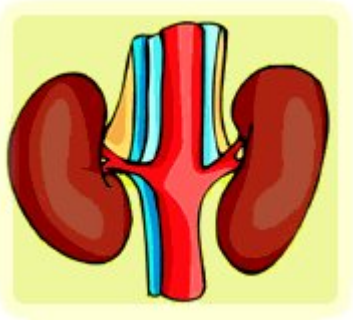
The Kidneys

By Jennifer Kenny



1 You have two kidneys that are very important to your body's functioning. They are purplish brown in color because of the rich supply of blood vessels. They are about the size of a grownup's fist, but they weigh less than a pound together. They are located above your waist with one on each side of the spine. The right kidney is slightly lower than the left kidney so the liver can fit.

2 At the top of each kidney are adrenal glands. They are not directly connected to the kidneys, but by secreting hormones, they do help control some of the work of the kidneys.

3 The kidneys themselves are protected by about an inch of fat. There would be serious consequences if the kidneys were injured. In fact, kidney punches are illegal in the boxing ring because of the risk.

4 The hilus is the inward curve of the kidneys. The ureter comes out from this spot. Nerves and blood vessels enter or pass through here, too. Blood is brought to the kidney by a renal artery. The blood is carried away by the renal vein. The renal capsule, a thin but tough membrane surrounds the rest of the kidney.

5 There are three layers to the kidney. The cortex is the outer layer and contains the kidney's filtering structures. The medulla is the middle layer. It drains the urine into tubes and empties into the renal pelvis. The renal pelvis is the inner layer that leads to the ureter.

6 The kidneys act like the body's washing machines - filtering and cleaning your blood. Twenty-five percent of all the body's blood passes through the kidneys each minute. The kidneys will clean more than one million gallons of water in the body of an average person's life.

7 In each kidney, there are one million filtering units called nephrons. The nephron has three main parts - called the glomerulus, Bowman's capsule, and coiled tube. The nephron is ½ inch long. It is very thin, though, so you can't see it without a microscope. The glomerulus (or plural, glomeruli) looks like a ball of cotton, but is actually a group of capillaries. Around the glomerulus is a Bowman's capsule that leads into the renal tubule and then up into the collecting tubule. Here a lot of water and needed substances are reabsorbed. Then the collecting tubules empty into the calyces, or cavities that lead into the middle part of the kidney. Then the renal pelvis goes into the ureter, which takes the urine to the bladder.

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1. Which best describes the location of your kidneys? (A) Below the waist (B) Near the femur bone (C) Above the waist (D) Upper chest	2. The _____ is the inward curve of the kidneys. (A) Hilus (B) Nephron (C) Medulla (D) Cortex
3. The renal capsule is a thick membrane. (A) False (B) True	4. In each kidney, there are _____ nephrons. (A) 100,000 (B) 1,000 (C) 1,000,000 (D) 10,000
5. Which is **not** a part of the nephron? (A) Coiled tube (B) Cortex (C) Bowman's capsule (D) Glomerulus	6. How much do kidneys weigh? (A) About five pounds each (B) About two pounds each (C) About five pounds together (D) About one pound together
7. Which is the middle layer of the kidney? (A) Renal pelvis (B) Medulla (C) Cortex	