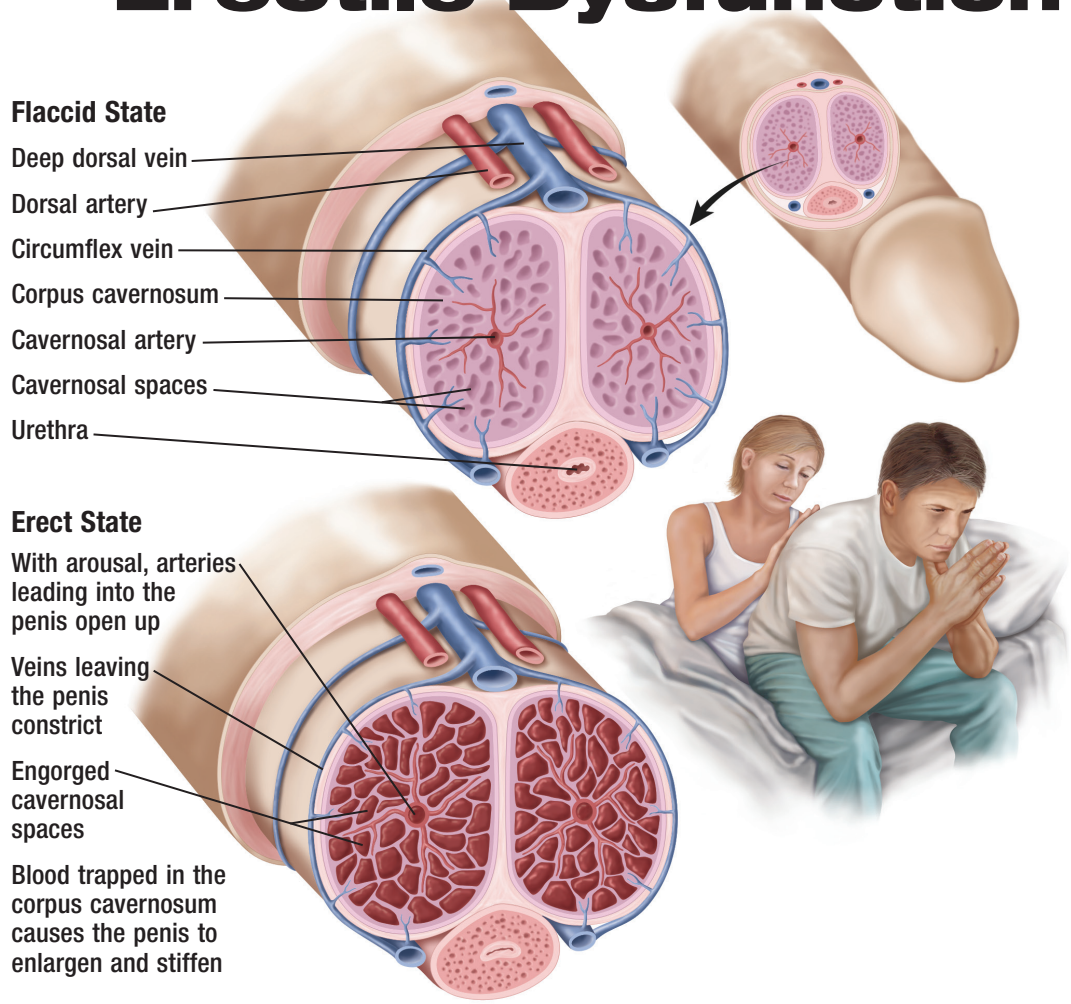
Erectile Dysfunction



Male Impotence

Erectile dysfunction (ED) occurs when a man cannot consistently get or keep an erection for satisfactory sexual intercourse. ED becomes increasingly common with advancing age, with 50% to 70% of men age 70 years and older experiencing it. ED can also be a sign of a chronic disease, a reaction to a stressful life event, the result of surgery or injury, or a side effect of a medication.

An erection is a complex series of events that begins with psychological and/or sensory stimulation. Nerve impulses cause relaxation of the muscles that control the tissue on either side of the penis, called the corpus cavernosum. *As these muscles relax, blood flows through the arteries in this tissue, causing the penis to become erect. The erection ends when the blood flows out of the tissue through the veins and back into the general circulation. If any part of this process is interfered with, an erection may not occur.*

A complete medical, sexual, and drug history can provide clues as to the cause of ED and help in planning an effective treatment. Lifestyle changes, such as weight loss and avoidance of alcohol, nicotine, and recreational drugs, may be effective in reversing ED. There are several prescription medications (Viagra, Cialis, Levitra) that increase the ability to achieve an erection after sexual stimulation. There are also two forms of alprostadil, an injection (Caverject) and a urethral pellet (Muse), which will cause an automatic erection without sexual stimulation. A vacuum pump, penile implant, and surgery are options if other treatments are not effective.

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PDE5 Inhibitors Increase the Ability to Achieve an Erection

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A complete evaluation, including a history of any chronic diseases or medications as well as a physical examination, is important to determine if there is a correctable cause for erectile dysfunction (ED). The diagnosis of ED is usually made without extensive laboratory tests.

Risk Factors and Causes

Men with high blood pressure, diabetes, atherosclerosis, stroke, spinal cord injuries, multiple sclerosis, or Parkinson's disease are at higher risk for ED. Abnormal levels of certain hormones, such as testosterone, prolactin, or thyroid, may occasionally be the cause. Prostate or other local surgery can affect nerve transmission or blood flow to the penis. There are a number of drugs that can cause ED as a side effect, including blood pressure medicine, antihistamines, stimulants, and antidepressants. Changes in lifestyle, such as adding regular exercise, losing weight, and avoiding cigarette smoking, excessive alcohol, and recreational drugs can help solve the problem.

PDE5 Inhibitors and Other Treatment Options

Phosphodiesterase type 5 (PDE5) inhibitors are oral prescription drugs approved to treat ED. They include sildenafil (Viagra), tadalafil (Cialis), and vardenafil (Levitra). Staxyn, a tablet designed to be dissolved on the tongue (not swallowed), is also an available form of vardenafil. These drugs work by enhancing the action of nitric oxide in the body, increasing smooth muscle relaxation in the penis. This action allows blood to flow into the corpus cavernosum tissue, resulting in an erection after sexual stimulation. Sildenafil and vardenafil should be taken about 1 hour before intercourse, and they continue to be active up to 4 hours afterward. Tadalafil may be taken 2 hours before intercourse and works for 24 to 36 hours, allowing more flexibility for the patient. These oral medications may only be taken once every 24 hours.

PDE5 inhibitors have side effects such as flushing, headache, nasal congestion, increased stomach acid, changes in vision and hearing, and muscle pain. They may also be dangerous for patients with some medical conditions, such as high blood pressure, abnormal heart rhythms, congestive heart failure, or other heart disease. These agents cause serious interactions with certain drugs, such as nitroglycerin or alpha-blockers. They require lower doses in men with kidney or liver disease.

If oral medications are not effective or appropriate, there are other treatment options for ED. Alprostadil causes an automatic erection by increasing blood flow without sexual stimulation. It is available in an injectable form, with a small needle used to inject it directly into the base or side of the penis. It is also available as a small pellet that is inserted into the urethra (opening at the tip of the penis). It can cause side effects including priapism (an erection that does not go away) and tissue scarring.

Natural supplements such as ginseng or yohimbine, marketed to treat ED safely without a prescription, have not been proven effective and may be a component of compounds that contain ineffective and dangerous substances. Products such as DHEA or other testosterone substitutes marketed as effective in treating "low T" (low testosterone) should be avoided as well.