

Anatomy Tip

Kidney

In an effort to aid Health Information Management Coding Professionals for ICD-10, the following anatomy tip is provided with an educational intent.

The kidneys are the main part of the urinary system and are a pair of organs; right and left; located in the back of the abdomen. Each kidney is about 4 or 5 inches long.

- The kidneys are surrounded by three layers of tissue:
 - The renal fascia is a thin, outer layer of fibrous connective tissue that surrounds each kidney (and the attached adrenal gland) and fastens it to surrounding structures.
 - The adipose capsule is a middle layer of adipose (fat) tissue that cushions the kidneys.
 - The renal capsule is an inner fibrous membrane that prevents the entrance of infections.
- There are three major regions inside the kidney:
 - The renal cortex borders the convex side.
 - The renal medulla lies adjacent to the renal cortex. It consists of striated, cone-shaped regions called renal pyramids (medullary pyramids), whose peaks, called renal papillae, face inward. The unstriated regions between the renal pyramids are called renal columns.
 - The renal sinus is a cavity that lies adjacent to the renal medulla. The other side of the renal sinus, bordering the concave surface of the kidney, opens to the outside through the renal hilus. The ureter, nerves, and blood and lymphatic vessels enter the kidney on the concave surface through the renal hilus. The renal sinus houses the renal pelvis, a funnel-shaped structure that merges with the ureter.
- All the blood in our bodies passes through the kidneys several times a day. The kidneys remove wastes, control the body's fluid balance, and regulate the balance of electrolytes. Each kidney contains around a million units called nephrons, each of which is a microscopic filter for blood. As the kidneys filter blood, they create urine, which collects in the kidneys' pelvis -- funnel-shaped structures that drain down tubes called ureters to the bladder.

References/Resources: <www.webMD.com>; <www.cliffnotes.com>

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