

Penile implants — What to expect and how to prepare

Penile implants can restore erectile function. Explore your choices and find out what to expect from this procedure.

Penile implants are artificial devices implanted inside the penis that allow men with erectile dysfunction (ED) to achieve an erection. They're also sometimes used to treat Peyronie's disease, a disorder that causes bent or painful erections. There are two basic designs:

- **Inflatable.** Also called hydraulic, inflatable implants can be pumped up to create an erection and then deflated.
- **Semirigid.** These implants are always somewhat firm.

First introduced in the 1970s, penile implants were the most reliable treatment for erectile dysfunction until the 1980s when medications injected into the penis became available. In the 1990s, oral agents such as sildenafil (Viagra) were introduced. These medications have since become the most popular erectile dysfunction treatment, but they don't work for all men with erectile problems. About two-thirds of men with ED will respond to oral medications — but some men can't take them, or the medications don't produce satisfactory results. For these men, penile implants are an additional option.

Penile implants require complex and permanent surgery, and there is a risk of infection and a risk that the device will malfunction. But, since these devices were first introduced, new materials, designs and surgical procedures have greatly improved outcomes for penile implants. Most men who have the procedure and their partners say they're satisfied with the results.

Penile implant surgery can be costly but may be covered by Medicare and other types of insurance.

Who is it for?

Erectile dysfunction can be caused by a number of health problems and injuries, and can be a complication of certain surgeries. Depending on the cause of erection problems, implants may be the best treatment choice. Penile implants are a good option for men with erectile dysfunction who can't take medications or for whom medications don't work. Some men make the personal choice to receive an implant rather than using alternative means to restore sexual function.

Implants are also used to treat some cases of Peyronie's disease — a condition that causes internal scarring that can lead to a bending of the erect penis, painful erections and other problems with sexual function.

Most men with erectile dysfunction opt for a penile implant only after other less invasive methods prove ineffective — these include oral medications, medications injected into the penis with a needle or via the urethra (the tube that carries urine and semen through the penis), and use of a vacuum pump device.

A penile implant procedure may have a higher risk of failure if you have immune system problems, a chronic health condition such as diabetes or are at high risk of infections.

How do you prepare?

Penile implant surgery is usually done at a surgery center or hospital by a urologist. Most candidates for penile implant surgery are evaluated by their surgeon to determine the cause of their erectile dysfunction and to assess their risk of a surgical procedure.

Once you and your doctor have determined that a penile implant may be a good choice for you, your doctor will help you understand the procedure, the risks and potential complications, and the type of implant that suits you best. Include your partner in the consultation with your doctor, if appropriate.

Follow your doctor's instructions about taking medications before and after your surgery. Often, during the two weeks before and after penile implant surgery, your doctor will tell you not to take medications that can alter the function of the platelets in your blood and can increase the risk of bleeding. Your surgeon should review your medications and suggest alternatives if you're taking medications that might make the surgery riskier.

Your surgeon might suggest that you bathe with antibiotic soap for three nights before your surgery to reduce the risk of infection. Do not shave the surgery site yourself.

You may be dismissed the day of surgery or may stay overnight, depending on the circumstances. Arrange for someone to drive you home from the surgery center or hospital.

How is it done?

Penile implant surgery usually takes between one and two hours and can be done under a general or spinal anesthetic.

Normally, spongy tissue inside the penis fills with blood to create an erection. To insert the penile implant, your doctor will stretch these tissue-filled chambers inside your penis (corpora cavernosa). After measurements are made and appropriately sized prostheses are selected, the cylinders (either inflatable or semirigid) are then inserted into the two chambers. With an inflatable implant, your doctor will also place a pump inside your scrotum, and possibly a fluid-filled reservoir in your lower abdomen, depending on the type of implant you receive.

There are two basic types of penile implants:

1. Inflatable implants

- a.** Three-piece implants use a fluid-filled reservoir implanted under the abdominal wall, a pump-and-release valve placed inside the scrotum,

and two inflatable cylinders inside the penis. Before you have sex, you pump the fluid from the reservoir into the cylinders to cause an erection. After sex, you release the valve inside the scrotum to drain the fluid back into the reservoir.

- b. The two-piece model currently available in the United States works in a similar way to a three-piece design, but the fluid reservoir is part of the pump mechanism implanted in the scrotum.

2. Semirigid Rods

This type of implant is always firm. The penis may be bent away from the body to have sex and toward the body to conceal the device.

In the United States, inflatable devices are the most common type of penile implant.

Three-piece inflatable devices are used in about 70 percent of penile implants. Two-piece inflatable devices are used about 20 percent of the time.

Semirigid devices are the least used, accounting for about 10 percent of implants. Although less commonly used, semirigid devices are less complicated, easier to place and have less risk of mechanical failure. Inflatable devices are more costly than semirigid types are, but they're more natural because they can be inflated to create an erection — and deflated at other times. Inflatable implants also reduce the possibility of damage to the inside of the penis due to constant pressure — which can be a problem for some men with semirigid implants.

Although semirigid implants are mechanically simpler — and early inflatable designs often had problems — improved design, materials and construction have made modern inflatable designs much more reliable.

The decision about which type of implant you should have is based on both your preference and your medical situation. Your doctor may advise one type of design over another based on factors including your age, risk of infection, and health conditions, injuries or medical treatments you have had in the past.

What can you expect during the procedure?

Immediately before surgery

- Penile implant surgery is usually done under either spinal or general anesthesia administered by an anesthesiologist.
- Within a couple of hours before the surgery, you may be given antibiotics to reduce your risk of infection.
- A tube called a catheter may be placed into the bladder through your urethra to drain urine. In most cases, the urinary catheter is removed the in the first 24 hours after surgery.

During surgery

- Your surgeon will make an incision below the head of the penis, at the base of the penis, or in the lower abdomen.
- Next, your surgeon stretches the spongy tissues in the penis that would normally fill with blood during an erection. This tissue is inside the two hollow chambers called the corpora cavernosa.
- After flushing the area with antibiotic fluid to prevent infection, your surgeon will choose the correct size implant and seat the cylinders inside the penis.
- If your doctor is implanting a two-piece inflatable device, the pump and valve mechanism are placed inside the scrotum. For a three-piece device, your surgeon will also implant a fluid reservoir under the abdominal wall through an internal incision.
- Once the device is in place, your surgeon will sew the incisions closed.

Recovery

- Most men go home within 48 hours of surgery.
- You will need to take antibiotics as directed by your surgeon to prevent infection.
- Following surgery, wear loosefitting underwear and clothing. Men with an inflatable device will need to make sure the scrotal pump stays in place during healing.
- Most men can resume strenuous physical activity about a month after surgery. You can resume sexual activity four to six weeks after surgery depending on the type of implant you have and the instructions of your surgeon.

Results

New designs and surgical procedures have improved the function and safety of penile implants. Although implants are the most invasive and least often chosen treatment for erectile dysfunction, they have a very high satisfaction rate. About three-fourths of the men who have the procedure, and their partners, say they're satisfied with the results. Many use the devices to have sex several times a week. Men with Peyronie's disease who have the procedure report slightly lower satisfaction rates.

While most men are satisfied with their penile implant, there are some things men should know before choosing to have the procedure:

- Implants cause an erection, but they don't increase sexual desire or sensation.
- A penile implant will be shorter than the erection you had naturally.
- Some partners feel that sexual pleasure is diminished by their lack of involvement in creating an erection.
- This surgery is permanent. If your implant is removed, you will not be able to get an erection.

- Infection is a possibility, especially if you have diabetes or certain other health problems. An infected prosthesis has to be removed and replaced.
- You may have reduced sensation in the head of your penis. In some men, this improves when they also take phosphodiesterase type 5 inhibitors, such as sildenafil (Viagra), tadalafil (Cialis) and vardenafil (Levitra).

Risks

- Infection Penile implants sometimes become infected. Surgery to replace the prosthesis is almost always necessary to treat an infection.
- For men who are not already at higher risk of infection because of an underlying health condition, infection rates are low — about 1 percent to 3 percent.
- Men with diabetes are at higher risk, with an infection rate of about 8 percent.
- Men with a spinal cord injury have about 9 percent risk of infection.
- Men having revision surgery — surgery to adjust or replace an implant — have about a 10 percent risk of infection. Men with diabetes who have revision surgery are at higher risk.
- If an infection occurs, it's usually not until weeks or more after surgery. In some cases, an infection occurs years later. Symptoms can include long-term pain, a component of the prosthesis sticking to the skin, or rarely, a component that breaks through the skin of the penis. With inflatable models, the entire prosthesis can also become infected.
- More serious infections — which in most cases start within weeks of surgery — can cause swelling of the scrotum, drainage of pus and fever.

Malfunction

Although new penile implant designs are very reliable and may last a lifetime, they can malfunction. For example, in some semirigid devices, internal parts can break down over time, leading to a prosthesis malfunction. In inflatable devices, fluid can leak or the valve or pump device can fail. Surgery is necessary to repair or replace a broken implant.

Looking ahead

New implants coated with antibiotics have reduced the incidence of infection, but more studies are needed to determine how effective they are.

Manufacturers recently released a three-piece inflatable implant with a lock-out device to prevent the device from accidentally inflating on its own. More research is needed to see how well this device works, but initial results are promising.

Because some men who have their prostate removed to treat prostate cancer have erection problems, experts are studying whether implanting a penile prosthesis at the same time the prostate is removed is appropriate.

The best solution to erectile dysfunction would be to repair the damaged tissue that caused the problem in the first place. Research is currently ongoing to devise injections of materials that would repair damaged penile tissue to allow natural erections to occur.