

Renal Corpuscle (OLD VERSION)

The renal corpuscle is the first site of filtration in the nephron. Here, arterioles bring blood from the body into the kidney for filtration. The glomerulus is a cluster of capillaries derived from those arterioles that feed into the nephron. There are fenestrations in the endothelial cells of the glomerulus that have large pores. This is designed to filter the blood and allow plasma solutes and large proteins to be secreted as ultrafiltrate. However, red blood cells cannot be filtered and are maintained in the blood. Smaller molecules enter the nephron to be reabsorbed or secreted, depending on physiological conditions. Encapsulating the glomerulus is Bowman's capsule, which is the location of ultrafiltration. From here, filtrate enters the nephron.



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Characteristics

Arterioles

Artery-O's

Arterioles bring blood from the body into the kidney to be filtered.

Glomerulus

Glow-mare

The glomerulus is a cluster of capillaries that are derived from afferent arteries and perform the first filtration of blood. Here, waste products are filtered from the blood.

Capillaries

Caterpillar

The glomerulus is a cluster of capillaries leading to the nephron. It is the first site of filtration in the kidney.

Fenestrations

Fence

Fenestrations are pores in the endothelial cells of glomeruli that allow for smaller substances to be filtered, but prevent red blood cells from leaving the blood.

Plasma Solutes And Proteins Secreted As Ultrafiltrate

Plasma-TV and Proteins secreted into Ultra-filtrate bucket

The plasma solutes and proteins are pushed by high pressure into the filtrate that enters the nephron. This process is called ultrafiltration.

Bowman's Capsule Encapsulates Glomerulus

Bow-man Encapsulating Glow-mare

Bowman's capsule is the site of ultrafiltration, and serves as the border between blood and filtrate. It surrounds the glomerulus so that all the blood passing through the capillaries can be filtered.