

# Erectile Dysfunction

Erectile Dysfunction (ED), also called impotence, is the inability to achieve or maintain a firm, erect penis sufficient for sexual intercourse to the mutual satisfaction of the man and his partner. In the United States, ED affects over 30 million men, including 25-50% of men over the age of 65. The topic of erectile dysfunction is very frustrating and sensitive to most men and their partners. It is important to recognize that erectile dysfunction usually has a physical cause and can be successfully treated in most cases.

## Causes of Erectile Dysfunction

An erection occurs through a series of steps. First, the brain sends arousal signs via the penile nerve. These nerve impulses relax penile tissue and vascular spaces allowing blood to flow. The resultant penile swelling compresses the veins, draining the penis, thus trapping blood in the penis, making it firm and erect.

Erectile dysfunction can occur from a disturbance of any of the above steps.

Nerve injury from spinal cord injury, diabetes or pelvic surgery prevents the required nerve impulses from reaching the penile tissue. Blood supply problems from hardening of the arteries (atherosclerosis; caused by smoking, high blood pressure, diabetes, and high cholesterol) prevent adequate blood flow into the penis, preventing normal function.

Atherosclerosis can also affect the vascular tissues of the penis itself, preventing normal erection. Other structural problems with the penis, including Peyronie's disease, can allow blood to leak from the penis via veins, preventing adequate erection.

In addition, hormonal disorders such as low male hormone levels, certain medications including high blood pressure medications, and antidepressants as well as alcohol may cause ED. Psychological conditions including performance anxiety and depression can also cause problems with erections.

**ED is not "normal" at any age.** Aging increases the chance of developing the above causes of erectile dysfunction, but age in itself should not be considered a cause of ED. Moreover, there is no reason that getting older should prohibit an active sex life.

## Evaluation

The standard evaluation of ED includes a detailed history to determine the exact quality and frequency of erections as well as the duration of the problem. Sexual drive (libido) is evaluated, and a complete medical history is taken. Specific questions regarding the previously described risk factors are asked. A physical exam evaluates the penis, testicles, and prostate as well as the vascular and nervous system.

Many patients, prior to referral to an urologist, have been treated by their primary physicians with an oral medication for erectile dysfunction—sildenafil (Viagra®) or similar medicines. If a man has not

tried this medication, or has not been treated with an adequate dose, it is reasonable to attempt a trial of sildenafil. Successful response could prevent further evaluation.

Lab tests include testosterone levels and sometimes other tests to evaluate for diabetes or cholesterol problems. Certain patients require more detailed tests. Penile Doppler ultrasound of the penile blood vessels uses sound waves along with a penile injection to evaluate penile blood flow.

## Treatment Options

### Reversal of potential causes

The first step in treating ED is to eliminate possible reversible causes. These changes include controlling hypertension and diabetes. Changing medications known to cause ED, if medically safe, may improve erectile function. In addition, exercise, weight loss, and cessation of smoking can help erectile dysfunction.

### 2. Oral Medications

Sildenafil (Viagra®) is an oral medication that revolutionized the treatment of erectile dysfunction. It and newer medications of the same class work by preventing the breakdown of cyclic GMP, a molecule in the penile blood vessels involved in normal erections. It augments and prolongs the normal penile mechanism and is generally very safe. It does, however, interfere with nitrate metabolism; therefore, if a patient takes any form of nitroglycerin, he cannot take Viagra. It requires intact penile and pelvic nerves to work.

Testosterone can be given by injection, patch, or gel and works by boosting the male hormone. This works best in men with low hormone levels and low sexual desire.

### 3. Vacuum Pump

The vacuum pump device consists of a plastic cylinder placed over the penis. Air is pumped out of the cylinder, drawing blood into the penis and thereby creating an erection. A constriction band is then slipped onto the base of the penis to maintain an erection. The band can be left in place for half an hour. These devices require practice, but are safe and reliable.

### 4. Penile Injections

Various medicines can be injected into the penis to cause an erection. These medications act as direct penile vascular tissue relaxants, bypassing the need for nerves and relaxing penile blood vessels allowing inflow of blood. The needle used is small and is inserted with minimal discomfort. An erection occurs in 5-15 minutes and may last for an hour.

The most serious side effect is a prolonged erection (more than 4 hours), which will require immediate treatment by your doctor. Several medicines can be used, including Prostaglandin

E1 and a mixture called Triple Mix. Initially, a low dose is used and increased gradually to achieve an erection at the lowest possible dose.

## 5. **Intraurethral Medication**

The MUSE® system uses an applicator to place a small pellet of Prostaglandin E1 into the urethra. The medicine is absorbed by the penis and causes an erection via the same mechanism as injected medicines. Painful erection can occur occasionally in some men.

## 6. **Penile Prosthesis**

A penile prosthesis is a plastic device surgically implanted into the penis that allows for erections whenever a patient desires without the use of medications, injections or external pumps.

Prostheses come in several designs.

Two-piece and three-piece models of inflatable prosthesis exist with inflatable cylinders in the penis and a pump in the scrotum. When an erection is desired, a pump is pushed within the scrotum, which causes saline (salt water) to flow from a reservoir to the penile cylinders, producing a rigid erection. When finished, the pump is inactivated, and the saline flows out of the penile cylinders back into the reservoir producing a completely flaccid (soft) penis.

Because penile prosthesis is a permanent, reliable treatment for ED that allows an erection whenever a patient desires, satisfaction rates with this treatment are high. Prosthesis placement does require surgery and may not be appropriate for all patients.

## *Summary*

Erectile dysfunction is a common problem. A detailed evaluation can help determine the exact problem and guide a treatment plan. Advances in the treatment of ED have been striking in the last decade, and at present all patients should be candidates for some form of therapy. The best treatment strategy depends on the individual's and his partner's situation and expectations. Your urologist can help you determine which option is best for you.

Any provider can initially evaluate you for Erectile Dysfunction, or for a more tailored plan of care, please feel free to schedule an appointment at our Urology San Antonio's Center for Men's Health and Wellness. Call to make an appointment with either Dr. Leroy Jones, or Scott Christensen ACNP-BC at 210-582-5577