Stereotactic Body Radiation Therapy for prostate cancer

Please note:

The information on Stereotactic Body Radiation Therapy (SBRT) from pages 28 – 31 has now been superseded/replaced. Please read this new section for the most up to date information on SBRT.

What is Stereotactic Body Radiation Therapy (SBRT)?

SBRT is a type of external beam radiation treatment that delivers very precise and higher doses of radiation from outside the body. This works in the same way as other radiotherapy treatments to damage the cancer cells. You may hear this called SBRT (stereotactic body radiotherapy) or SABR (stereotactic ablative body radiotherapy). In this booklet the term used is SBRT.

There are specific indications or reasons for offering SBRT depending on your staging and grade of prostate cancer, PSA, and the position of some of your organs such as your bladder and back passage in relation to your prostate. It will also depend on the size of your prostate. It is suitable for those with low to favourable intermediate risk prostate cancer and who have a good urine flow.

An overview of the treatment

To deliver SBRT, changes are made in the way that the LINAC machine is used. (The LINAC machine produces high energy x-ray beams to treat cancer). The dose rate is increased, and the beam is delivered without a flattening filter, which is used in non-SBRT radiotherapy. In this way radiation beams can be very precisely adjusted and corrected.

The dose of each fraction of radiotherapy is larger than with traditional EBRT. As a result, the treatment dose is delivered in 5 large doses of radiotherapy over 5 days, and you will not be treated on a Saturday or Sunday. To deliver such doses safely, they need to be delivered very accurately to the prostate. Because the beams are so precisely targeted there is less radiation reaching other healthy tissues or organs near the cancer. Additional hormone therapy is not required.

When might this be suggested?

As a primary/main treatment to potentially cure the cancer when it is contained in the prostate and has not spread (metastasised) to other parts of their body.

- As a treatment, after a period of active surveillance if there are signs of the cancer growing.
- For men with low or intermediate risk prostate cancer.
- For men who are medically fit for treatment.
- For men with a prostate volume of 70cc but possibly up to 90cc if their urinary flow rate is acceptable.

What happens?

(The information that follows is meant as general guidance. As procedures may vary slightly, 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.)

1. Gold fiducial seeds or markers

Before putting the seeds into place, you will be asked to stop any blood thinning medicines that you take such as Clopidogrel, Aspirin, Apixaban or warfarin for 7 days before this procedure. Tiny gold fiducial seeds/markers are inserted into the prostate through the bowel wall. You will have a local anaesthetic. It is a similar procedure to having a biopsy.

The whole process of inserting the seeds should only take about 30 minutes. You will be asked to take antibiotics for 3 days afterwards.

2. Radiotherapy planning CT scan

- Before your CT scan you will be given a suppository (medication into your back passage) to get rid of any gas in your bowel.
- You will be asked to drink water, so your bladder is comfortably full.
- Some small permanent dots will be marked onto your skin.
- The scan takes about 20 minutes.

An oncologist will identify your prostate on your CT scan and use computer software to outline its exact location. Your previous MRI scan will be fused/overlaid with the planning CT scan to allow the oncologist to accurately target your prostate.

The MRI and CT scans are used to create your individual radiotherapy treatment plan. You will probably start your radiotherapy treatment about 1-2 weeks after the scans.

3. On treatment days

- You will have a suppository to get rid of any gas in your bowel.
- You will be asked to drink water, so your bladder is comfortably full.
- You will lie on your back on a special treatment bed with your arms at your side
- You will have your treatment.
- This will be the same process for the 5 days that you have your treatment.

The information from pages 32 – 36 for SBRT remains the same apart from the updates noted below.
In addition, please disregard the following information as this has now been updated.

Page	Heading	Information that is now outdated, please ignore
35	**Drawbacks**	Follow up of patients treated is still relatively recent so long term side-effects are not well known. However this risk is significantly reduced by monitoring the prostate position with specialist systems such as RayPilot® Hypocath® and Calypso®.
35	**Advantages**	At the time of writing (July 2023) Stereotactic body radiation (SBRT) is available as part of a clinical trial. This involves receiving curative radiotherapy in only 5 large doses over 1 week.
36	**The Calypso® system**	This is a slightly different system in that three Calypso beacons are inserted into the prostate. These beacons act as radio transponders to track the position of the prostate, so if the prostate moves at all, the radiotherapy beams are switched off. The beacons are put into the prostate in the same way as the fiducial markers. You will be asked to lie on your side. The ultrasound probe will be slid gently into the back-passage to see the prostate and guide the insertion of the beacons. Antibiotics will be given to take for a few days after these have been inserted to help stop any spread of infection from the bowel to the prostate. These beacons will remain in the prostate after the radiotherapy is completed in the same way as the fiducial markers are. Getting the system in place will take about 20-30 minutes in total from start to finish. With the Calypso® system the planning CT scan is usually performed 7-10 days later to let the beacons settle in the prostate. Just like the Raypilot® Hypocath, an individual treatment plan will be developed. For more information about this system and whether it is available, please speak to your consultant oncologist.