



ERECTILE DYSFUNCTION

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Definition of Erectile Dysfunction

Erectile dysfunction (ED) is defined as the inability to obtain and/or sustain an erection firm enough for sexual intercourse.

Erectile dysfunction affects about 30 million men American men.

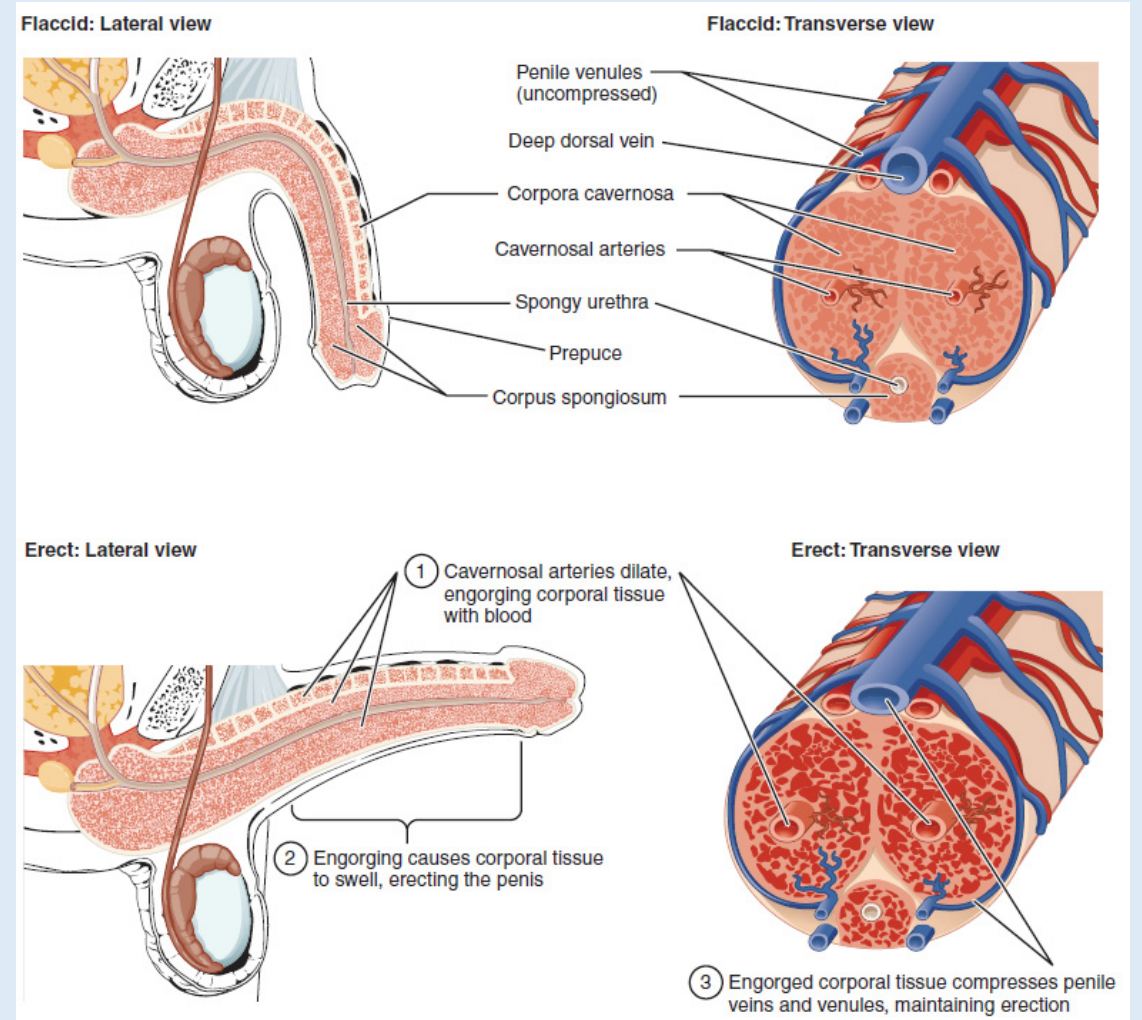
Erectile dysfunction is the most common sex problem that men report to their doctor.

Erectile dysfunction is not a natural consequence of aging; however, it is becoming increasingly prevalent with age, with it affecting 40% of men age 40 and 70% of men age 70.

Simplified Mechanism of Erection

During sexual arousal, the brain signals nerves to release chemical that increase blood flow into the penis. Blood flows into the two erection chambers made of spongy muscle tissue (corpus cavernosum). The corpus cavernosum chambers are not hollow. During an erection, the spongy tissues relax and trap blood. The blood pressure in the chambers make the penis firm, causing an erection.

When a man has an orgasm, a second set of nerve signals reach the penis and cause the muscular tissues there to contract. Blood is released back into a man's circulation and the erection comes down.



Symptoms of Erectile Dysfunctions

- A tendency to sustain only brief erections
- An inconsistent ability to achieve an erection
- A total inability to achieve an erection

Causes of Erectile Dysfunction

Many different factors affecting the vascular system, nervous system and endocrine system can cause or contribute to erectile dysfunction (ED).

- **Physical: Organic**

Diseases and Conditions

1. Type 2 diabetes- men with diabetes are 2 to 3 times more likely to develop ED than man who do not have diabetes.
2. Heart and blood vessel disease
3. Atherosclerosis
4. High blood pressure
5. Chronic kidney disease
6. Multiple sclerosis
7. Peyronie's disease-curvature of the penis
8. Injury from treatments for prostate cancer-radiation therapy and prostate surgery
9. Injury to the penis, spinal cord, prostate, bladder or pelvis
10. Surgery for bladder cancer

Causes of Erectile Dysfunction

- **Physical: Organic**

Certain Medicines

1. Blood pressure medicines
2. Antiandrogens-medicine used for prostate cancer therapy
3. Antidepressants
4. Tranquilizers or prescription sedatives
5. Appetite suppressants or medicines that make you less hungry
6. Ulcer medicines

Causes of Erectile Dysfunction

The brain plays a key role in triggering the series of physical events that cause an erection, starting with feelings of sexual excitement.

- **Psychological and Emotional Issues**

Anxiety

Depression

Fear of sexual failure or guilt about certain sexual activities

Stress-about sexual performance or life in general

Low self-esteem

Patients maybe referred to a mental health clinician for counseling and may be ask to bring his partner.

Prevention of Erectile Dysfunction

Taking active steps to prevent erectile dysfunction may help your sexual function and improve your general health.

The best way to prevent erectile dysfunction is to make healthy lifestyle choices and manage any existing health conditions.

- See your doctor for regular checkups and medical screening tests
- Follow a healthy eating Plan-choose whole grains foods, low fat dairy foods, fruits and vegetables and leans meats
- Maintain a healthy weight
- Work with your doctor to control the blood pressure, diabetes, heart disease or other chronic health diseases. Do not stop taking medication without discussing it with health care provider, which may be able to adjust dosage of medication or change medication.
- Stop smoking or vaping
- Limit or avoid alcohol
- Avoid use of illegal drugs: Illegal drugs may prevent patient from getting or sustaining an erection. Some illegal drugs may prevent you from becoming aroused or mask other psychological or physical factors that may be causing erectile dysfunction.
- Exercise regularly: Physical activity increases blood flow through the body, including the penis. Talk with health care provider before starting new activity.
- Get 7-8 hours of sleep regularly
- Get treatment for anxiety, depression, stress or other mental health concerns. Mental Health Counselor may suggest patient bring partner to counseling also.

Diagnosis of Erectile Dysfunction

A Primary Care Provider or a Urologist diagnoses erectile dysfunction (ED) with a medical and sexual history and a mental health and physical exam. Patients may find it difficult to talk with a health care professional about ED, therefore the health care professional may initiate the discussion. Remember that a healthy sex life is part of a healthy life. The more the health care provider knows about the patient, the more likely he or she can treat the patient.

Medical history

- History of any medical diseases
- History of any surgery or treatments that may have damaged nerves or blood vessels near the penis
- Prescription or over the counter medicines
- Use of illegal drugs, alcohol use, smoking cigarettes or vaping

The medical history can reveal diseases and treatments that lead to ED.

Diagnosis of Erectile Dysfunction

Sexual History

Reviewing the patient's sexual activity can help the health care provider diagnose problems with erection, sexual desire, climax or ejaculation.

The health care provider may ask you questions the patient may be embarrassed about, but he should provide truthful answers.

He or she may ask questions such as:

- how would you rate your confidence to get and keep an erection
- how often did you find sexual intercourse satisfying
- how would you rate your level of sexual desire
- presence of nocturnal or morning erections which may suggest a psychogenic component to erectile dysfunction
- are symptoms stable or getting worse

The health care may use different questionnaires to assist in obtaining the sexual history [Sexual Health Inventory For Men (SHIM)]

SEXUAL HEALTH INVENTORY FOR MEN (SHIM)

PATIENT NAME: _____ TODAY'S DATE: _____

PATIENT INSTRUCTIONS

Sexual health is an important part of an individual's overall physical and emotional well-being. Erectile dysfunction, also known as impotence, is one type of very common medical condition affecting sexual health. Fortunately, there are many different treatment options for erectile dysfunction. This questionnaire is designed to help you and your doctor identify if you may be experiencing erectile dysfunction. If you are, you may choose to discuss treatment options with your doctor.

Each question has several possible responses. Circle the number of the response that **best describes** your own situation. Please be sure that you select one and only one response for **each question**.

OVER THE PAST 6 MONTHS:

	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH	
1. How do you rate your confidence that you could get and keep an erection?	1	2	3	4	5	
2. When you had erections with sexual stimulation, how often were your erections hard enough for penetration (entering your partner)?	0 No SEXUAL ACTIVITY	1 ALMOST NEVER OR NEVER	2 A FEW TIMES (MUCH LESS THAN HALF THE TIME)	3 SOMETIMES (ABOUT HALF THE TIME)	4 MOST TIMES (MUCH MORE THAN HALF THE TIME)	5 ALMOST ALWAYS OR ALWAYS
3. During sexual intercourse, how often were you able to maintain your erection after you had penetrated (entered) your partner?	0 DID NOT ATTEMPT INTERCOURSE	1 ALMOST NEVER OR NEVER	2 A FEW TIMES (MUCH LESS THAN HALF THE TIME)	3 SOMETIMES (ABOUT HALF THE TIME)	4 MOST TIMES (MUCH MORE THAN HALF THE TIME)	5 ALMOST ALWAYS OR ALWAYS
4. During sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?	0 DID NOT ATTEMPT INTERCOURSE	1 EXTREMELY DIFFICULT	2 VERY DIFFICULT	3 DIFFICULT	4 SLIGHTLY DIFFICULT	5 NOT DIFFICULT
5. When you attempted sexual intercourse, how often was it satisfactory for you?	0 DID NOT ATTEMPT INTERCOURSE	1 ALMOST NEVER OR NEVER	2 A FEW TIMES (MUCH LESS THAN HALF THE TIME)	3 SOMETIMES (ABOUT HALF THE TIME)	4 MOST TIMES (MUCH MORE THAN HALF THE TIME)	5 ALMOST ALWAYS OR ALWAYS

Add the numbers corresponding to questions 1-5. TOTAL: _____

The Sexual Health Inventory for Men further classifies ED severity with the following breakpoints:

1-7 Severe ED 8-11 Moderate ED 12-16 Mild to Moderate ED 17-21 Mild ED

Diagnosis of Erectile Dysfunction

- **Mental Health Exam**

The health care provider may ask questions about feelings anxiety, depression or any problems in the relationship with the partner. They may ask about any medications you are taking for any mental health conditions. The health care provider may refer you to a mental health counselor if there is a more serious mental health concern.

- **Physical Exam**

The physical exam is a way to check your total health. For erectile dysfunction, the exam often starts with an exam of the genitals (penis and testicles). Based on age and risk factors, the exam may focus on the heart and blood system, as well as the prostate.

Diagnosis of Erectile Dysfunction

Lab Tests

- Hgb A1C check for diabetes
- Lipid panel is a test that can help show whether a person is at risk for coronary heart disease. This test looks at substances in the blood that carry cholesterol.
- Free testosterone done in the mornings

Imaging Test

- Ultrasonography (penile doppler) can detect poor blood flow through the penis.

Treatment for Erectile Dysfunction

Shared decision making is the cornerstone of treatment and management of erectile dysfunction. It is a process in which the patient and the clinician together determine the best course of therapy based on the discussion of risks, benefits and desired outcome.

- **Oral Medications known as PDE-5 inhibitors (Phosphodiesterase) relax muscle cells in the penis and increase blood flow.**
 1. Viagra (sildenafil citrate)-tablet (50mg, 100mg), liquid
 - Best time to take is 1 hour before sexual intercourse
 2. Levitra (vardenafil)-tablet (2.5mg, 5mg, 10mg, 20mg)
 3. Cialis (tadalafil)-tablet (2.5mg, 5mg, 10mg, 20mg)
 - Take a half hour prior to sexual intercourse and may last up to 36 hours
 4. Stendra (avanafil)-tablet (50mg, 100mg, 200mg)
 - Take 15 to 30 minutes prior to sexual intercourse

Tablets may be taken with or without food.

Do not take these medications if you are taking nitrates (nitroglycerin) to treat a heart condition. Patient should inform the health care provider of heart disease, heart failure, hypotension and all other medications.

Common Side Effects of PDE-5 Inhibitors

The health care provider should always discuss side effects with patients and course of action:

- Headache
- Dizziness or lightheadedness
- Fainting
- Flushing
- Heartburn
- Painful erection
- Priapism: an erection lasting longer than 4 hours. Seek emergency treatment
- Blurred vision (Viagra, Stendra); stop using and contact the clinician
- Sudden loss of vision (Viagra, Stendra); stop using and get emergency help

If side effects are persistent or severe, stop using medication and contact your clinician.

Treatment of Erectile Dysfunction

- **VED (Vacuum Erection Device)** is a battery or manually operated cylinder pump which fully enclose the penis. A vacuum tube inserted over the penis can create an erection. As air is pumped out of the tube, the penis expands and blood flows into it.
 - **Side effects:** transient bruising, discomfort/pain, difficulty with ejaculation and difficulty with the device. Most of the side effects are minor and resolve without intervention.
- **Constriction ring** is a special designed rubber band applied at the base of the penis to keep the blood from flowing out. It maybe use also when a man is able to obtain an erection but not sustain it. The ring should not remain on more than 30 minutes. Remove immediately after sexual activity.
- **Intraurethral Suppository (Alprostadil)** involves the insertion of a tiny alprostadil suppository in the penile urethra using a special applicator. In office dose should be given first. It is be refrigerated. Patient must urinate prior to insertion of the alprostadil suppository.
 - **Side effects:** discomfort/pain, dizziness, faint, light bleeding and priapism (seek emergency treatment). If side effects are persistent stop using medication and notify the clinician.

Treatment of Erectile Dysfunction

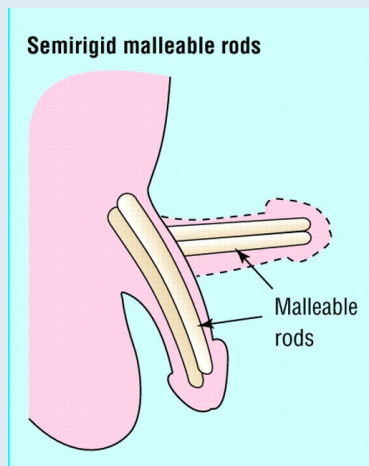
- **Penile Injection-intracavernosal injections (Alprostadil)** is the only medication used as a single agent and FDA-approved in the US. Uses a fine needle and syringe to inject the medication on the side of the penis into the cavernosal space near the base of the penis. It may be pre-mixed.
 - **Side effects:** bruising/bleeding at injection site, discomfort/pain, priapism- seek emergency treatment. If side effects are persistent, stop using medication and notify the clinician.
- **Testosterone Replacement Therapy (TRT)** is used if blood test shows low testosterone levels (low T). TRT is not an effective monotherapy for erectile dysfunction if the man's goal is to improve his erection. Patient will need to be counseled regarding the need for other erectile dysfunction treatments (PDE-5 inhibitors) in addition to TRT.

Surgery: Penile Implants

Penile implant surgery should be a last resort. If all other treatments fail the urologist can implant a device into the penis.

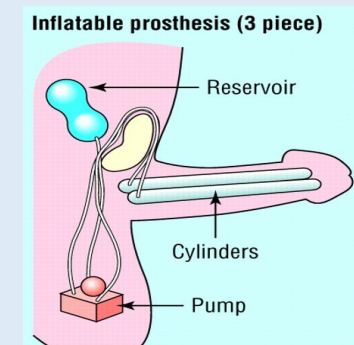
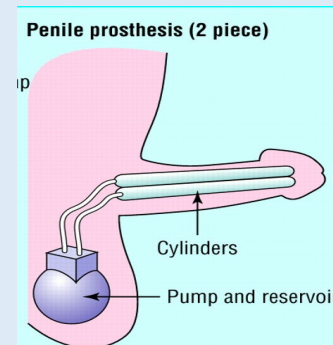
Semi-Rigid Implant (Bendable)

- This is made of two easy to bend rods made of silicone and metal to be placed in the two cavernosal tissue chambers
- Make the penis firm for sex
- Can be bent down for urination and up for sex



Inflatable Implant

- This may be a two piece or three-piece device
- Two cylinders are placed in the cavernosal chambers and the pump/fluid reservoir is placed in the scrotum (two-piece). In the three-piece device, the fluid reservoir is placed in the pelvic area.
- The pump inflates the penis and acts as a natural erection for the partner.



Side Effects of Penile Implants

- **Bleeding**
- **Infection**
- **Tenderness**
- **Pain**
- **Device failure (long term) will require another surgery for replacement**

New Technology

Low Intensity Wave Therapy (LISWT)

- Shockwave therapy – usually painless – in office treatment
- A type of regenerative medicine
- Uses low intensity sound waves to creates micro-trauma to the tissue, stimulating the body's own healing response.
- A probe is applied to the penis
- Helps increase blood supply by clearing plaques out of blood vessels.
- Encourage growth of new blood vessels
- Lasts about 15 to 20 minutes
- Average patient: 6 treatments in a 3-week period

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