

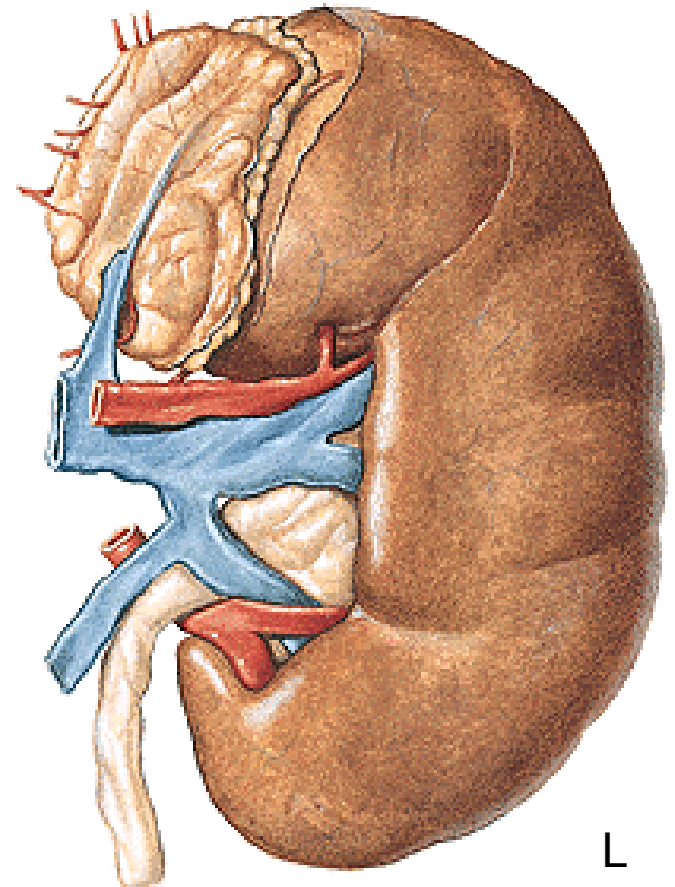
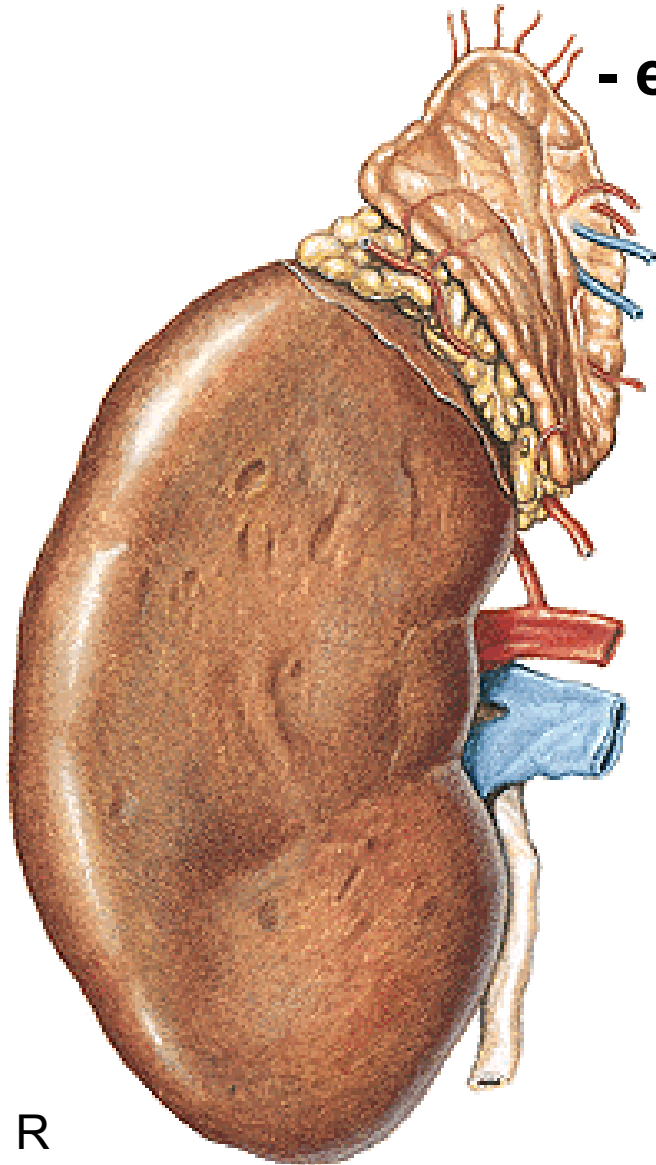
# **URINARY SYSTEM**

# REN, NEPHROS - facies anterior et posterior

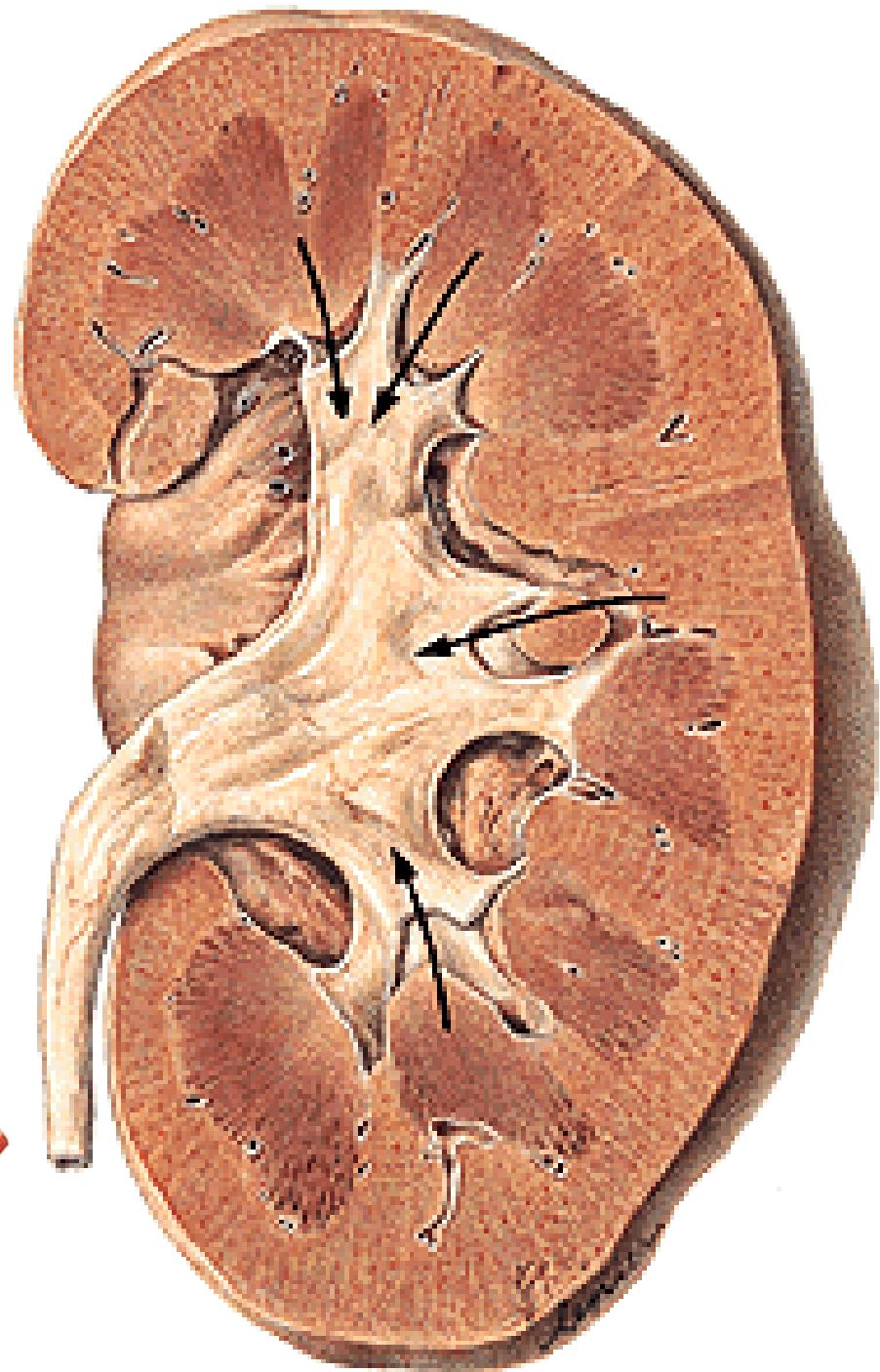
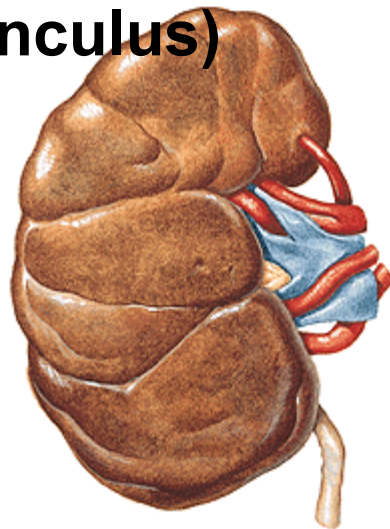
- margo lateralis et medialis - hilum renale

- sinus renalis

- extremitas superior et inferior



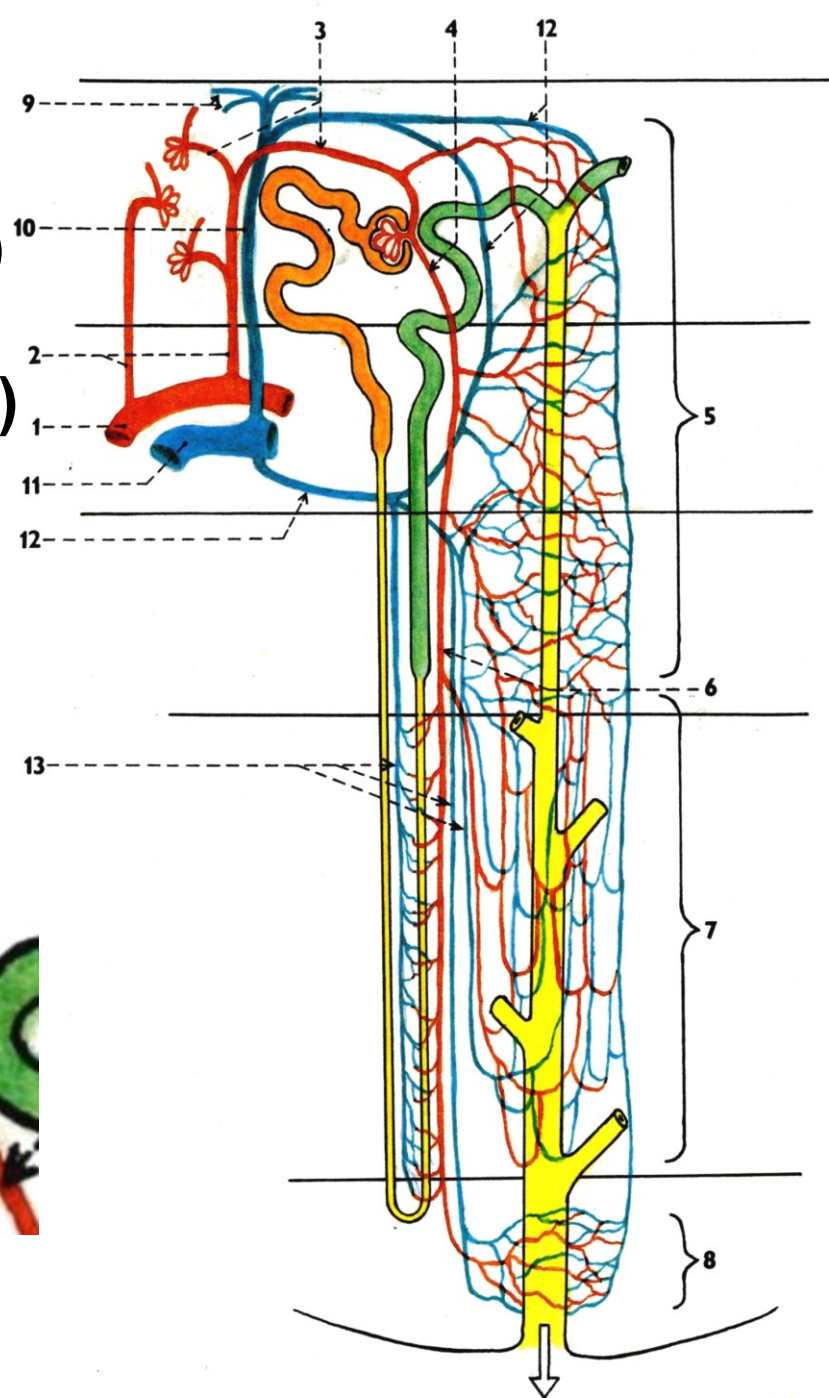
**Capsula fibrosa**  
**Cortex renalis**  
**Medulla renalis**  
– 6-20 pyramides renales  
**Columnae renales**  
**Pars radiata corticis**  
**Papilla renalis**  
**Ductus papillares**  
**Foramina papillaria**  
**Area cribrosa**  
**Sinus renalis**  
**Lobus renalis (Renculus)**  
**Renculi-marking**  
**(renculization)**



# NEPHRON

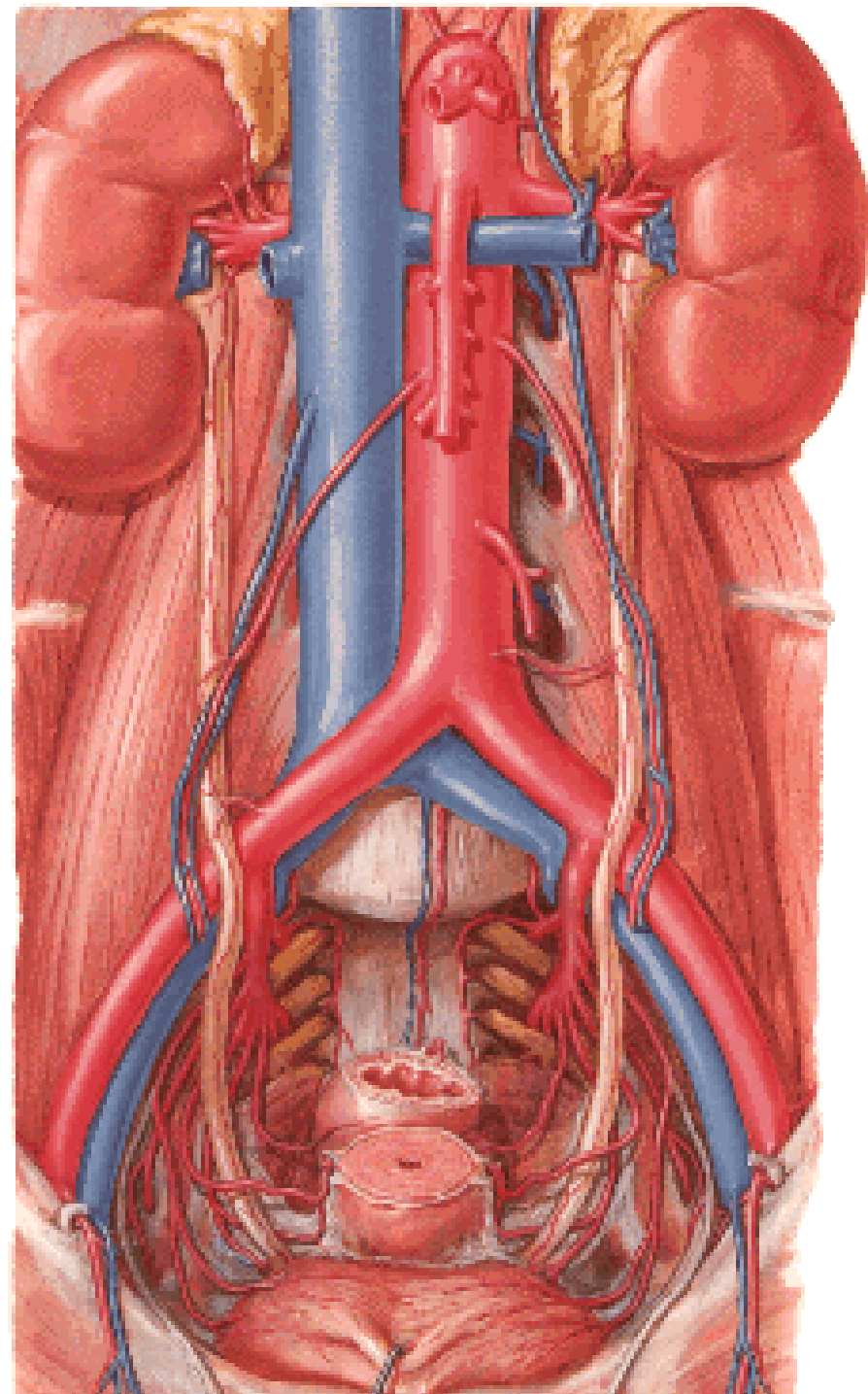
- Corpusculum renale (Malpighi)
  - Glomerulus
  - Capsula glomeruli (Bowman)
- Tubulus proximalis
- Henle's loop
- Tubulus distalis

Tubulus colligens  
Ductus papillaris  
Foramen papillare



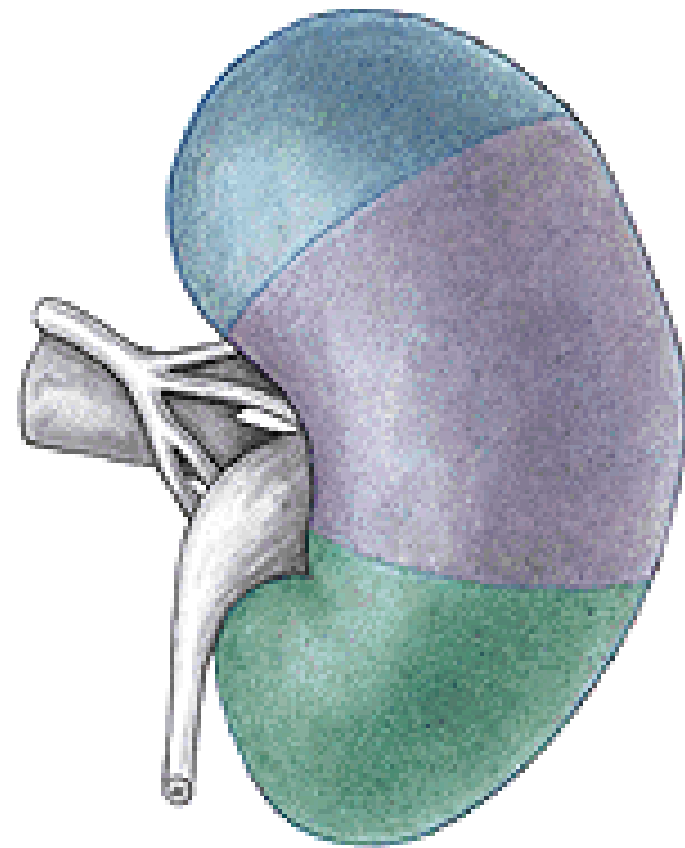
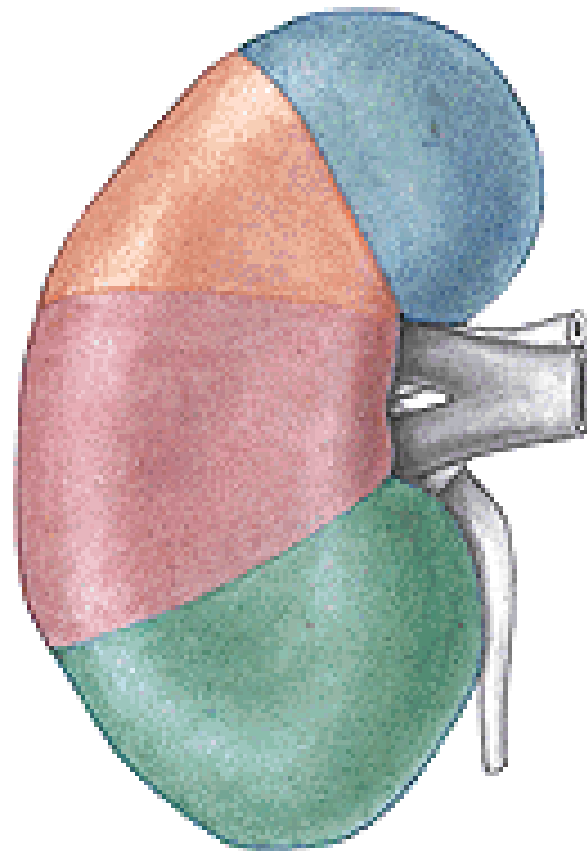
## A. renalis

- r. anterior – 4 rr. praepelvici
- r. posterior – r. retropelvicus
- aa. lobares – aa. interlobares



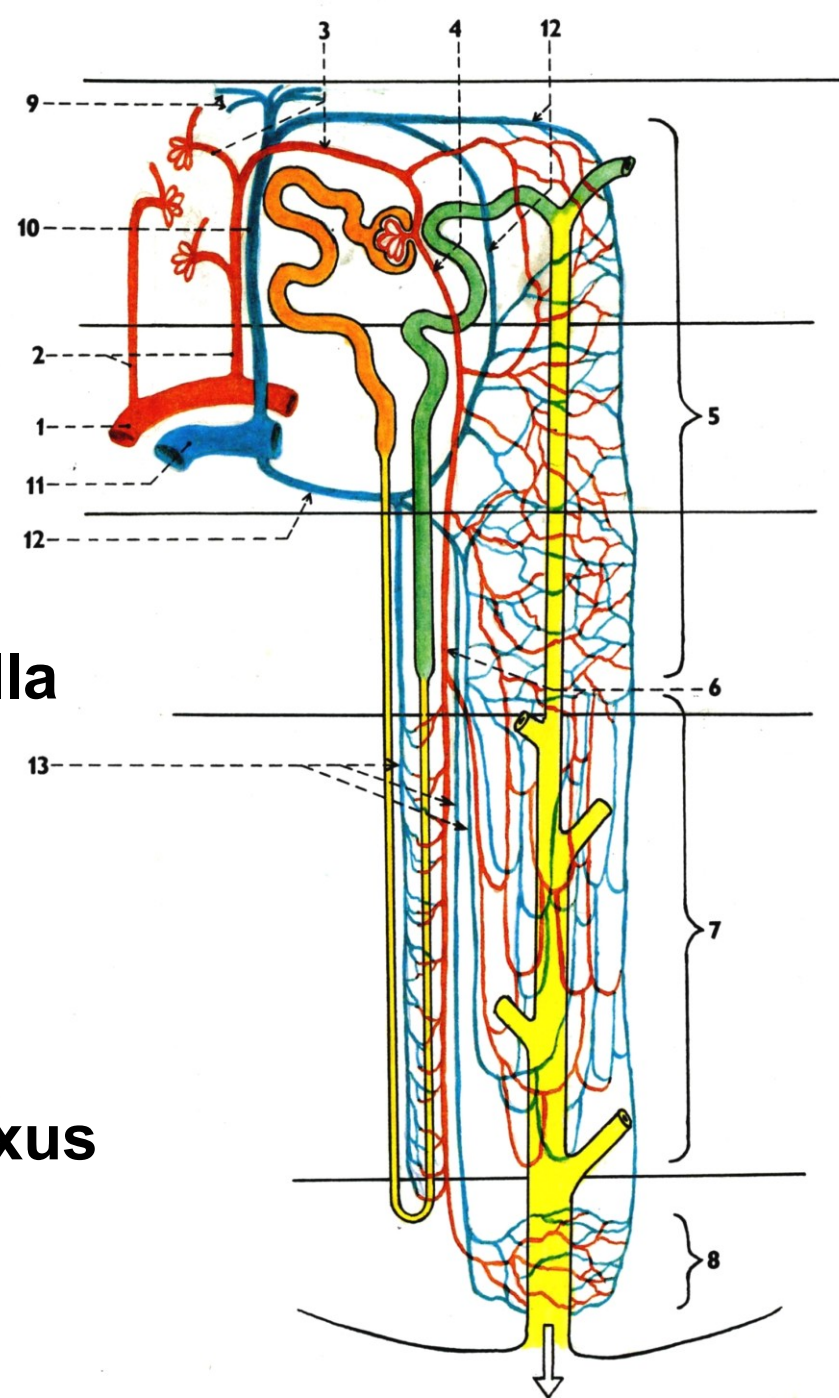
## Segmenta renalia – s. superius

- s. anterius superius
- s. anterius inferius
- s. inferius
- s. posterius

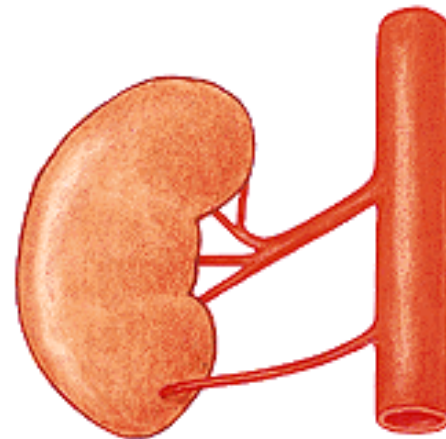
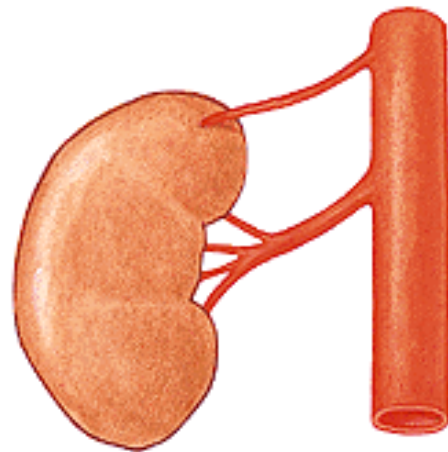
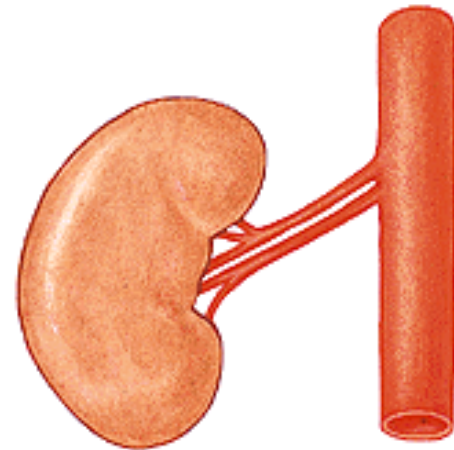
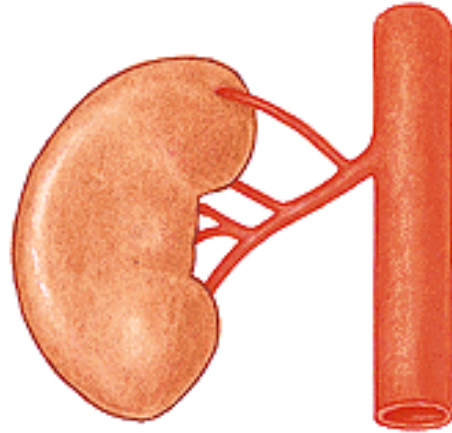


**Aa. interlobares:**

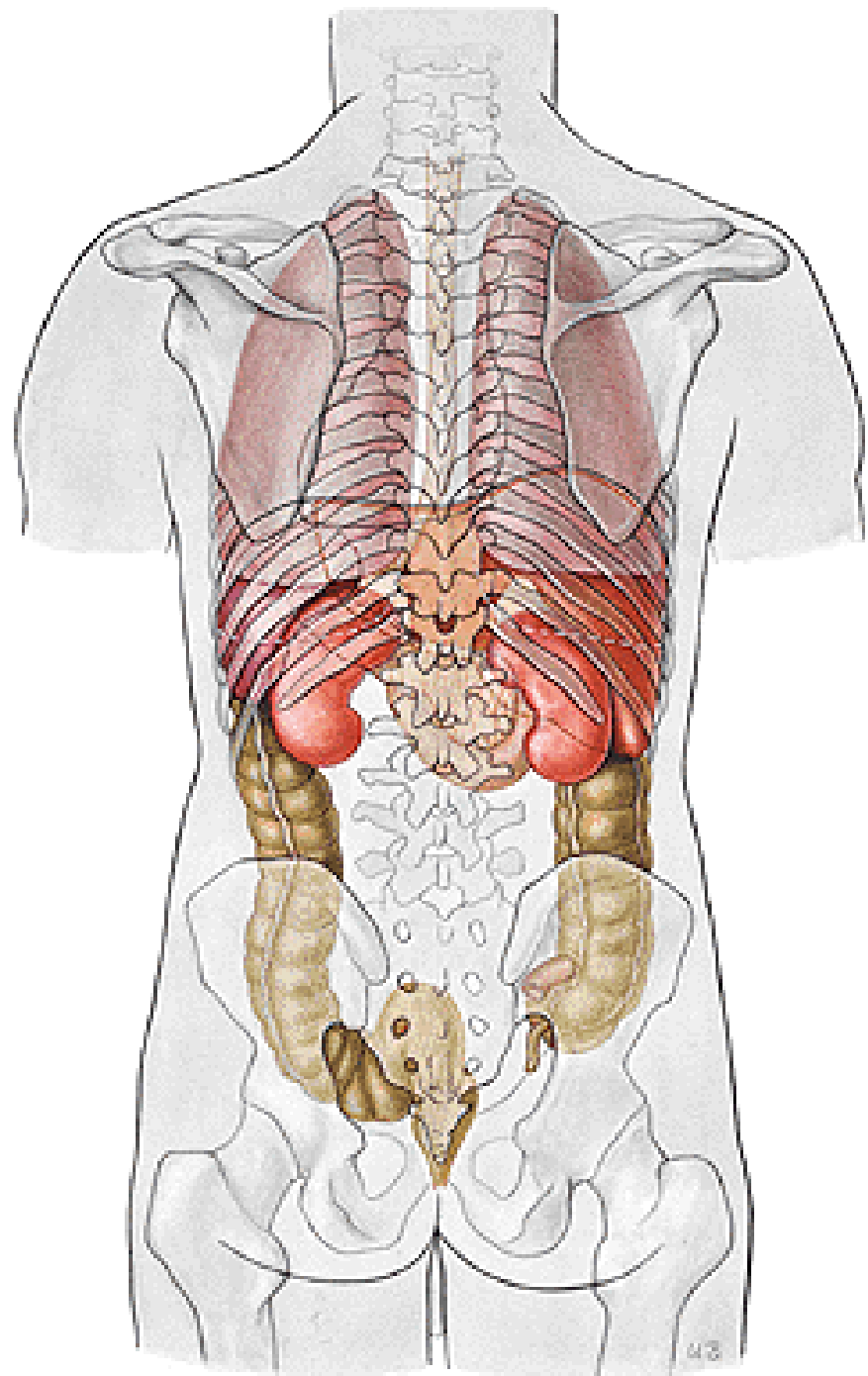
- 1. A. arcuata**
- 2. A. interlobularis**
- 3. Vas afferens**
- 4. Vas efferens**
- 5. Peritubular capillary plexus**
- 6. Arteriola recta**
- 7. Capillary plexus in the medulla**
- 8. Capillary plexus around papillary duct**
- 9. Venulae stellatae**
- 10. V. interlobularis**
- 11. V. arcuata**
- 12. Vein from the peritubular plexus**
- 13. Venulae rectae**



## Aa. renales accessoriae

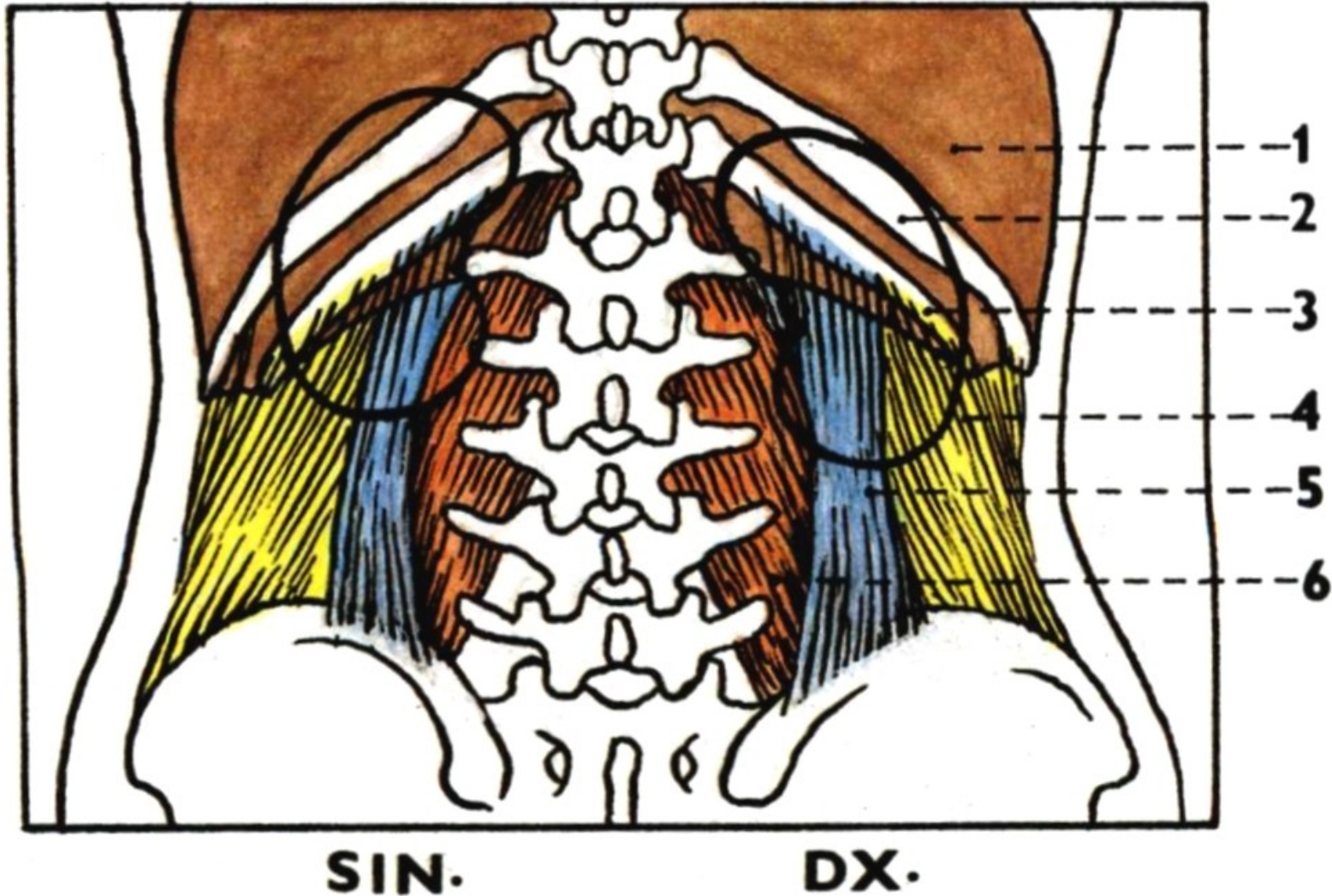


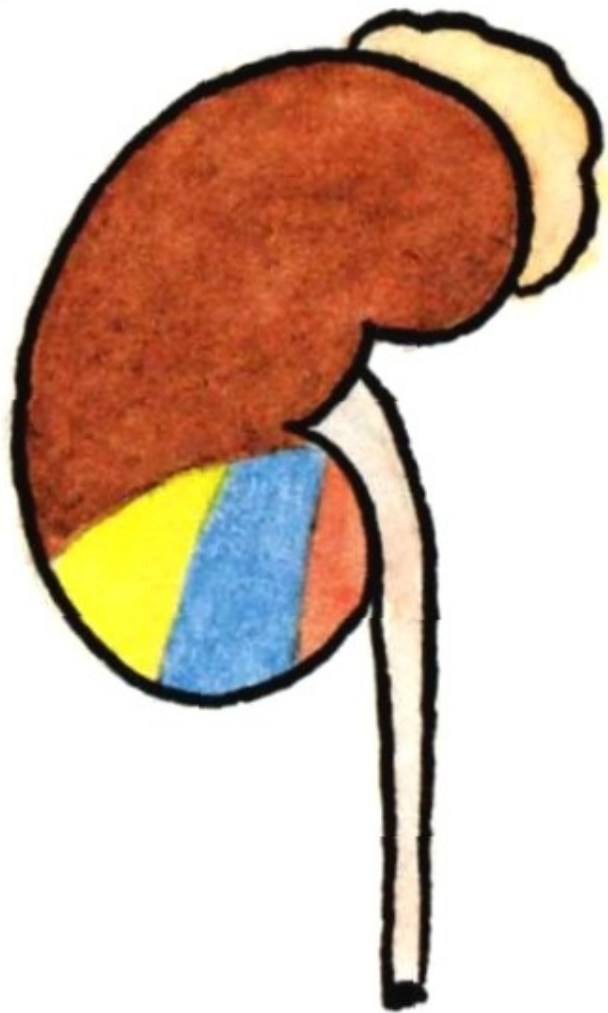




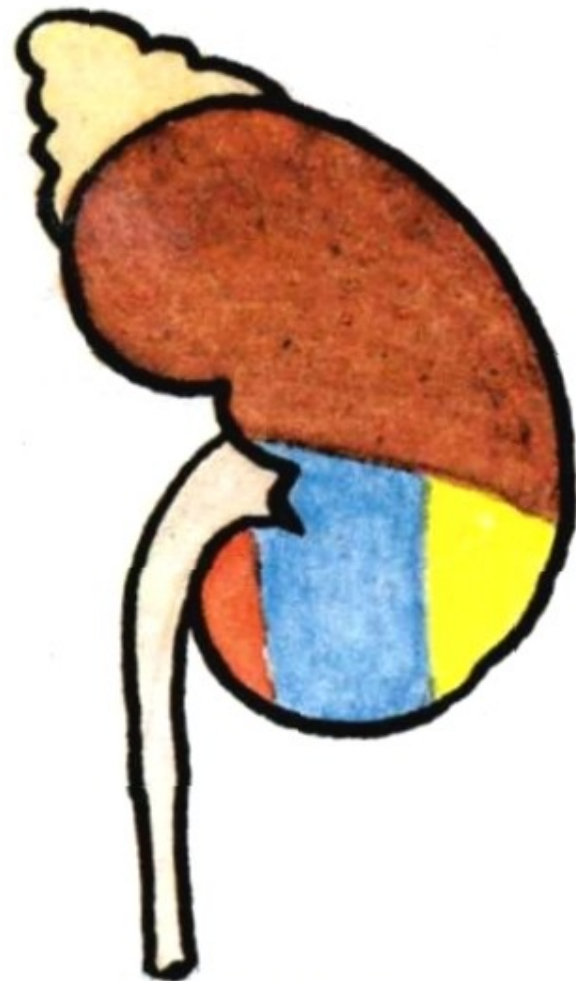
1. Diaphragma
2. 11<sup>th</sup> rib
3. 12<sup>th</sup> rib

4. M. transversus abdominis
5. M. quadratus lumborum
6. M. psoas major



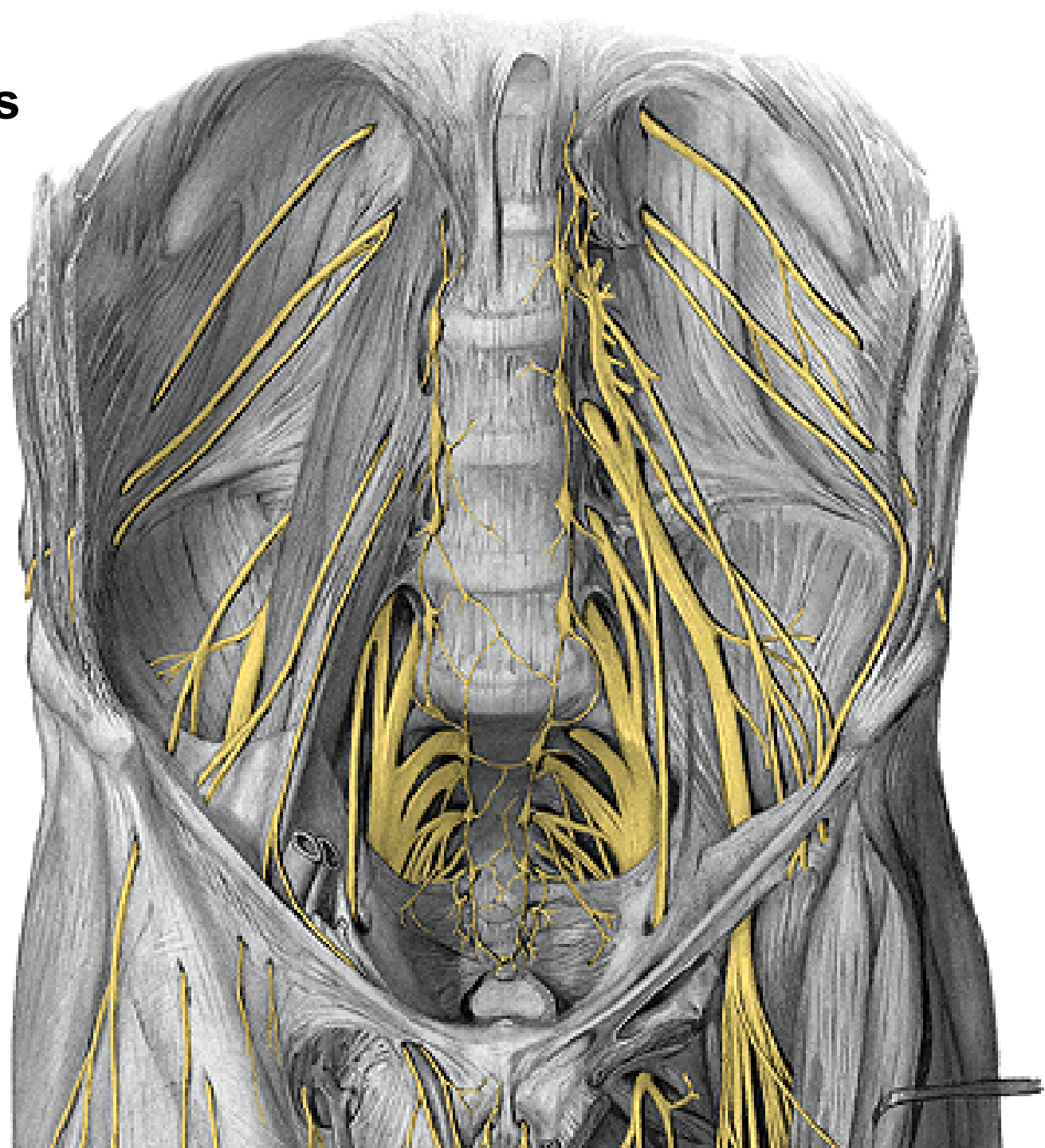


**SIN.**

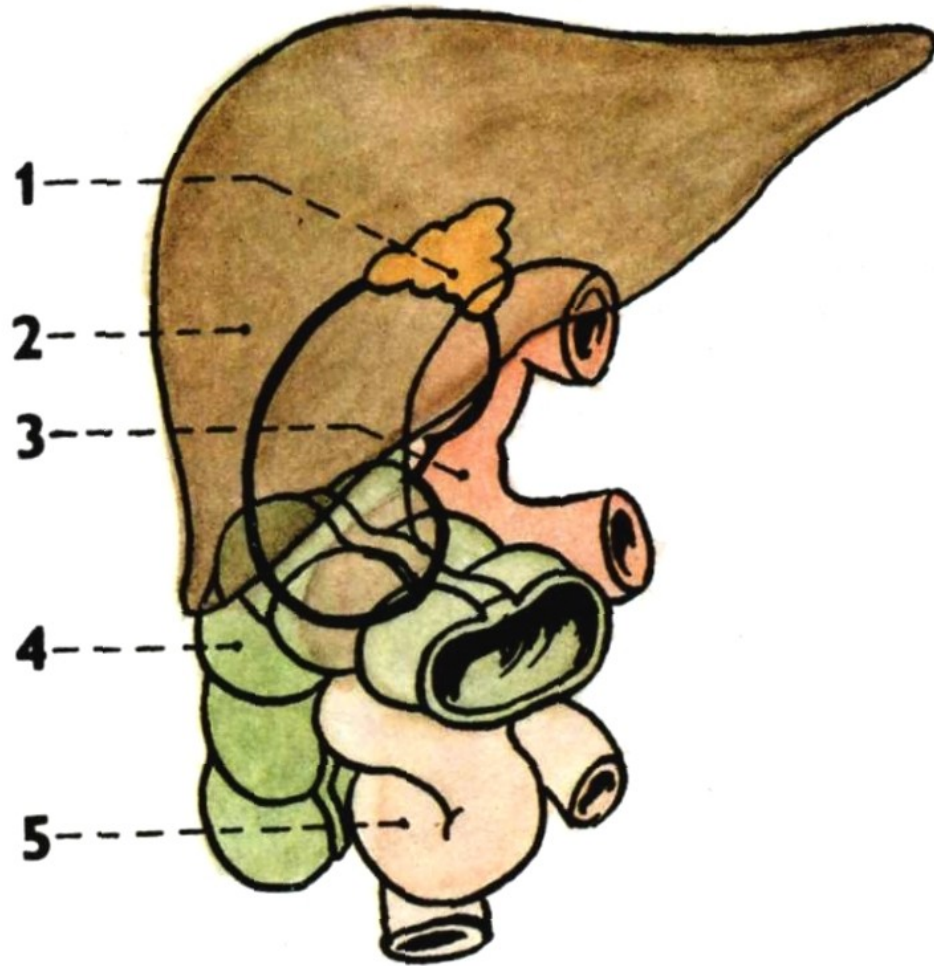


**DX.**

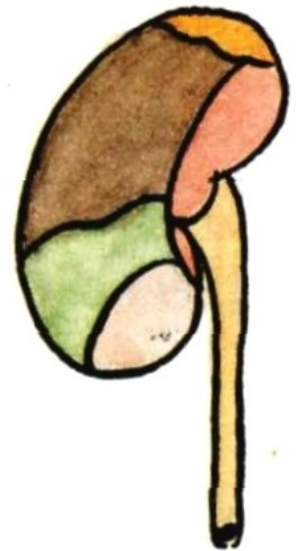
**N. subcostalis**  
**N. iliohypogastricus**  
**N. ilioinguinalis**



1. Gl. suprarenalis dx.
2. Liver
3. Duodenum
4. Flexura coli dx.
5. Jejunum

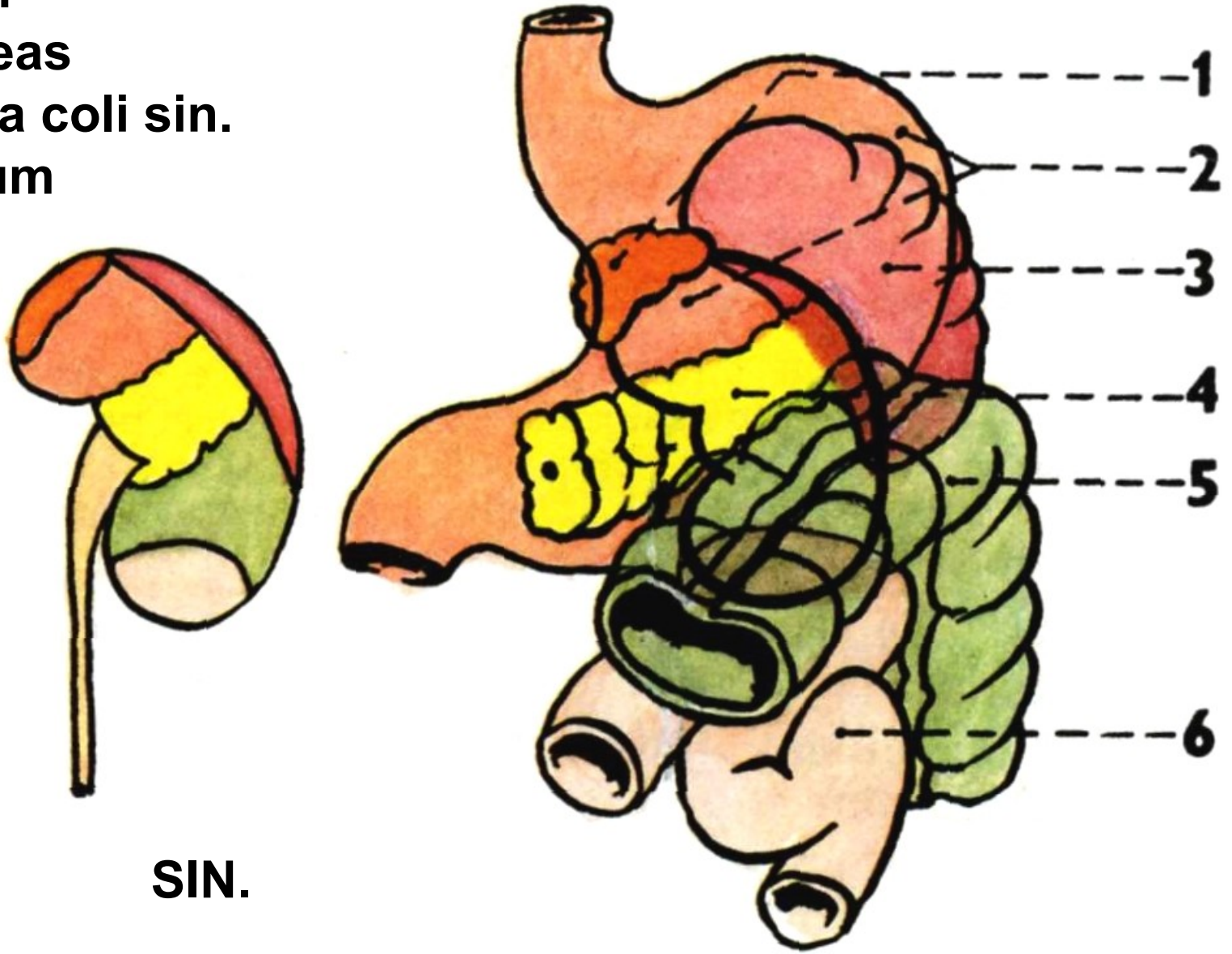


**DX.**



**DX.**

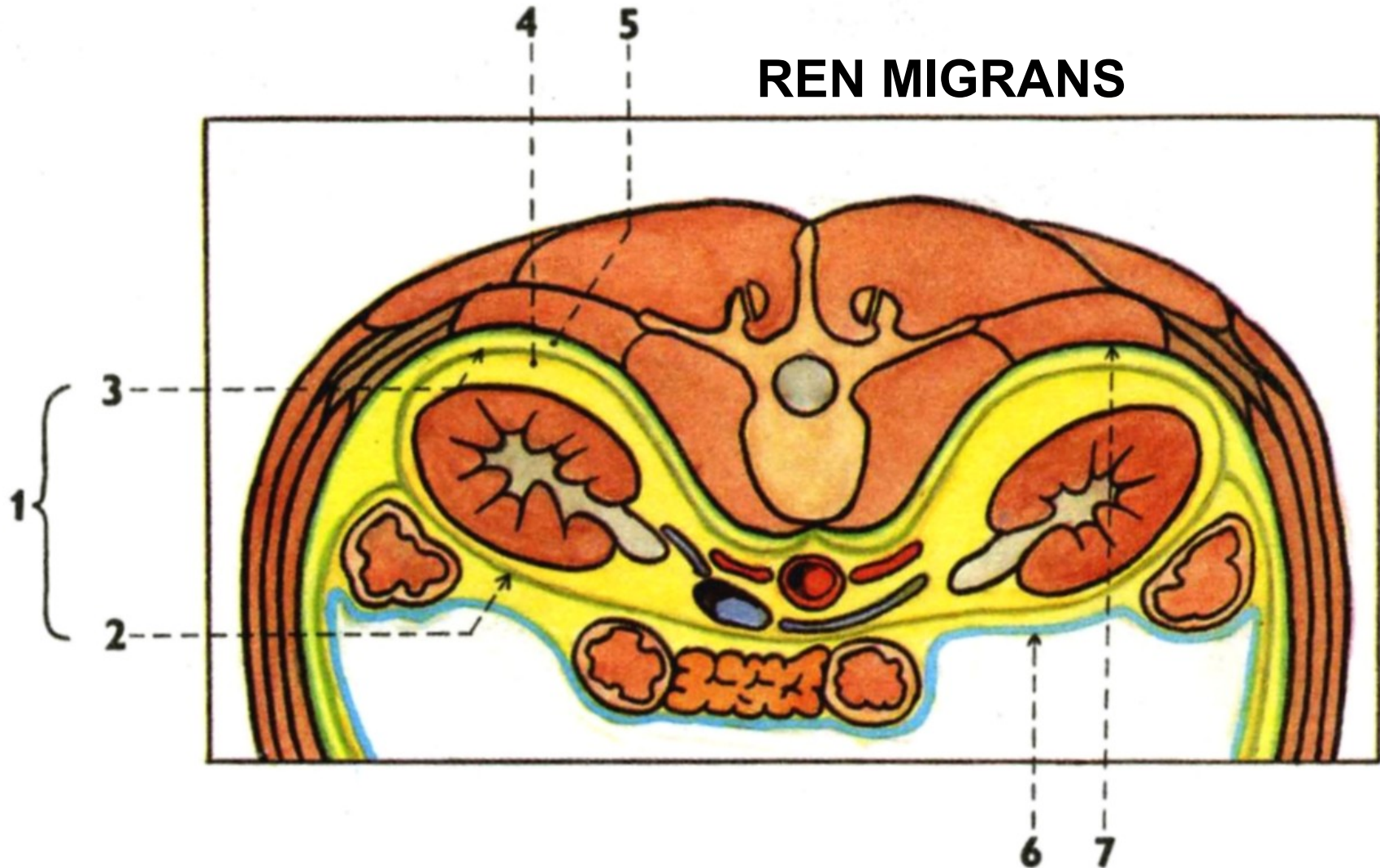
1. Gl. suprarenalis sin.
2. Stomach
3. Spleen
4. Pancreas
5. Flexura coli sin.
6. Jejunum



**SIN.**

1. Fascia renalis
2. Lamina praerenalis
3. Lamina retrorenalis
4. Capsula adiposa

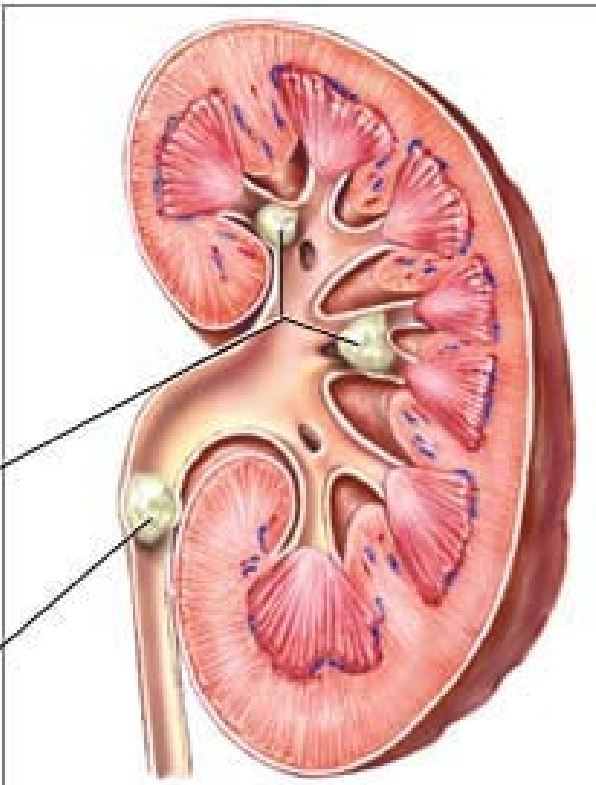
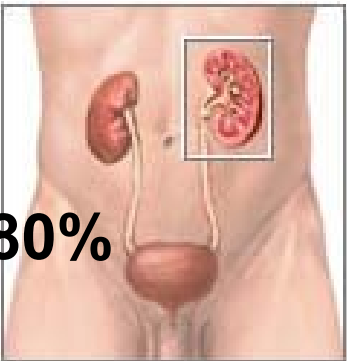
5. Corpus adiposum pararenale
6. Peritoneum
7. Fascia transversalis



# Nephrolithiasis

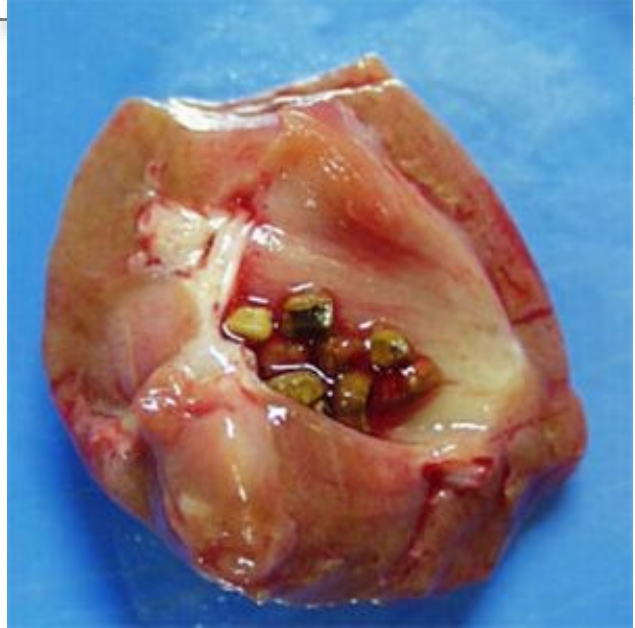
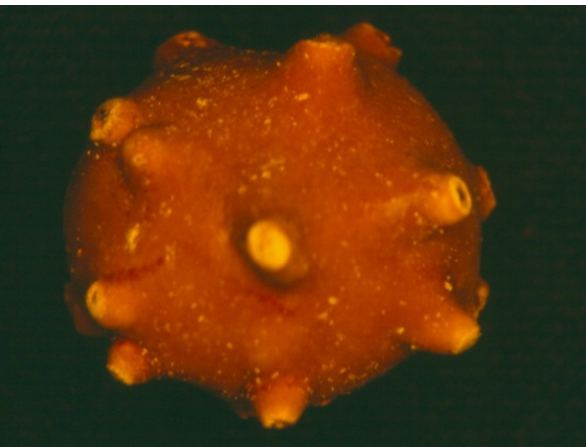
Calcium oxalate crystals - 80%

Uric acid - 5 - 10%



Kidney stones in the minor and major calyces of the kidney

Kidney stone in the ureter





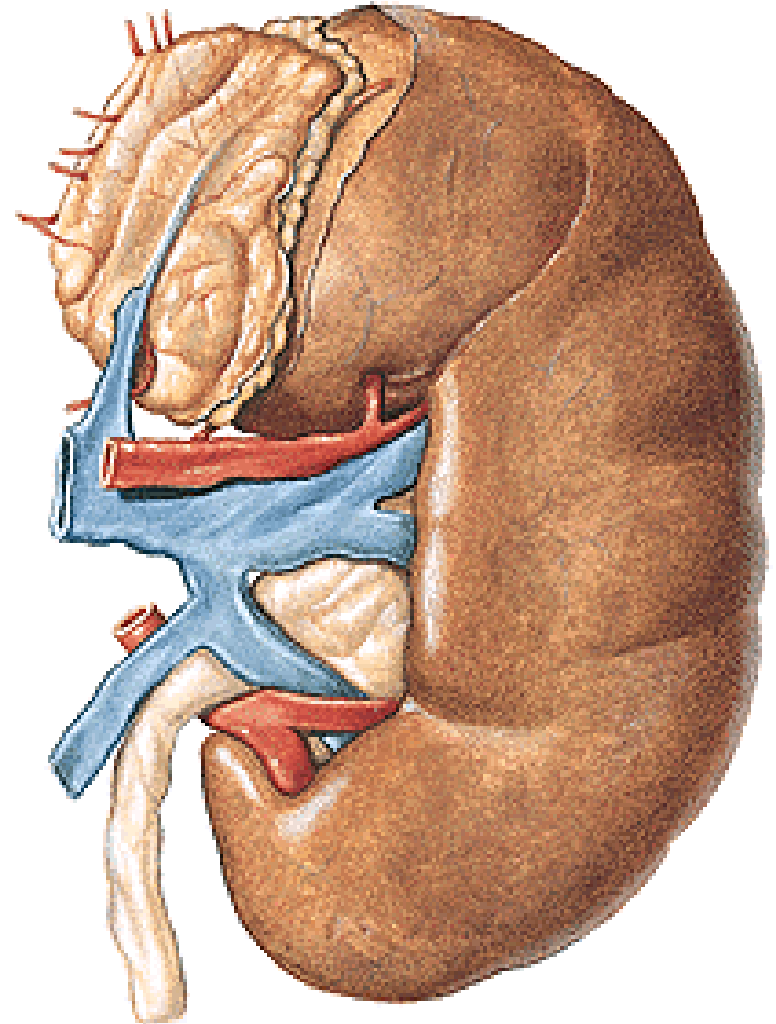
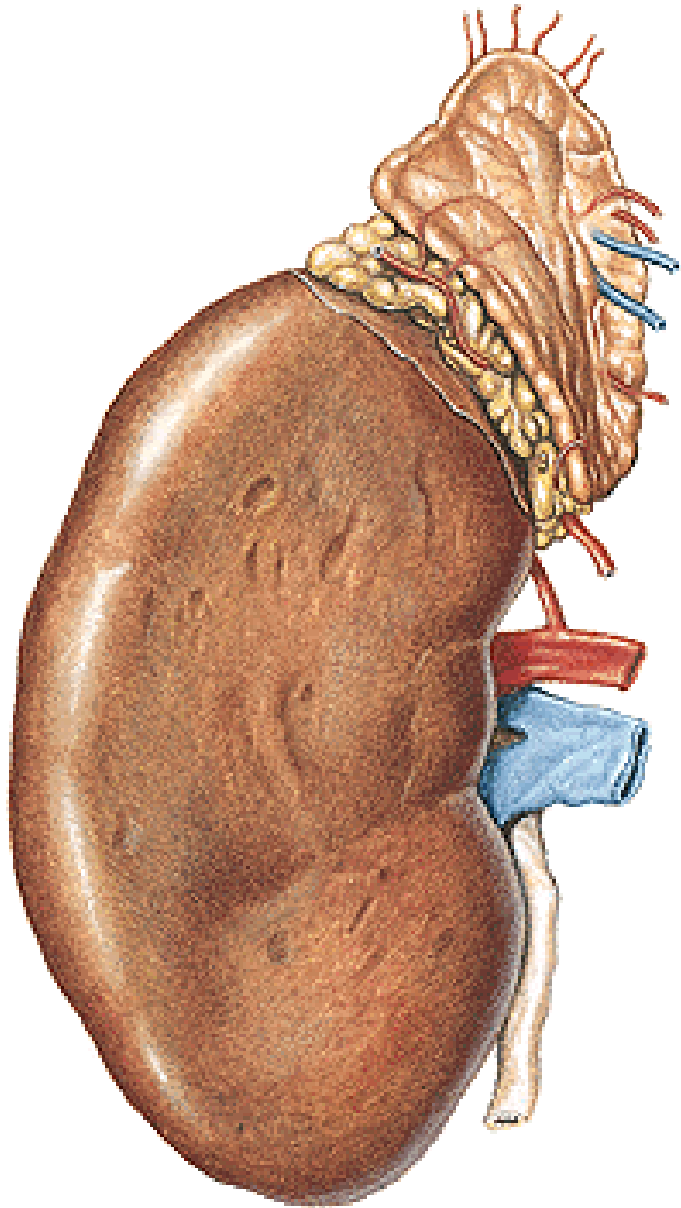


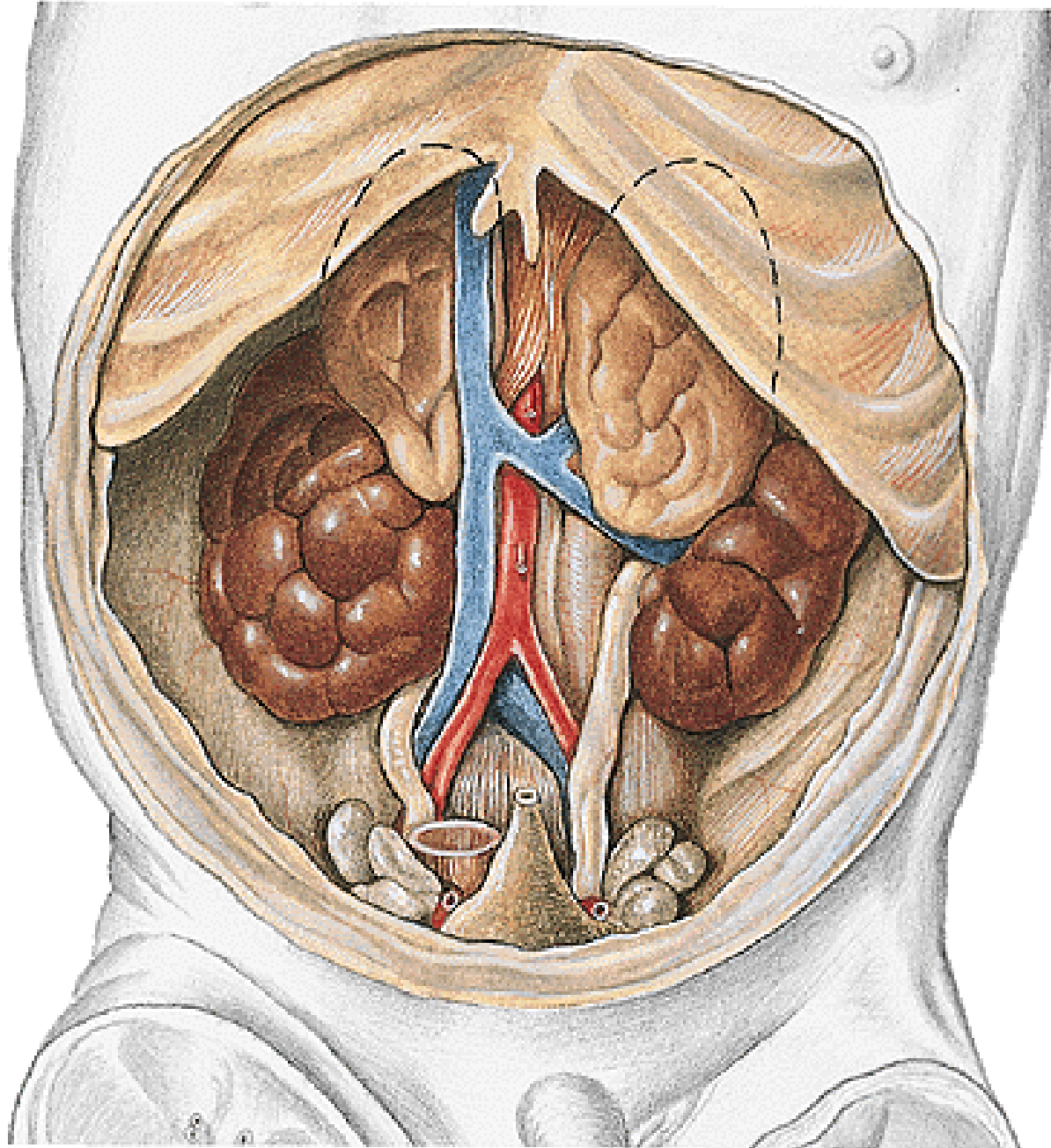


**Cross-sectional image through the L1 obtained with CT**

**GLANDULA SUPRARENALIS – facies anterior – hilum**  
- facies posterior  
- facies renalis

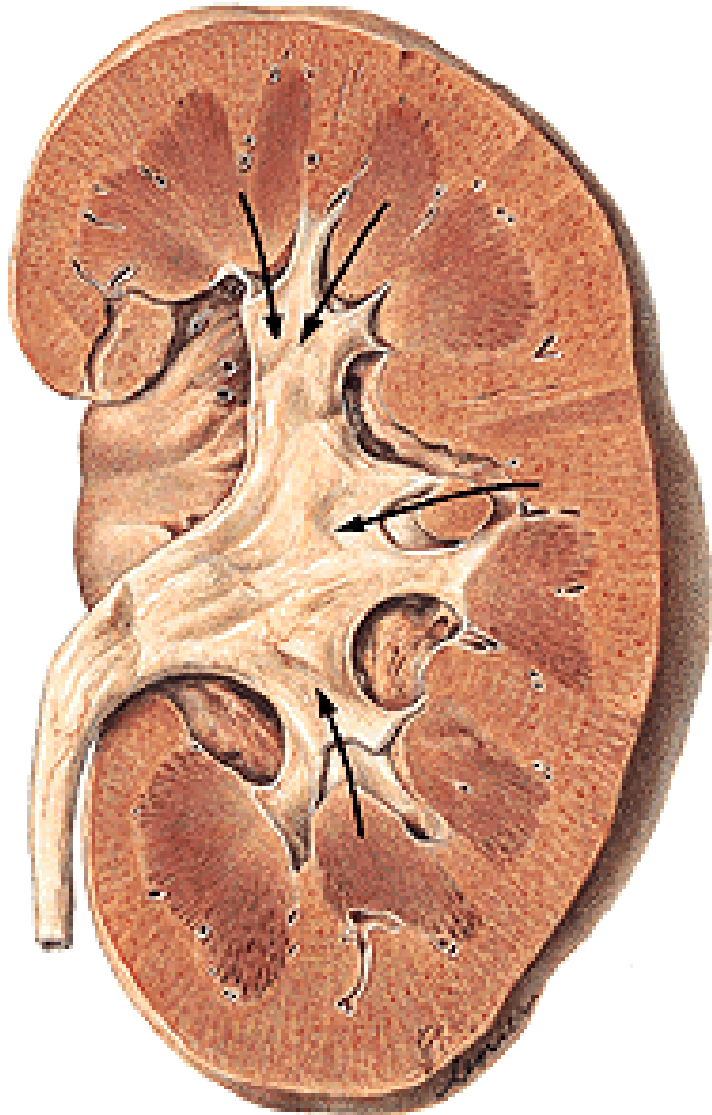
**Cortex**  
**Medulla**





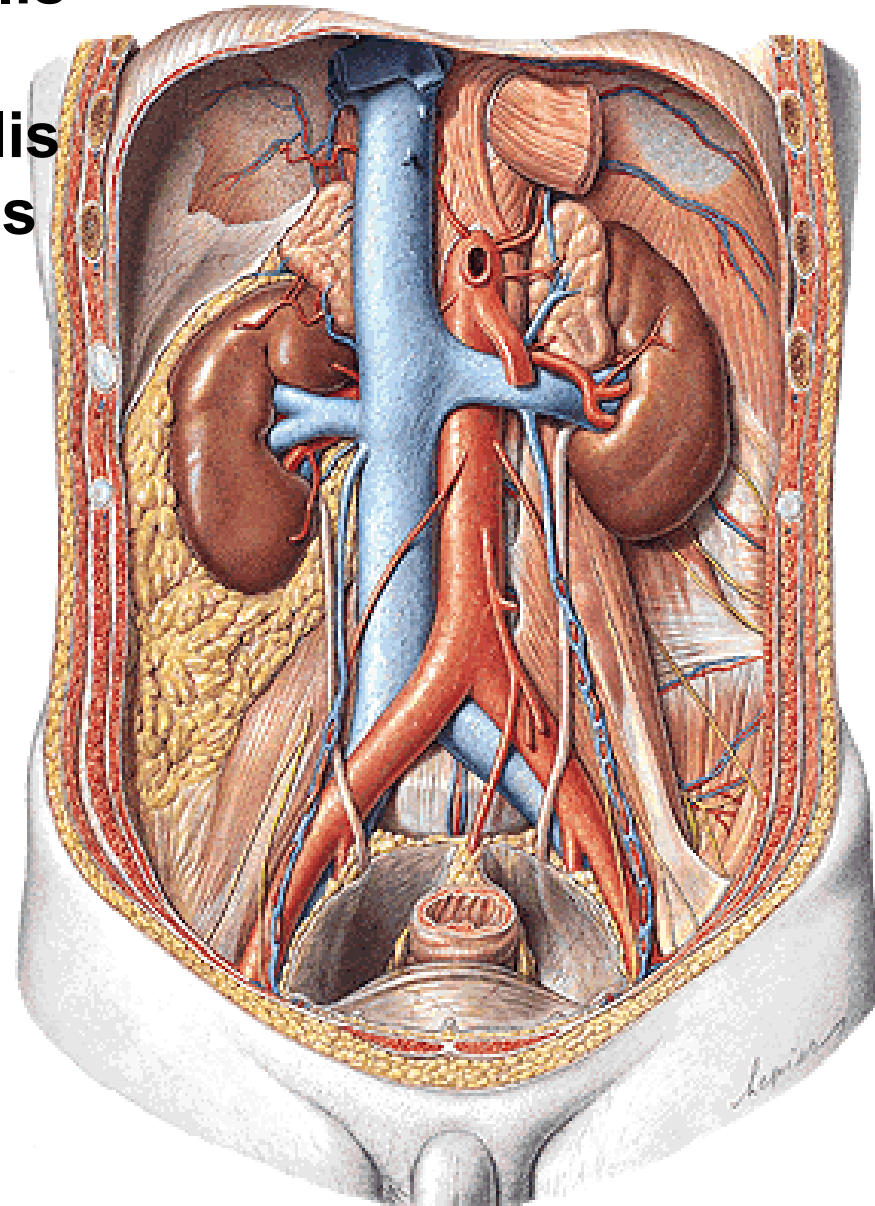
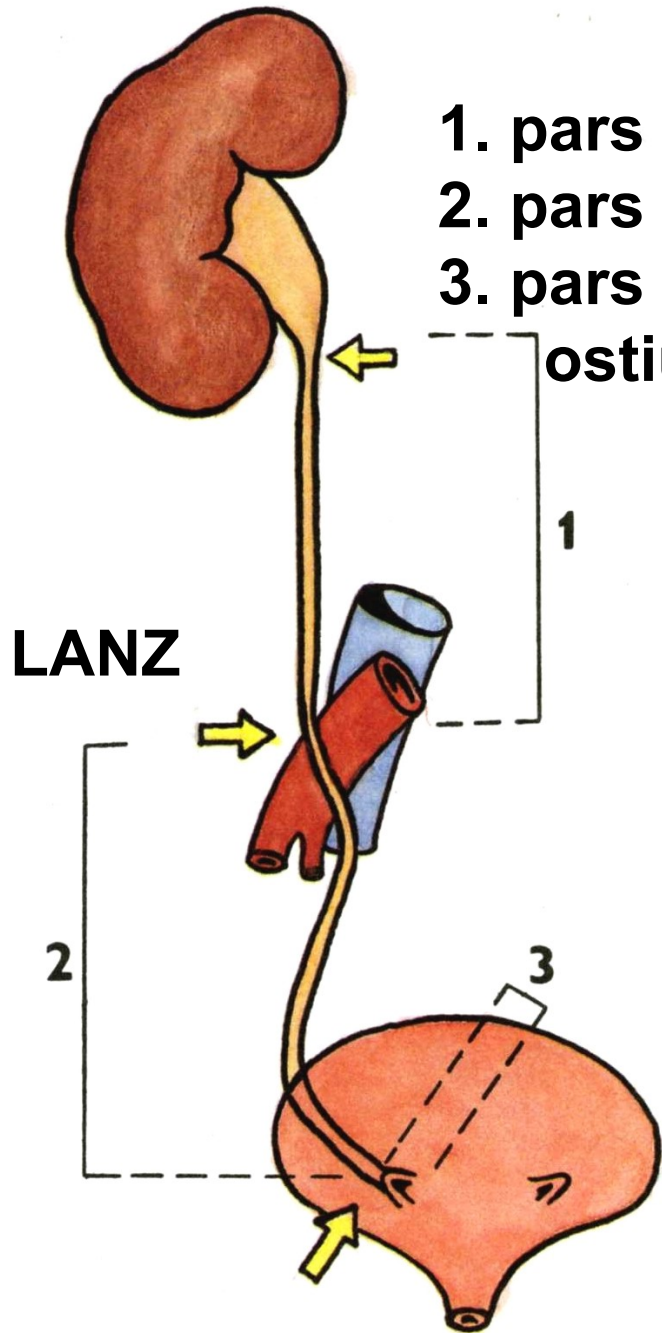
**Five-month old fetus**

# CALICES RENALES – minores et majores PELVIS RENALIS



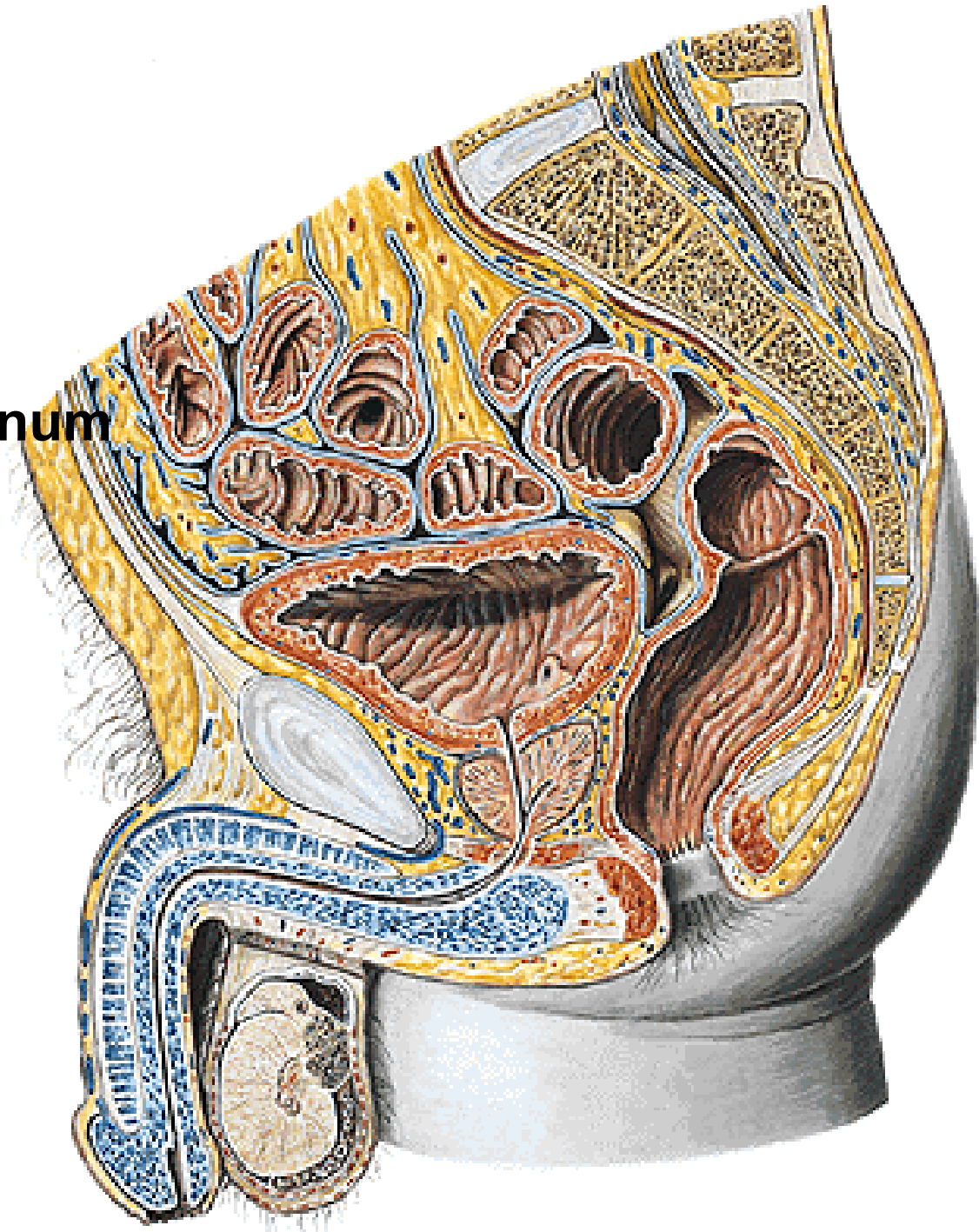
# URETER

1. pars abdominalis
  2. pars pelvina
  3. pars intramuralis
- ostium ureteris



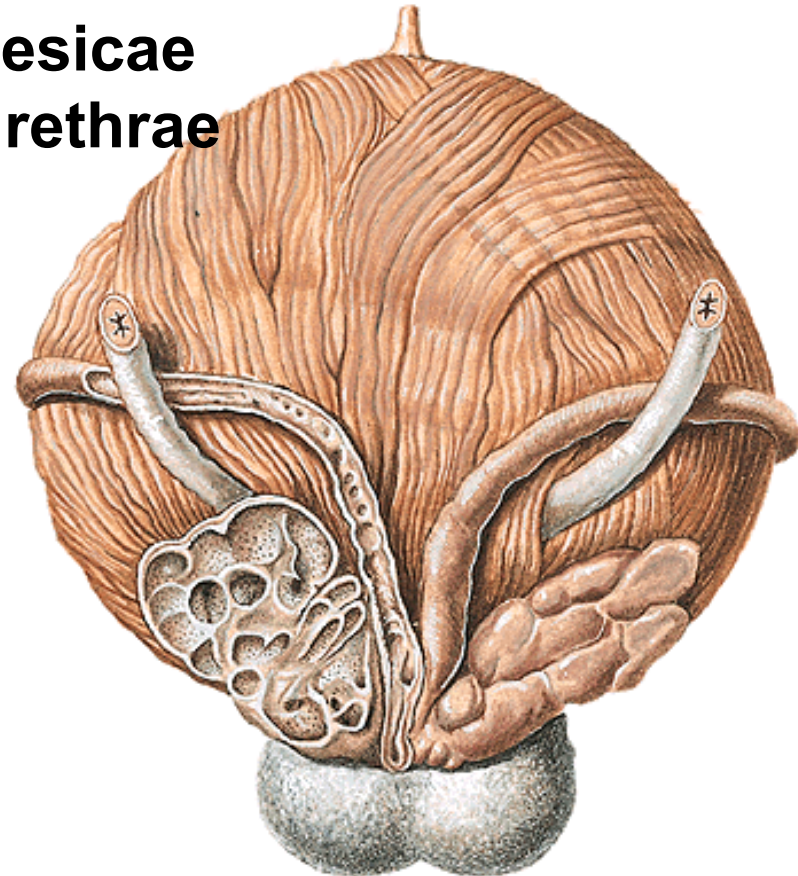
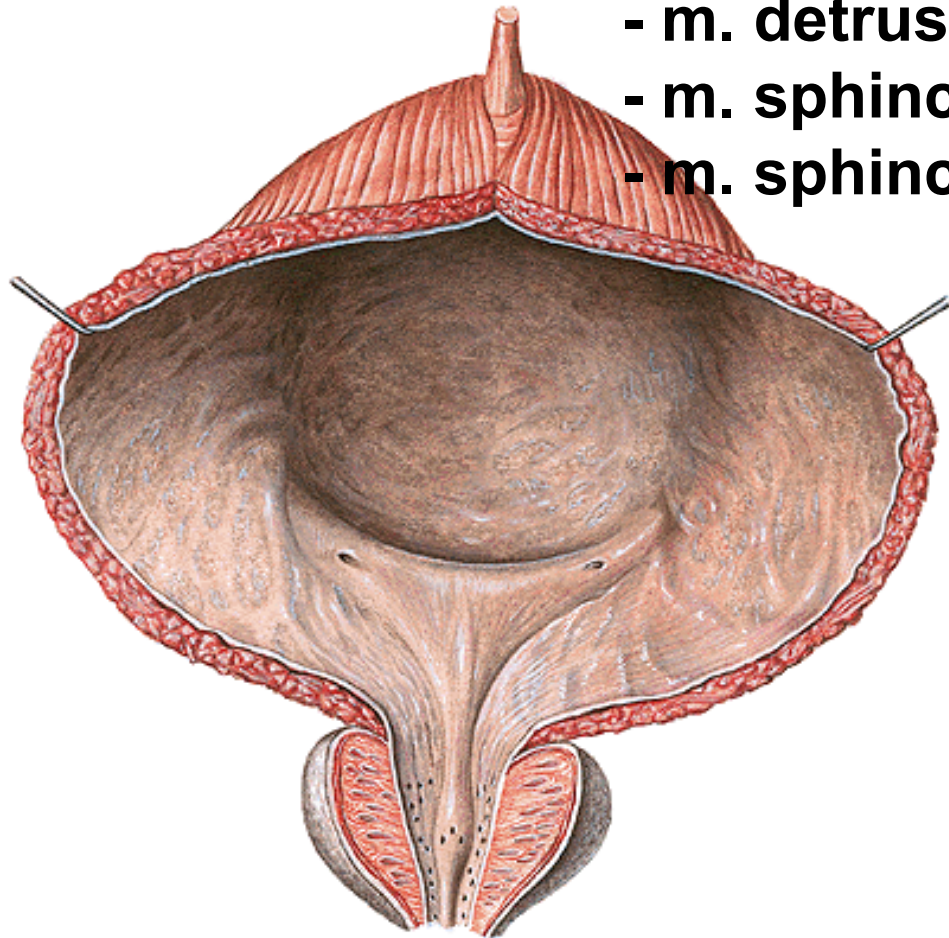
# VESICA URINARIA

- fundus vesicae
- corpus vesicae
- apex vesicae
  - lig. umbilicale medianum
- cervix vesicae



# Trigonum vesicae – ostia ureterum

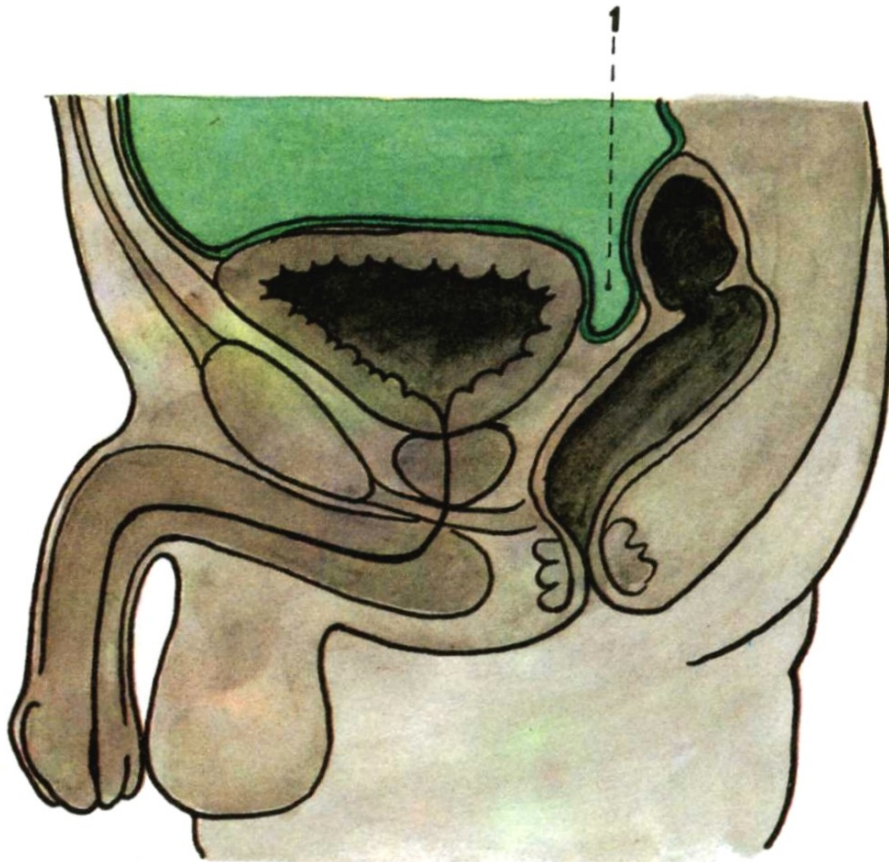
- ostium urethrae internum
- plica interureterica
- fossa retrotrigonalis
- bundles of Bell
- uvula vesicae
- m. detrusor
- m. sphincter vesicae
- m. sphincter urethrae





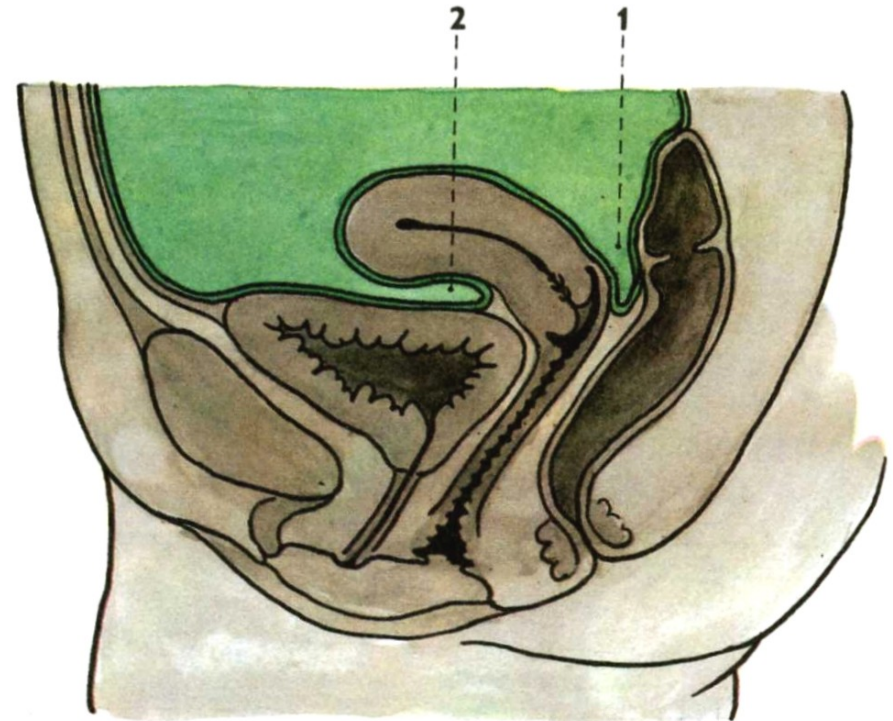
## Median section through the male pelvis

1. Excavatio rectovesicalis



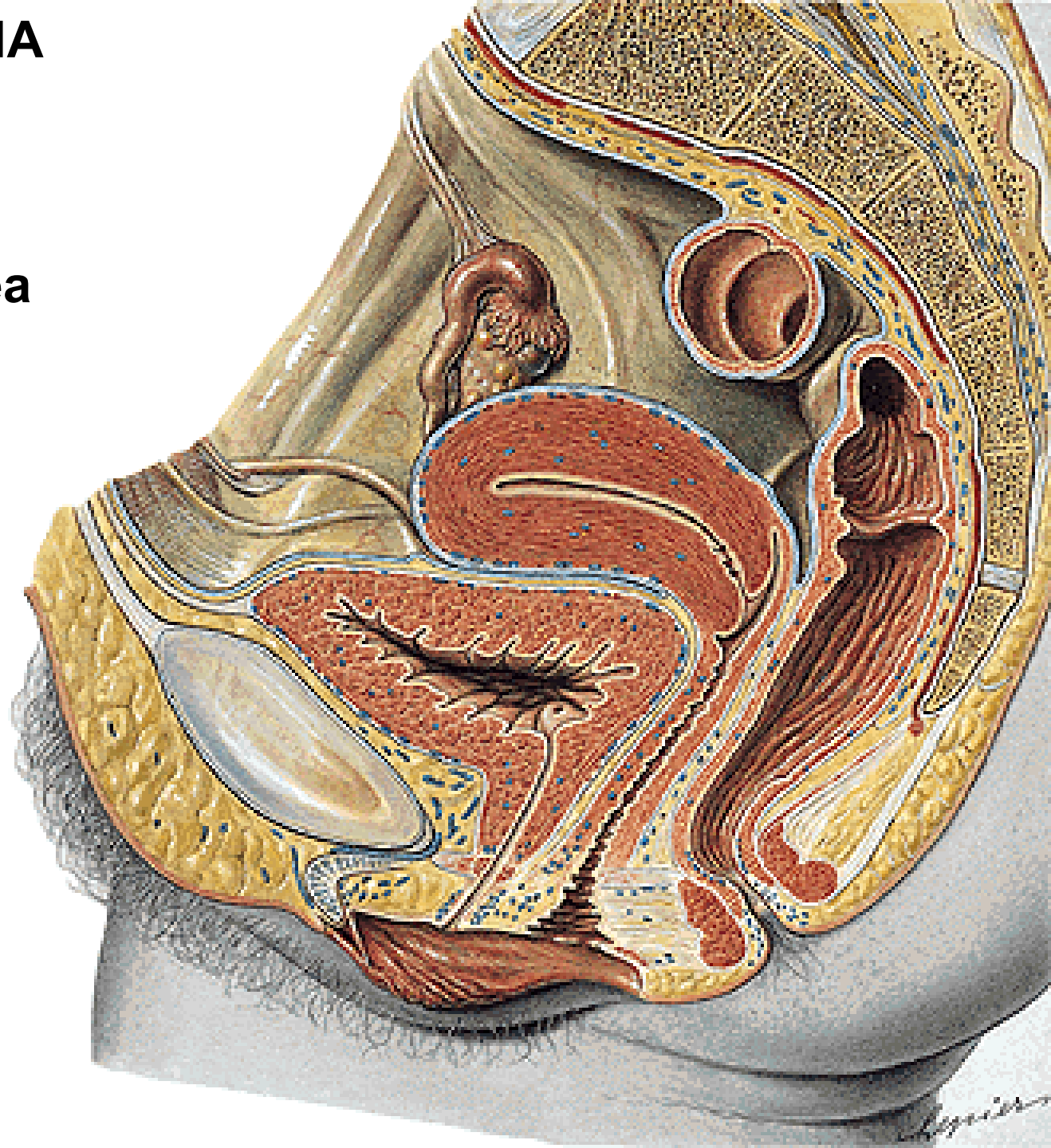
## Median section through the female pelvis

1. Excavatio rectouterina  
2. Excavatio vesicouterina



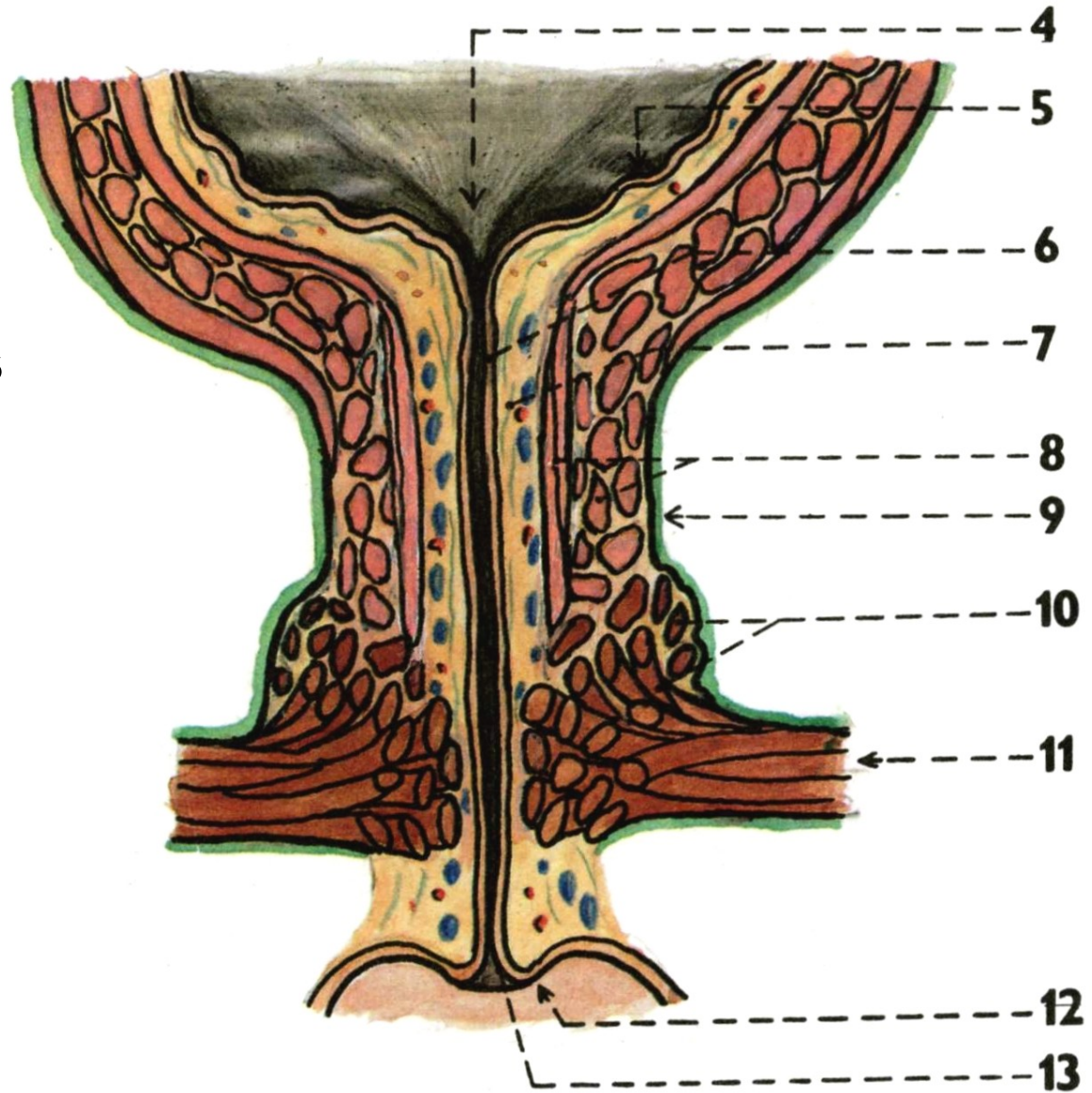
# URETHRA FEMININA

- pars intramuralis
- pars pelvina
- pars membranacea
- pars perinealis



# URETHRA FEMININA

**Crista urethralis**  
**Lacunae urethrales**  
**Glandulae urethrales**  
**Ductus paraurethrales**



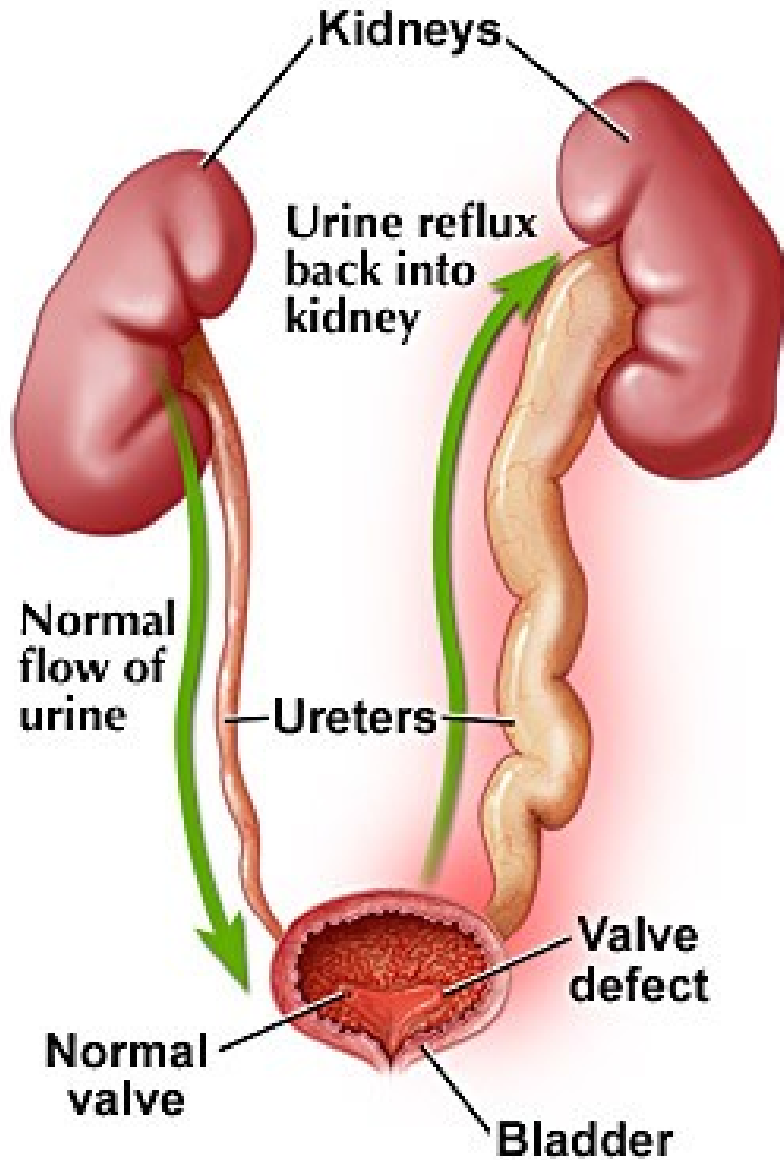
IVU



# Retrograde pyelography



# Vesicoureteral reflux (VUR) – voiding cystourethrogram (VCU)

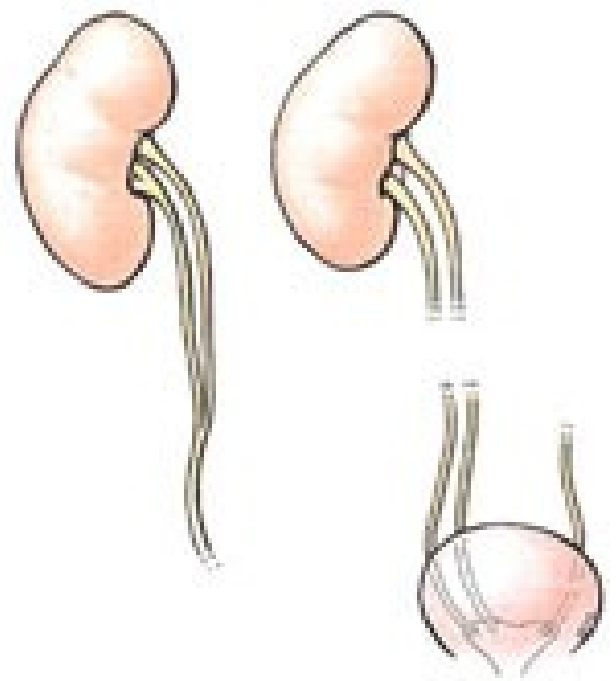


## Retrocaval ureter



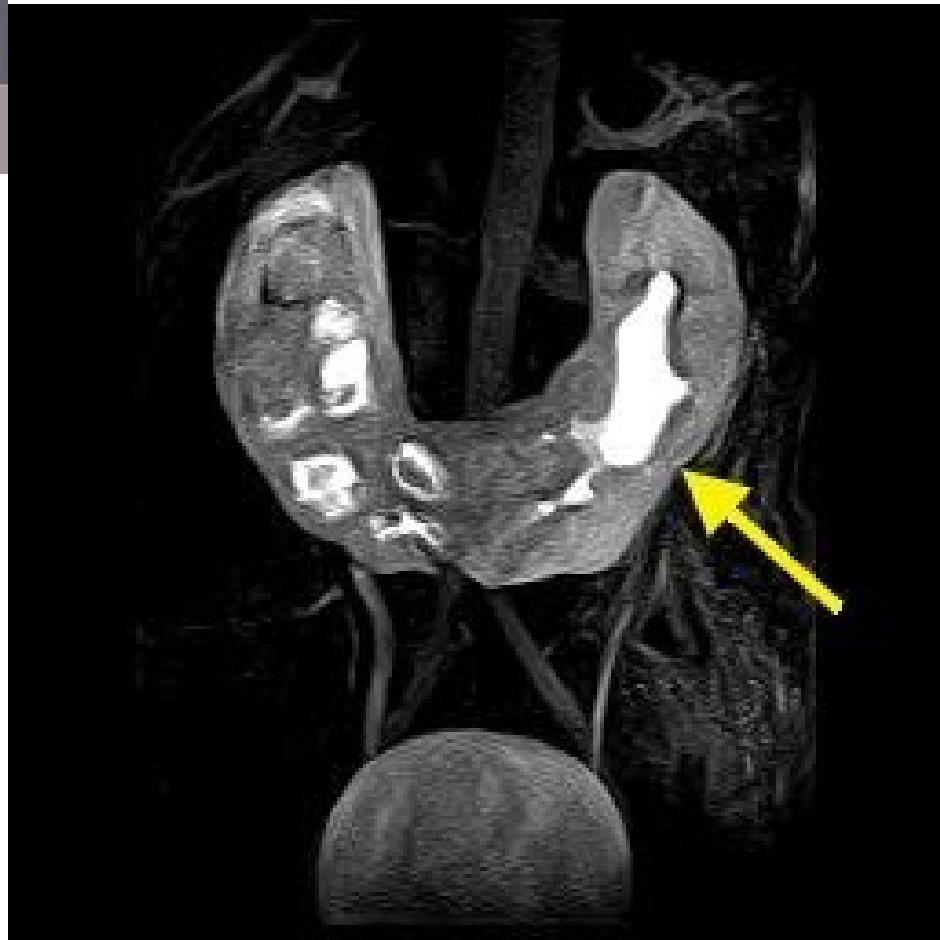


## Ureter duplex





## Horseshoe kidney



Illustrations 2, 3, 5, 6, 8, 9, 12, 17-24, 26 and 28 were copied from:

**Atlas der Anatomie des Menschen/Sobotta.  
Putz,R., und Pabst,R. 20. Auflage. München:  
Urban & Schwarzenberg, 1993)**

Illustrations 4, 7, 10, 11, 13-15, 21, 25, and 27 were copied from:

**Čihák R: Anatomie 2 (Splanchnologia). Avicenum,  
zdravotnické nakladatelství, Praha, 1988.**