

- The efferent arteriole emerging from the glomerulus forms a fine capillary network around the renal tubule called the peritubular capillaries.
- A minute vessel of this network runs parallel to the Henle's loop forming a 'U' shaped vasa recta. Vasa recta is absent or highly reduced in cortical nephrons.

URINE FORMATION

It is the principle function of kidneys. It includes three stages: ultrafiltration, tubular reabsorption and tubular secretion.

GLOMERULAR FILTRATION OR ULTRAFILTRATION

- It is the first step in urine formation.
- Filtration of blood is carried out by the glomerulus of the kidney and hence called glomerular filtration.
- About 1100-1200 ml of blood is filtered by the kidneys per minute.
- The filtration of blood occurs through 3 layers in the glomerulus. They are (1) The endothelium of glomerular blood vessels. (2) the epithelium of Bowman's capsule (3) A basement membrane between these two layers.
- The glomerular capillary blood pressure causes filtration of blood.
- The epithelium of Bowman's capsule are called podocytes. In between podocytes there are minute spaces called filtration slit or slit pores.
- Blood is filtered through the slit pores and the filtrate constitutes almost all the plasma except the proteins.
- The filtrate passes into the lumen of the Bowman's capsule. This process is called ultra filtration.
- The amount of the filtrate formed by the kidneys per minute is called glomerular filtration rate (GFR).
- GFR in a healthy individual is nearly 125 ml/min.
- i.e 180 litres per day.