## Nephrology - Kidney Physiology Overview

The kidneys have two functions: regulating extracellular fluid volume and blood pressure. The blood vessel brings in many substances, ions, and red blood cells, and the ascending limb of the loop of Henle, the thick ascending limb, goes back towards the head of the nephron. Within the glomerulus, we have special cells that wrap around the capillaries and these are known as podocytes. Podocytes have many feet like projections and they are important in filtration of substances from the capillary into the capilaries. Then we have these other cells known as missing dial cells and they are important in contraction and altering blood flow. Nephrons have a very rich blood supply in order to perform all its tasks such as regulating volume, blood pressure, ions, and osmolarity. The end product of the kidneys themselves is urine waste.

The kidneys regulate fluid volume and blood pressure. They do this by filtering and reabsorbing the blood and by secreting the urine. The three main arena processes are blood marrow filtration, reabsorption, and secretion.

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