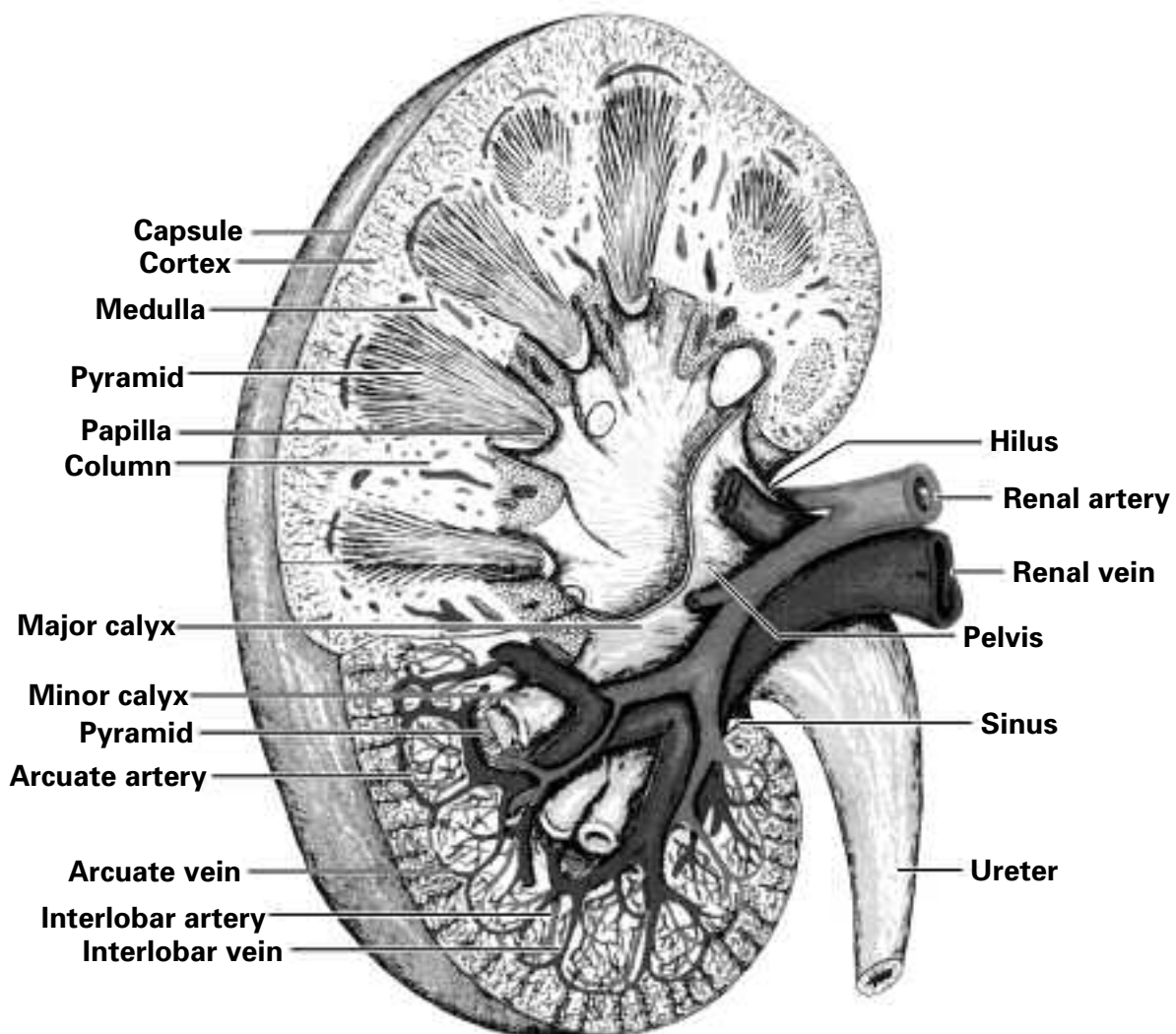


Carolina™ Mammal Kidney Dissection Guide



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Overview

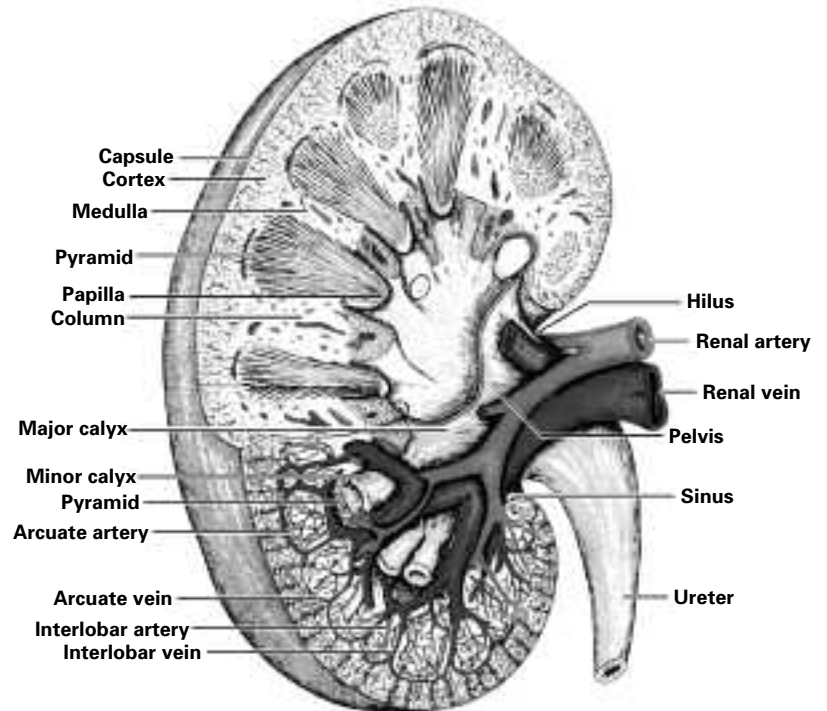
The Carolina Mammal Kidney Dissection Guide is a general set of instructions for dissecting mammal kidneys. With each type of kidney, there will be differences in the size of the structures and kidney regions, but the general structures and their relative location will be the same or very similar.

Safety

Follow safe laboratory practices when performing any dissection. Wear safety glasses or goggles, gloves, and lab aprons when dissecting. Perform dissections on a dissecting tray or pan to contain specimens and fluids. Be careful when using sharp instruments, such as scalpels, forceps, teasing needles, and scissors.

Procedure

1. Review the glossary provided at the end of this dissection guide. Refer to the diagram of the kidney as a general reference as you observe and identify external and internal structures.
2. Observe the renal capsule. This structure is made up of dense, irregular connective tissue and provides protection as well as helps maintain shape. Remove any adipose tissue that may be attached to the capsule.
3. Locate the hilus. This is an indentation where the ureter and blood vessels enter and exit the kidney. Remove excess adipose tissue to observe the ureter more closely. The renal artery and vein may be difficult to locate; they were severed close to the hilus when the kidney was removed from the animal.
4. Make a frontal section through the kidney. Locate the cortex and medulla. The medulla lies below the cortex. Observe and record the appearance of each region.
5. The medulla consists of numerous conical structures called renal pyramids. The base of each pyramid lies next to the cortex, while the tip forms a renal papilla. Each papilla projects into the renal sinus. Locate the renal pyramids, renal papilla, and renal sinus.
6. Renal pyramids are separated by bands of tissue called renal columns. Each column begins in the cortex and extends through the medulla. Examine the texture of this tissue. Columns have a granular texture similar to that of the cortex.
7. Each renal pyramid and adjacent cortical region make up a renal lobe. Urine production occurs in the renal lobes. Each renal papilla discharges urine into a cup-shaped minor calyx. Four or five minor calyces merge to form a major calyx. Major calyces merge to form the renal pelvis. Using a probe, trace the path of urine from the renal pyramids to the renal pelvis.



8. Examine the renal pelvis. It is formed by a wall of thick fibrous tissue and forms the expanded end of the ureter.
9. Using a scalpel, carefully cut one wall of the ureter and extend the incision to the hilus. The ureter is continuous with the renal pelvis. Observe the fine ridges on the endothelial lining of the ureter and renal pelvis.
10. Once you have observed all the structures of the kidney, dispose of the specimen in accordance with local guidelines and your teacher's instructions.

Glossary

Calyx - cup-like division found in the renal medulla; minor calyces (plural) empty into major calyces.

Hilus - depression where the renal artery, renal vein, and ureter enter and exit the kidney.

Renal artery - branch from the abdominal aorta that supplies the kidney with oxygenated blood.

Renal capsule - dense, irregular connective tissue layer that protects the kidney and helps maintain its shape.

Renal corpuscle - glomerulus enclosed within a glomerular capsule; site of filtration.

Renal cortex - outer region of the kidney.

Renal lobe - consists of a pyramid, portion of the cortex at the pyramid base, and a portion of the adjacent renal column.

Renal medulla - inner portion of the kidney.

Renal papilla - apex of a renal pyramid; continuous with the minor calyx.

Renal pelvis - large cavity that receives urine from major calyces; continuous with ureter.

Renal pyramid - cone-shaped structure found in the medulla with its base facing the cortex and the apex facing the hilus.

Renal vein - blood vessel exiting the kidney carrying filtered, deoxygenated blood to the inferior vena cava.

Ureter - tube that connects the kidney to the urinary bladder.

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Pig Kidney (<i>Caropak</i> ® Single)	Double Injected	RN-22-8581
Pig Kidney (<i>Caropak</i> ® Single)	Triple Injected	RN-22-8591

Disposal

Because local regulations may vary from federal and state regulations, we recommend that you discuss disposal of preserved specimens with your institution's or system's environmental representative.

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