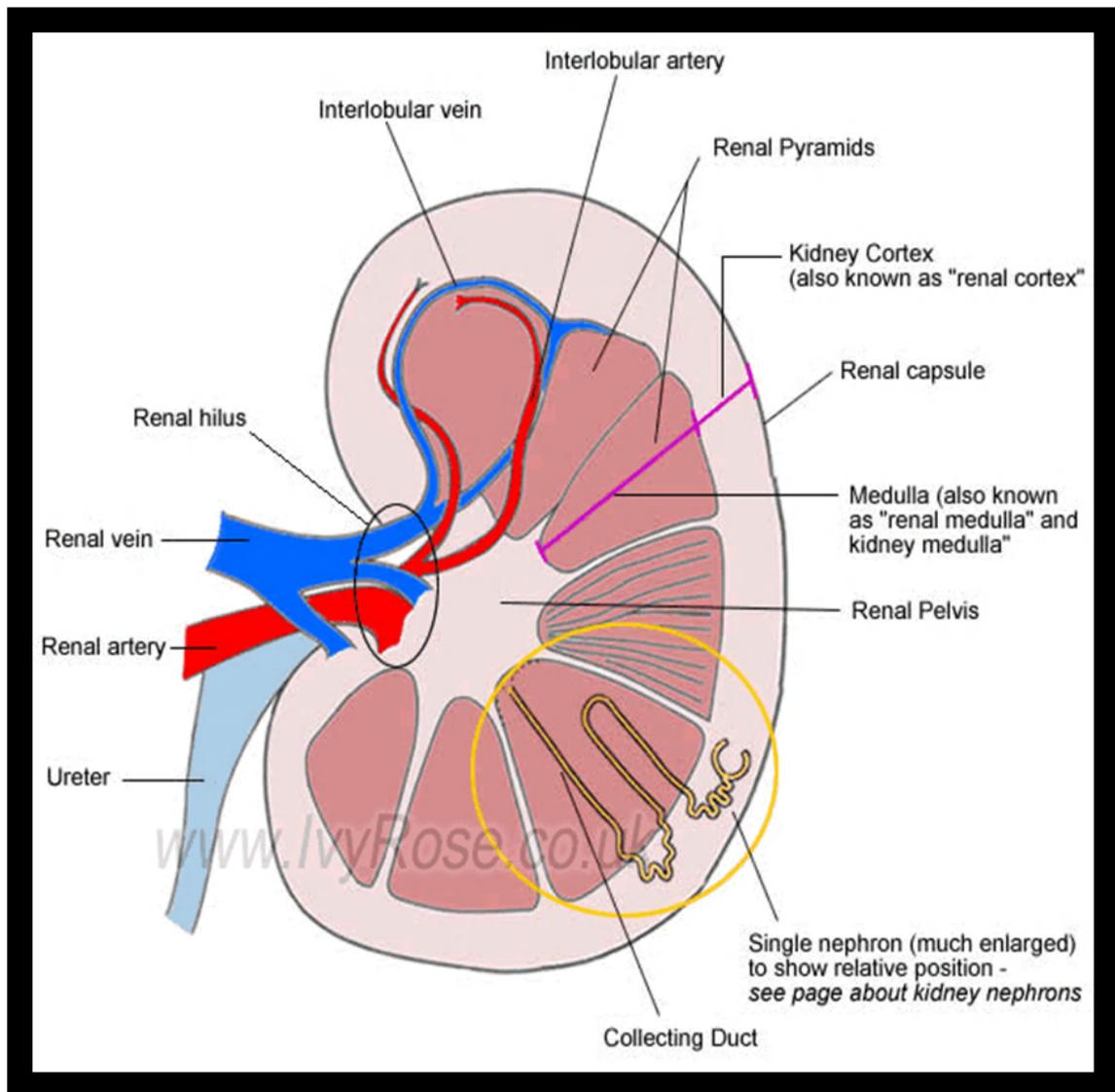


Diagram of the Structure of the Kidney (Gross Anatomy of the Kidney)



Short descriptions of the parts of the kidney labeled above:

Renal hilus:

The renal hilus is an indentation near to the center of the concave area of the kidney. This is the area of the kidney through which the ureter leaves the kidney and the other structures including blood vessels (illustrated), lymphatic vessels, and nerves enter/leave the kidney.

Renal capsule:

The renal capsule is a smooth, transparent, fibrous membrane that surrounds, encloses, and protects the kidney. Each kidney has its own renal capsule (outer layer), which helps to maintain the shape of the kidney as well as protecting it from damage. The renal capsule is itself surrounded by a mass of fatty tissue that also helps to protect the kidney by damage by cushioning it in cases of impact or sudden movement.

Renal cortex:

The renal cortex is the outer part of the kidney and has a reddish color (shown as very pale brown above). It has a smooth texture and is the location of the Bowman's Capsules and the glomeruli, in addition to the proximal and distal convoluted tubules and their associated blood supplies

Renal medulla:

The renal medulla is the inner part of the kidney. "Medulla" means "inner portion". This area is a striated (striped) red-brown color.

Renal pyramids:

There are approx. 5 - 18 striated triangular structures called "Renal Pyramids" within the renal medulla of each kidney. The appearance of striations is due to many straight tubules and blood vessels within the renal pyramids.

Renal pelvis:

The renal pelvis is the funnel-shaped basin (cavity) that receives the urine drained from the kidney nephrons via the collecting ducts and then the (larger) papillary ducts.

Renal artery:

The renal artery delivers oxygenated blood to the kidney. This main artery divides into many smaller branches as it enters the kidney via the renal hilus. These smaller arteries divide into vessels such as the segmental artery, the interlobar artery, the arcuate artery and the interlobular artery. These eventually separate into afferent arterioles, one of which serves each **nephron** in the kidney.

Renal vein:

The renal vein receives deoxygenated blood from the peritubular veins within the kidney. These merge into the interlobular, arcuate, interlobar and segmental veins, which, in turn, deliver deoxygenated blood to the renal vein, through which it is returned to the **systemic blood circulation** system.

Interlobular artery:

The interlobular artery delivers oxygenated blood at high pressure to the glomerular capillaries.

Interlobular vein:

The interlobular vein receives deoxygenated blood (at lower pressure) that it drains away from the glomerular filtration units and from the Loops of Henle.

Kidney nephron:

Kidney nephrons are the functional units of the kidneys. That this, it is the kidney nephrons that actually perform the kidney's main functions. There are approx. a million

nephrons within each kidney

Collecting Duct (Kidney):

The collecting duct labeled in the diagram above is part of the kidney nephron (shown much enlarged). The distal convoluted tubules of many nephrons empty into a single collecting duct. Many such collecting ducts unite to drain urine extracted by the kidney into papillary ducts, then into a minor calyx, then the major calyx (at the center of the kidney), and finally into the ureter through which the urine leaves the kidney en-route to the urinary bladder.

Ureter:

The ureter is the structure through which urine is conveyed from the kidney to the urinary bladder.

Reference: