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**MICTURITION**

Urination, also called Micturition, the process of excreting urine from the urinary 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. 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. In man and most other animals, voiding of the bladder is influenced by the volume of urine it contains. When 100–150 millilitres (3.5–5 ounces) of urine accumulate, the first sensations of a need to void are felt. The feeling increases in intensity as more urine accumulates, and it becomes uncomfortable at a bladder volume of 350–400 millilitres. Impulses from the pelvic nerves mediate the sensations of bladder filling, painful distension, and the conscious need to urinate.

**Micturition Process**

Micturition process consists of two phases:

1. Storage phase

2. Voiding phase

**Storage Phase**

The urinary bladder is a balloon-shaped, hollow, muscular, organ that acts as the storage organ for urine. The urinary bladder in a healthy urinary system can store up to 16 ounces of urine for 2 to 5 hours easily. 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**

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:

1. 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.

2. 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.

3. 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.

**Management of Micturition Disorders**

1. The nerve pathway to the urinary tract should be intact.

2. The bladder capacity should be normal.

3. Normal muscle tone should be observed in the sphincters, detrusors, and pelvic floor muscles.

4. There should be no obstruction to the urine flow in any region of the urinary tract.

5. The environmental and psychological factors that inhibit micturition should be absent.

6. The coordinated activity of sympathetic, parasympathetic, and somatic nerves help in normal micturition.