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QUESTION: Write a short note on micturition

Micturition is the action of urinating.

Micturition or urination is the process of expelling urine from the bladder.

This act is also known as voiding of the bladder. 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.

The micturition reflex is a bladder-to-bladder contraction reflex for which the reflex center is located in the rostral pontine tegmentum (pontine micturition center: PMC). There are two afferent pathways from the bladder to the brain.

Micturition consists of a storage phase and a voiding phase. Stretch receptors in the bladder increase their firing rate as the bladder becomes more full. This causes the micturition reflex, and increases urinary urge, and can even cause involuntary urination.

A healthy person may urinate anywhere from four to ten times in a day. The average amount, however, is usually between six and seven times in a 24-hour period.

We depend on micturition (urination) to eliminate organic waste products, which are produced as a result of cell metabolism in the body.

The urinary system also regulates the concentrations of sodium, potassium, chloride and other ions in the blood as well as helping to maintain normal blood pH, blood pressure and blood volume.

For normal micturition to occur we need:

- Intact nerve pathways to the urinary tract;
- Normal muscle tone in the detrusors, sphincters and pelvic floor muscles;
- Absence of any obstruction to urine flow in any part of the urinary tract;
- Normal bladder capacity;
- Absence of environmental or psychological factors which may inhibit micturition

Loss of any of these normal functions may result in incontinence or urgency to micturate.

Micturition requires the coordinated activity of sympathetic, parasympathetic and somatic nerves. It also requires normal muscle tone and freedom from physical obstruction and psychological inhibition. Control from our higher brain centres allow us to determine the right time and place to allow this important physiological function to occur.

