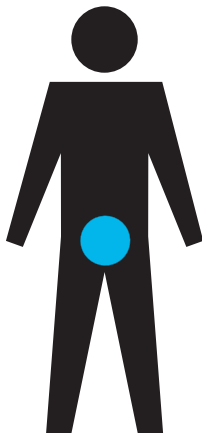




SPOTLIGHT ON

Prostate Biopsy

- i. Trans-rectal ultrasound prostate biopsy**
- ii. Transperineal prostate biopsy**
- iii. MRI fusion guided biopsy**



About your prostate

The prostate starts out about the size of a pea then slowly grows reaching the size of a walnut when the man is in his 20s. Around the age of 40, it starts to grow or enlarge again and this may cause problems for a man when passing urine. Only men have a prostate.

Where is it?

The prostate is inside the pelvis, just below the bladder and in front of the back passage. It wraps around the tube, called the urethra, which allows urine to flow out of the bladder and semen to pass out through the penis. Therefore, the prostate can't be seen or palpated/checked from outside the body.

What does the prostate do?

It supplies a thick, clear fluid that mixes with sperm to form semen, called the ejaculate. This fluid helps to nourish and protect sperm during intercourse. The prostate also makes Prostate Specific Antigen, or PSA, which is a protein that makes semen more fluid and so helps sperm to move more easily.

Why has the GP, consultant or CNS asked me to have a prostate biopsy?

It helps to decide what the problem might be within your prostate; if it is a benign (not cancerous) enlargement of your prostate and to check and confirm whether you might have cancer in your prostate.

However, the biopsy not only picks up cancer in the prostate but it can also establish how aggressive the cancer may be and help the consultant decide on which treatment options may be suitable for the man.

Before having a prostate biopsy, you will most likely have had:

- A raised PSA level.
Because some PSA leaks out of the prostate, it's normal to find PSA in a man's blood. This is called your PSA level. So, a small amount of blood is taken to measure the amount of PSA in your blood and can be used to help the doctor decide what is going on. Your PSA level can be raised for a variety

of reasons such as prostatitis (inflammation of the prostate), BPH (benign enlargement of the prostate) or prostate cancer;

- An abnormal digital rectal examination (DRE).
If your GP has some concerns about your DRE such as any hardened area, odd shape or unusual lump;
- Previous biopsy results.
If previous biopsy results were normal or perhaps doubtful and you still have raised PSA levels or if your biopsy showed prostate cells that were abnormal but not cancerous;
- If you have already been diagnosed with prostate cancer and have chosen Active Surveillance to manage your prostate cancer, a biopsy will be done to find out if the cells in the prostate are changing or have changed. In some situations, an MRI scan may be done prior to having a biopsy.

What is a prostate biopsy?

It is a test that your GP, consultant or CNS (clinical nurse specialist) may ask you to have done. It involves taking tiny samples of tissue from your prostate then looking very carefully at these under a microscope. There are 3 types of biopsy:

- i. TRUS which is a trans-rectal ultrasound and biopsy. This is usually the standard way to have a biopsy if you have a raised PSA and/or the doctor has concerns when she/he examined your prostate. It involves taking tissue samples from your prostate through the wall of the back passage. Occasionally, the trans-perineal method can be used if there are difficulties reaching your prostate through the back passage;
- ii. Template guided prostate biopsy (or trans-perineal biopsy). It involves placing a special grid against your perineum (the skin between your scrotum and back passage) and taking tissue samples from your prostate through the perineum. This may be done in certain circumstances and perhaps is becoming more common now;

iii. In addition, some hospitals are now using an MRI fusion guided image to target specific areas of the prostate. This is essentially the same procedure as above except that a high-definition MRI image is superimposed onto the live ultrasound image providing further detail.

(MRI means magnetic resonance imaging. An MRI scan uses magnets rather than X-rays to produce detailed pictures of your prostate.)

It's important to be aware that you may not be suitable for or offered both types of biopsy and some types of biopsy may not be available in your area.

Who does the prostate biopsy?

In some areas this will be done by the Consultant or CNS who is looking after you. In many areas, the biopsy service is led by a CNS or urology CNS. Occasionally a biopsy may be done by a radiologist (a doctor who specialises in X-rays).

Before having a prostate biopsy, tell the Doctor or CNS:

- If you have any problems with bleeding;
- If you have an allergy to any medicines like antibiotics;
- About any medicines, herbal pills or herbal supplements you are taking;
- If you take any drugs to thin your blood such as warfarin, clopidogrel, rivaroxaban or apixaban. You should have been asked to stop these before the biopsy so ask when you can start to take these again;
- If you take aspirin, ibuprofen or other non-steroidal anti-inflammatory drugs;
- If you have been unwell with any other medical condition in the past few days.

The information that follows about prostate biopsy is meant as general guidance. As procedures may vary slightly from hospital to hospital, ask for more advice from staff at the hospital you are attending. If you have been given any specific guidance by the hospital then it is important that you follow their instructions.

What is a TRUS Biopsy?

This is to take tiny samples from your prostate through the wall of the back passage, using an ultrasound scan, special needle and local anaesthetic.

What is a template guided biopsy?

This is to take tiny samples from your prostate through the skin of the perineum, using an ultrasound scan, special grid, special needle and general or spinal anaesthetic.

What is MRI guided TRUS Biopsy?

This is to take tiny samples from your prostate through the wall of the back passage, using an ultrasound scan, special needle and local anaesthetic.

However, this type of biopsy also involves overlaying (or fusing) a recently taken MRI high definition picture onto the live images on screen from the ultra sound scan.

Once these two types of specialist diagnostic techniques are fused together by special computer software, they provide a detailed 360° 3D picture of the man's prostate. The advantage being the biopsy needle can be very accurately targeted to specific areas in the prostate.

With this type of biopsy you will be asked to lie on your left side with your knees bent up towards your chest. (This type of biopsy may not be available in all hospitals.)

What is trans-perineal biopsy using MRI and trans-rectal ultrasound fusion biopsy?

This is to take tiny samples from your prostate through the skin of the perineum, using an ultrasound scan, special grid, special needle and general or spinal anaesthetic.

However, this type of biopsy also involves overlaying (or fusing) a recently taken MRI high definition picture onto the live images on screen from the ultra sound scan.

Once these two types of specialist diagnostic techniques are fused together by special computer software, they provide a detailed 360° 3D picture of the man's prostate. The advantage being the biopsy needle can be very accurately targeted to specific areas in the prostate.

(This type of biopsy may not be available in all hospitals.)

Why might I have a trans-perineal biopsy?

It may be done if the cancer is thought to be at the front of the prostate as areas such as this cannot be easily reached from the back passage.

If the man has previously had surgery to his back passage.

Consent form

Most likely you will need to sign a consent form agreeing to have the biopsy done. You can ask the doctor or CNS questions about the procedure, or let them know if you have any worries about having the biopsy and what the results might mean for you.

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Preparation

To reduce the risk of infection, you may be asked to take antibiotic tablets immediately before the operation.

Perhaps in some hospitals you may be asked to have an enema to clear your bowel before the TRUS and biopsy. The hospital staff will let you know if this is likely to be the case.

Preparation

To reduce the risk of infection, you may be asked to take antibiotic tablets immediately before the operation.

The hospital will most likely to advise you not to eat or drink for 6 hours before your surgery if having a general anaesthetic.

How is it done?

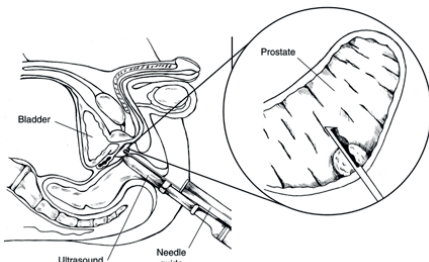
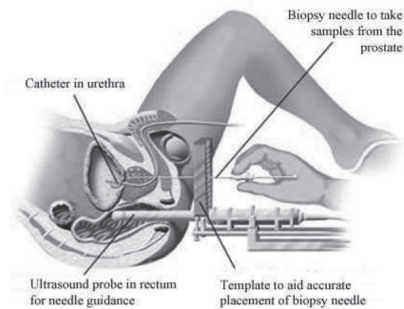


Image from the Library of The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

For the TRUS and biopsy, you will be asked to lie on your left side with your knees bent up towards your chest. It helps both you and the doctor or CNS if you can manage to relax.

The doctor or CNS will examine your prostate using a gloved finger.

How is it done?



You will most likely be admitted on the day of your operation, you will be examined, and the procedure will be explained again to you.

The anaesthetist will give you some medication into the back of your hand to make you sleep throughout the operation.

Then a small, ultrasound instrument coated with gel is gently passed into your back passage. The instrument is about the size of a thumb and works by releasing sound waves. The echoes from the sound waves give a clear picture of the shape and size of your prostate that the doctor or CNS can see on a screen. You may find having the probe in your back passage uncomfortable but it shouldn't hurt and it shouldn't take too long.

When the doctor or CNS has a picture of your prostate on the screen, they usually measure the size of your prostate, then guide a special needle through the wall of the back passage to reach the prostate.

An injection of anaesthetic is given to numb your prostate.

Then another very fine needle is used to take tiny samples of tissue from your prostate very quickly. You might feel a short, sharp pain or stinging as the special needles take these samples and there will be a 'clicking' noise as the samples are taken, although usually the local anaesthetic stops you feeling any pain.

When in theatre your legs will be put into special supports so that the doctor or CNS can see and later can place the special grid on your perineum.

The doctor will slide a gloved finger into your back passage to examine the prostate. After this the ultrasound probe will be slid into your back passage to give clear pictures of your prostate so that the biopsies can be taken.

In order to take samples from all areas of the prostate, a special grid (or template) is used which has holes every 5mm and this is placed against the perineum. The very fine biopsy needles are put into the prostate through the holes and samples of tissue are taken very quickly in a regular, organised way throughout the grid.

Once all the samples have been taken, the grid is taken away and a firm dressing is applied and a pair of disposable pants will help keep this in place.

How many samples are taken?

Although the number may vary, it's usually 10 or more tiny samples from targeted areas.

How many samples are taken?

Usually about 30–50 samples are taken and the clinician/CNS doing the biopsy can choose the areas to target. If you have a larger prostate the clinician/CNS may decide to take more samples.

<p>How long does it take?</p> <p>In total the procedure takes about 15 minutes. The first part of the procedure makes sure that the ultrasound instrument is in the correct place and giving clear pictures of your prostate.</p> <p>Each biopsy itself (taking tiny samples from your prostate) only takes a matter of seconds, but it is likely that several biopsies will be taken.</p>	<p>How long does it take?</p> <p>The whole operation takes between 20–40 minutes.</p>
<p>Will I have an anaesthetic?</p> <p>You will have an injection of local anaesthetic to numb your prostate which usually stops you feeling any pain.</p>	<p>Will I have an anaesthetic?</p> <p>You will either have a general anaesthetic (you will be asleep) or a spinal anaesthetic (you will be numb from the waist down).</p>
<p>Will I have a catheter?</p> <p>Not usually.</p>	<p>Will I have a catheter?</p> <p>Not usually. Although occasionally it may be necessary to have a catheter put in place during the procedure.</p>
<p>Will I have to stay in hospital and for how long?</p> <p>You will not usually need to stay in hospital.</p>	<p>Will I have to stay in hospital and for how long?</p> <p>Usually this will be done as a day case or as an out-patient procedure. Occasionally, depending on individual circumstances, you may have to stay in hospital overnight.</p>
<p>After the biopsy and before going home</p> <p>You will most likely go back to a waiting area and may be given some fluid to drink;</p> <p>Before you go home, you will be asked to pass urine to make sure that you can pass urine and that it's not too blood stained;</p> <p>You may be given a date to come back to see the doctor or CNS or other arrangements made to let you know your results. There's no harm asking how you will get your result if you're not too sure.</p>	<p>After the biopsy and before going home</p> <p>If you have stayed in overnight and have a catheter, then this will be taken out and you should be able to go home once hospital staff have checked to make sure that you are passing urine normally.</p>

What are the potential side-effects?

Blood in your urine. This is quite common and should clear up in about a week;

Blood in your semen. This is quite common and usually lasts for about 4-6 weeks;

Blood when you pass a motion;

A dull ache in the area between your scrotum and back passage.

What are the potential side-effects?

Blood in your urine for up to 10 days;

Blood in your semen for up to 6 weeks;

Bruising of the skin and perineum;

Temporary discomfort in back passage or soreness in back passage area;

On a few occasions, swelling can occur in the prostate which can lead to difficulties in passing urine or very occasionally not able to pass urine at all.

Medication to take when going home

Antibiotics will most likely be given, remember to finish all the tablets.

Pain killers as advised.

If you normally take warfarin, rivaroxaban or apixoban ask when you should start this again.

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Infection

After biopsy, a small number of men may be at risk of developing an infection. This is why it's really important to take all your antibiotic tablets, as directed by the doctor or CNS, if you have been given these.

As the needles for a template guided prostate biopsy go through the skin of the perineum, there may be a slightly lower risk of infection rather than with a TRUS biopsy where the needles pass through the wall of the back passage.

However, after either biopsy if you start to pass a large number of blood clots, can't pass urine at all, have a burning feeling when passing urine, are in severe pain or develop a high temperature over 38°C, feel hot, cold and shivery, then you should contact your GP or NHS 24 straight away. If you have been given a particular number to call by hospital staff, then you should call that number.

Going home

- You should be able to drive home, but, as you might feel a little uncomfortable, it may be best to have someone drive you home. If you have had a general anaesthetic, ask the doctor or ward staff for more advice. You may need to check with your insurance company about your cover after your anaesthetic and you need to be comfortable in doing an emergency stop.
- If you are given antibiotics to take at home, it's important that you read the instructions carefully and make sure that you finish the full course of tablets.
- If you are in a lot of pain, you may be able to take over-the-counter painkillers such as paracetamol or ibuprofen. Ask the doctor, CNS or pharmacist if you are unsure what you can take.
- If you are on any blood thinning tablets, ask the doctor when you can start taking these again.
- Take it easy for the rest of the day.
- Try to drink plenty of fluids to help flush out any possible infection.
- Get back to your normal activities as soon as you feel up to it, although you may be advised to avoid energetic exercise for the first few days.
- Apart from the day of the procedure, most likely, you will not need any extra time off work unless you have a very strenuous job. If you had a template guided biopsy then you may need 2-3 days off work.

Then what happens?

The samples of tissue are sent to a laboratory to be examined in great detail for any signs of prostate cancer so you won't get the results straight away.

How long before I get the results?

The results will go to your consultant or GP in about 2-3 weeks' time. This may vary from area to area so ask the doctor or nurse who did the biopsy when you are likely to get your results. If you don't hear after 3 weeks, there's no harm phoning the CNS at the hospital to ask about your results. In some hospitals, the doctor or CNS will phone and give you the biopsy results. After getting the results, you will most likely be given an appointment to see the consultant at the hospital.

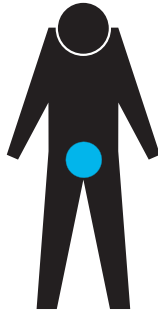
Why might I have another prostate biopsy done?

This can vary from man to man depending on your results. You may have another prostate biopsy done if:

- Your TRUS biopsy result didn't show any cancer but your digital rectal examination found that your prostate was not a normal shape or size or there were some hardened areas or lumps. This is because such tiny samples are taken during the TRUS biopsy that it may be possible to miss small areas of cancer in your prostate;
- You may have a template guided biopsy if you have already had a number of TRUS biopsies and these have not shown why your PSA is raised;
- Your PSA level is continuing to rise;
- Your brother, father or close family relative has or had prostate cancer;
- Abnormal, but not cancerous cells, have been found in your prostate;
- Prostate cancer has been diagnosed and you have chosen Active Surveillance to manage your prostate cancer, so that any cell changes in the prostate can be picked up.

To keep a check on what is happening, your GP, consultant or CNS may ask you to have a PSA blood test once a year or possibly a bit more regularly.

If you have any questions or concerns about your biopsy or what it means then speak to your GP or CNS at the hospital.



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