Premature Ejaculation

Training Module

Premature ejaculation occurs in men when semen leaves the body (ejaculate) sooner than wanted during sex.

The ejaculation time considered to be premature for Indian men has been found to be within approximately 1 minute of vaginal penetration. (However, it varies from man to man and can be considered subjective).

Symptoms of Premature Ejaculation

1. Always or nearly always ejaculate within 1 minute of penetration.
2. Unable to delay ejaculation during sex all or nearly all the time.
3. Significant personal distress and frustration due to the inability to control ejaculation.

Physiology of Ejaculation

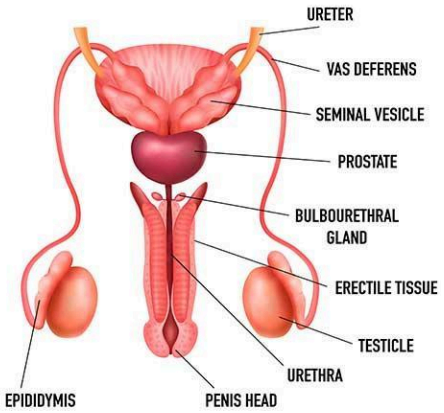
Ejaculation**,** the release of sperm cells and seminal plasma from the male reproductive system. Ejaculation takes place in two phases: in the first, or emission, stage, sperm are moved from the testes and the epididymis (where the sperm are stored) to the beginning of the urethra, a hollow tube running through the penis that transports either sperm or urine; in the second stage, ejaculation proper, the semen is moved through the urethra and expelled from the body.

Sensory information from the penis and other genital areas is transmitted to the spinal cord via afferent nerves. These sensory signals are processed and integrated in the spinal cord. Within the spinal cord, particularly in the lumbar and sacral regions, there are integration centers that process the sensory input related to sexual stimulation. These centers are responsible for coordinating the complex reflexes involved in ejaculation. The spinal cord sends motor signals through efferent pathways to the muscles involved in ejaculation. This includes the muscles of the pelvic floor, the vas deferens (which transports sperm), and the muscles controlling the urethra.

Sperm cells that are stored in the male body are not capable of self-movement because of the acidity of the accompanying fluids. When the sperm receive fluids, called seminal plasma, from the various internal accessory organs (prostate gland, ejaculatory ducts, seminal vesicles, and bulbourethral glands), the acidity decreases. As they leave the body, the sperm receive oxygen, which is vital to motility. Unable to leave the male body by their own motivation, the sperm cells are transported by muscular contractions. During the emission phase, the muscles around the epididymis and ductus deferens (the tube extending from the epididymis) contract to push the sperm into the prostate and urethra. During ejaculation, the semen is expelled by strong spasmodic contractions of the bulbocavernosus muscle, which encircles the corpus spongiosum (the structure in the penis that encloses the urethra).

The whole process of ejaculation is accomplished by nerve impulses received from the penis; once ejaculation is started it becomes a reflex reaction that cannot be voluntarily interrupted.

Reference: https://www.britannica.com/science/ejaculation



Causes of Premature Ejaculation

1. Biological Causes

- Hormonal Imbalance - Abnormal levels of hormones can affect ejaculation. Some of these hormones include:
  Testosterone: Testosterone is the primary male sex hormone and is responsible for the development of male reproductive tissues and characteristics. While it plays a crucial role in sexual function and libido, excessively high levels of testosterone can disrupt the delicate balance within the body's hormonal system, potentially leading to premature ejaculation. Researchers have found that high testosterone levels can lead to an increase in sexual arousal and sensitivity, potentially resulting in heightened ejaculatory response. This overstimulation of the ejaculatory reflex can contribute to premature ejaculation, causing men to climax sooner than desired. Additionally, high testosterone levels may also lead to increased anxiety, a common psychological factor associated with premature ejaculation. Understanding the complex interplay between hormones and sexual function is essential in addressing premature ejaculation effectively.
  Reference - https://columbusmensclinic.com/a-mans-guide-to-does-high-testosterone-cause-premature-ejaculation/#:~:text=Researchers%20have%20found%20that%20high,to%20climax%20sooner%20than%20desired

  Serotonin: Experimental evidence indicates that serotonin (5-HT), throughout brain descending pathways, exerts an inhibitory role on ejaculation. There are

serotonin receptor cells in brain and spinal cord. When activated by serotonin, these receptors pathways inhibit the neuronal that lead to ejaculation. This inhibition is a part of body's mechanisms to control the timing of ejaculation, preventing it from occurring to quickly. When serotonin levels are low, the reduced activation of these receptors weakens the inhibitory control. This leads to less regulation of ejaculatory reflex leading to quicker progression the of the phases of sexual arouser and climax.
Serotonin is also involved in mood regulation and low serotonin levels can lead to increased anxiety and stress.
Reference-
https://www.sciencedirect.com/science/article/abs/pii/S0302283806006683#:~:text=Experimental%20evidence%20indicates%20that%20serotonin,HT's%20modulating%20activity%20on%20ejaculation

Dopamine: High levels of dopamine increase sexual arousal, which can lead to quicker progression through the arousal phases and potentially result in premature ejaculation. The heightened state of arousal may reduce the control over the timing of ejaculation. Dopamine and serotonin have opposing effects on ejaculation. While dopamine promotes sexual arousal and facilitates ejaculation, serotonin acts as an inhibitor, delaying ejaculation by increasing the latency to climax. An imbalance between dopamine and serotonin, where dopamine levels are relatively higher, can lead to reduced inhibitory control from serotonin, thereby contributing to PE. Conversely, increasing serotonin activity (e.g., through selective serotonin reuptake inhibitors, SSRIs) can help delay ejaculation.
Reference - Pfaus, J. G. (2009). Pathways of sexual desire. *Journal of Sexual Medicine*, 6(6), 1506-1533. DOI: 10.1111/j.1743-6109.2009.01309.x
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5717471/#:~:text=Dopamine%20and%20serotonin%20are%20essential,(5%2DHT)%2019.

Prolactin: Elevated prolactin levels inhibit the secretion of gonadotropin-releasing hormone (GnRH) from the hypothalamus, which in turn reduces the production of luteinizing hormone (LH) and follicle-stimulating hormone (FSH). This suppression leads to lower testosterone levels. Since testosterone plays a crucial role in maintaining libido and sexual function, lower levels can indirectly contribute to sexual dysfunction, including PE. Prolactin levels are also inversely related to dopamine levels in the brain. High prolactin can reduce dopamine, which is essential for sexual arousal and pleasure. Reduced dopamine levels can lead to decreased sexual satisfaction and increased likelihood of rapid ejaculation. Imbalance of prolactin and dopamine levels also affect serotonin levels and lower serotonin activity is associated with quicker ejaculation, thus linking high prolactin levels to PE. High prolactin can lead to reduced sexual desire and arousal. When sexual arousal is diminished, men might experience anxiety about their sexual performance, which can contribute to a rush to complete sexual activity, leading to premature ejaculation.
Reference-

Melmed, S., & Jameson, J. L. (Eds.). (2015). "Endocrinology: Adult and Pediatric." Elsevier Health Sciences.
Waldinger, M. D. (2002). "Premature Ejaculation and Serotonin Reuptake Inhibitors." Expert Opinion on Pharmacotherapy, 3(9), 1193-1204.
Ben-Jonathan, N., & Hnasko, R. (2001). "Dopamine as a Prolactin (PRL) Inhibitor." Endocrine Reviews, 22(6), 724-763.

Cortisol: Cortisol is most commonly known as the stress hormone. Stimulation of the sympathetic nerves and hormonal imbalance caused by stress create an urge to ejaculate. Generally, this urge is enhanced by mental and sensory stimulation until orgasm is reached. One is likely to engage in sex with an amplified urge to ejaculate because the nerves have already been exhausted which leads to an early climax. Men with premature ejaculation have shown a significant impact on self-esteem and self-confidence and many people confirm high levels of anxiety connected to sexual or intimate situations with a partner.
Reference-
https://www.lybrate.com/topic/how-stress-causes-premature-ejaculation/c1c0eea442398e3eadb81895ff35a625

- **Spinal Injury:** The spinal cord is crucial for transmitting signals between the brain and the reproductive organs. Spinal injuries can disrupt these pathways, affecting the control of ejaculation. Spinal injuries can alter ejaculatory reflexes. Depending on the level and severity of the injury, reflexes may become hyperactive or diminished, leading to difficulties in controlling ejaculation. Injuries to the spinal cord above the lumbar region can cause hyperreflexia, leading to exaggerated reflexes and quicker ejaculation. Loss of sensation and altered neural feedback due to spinal injury can also lead to a lack of control over the timing of ejaculation.
  Reference- Courtois, F., Charvier, K., & Leriche, A. (2011). "Ejaculation and Spinal Cord Injury." Progress in Brain Research, 200, 343-365. DOI: 10.1016/B978-0-444-53497-2.00020-4

- **Neural Injury:** Nerves in the pelvic region control the ejaculatory process. Injury to these nerves can impair the transmission of signals required for normal ejaculatory function. Nerve injuries can cause neuropathic pain, which may alter sexual function and lead to difficulties in controlling ejaculation. In some cases, nerve damage can lead to delayed ejaculation, but it can also cause PE due to altered neural control mechanisms. Changes in sensory feedback from the genital area can disrupt normal ejaculatory timing.
  Reference: Costello, A. J., & Steers, W. D. (1994). "Neuroanatomy and Physiology of Ejaculation." World Journal of Urology, 12(5), 262-267. DOI: 10.1007/BF00182020

- **Surgeries:** Surgeries involving the pelvic region, such as prostate surgery or hernia repair, can damage nerves and tissues involved in ejaculation. Post-surgical scarring and adhesions can interfere with the normal mechanics of ejaculation. Surgical damage to the nerves controlling ejaculation can lead to PE by altering the timing and control of ejaculatory reflexes. Post-surgical

changes in pelvic anatomy can affect ejaculatory function, potentially leading to PE.
Reference- Walsh, P. C., et al. (2000). "Radical Prostatectomy: Anatomical and Functional Outcomes." British Journal of Urology International, 85(2), 149-160. DOI: 10.1046/j.1464-410x.2000.00451.x

- **Urinary Tract Infection (UTI):** UTIs cause inflammation and irritation of the urinary tract, which can affect the prostate and surrounding tissues involved in ejaculation. Inflammation can lead to hypersensitivity and altered sensations in the genital and pelvic areas. Discomfort and pain associated with UTIs can lead to anxiety and stress during sexual activity, potentially contributing to PE.

- **Weak Pelvic Muscles:** The pelvic floor muscles play a key role in controlling ejaculation. These muscles contract rhythmically during ejaculation and help in controlling the timing of the ejaculatory process. Weakness in these muscles can reduce the ability to control ejaculation, leading to quicker release. Weak pelvic floor muscles can lead to a lack of control over the ejaculatory reflex, resulting in PE. Strengthening these muscles through pelvic floor exercises (Kegels) can improve control and delay ejaculation.

- **Sensitivity of the Penis:** The glans penis is rich in sensory receptors, primarily involved in detecting tactile stimuli. These receptors play a significant role in sexual arousal and ejaculation. Heightened sensitivity of these receptors can lead to rapid stimulation and quicker ejaculation. Increased penile sensitivity can trigger the ejaculatory reflex prematurely. Topical anesthetics can reduce sensitivity and help in delaying ejaculation by numbing the skin of the penis.

- **Infections (Bacterial and Fungal):** Bacterial and fungal infections in the genital area can cause inflammation and irritation, affecting the tissues involved in ejaculation. Infections can lead to heightened sensitivity and discomfort in the genital area, potentially triggering premature ejaculation. Bacterial infections, such as prostatitis, can cause inflammation of the prostate and surrounding tissues, leading to increased urgency and sensitivity. Fungal infections, such as candidiasis, can cause itching and irritation, contributing to quicker ejaculation.

- **Vitamin B12 Deficiency:** Vitamin B12 is essential for maintaining healthy nerve function, including those involved in the ejaculatory reflex. B12 deficiency can disrupt neurotransmitter synthesis, potentially affecting mood and ejaculatory control. Symptoms of B12 deficiency, such as fatigue and weakness, can impact overall sexual stamina and performance. B12 deficiency may lead to neurological impairments that affect the timing and control of ejaculation.

- **Vitamin D3 Deficiency:** Vitamin D3 plays a role in maintaining muscle strength and function. D3 deficiency can disrupt endocrine function, including

testosterone production, which may impact sexual health. Low D3 levels are associated with mood disorders, which can affect sexual performance and satisfaction. D3 deficiency-related muscle weakness may affect pelvic floor muscles involved in ejaculatory control. Disrupted testosterone levels due to D3 deficiency can contribute to sexual dysfunctions, including PE.

2. Psychological Causes

- **Masturbation Addiction:** Frequent or aggressive masturbation can desensitize the penis, leading to quicker ejaculation during partnered sexual activity. Guilt, anxiety, or compulsive behaviors associated with excessive masturbation can contribute to performance anxiety and premature ejaculation.
- **Anxiety:** According to a study published in the National Library of Medicine (NLM), between 20 to 30% of men suffer from premature ejaculation. The said study also showed that men suffering from PE also reported other sexual problems associated with an increase in anxiety and interpersonal difficulties. Anxiety takes many forms that can result in premature ejaculation. You might be experiencing performance anxiety. This means that you might be afraid that you won't satisfy the sexual needs of your partner. Or you might feel that your partner's expectations are too high, and you won't be able to deliver. Some are anxious about sexual activities in general. This can be due to inexperience. A man might be anxious because he thinks he doesn't know what to do when it's time to do the "deed."
  Reference:
  https://menshealthclinic.com/au/resource/how-anxiety-impacts-premature-ejaculation-causes-and-effects#:~:text=Anxiety%20takes%20many%20forms%20that,t%20be%20able%20to%20deliver

- **Trauma:** Trauma activates the body's stress response, leading to the release of stress hormones like cortisol and adrenaline. These hormones can disrupt normal sexual function. Individuals who have experienced trauma may have heightened arousal states, making it difficult to control the ejaculatory reflex. Trauma often leads to anxiety and Post-Traumatic Stress Disorder (PTSD). These conditions can increase anxiety levels during sexual activity, contributing to premature ejaculation. **Performance Anxiety** related to sexual performance can exacerbate the urge to ejaculate prematurely.

- **Negative Self-perception:** Ongoing relationship conflicts can harm self-esteem and body image. A negative self-perception can increase stress and anxiety during sexual encounters, disrupting normal physiological processes and contributing to premature ejaculation.

3. Environmental Causes

- **Relationship Issues:** Emotional disconnection due to relationship problems can lead to a lack of intimacy and trust. This emotional gap can cause increased anxiety and decreased sexual satisfaction, which in turn impacts the physiological control over ejaculation.

- **Lack of Privacy:** Privacy concerns can heighten anxiety and stress levels, which are known contributors to premature ejaculation. The constant worry about being overheard or interrupted can make it difficult to relax and enjoy the moment. Knowing that privacy is limited can create performance pressure, causing individuals to rush the sexual experience, leading to premature ejaculation. The fear of being interrupted or overheard can exacerbate this pressure.

Treatments of Premature Ejaculation

1. **Behavioral Techniques**
   a. Start-Stop Technique: During sexual activity, stimulation is stopped just before the point of no return (ejaculation), then resumed once the urge to ejaculate subsides. This cycle is repeated multiple times before allowing ejaculation. This helps increase control over ejaculation by training the body to delay climax.

   b. Squeeze Technique: The partner squeezes the penis firmly just below the head (the glans) for several seconds until the urge to ejaculate passes. This is repeated multiple times during sexual activity. It reduces the urge to ejaculate and increases awareness of the sensation leading to ejaculation.

   c. Selective Serotonin Reuptake Inhibitors (SSRIs): Common SSRIs used are Paroxetine, Sertraline, Fluoxetine. SSRIs increase serotonin levels in the brain, which can delay ejaculation and regular use can significantly prolong the time taken to ejaculate.

   d. Topical Anesthetics: Common anesthetics used are Lidocaine-Prilocaine cream. When applied to the penis before intercourse, these creams reduce sensitivity by numbing the skin. This delays ejaculation by decreasing penile sensation.

2. **Psychological Counseling and Therapy**
   a. Cognitive Behavioral Therapy: CBT addresses negative thought patterns and behaviors that contribute to PE, helping individuals develop healthier sexual attitudes and practices. It reduces performance anxiety and improves sexual confidence.

   b. Sex Therapy: Involves counseling both partners to improve communication and sexual techniques, addressing relational factors that contribute to PE. Sex Therapy enhances intimacy and reduces stress related to sexual performance.

3. **Lifestyle changes**
   a. Regular Exercise: Physical activity reduces stress and improves overall health, which can positively impact sexual performance by enhancing stamina and reducing anxiety.

b. Healthy Diet: A balanced diet supports overall hormonal balance and energy levels. It improves general well-being and sexual function.