



When you read up about your physical condition, you take an important tool into your own hands. The more you know about your physical condition, and the more positive steps you take, the better your chance for positive outcomes and treatment success.

Health Topic: Anatomy and Physiology of the Urologic System

The urologic system in human beings consists of the kidneys, ureters, bladder and urethra. In men, the prostate also comprises part of the urinary tract. These organs play a central role in fluid, electrolyte and acid base balance in humans. The kidneys also contribute to vitamin D production and promoting the formation of new red blood cells. The kidneys are a pair of reddish brown solid organs that lie in the lower back of the human body. The urine that is produced in the kidney drains down to the bladder through a structure called the ureter. The urine collection then accumulates in the bladder and the bladder then expels the urine through another tube called the urethra. In men, the prostate gland is situated surrounding the opening of the bladder to the urethra and men urinate through the prostate to expel the urine.

The kidneys function as the filters of the human blood. Once the blood is pumped through the filters of the kidney, the waste product called urine is drained through the ureters into the bladder. During this filtration process of the blood, the kidneys can regulate calcium, sodium and potassium levels in the body.

The urinary bladder is comprised of muscle fibers which are able to expand and hold the urine. The capacity of a human bladder can vary, but most adults are able to hold up to 12-20 ounces of urine. Once enough urine has accumulated in the bladder the sensors of the muscle fibers then decide to contract and expel the urine. The act of voiding includes relaxation of the sphincter muscle in addition to contracting of the muscle fibers of the bladder.

The prostate is a walnut sized solid organ which is situated at the opening of the bladder. The function of the prostate is related to the reproductive function of the male.

The urine is expelled from the body through a tube called the urethra. The female urethra is shorter in length than the male urethra. The male urethra travels through the shaft of the penis and out the opening of the penis called a meatus.