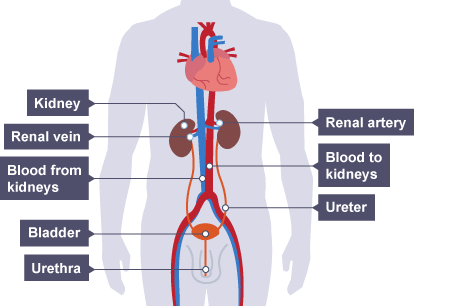
Core Competency Theme 12: Elimination



Aorta

**Inferior Vena Cava**

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|  | Basic description | Function |
| **A**  **Kidney** | Most people have two kidneys, which are organs shaped like kidney beans, each one about 10-15cms long, located either side of the spine, deep in the abdomen. However, it is possible to live a healthy and active life with only one functioning kidney. In rare instances people can be born with three kidneys, and likewise remain healthy.  The main job is to cleanse the blood of toxins and transform the waste into urine.  Each kidney weighs about 160 grams and gets rid of between one and one-and-a-half litres of urine per day. The two kidneys together filter 200 litres of fluid every 24 hours. | The kidney has 7 keys functions:   1. Regulation of blood volume 2. Regulation of blood pressure 3. Regulation of the pH of the blood 4. Regulation of the ionic composition of blood 5. Production of Red blood cells 6. Synthesis of Vitamin D 7. Excretion of waste products and foreign substances |
| **B**  **Renal Vein** | There are two renal veins, a left and a right. They branch off the inferior vena cava and drain oxygen-depleted blood from the kidneys. | As they enter the kidneys, each vein separates into two parts. The posterior veins assist in draining the back section of each kidney, while the anterior veins assist the front part. These veins also are responsible for draining blood from the ureter, which transports urine away from the kidneys to the urinary bladder |
| **C**  **Renal Artery** | The renal artery enters through the hilum, which is located where the kidney curves inward in a concave shape. Under normal circumstances, once the renal artery enters through the hilum, it splits into two main branches, which each then split into numerous smaller arteries, which deliver blood to different areas of the kidneys, known as nephrons. | Your renal artery can compensate for low or high blood pressure and can adapt to stress by contracting or expanding to allow more or less blood to flow to the kidneys. It is the smooth muscle in the interior wall of the arteries that controls this, and it responds to signals sent to receptors in its surface. |
| **D**  **Inferior Vena Cava** | Inferior vena cava brings de-oxygenated blood from the legs and lower body to the heart. | The inferior vena cava transfers de-oxygenated blood to the heart from the lower part of the body. |
| **E**  **Aorta** | The aorta is the largest blood vessel in the body, roughly as wide as your thumb. | The aorta carries oxygenated blood from the left ventricle to various other parts of the body. |
| **F**  **Ureter** | Both of the ureters pass beneath the urinary bladder, which results in the bladder compressing the ureters and hence preventing back-flow of urine when pressure in the bladder is high during urination. This prevention of back-flow is important because when it is not operating correctly cystitis, which is inflammation of the ureter / urinary bladder, may develop into a kidney infection. | There are two ureters, one leading from each kidney to the urinary bladder. Each of these transports urine from the renal pelvis of the kidney to which it is attached, to the bladder |
| **G**  **Bladder** | The urinary bladder is a muscular sac in the pelvis, just above and behind the pubic bone. When empty, the bladder is about the size and shape of a pear. | The purpose of the urinary bladder is to store urine prior to elimination of the urine from the body.  The bladder also expels urine into the urethra by a process called micturition (also known as urination). Micturition involves the actions of both voluntary and involuntary muscles. Lack of voluntary control over this process is referred to as incontinence. |
| **H**  **Urethra** | The Urethra is a tube that connects the [urinary bladder](https://en.wikipedia.org/wiki/Urinary_bladder) to the [urinary meatus](https://en.wikipedia.org/wiki/Urinary_meatus) for the removal of fluids from the body. | The urethra is the passageway through which urine is discharged from the body.  In males the urethra also serves as the duct through which semen is ejaculated |