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WRITE A SHORT NOTE ON MICTURITION

Micturition also called urination, is the process of excreting urine from the urinary 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

**1.Resting or Filling Stage**

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.

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. When 100–150 milliliters (3.5–5 ounces) of urine accumulate, the first sensations of a need to void are felt

**2.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. as more urine accumulates, and it becomes uncomfortable at a bladder volume of 350–400 milliliters. Impulses from the pelvic nerves mediate the sensations of bladder filling, painful distension, and the conscious need to urinate. A slowly filling bladder adapts progressively to the pressure from increased volume. Hence, a bladder that is rapidly filled stimulates urination faster than one that fills slowly. When enough pressure is sensed by the walls of the bladder, the detrusor muscle contracts, the bladder neck and opening to the urethra relax, and the contents of the bladder are emptied. Normally the bladder empties completely.