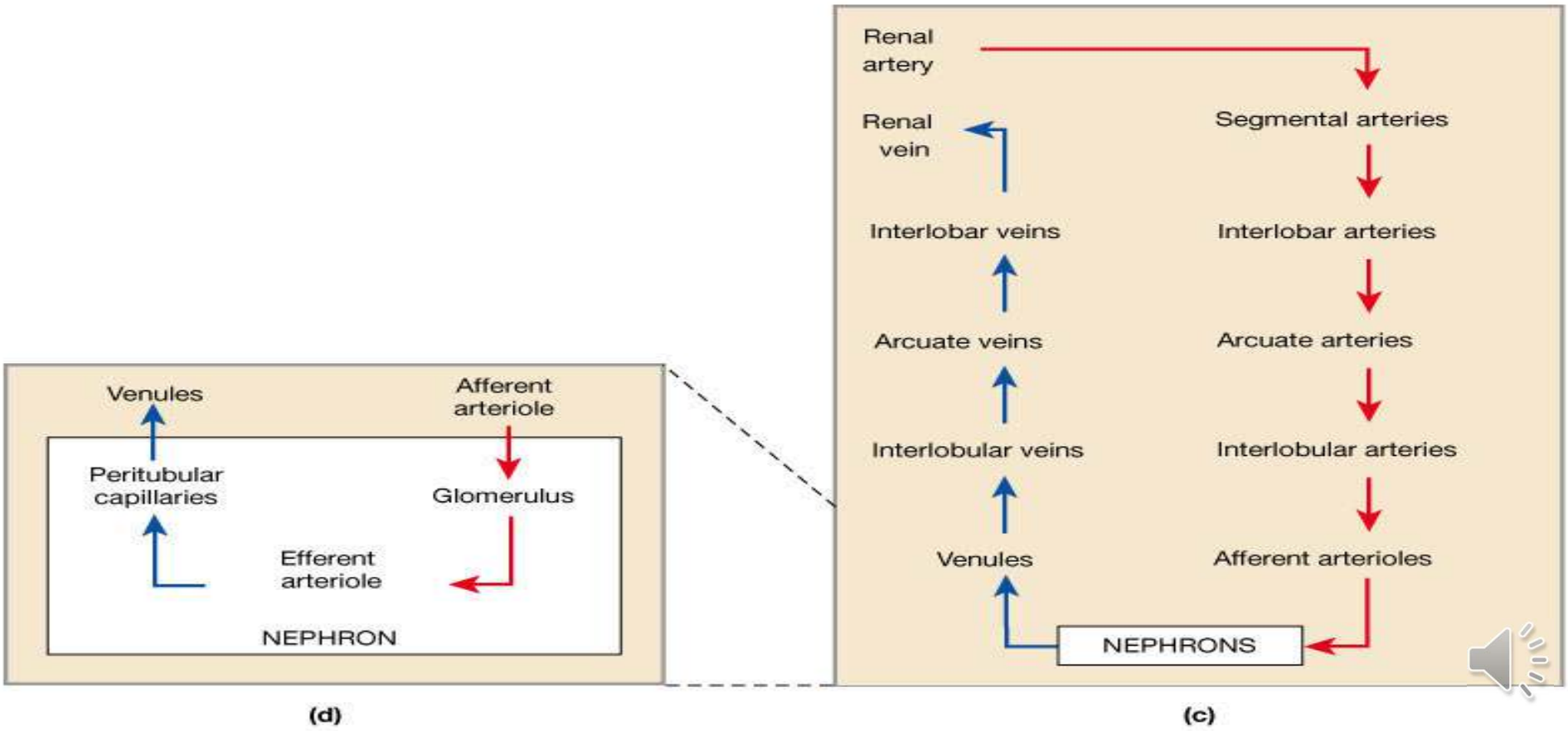

glomerular capsule
distal tubule
efferent arteriole
glomerulus
afferent arteriole
proximal tubule
renal cortex
renal medulla
loop of henle
collecting duct

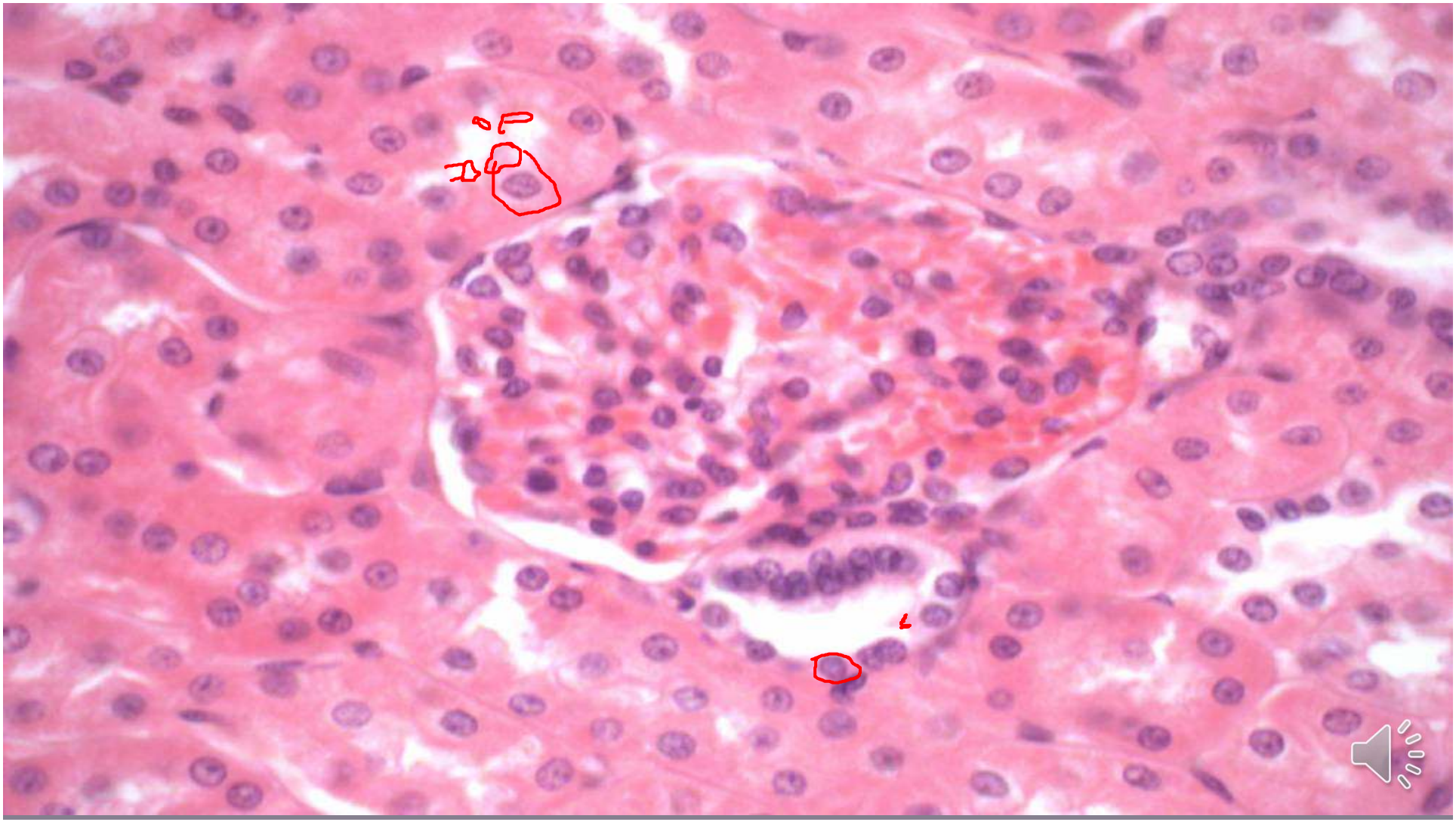

Glomerular capsule
Efferent arteriole
Afferent arteriole
Proximal convoluted tubule
Interlobular artery
Venule
Interlobular vein
Loop of the nephron
Peritubular capillary network
Urine flows into renal papilla

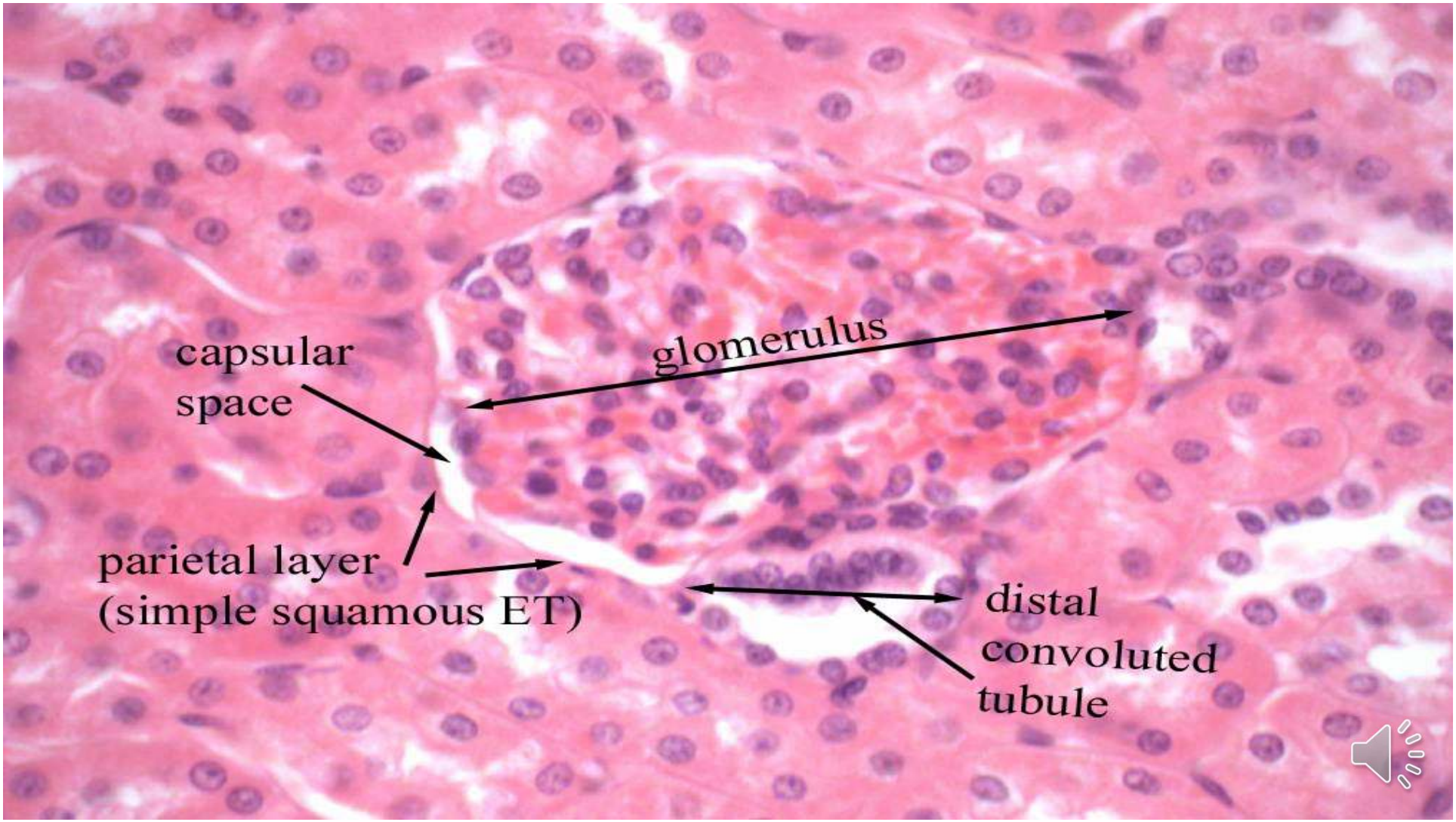

Distal convoluted tubule
Cortical nephron
Glomerulus
Juxtamedullary nephron
Afferent arteriole
Proximal convoluted tubule
Bowman's capsule of renal corpuscle
Efferent arteriole
Arcuate artery
Interlobular vein
Arcuate vein
Cortical radiate artery
Peritubular capillaries
Nephron loop
Arcuate artery
Arcuate vein
Collecting ducts
B
C
D

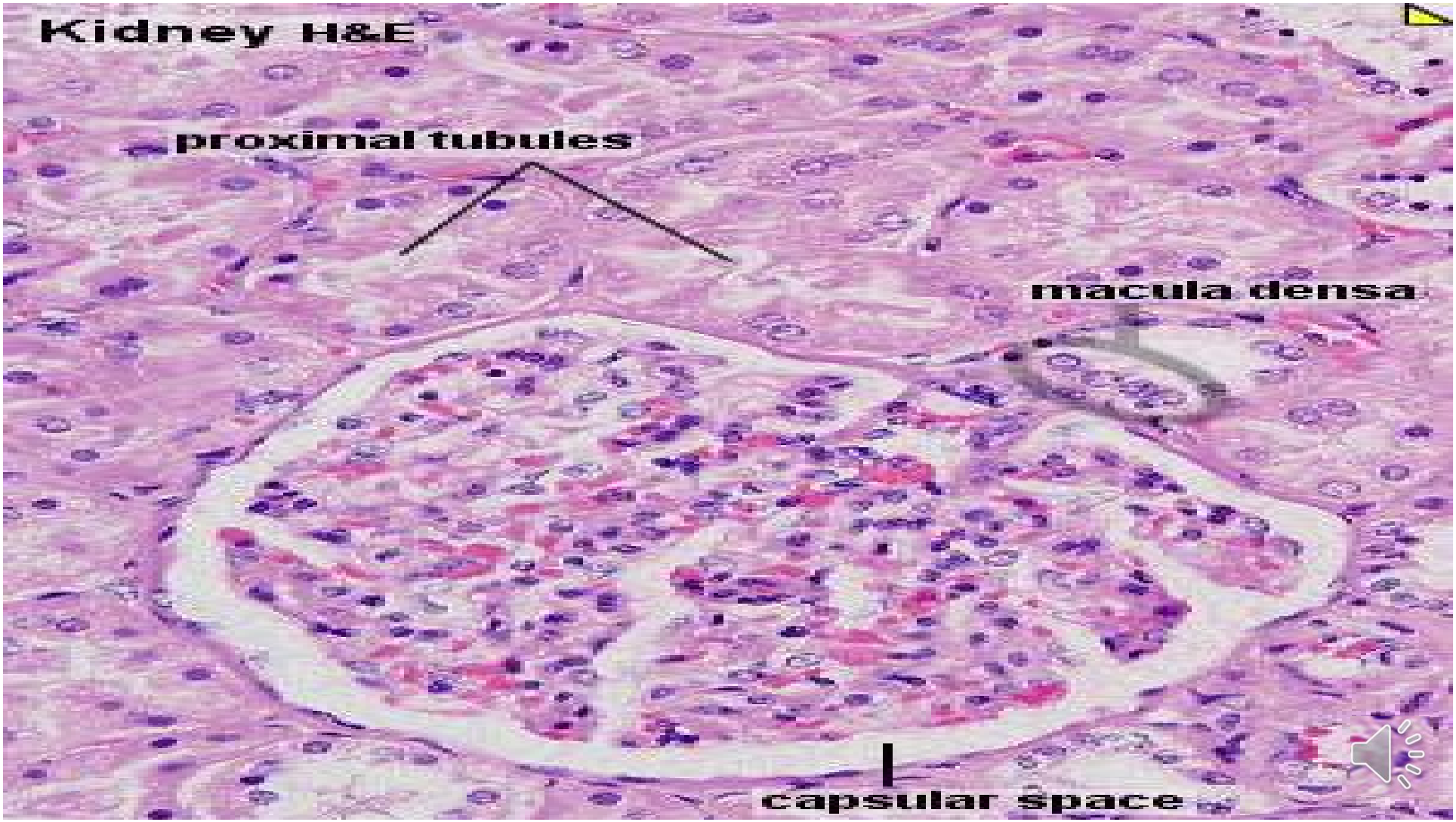

Interlobar artery
Arcuate artery
Renal cortex
Interlobular artery
Segmental artery
Afferent arteriole
Cortical nephron
Juxtamedullary nephron
Glomerulus
Renal artery
Efferent arteriole
Peritubular capillaries (cortical nephron)
Cortex
Arcuate vessels
Medulla
Interlobular vein
Renal vein
Vasa recta (juxtamedullary nephron)
Nephron loop
Collecting duct
Renal pyramid
Fibrous capsule
Interlobar vein
Arcuate vein
Interlobular vein

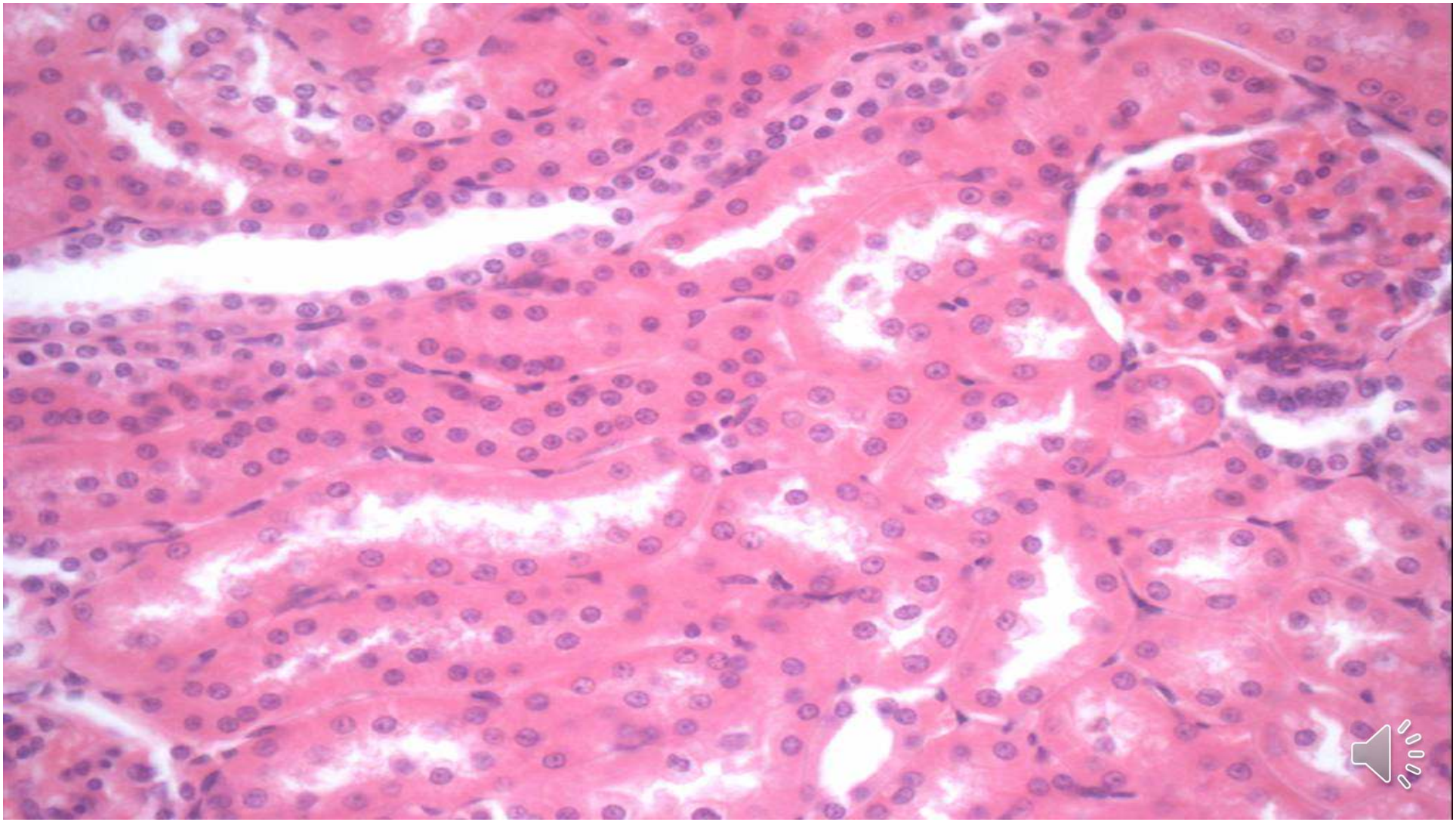
The Blood Supply to the



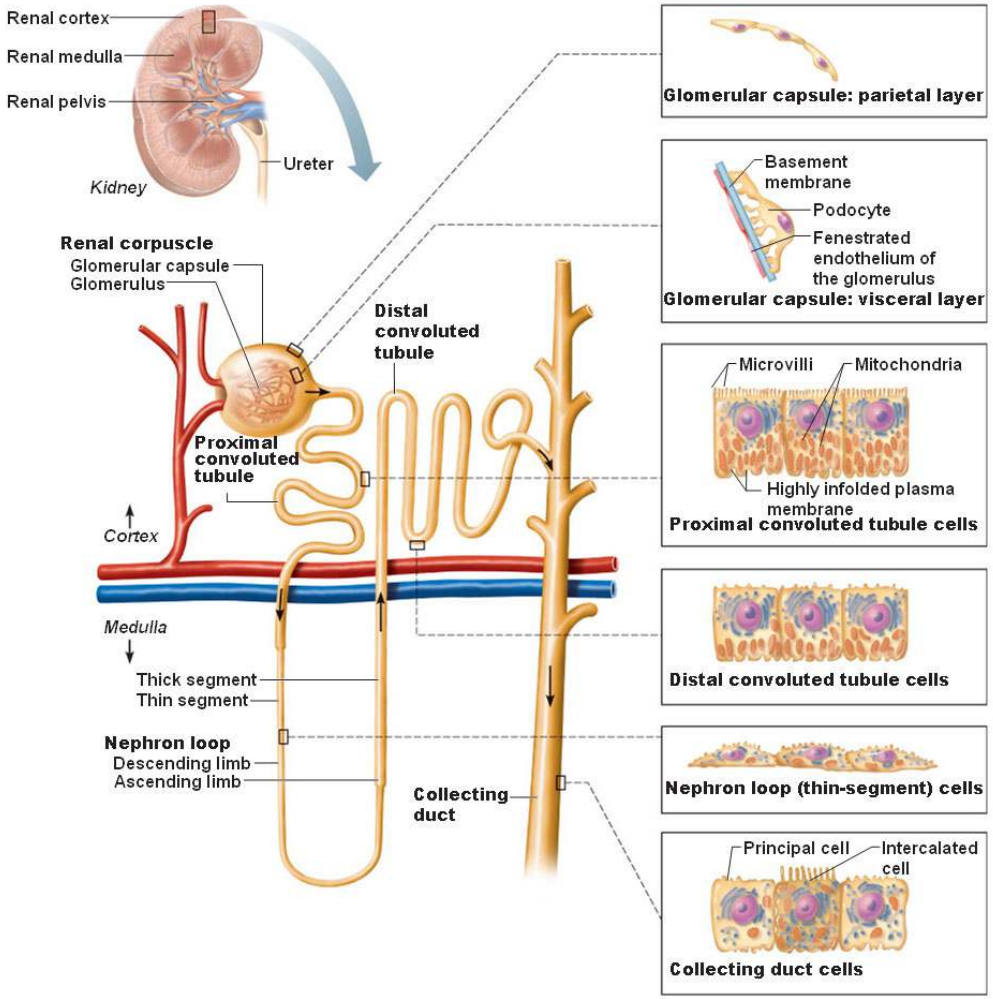


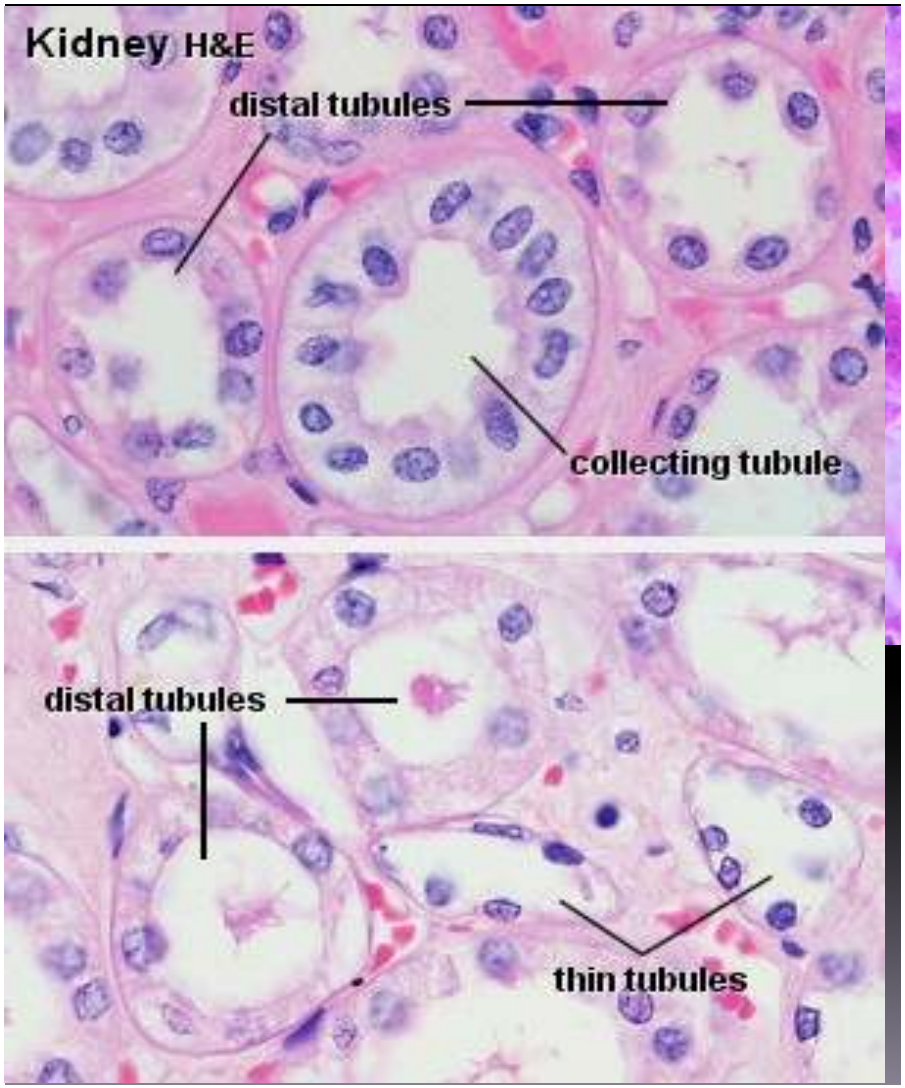

capsular
space
glomerulus
parietal layer
(simple squamous ET)
distal
convoluted
tubule

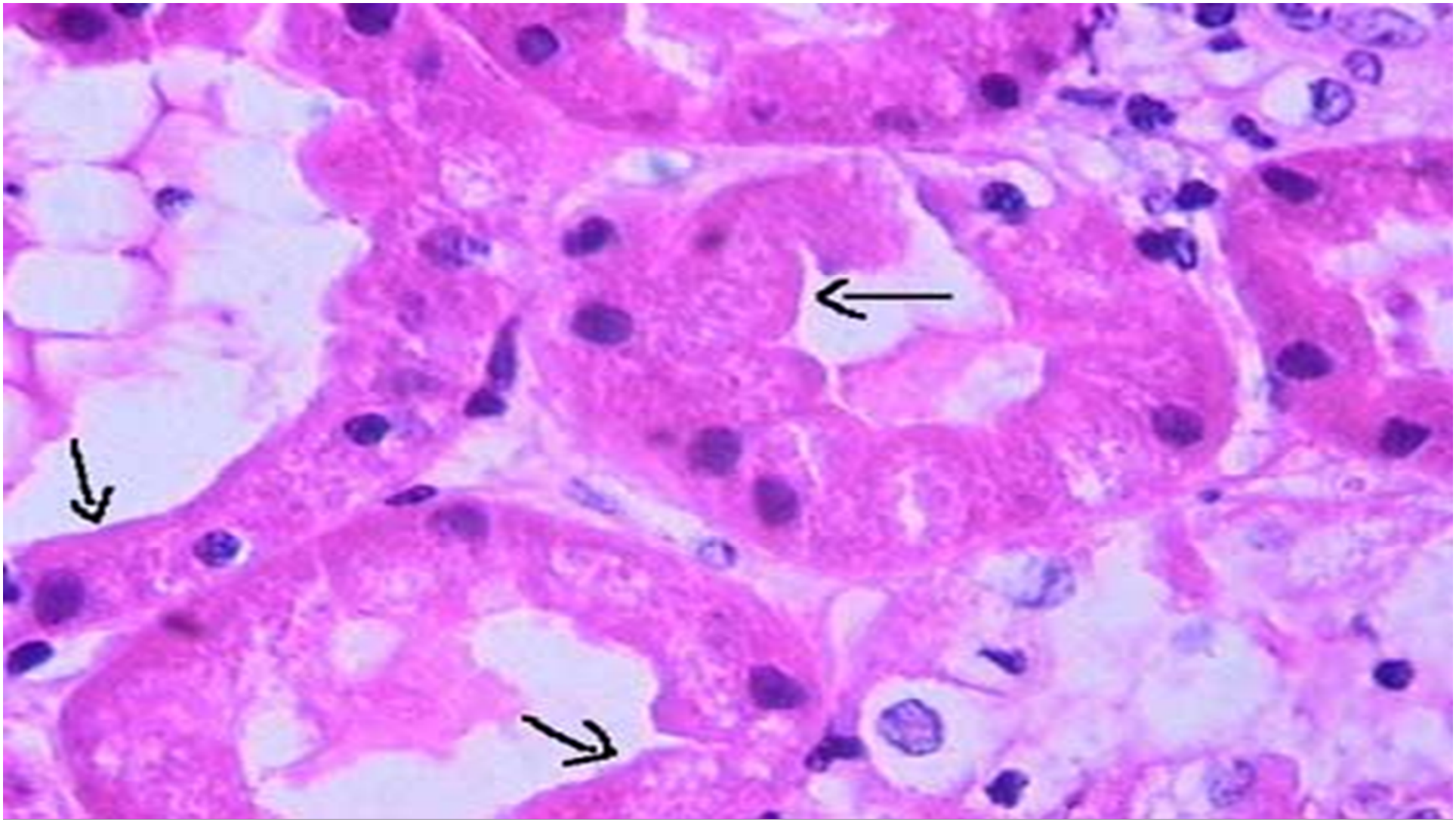

Kidney H&E
proximal tubules
macula densa
capsular space

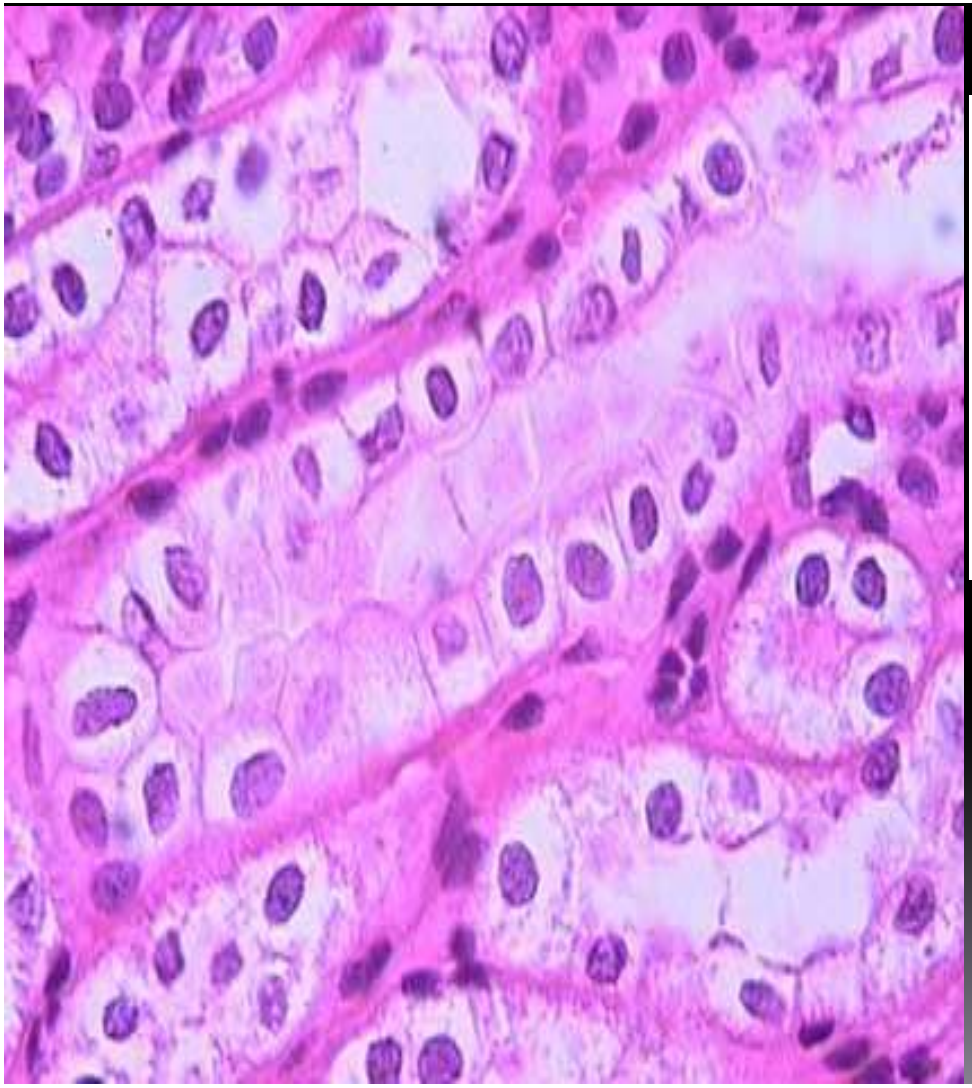


Renal Tubule



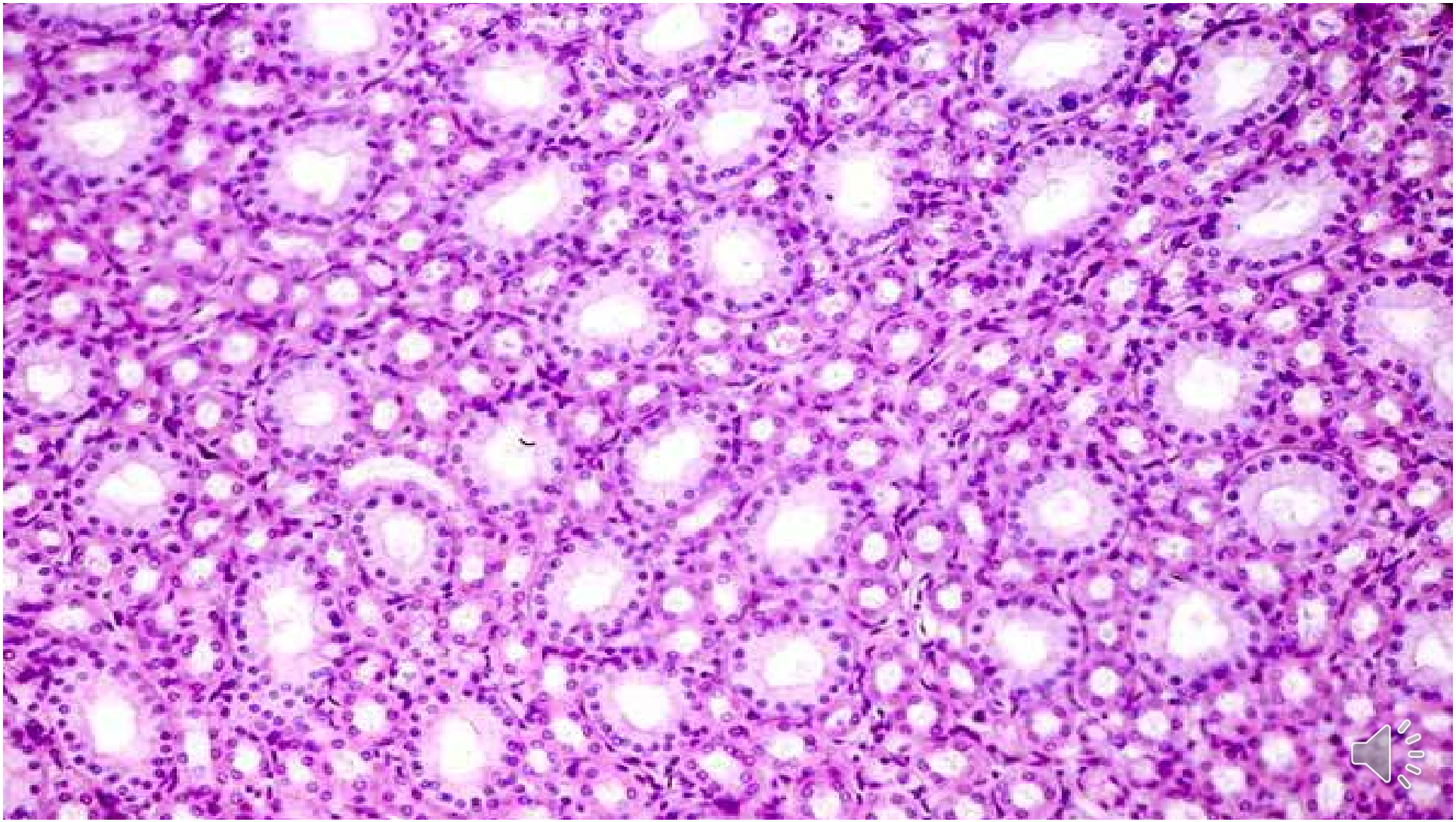


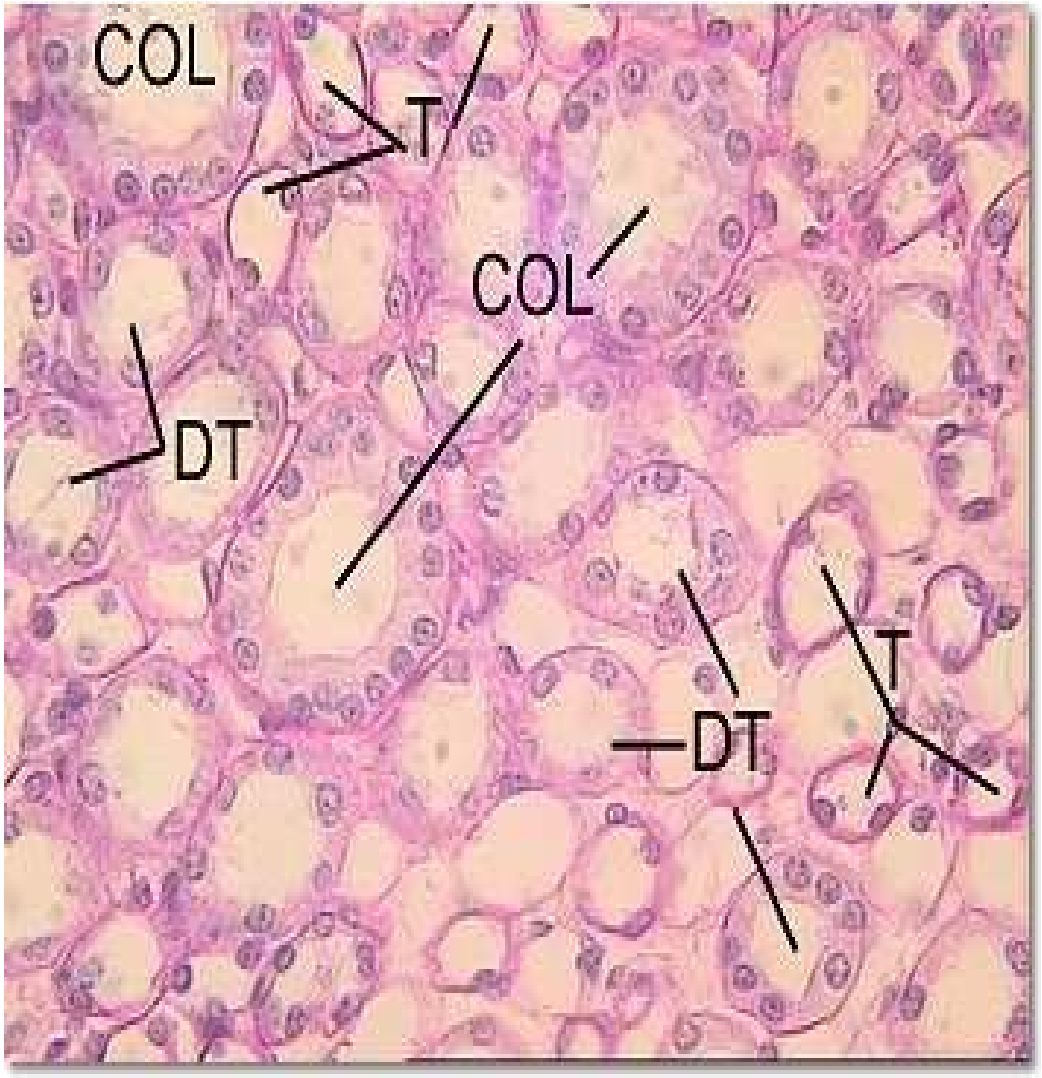




collecting duct cells.

Distal tubule cells gradually change to collecting duct cells and the histologic aspect, in many cases, do not permit differentiate between cells of this portions of the nephron with light microscopy. (H&E, X400).



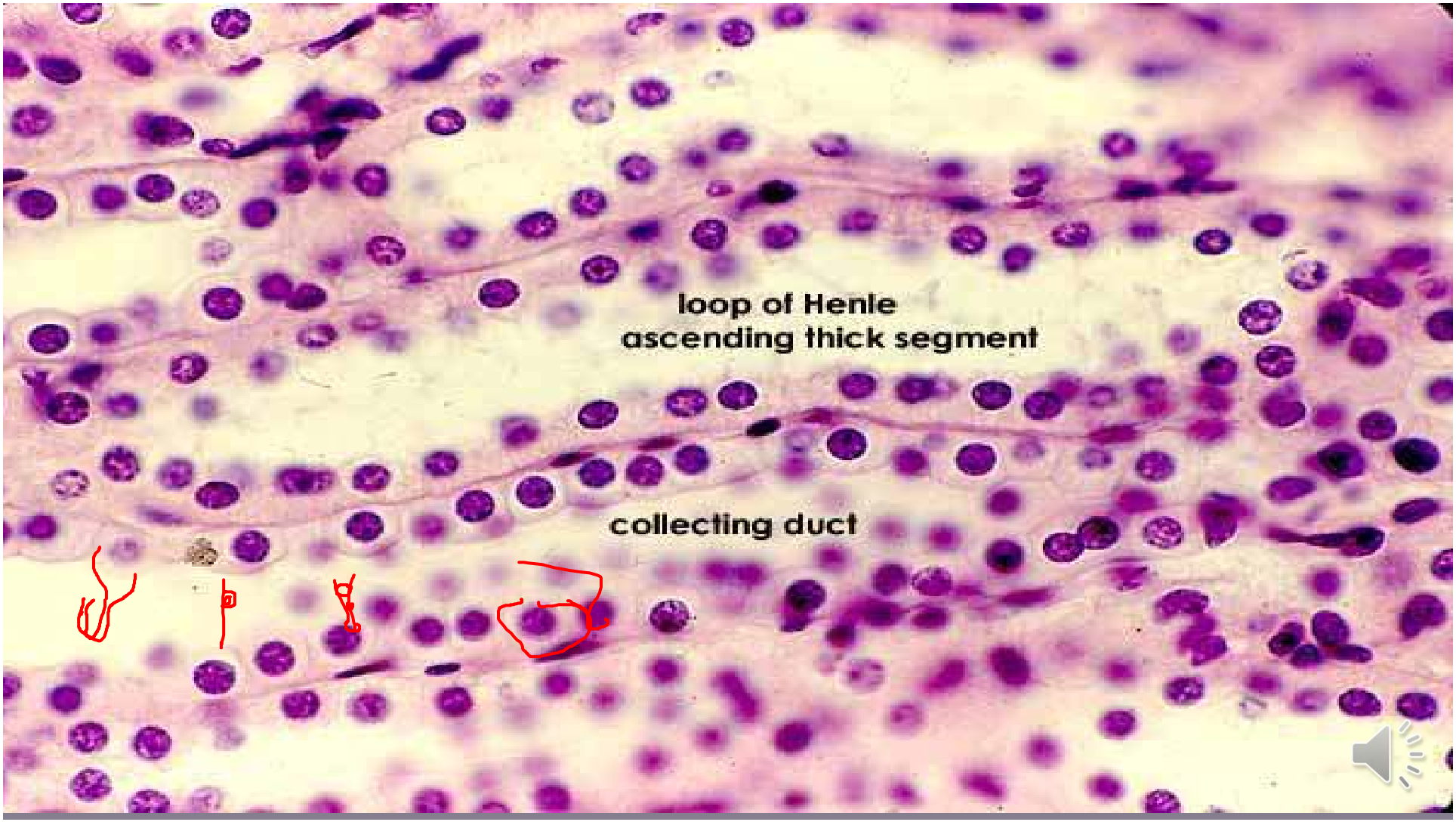


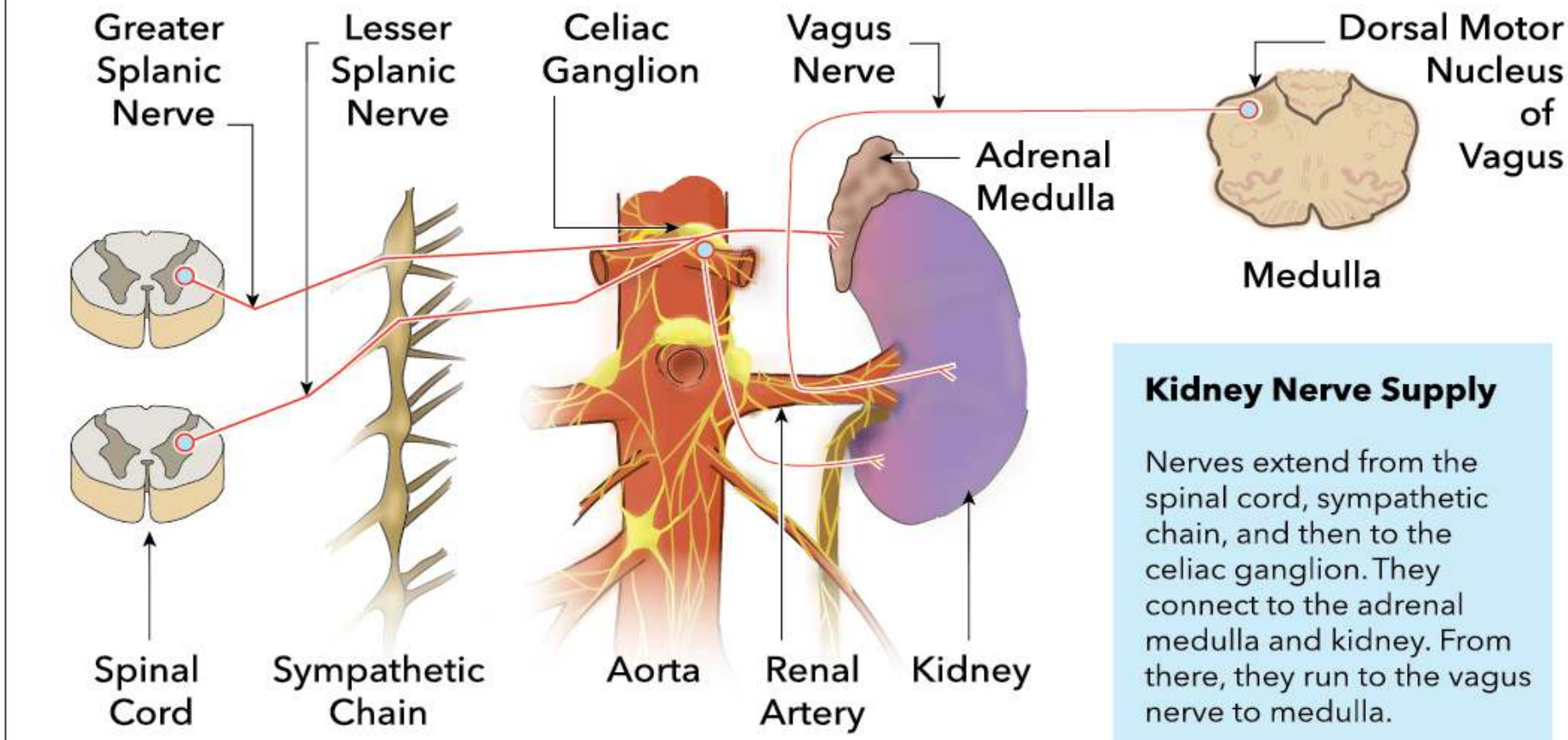
Renal Tubules

COL = Collecting Tubule

DT= Distal Tubule

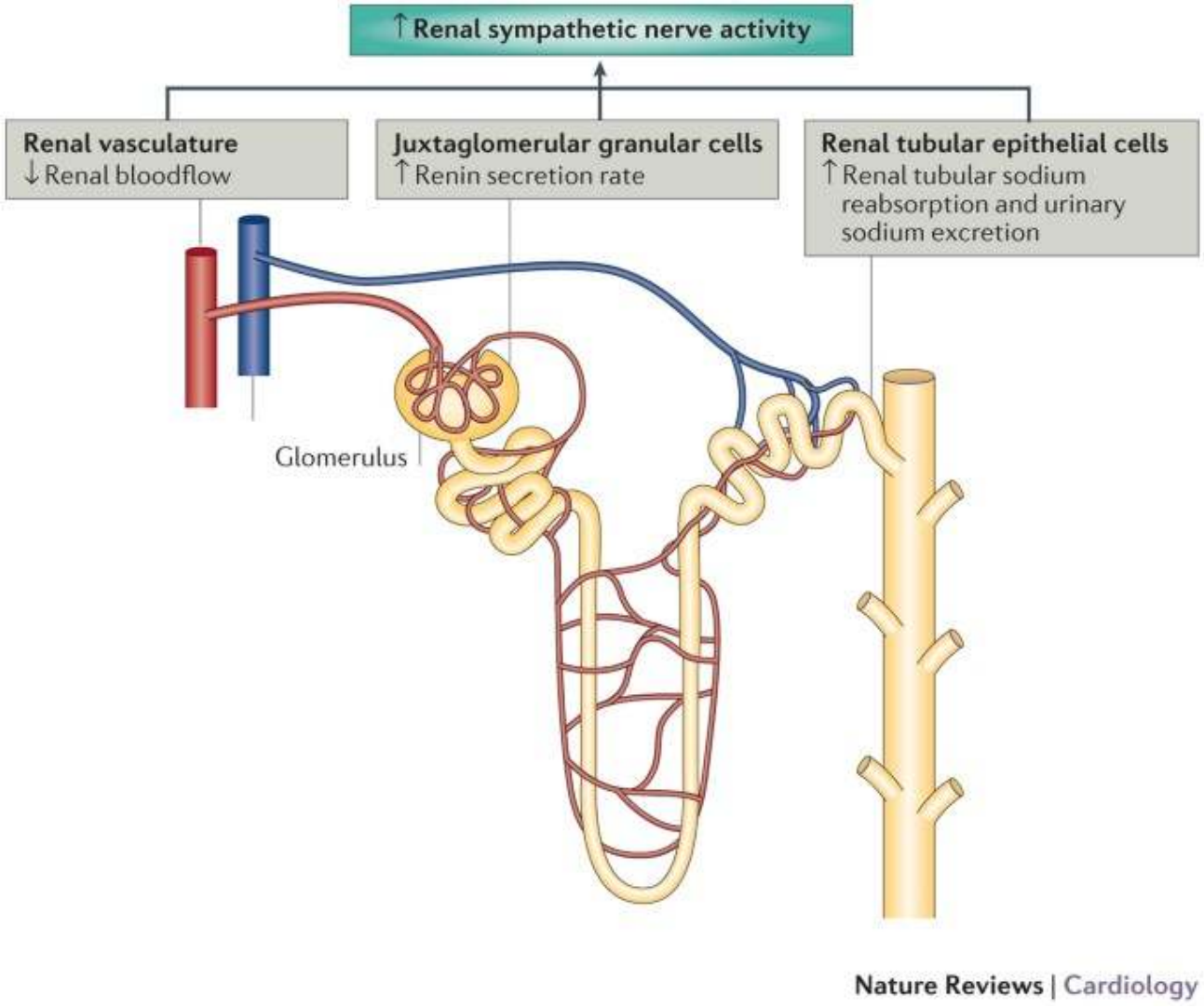
T= Thin segments of the Loop of Henle

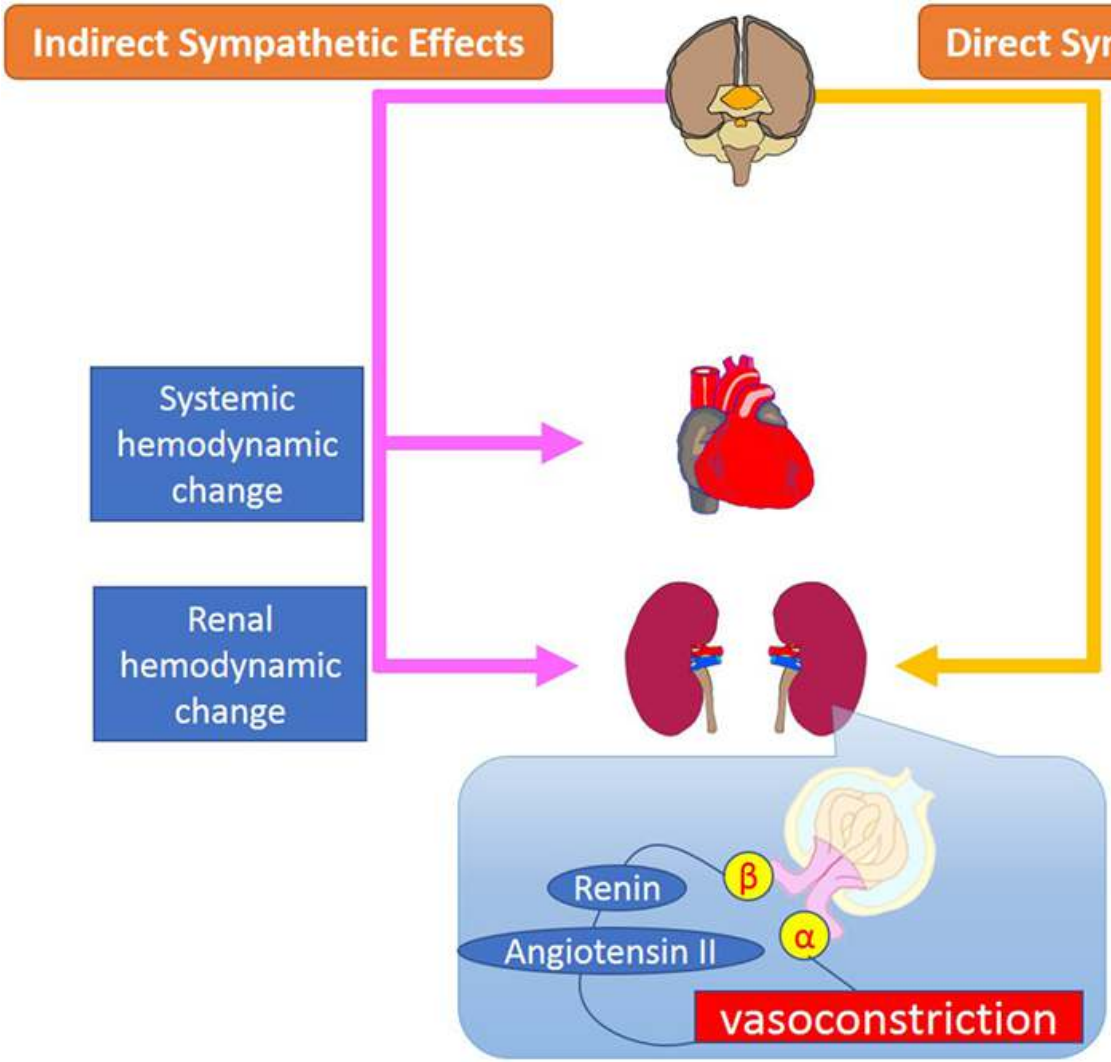

loop of Henle
ascending thick segment
collecting duct



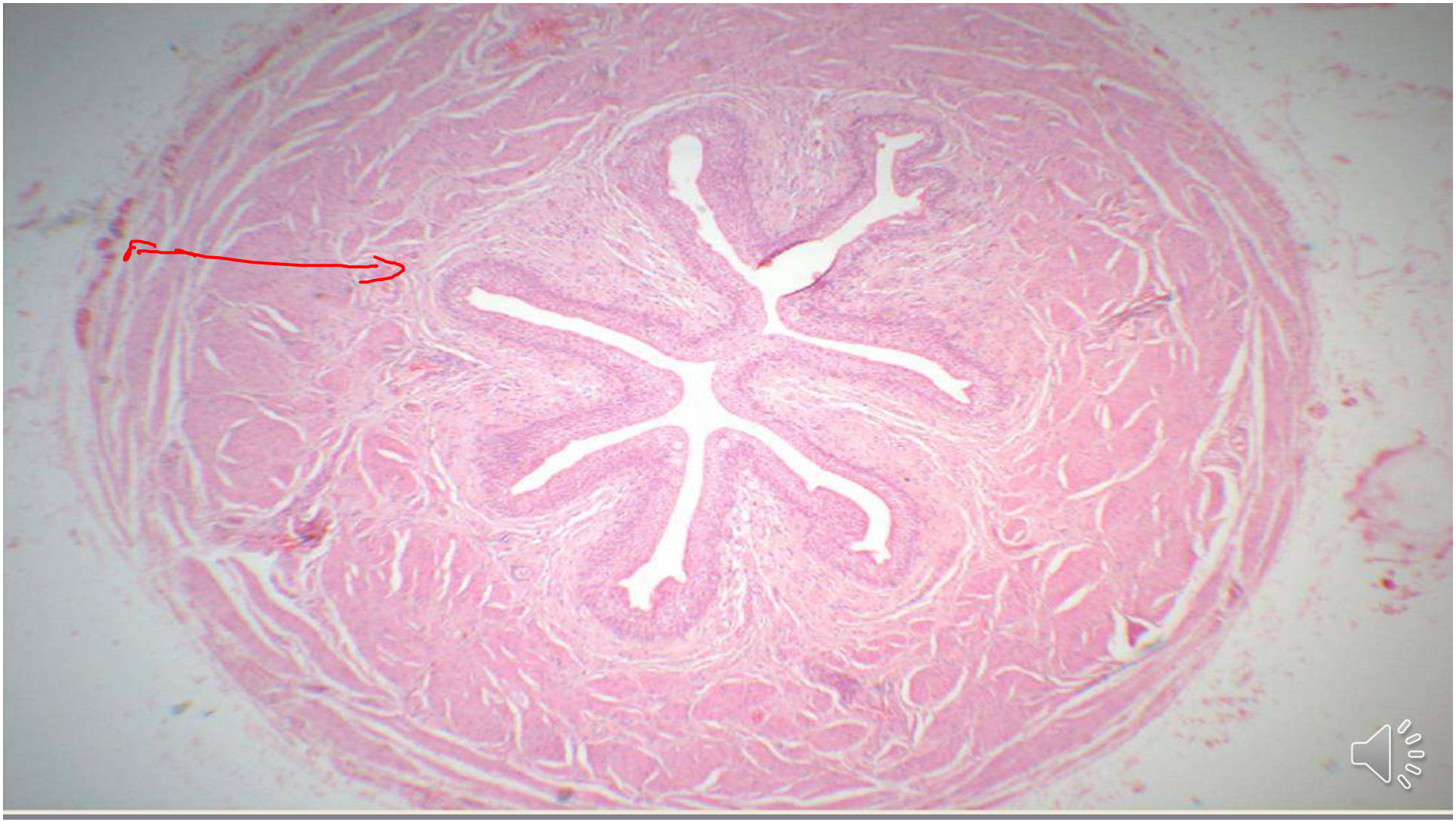
Kidney Nerve Supply

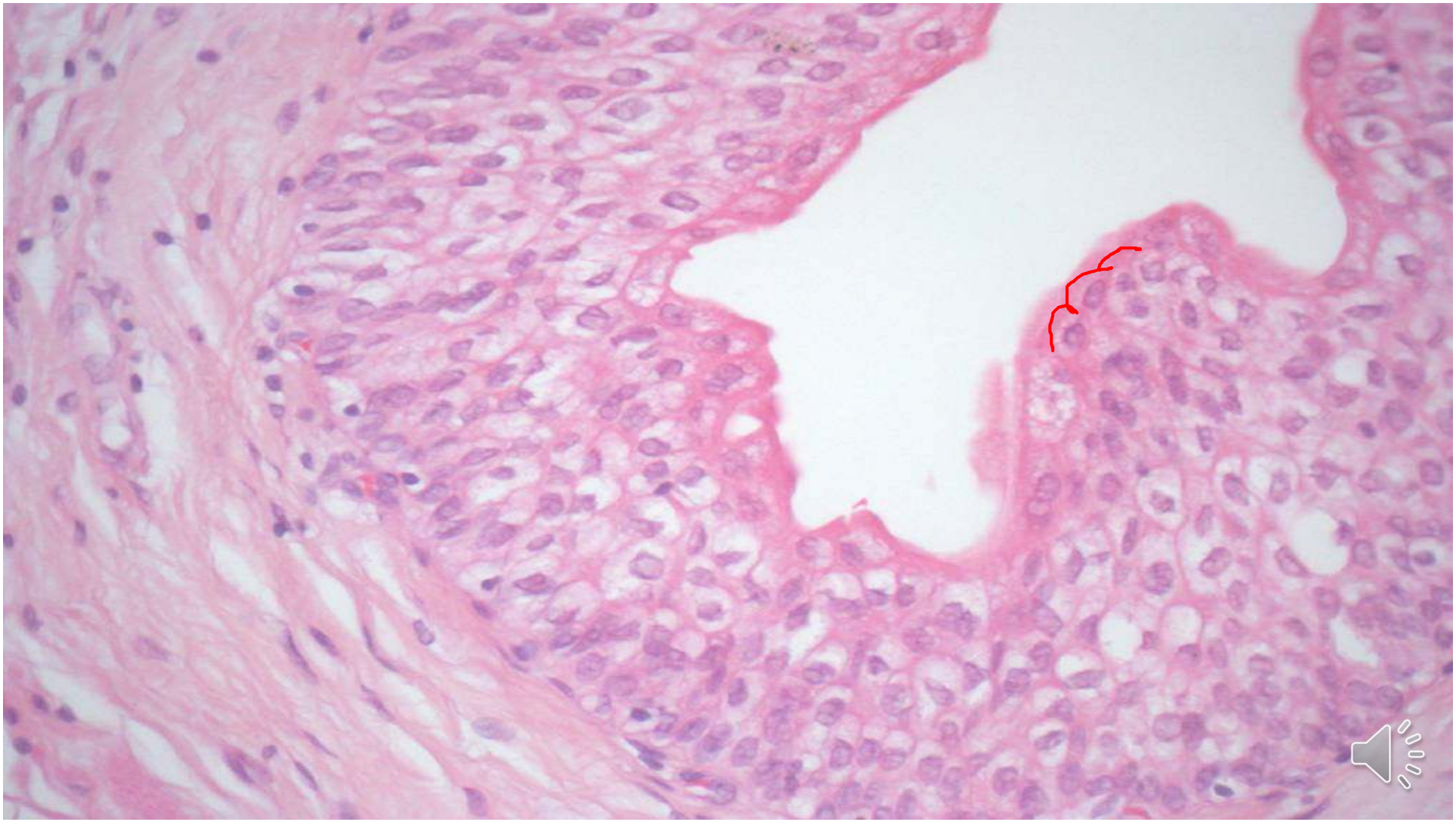
Nerves extend from the spinal cord, sympathetic chain, and then to the celiac ganglion. They connect to the adrenal medulla and kidney. From there, they run to the vagus nerve to medulla.

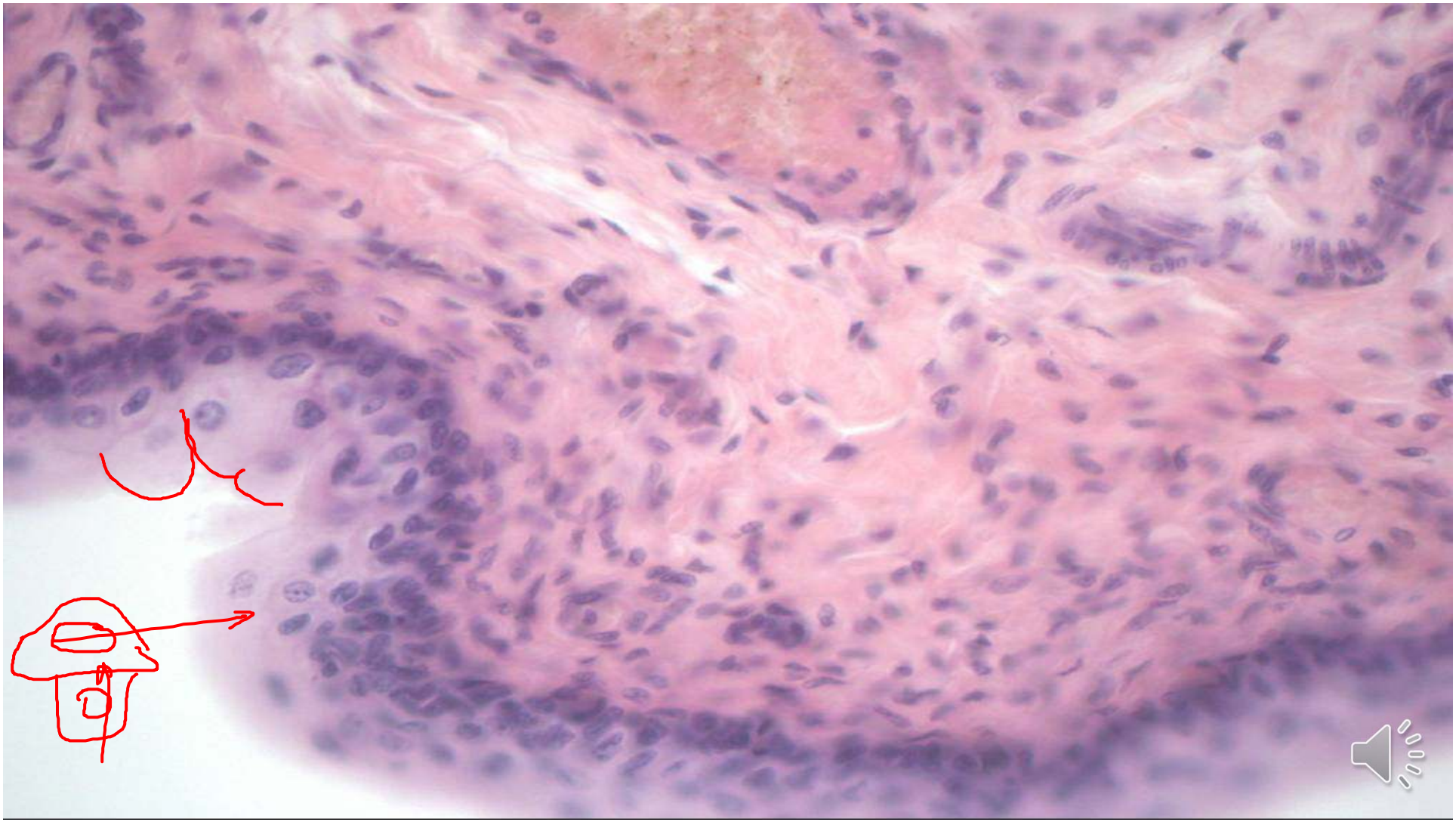

↑ Renal sympathetic nerve activity
Renal vasculature
↓ Renal bloodflow
Juxtaglomerular granular cells
↑ Renin secretion rate
Renal tubular epithelial cells
↑ Renal tubular sodium reabsorption and urinary sodium excretion
Glomerulus
Nature Reviews | Cardiology

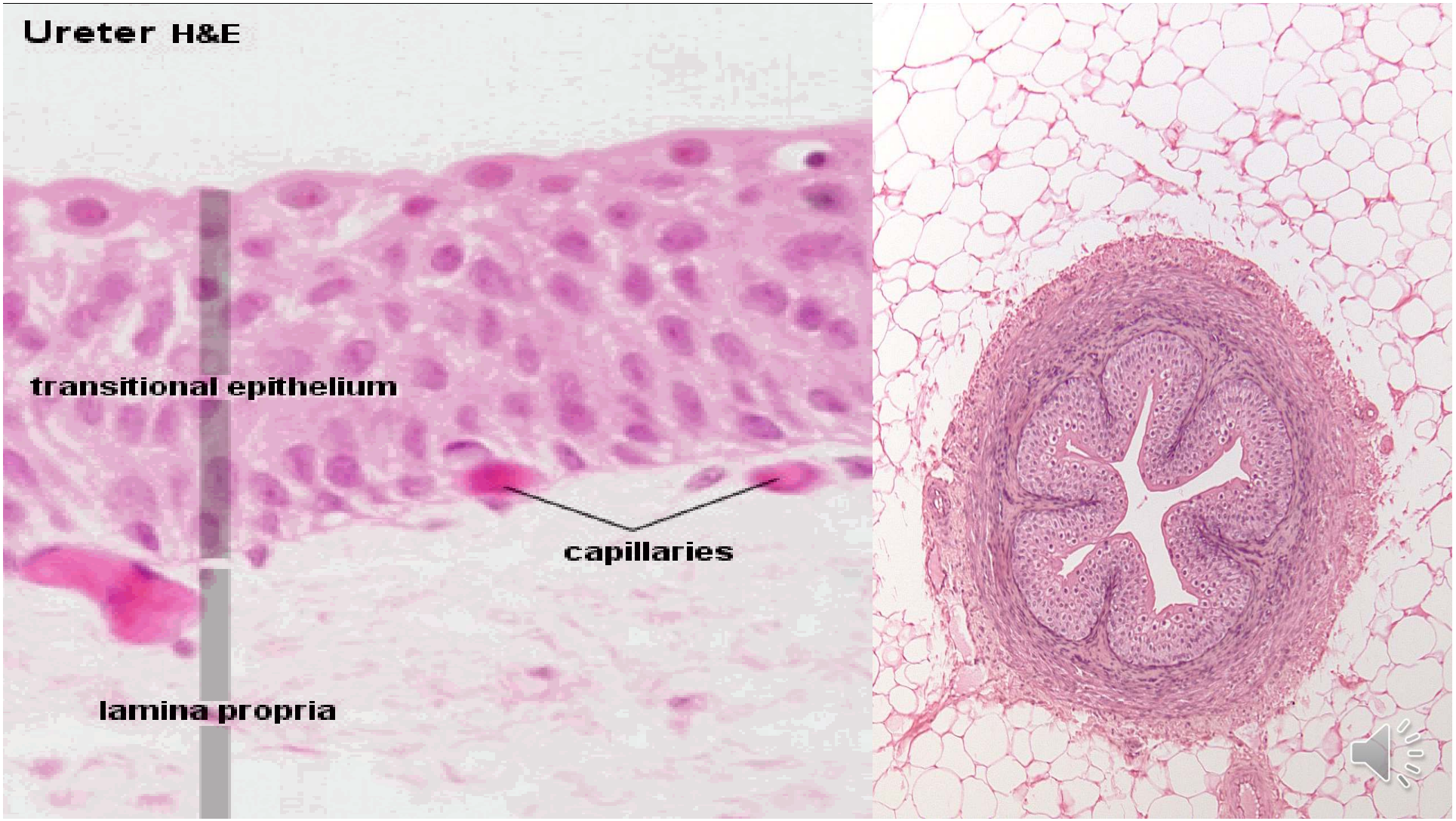


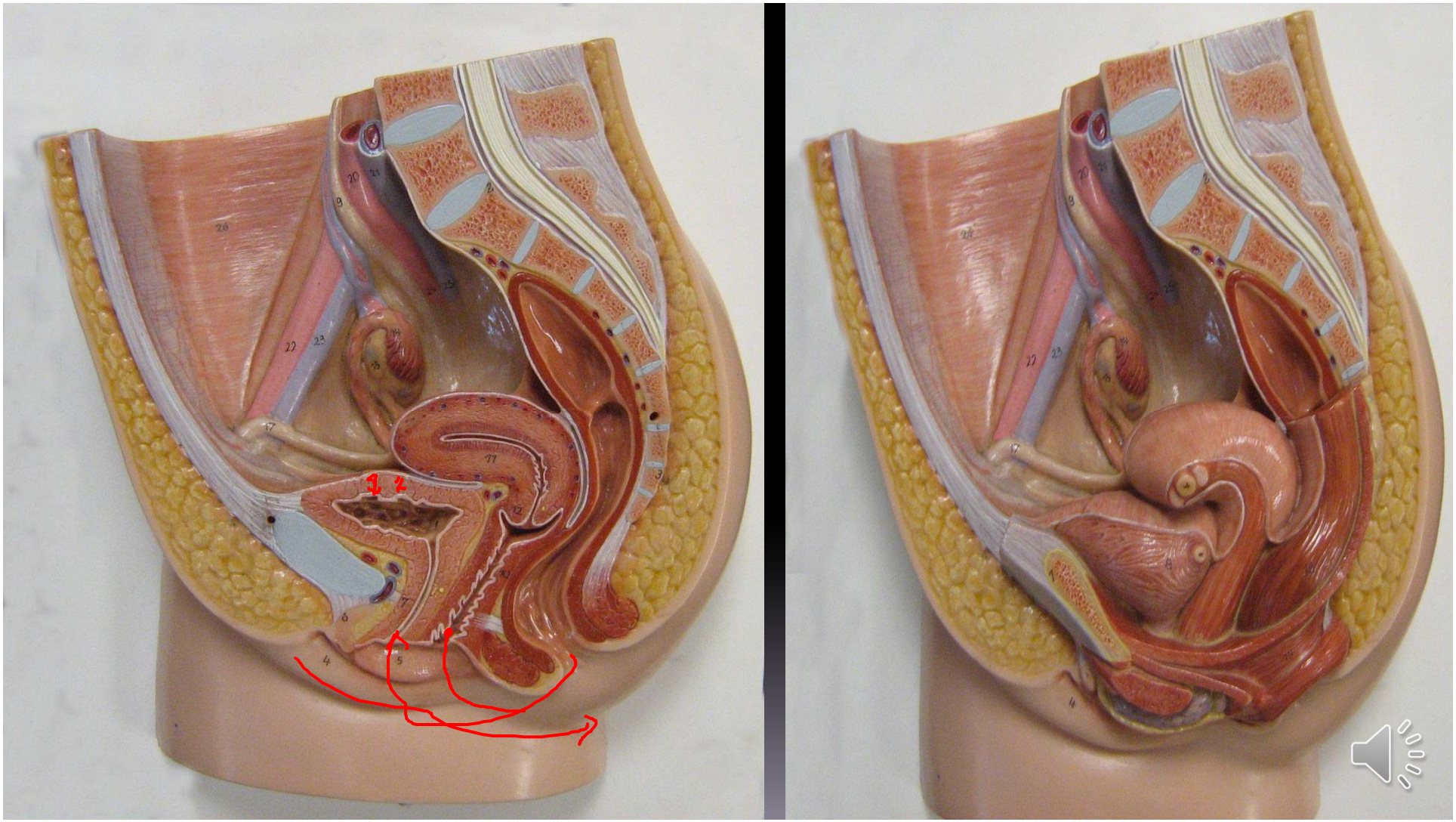
	action	receptor
renal artery	constriction	α_1, α_2
	dilation	D_1
renin secretion (Juxtaglomerular cell)	↑	β_1
	↓	α_2
prostaglandin production	↑	α_1
proximal tubule		
sodium reabsorption	↑	α_1, α_2
	↓	D
HCO_3^- reabsorption	↑	α_1
Na-H counter transport	↑	$\alpha_2 > \alpha_1$
	↓	D1
glycogenesis	↑	α_1
collecting duct		
sodium reabsorption	↓	α_2
chloride reabsorption	↑	β
potassium secretion	↑	β_1

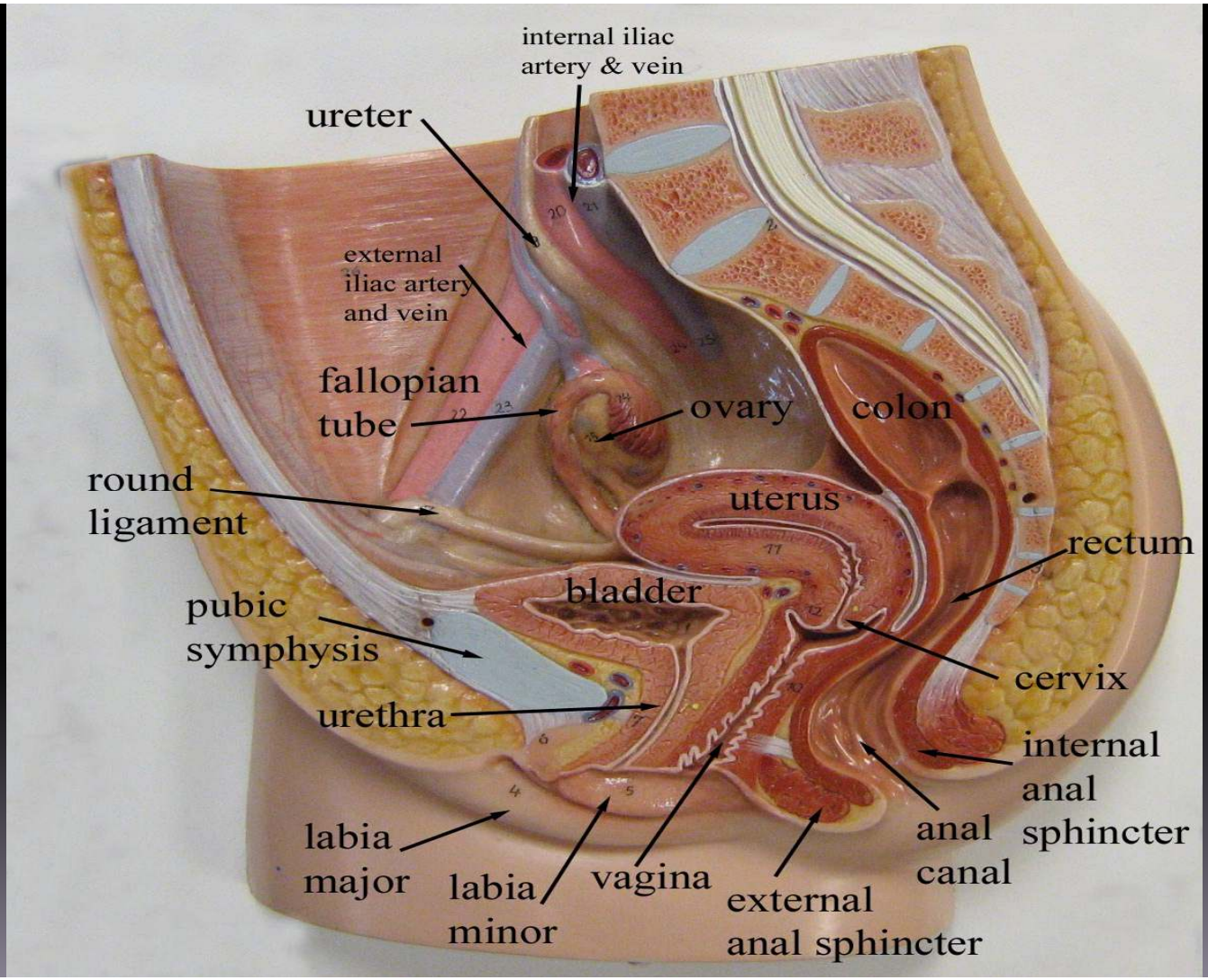


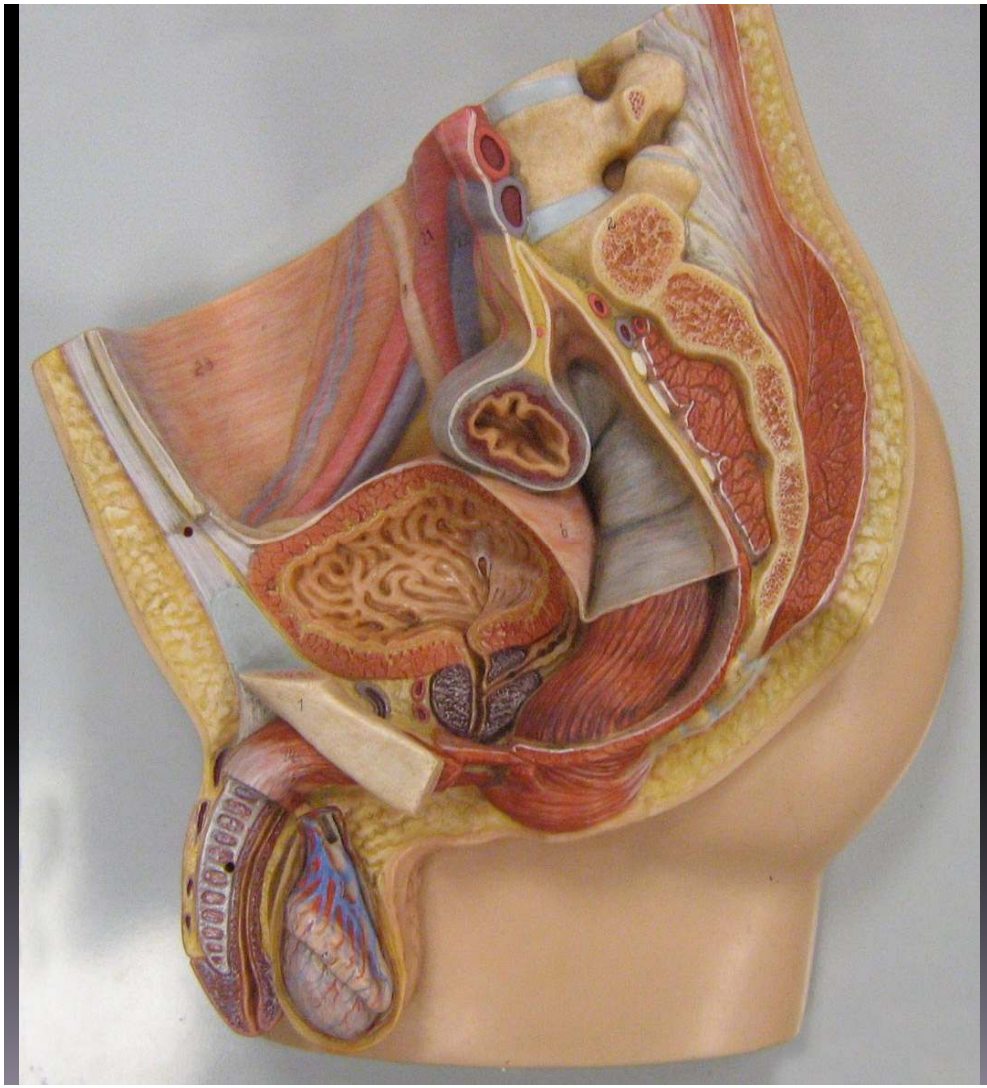


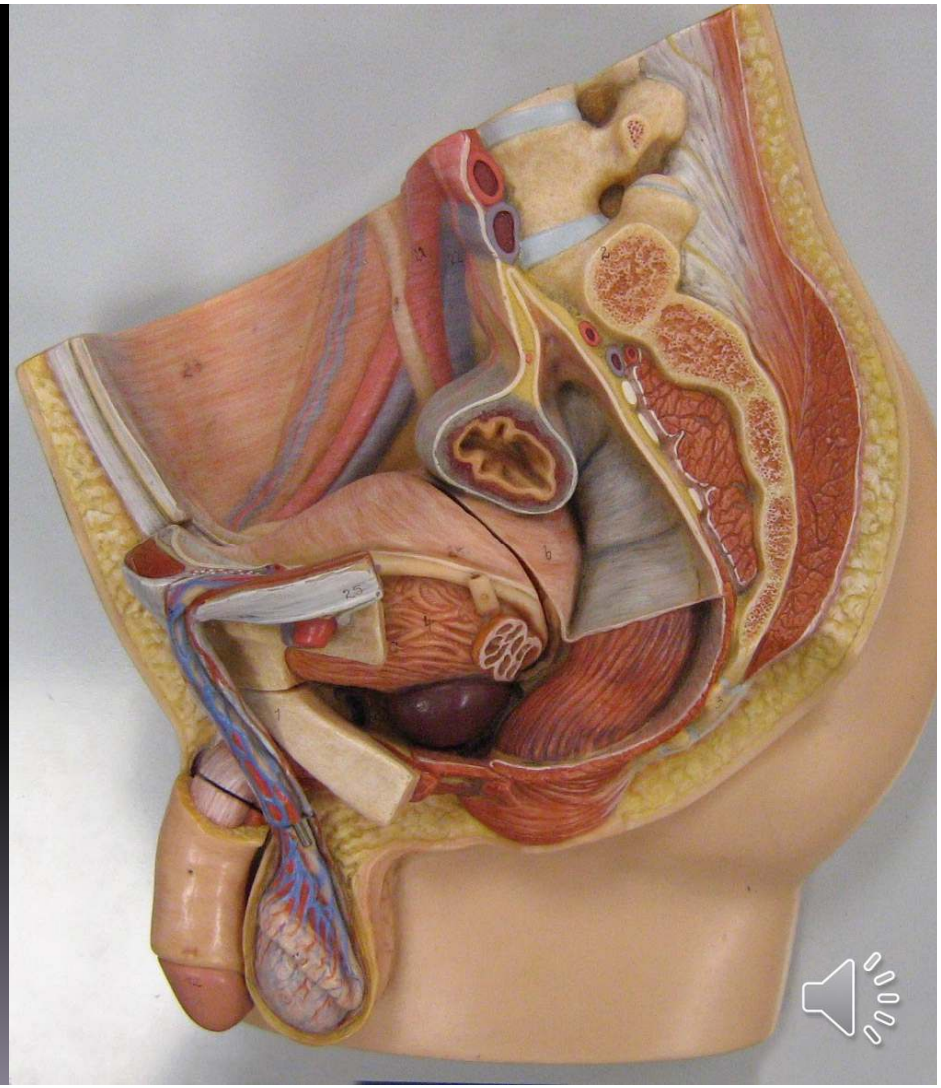


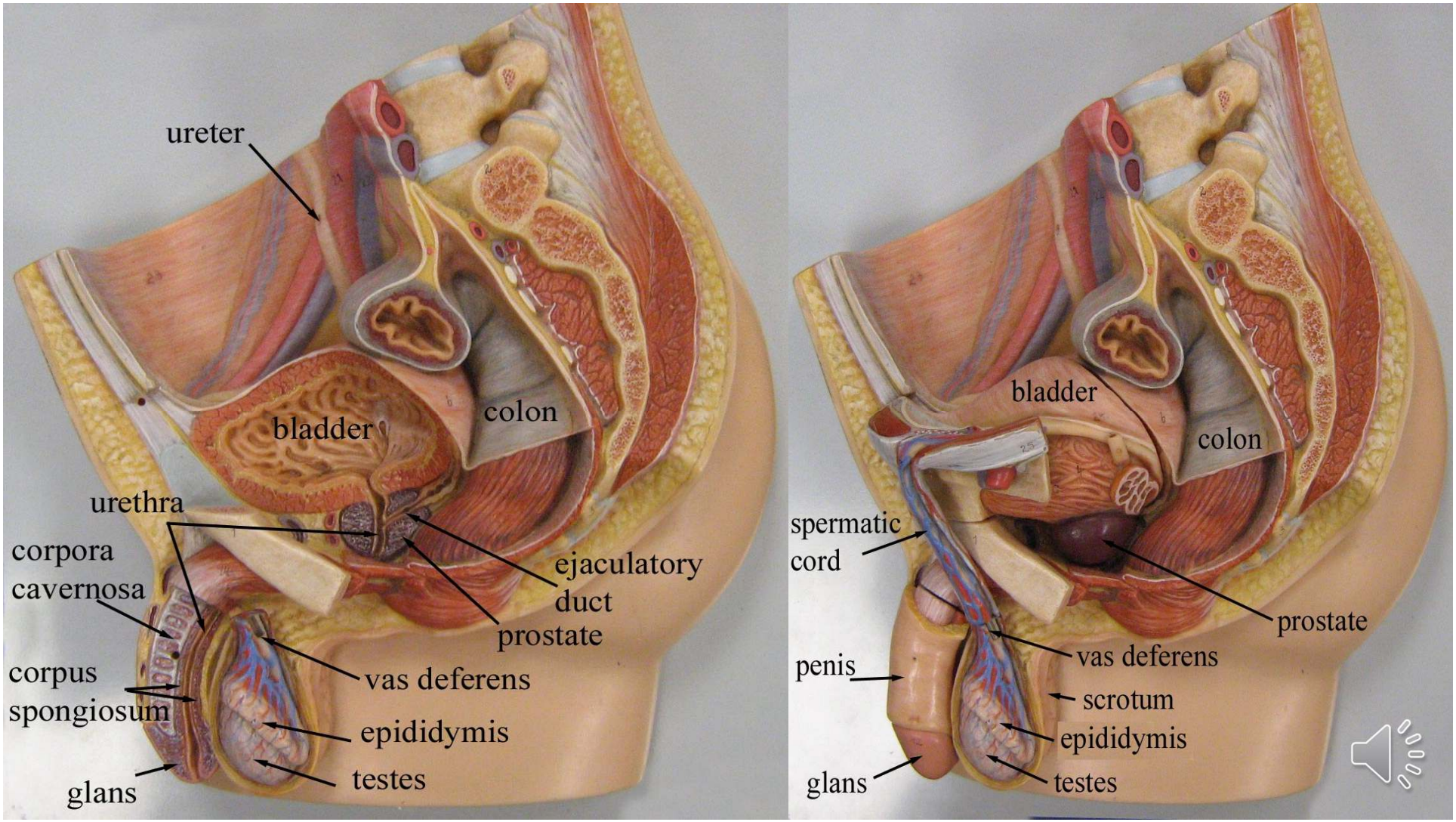

Ureter H&E
transitional epithelium
capillaries
lamina propria

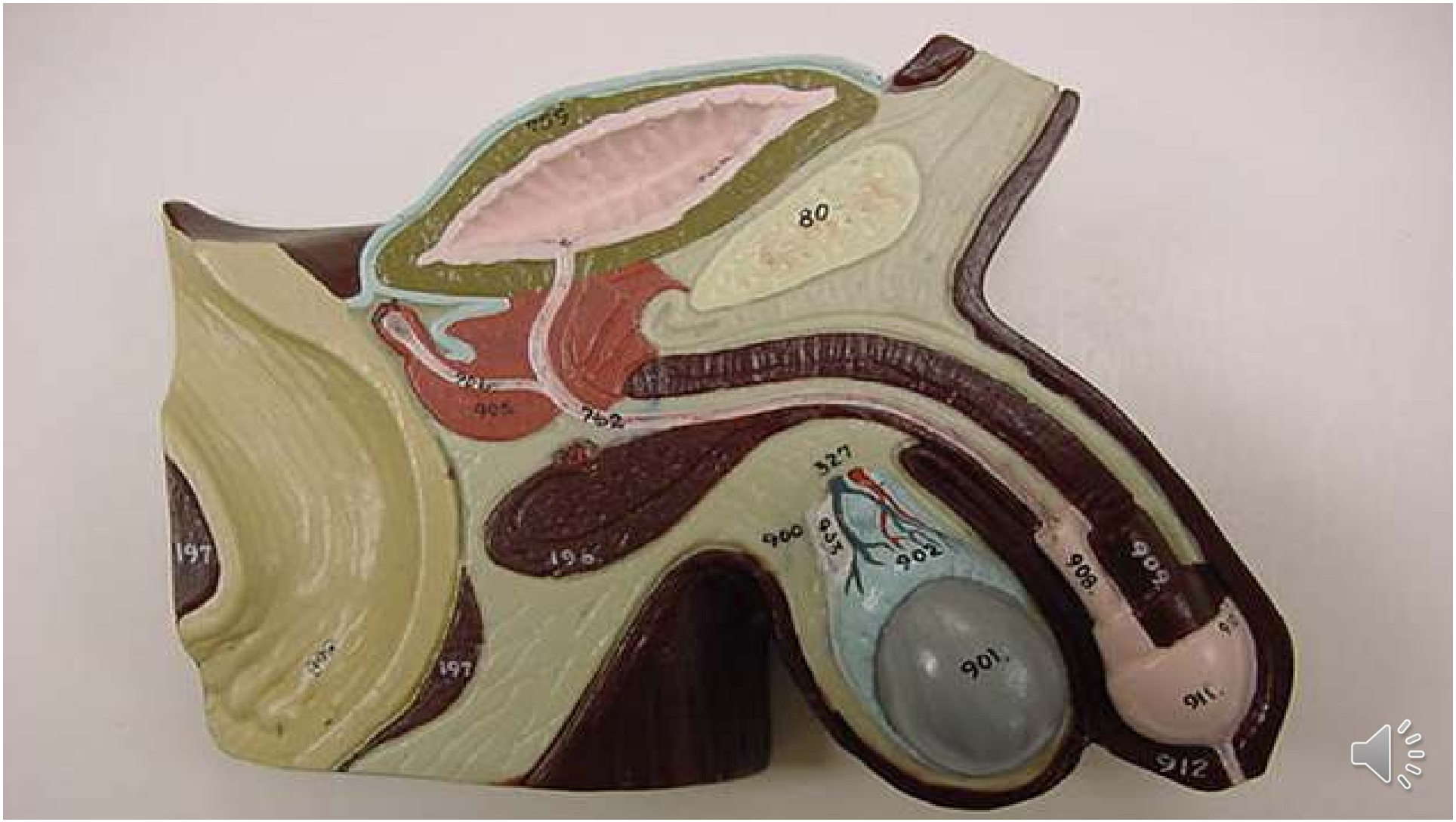


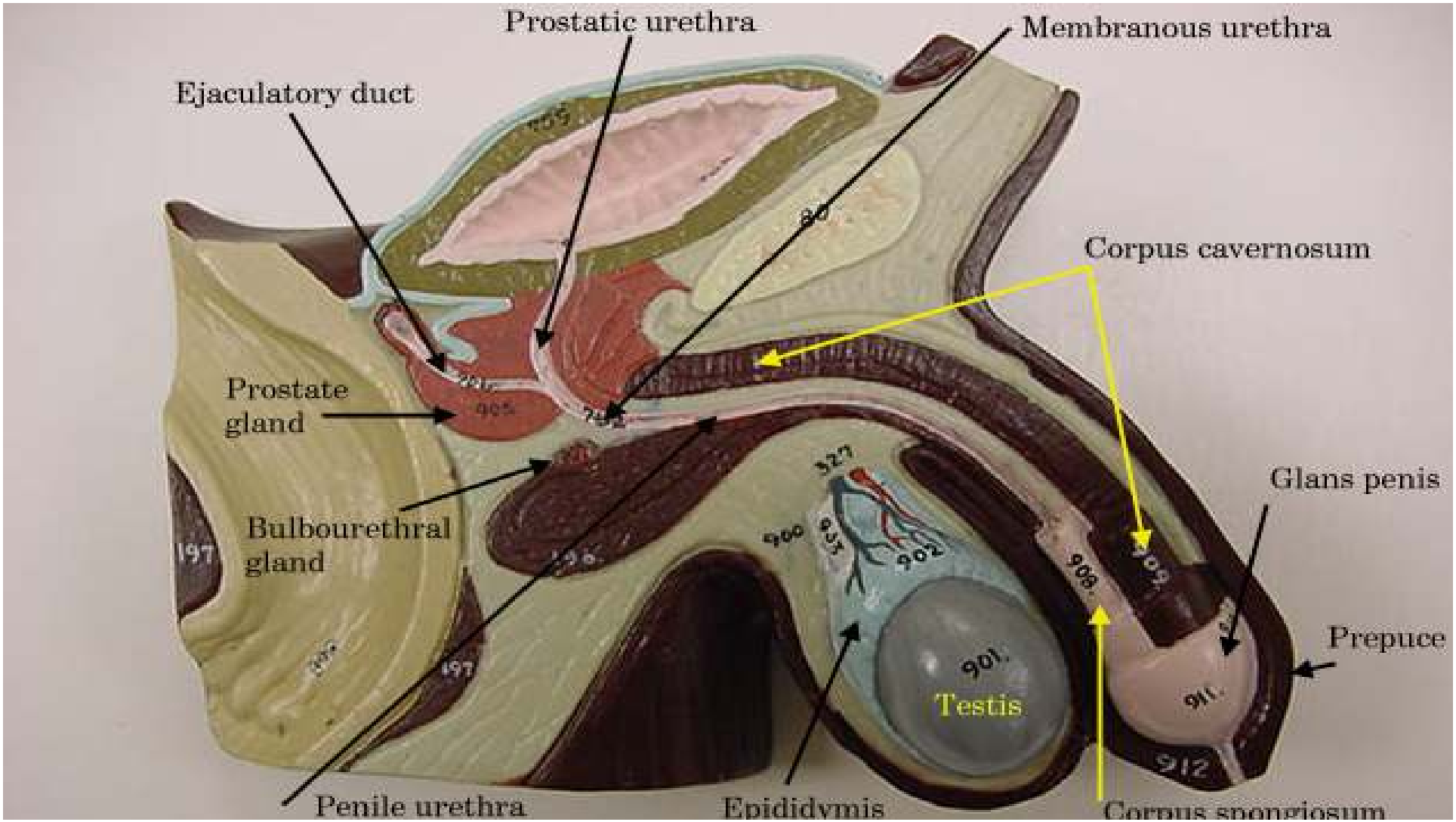

internal iliac artery & vein
ureter
external iliac artery and vein
fallopian tube
ovary
colon
round ligament
uterus
rectum
bladder
pubic symphysis
cervix
urethra
internal anal sphincter
anal canal
labia major
labia minor
vagina
external anal sphincter



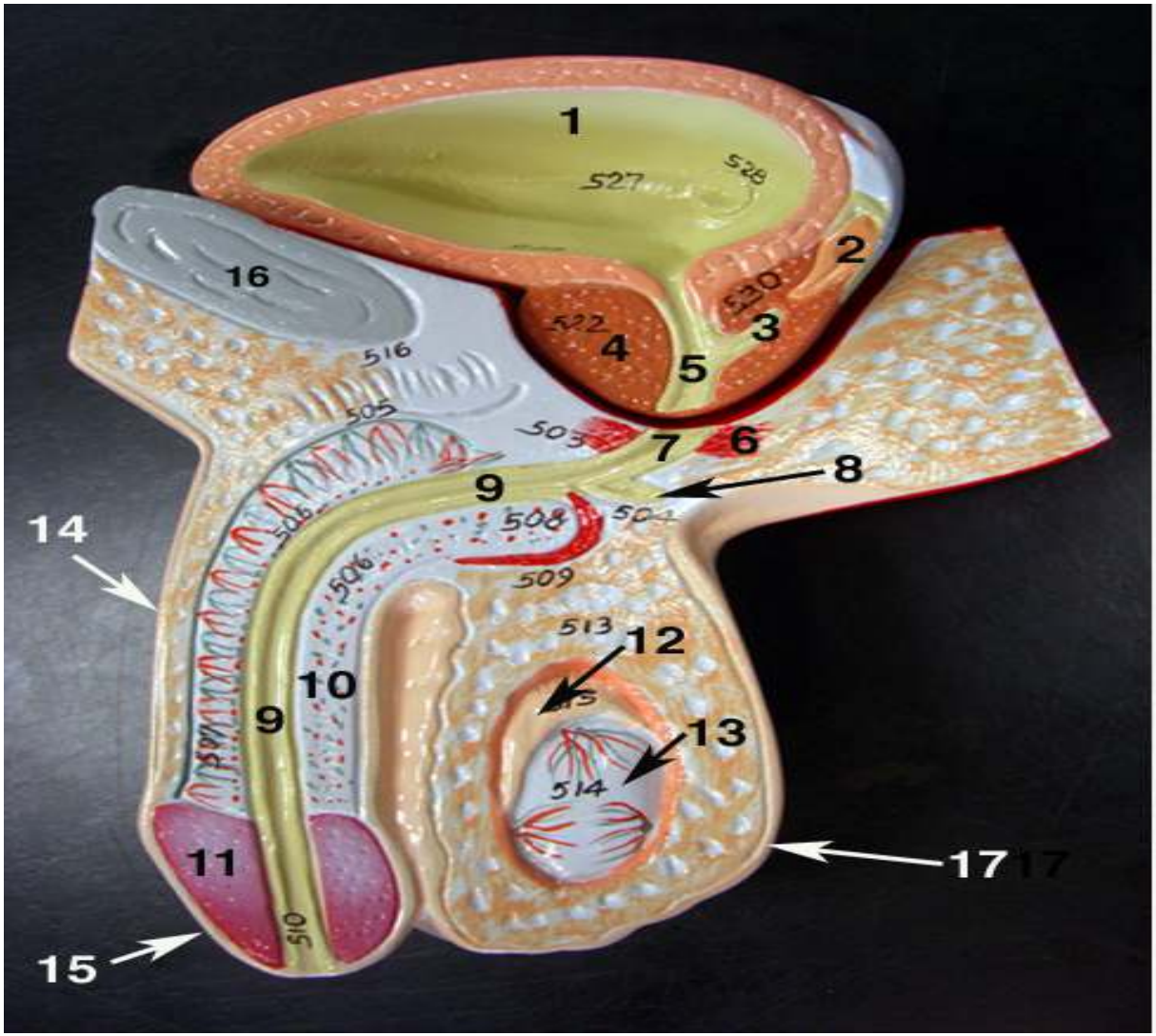



ureter
bladder
colon
urethra
corpora
cavernosa
ejaculatory
duct
prostate
corpus
spongiosum
vas deferens
epididymis
glans
testes
bladder
colon
spermatic
cord
prostate
penis
vas deferens
scrotum
epididymis
glans
testes

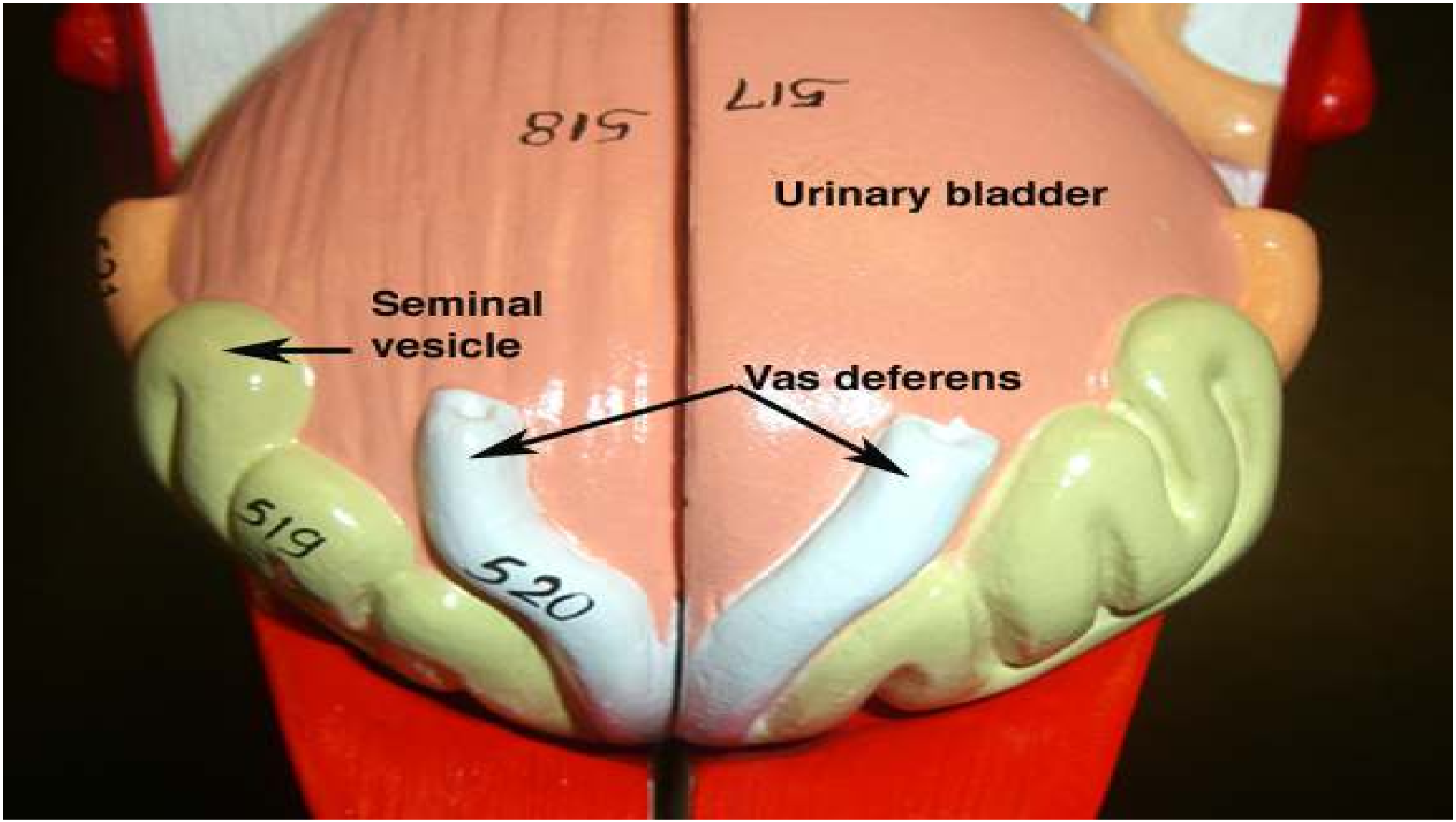

80
905
752
327
900
902
908
901
911
912
197
196

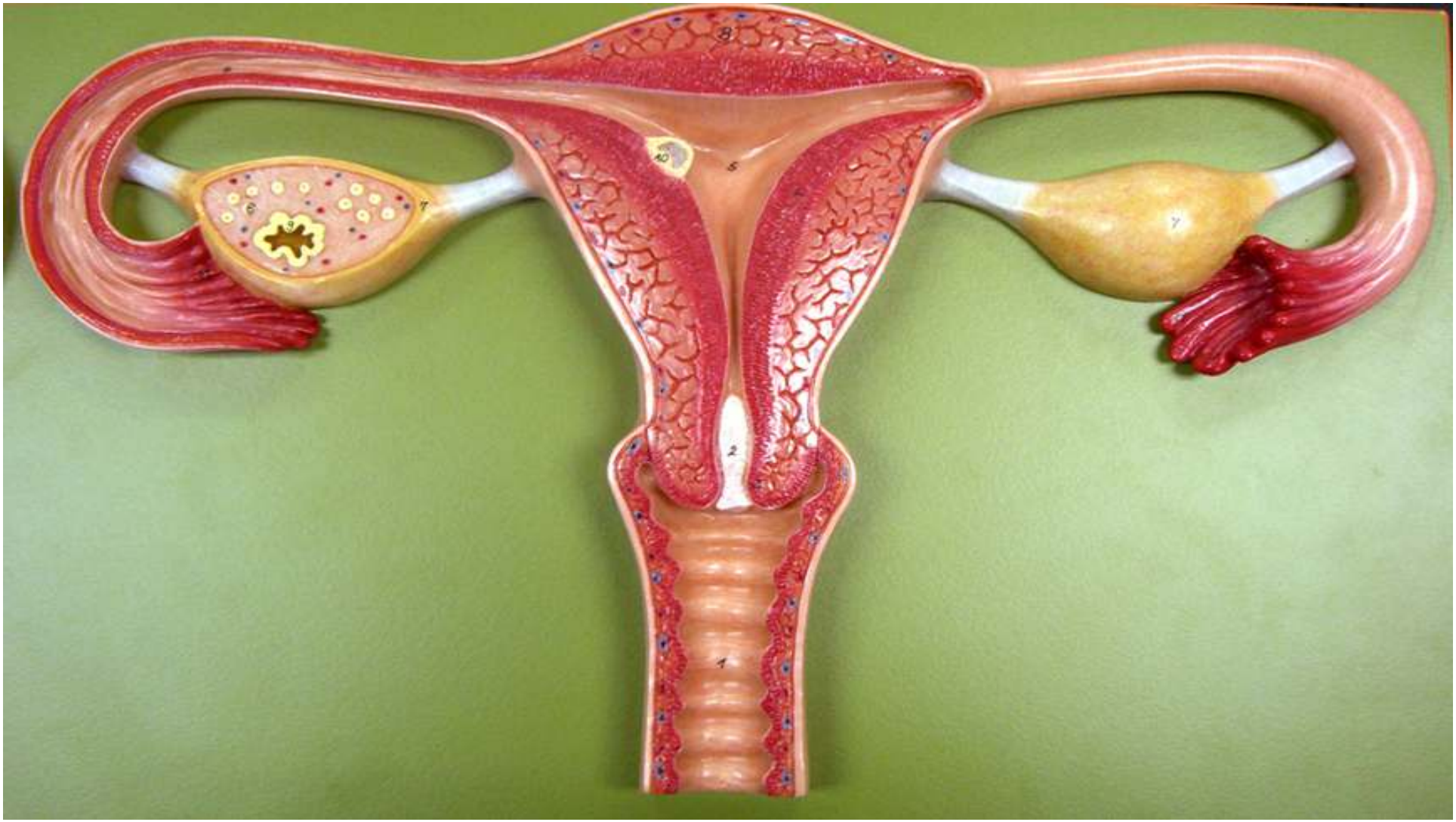

Prostatic urethra
Membranous urethra
Ejaculatory duct
Corpus cavernosum
Prostate gland
Bulbourethral gland
Glans penis
Prepuce
Testis
Penile urethra
Epididymis
Corpus spongiosum

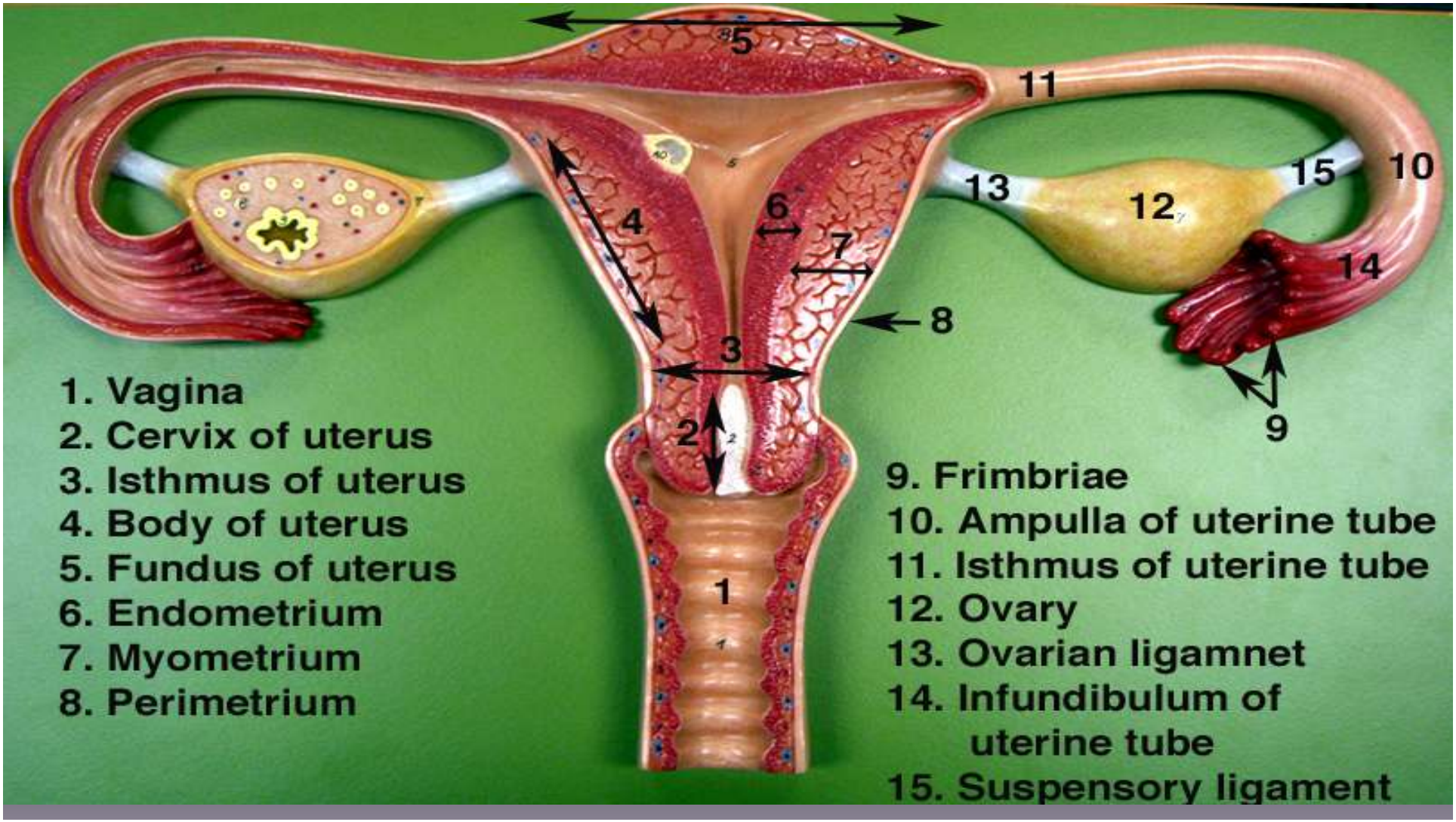

527
528
530
522
516
505
503
508
509
513
515
514
510

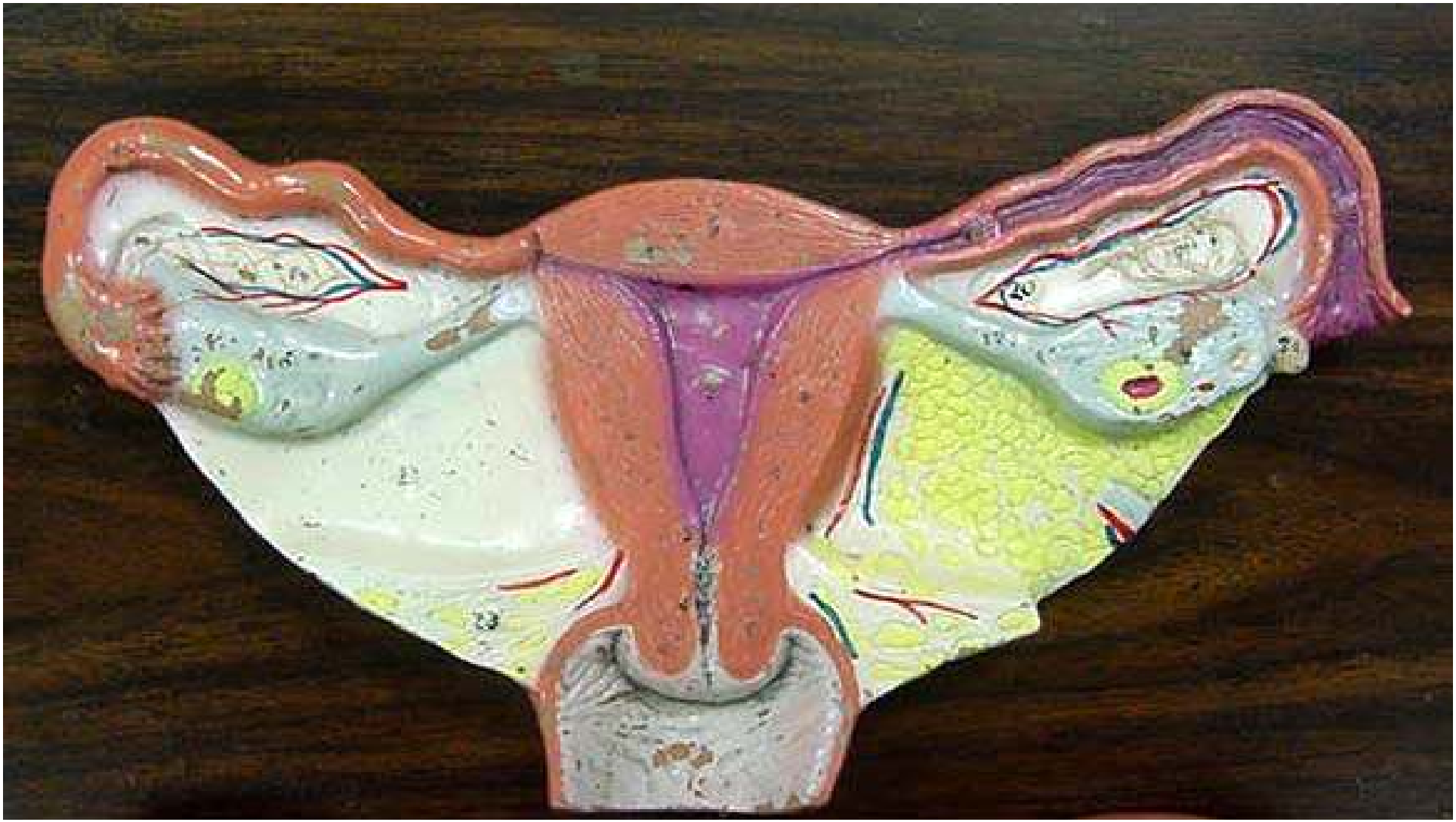


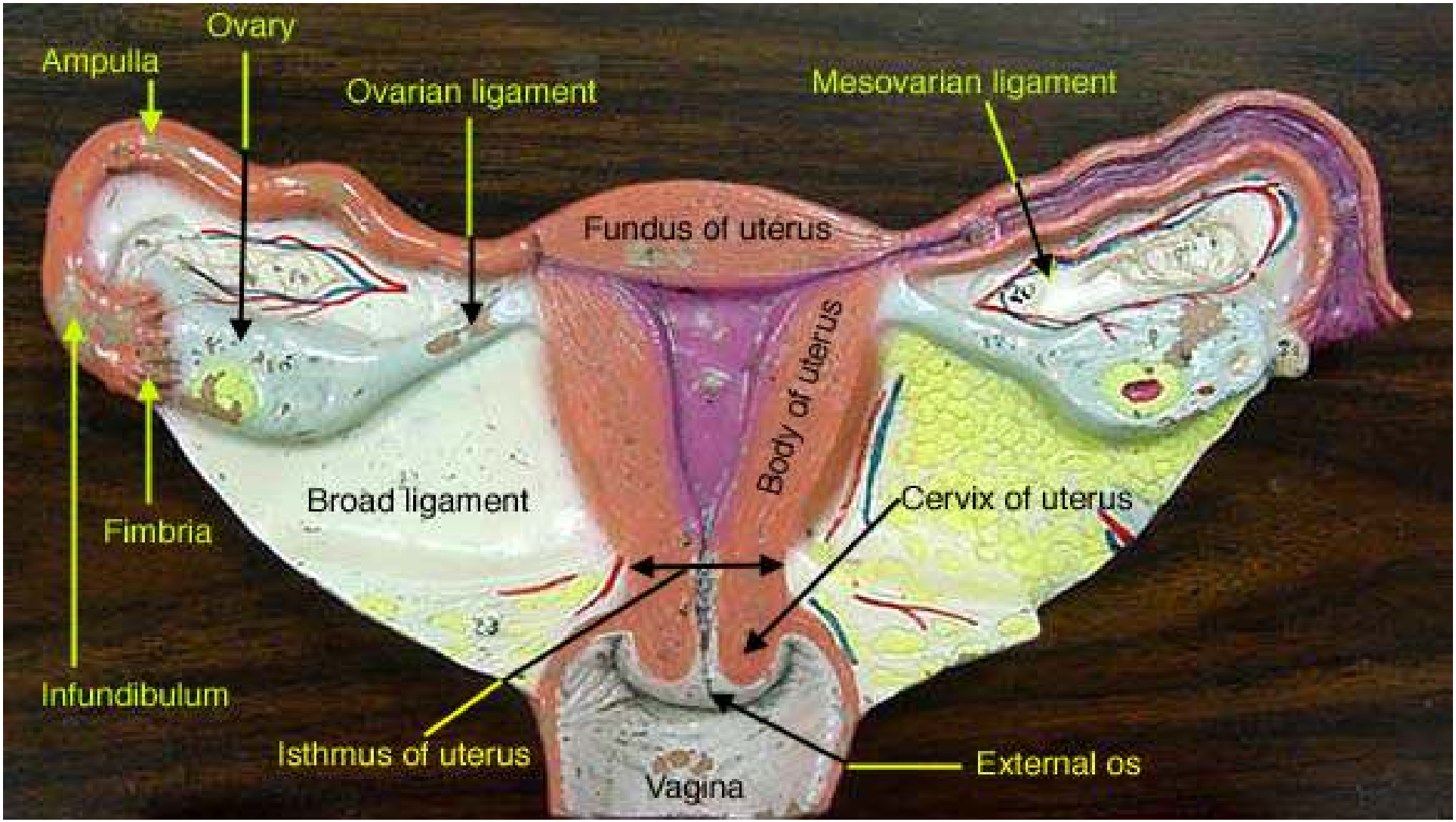
1. Urinary bladder
2. Ampulla of vas deferens
3. Ejaculatory duct
4. Prostate gland
5. Prostatic urethra
6. External urethral sphincter
7. Membranous urethra
8. Bulbourethral gland
9. Penile urethra
10. Corpus spongiosum
11. Glans penis
12. Epididymis
13. Testis
14. Penis
15. Prepuce
16. Pubic bone
17. Scrotum

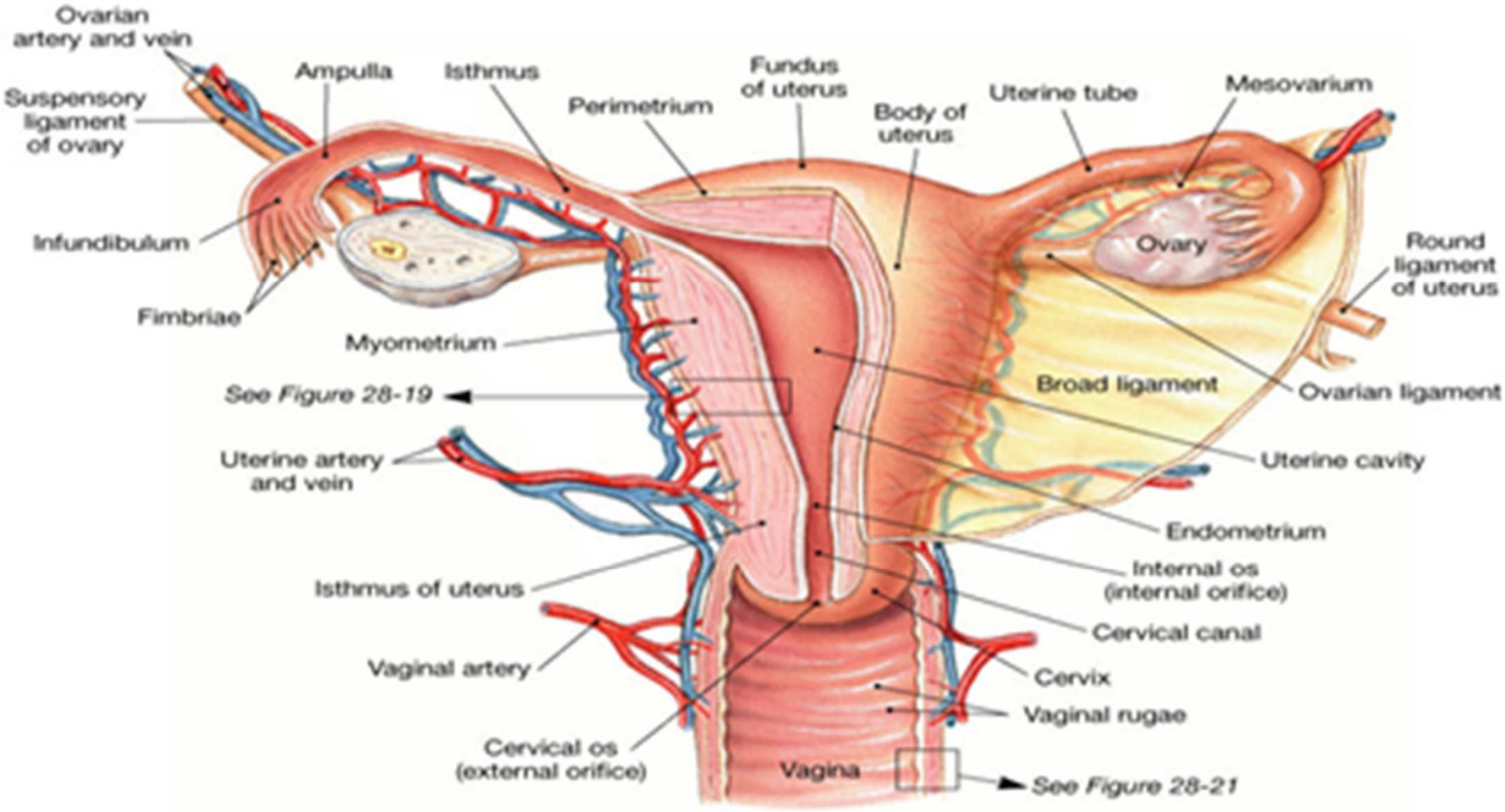

Urinary bladder
Seminal vesicle
Vas deferens



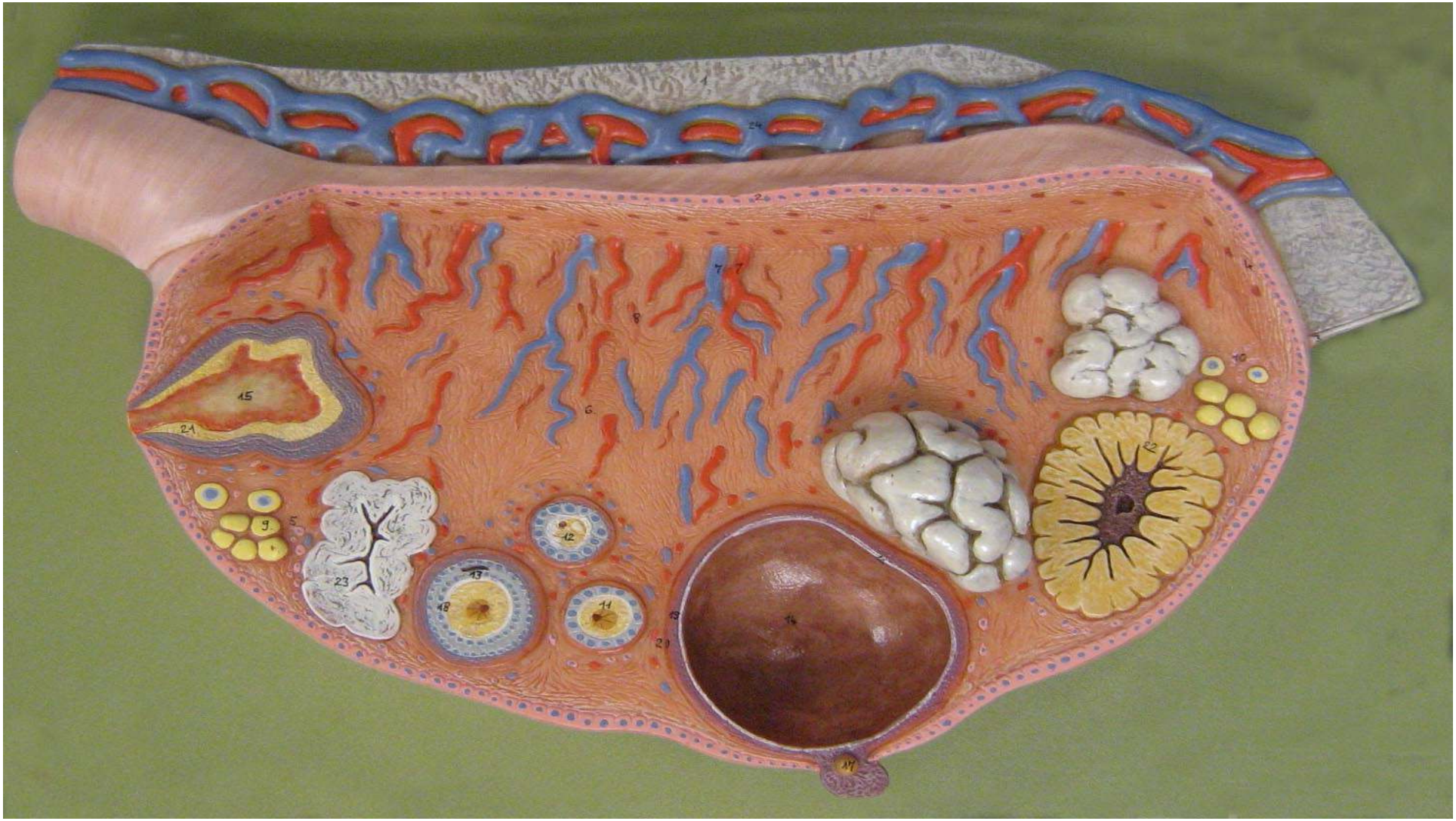

1. Vagina
2. Cervix of uterus
3. Isthmus of uterus
4. Body of uterus
5. Fundus of uterus
6. Endometrium
7. Myometrium
8. Perimetrium
9. Frimbriae
10. Ampulla of uterine tube
11. Isthmus of uterine tube
12. Ovary
13. Ovarian ligamnet
14. Infundibulum of uterine tube
15. Suspensory ligament

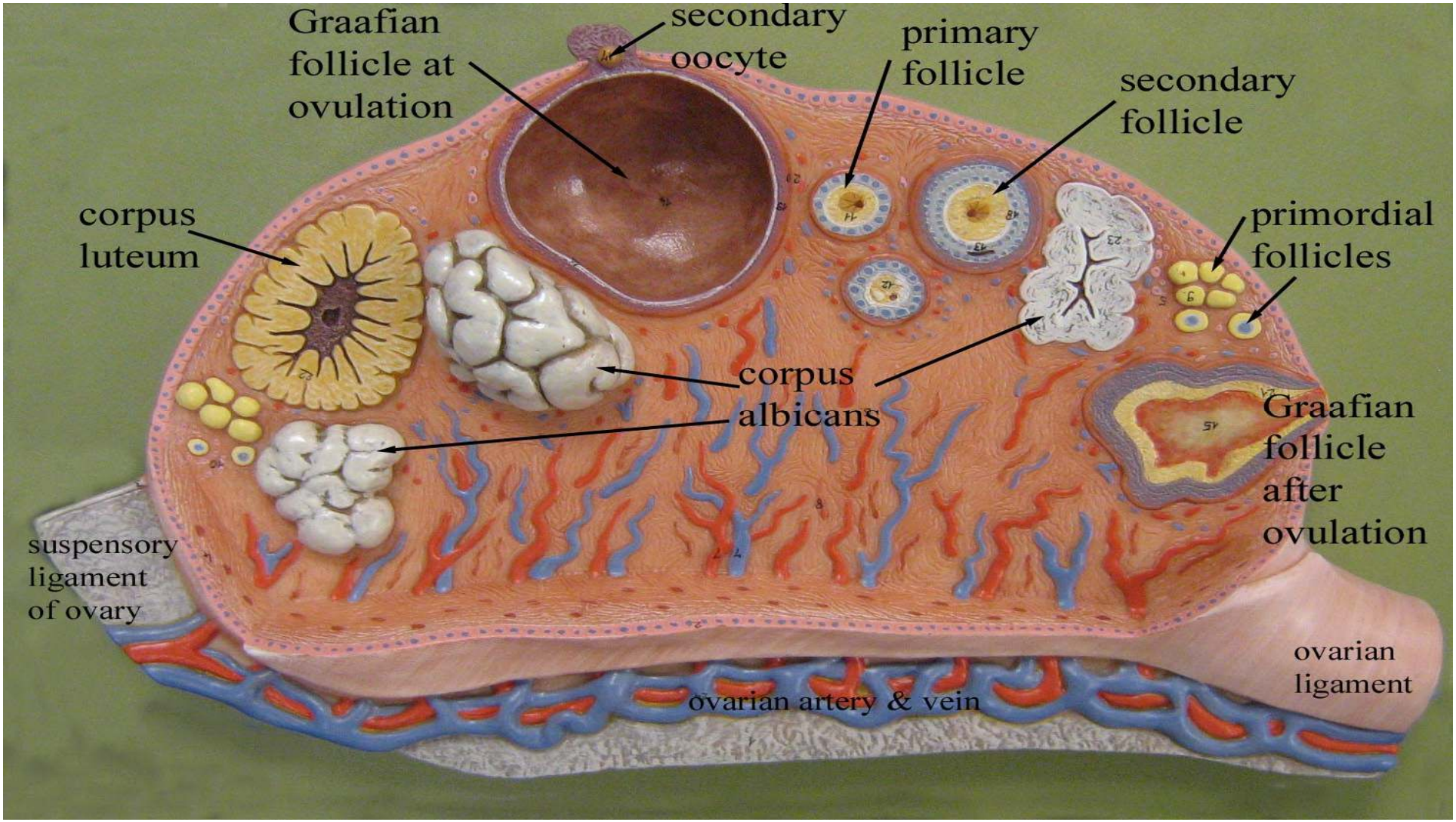



Ampulla
Ovary
Ovarian ligament
Mesovarian ligament
Fundus of uterus
Body of uterus
Broad ligament
Cervix of uterus
Fimbria
Infundibulum
Isthmus of uterus
Vagina
External os

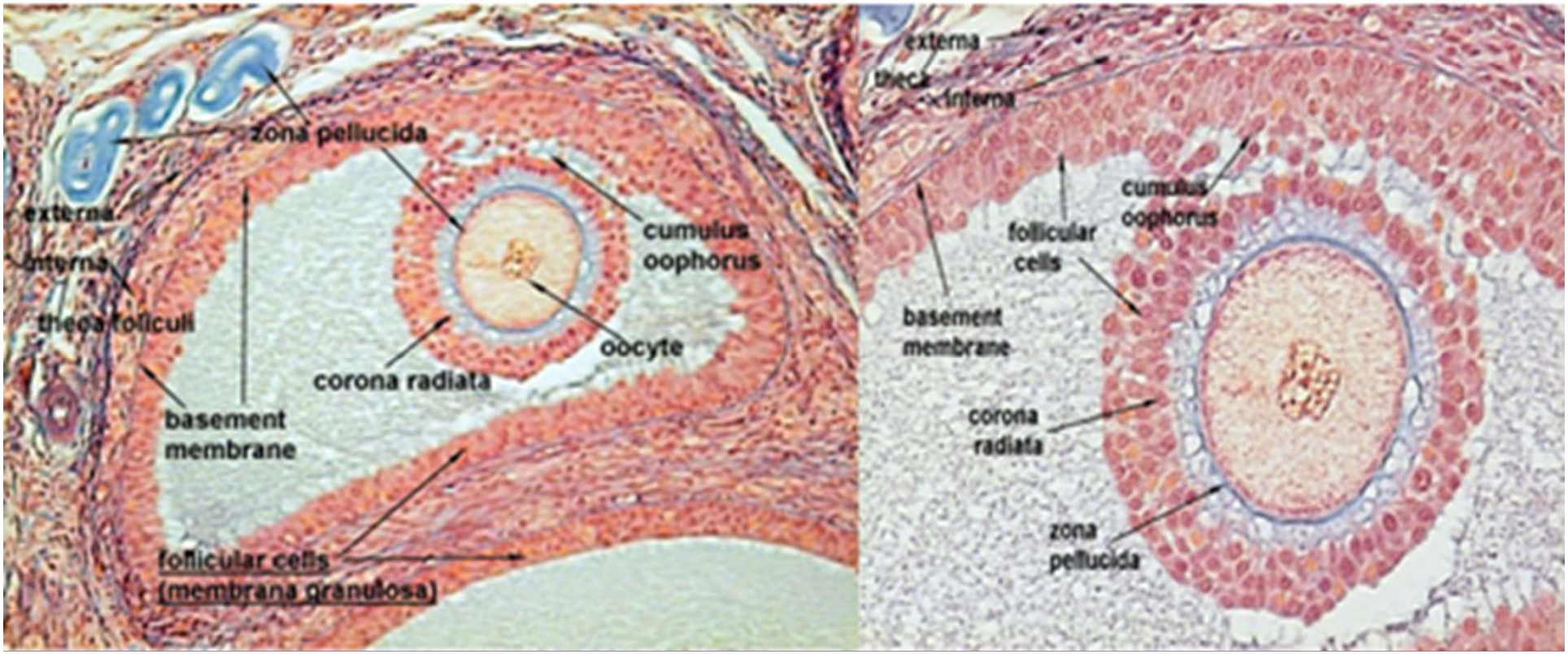


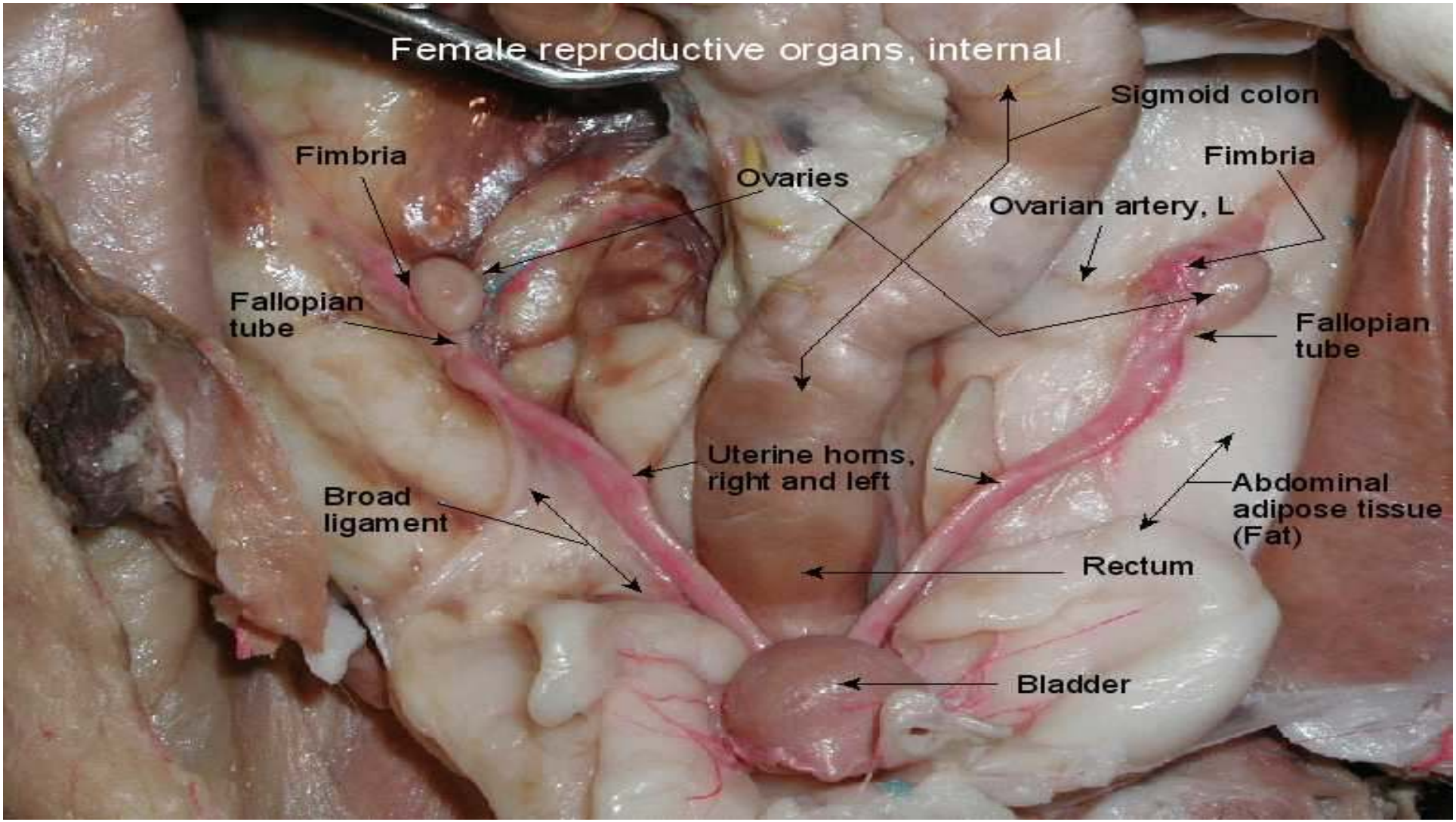
(c) Posterior view

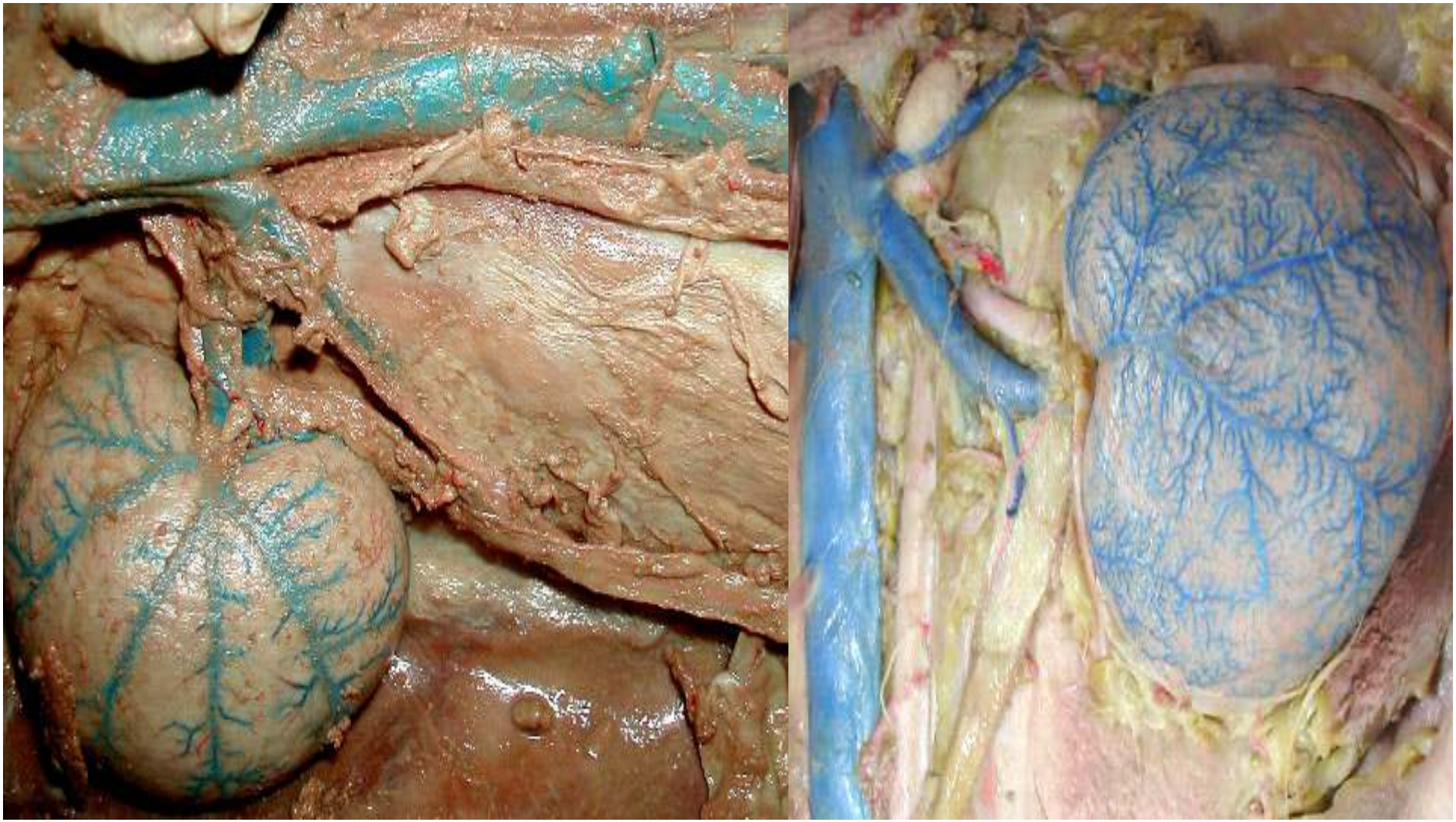

1
24
2
7
8
4
15
21
6
10
22
9
5
12
23
13
18
11
14
20
17


Graafian follicle at ovulation
secondary oocyte
primary follicle
secondary follicle
corpus luteum
primordial follicles
corpus albicans
Graafian follicle after ovulation
suspensory ligament of ovary
ovarian ligament
ovarian artery & vein

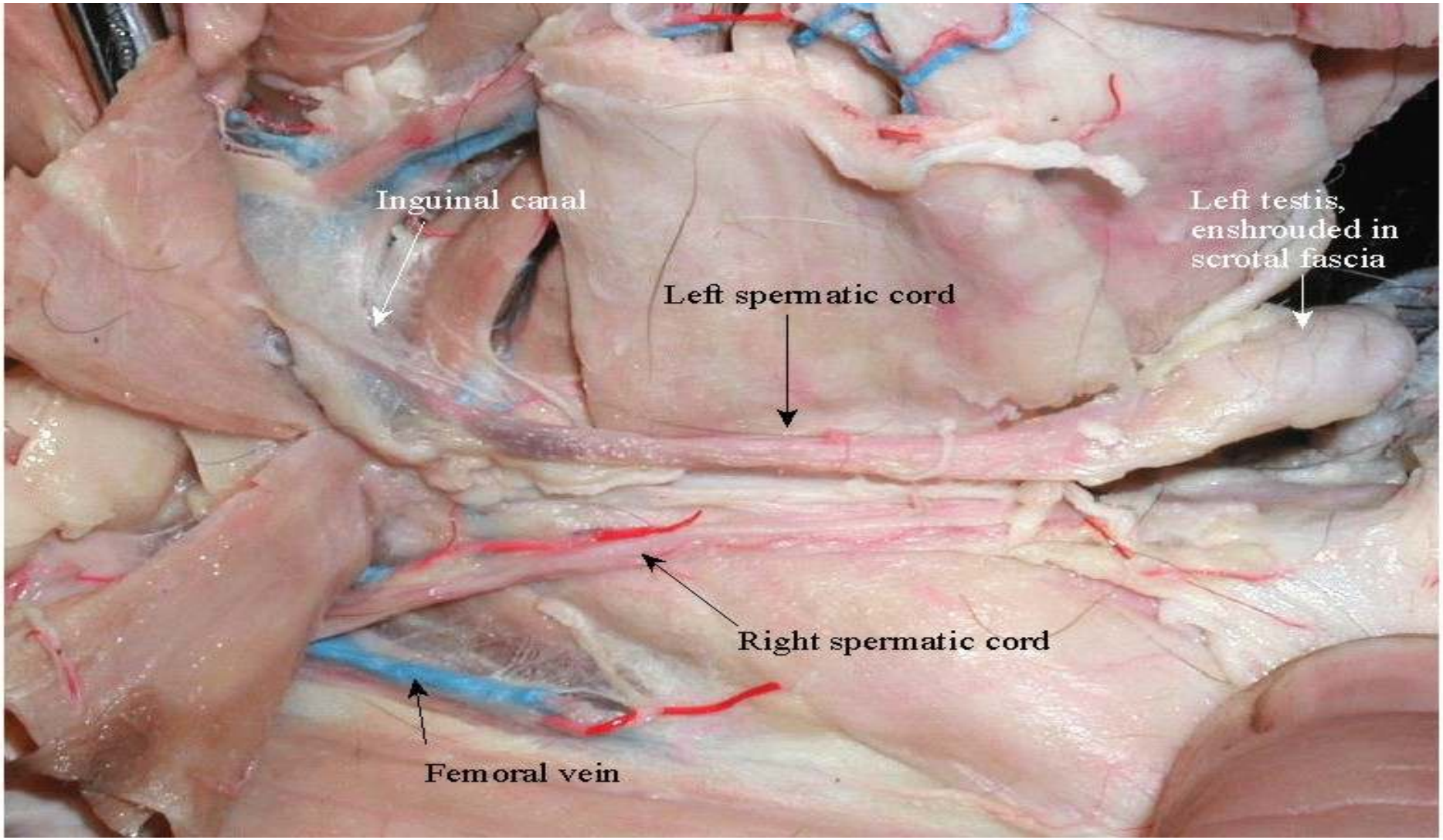
Ovaries

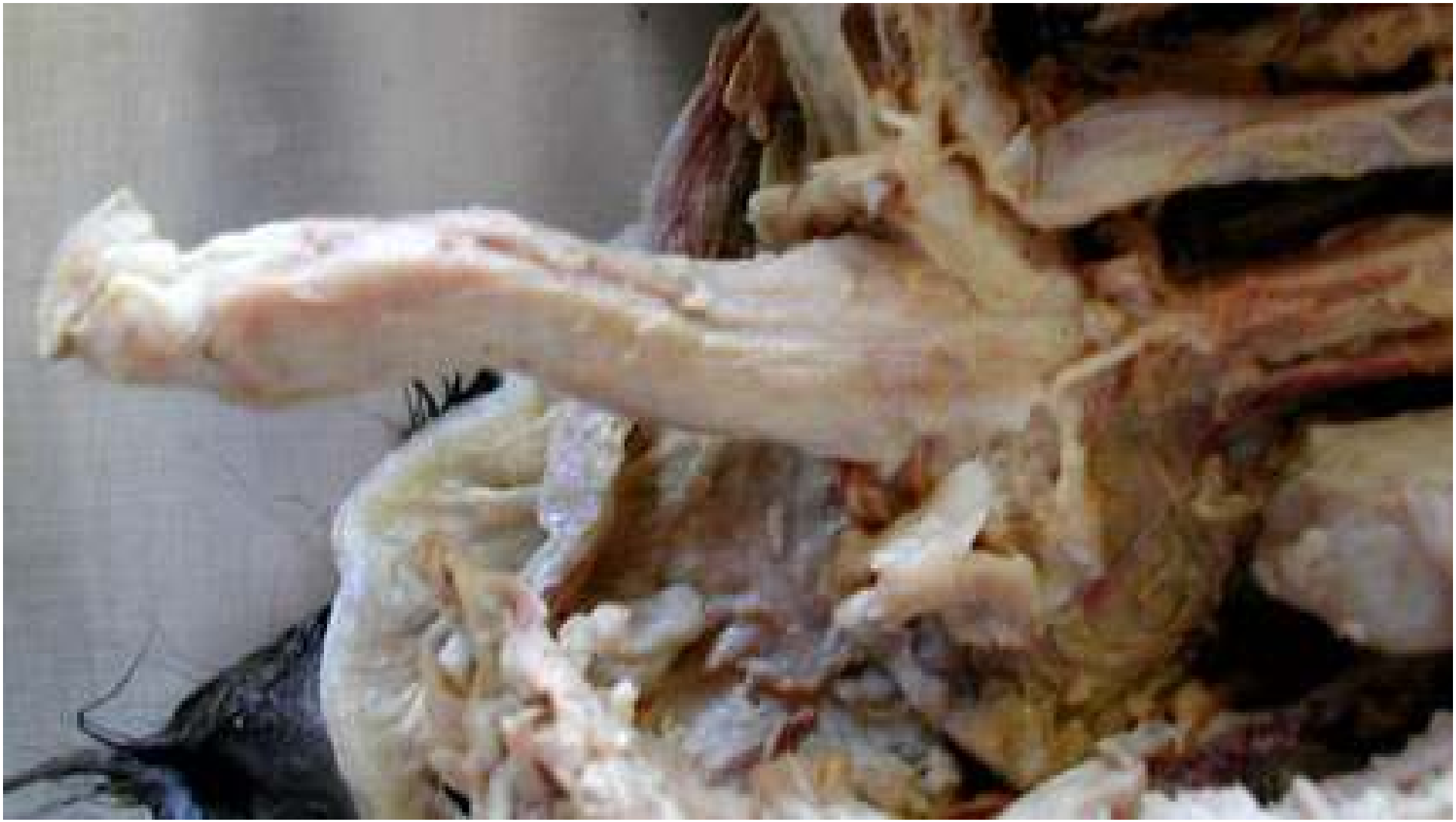

zona pellucida
externa
interna
theca folliculi
cumulus oophorus
oocyte
corona radiata
basement membrane
follicular cells (membrana granulosa)
externa
theca
interna
follicular cells
cumulus oophorus
basement membrane
corona radiata
zona pellucida


Female reproductive organs, internal
Sigmoid colon
Fimbria
Ovaries
Fimbria
Ovarian artery, L
Fallopian tube
Fallopian tube
Uterine horns, right and left
Broad ligament
Abdominal adipose tissue (Fat)
Rectum
Bladder

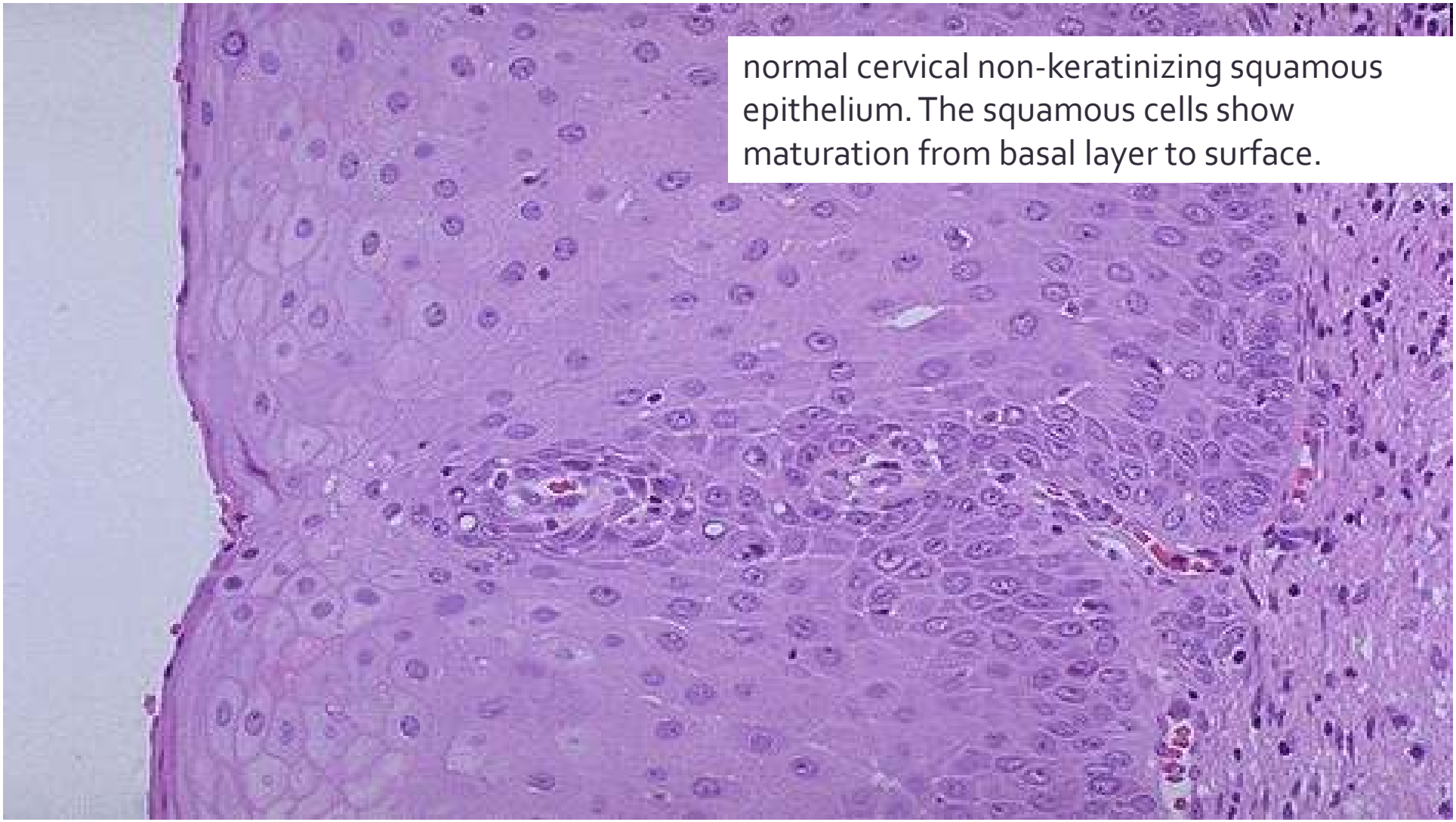



URINARYBLADDER
CAT

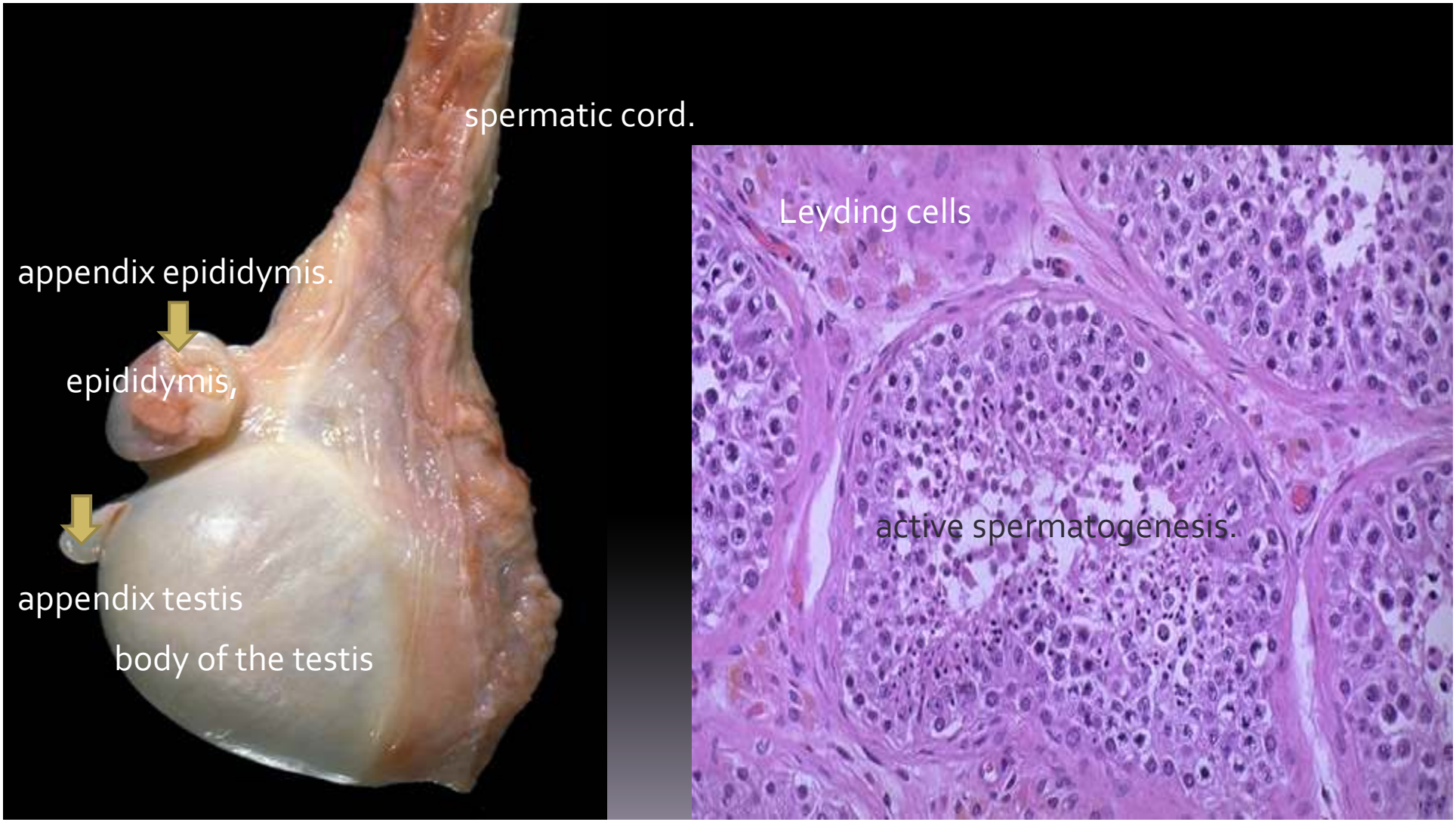

Inguinal canal
Left testis, enshrouded in scrotal fascia
Left spermatic cord
Right spermatic cord
Femoral vein

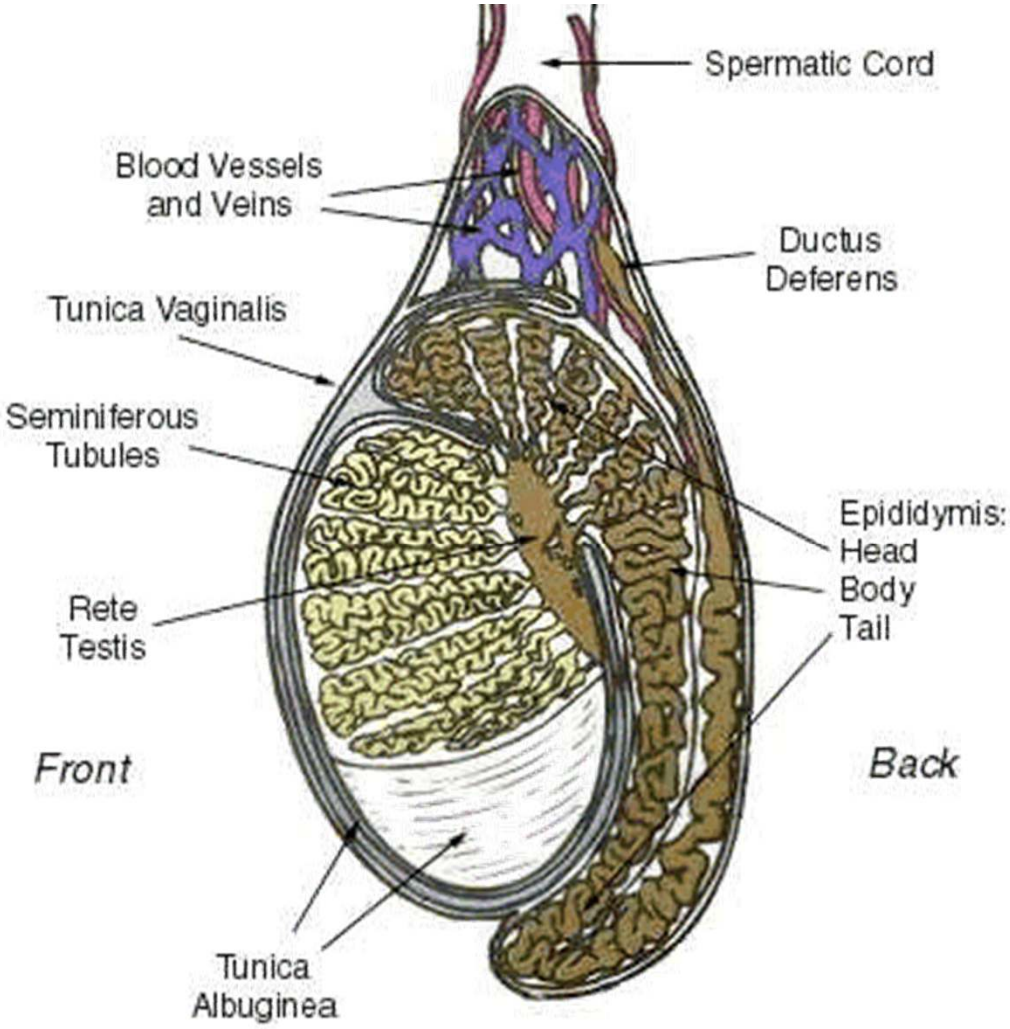


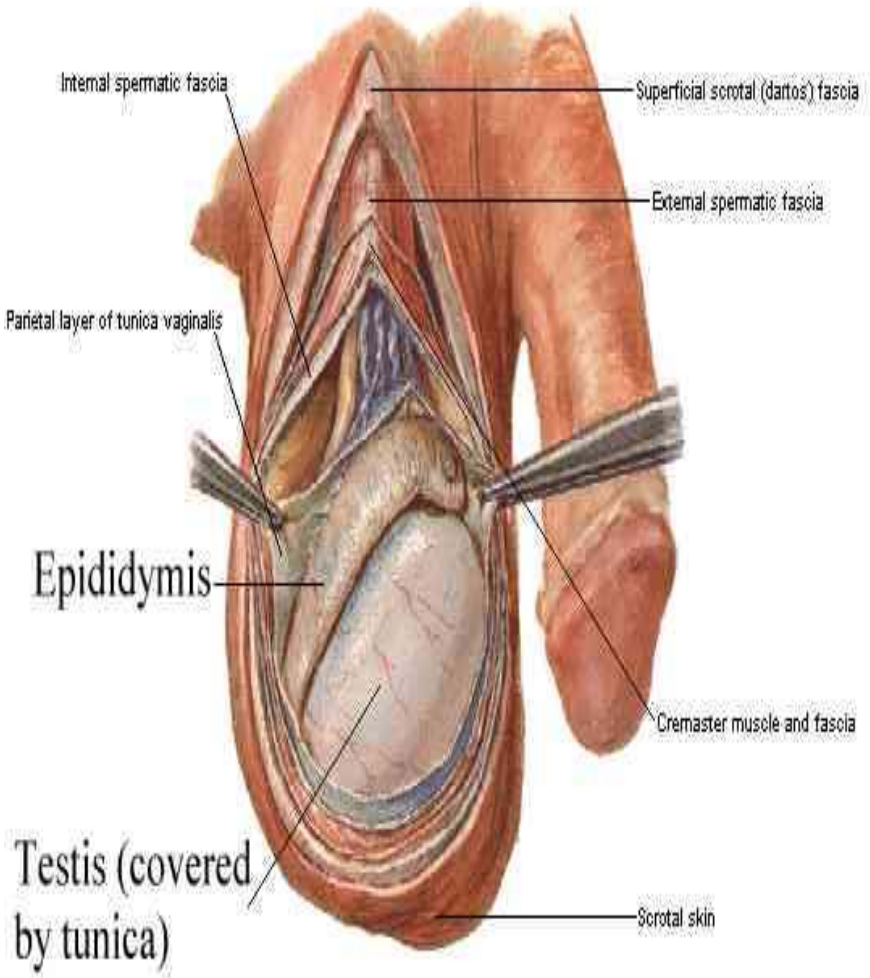

normal cervix with a smooth, glistening mucosal surface.

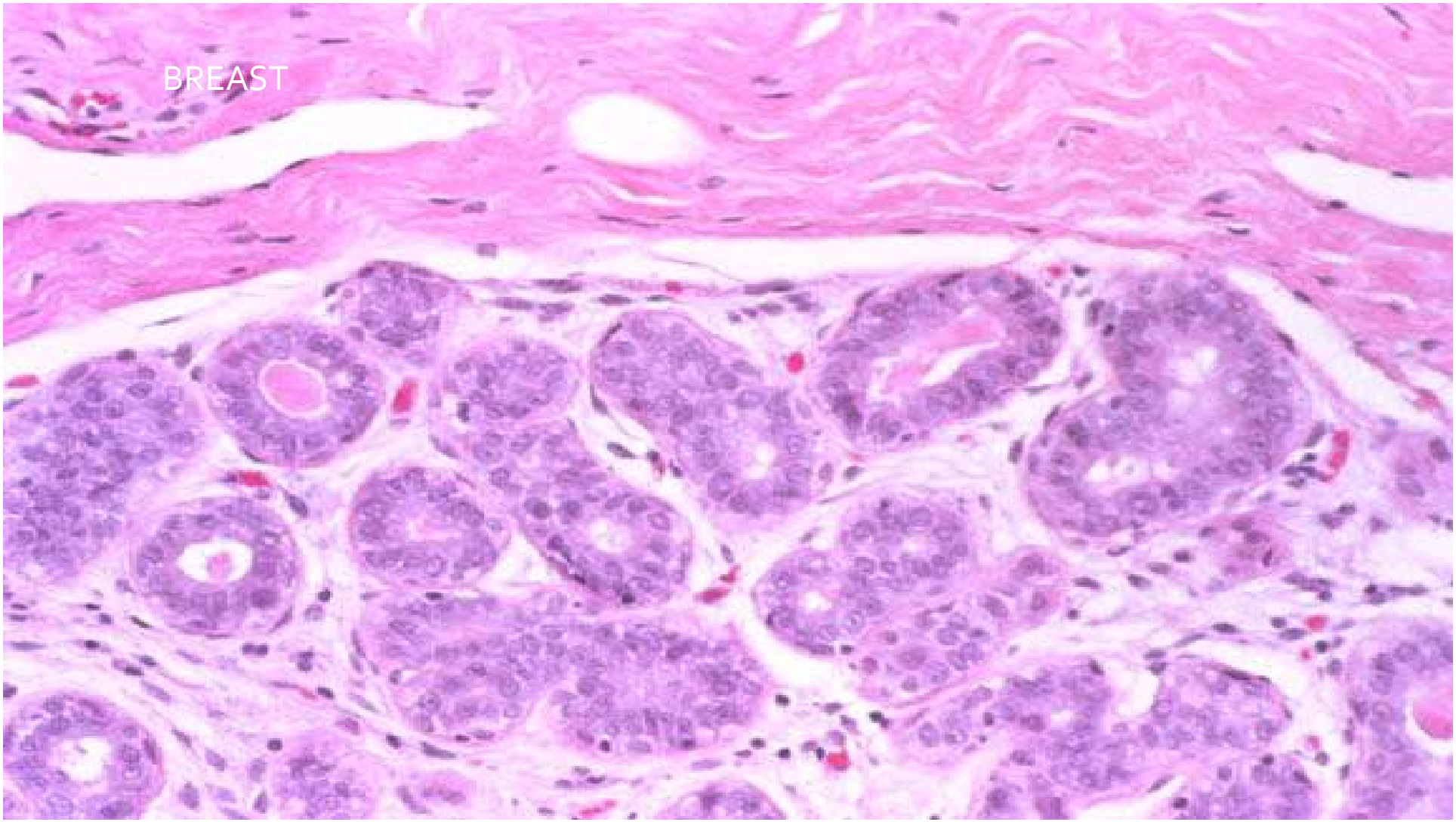


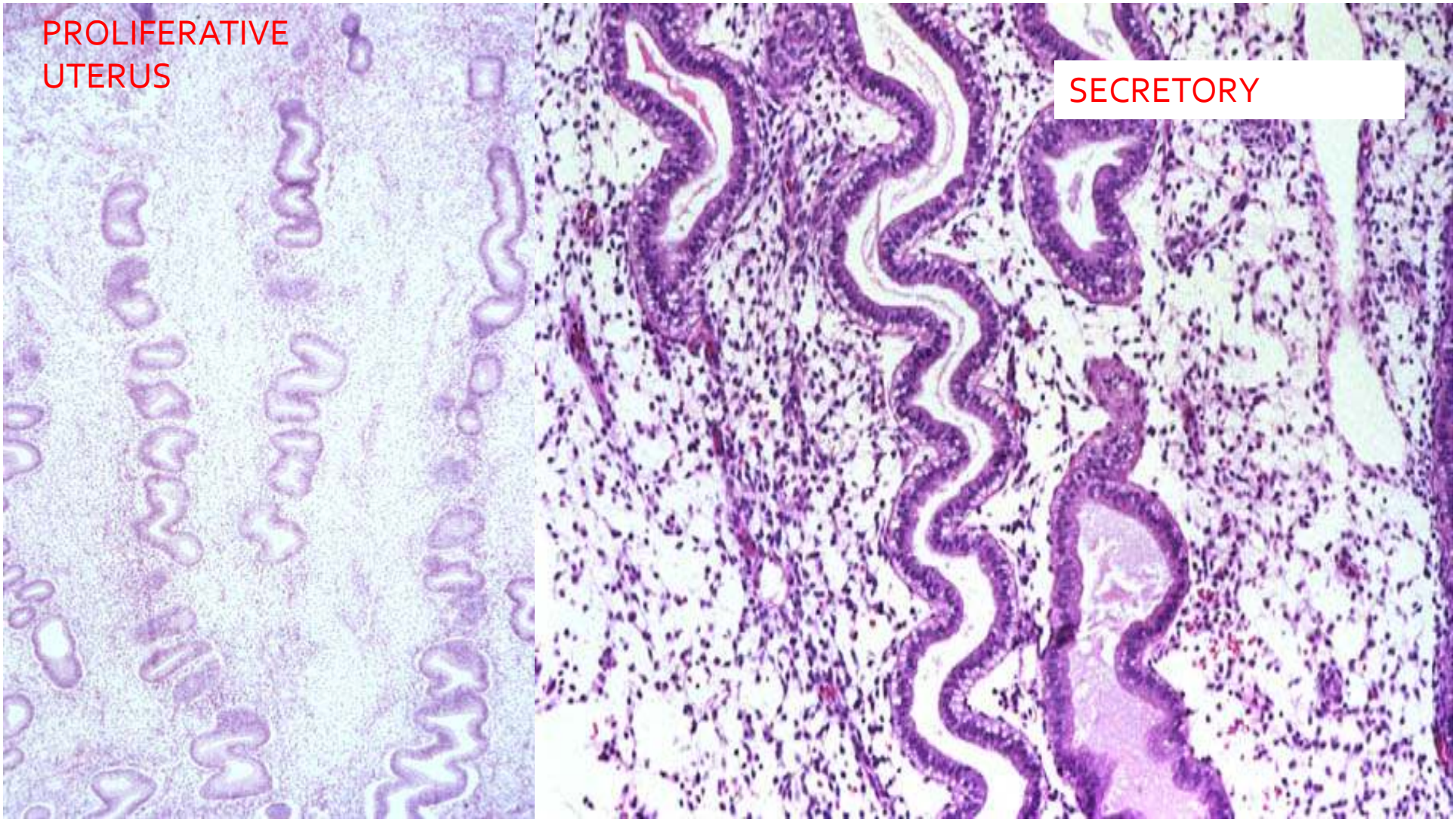
normal cervical non-keratinizing squamous epithelium. The squamous cells show maturation from basal layer to surface.

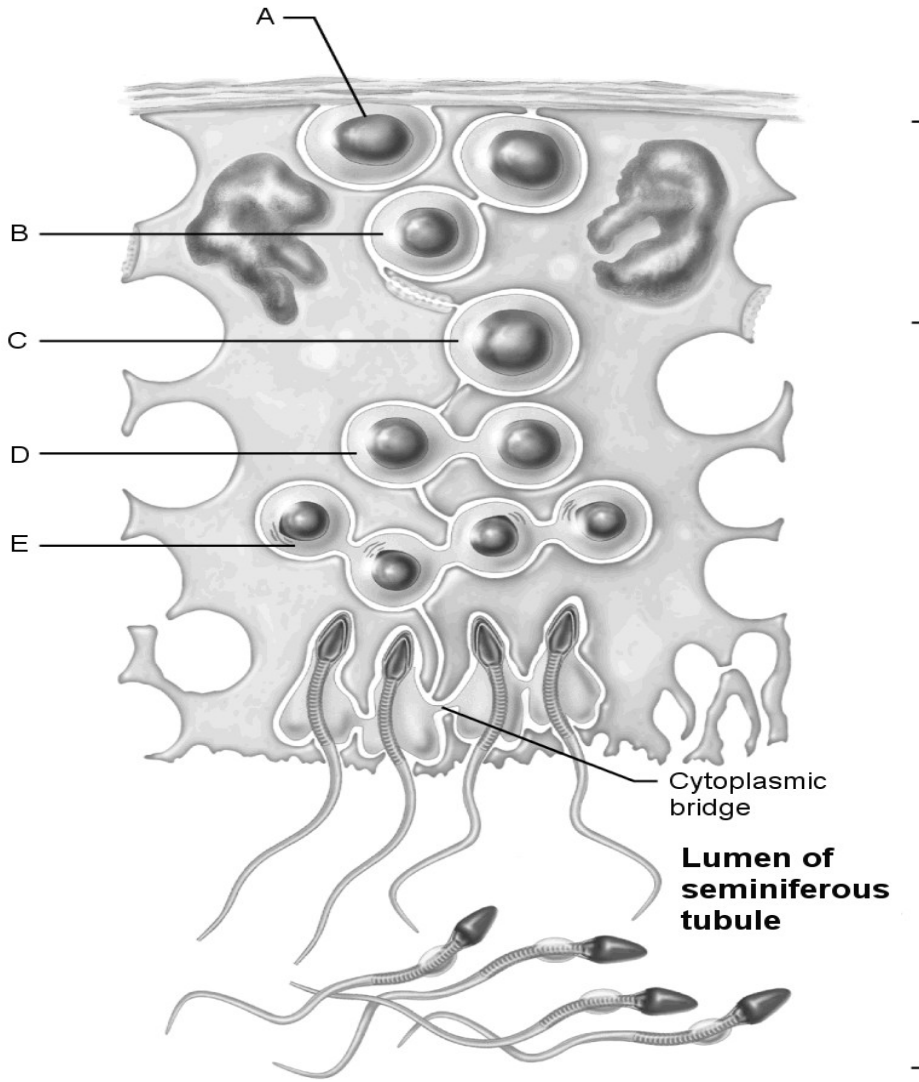

spermatic cord.
appendix epididymis.
epididymis,
appendix testis
body of the testis
Leyding cells
active spermatogenesis.


Spermatic Cord
Blood Vessels and Veins
Ductus Deferens
Tunica Vaginalis
Seminiferous Tubules
Epididymis: Head
Body
Tail
Rete Testis
Front
Back
Tunica Albuginea

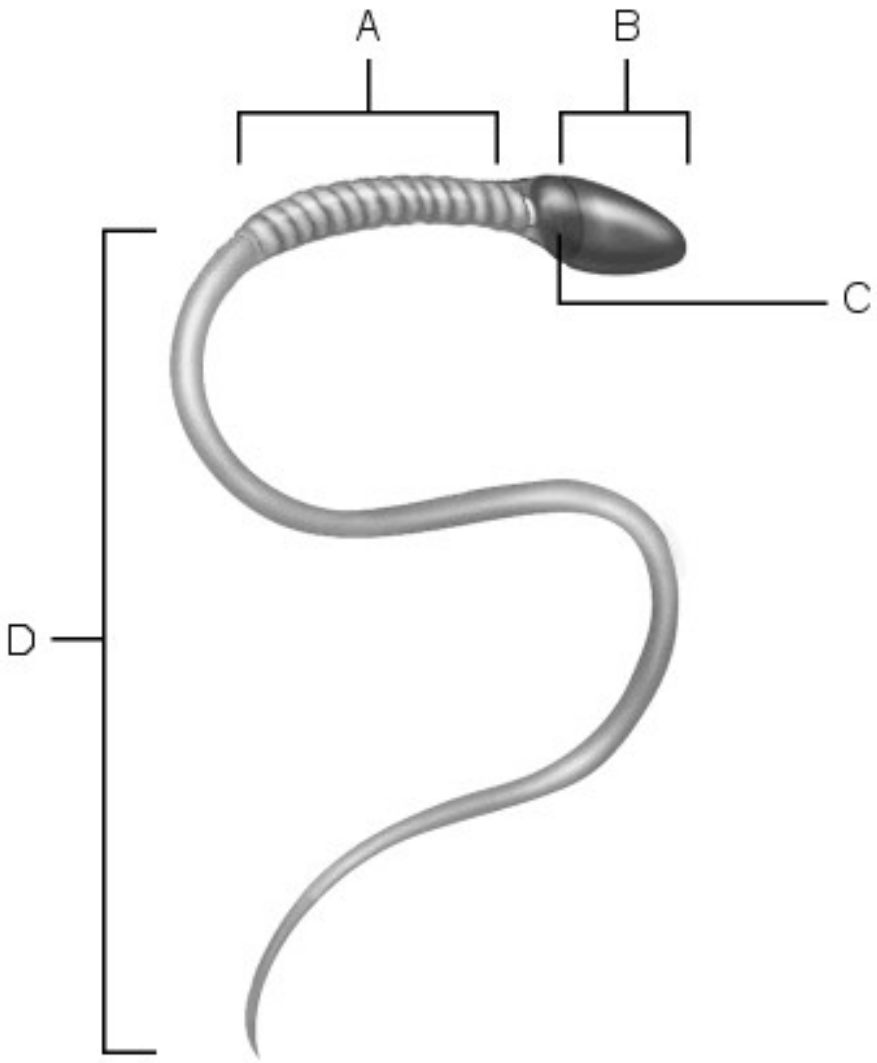

Internal spermatic fascia
Superficial scrotal (dartos) fascia
External spermatic fascia
Parietal layer of tunica vaginalis
Epididymis
Cremaster muscle and fascia
Testis (covered by tunica)
Scrotal skin


BREAST


PROLIFERATIVE
UTERUS
SECRETORY



54) Stem cell.
Answer: A
55) First cells with *n* number of chromosomes.
Answer: D
56) Type B spermatogonia.
Answer: B
57) Early spermatids.
Answer: E
58) Primary spermatocyte.
Answer: C



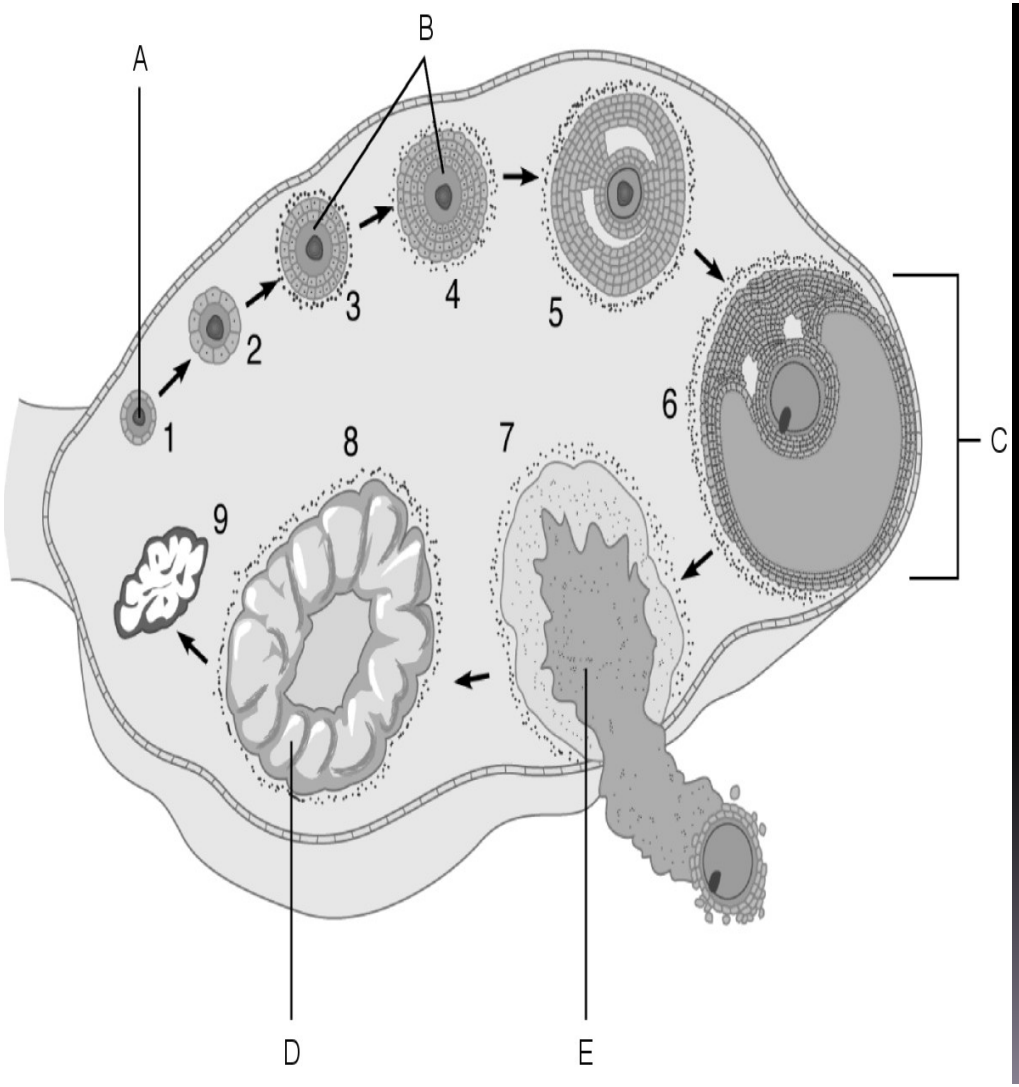
match the following:

59) Acrosome.
Answer: B

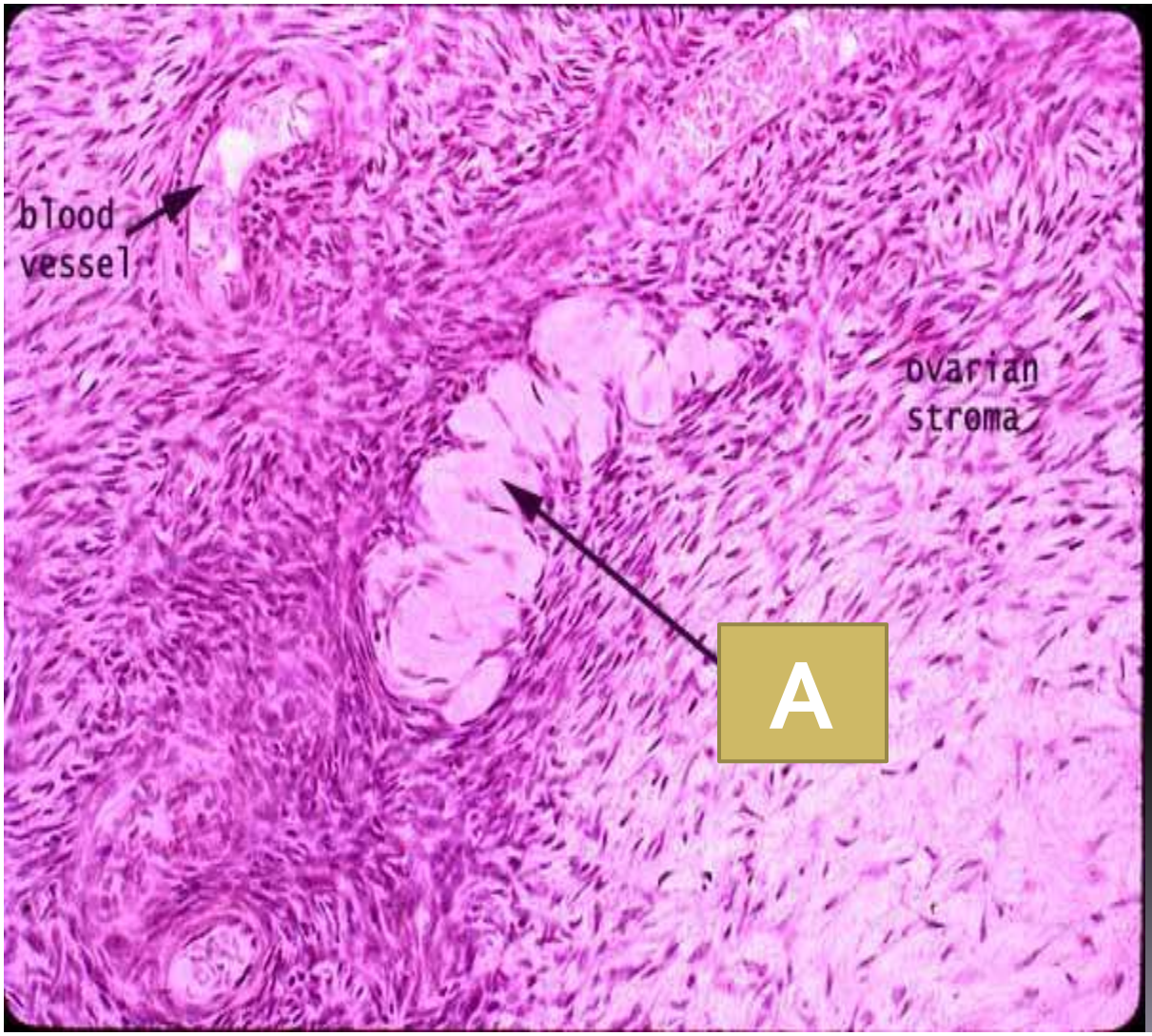
60) Location of mitochondria.
Answer: A

61) Midpiece.
Answer: A

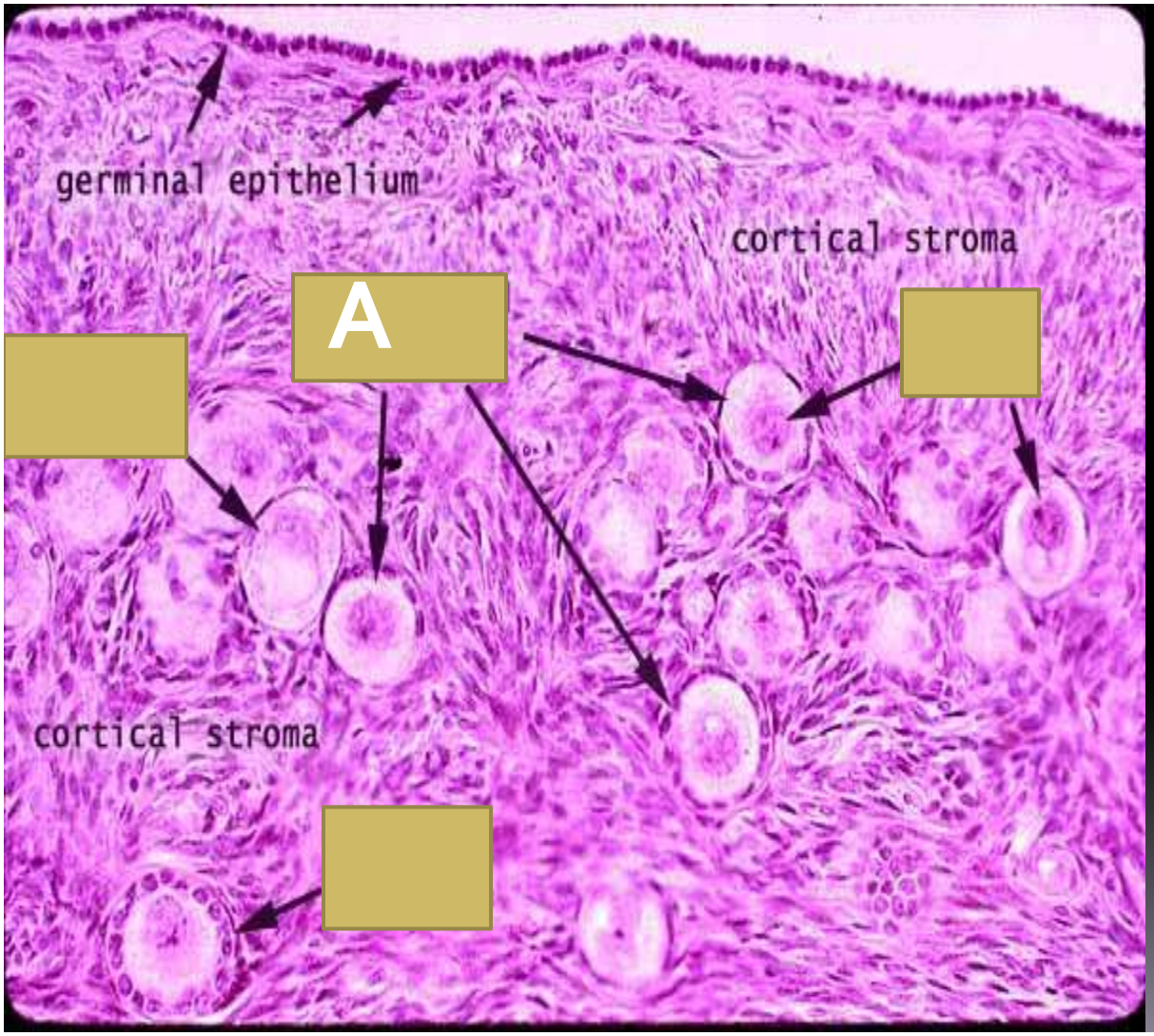
62) Location of nucleus.
Answer: C



63) The stage called ovulation.
Answer: E
64) Vesicular (Graafian) follicle.
Answer: C
65/Primary follicles.
Answer: B
66) Primordial follicle.
Answer: A



67/IdentifY structure A
A/CORPUS ALBICANS
B/CORPUS LUTEUM
C/CORPUS MAGELUM
D/GRAFIAN VESICLE
E/PRIMARY FOLLICLE



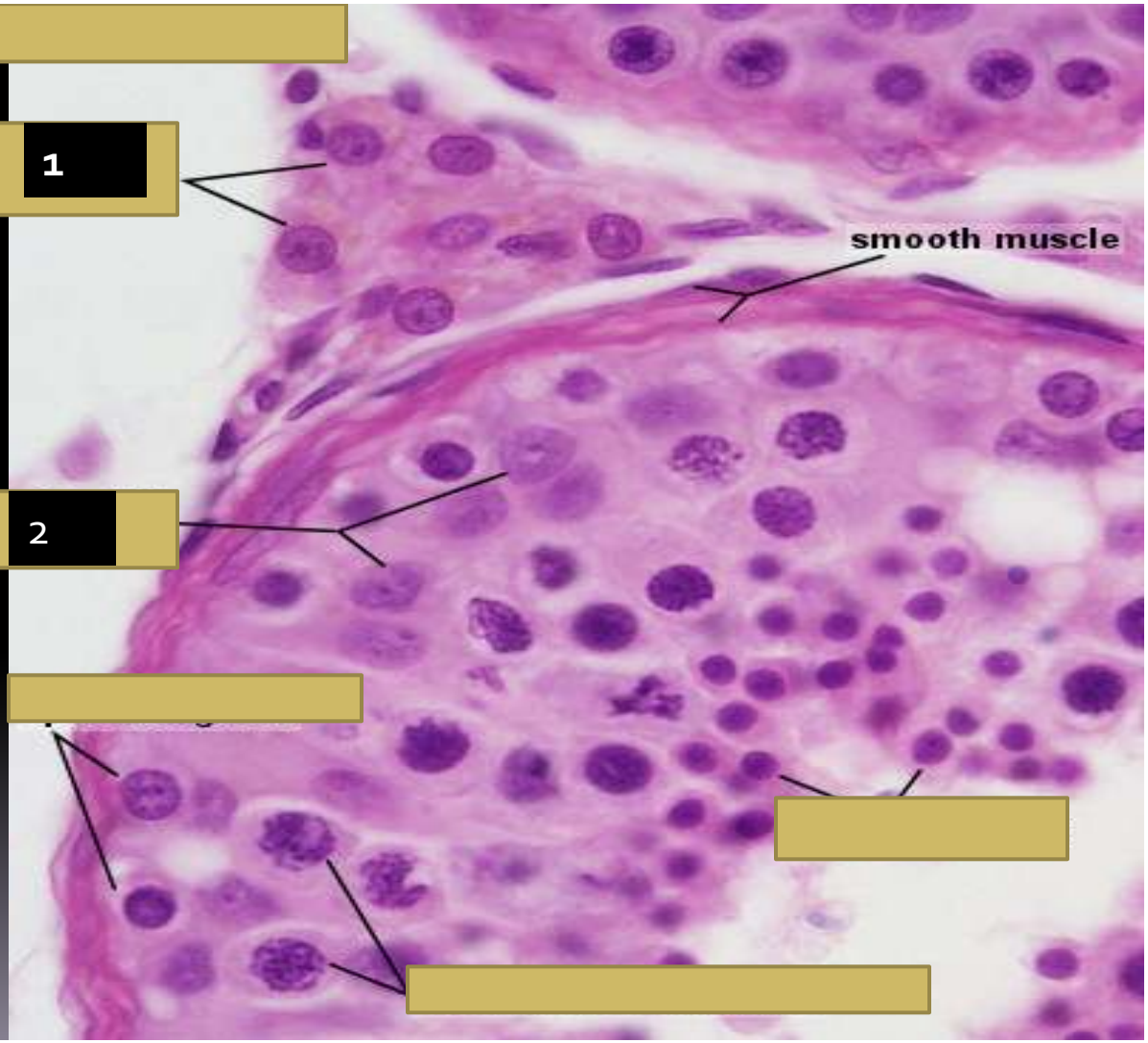
68/IDENTIFY A
A/SECONDARY FOLLICLES
B/PRIMARY FOLLICLE
C/TERTIARY FOLLICLES
D/ATRETIC FOLLICLE

73/Where this pictures has been taking from?

A/ VAGINA
B/BREAST
C/PENIS
D/URETHRA
E/URETER

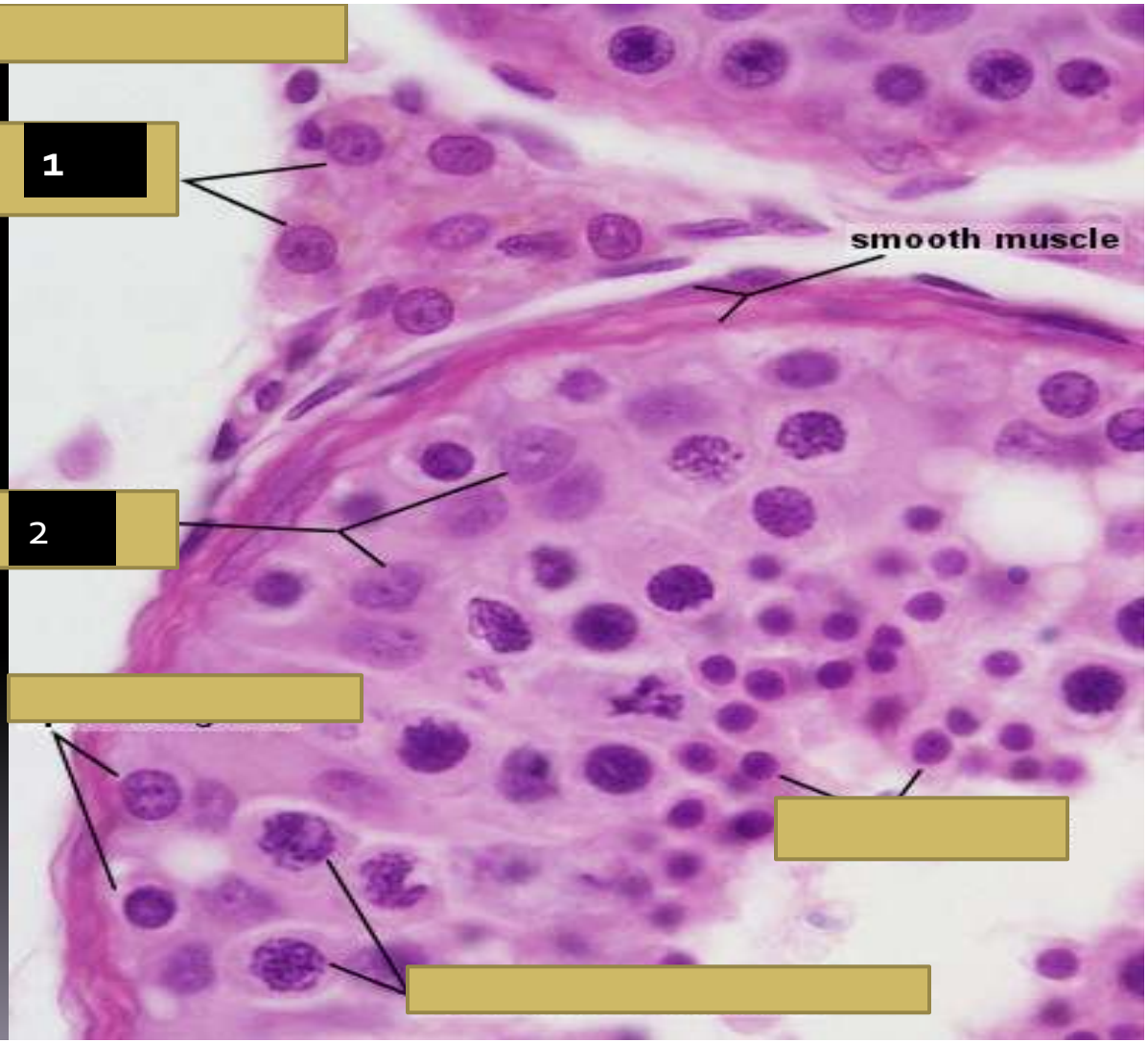
83/ Identify 1
A/ Leydig cells
B/Sertoli cells
C/ interstitial cells
d/a,b correct
e/a,c correct

84/ FUNCTION OF #1
A/ They produce testosterone in the presence of luteinizing hormone (LH).
B/ They produce testosterone in the presence of FSH
C/Maintenance and protection
D/ They produce Estrogen in the presence of luteinizing hormone (LH).
e/I am confused



83/ Identify 1
A/ Leydig cells
B/Sertoli cells
C/ interstitial cells
d/a,b correct
e/a,c correct

84/ FUNCTION OF #1
A/ They produce testosterone in the presence of luteinizing hormone (LH).
B/ They produce testosterone in the presence of FSH
C/Maintenance and protection
D/ They produce Estrogen in the presence of luteinizing hormone (LH).
e/I am confused



Mature (Vesicular) Follicle