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ASSIGNMENT

Write a short note on micturition.

**MICTURITION**

Micturition (urination) is the release of urine from the urinary bladder through the urethra to the outside of the body. It is the urinary system's form of excretion. This act is also known as voiding of the bladder. Nerve centres 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—a liquid containing waste products given off by the body and extracted from the bloodstream by the kidneys. The major contractile muscle of the bladder is the detrusor. The smooth muscle contractions of ureters facilitate micturition. 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. As the bladder becomes full, the stretch receptors increase their firing rate. This increase the urge to urinate and causes micturition reflex. It sometimes even causes involuntary urination.

**Micturition Process**

Micturition process consists of two phases:

* Storage phase
* Voiding phase

Storage Phase; The storage phase is characterized by the storage of urine by the urinary bladder. The movement is controlled by the circular sphincter muscles. The circular sphincter muscles prevent leakage of urine. They close tightly around the opening of the bladder into the tube (urethra) that allows the passage of urine outside the body.

Voiding phase; The voiding phase is said to occur when the brain sends signals to begin urinating until the bladder becomes empty. When the bladder is filled with urine, the nerves in it are triggered, which in turn stimulates the need to urinate. The brain signals urinary bladder to contract. The receptors of the urinary bladder send a signal to the central nervous system, in response to which the nervous system sends a signal that incites the contraction of the urinary bladder. Through the urinary opening at the urethra, the urine is eliminated, and the process is called micturition. The neural mechanism involved is called the micturition reflex.

Problems Associated With Micturition

There are several factors which affect the process of micturition. Some of these can be due to physical trauma or disease; others are psychological in nature. Following are a few disorders that affect micturition:

* Detrusor Instability – This is a condition where the detrusor muscle contracts without any apparent reason. This muscle is responsible for contracting the bladder and help with the micturition process. As a result, detrusor instability results in urinary incontinence.
* Urinary Retention – This condition is characterized by the inability to empty the bladder completely. The onset may be gradual or sudden. The causes can range from a blockage in the urethra, nerve problems and weak bladder muscles.
* Spinal Cord Trauma – Injuries to the spinal cord, specifically the tenth thoracic vertebra (T10) can cause the bladder to be overactive or cause urinary incontinence.