

Dear Colleague,

Thank you for requesting information on the GreenLight laser prostatectomy technique.

I have been performing **The GreenLight PVP** (Photoselective Vaporisation of the Prostate) since September 2002 and, as of February have treated over 900 patients (our data has been presented at the European, American and British Annual Urological Meetings, and published in a number of international journals). The short term results compare very favourably with conventional surgery with dramatically reduced bleeding, hospital stay and recovery time. In the medium to long term the results appear to be as good as we would expect with TURP, with durable flow and symptoms improvements to 3 years.

I was recently privileged to use as the first surgeon in Europe the latest model of the GreenLight, **The HPS (High Performance System)** with results that seem even better than with the currently available version of the GreenLight PVP.

In patients with very large prostates who are normally treated by open surgery we have shown that the procedure can be carried out safely (even in high risk patients) with good results. For patients in retention of urine, more than 95% can expect to be catheter free after GreenLight surgery. Even patients with concurrent bladder stones or hernias can often leave hospital the same day without a catheter. Should you wish any abstracts or journal articles on these results we will be happy to forward them.

It is necessary to consult with patients prior to surgery, but to reduce inconvenience to patients, I try to make my clinic visits "one stop." To assist in this, we like to have as much information on patients as possible prior to seeing them. The following pages should help with this.

I hope you will find this information pack of help, as there are a number of areas which are common to all patients having the procedure. I hope you will find this timesaving, helpful and straightforward. We appreciate any comments with regard to this.

With best wishes,



GREENLIGHT PVP INFORMATION PACK FROM MR G. MUIR

This describes the procedure involved in having a prostate operation. This procedure has in my practice replaced the previous "gold standard" of TURP and is usually carried out as a **day-case procedure**.

You will have discussed the reasons behind having the surgery, which are to relieve the obstruction to the flow of urine through the prostate by removing the central part of the prostate.

This operation is done usually for benign (non-cancerous) swelling of the prostate although it may be used to relieve the obstruction of a prostate cancer. However it does not remove the whole prostate and is not a "cancer curing" operation.

HOW IS THE OPERATION CARRIED OUT?

Day-Case Procedure

No special preparation for the surgery (i.e. shaving or diet) is required. You will usually come in on the day of the operation and should starve for at least six hours prior to the scheduled operating time.

Medication

You need not stop aspirin or other anti-platelet drugs prior to the operation but **if you are taking warfarin or heparin then it is imperative that the dosage of this is monitored or modified.**

In this case please make sure you have a copy of our protocol for managing anticoagulation.

Light Anaesthetic

The operation is carried out under light general (asleep) anaesthetic, with local anaesthetic being given around the prostate. Spinal anaesthesia can be used but if it is then a catheter must be left in the bladder after the operation. We prefer not to use sedation and local anaesthetic unless absolutely necessary, since most men will have some discomfort with this technique.

Small Catheter

A telescope (cystoscope) is passed into the bladder, which is examined. The obstructing prostate tissue is then vaporised using the high powered laser. A small catheter (soft plastic drainage tube) may be placed in the bladder to drain the urine if there is any concern about bladder contractility, but it is not usually required for bleeding even in the largest prostates.

After passing water you can usually leave hospital; if a catheter is left in place this is removed the following morning unless there has been a previous problem with retention of urine in which case I may recommend leaving it for a few more days.

Following the Operation

Passing urine

Some men may fail to pass water after the operation: this is much more common if the surgery is being done where the bladder has been stretched or is emptying poorly and this would be discussed with you in detail.

In men with good bladder emptying there is still a possibility of around 5% of some difficulty passing urine after the catheter is removed: this may require a short period with a small soft catheter to rest the bladder but has no long term ill effects and does not require prolonged hospitalisation.

Discomfort

Following the operation it is usual to have mild discomfort only. The majority of men will need only simple painkillers, although some may need tablets to calm bladder spasm. You will be given regular Voltarol painkillers and also a few days of an antibiotic. About one man in ten will have bothersome discomfort needing a longer course of painkillers.

Mild Bleeding

Despite the absence of a cut in the skin, this is still classified as a major operation. There may be bleeding at the time of surgery or later: so far no patients have had life threatening bleeding. Only one man (who was on blood thinning medication) has required blood transfusion at the time of surgery. Advances in anaesthetic techniques reduce the risk of serious chest infection.

WHAT ARE THE SIDE EFFECTS?

Retrograde Ejaculation

The major side effect is of retrograde ejaculation, which is when the semen falls back into the bladder instead of coming out through the penis. This seems to affect about 30-60% of men after PVP, depending on the prostate size (with TURP the figure was 80%) Some men may feel the orgasm to be somewhat less intense if this happens, but usually learn to appreciate the sensations again. Our impression is that this side effect is commoner with larger prostates. Retrograde ejaculation may cause sterility but cannot be relied upon as a form of contraception since some sperms may still be expelled.

Low Risk of Impotence

So far there are no reports of significant impotence after the operation, but there remains a theoretical risk that this could occur if the laser were to be used too close to the penile nerves.

Prostate Regrowth

Since not the entire prostate is removed, regrowth can occur. The figures from TURP suggest that one man in seven will need revision surgery over a ten-year period due to prostate regrowth. It is likely that this will be similar with PVP. As with TURP, there may be formation of scar tissue (a stricture) following the operation which can require a minor operation to put it right. The risk of this with TURP is around 5% and with PVP it is only around 2-3%.

Low Risk of Incontinence

Lastly, as with TURP, incontinence may very rarely occur. The risk of incontinence due to damage to the sphincter muscle, in my hands, is around one in 300. This is a treatable problem.

HOW LONG DOES RECOVERY TAKE?

Symptoms

We have observed most patients to have a halving or more of their symptoms within six weeks of surgery. However, the bladder may be overactive for a few weeks after the operation, giving a sense of things getting worse before getting better. It is thus sensible to avoid any long journeys after the procedure for a few weeks. Bladder function can keep improving for up to four months after the procedure.

If urgency and getting up at night are major problems prior to the operation, or if there is any history of incontinence, I will usually have

recommended a urodynamic examination to confirm that obstruction is present. Despite this about one man in six with these symptoms may find they persist post operatively, due we presume to a primary overactivity of the bladder. If this does happen there are medical treatments which will usually help.

Bleeding

Severe bleeding is uncommon after PVP, but you will probably pass a little blood in the first few weeks, particularly at the start of the urine stream. If bleeding is a major problem then it is important to drink well and to have a urine sample checked to rule out urinary infection.

It is sensible to avoid very heavy lifting for three weeks after the operation since any sudden increase in abdominal pressure can cause bleeding to occur.

Returning to Normal Activities

Driving presents no problem. You can return to work when you feel fit and depending on your job: usually no more than a week off is needed but some men have gone back to work within 48 hours.

Exercise and Intercourse

Sport or sexual activity can be resumed as soon as you feel fit. On resumption of intercourse, if you do ejaculate normally, it is likely there will be blood or discolouration of the semen. This is nothing to worry about and will not harm your partner in any way.

Mental Effects

After any surgery you may feel tired and a bit emotional for a number of weeks. This is quite normal, but if you feel depressed it is important to let someone know.

WHAT FOLLOW-UP IS REQUIRED?

If all goes smoothly a telephone check within the first ten days will make sure there are no major problems. I like to have a check after three to four months to make sure the symptoms and urine flow have improved as expected, and if need be a final review at six months.

PRE-OP TEST RESULTS AND INFORMATION REQUIRED

TESTS

A number of tests are needed to assess a man's suitability for this operation. If you have previously seen another specialist and a letter has been sent to me then I will usually have these results.

Otherwise it is a good idea to try to get the tests organised at the time of the first appointment. My PA will help you with this if need be. You may find the check box below helpful.

| Test | Comment | Result Available? |
|------------------------------------|--|-------------------|
| <i>Serum PSA</i> | Blood test: needs to be done prior to outpatient visit | Yes / No |
| <i>Serum Creatinine</i> | Blood test: needs to be done prior to outpatient visit | Yes / No |
| <i>Full Blood Count</i> | Blood test: needs to be done prior to outpatient visit | Yes / No |
| <i>Urine Flow rate</i> | Urine test: can be done at time of assessment | Yes / No |
| <i>Urine residual volume</i> | Ultrasound: can be done at time of assessment | Yes / No |
| <i>Urine culture or urinalysis</i> | Urine test: can be done at time of assessment | Yes / No |

If your PSA is raised you may have had a TRUS and Biopsy test: if so I will also need to see the results of these.

In addition, for some men it may be necessary to carry out a flexible cystoscopy if there is any doubt as to whether a blockage is due to the prostate gland or possibly a stricture (scarring in the pipe between the prostate and the penis)

If the prostate is very large I may recommend a special ultrasound assessment (TRUS) to determine whether pre-treatment for a couple of weeks with a drug to reduce prostate blood flow is advisable, and to accurately estimate the correct amount of laser energy to use.

Both the cystoscopy and the TRUS test can be carried out in the clinic without affecting your activity thereafter.

Lastly, as part of my commitment to evaluating and improving my technique, I collect information on prostate and erectile symptoms in all my patients. It would be helpful from this point of view if you would be kind enough to fill in the last pages of this pack

- INTERNATIONAL PROSTATE SYMPTOM SCORE (IPSS) on Page 6
- MODIFIED INTERNATIONAL INDEX OF ERECTILE FUNCTION (IIEF-5) on Page 7

These details will be kept absolutely confidential but will allow an assessment of the benefits of the procedure both for you, and hopefully for others in future.

INTERNATIONAL PROSTATE SYMPTOM SCORE (IPSS)

This score gives an idea of the symptoms and bother you are suffering. Use the following point scale to answer each of the questions. **Write a number in the box** at the end of each column, and then total the score from all the questions.

| | |
|---|-----------------------------|
| 0 = Not at all | 3 = About half the time |
| 1 = Less than once in 5 times you have urinated | 4 = More than half the time |
| 2 = Less than half the time | 5 = Almost always |

Name: _____ Date: _____

| Over the past month, how often have you: | Result | | | | | | |
|--|----------------------------|-----------------|--------------------|-------------------|--------------------|--------------------|----------------------------|
| Had the sensation of not completely emptying your bladder after you finished urinating? | | | | | | | |
| Had to urinate again less than 2 hours after you finished urinating? | | | | | | | |
| Found that you stopped and started again several times when you urinated? | | | | | | | |
| Found it difficult to postpone urination? | | | | | | | |
| Had a weak urinary stream? | | | | | | | |
| Had to push or strain to begin urination? | | | | | | | |
| Had to get up to urinate from the time you went to bed at night until you got up in the morning? | | | | | | | |
| <p><i>For this question, use the following point scale</i></p> <table style="margin: auto;"> <tr> <td style="padding: 0 20px;"><i>0 = None</i></td> <td style="padding: 0 20px;"><i>3 = 3 times</i></td> </tr> <tr> <td style="padding: 0 20px;"><i>1 = 1 time</i></td> <td style="padding: 0 20px;"><i>4 = 4 times</i></td> </tr> <tr> <td style="padding: 0 20px;"><i>2 = 2 times</i></td> <td style="padding: 0 20px;"><i>5 = 5 times or more</i></td> </tr> </table> | | <i>0 = None</i> | <i>3 = 3 times</i> | <i>1 = 1 time</i> | <i>4 = 4 times</i> | <i>2 = 2 times</i> | <i>5 = 5 times or more</i> |
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| <i>1 = 1 time</i> | <i>4 = 4 times</i> | | | | | | |
| <i>2 = 2 times</i> | <i>5 = 5 times or more</i> | | | | | | |
| Total score from all questions | | | | | | | |

QUALITY OF LIFE

If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that? **Circle one answer**

Delighted
Pleased
Mostly satisfied
Mixed
Mostly dissatisfied
Unhappy
Terrible

MODIFIED INTERNATIONAL INDEX OF ERECTILE FUNCTION (IIEF-5)

This allows objective assessment of any difficulties with erections either before or after surgery. Please answer the questions by putting a **tick in the correct numbered box**, thinking of the last month.

Please note that if you are not sexually active then this form may not be relevant, in which case please tick here

Name: _____ Date: _____

1. How do you rate your confidence that you could get and keep an erection?

| | |
|-----------|---|
| Very Low | 1 |
| Low | 2 |
| Moderate | 3 |
| High | 4 |
| Very High | 5 |

4. During sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?

| | |
|-----------------------------|---|
| Did not attempt intercourse | 0 |
| Extremely difficult | 1 |
| Very difficult | 2 |
| Difficult | 3 |
| Slightly difficult | 4 |
| Not difficult | 5 |

2. When you had erections with sexual stimulation, how often were your erections hard enough for penetration?

| | |
|---------------------------------|---|
| No sexual activity | 0 |
| Almost never/never | 1 |
| A few times | 2 |
| Sometimes (about half the time) | 3 |
| Most times | 4 |
| Almost always/always | 5 |

5. When you attempted sexual intercourse, how often was it satisfactory for you?

| | |
|---------------------------------|---|
| Did not attempt intercourse | 0 |
| Almost never/never | 1 |
| A few times | 2 |
| Sometimes (about half the time) | 3 |
| Most times | 4 |
| Almost always/always | 5 |

3. During sexual intercourse, how often were you able to maintain your erection after you had penetrated (entered) your partner?

| | |
|---------------------------------|---|
| No sexual activity | 0 |
| Almost never/never | 1 |
| A few times | 2 |
| Sometimes (about half the time) | 3 |
| Most times | 4 |
| Almost always/always | 5 |

Comments:

FINANCE

SELF PAY

If you are considering this operation on a self pay basis then please contact Nicky on the number below and she will let you know how to go about that.

If you are in good health and have accommodation within 30 miles of central London then there will not be a need to stay in hospital except in rare circumstances. You would need a responsible adult present to keep an eye on you overnight. At present the total package price for a day case procedure at King's College Hospital is £4,560.00.

Some men need to plan one night in hospital for reasons not related to the procedure. These may include heart trouble, social reasons, distance from King's or immobility (if you have any serious co-existing medical conditions the hospital may not be able to guarantee a package price, although it is very rare for any complications to occur).

A one night stay adds £350.00 to the above cost (total £4,910.00). This option is arranged through King's Self Pay, administered by BUPA.

At the Lister Hospital the overall costs are a little higher, totalling £4,775.00 for a day case and £5,075.00 for a one night stay. This includes hospital, surgical and anaesthetic fees (these will each be billed separately.)

INSURED PATIENTS

This procedure is now covered by BUPA and PPP, and we have agreed treatment packages with them. As with any relatively new procedure there may sometimes be problems with insurance cover. While insurers will usually remunerate this operation up the level of a TURP prostate resection (code M6530) I would like you to be aware that the surgical and anaesthetic fees will be higher than those usually remunerated by the insurers for a TURP.

For patients not insured by BUPA or PPP, my fee is £1,150.00 which includes any necessary post-operative surgical care or re-operation in the first two weeks. The anaesthetist's fee is £325.00. These fees reflect in large part the expense that acquiring this expertise has necessitated, and partly the fact that I see many patients who are either high risk or have very large prostates, due to the data we have presented on such cases.

Although these fees added to the hospital charge for either a day case or one night stay will still usually total less than the cost of the average TURP operation (and much less than open prostatectomy) you may wish to be aware that insurance companies often have an upper limit which they will remunerate physicians. Were this the case there may well be a shortfall and I would wish you to be aware of this prior to proceeding.

Your insurers may prefer to budget for the package price but you should check with them if you have any concerns, as we are unable to enter into protracted discussions with individual insurers on behalf of individuals due to the excess time it has taken in the past

NHS PATIENTS

I am happy to see NHS patients for this procedure although due to the complexity of the NHS referral system this can be a little tortuous! If you wish an NHS referral then either your GP or your urologist would need to write to me at:

Dept of Urology, King's College Hospital, Denmark Hill, London SE5 9RS

Our NHS administrators will then make the relevant arrangements for an appointment to be sent out, assuming that there are no funding issues.

COSTS

Enclosed please find the information pack on having the Green Light Laser procedure done. Costs while mentioned in the pack are only for the procedure. **Other possible costs will be as follows:**

| Preoperative Costs | |
|--|-----------|
| Initial Consultation | £160.00 |
| Ultrasound | £190.00 |
| Flow Rate Test (approx.) | £107.00 |
| Operative Costs | |
| Lister Hospital (Day Case) | £3,300.00 |
| Lister Hospital (inc. overnight stay) | £3,600.00 |
| London Bridge Hospital (Day Case) | £2,700.00 |
| London Bridge Hospital (inc. overnight stay) | £2,900.00 |
| Kings College Hospital (Day Case) | £3,085.00 |
| Kings College Hospital (inc. overnight stay) | £3,435.00 |
| Surgical Costs | £1,150.00 |
| Surgical Costs (London Bridge Hospital) | £1,160.00 |
| Anesthetist Costs | £325.00 |
| Postoperative Costs | |
| Consultation | £110.00 |
| Ultrasound | £95.00 |
| Flow Rate Test (approx.) | £107.00 |

Please note prices are subject to changes and will need to be confirmed when booking the procedure.