



## **An Integrative Approach to Erectile Dysfunction**

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Thanks for your interest in Integrative Health Matters!

At IHM, we focus on putting together the best of standard treatments with the best new research-based therapies. In this document, I provide a summary of many treatment options available for ED so you can make a direct comparison.

Many treatments exist for erectile dysfunction. This list is based on an extensive review of the medical literature and society guidelines. Treatments are listed in the same order as they are listed in the American Urological Association's Guidelines on the Treatment of Erectile Dysfunction (2018).<sup>i</sup>

We hope this list helps you consider your options. We do have videos available on our website describing regenerative and standard options in great detail – watch them at [www.ihm.life/rejuvenate](http://www.ihm.life/rejuvenate). If you'd like to consult with us about an integrative approach to sexual health, please call today for an appointment! 903-595-8077

## **Treatment Options for ED**

### **Mental health evaluation**

- Effectiveness
  - Used as an adjunct to other treatments for ED, can improve their efficacy
- Duration of treatment effects
  - Short-term: N/A
  - Long-term: Modest but real improvements are available with a committed approach to health
- Burdens
  - Time: Usually 1 hour per session, number of sessions needed depends on how much therapy is needed
  - Cost: Average psychologist session is \$70 to \$150
  - Risks/Side effects: Minimal
- Special precautions: None
- FDA-Approved: N/A
- **Recommendations:** If you have relationship issues or a history of trauma or concomitant mental concerns such as depression or anxiety, psychological evaluation and treatment can be hugely valuable.



### **Lifestyle changes: diet and increased physical activity**

- Effectiveness
  - Possible if mild and early and underlying conditions are reversed
  - AUA says “may have small positive effects on erectile function and broader, positive effects on overall health”
  - 2-year study of weight loss and physical activity intervention for obese men showed ED improvement from “moderate ED” to “mild to moderate ED”
    - 17 of the 55 men in the trial achieved reached “mild ED” or better
- Duration of treatment effects
  - Short-term: N/A
  - Long-term: Modest but real improvements are available with a committed approach to health
- Burdens
  - Time: Likely significant daily choices
  - Cost: Depends on what you do
  - Risks/Side effects: Minimal
- Special precautions: None
- FDA-Approved: N/A
- **Recommendations:** Of course this benefits overall health as well, so we do recommend it as much as you are able. We offer health coaching and integrative medicine visits to help support you on your journey!



## integrative health matters

### **Pharmaceuticals: PDE5 inhibitors: Viagra, Cialis, etc**

- Effectiveness
  - About 7.8 to 9 point improvements on erectile function assessment scale in most studies, which generally raises a person two levels, ie from “severe” to “mild to moderate,” “moderate” to “mild,” and “mild to moderate” or “mild” to “No ED”
- Duration of treatment effects
  - Short-term: Generally effective within 30 to 60 minutes; lasts between 4 and 24 hours depending on which medication you use
  - Long-term:
    - None, must take again before sexual activity
    - Low-dose Cialis may be used daily for ongoing maintenance of short-term effects
- Burdens
  - Time: Must be used on demand for sex or daily, must wait 30-60 minutes for effects to occur
  - Cost: According to recent GoodRx search, you can get generic Viagra and daily Cialis for about 50 cents a pill; higher dose Cialis is over \$1 a pill<sup>ii</sup>
  - Risks/Side effects:
    - Indigestion, headache, flushing, back pain, nasal congestion, muscle aches, visual disturbance, and dizziness, priapism - 2-11% range overall
      - Daily dosing of low-dose Cialis lowers these risks
    - Possibly 3:100,000 men develop rare visual condition
- Special precautions
  - Use of nitrate-containing medications or alpha blockers such as Flomax in combination with a PDE5 inhibitor can cause a precipitous drop in blood pressure
  - Can interact with anti-depressants, anti-fungals, anti-hypertensives, and HIV/AIDS drugs.
  - Men with mild to moderate hepatic or renal impairment or men with spinal cord injury must use caution
  - Stop medication and seek prompt medical care if sudden loss of vision or hearing occurs
- FDA-Approved: Yes
- **Recommendations:** If they work for you and you can use them without side effects, they are a great option. Use them to enhance healing if you are using regenerative therapies. Always use the lowest dose possible (daily dosing is a great choice) and combine them with supplements that also boost nitric oxide production (arginine-based supplements).

**Pharmaceuticals: Urethral medications (ie, Muse)**

- Effectiveness
  - Successful intercourse rates (variously defined across studies) with alprostadil placed into the urethra (through the opening at the tip of the penis) ranged from 29.5% to 78.1% in different studies
- Duration of treatment effects
  - Short-term: Generally begins to work 5 to 10 minutes after insertion and lasts 30 to 60 minutes
  - Long-term: None. Once it wears off, you must take it again
- Burdens
  - Time: Requires in-office administration of first treatment; otherwise, use before each sexual relation
  - Cost: Intraurethral about \$75 a dose<sup>iii</sup>
  - Risks/Side effects
    - Frequently reported but most are minor and short-term
      - Genital pain (ranging from 6.5 to 34.7%)
      - Minor urethral trauma (ranging from 1 to 5.1%)
      - Urethral pain or burning (0 to 29%)
      - Dizziness (0 to 7.0%)
    - One study reported that 1% of men experienced an episode of prolonged or painful erection but there were no other reports of priapism.
- Special precautions
  - Hypotension (low blood pressure) or syncope (passing out) occur rarely, which is why the first treatment must be given in a doctor's office
  - Urethral disease such as balanitis or strictures
  - Should not be used for intercourse with a pregnant woman
- FDA-Approved: Yes
- **Recommendations:** Consider if you don't respond to oral meds, if you only get a partial response to regenerative therapies, or if you are not a candidate for regenerative therapies.



## integrative health matters

### **Pharmaceuticals: Penile injections (ie. TriMix, Caverject)**

- Effectiveness
  - Reported range of achieving erection sufficient for sexual intercourse is 53.7% to 100%
- Duration of treatment effects
  - Short-term: Generally erection occurs within 5 to 20 minutes of the injection and lasts up to 1 hour
  - Long-term: None. Once it wears off, you must take it again. Can use up to 3x/week with at least 24 hours between doses.
- Burdens
  - Time: Requires in-office administration of first treatment; otherwise, use before each sexual relation
  - Cost: Penile injections such as Caverject are about \$100 each<sup>iv</sup>; may be able to get compounded Tri-Mix for less
  - Risks/Side effects
    - Pain with injection or erection, bruising or swelling, priapism, fibrosis or plaque formation, deformity occur about 10-20% of the time overall
- Special precautions:
  - Hypotension (low blood pressure) or syncope (passing out) occur rarely, which is why the first treatment must be given in a doctor's office
  - May make Peyronie's disease worse
- FDA-Approved: Yes

**Recommendations:** Consider if you don't respond to oral meds, if you only get a partial response to regenerative therapies, or if you are not a candidate for regenerative therapies.



## integrative health matters

### **Pharmaceuticals: Testosterone therapy**

- Effectiveness
  - Makes PDE5 inhibitors more likely to work
  - Not effective alone for ED per AUA
  - Does provide more global health benefits
- Duration of treatment effects
  - Short-term: None
  - Long-term: Must be used ongoing for real benefit
- Burdens
  - Time: Must do injections usually 2x a week, daily creams, or BioTE pellets 3 times a year
  - Cost: Widely varies depending on form used
  - Risks/Side effects
    - Infertility
    - Other risks/benefits remain unclear and debated
- Special precautions:
  - May have adverse effects on prostate disease or cancer
  - Avoid exposing others to testosterone cream
- FDA-Approved: Off-label use for ED, only approved for medical conditions causing low T such as genetic or testicular disease and hypothalamic or pituitary disease
- **Recommendations:** Consider having testosterone assessed and using replacement if indicated, especially if pursuing regenerative therapies. Testosterone is likely to have other positive benefits on your health.



## integrative health matters

### **Vacuum erectile device (penis pump)**

- Effectiveness
  - 12 studies showed 34-100% satisfaction, average 76.49%
- Duration of treatment effects
  - Short-term: Generally works immediately and lasts 10 to 15 minutes
  - Long-term: None. Once it wears off, you must use it again
- Burdens
  - Time: Must use the device every time you have sex
  - Costs: \$349 for a high-quality device
  - Risks/Side effects
    - Most are minor and resolve
      - Transient penile petechiae or bruising (16 studies: mean 17.7%; range 0 to 50%),
      - Discomfort or pain (17 studies: mean 18.2%; range 0 to 64%),
      - Difficulty with ejaculation (9 studies: mean 21.6%; range 3.4 to 40%),
      - Difficulty with the device (10 studies: mean 19.8%; range 0 to 66.6%).
    - Some men also note loss of sensitivity (7 studies: mean 14.5%; range 3.2 to 45%)
- Special precautions
  - Men who are receiving anti-coagulant therapy and/or who have bleeding disorders or have a history of priapism should use VEDs with caution.
- FDA-Approved: Off-label use for ED and Peyronie's disease, only approved for "creating or maintaining sufficient penile rigidity for sexual intercourse"
- **Recommendations:** Use it daily as exercise to enhance effects of other therapies.



## integrative health matters

### **Penile prosthesis implantation**

- Effectiveness
  - Satisfaction rates average 80-90%
- Duration of treatment effects
  - Short-term: Usually ready to use 5 or 6 weeks after surgery
  - Long-term: 90 to 95% still work 10 years after surgery
- Burdens
  - Time: Major operation and recovery, must inflate prior to each sexual relation
  - Cost: \$16,000 to \$19,000
  - Risks/Side effects
    - Operative/peri-operative risks
      - Penile edema or hematoma (mean 3.4%), corpus injury (mean 2.3%), urethral injury (mean 1.2%), acute urinary retention (mean 2.0%), and crura injury (mean 1.5%). These AEs were rarely serious and generally resolved with supportive care or minimal intervention (i.e., short-term use of an indwelling catheter to manage acute urinary retention). Most men will experience some degree of pain after surgery with complete resolution within one to three months.
    - Infection: typically occurs within 3 months, usually requires removal
      - Occurs in about 2-5%
      - Decreased to 1-2% with devices that have infection-inhibiting coating
      - In diabetics, 5.5% to 20%; can be lowered with antibiotic-coated devices to 2% or less
      - Rarely can be replaced immediately; usually not until at least 6 weeks after infection
        - Much more difficult to replace due to scarring
        - Other problems such as penile shortening, change in penile shape, and loss of sensation are more likely to occur if it is replaced
    - Erosion: 0 to 6.5%, requires surgical revision if it occurs
    - Mechanical failure: Improving with technology
      - 90 to 95% still work 10 years after surgery
    - Changes in penis appearance
      - Length decrease commonly reported
      - Can improve with presurgical traction or vacuum device use, use of oral medications such as Viagra or Cialis or intraurethral medication such as Muse after surgery
    - Overall reoperation rate in a study of 7,666 men from 1995 to 2010 was 11% (half due to mechanical failure)
- Special precautions
  - Must be a surgical candidate
- FDA-Approved: Yes
- **Recommendations:** This treatment cannot be undone, as inserting the prosthesis removes your ability to ever have normal erections. Use it only as a last resort!



**Low intensity extracorporeal shock wave therapy**

- Effectiveness
  - 10 randomized sham-controlled trials, 3 randomized trials, 8 meta-analyses, and 1 systematic review demonstrating efficacy including ultrasound evidence of improved blood flow; ALL studies have shown improvement, as much as 75% 1 year after treatment
  - Average improvement seems to be one level of function after 6 treatments
  - Additional courses of 6 treatments have an additive effect
- Duration of treatment effects
  - Short-term: May notice increased erections within 1-2 days of treatment but max effects aren't apparent for about 4-6 weeks after
  - Long-term: Some results decline with time, but 75% of men still have significant results after 1 year or treatment, 50% 2 years after
- Burdens
  - Time: 6 weeks, once or twice a week, 30 minute in-office treatment
  - Cost: \$3000 for initial 6, \$2000 for subsequent rounds of 6
  - Risks/Side effects
    - A few patients report mild tenderness or numbness in certain parts of the penis that goes away in a couple of days
    - Per the AUA, there are essentially no adverse events reported
- Special precautions:
  - Cannot be used if any active lesions or sores in the area being treated
  - Cannot be used in men with a penile prosthesis implant
- FDA-Approved: Off-label use for ED with a device that is FDA-approved for relief of minor muscle aches and pains

**Recommendations:** Works great with virtually no side effects, should be a first line option for any man wanting to improve ED. Data supports a similar therapy with pulse wave devices, which are similar to low intensity shockwave devices, and more readily available for off-label use in the United States.

### **Platelet-rich plasma (PRP) therapy (such as P Shot)**

- Effectiveness
  - Data is still small but promising, see talk for more details
- Duration of treatment effects
  - Short-term: May notice increased erections within 1-2 days of treatment but max effects aren't apparent for about 4-6 weeks after
  - Long-term: Not yet known
- Burdens
  - Time: About 1 hour in the office, must wait for healing to occur
  - Cost: Average \$1800
  - Risks/Side effects
    - Local discomfort or pain may persist, generally up to a week
    - No known long-term adverse events from PRP
- Special precautions
  - Some medications must be held before treatment and some may reduce efficacy
    - Antiplatelet therapy and blood thinners, aspirin
    - NSAIDs
      - Continue to avoid for 2-6 weeks after the injection (use acetaminophen if needed for pain)
    - Pioglitazone (Actos) – may inhibit platelet function
    - Immunosuppressants (such as glucocorticoids)
  - Blood disorders, such as clotting issues could increase complication rates
  - Immunocompromise could increase complication rates and lower effectiveness
  - Cannot be used if any active lesions or sores in the area being treated
  - Cannot be used in men with a penile prosthesis implant
  - Caution if you have prosthetic joints or hardware infection
- FDA-Approved: Off-label, PRP is made using a device that is FDA-approved for certain orthopedic procedures
- **Recommendations:** Great emerging research with low side effects makes this an option worth considering.

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<sup>i</sup> Erectile Dysfunction: AUA Guidelines (2018). Burnett et al. 2018. Available at [https://www.auanet.org/guidelines/erectile-dysfunction-\(ed\)-guideline](https://www.auanet.org/guidelines/erectile-dysfunction-(ed)-guideline)

<sup>ii</sup> Coupons available at <https://www.goodrx.com/sildenafil> and <https://www.goodrx.com/tadalafil-cialis>

<sup>iii</sup> Coupons available at <https://www.goodrx.com/muse>

<sup>iv</sup> Coupons available at <https://www.goodrx.com/caverject-impulse>