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## When drugs for erectile dysfunction don't work: What's next?

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Here are the alternatives to oral erectile dysfunction drugs. Solutions are available for most men's needs.

Thanks to a lot of direct-to-consumer advertising, most American men of a certain age know to ask about the "little blue pill" or similar medications if they develop erectile dysfunction (ED). These drugs enhance blood flow to the spongy tissues in the penis, which creates an erection. However, the drugs don't work for about 30% of men. Then what?

**Injections:** The next best option to oral medication is injecting a drug called alprostadil (Caverject, Edex) directly into the body of the penis. The relatively shallow injection creates an erection within five to 20 minutes that lasts for up to an hour. "Some men are not wild about sticking themselves with a needle, but it works," says Dr. Michael O'Leary, a professor of surgery at Harvard Medical School and a urologist at Brigham and Women's Hospital. Possible risks include pain at the injection site or an unusually prolonged erection requiring medical attention.

**Urethral pellet:** Another option is the medicated urethral system for erection (MUSE). In this treatment, a pellet of alprostadil is inserted into the opening at the tip of the penis (the urethra), where it is absorbed through the urethra wall. It creates an erection within 10 minutes that lasts up to an hour. MUSE doesn't work as well as injections, and may cause irritation and pain.

**Vacuum restriction:** In vacuum restriction, the man places a plastic cylinder over the penis and uses a pump to create vacuum pressure in the tube, which draws blood into the penis. The erection is maintained for up to a half hour by a snug rubber ring placed at the base of the penis. "This is another option, but it doesn't produce a real natural kind of erection," Dr. O'Leary says.

**Penile implant:** A more invasive option is a penile implant. Small hollow tubes are inserted in the penis. They can be inflated using a small pump implanted in the scrotum to make the penis erect, then deflated when no longer needed. The downside is that the implant disturbs the natural erectile anatomy, so oral drugs or injections will no longer work after an implant.

### Erectile dysfunction: What are the options?

Treatment	How it works	How well it works	How to use it
Prescription drugs	Increase blood flow to the penis, helping to achieve and maintain erections.	The drugs work in about 70% of men. Typical side effects include headache, flushing, stuffy nose, and back pain.	Take the drug when anticipating sexual activity. Cialis lasts for about 36 hours. The others work for about eight hours.
sildenafil (Viagra)			
tadalafil (Cialis)			
vardenafil (Levitra)			
avanafil (Stendra)			

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Alprostadil (Caverject, Edex) injections	Widens the blood vessels to the penis, allowing them to fill with blood and create an erection.	70% to 90% effective for all causes of erectile dysfunction. Most effective treatment for men whose erectile dysfunction results from prostate surgery.	Inject at time of sexual activity. Erection occurs in five to 20 minutes and lasts 30 to 60 minutes. Don't use more than once in 24 hours.
Alprostadil pellets (MUSE: medicated urethral system for erection)	A small drug pellet (alprostadil) is inserted into the head of the penis. The drug enhances blood flow to create an erection.	About 30% effective for all causes of erectile dysfunction. May cause pain at insertion site and irritation in the urethra.	Insert at time of sexual activity. Erection begins in eight to 10 minutes and lasts for 30 to 60 minutes.
Vacuum restriction method (pump)	Vacuum pressure in a hollow cylinder placed over the penis draws in blood, creating an erection. A snug rubber ring placed at the base of the penis maintains the erection.	60% to 80% effective for all causes of erectile dysfunction. Does not produce fully rigid erection.	Use at time of sexual activity. Do not leave ring on for more than 30 minutes.
Penile implant	Hollow tubes implanted in the penis are inflated by a pump in the scrotum to create an erection.	Produces erections for as long as needed.	The implant disturbs the erectile anatomy, so pills and injections will not work anymore.

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