University College London Hospitals

MRI-targeted transperineal prostate biopsy
Urology Directorate
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1 Introduction
This leaflet is written for patients, their family and any carers. It provides information on MRI-targeted transperineal prostate biopsies for men undergoing this procedure. The leaflet goes through the indications, benefits, risks, technique and post-operative care associated with this biopsy technique.

2 What is a Prostate Biopsy?
The prostate gland produces the white fluid that becomes part of the semen. It is located below the bladder and in front of the rectum and is roughly the size of a walnut.

A biopsy involves taking small samples of tissue from the prostate gland. These samples are then analysed by a histopathologist (doctors who diagnose and study disease using expert medical interpretation of cells and tissue samples).

The biopsy can find out whether any of the prostate cells have become cancerous or, if there is pre-existing cancer, whether the cancer has changed. It can also diagnose other conditions such as benign prostatic hyperplasia, prostatitis or prostatic intraepithelial neoplasia.
3. What does the procedure involve?
This procedure involves using an ultrasound probe, inserted via the back passage, to scan the prostate. The live ultrasound images of the prostate are “fused” with the multiparametric (“enhanced”) MRI of the prostate taken earlier (usually no more than 6 months before the biopsy).

Biopsies are taken through the skin between the testicles and the back passage (the perineum) using a special grid. The sampling is targeted to the suspicious seen on MRI. Additional samples may be taken from the rest of the prostate, even if normal on MRI, depending on the reason for why the biopsies are being taken.

The number of samples taken depends on the size and number of abnormalities, as well as the size of the prostate, usually ranging from 4 to 24 biopsies.

There are several reasons why you might be advised to have this done, including the following:

- The MRI of the prostate suggested areas where there may be cancer,
- you may already have undergone a number of inconclusive transrectal biopsies (i.e. biopsies in which the needles are passed through the back passage),
- you may have had an infection following a previous trans-rectal biopsy, or
- the location of an identified abnormality within your prostate might make it difficult to access by any other approach.

4. What happens during the procedure?

After the local, sedation, general or spinal anaesthetic has been given your legs will be placed in special supports which allow the surgeon to reach the skin behind your testicles. The surgeon will examine the prostate through the back passage (anus) before inserting the ultrasound probe into the rectum. This probe is as wide as a man's thumb and approximately 4 inches long. Local anaesthetic is injected into the skin and around the prostate to make it go numb, which helps reduce pain when you wake up after the procedure.

In order to take samples (biopsies) of the prostate, a special grid is used so that all areas of the prostate can be included. The biopsy needles are inserted into the prostate through the skin of the perineum, guided by the ultrasound probe (pictured). The live ultrasound images of the prostate are fused with the multiparametric MRI scan performed earlier (usually within 6 months of the biopsy).
The abnormalities on MRI are targeted via the procedure and additional biopsies may be taken from the rest of the prostate.

After the biopsies have been done, a firm dressing will be applied to the perineum and held in place with a pair of disposable pants.

5. What are the risks of MRI Targeted biopsies?
Most procedures have possible side-effects. But, although the complications listed below are well-recognised, most patients do not suffer any problems.

Common (greater than 1 in 10)
- Blood in your urine for up to 10 days.
- Blood in your semen for up to 6 weeks; this is harmless and poses no risk to you or any sexual partners.
- Bruising in your perineal area which can take a few weeks to resolve
- Sensation of discomfort due to bruising.

Occasional (between 1 in 10 and 1 in 50)
- Failure to detect a significant cancer of the prostate.
- The procedure may need to be repeated if the biopsies are inconclusive, or your PSA level rises further, or if further MRI scans show more abnormalities.

Rare (less than 1 in 50)
- Haemorrhage (bleeding) needing hospitalisation
- Urinary infection requiring antibiotics
- Blood infection (septicaemia) needing hospitalisation.
- Inability to pass urine (retention of urine).
- Rarely, erectile problems can occur requiring tablets to help.

Hospital-acquired infection
- Colonisation with MRSA (0.9% - 1 in 110).
- MRSA bloodstream infection (0.02% - 1 in 5000).
- Clostridium difficile bowel infection (0.01% - 1 in 10,000).

The rates for hospital-acquired infection may be greater in high-risk patients, for example those patients
- with long-term drainage tubes;
- who have had their bladder removed due to cancer;
- who have had a long stay in hospital; or
- who have been admitted to hospital many times.
6. What will happen if I choose not to have a transperineal template guided prostate biopsy?

We can monitor the prostate problem with your GP using PSA blood tests. If you had an MRI we might wish to sometimes repeat this. Your doctor or nurse specialist will discuss this with you.

7. What are the alternatives to this procedure?

We can monitor the prostate problem in association with your GP using PSA blood tests. If you had an MRI we might wish to sometimes repeat this. Your doctor will discuss this with you.

8. What should I expect before the procedure?

You will usually be admitted to hospital on the same day as your procedure. MRI-targeted biopsies are performed under local anaesthetic, however if sedation or a general anaesthetic is indicated you will receive an additional appointment for a “pre-assessment” to assess your general fitness, to screen you for MRSA and to do some baseline investigations. Once you have been admitted, you will be seen by members of the medical team which may include the consultant, urology doctor and your named nurse.

You will be asked not to eat and drink for six hours before surgery. Immediately before the procedure, the anaesthetist may give you a pre-medication which will make you dry-mouthed and pleasantly sleepy.

If you are taking warfarin, you must inform the clinic staff at your pre-assessment visit so that you are advised when to stop it before the procedure. It is usual to stop warfarin for 3 days and then do a blood test (INR) before your biopsy. If you are taking aspirin, you do not need to stop this. If you are taking clopidogrel, or other blood thinning medication, you must let the medical staff know because the biopsy may need to be postponed or alternative arrangements made.

After checking for allergies, you will normally be given an intravenous or intramuscular injection of antibiotic just before the beginning of the procedure.
Please tell your surgeon (before your procedure) if you have any of the following:

- An artificial heart valve
- A coronary artery stent
- A heart pacemaker or defibrillator
- An artificial joint
- An artificial blood-vessel graft
- A neurosurgical shunt
- Any other implanted foreign body
- A regular prescription for warfarin, aspirin or clopidogrel (Plavix®)
- A previous or current MRSA infection
- A high risk of variant-CJD (if you have had a corneal transplant, a neurosurgical dural transplant or injections of human-derived growth hormone).

When you are admitted to hospital, you will be asked to sign the second part of your operation consent form giving permission for your operation to take place, showing you understand what is to be done and confirming that you want to go ahead. Make sure that you are given the opportunity to discuss any concerns and to ask any questions you may still have before signing the form.

9. Asking for your consent
We want to involve you in all the decisions about your care and treatment. If you decide to go ahead with MRI targeted Prostate biopsies, by law we must ask you to sign a consent form before proceeding with the procedure. This confirms that you agree to have the procedure and understand what it involves. Staff will explain all the risks, benefits and alternatives before they ask you to sign a consent form. If you are unsure about any aspect of your proposed procedure, please don’t hesitate to speak with a senior member of staff again.
10. What happens immediately after the procedure?
You should:

- let the medical staff know if you are in any discomfort;
- ask what you can and cannot do;
- feel free to ask any questions or discuss any concerns with the ward staff and members of the surgical team; and
- make sure that you are clear about what has been done and what happens next.

You will go home later the same day provided you are passing urine normally.

Following this, blood in the urine is common for 2 to 3 days, with the occasional blood clot, but this should clear quickly if you increase your fluid intake. You may expect to see blood in the semen for up to six weeks. You may be given antibiotics to take home depending on local hospital practice at the time which can change depending on advice from the microbiology department.

The average hospital stay is 6 to 8 hours in total.

Driving after surgery
It is your responsibility to make sure you are fit to drive following your surgery. You should, however, check with your insurance company before returning to driving. Your doctors will be happy to give you advice on this.

11. What should I expect when I get home?
When you are discharged from hospital, you should:

- be given advice about your recovery at home;
- ask when you can begin normal activities again, such as work, exercise, driving, housework and sex;
- ask for a contact number if you have any concerns once you return home;
- ask when your follow-up will be and who will do this (the hospital or your GP); and
- be sure that you know when you get the results of any tests done on tissues or organs that have been removed.
When you leave hospital, you will be given a discharge summary. This contains important information about your stay in hospital and your procedure. If you need to call your GP or if you need to go to another hospital, please take this summary with you so the staff can see the details of your treatment. This is important if you need to consult another doctor within a few days of being discharged.

It is important that you:

- drink twice as much fluid as you would normally for the first 48 hours;
- maintain regular bowel function;
- avoid physically-demanding activities;

Any discomfort can usually be relieved by simple painkillers.

12. What else should I look out for?

If you experience:

- a fever, shivering or develop symptoms of cystitis (frequency and burning on passing urine), you should contact your consultant’s secretary or the hospital ward. If it’s not possible to make contact this way, please go to A/E or contact your GP.

- a lot of bleeding in the urine, especially with clots of blood, you should contact your consultant’s secretary or the hospital ward. If it’s not possible to make contact this way, please go to A/E or contact your GP.

- a fever outside your surgery opening hours, you must telephone ward you were on so that a doctor can assess you. If it’s not possible to make contact this way, please go to A/E or contact your GP.

13. Are there any other important points?

All biopsies are reported and discussed in detail at a multi-disciplinary meeting before any further treatment decisions are made. You and your GP will be informed of the results. We sometimes need to order additional tests as a result of our discussions and, as a result, you may receive appointments for a bone scan or whole body MRI scan afterward.
14 Where can I get more information?

Prostate Cancer UK
Tel: 0800 074 8383
www.prostatecanceruk.org

UCLH Macmillan Support and Information Service
Location: Ground Floor, Huntley Street, London, WC1E 6DH
Tel: 020 3447 8663
Email: supportandinformation@uclh.nhs.uk

Macmillian Cancer Support
Tel: 0808 808 00 00
www.macmillan.org.uk

UCL Hospitals cannot accept responsibility for information provided by external organisations.

15 References


16 Contact Details

Clinical Nurse Specialist

Jane Coe
Email: jane.coe@uclh.nhs.uk
Tel: 020 3447 4932

Pathway Coordinator to Professor Emberton, Mr Arya, Mr Hashim Ahmed & Mrs Moore
Tel : 020 3447 9194
Fax: 020 3447 9303
Email: prostate@uclh.nhs.uk

Out of hours, please contact your GP or nearest Accident & Emergency Department
17 How to find us
1. University College Hospital
2. University College Hospital Macmillan Cancer Centre
3. UCLH HQ (250 Euston Road)
4. University College Hospital at Westmoreland Street
Space for notes and questions