

**Erectile Dysfunction**  
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**HPI:**

- Any issues with sexual function? For example, getting and/or maintaining erections?
  - When did you first notice issues with erections?
  - Are you able to get a partial or full erection currently?
  - Do you ever wake up with an erection?
- Have you tried anything? For example, Viagra, Levitra, Cialis, vacuum pump, constriction band, urethral medication, penile injections?
  - If so, what have you tried?
    - What worked? [ask if stimulated after pills, dose of medications, on empty stomach with Viagra?]
    - Any side effects with therapy?
      - Pills- headache, vision changes, heart burn, sinus congestion, facial flushing?
      - Urethral medication- penile pain?
      - Injections- penile pain, priapism?
      - Were side effects severe enough to prevent future use?
- **ROS:** fatigue, decreased libido, mood changes, trouble losing weight (common symptoms of testosterone deficiency)?

**PMHx:**

- DM- Recent HA1c? Diet/pill/or insulin-controlled?
- CAD- Prior CABG? Coronary artery stents? If so, when were stents placed; current antiplatelets/anticoagulation? If so, has patient received clearance to hold these medications in the past prior to a procedure?
- OSA- Compliant with OSA therapy (e.g., CPAP)?
- If PMHx significant for CV and/or lung disease, obtain information for cardiologist/pulmonologist in case clearance is needed for oral meds or future surgery

**PSHx:**

- Inguinal hernia repairs?
- Pelvic surgery (open vs robotic prostatectomy; cystectomy)?

**FHx:**

- Immediate family member with significant heart disease at young age (heart attack or stroke in parents or siblings <50 years old)? If so, consider cardiology referral as ED may be presenting sign of underlying CV disease
- Family history of prostate cancer? If so, what age at diagnosis?

**SocialHx:**

- Current tobacco use?
- Alcohol intake?

**Medications:**

- BP meds
  - Higher risk of ED

- Hydrochlorothiazide, spironolactone, furosemide, beta blockers
  - Lower risk of ED
    - Alpha blockers (e.g., doxazosin, terazosin), ACEI (e.g., lisinopril, enalapril), ARBs (e.g., losartan, valsartan), CCB (e.g., amlodipine, diltiazem, verapamil, nifedipine)
- Antidepressants
  - Higher risk of ED
    - SSRIs (citalopram/Celexa, escitalopram/Lexapro, fluoxetine/Prozac, paroxetine/Paxil, sertraline/Zoloft)
    - SNRIs (venlafaxine/Effexor, duloxetine/Cymbalta, desvenlafaxine/Pristiq)
    - TCAs (amitriptyline, nortriptyline)
  - Lower risk of ED
    - Bupropion
    - Mirtazapine
- Opioid pain medications
- Trazodone (can increase risk for priapism)

**Physical exam:**

- BP
- Assess for anatomy that may influence ability to get an adequate erection for use (e.g., buried penis) and for prior abdominal/pelvic surgical scars that may influence surgery
  - Morbidly obese? Buried penis? Prominent suprapubic fat pad? Able to expose glans? Stretched penile length (to show patient what he can expect with an IPP)
  - General health of genital tissue?
  - Prior groin incisions?
  - Testicular masses? hydrocele?

**Labs:**

- Total testosterone (before 10am unless nightshift worker- obtain whenever their morning is)
- Creatinine
- HA1c (if diabetic or concern for DM)
- PSA (when applicable)

# TREATMENTS

**Oral (pill) medication phosphodiesterase type 5 inhibitors (PDE5I):** Taken on-demand before sexual activity or daily (tadalafil) to increase blood flow into penis. Often times, initial therapy to treat erectile dysfunction

Pros:

- Non-invasive
- Cost effective
- High rates of success
- Generally, well-tolerated

Possible side effects:

- Headache
- Heartburn
- Muscle aches
- Vision changes
- Facial flushing
- Sinus congestion
- Side effects may improve with repeated use
- \*Cannot be taken with nitrates

**Pearlman's take-home message:** Pills are often used as initial therapy for erectile dysfunction and work in many men as an on-demand option. Some insurance companies cover a limited supply. You can obtain generic Viagra® (sildenafil) and Cialis® (tadalafil) for cheap WITHOUT insurance using medication assistance programs (GoodRx). Pills may not work as well in those after prostate and/or bladder removal, or in those with diabetes. If the pills don't work, many other options exist!

**Vacuum erection device (vacuum pump, penis pump):** External device is placed over penis, creates a vacuum, and draws blood into penis to obtain erection. Constriction band is placed at base of penis to maintain erection

Pros:

- Drug free
- May use with other therapies to help get/maintain erection
- (e.g., with pills, intraurethral suppository, or penile injections)
- May be used as part of penile rehabilitation/exercise to help stretch erectile tissue (after prostatectomy) to decrease loss of stretched penile length

Possible side effects:

- Penile bruising
- Penile pain/discomfort
- Decreased spontaneity
- Changes to penile sensation
- Penis may be cool to the touch
- Delayed or inability to ejaculate

**Pearlman's take-home message:** The vacuum erection device may be used as part of penile rehabilitation protocol or as a treatment for erectile dysfunction. Gesiva Medical offers a quality device that is battery powered and can be ordered by patients from the company website. No prescription needed.

**Penile constriction band (tension ring):** Place at base of penis to maintain erection

Pros:

- Drug free
- May use with other therapies to help maintain erection
- (e.g., with pills, vacuum erection device, intraurethral suppository, or penile injections)

Possible side effects:

- Penile discomfort
- Delayed or inability to ejaculate

**Pearlman's take-home message:** The penile constriction band may be used by itself or in combination with other therapies to help maintain erection. You can purchase these bands online or at an adult store. Gesiva Medical also offers quality silicone tension bands. You want to find a band that is tight enough to prevent blood from leaving the penis but not too tight that it causes significant discomfort.

**Intraurethral suppository:** Applicator is used to place a pellet containing alprostadil into urethra which dissolves to increase blood flow to penis

Pros:

- No needles
- Can be used twice daily
- Onset of erection: 5-10 minutes

Possible side effects:

- Penile pain
- Urethral pain/burning
- Low blood pressure

**Pearlman's take-home message:** May be used in those men who are unable to take or tolerate the oral therapies or in whom the oral therapies do not provide adequate results. This therapy is an alternative to penile injections (same medication as one of the injectable medications) for those not interested in injections. This therapy tends to be quite expensive for most men, which limits its use.

**Penile injections:** Self-inject side of penis on-demand before sexual activity to increase blood flow to penis

Pros:

- Onset of erection: 5-20 minutes

Possible side effects:

- Penile pain
- Penile fibrosis (scar tissue)
- Prolonged erection (priapism)

- Refrigeration required for Trimix

**Take-home message:** Self-administered penile injections are more effective than the other medical options to treat erectile dysfunction, especially in those who have had prostatectomy or bladder removal and in those with diabetes. Injections are performed shortly prior to desired sexual activity. The medication can cause a prolonged painful erection, so it's important to start at a low dose and slowly increase as needed for erection. NuCara pharmacy in Coralville, IA offers a compounded formulation for injections (Trimix- mixture of alprostadil, papaverine, and phentolamine), syringes and needles for injection, as well as additional teaching regarding injection technique.

**Penile implant:** Completely concealed device placed through a small incision. Scrotal pump is squeezed to achieve erection. Separate button on scrotal pump is used to deflate device. Can start using device for sexual activity after 6 weeks

Pros:

- Offers reliable, spontaneous erection
- No effect on penile sensation, orgasm, or ejaculation
- Covered by most commercial insurance companies in Iowa, as well as Medicare (not a covered benefit by Medicaid/state insurance)

Possible side effects:

- Device malfunction
- Risk of infection <1%

**Take-home message:** The penile implant provides a spontaneous and reliable erection that does not require medication. Some men choose to proceed right to penile implant surgery if the pills are insufficient while others decide to try a variety of options (e.g., vacuum pump, injections) before considering surgery. There is no right answer and the decision to pursue surgical placement of a penile implant is up to you!

## **Erectile function after prostatectomy:**

Erectile dysfunction after prostate removal for prostate cancer (radical prostatectomy) is likely due to a variety of factors, including nerve damage (as the nerves responsible for erections sit on the prostate and can be damaged during surgery even when the nerves are “spared”). It may take up to 2 years for return to maximum sexual function after prostate removal as nerves try to recover.

### **Use-it-or-lose-it**

Additional damage can occur when the penis remains flaccid for a long period of time (due to lack of well-oxygenated blood to the erectile tissue) which can cause the tissue to lose its flexibility and form scar. For this reason, we advocate for early intervention in order to optimize outcomes when it comes to restoring sexual health and preserving penile length and girth.

**Penile rehabilitation:** Refers to improving erectile function so that erectaids (medications, vacuum pump) are no longer necessary. The role for penile rehabilitation (with pills, penile injections, and/or vacuum pump) to enhance return of sexual function is unclear and there is no ideal regimen. Penile rehabilitation should be tailored to the patient and his goals, motivation, ability to afford various therapies, relationship status, and other medical problems. The optimal strategy likely will involve several treatments.

**Oral medications (PDE5I):** You may decide to take PDE5I medication scheduled or on-demand prior to sexual activity (no evidence that one works better than the other). These medications will only be successful in those who have had some type of nerve-sparing procedure. Response rates increase with time after prostatectomy (as the nerves are given more time to heal after surgery)

### **Sample regimens:**

Nightly low-dose sildenafil (25mg) or tadalafil (5mg)

On-demand higher dose sildenafil (50-100mg) or tadalafil (20mg)

**Penile injections:** You may decide to perform penile injections (this therapy does NOT require functional nerves to cause dilation)

**Sample regimen:** Administer penile injection with alprostadil or Trimix three times per week

**Vacuum erection device:** May help reduce loss of penile length and girth. Would use the vacuum pump without the tension band unless for sexual intercourse

**Sample regimen:** Starting 1 month post prostatectomy, use vacuum erection device daily (inflate device for two consecutive 5-minute periods after a brief release of suction in between inflations); hold off on using tension band for the first month