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Patient information

Maximising Sexual Function Following Radical Prostatectomy

Urology Department

Many men will experience problems with their sexual function following radical prostatectomy. There is some evidence that actively trying to rehabilitate the penis following surgery improves the chance of the return of normal erections in the long term. This leaflet explains the principles behind this treatment and the treatment options available.

What is erectile dysfunction(ED)?

Erectile dysfunction (ED) means that you cannot get and/or maintain an erection. In some cases the penis becomes partly erect, but not hard enough to have sex satisfactorily. In some cases, there is no swelling or fullness of the penis at all. ED is sometimes called impotence.

How common is ED after radical prostatectomy?

In studies the reported incidence of ED after radical prostatectomy varies from between 10 and 90%. It has become normal practice to try and preserve the nerves related to the erection at the time of surgery (nerve sparing) whenever possible as long as cancer cure is not compromised.

How long after surgery does it take for erections to return?

A few men will have normal erections within weeks of surgery. In other men it may take up to three years for erections to return. In some men erections will not return.

Historically patients have been reassured that their erections may improve in time and have not been treated actively unless they are finding the ED troublesome. However, there is increasing evidence that early active treatment to restore erections gives a better long term result.

How does an erection normally occur?

When you are sexually aroused, messages from your brain travel down the spinal cord and through nerves in the neurovascular bundle on either side of the prostate to your penis. Chemicals called 'neurotransmitters' are then released from the ends of the nerves in the penis. Stimulation of the penis can also cause local nerve endings to release neurotransmitter chemicals.

The neurotransmitters which are released in the penis cause another chemical to be made called cyclic guanosine monophosphate (cGMP). An increase of cGMP causes the arteries in the penis to dilate (widen). This allows extra blood to flood into the penis. The rapid inflow of blood causes the penis to swell into an erection.

The swollen inner part of the penis also 'presses' on the veins nearer to the skin surface of the penis. These veins normally drain the penis of blood. So, the flow of blood out of the penis is also restricted, which enhances the erection.

The cGMP is soon converted into another inactive chemical. But, as you remain sexually aroused whilst having sex, your brain keeps sending nerve messages to the penis which makes more cGMP to maintain the erection. When the level of cGMP falls, the blood flow to the penis returns to normal, and the penis gradually returns to the non-erect state.

Why do you get ED following radical prostatectomy?

The traditional teaching has been that post radical prostatectomy ED is caused by damage to the neurovascular bundle (the nerves running between the spinal cord and the penis). These nerves may either be bruised (neuropraxia) or cut at the time of surgery.
It was felt that if the nerves were bruised they would recover and can take up to four years to return to normal function. If they were cut they probably wouldn't.

There is increasing evidence however that the lack of erections themselves leads to further damage to the penis. If the penis does not fill with blood regularly then the cells do not get enough oxygen. This can lead to damage of the erection tissue which leads to the laying down of fibrous tissue (scarring). It is thought that this effect adds to the problem of the nerve damage.

Why should I consider penile rehabilitation?

Studies have shown that if men are encouraged to use methods to obtain an erection soon after surgery then their long term chances of having normal erections are increased. Suggesting that if the penis is kept healthy with regard to its blood supply at an early stage, then when the nerves heal normal function is more likely to return.

There have now been numerous studies using a variety of methods to obtain erections, all showing a benefit in tackling the problem of ED at an early stage. However, most of the studies have only been on small numbers of men over relatively short periods of time.

What are the principles behind rehabilitation?

The aim of rehabilitation is to get the penis to fill with blood regularly each week. Normally about three times a week. This does not mean you have to make love three times a week!

In studies various methods have been used to achieve a regular erection. These methods have been tested against either doing nothing or the use of something only when there is a desire for intercourse. All methods used seem to give some benefit.

At the moment there have been no robust trials looking at one method against another.

What methods can be used to rehabilitate the penis?

There are several different ways to rehabilitate the penis. These include:

Medication (tablets taken by mouth)

There are three different tablets licensed in the UK to treat ED. They are sildenafil (trade name Viagra), tadalafil (trade name Cialis), and vardenafil (trade name Levitra). They have all been used for rehabilitation after radical prostatectomy.

All the tablets work by increasing the blood flow to your penis. They do this by amplifying the signals from the penile nerves to the penile blood vessels. They only cause erections when you are sexually aroused. In the normal situation you take a dose about an hour before you plan to have sex.

It is thought that by taking these medications on a regular basis (whether you are intending to try and have intercourse or not) helps to bring back your normal night time erections. It is also known that these medications improve the health of the cells lining the blood vessels of the penis. It is thought that the combination of these two factors helps to maintain a healthy penis.

In most men post radical prostatectomy oral medication will not give an erection satisfactory for intercourse. Many men like to combine this approach with a vacuum device.

Injection treatment

With this treatment you are taught to inject a medication called Alprostadil into the base of the penis (intracavernosal injection). This chemical acts directly on the blood vessels of the penis. You do not have to have intact nerves for it to work. The erection will happen after about 15 minutes. (Unlike with tablets, the erection occurs whether or not you are sexually aroused.)

With regard to intracavernosal injections there is data suggesting that there is an increased percentage of treated patients experiencing return of natural erections compared with patients who receive no treatment

Urethral medication

With this method you are taught to place a small pellet into the end of the urethra (the tube which passes urine and opens at the end of the penis). The pellet contains a similar medicine to that used for the injection treatment. The medicine is quickly absorbed into the penis to cause an erection, usually within
10-15 minutes.

Vacuum devices

There are several different devices. Basically, you place a plastic container over your penis. A pump then sucks out the air from the container to create a vacuum. This causes blood to be drawn into the penis and cause an erection. When erect, a rubber band is placed at the base of the penis to maintain the erection. The plastic container is then taken off the penis and the penis remains erect until the rubber band is removed (which must be removed within 30 minutes).

A recent study encouraged men to use the vacuum device to obtain an erection and maintain it for ten minutes a day without using a constriction ring. There was an improvement in penile length and erections in those doing this compared to those people who did not over a six months period.

When would I begin penile rehabilitation?

If you have trouble with your erections before the operation it is worthwhile considering trying out one of the methods of achieving an erection before the operation is performed. This will help you to gain confidence with a method before your surgery. You should discuss this with your consultant.

You can begin your rehabilitation programme at any stage after radical prostatectomy following removal of the catheter. Some men feel that they are not up to sex soon after the operation and want to wait until any continence problems haves settled down before they embark on further treatment. There are no hard and fast rules about how soon rehabilitation should start but the general feeling is the earlier the better. We would certainly hope to begin within in three months of the operation.

Will I have to pay for my tablets?

As you have a diagnosis of prostate cancer you should have a prescription charge exemption form. If you do not have one please contact your GP or specialist nurse.

Some patients do have to pay for treatments for erectile dysfunction. If you have prostate cancer you do not have to pay and your doctor should endorse your prescription with ‘SLS’.

Some doctors think they are only able to prescribe four tablets, injections or pellets a month but this is not the case and if you have problems with this please contact your consultant.

What would be the rehabilitation regime?

The exact details of the regime will depend on the method of rehabilitation chosen by the individual. Patients can choose which type of erection aid they would like to try. It is fine to try all methods to see which one suits the patient and their partner the best.

It is perfectly possible to use a mixture of the methods. For example you may wish to take an oral medication on a daily basis and use a vacuum device at least three times a week **or** you may wish to take an oral medication two to three times a week to keep the penis healthy and use a penile injection for intercourse.

You will be seen on a regular basis in outpatients according to your need.

What happens if after two years I still cannot get an adequate erection?

If at two years post-operatively you are still not experiencing any erectile function then you can be considered for penile prosthesis. This is when a surgeon inserts a 'rod' permanently into the penis. The most sophisticated type can be inflated with an inbuilt pump to cause an erection. The more basic type keeps the penis rigid all the time.

Orgasmic Function Following Radical Prostatectomy

Many men will experience changes in their orgasm's following radical prostatectomy. It is normal to be able to obtain a sensation of orgasm even if the penis is not erect.

Before surgery most men will ejaculate at the time of orgasm.

The ejaculate contains fluid from the prostate, from the seminal vesicles and (providing you have not had a vasectomy) from the testicles. All these fluids enter the urethra (water pipe) through the prostate and are ejaculated at the time of orgasm. When the prostate is removed there is no way for these fluids to enter the urethra and so the ejaculation is 'dry'. The fluids that are created are absorbed back into the body in a harmless way. It is no longer possible to father children by sexual intercourse following radical prostatectomy.

Following surgery some men will continue to experience their normal orgasmic sensations just without any ejaculation. It is common, especially when general continence is still an issue, that men will leak a variable amount of urine at the time of orgasm. It is sensible to empty the bladder before embarking on sexual stimulation. Urine is sterile and cannot harm your partner.

Some men find the orgasm is more intense after surgery others find it is less intense and takes more time happen. Other men have discomfort at the time of orgasm and this tends to settle down with time.

General Health Advice Following Radical Prostatectomy

Although we know that radical prostatectomy is likely to be the primary cause of erection problems following this surgery it is also important to diagnose and treat any other 'risk factors' for ED.

In the general population 8 in 10 cases of ED are due to a physical cause. You may already have had the 'risk factors' for ED before surgery. Diagnosing and treating these risk factors may increase your chance of recovering erectile function. These risk factors all potentially lead to reduced blood flow to the penis.

Like in other parts of the body, the arteries which take blood to the penis can become narrowed, and the blood flow may not be sufficient to cause an erection.

Risk factors include:

- Uncontrolled high blood pressure.
- High cholesterol.
- Diabetes.
- Smoking.
- Being overweight in particular if the waist measurement is increased.
- Having a sedentary life style.

If you haven't had these risk factors checked in the last 6 months then it is sensible to see your GP or practice nurse to have the relevant tests done. They will also be able to offer advice regarding smoking cessation.

There is good evidence that increasing exercise and decreasing weight by 10%, if you are overweight, increases your chance of responding to PDE5 inhibitors and improved erectile function.

Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further Information

For general queries telephone the Urology Centre on
Tel: 0151 282 6799/6789
Text phone number: 18001 0151 282 6799/6789

For clinical questions specific to your case, telephone the secretary of your Urology Consultant

Prostate Cancer UK
http://prostatecanceruk.org/information
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