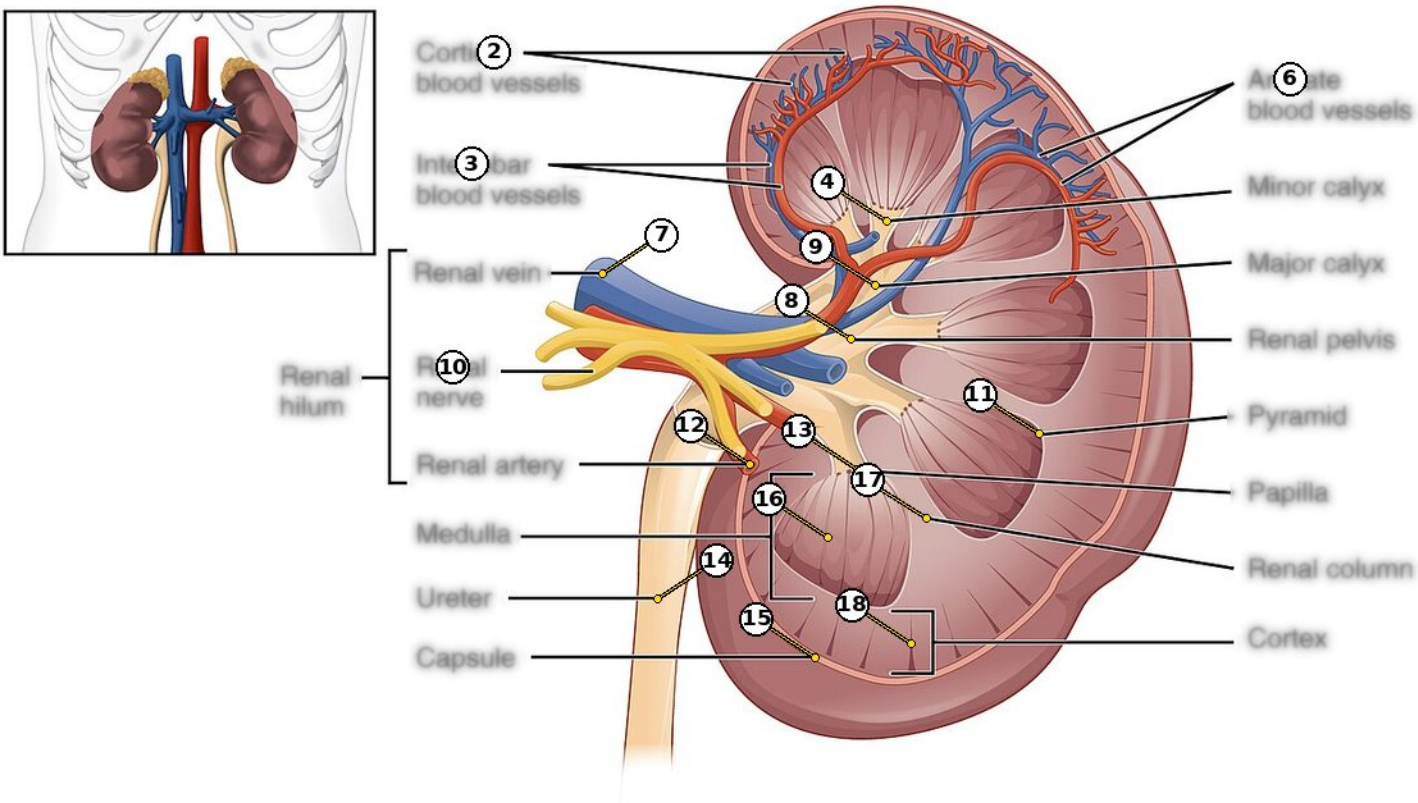
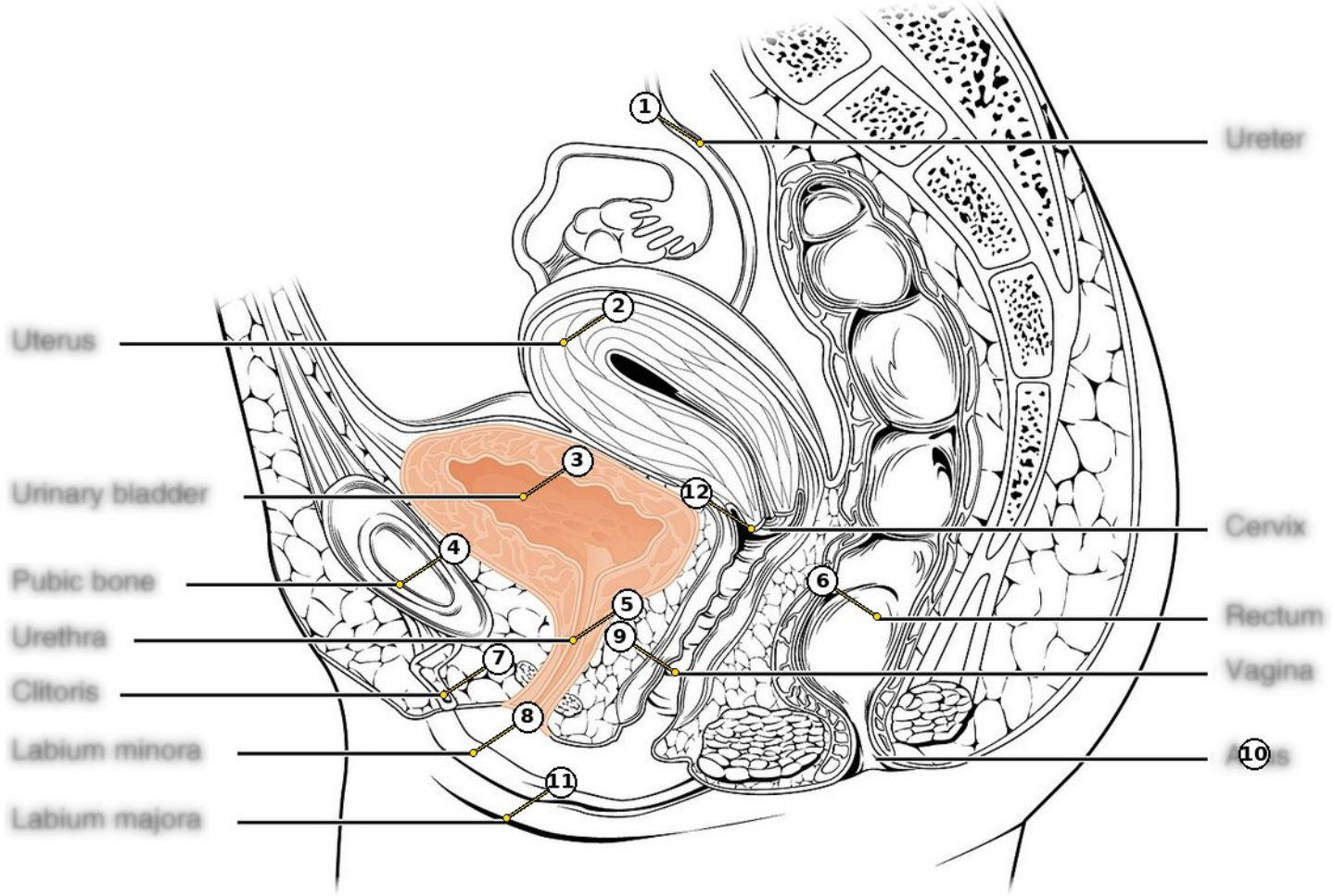
The kidney in section, and its blood vessels



1	**2**	**3**
4	**5**	**6**
7	**8**	**9**
10	**11**	**12**
13	**14**	**15**
16	**17**	**18**

Credit: OpenStax College · CC BY 3.0 · commons.wikimedia.org/wiki/File%3A2610_The_Kidney.jpg

A female pelvis in sagittal section

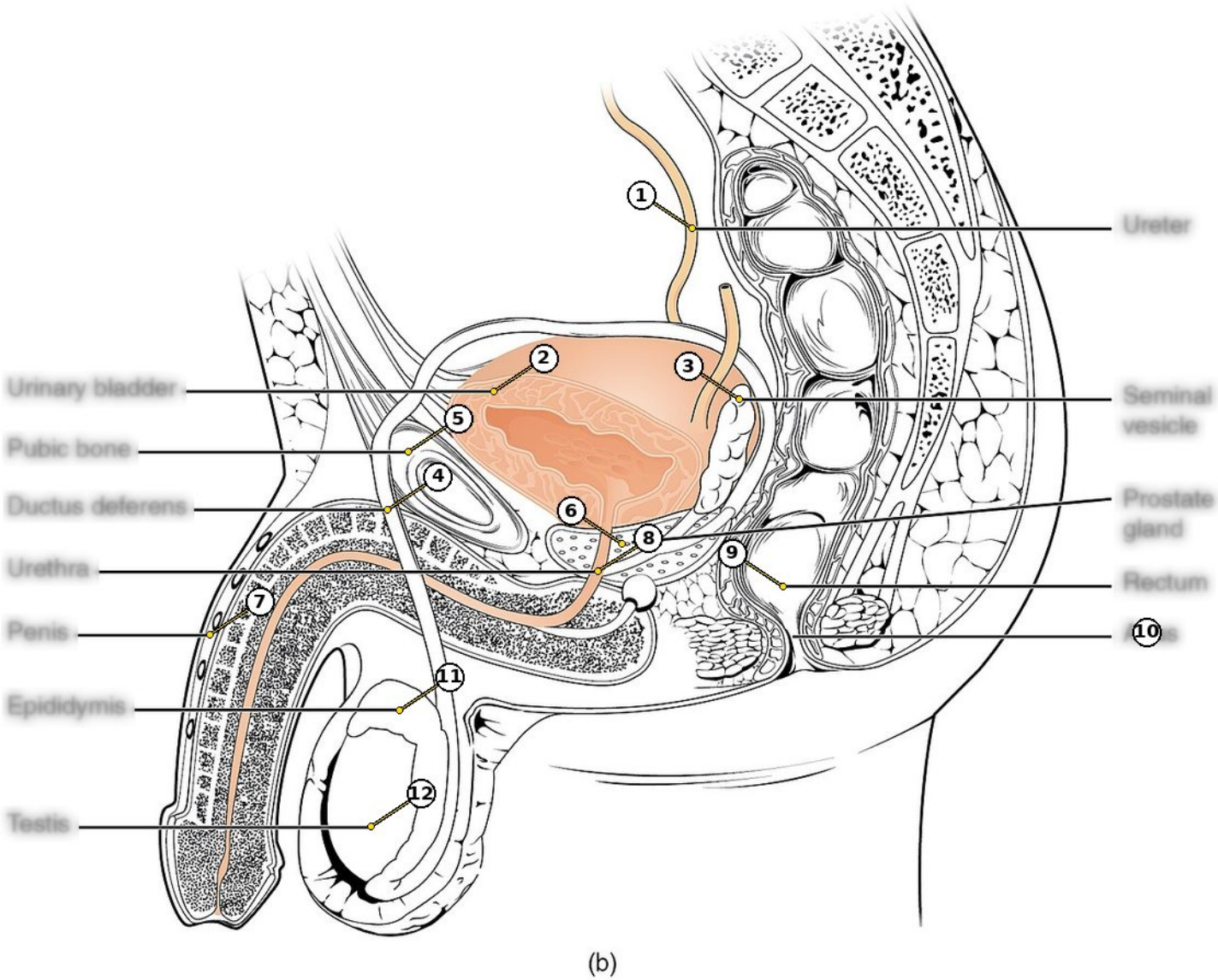


(a)

1		**2**	
3		**4**	
5		**6**	
7		**8**	
9		**10**	
11		**12**	

Credit: OpenStax Anatomy and Physiology · CC BY 4.0 · commons.wikimedia.org/wiki/File%3A2602_Female_Urethra.jpg

A male pelvis in sagittal section

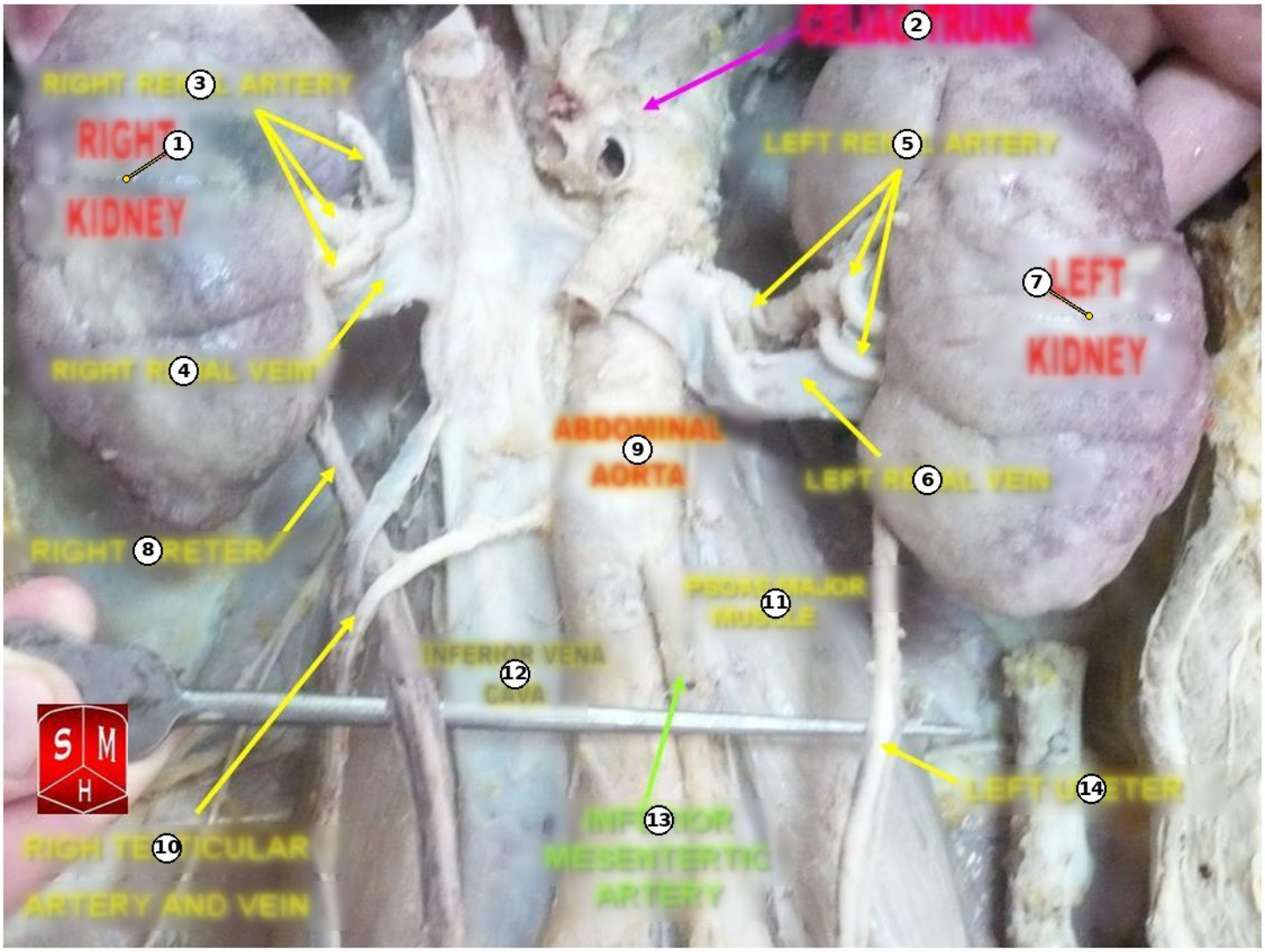


(b)

1		**2**	
3		**4**	
5		**6**	
7		**8**	
9		**10**	
11		**12**	

Credit: OpenStax Anatomy and Physiology · CC BY 4.0 · commons.wikimedia.org/wiki/File%3A2603_Male_Urethra_N.jpg

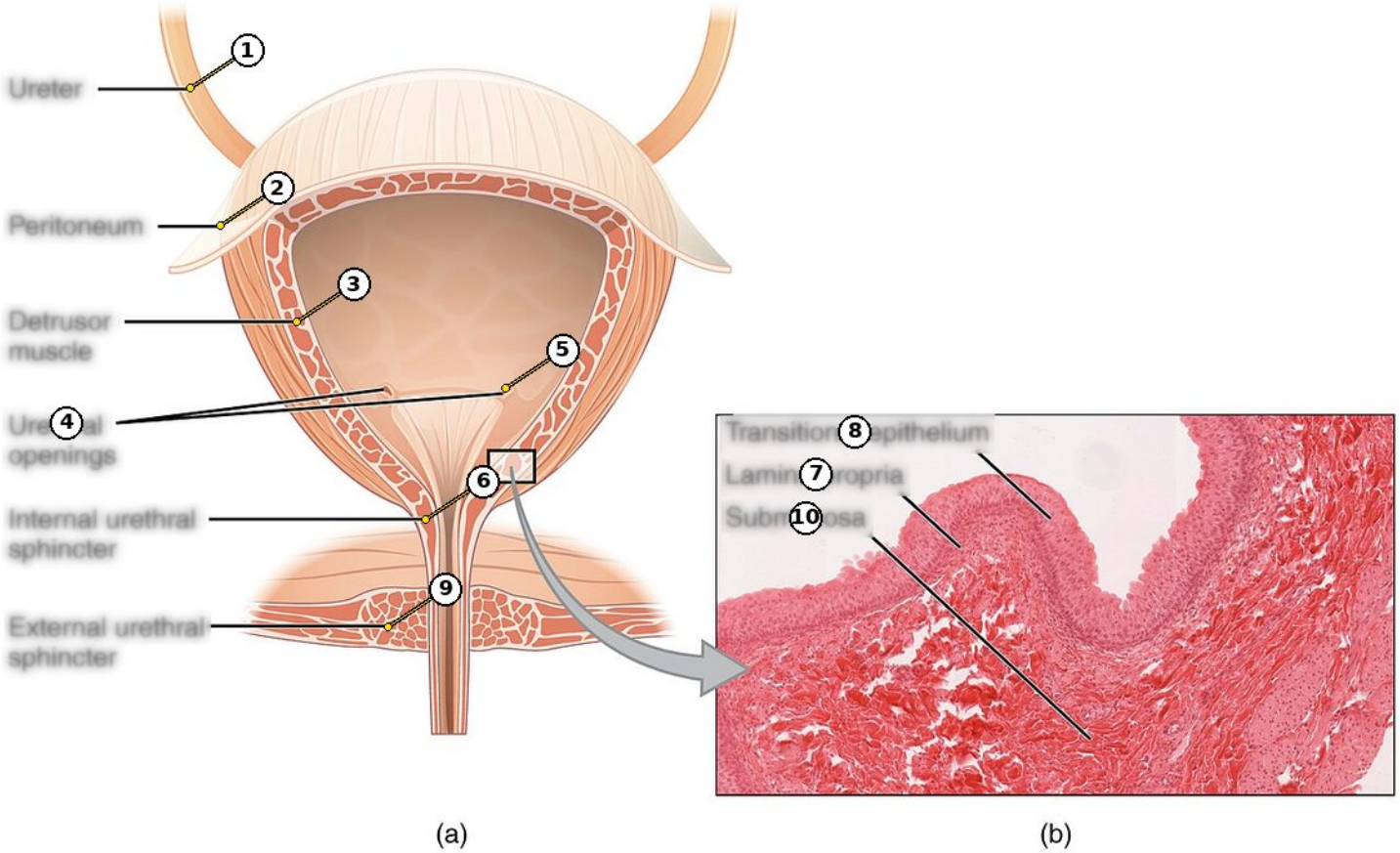
Both kidneys and their vessels, dissection



1		**2**	
3		**4**	
5		**6**	
7		**8**	
9		**10**	
11		**12**	
13		**14**	

Credit: Anatomist90 · CC BY-SA 3.0 · commons.wikimedia.org/wiki/File%3AKidneys.jpg

The urinary bladder opened anteriorly, and its wall in a micrograph



1 _____ **2** _____

3 _____ **4** _____

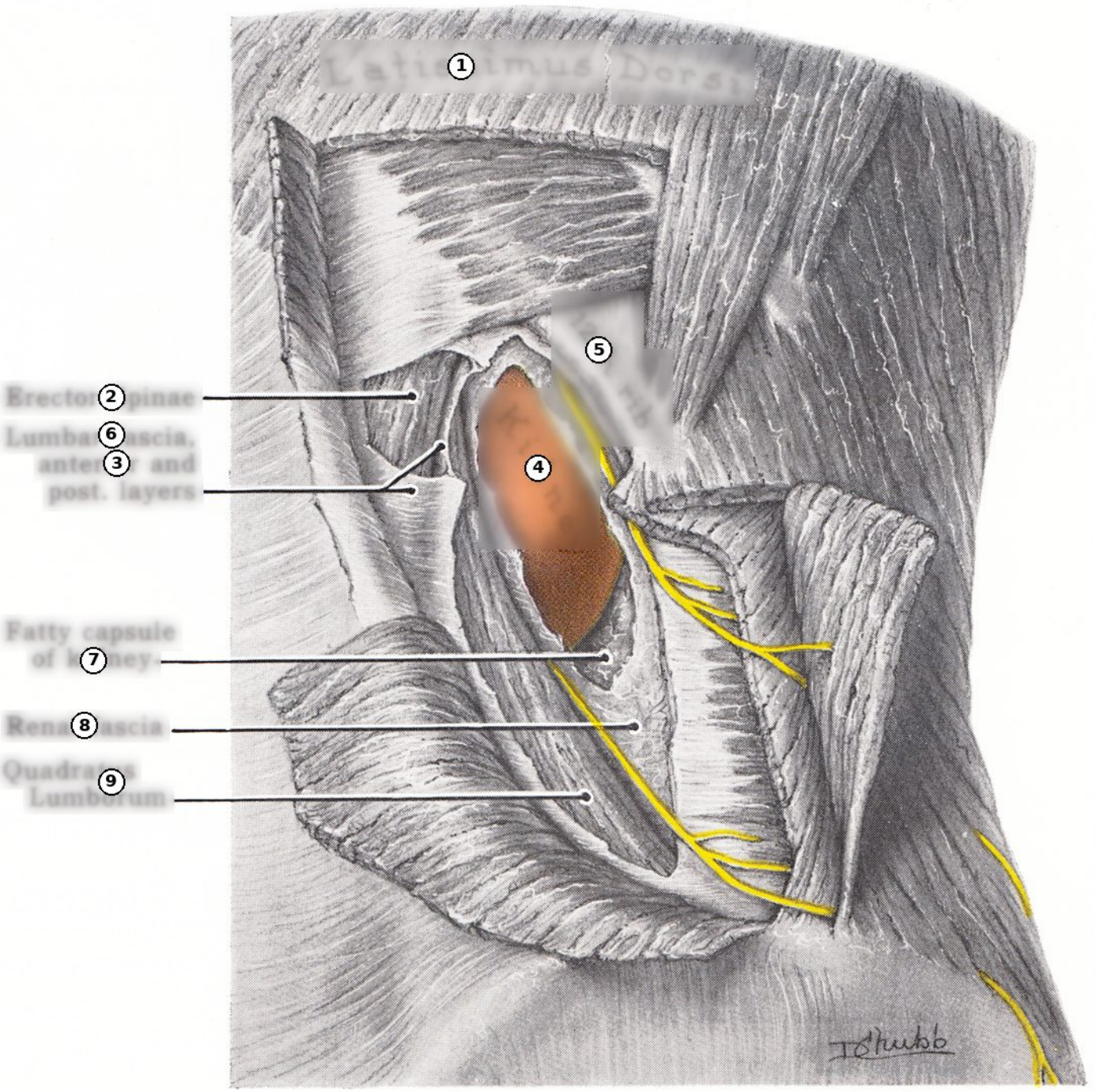
5 _____ **6** _____

7 _____ **8** _____

9 _____ **10** _____

Credit: OpenStax College · CC BY 3.0 · commons.wikimedia.org/wiki/File%3A2605_The_Bladder.jpg

The kidney approached posteriorly, through the loin



1 _____ 2 _____

3 _____ 4 _____

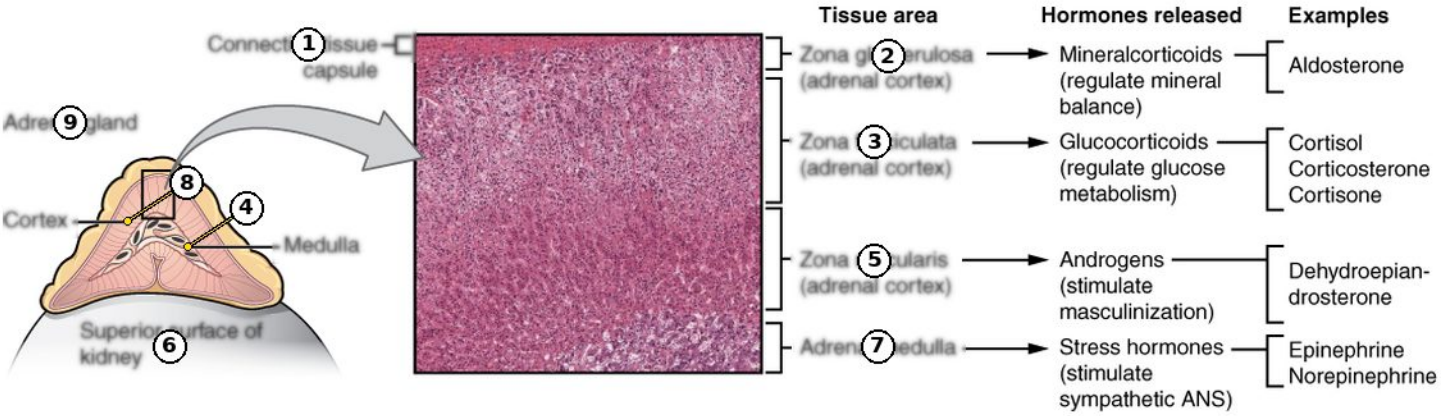
5 _____ 6 _____

7 _____ 8 _____

9 _____

Practise online: medicine.kazimiri.com/semester-1/label/?map=plate-ex25-kidney-from-behind-grant-1
Credit: Grant, John Charles Boileau · Public domain · commons.wikimedia.org/wiki/File%3AGrant_1962_175.png

The adrenal gland and its layers



1 _____ **2** _____

3 _____ **4** _____

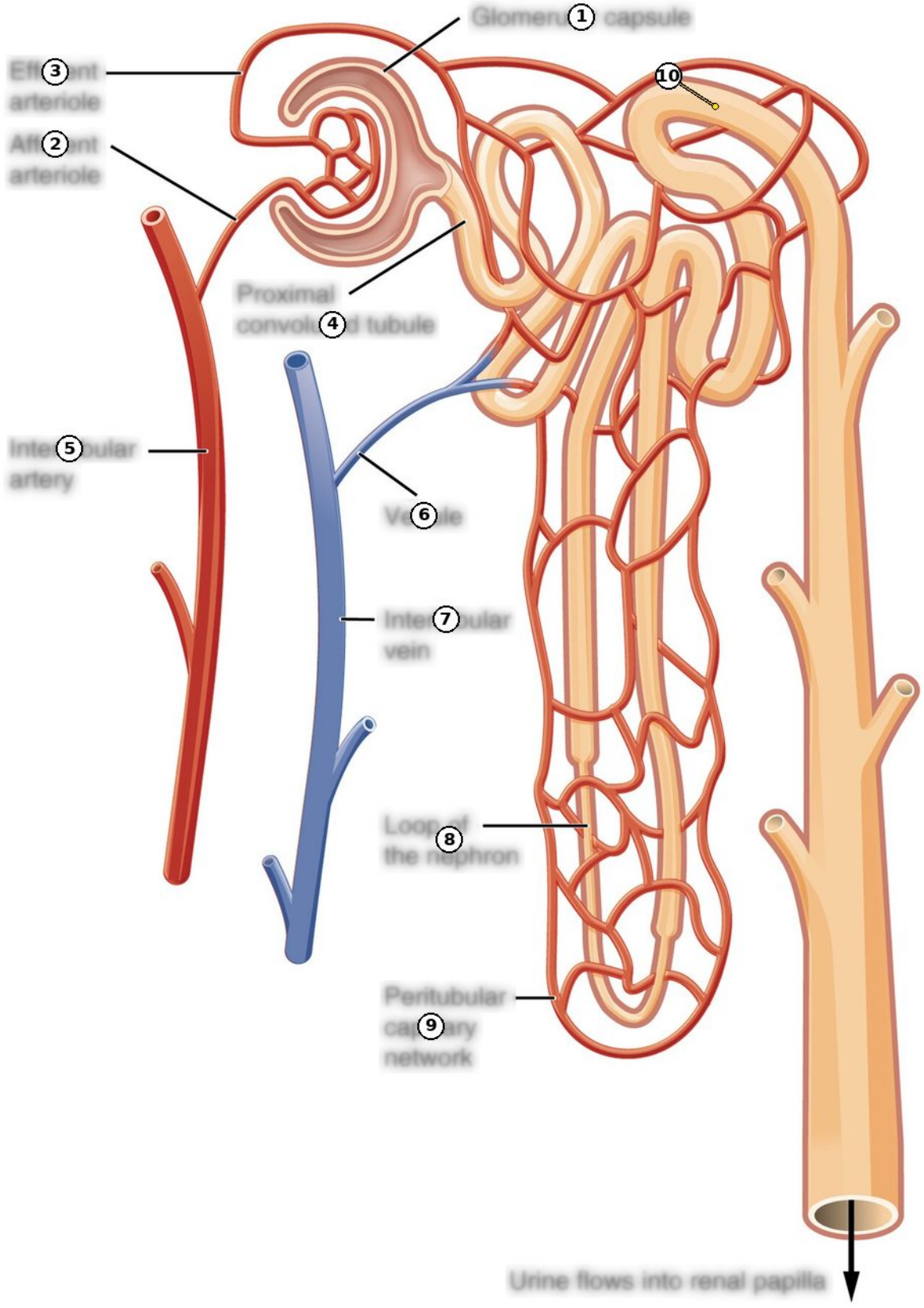
5 _____ **6** _____

7 _____ **8** _____

9 _____

Credit: OpenStax College · CC BY 3.0 · commons.wikimedia.org/wiki/File%3A1818_The_Adrenal_Glands.jpg

A kidney tubule and its blood vessels (OpenStax)



1 _____ **2** _____

3 _____ **4** _____

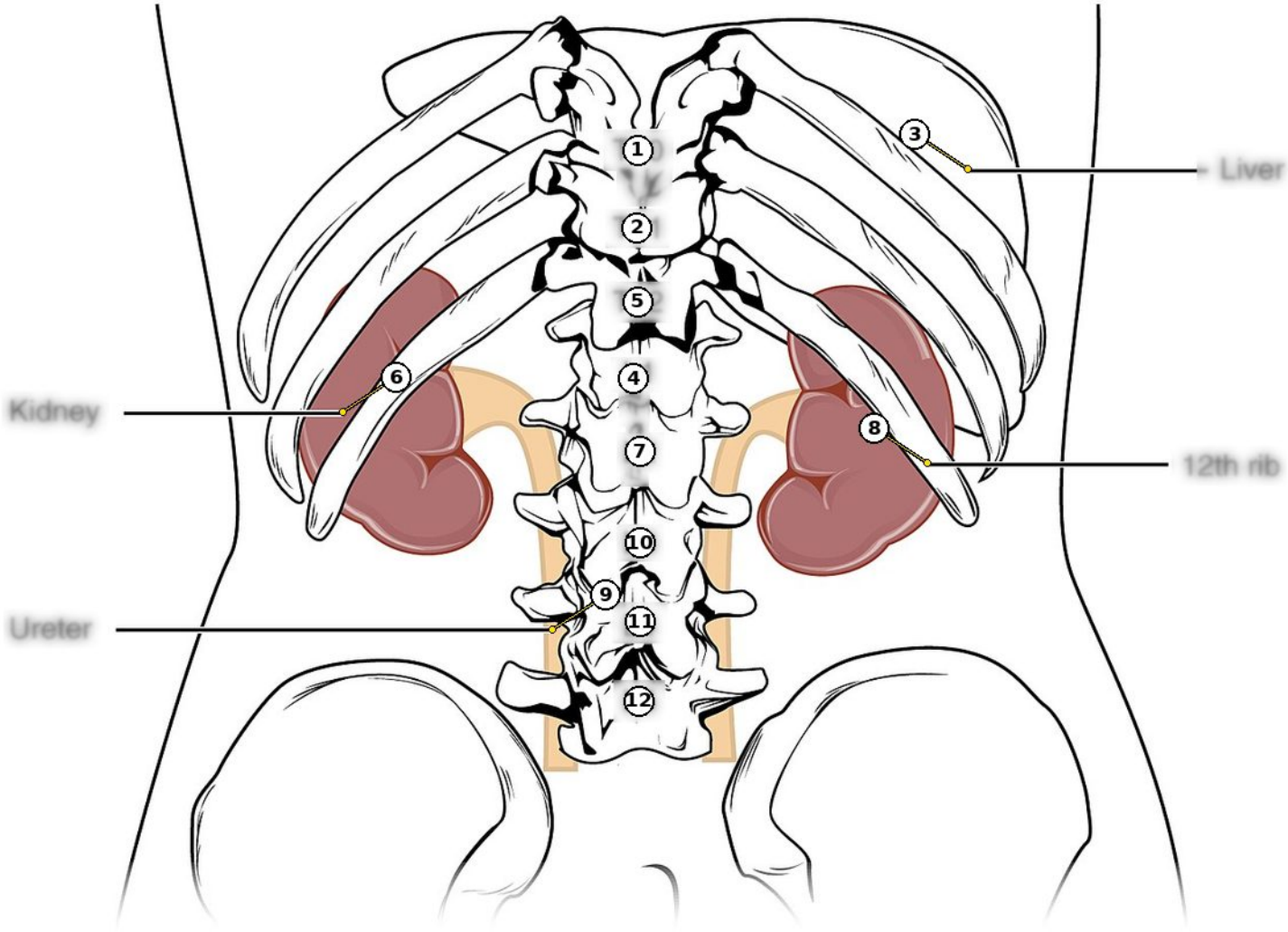
5 _____ **6** _____

7 _____ **8** _____

9 _____ **10** _____

Credit: OpenStax College · CC BY 3.0 · commons.wikimedia.org/wiki/File%3A2611_Blood_Flow_in_the_Nephron.jpg

The lower thoracic and lumbar region, posterior view



1 _____ **2** _____

3 _____ **4** _____

5 _____ **6** _____

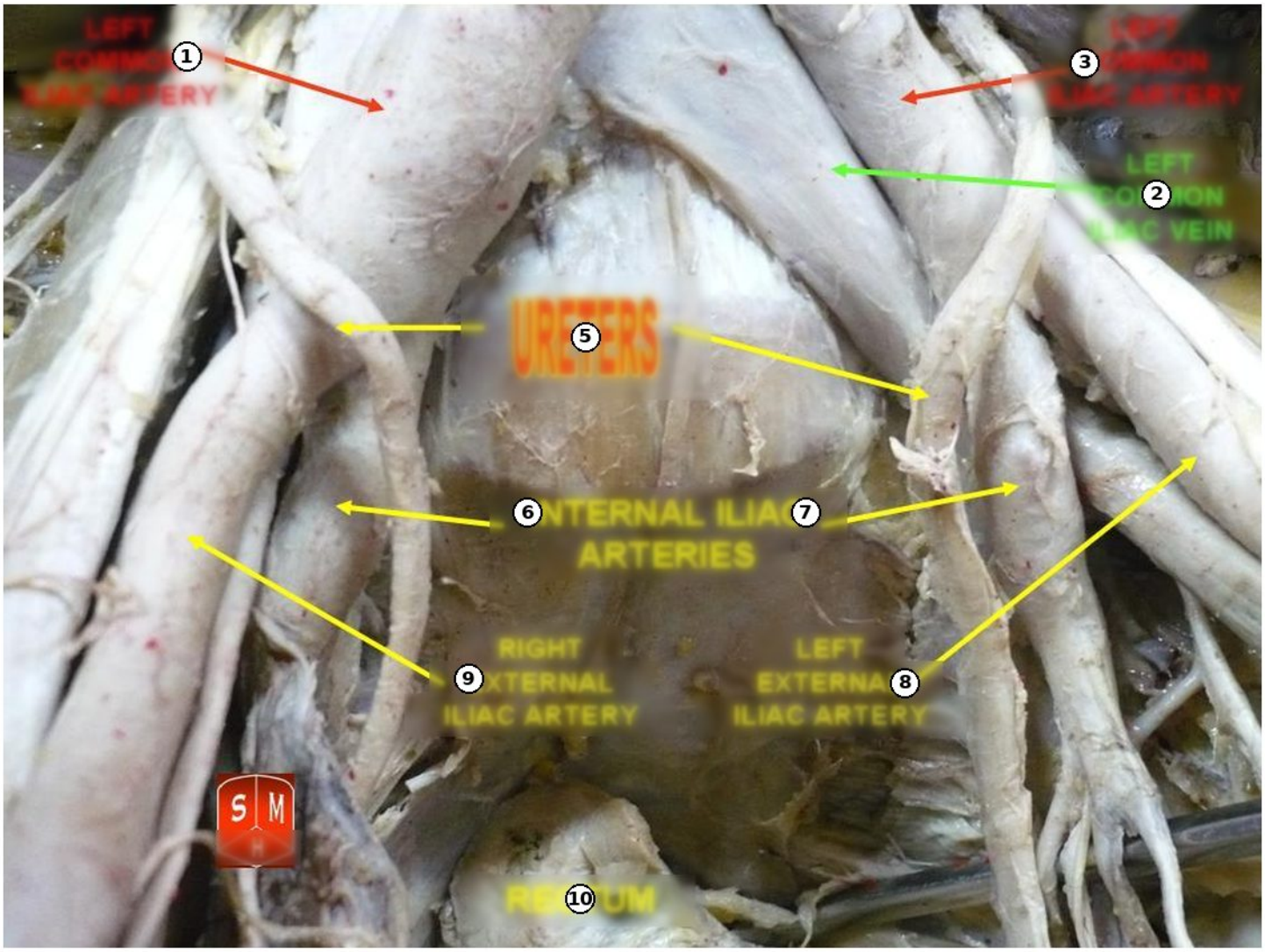
7 _____ **8** _____

9 _____ **10** _____

11 _____ **12** _____

Credit: OpenStax College · CC BY 3.0 · commons.wikimedia.org/wiki/File%3A2608_Kidney_Position_in_Abdomen.jpg

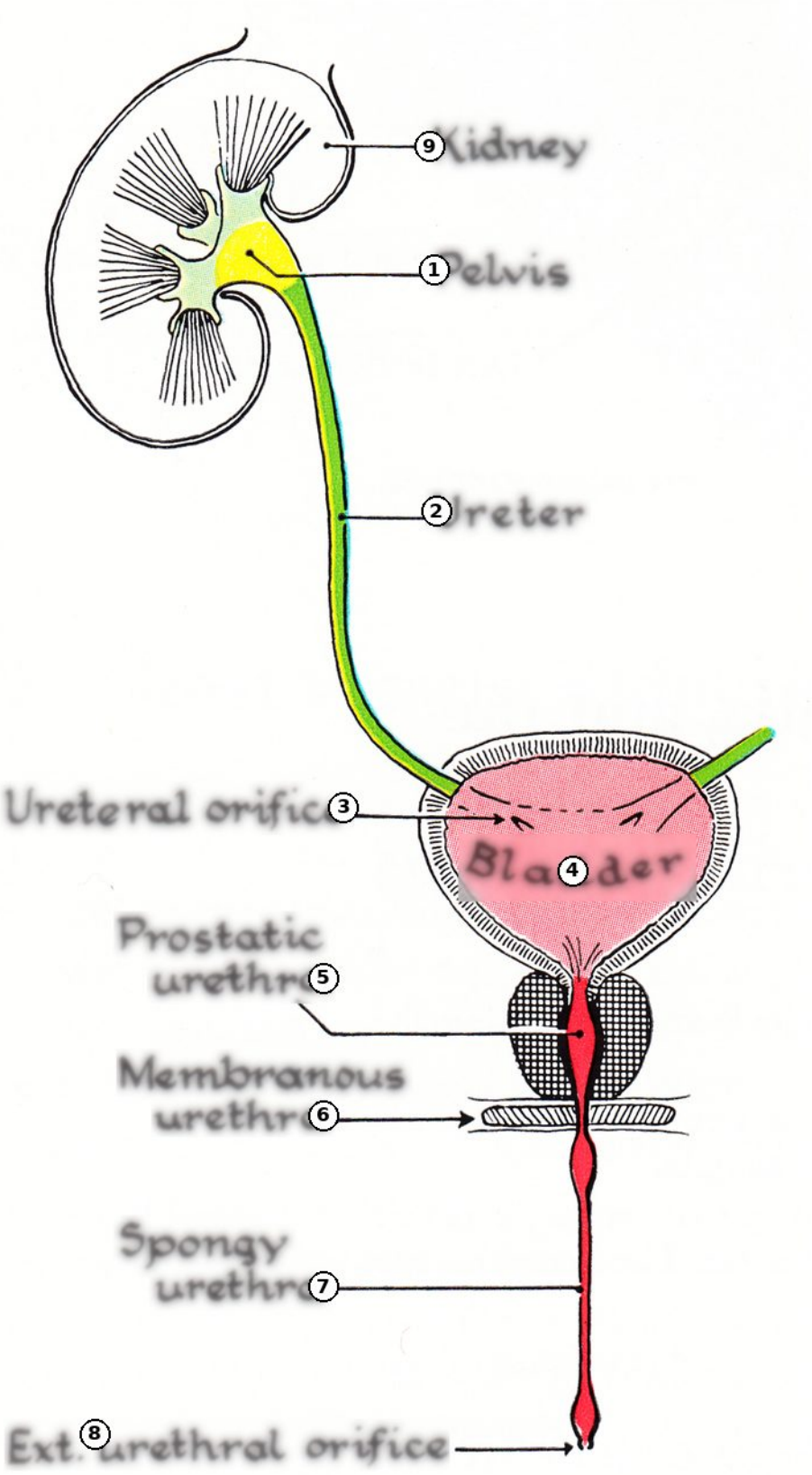
A real dissection: the vessels at the pelvic brim, superior view



1		**2**	
3		**4**	
5		**6**	
7		**8**	
9		**10**	

Credit: Anatomist90 · CC BY-SA 3.0 · commons.wikimedia.org/wiki/File%3AUreters.jpg

The urinary tract, a diagram



1 _____ **2** _____

3 _____ **4** _____

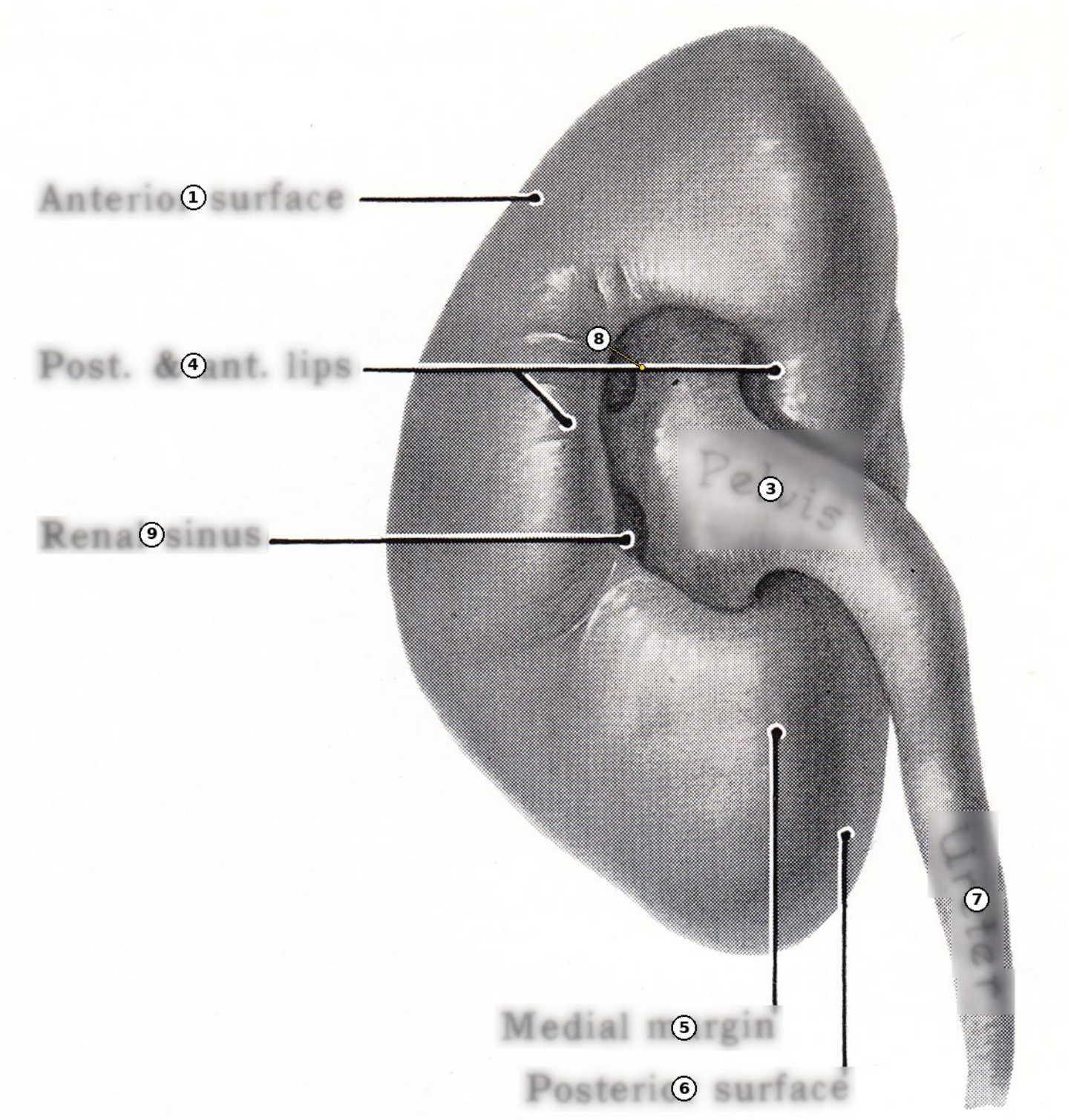
5 _____ **6** _____

7 _____ **8** _____

9 _____

Credit: Grant, John Charles Boileau · Public domain · commons.wikimedia.org/wiki/File%3AGrant_1962_182.png

The right kidney from the medial side



1 _____ 2 _____

3 _____ 4 _____

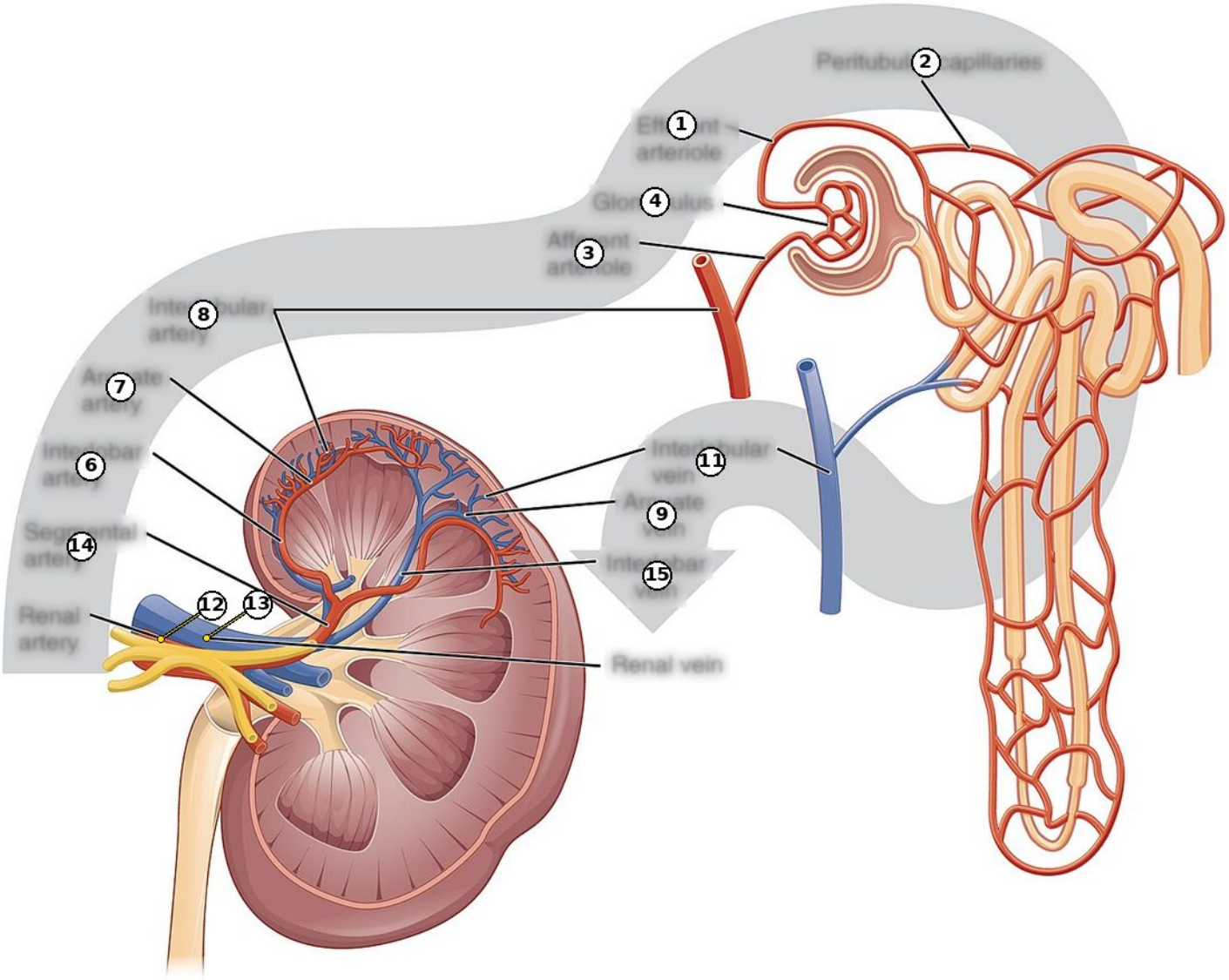
5 _____ 6 _____

7 _____ 8 _____

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Credit: Grant, John Charles Boileau · Public domain · commons.wikimedia.org/wiki/File%3AGrant_1962_181.1.png

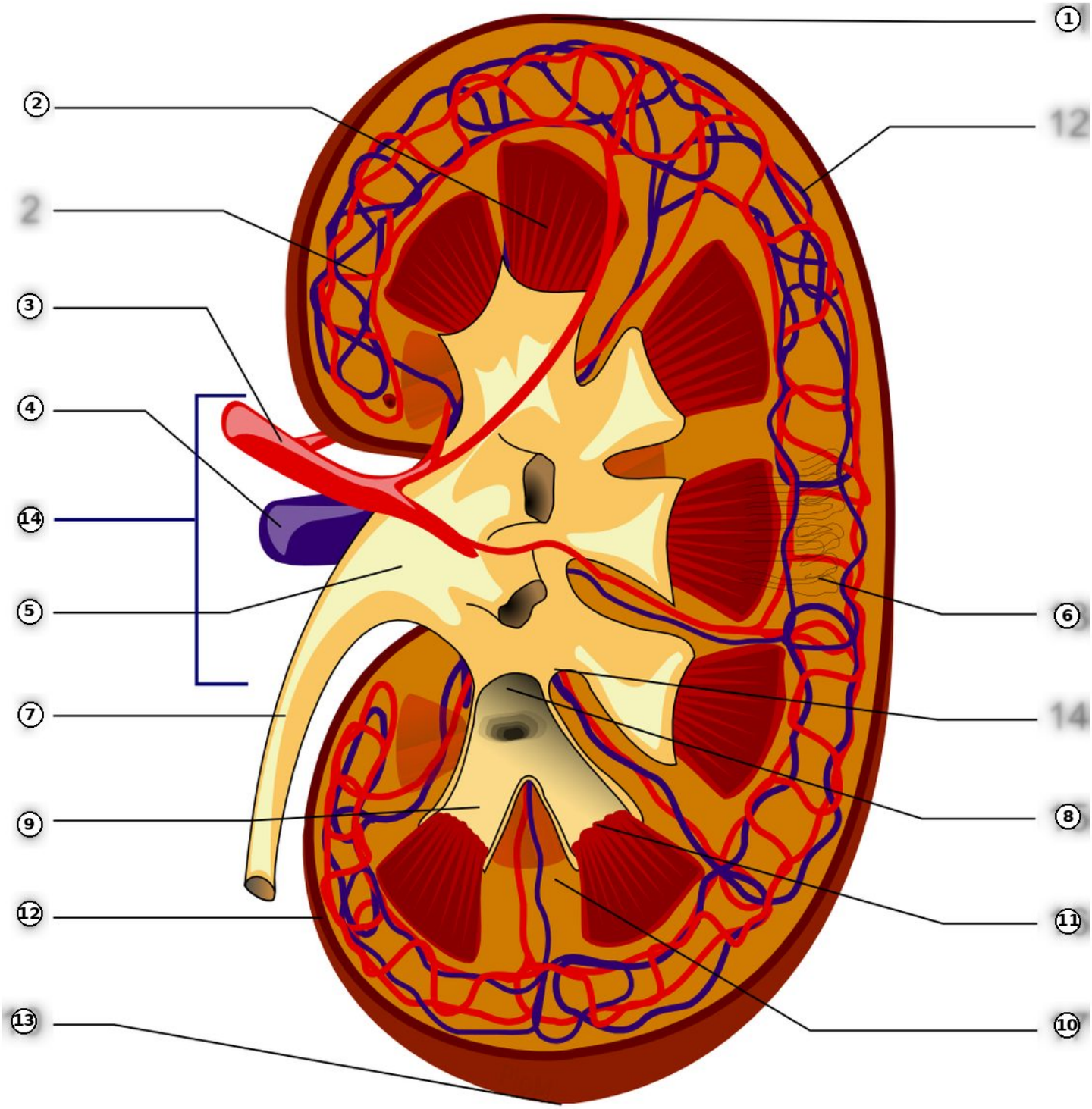
Blood vessels of the kidney



1		2	
3		4	
5		6	
7		8	
9		10	
11		12	
13		14	
15			

Credit: OpenStax College · CC BY 3.0 · commons.wikimedia.org/wiki/File%3A2612_Blood_Flow_in_the_Kidneys.jpg

The kidney cut open, its parts numbered (the key is on its Commons page)



1		2	
3		4	
5		6	
7		8	
9		10	
11		12	
13		14	

Credit: Piotr Michał Jaworski; Pio M EN DE PL · CC BY-SA 3.0 · commons.wikimedia.org/wiki/File%3AKidney_PioM.png

Answers · Anatomy · Exercise 25 · kidneys, bladder, suprarenals

Diagram 1 · The kidney in section, and its blood vessels

1 Cortical radiate vessels
2 Cortical radiate vessels
3 Interlobar vessels
4 Minor calyx — kielich mniejszy
5 Arcuate vessels
6 Arcuate vessels
7 Renal vein — żyła nerkowa
8 Renal pelvis — miedniczka nerkowa
9 Major calyx — kielich większy
10 Renal plexus
11 Renal pyramid — piramida nerkowa
12 Renal artery — tętnica nerkowa
13 Renal papilla — brodawka nerkowa
14 Ureter — moczowód
15 Renal capsule — torebka nerki
16 Renal medulla — rdzeń nerki
17 Renal column — słup nerkowy
18 Renal cortex — kora nerki

Diagram 2 · A female pelvis in sagittal section

1 Ureter — moczowód
2 Uterus — macica
3 Urinary bladder — pęcherz moczowy
4 Pubis — kość łonowa
5 Female urethra — cewka moczowa żeńska
6 Rectum — odbytnica
7 Clitoris — łechtaczka
8 Labium minus — warga sromowa mniejsza
9 Vagina — pochwa
10 Anus
11 Labium majus — warga sromowa większa
12 Cervix of the uterus — szyjka macicy

Diagram 3 · A male pelvis in sagittal section

1 Ureter — moczowód
2 Urinary bladder — pęcherz moczowy
3 Seminal vesicle — pęcherzyk nasienny
4 Ductus deferens — nasieniowód
5 Pubis — kość łonowa
6 Prostate — gruczoł krokowy
7 Penis — prącie
8 Male urethra — cewka moczowa męska
9 Rectum — odbytnica
10 Anus
11 Epididymis — najądrze
12 Testis — jądro

Diagram 4 · Both kidneys and their vessels, dissection

1 Kidney — nerka
2 Coeliac trunk — pień trzewny
3 Renal artery — tętnica nerkowa
4 Renal vein — żyła nerkowa
5 Renal artery — tętnica nerkowa
6 Renal vein — żyła nerkowa
7 Kidney — nerka
8 Ureter — moczowód
9 Abdominal aorta — aorta brzuszna
10 Testicular artery — tętnica jądrowa
11 Psoas major — mięsień lędźwiowy większy
12 Inferior vena cava — żyła główna dolna
13 Inferior mesenteric artery — tętnica krezkowa dolna

14 Ureter — moczowód

Diagram 5 · The urinary bladder opened anteriorly, and its wall in a micrograph

1 Ureter — moczowód
2 Peritoneum — otrzewna
3 Detrusor muscle — mięsień wypieracz moczu
4 Ureteric orifice — ujście moczowodu
5 Ureteric orifice — ujście moczowodu
6 Internal urethral sphincter — mięsień zwieracz wewnętrzny cewki moczowej
7 Lamina propria of the bladder
8 Transitional epithelium
9 External urethral sphincter — mięsień zwieracz zewnętrzny cewki moczowej
10 Submucosa of the bladder

Diagram 6 · The kidney approached posteriorly, through the loin

1 Latissimus dorsi — mięsień najszerszy grzbietu
2 Erector spinae — prostownik grzbietu
3 Thoracolumbar fascia — powięź piersiowo-lędźwiowa
4 Kidney — nerka
5 Rib — żebro
6 Thoracolumbar fascia — powięź piersiowo-lędźwiowa
7 Perirenal fat capsule
8 Renal fascia
9 Quadratus lumborum — mięsień czworoboczny lędźwi

Diagram 7 · The adrenal gland and its layers

1 Capsule of the suprarenal gland
2 Zona glomerulosa
3 Zona fasciculata
4 Suprarenal medulla — rdzeń nadnercza
5 Zona reticularis
6 Kidney — nerka
7 Suprarenal medulla — rdzeń nadnercza
8 Suprarenal cortex — kora nadnercza
9 Suprarenal gland — nadnercze

Diagram 8 · A kidney tubule and its blood vessels (OpenStax)

1 Glomerular capsule
2 Afferent arteriole
3 Efferent arteriole
4 Proximal convoluted tubule
5 Cortical radiate artery
6 Venule
7 Cortical radiate vein
8 Nephron loop
9 Peritubular capillaries
10 Nephron — nefron

Diagram 9 · The lower thoracic and lumbar region, posterior view

1 Tenth thoracic vertebra
2 Eleventh thoracic vertebra
3 Liver — wątroba
4 First lumbar vertebra
5 Twelfth thoracic vertebra
6 Kidney — nerka
7 Second lumbar vertebra
8 Rib — żebro
9 Ureter — moczowód
10 Third lumbar vertebra
11 Fourth lumbar vertebra
12 Fifth lumbar vertebra

Diagram 10 · A real dissection: the vessels at the pelvic brim, superior view

1. Common iliac artery — tętnica biodrowa wspólna
2. Left common iliac vein
3. Common iliac artery — tętnica biodrowa wspólna
4. Ureter — moczowód
5. Ureter — moczowód
6. Internal iliac artery — tętnica biodrowa wewnętrzna
7. Internal iliac artery — tętnica biodrowa wewnętrzna
8. External iliac artery — tętnica biodrowa zewnętrzna
9. External iliac artery — tętnica biodrowa zewnętrzna
10. Rectum — odbytnica

Diagram 11 · The urinary tract, a diagram

1. Renal pelvis — miedniczka nerkowa
2. Ureter — moczowód
3. Ureteric orifice — ujście moczowodu
4. Urinary bladder — pęcherz moczowy
5. Prostatic urethra — część sterczowa cewki moczowej
6. Membranous urethra — część błoniasta cewki moczowej
7. Spongy urethra — część gąbczasta cewki moczowej
8. External urethral orifice
9. Kidney — nerka

Diagram 12 · The right kidney from the medial side

1. Anterior surface of the kidney
2. Lips of the renal hilum
3. Renal pelvis — miedniczka nerkowa
4. Lips of the renal hilum
5. Medial border of the kidney
6. Posterior surface of the kidney
7. Ureter — moczowód
8. Renal hilum — wnęka nerki
9. Renal sinus

Diagram 13 · Blood vessels of the kidney

1. Efferent arteriole
2. Peritubular capillaries
3. Afferent arteriole
4. Glomerulus
5. Cortical radiate artery
6. Interlobar artery
7. Arcuate artery
8. Cortical radiate artery
9. Arcuate vein
10. Cortical radiate vein
11. Cortical radiate vein
12. Renal artery — tętnica nerkowa
13. Renal vein — żyła nerkowa
14. Segmental artery
15. Interlobar vein

Diagram 14 · The kidney cut open, its parts numbered (the key is on its Commons page)

1. Superior pole of the kidney
2. Renal pyramid — piramida nerkowa
3. Renal artery — tętnica nerkowa
4. Renal vein — żyła nerkowa
5. Renal pelvis — miedniczka nerkowa
6. Nephron — nefron
7. Ureter — moczowód
8. Major calyx — kielich większy
9. Minor calyx — kielich mniejszy
10. Renal column — słup nerkowy
11. Renal papilla — brodawka nerkowa
12. Renal capsule — torebka nerki

13 Inferior pole of the kidney
14 Renal hilum — wnęka nerki