Prostate Template Biopsy for the Diagnosis of Prostate Cancer

Why choose template biopsy vs TRUS biopsy?

It is a fact that the current standard-practice TRUS biopsy can be negative in up to one third of men who actually have cancer. This is because it misses large areas of the prostate such as the ends of the prostate as well as areas high up in the prostate (known as ‘under sampling’). Over half of men have more areas of cancer than detected by TRUS biopsy.

TRUS biopsy can give incorrect information about how aggressive the prostate cancer is. 1 in 4 men actually have a more aggressive cancer than originally detected on TRUS biopsy. This is because they can miss cancers or not sample the tumour properly (at its centre) but only just skim the edge of it. Higher risk areas in the tumour can be missed and the size of the tumour can be underestimated. Template biopsies have been shown to be accurate at finding important cancer with an accuracy of 95%. This is because the whole gland is sampled in a systematic and careful way.

How is template biopsy performed?

A template-guided biopsy is carried out under a general anaesthetic. An ultrasound probe is gently inserted into the back passage and the prostate is scanned. A soft, flexible tube is inserted through the penis into the bladder to identify the urethra and is left in place for the duration of the procedure. Using a grid (template) with holes every 5mm placed against the perineum (the skin between the scrotum and back passage).

A biopsy needle is inserted through each hole on the grid and the prostate is sampled every 5mm. In the ultrasound picture below (right), the prostate is seen as a round object that is slightly darker than the rest of the area. Numbers and letters represent the template grid and each hole is represented by a ‘dot’.
Preparation for template biopsy

Four days before the procedure, you should start taking a tablet called an alpha-blocker (Tamsulosin). Your hospital doctor should have given you a 2-week prescription for this. If not, please call the hospital and ask whether you should be on it. This tablet relaxes the prostate and reduces the chance of the template biopsies causing retention of urine (not being able to pass urine). You will also be given a course of antibiotics to start one day prior to the procedure and this will be continued for 7 days after the procedure.

You will need to be admitted to hospital a few hours before the procedure. You should not eat anything for 6 hours before your procedure time to ensure your safety under anaesthetic. You can drink water up until 4 hours before your procedure time. A member of the team will see you and you will be asked to sign a consent form to state that you agree to have the procedure if you have not already done so. The anaesthetist will see you prior to the procedure to discuss the anaesthetic with you.

What are the risks of template biopsy?

Transperineal biopsies carry risk as a normal TRUS prostate biopsy carried out through the rectum. The complications of both are similar, but with two important differences. As the needles are going through skin rather than back passage, the procedure is cleaner and has a lower infection rate. However, because we take more biopsies, there is bruising and the importantly, the prostate can swell causing the water passage to block. This is called retention of urine and you will need to have a plastic tube (catheter) inserted into the bladder to drain the urine for a few days whilst the swelling goes down. The plastic tube is a temporary measure. To reduce the risk of this happening we ask that you take a tablet that relaxes the prostate, as described above.

The other complications that you need to be aware of are:

- Bruising of skin (almost all men)
- Bruising occasionally spreads to the scrotum (between 1 in 20 to 1 in 10)
- Temporary discomfort or pain in the back passage area (most men)
- Bloody urine (‘pinkish’) for the first few hours to 2 days (most men)
- Bloody semen/ejaculate in most men (lasting for up to 3 months)
- Prostatitis (inflammation or infection of the prostate) in some men (less than 1 in 20)
- Retention of urine requiring a temporary catheter (1 in 20)
- Infection (requiring admission and intravenous antibiotics (0-1 in 100)
- A few men have experienced temporary poorer erections (1 in 50)
During the procedure

Typically between 40-60 biopsy samples are taken and the whole procedure last between 20-40 minutes. If you have a larger prostate, then many more biopsies can be taken.

At the end of the procedure the template is removed and the skin injected with a long-acting local anaesthetic. A thick padding will be placed over the area of skin that the needle has gone through to prevent a lot of bruising. This padding should be left for at least 6 hours.

The biopsies are grouped into 20 areas of the prostate. A Consultant Histopathologist examines each biopsy sample under the microscope and a report is given telling us whether each biopsy has cancer in it or not. Other information is also given such as whether the tissue looked inflamed or whether there are other features such as precancerous areas in the prostate.
What does the report look like?

Each area can be given a risk category to show how important the cancer in that area might be. These are colour coded to make it easier to visualise the areas that are important.
After the procedure

You will be given antibiotic tablets and painkillers to take for seven days after the procedure. You should continue with the alpha-blockers for another 10 days. You may experience some perineal pain or discomfort after the procedure: paracetamol or other simple painkillers should be adequate. You should avoid any medication containing aspirin for 24 hours as it causes blood thinning and will therefore increase the risk of bleeding.

You can expect to see some blood in your urine for 1 - 2 days following the biopsies. You may notice some blood in your semen for up to 3 months. If the bleeding becomes excessive, prolonged or if you start to pass blood clots then you should seek medical attention.

Occasionally swelling may occur in the prostate gland as an inflammatory response to the biopsies being taken. This can cause difficulty in passing urine and may very occasionally cause the ability to pass urine to stop completely. This is known as urinary retention and you would then need a catheter inserted to drain your bladder for a few days. You will not be allowed to go home until you have passed urine.

There is a <0.5% risk of developing sepsis (a very bad infection) following prostate biopsy. The antibiotics you will be given should help prevent this. If you develop flu-like symptoms within 24 hours of the biopsies being taken (fever, cold shivers, general aching) you should seek medical assistance immediately. You should drink plenty of fluids.

You can usually return to work the day after you have been discharged from hospital, if you feel ready to do so. It may be difficult sitting down for prolonged periods of time for the first 2-3 days.

You need to check with your insurance company about your cover following anaesthetic. You also need to feel comfortable doing an emergency stop. If you are taking any medication, check with the pharmacist whether it is safe to drive while taking them.