

# THE UROLOGY GROUP

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## ERECTILE DYSFUNCTION

Erectile dysfunction refers to the inability to get an adequate erection for sexual function. It is a common problem which affects at least 30% of men over age 50.

An erection normally develops when blood flows into the erectile chambers of the penis. These chambers, known as the corpora cavernosa, are elastic sleeve like structures which lie in the penis adjacent to the urethra, the urinary channel. Erection develops when there is marked increase of blood flow into the spongy elastic erectile sleeves. Once blood flows in, it has to be trapped there so that it does not leak back out. This entire process is under the control of chemical messengers. These events are in turn coordinated through a control center in the brain.

A variety of problems can interfere with the ability of a man to get an erection. There may be improper levels of the male hormone testosterone. The nerves which control the process may not function properly. Stress, anxiety or other emotional problems may adversely affect the control center in the brain. There may be inadequate blood flow secondary to poor circulation either in the major blood vessels which bring blood to the groin area or in the smaller arteries that directly supply the erectile sleeves. The most common cause for erectile dysfunction is venous leak. The veins which are responsible for trapping the blood in the erectile chambers leak. In this case blood gets to the proper place but doesn't stay there.

Many conditions may interfere with erectile ability. High blood pressure, heart disease, impaired circulation, previous stroke, diabetes, alcoholism and kidney disease all can cause impotence. Trauma to the pelvic or groin area may interfere with blood flow. Prescription and non-prescription medications may adversely affect erection. Stress, anxiety, emotions and relationship difficulties also interfere with erection.

Evaluation of erectile dysfunction begins with the medical history. During the history the doctor asks questions to gather information about the above conditions. Subsequently, the doctor examines the abdominal and groin area to search for physical signs of some of the underlying conditions noted above. In men over the age of 45 the prostate may be checked as well. The prostate itself does not cause problems related to impotence; however, all men are at risk for the development of prostate cancer. For that reason the prostate should be checked with a digital rectal exam on an annual basis.

In the past a variety of diagnostic tests were carried out in an effort to pinpoint the cause of erectile difficulty. Some of these tests included sleep lab testing, Doppler study to assess blood flow and tests to check the function of the nerves in the groin area. We now pursue a "Goal Oriented" evaluation and treatment strategy. We found that expensive tests did not change our eventual treatment recommendation. For that reason we now approach impotence in terms of what can be done to improve sexual function.

Hormone levels of testosterone may be checked with a blood test. If the testosterone level is low, the next step is testosterone replacement. If the testosterone level is normal, there is no advantage to giving extra testosterone.

In most men, the first treatment step is typically a trial of an oral medication. Viagra, Levitra and Cialis have worked extremely well for many men. One of these pills is taken several hours before sexual activity. These medications will not cause an erection to develop on its own. However, when sexual stimulation starts, a better erection often develops. They work by affecting one of the chemical messages responsible for controlling the process of blood flow in – blood flow out. The pills amplify whatever chemical message is already present, so that there is better blood flow into the elastic erectile sleeves, and once the blood reaches the erectile sleeves, it is trapped there better so that it is less likely to leak back out. After climax and ejaculation, the penis becomes soft again (known as detumescence) just as it does for an erection not aided by pills. A prolonged erection does not develop from using one of these pills. These pills work best if taken on an empty stomach, 2-3 hours before sexual activity. So, if going out to dinner on a Saturday night, it is best to take the pill before going out, not after coming home with a full stomach. These pills are contraindicated in men with severe heart disease who are using a nitrate based medication. Side effects can include headache, flushing and rarely stomach upset or increased sensitivity of the eyes to light.

When pills are not effective the next step is a vacuum erection device, the MUSE system or penile self-injection. An erection device uses a cylinder placed over the penis to create a vacuum that draws blood into the erectile sleeves. A restrictive band is placed at the base of the penis to keep the blood there. This form of therapy is safe and non-invasive. Although it may be awkward to learn at first, many men are quite satisfied with this option. There are three to four different companies who make vacuum erection devices.

Another popular treatment option is the self-injection of medication into the erectile sleeve of the penis. With self-injection therapy the patient learns how to inject the medicine into the elastic erectile sleeve in the penis. This delivers the chemical message directly into the elastic sleeves to start the erectile process of blood flow in and blood flow trapping. After injection, an erection occurs which may last from 30 minutes up to 2 hours. Prostaglandin (Caverject, etc.), phentolamine and papaverine are medicines used for penile self-injection. Direct injection of any of these medications may cause a persistent erection that does not go away spontaneously after ejaculation and may require emergent treatment.

The major limitation to the use of penile self-injection has been the requirement for a man to inject himself with a needle in the side of the penis. An alternative delivery system known as MUSE allows the medication (prostaglandin) to be delivered by inserting a small suppository into the urethra at the tip of the penis. If enough of the medication is absorbed from the urethra (the urinary channel) into the erectile sleeves, an erection can develop.

If a prolonged erection (greater than 2 hours) develops after penile self-injection or the use of MUSE, the patient should take Sudafed 120 mg. If the erection persists in spite of that, a patient needs to seek emergency treatment.

An option for impotence therapy which was quite popular in the past was the surgical insertion of a penile prosthesis or an implant. With a penile implant, an artificial device is inserted into the erectile sleeves of the penis that can be mechanically inflated to produce an erection. Problems include device failure and infection.

For some men the erectile process works normally but they may have difficulty getting an erection due to emotional stress or anxiety. Counseling works well in this circumstance.

Overall, a "Goal Oriented" stepwise approach to impotence has proved very successful. Counseling where needed may be helpful. Treatment with oral medication is oftentimes very successful. When that fails, therapy with either a vacuum erection device, MUSE or penile injection may produce favorable results.