

Step 1: Preserve

This handout goes through Step 1 of the UroPlan Active Restoration Roadmap and explains how pelvic surgery can affect both erections and bladder control. Things are organized in a question/answer format and have been broken into two sections with the first addressing erectile preservation and the second addressing bladder and urine control. **This is the step men should focus on prior to surgery and continue throughout the recovery process.** Please remember that each of the exercises and therapies discussed here should ideally be started prior to surgery and continued throughout the healing process in the months following.

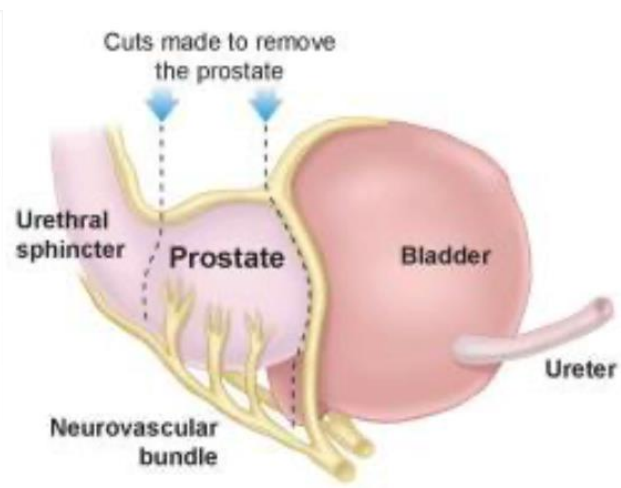
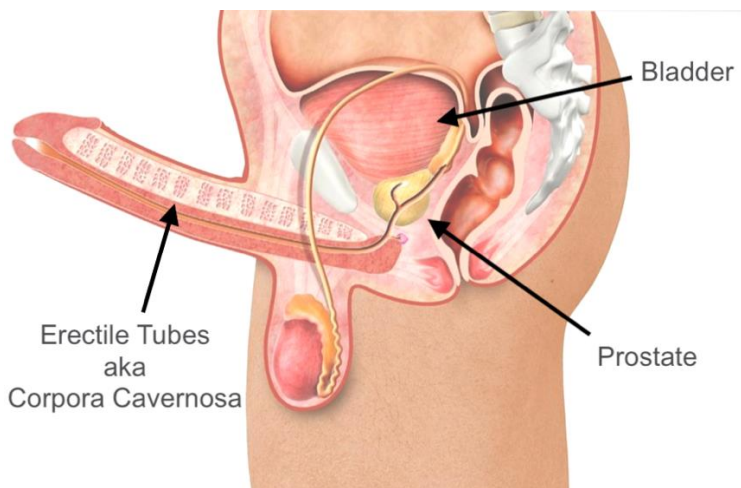
Please visit www.UroPlanIndy.com to watch our UroPlan videos and for electronic versions of each of these handouts. If you ever have any questions or concerns, please feel free to call the Men's Health Center at (317) 564-5104.

Section 1: Erectile Preservation

How do erections work?

In regards to sexual function, the male erection is essentially the result of two inflatable tubes that start in the pelvis and extend down the length of the penis. These tubes are known as the corpora cavernosa.

When a man is aroused, an electrical signal travels from the brain, through the deep nerves of the pelvis, to the arteries that supply these inflatable tubes. These arteries then expand and allow the rush of blood that provides an erection.



How does pelvic surgery affect erections?

The nerves that supply erection are densely attached to the prostate. Completely removing them disrupts the pro-erectile electrical signal that comes from the brain, preventing erections. As a result, many men now undergo what are known as 'nerve-sparing' procedures if their anatomy allows it. With this approach, these nerves are gently separated from the prostate, which improves men's chances of recovering sexual function.

However, even if these nerves are spared, men will still experience a temporary 'paralysis' of these nerves that can take several months to resolve. This does not affect sensation, but it will prevent men from achieving erections immediately following surgery. This presents a challenge.

The soft, spongy tissue inside the erection tubes requires significant blood flow to stay healthy. Practically, this is provided by the 3-4 erections most men achieve while sleeping or upon waking up. These daily erections go away when a man undergoes pelvic surgery. Even if a man's nerves are spared and are only temporarily 'paralyzed', this lack of regular blood flow can cause significant scarring inside the erectile tubes. Ultimately, this leads to a loss of penile length, a loss of penile girth, and ultimately worse erectile function even if a man's pelvic nerves eventually recover from surgery.

The goal of penile rehabilitation portion of the UroPlan Active Roadmap is to exercise and **preserve** this tissue to keep it as healthy as possible as the pelvic nerves recover from surgery. This gives men their best chance to preserve their natural sexual function.

Does prostate removal affect ejaculation?

When a man experiences climax, there are several processes that occur simultaneously. The pleasurable sensation that accompanies climax is known as orgasm, while the pelvic contractions and expulsion of semen is known as ejaculation. When the prostate is removed, the expulsion of fluid is lost. Orgasm is still pleasurable and men will still experience pelvic contractions with climax, but no fluid will come out the tip of the penis.

How can we preserve the erectile tissue while the pelvic nerves recover?

There are three main components to erectile tissue preservation following pelvic surgery:

- 1) At least once daily use of a vacuum erection device (also known as a VED)
- 2) A daily dose of tadalafil 5 mg (aka generic Cialis)
- 3) Twice daily dose of L-citrulline 1500 mg

What is a Vacuum Erection Device, also known as a VED?

A VED is an external pump that a man can use to achieve an erection and it is an important part of penile rehabilitation following prostate removal.

How does it work?

By creating a seal with the skin and evacuating air from within the cylinder, blood is pulled into the erectile bodies of the penis. This can induce an erection under most circumstances. Regular use of the VED following surgery can help keep a man's erectile tissues healthy while his nerves are recovering.

This helps to reduce the loss of penile length and girth many men report following surgery and minimizes scarring within the erectile bodies caused by lack of regular blood flow.



What are the side effects of the VED?

Although the VED is generally considered to be safe, some men may experience bruising as a result of the suction. This is typically mild, but men who are on blood thinning medication (like coumadin, Warfarin, rivaroxaban, Xarelto, clopidogrel or Plavix) are at a higher risk and should use caution when using their VED. Some men report that the VED is uncomfortable when they are first learning how to use it.

Which VED should I use?

There are many different types and brands of VED. The VED can either be a manual pump or battery powered. Although no particular type or brand of VED has been shown to be superior for penile rehabilitation, battery powered devices are generally preferred as they are quicker and easier for patients to use.

At our practice, we generally prefer the Osbon ErecAid Vacuum Therapy System manufactured by Timm Medical as it is well made and the company offers thorough patient teaching to ensure each man can use his device effectively. If you are interested in purchasing the Timm Medical device, please call their customer support at (800) 438-8592 or visit www.timmmedical.com to learn more.

However, patients are more than welcome to purchase a different device if they so desire. It is much better to purchase a different, more cost-effective device rather than completely forego vacuum therapy following prostate removal.

The Soma Therapy OTC Manual System by Augusta Medical Systems is a cost-effective manually operated vacuum device that, although not battery powered, can provide equivalent results provided patients are willing to invest the extra effort required by manual devices. If you are interested in purchasing the Augusta Medical Systems device, please visit www.augustams.com to learn more.

For men interested in considering even more options, a commonly used online marketplace for VEDs is www.erecaidpumps.com.

Unfortunately, due to the different number of available devices on the market, we are unable to offer troubleshooting for each of these different devices.

VEDs are typically not covered by most major insurance companies, but they can often be purchased using funds from a health savings account, also known as an HSA.

We are happy to provide you with a prescription and letter of necessity should you require it. Please call our office at (317) 564-5104.

What exercise schedule should I follow with my VED?

We recommend the following exercise regimen. Please note that although portions of these instructions may be specific to the Gesiva Medical VED, this regimen can be replicated with virtually any device.

- Step 1:** Please apply a water-soluble lubricant to the head of your penis, inside the cylinder (about finger length deep), and around the opening/rim of the cylinder (imagine you're putting toothpaste on a toothbrush).
- Step 2:** Place your penis in the cylinder and give it a slight twist against your body to 'seat' the lubricant and ensure an air-tight seal.
- Step 3:** Press and hold the power button (grey button) for 3-5 seconds, then pause for 3-5 seconds and repeat. You will continue to pump in intervals of 3-5 seconds on and 3-5 seconds off until you achieve a full erection. This process usually takes about 1 ½ to 2 minutes.

For manually operated devices, you will need to replicate the above process using the hand pump. Fully pump the device until you've achieved a full erection.

- Step 4:** Once fully erect, hold the erection in the cylinder for 30 seconds. After 30 seconds, press the release button to release the vacuum. This will allow your erection to come down.
- Step 5:** Please repeat steps 2-4 for 10-15 minutes – the goal is to try to create between 8-12 erections in that time span.

Frequency: We recommend that patient complete the above 10-15 minutes exercise regimen at least once daily for best results. If daily use is not possible, at least every other day usage should be considered.

What if I can't use a VED for some reason?

For men who can't use a VED, we recommend using a penile traction device. These are devices that gently stretch the penis. However, because they don't utilize suction, bruising is rarely an issue. Although there are many different models, we typically recommend the PeniMaster Pro with the rod extender system or the RestoreX traction device. The PeniMaster Pro with the rod extender system is available at www.penimaster.com while the RestoreX traction device is available at www.restorex.com. We typically recommend the PeniMaster Pro for this application as it tends to be more cost effective than the RestoreX device. Men should apply and wear their device for at least 30 minutes a day, every day. Both the PeniMaster Pro and the RestoreX device come with detailed instructions and we encourage patients to refer to these when using their device.

When should I start my exercises?

Generally, we recommend that patients purchase their VED or traction device and start practicing their exercises as soon as 2 weeks prior to surgery. This allows men to get comfortable with their device as soon as possible. Following surgery, we recommend starting your exercises as soon as your catheter is removed. That being said, this may not be possible for men who are experiencing significant urinary leakage. We recommend trying to void completely prior to starting your exercises and perform your first few sessions lying flat in bed with your head and shoulders supported by pillows.

If you are still leaking, it's ok to delay starting your exercises until this improves, although we strongly recommend that patients should try to start no later than 1 month following surgery. If you are still leaking slightly at this point, you can put some light absorbent material at the end of the cylinder to absorb any urine that leaks (toilet paper, facial tissue or cotton balls all work well and are light enough to not affect vacuum). This will help avoid urine being pulled into the diaphragm which could damage the pump mechanism.

What is the medication tadalafil (also known as Cialis)?

Tadalafil (the generic name for Cialis) is a medication known as a 'phosphodiesterase inhibitor'. It is typically prescribed to men with mild erectile dysfunction as a way to boost the chemical pro-erectile signals in the penis. This can allow men with mild erectile dysfunction to achieve erections by improving blood flow to the penis.

In the context of penile rehabilitation, the prescribed daily dose of tadalafil is unlikely to cause regular erections immediately following surgery. Rather, it promotes blood flow to the erectile tissues which can help reduce scarring and shrinkage as the pelvic nerves recover. It should be taken every day leading up to and following surgery, regardless whether or not sexual activity is desired.

Although tadalafil is incredibly safe, it should NOT be taken by men who are also taking 'nitrate' containing medications as it may cause an unsafe drop in blood pressure. Some examples of these include nitroglycerine tablets, isosorbide mononitrate, and nitroglycerine patches. If you're unsure if you're taking one of these medications, please call our office at (317) 564-5104 to review your medication list before you start taking this medication.

Depending on your insurance, your pharmacy may state that a 'prior authorization' is required prior to filling your prescription. **Our office does NOT submit prior authorizations for this medication.** If your pharmacy tells you this, please download the smartphone app 'GoodRx' (www.goodrx.com) and use the provided coupon for an affordable cash price. Your pharmacy can help you with this process. You may need to ask your pharmacy to send the script to a different pharmacy to get the best price (Meijer is typically the cheapest).

Like the VED, we recommend that men start taking their daily tadalafil script as soon as 2 weeks prior to surgery.

What about the supplement L-citrulline?

L-citrulline is a dietary supplement that is readily available over-the-counter and does not require a doctor's prescription. Similar to the tadalafil mentioned above, it has been shown in studies to boost the chemical pro-erectile signals in the penis, although it does so in a slightly different mechanism. That's why we recommend that men take L-citrulline in addition to their daily tadalafil.

We recommend a dose of 1500 mg twice daily. Although we do not recommend any particular brand, L-citrulline can be purchased easily from most health food stores or ordered online from Amazon (<https://amzn.to/2XJeAAu>). As with both the VED and daily tadalafil, we recommend that patients start taking their twice daily L-citrulline as soon as 2 weeks prior to surgery.

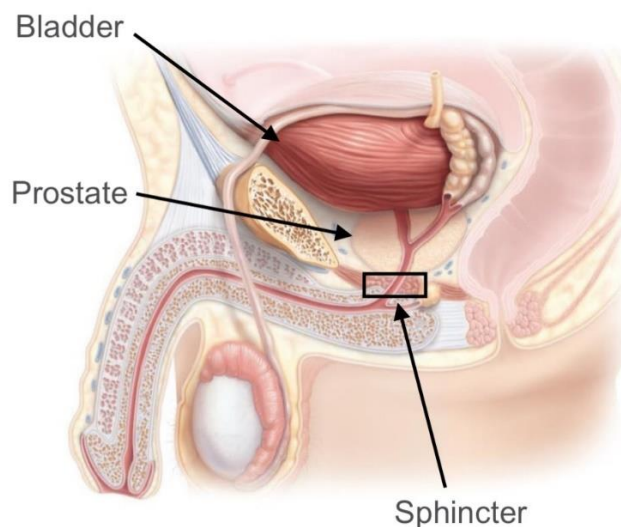
with the previously mentioned daily tadalafil, we recommend that men who are taking nitrate medication not take L-citrulline as it may cause an unsafe decrease in blood pressure.

Section 2: Bladder and Urine Control Preservation

How does bladder control work and how does prostate surgery affect it?

Bladder control, also known as continence, is the ability to hold urine without leaking. This is mostly controlled by a small muscle known as the urinary sphincter. This muscle wraps around the urine tube, known as the urethra, and squeezes it shut, preventing urine leakage.

The sphincter is very close to the prostate and, as such, can be stressed when the prostate is removed. In addition, the prostate itself helps with urine control. As a result, most men will experience some degree of bladder leakage following prostate removal as the sphincter recovers from surgery and works to control urine flow by itself as the prostate is no longer there to help it.



How can we promote early recovery of bladder and urine control?

The sphincter is a muscle and, like other muscles, gets stronger with regular exercise. The ideal exercises that can help with the recovery of urine control are known as Kegel exercises. These

are a type of pelvic contraction that work the sphincter and other pelvic muscles that assist with bladder control. Here's a step-by-step regimen for performing Kegel exercises:

1. Locate your pelvic muscles. Pretend you are trying to avoid passing gas or, when urinating, try to stop your urine stream. If you've identified the right muscles, you'll feel the contraction more in the back of the pelvic area than the front.
2. Choose your position. Start by lying on your back until you get the feel of contracting the pelvic floor muscles. When you have the hang of it, practice while sitting and standing.
3. Work on contracting while relaxing your other muscles. Contract your pelvic floor muscles for 3-5 seconds. Relax for 3-5 seconds. Repeat the contract/relax cycle 10 times. Don't contract your abdominal, leg, or buttock muscles, or lift your pelvis. Place a hand gently on your belly to detect unwanted abdominal action.
4. Extend the time. Gradually increase the length of contractions and relaxations. Work your way up to 10-second contractions and relaxations.
5. Aim high. Try to do at least 30 to 40 Kegel exercises every day. Spreading them throughout the day is better than doing them all at once. Since these are stealth exercises that nobody notices except you, try to sneak in a few when waiting at a stoplight, riding an elevator, or standing in a grocery line.
6. Diversify. Practice short, 2 to 3 second contractions and releases (sometimes called "quick flicks") as well as longer ones.
7. Kegel exercises in an emergency. After surgery, if you leak urine when you cough, sneeze, laugh, bend over or lift something heavy (known as stress incontinence), doing one or more Kegels before a 'trigger' may be enough to prevent any leakage. If you have the urge to urinate and doubt you are going to make it to the toilet, doing Kegels may get you safely to a restroom.

As with our other interventions, we recommend that men start practicing their Kegel exercises as soon as 2 weeks prior to surgery and resume them once more after their catheter has been removed.

Conclusion

That's it! Those are the key exercises and interventions for both erectile and bladder/urine control preservation. **This is what you should focus on leading up to surgery and continue throughout the recovery process.** Although complete recovery is never guaranteed, these practices give men their best chance possible at recovery following pelvic surgery. To learn more about Step 2 (Perform) and Step 3 (Prevail) of the UroPlan Active Restoration Roadmap, please refer to those individual handouts or visit our website using the information below. If you ever have any questions or concerns about anything discussed above, please don't hesitate to call us at (317) 564-5104.



Scan the above QR code with your smartphone to visit www.UroPlanIndy.com where you can watch our UroPlan videos and download electronic versions of each of our handouts.