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ASSIGNMENT: Write a short note on Micturition

Micturition or urination is the process of expelling urine from the bladder. This act is also known as voiding of the bladder. The excretory system in humans includes a pair of kidneys, two ureters, a urinary bladder and a urethra. The kidneys filter the urine and it is transported to the urinary bladder via the ureters where it is stored till its expulsion. The process of micturition is regulated by the nervous system and the muscles of the bladder and urethra. The urinary bladder can store around 350-400ml of urine before it expels it out. Nerve centers for the control of urination are located in the spinal cord, the brainstem, and the cerebral cortex (the outer substance of the large upper portion of the brain). Both involuntary and voluntary muscles are involved. The urinary bladder is a storage reservoir for urine. The major contractile muscle of the bladder is the detrusor. Urination involves either sustained contractions or short intermittent contractions of the detrusor along with contraction of the muscles in the urethra, the duct from the urinary bladder that conducts urine from the body. Voiding of the bladder is influenced by the volume of urine it contains

The urinary bladder has two distinct stages or phases:

* Resting or filling stage
* Voiding stage

**Resting or Filling Stage**

It is in this phase of the bladder that the urine is transported from the kidneys via the ureters into the bladder. The ureters are thin muscular tubes that arise from each of the kidneys and extend downwards where they enter the bladder obliquely.

The opening of the ureter into the urinary bladder is not guarded by any sphincter or muscle. Therefore, this oblique nature of opening prevents the urine from re-entering the ureters. At the same time, the main muscle of the urinary bladder, the detrusor muscle, is relaxing allowing the bladder to distend and accommodate more urine.

**Voiding Stage**

During this stage, both the urinary bladder and the urethra come into play together. The detrusor muscle of the urinary bladder which was relaxing so far starts to contract once the bladder’s storage capacity is reached.

The urethra is controlled by two sets of muscles: The internal and external urethral sphincters. The internal sphincter is a smooth muscle whereas the external one is skeletal. Both these sphincters are in a contracted state during the filling stage.