Stereotactic Body Radiation Therapy (SBRT) to the Lung

SBRT is a type of radiation used to treat a small tumour(s) in different parts of your body. This handout will give you information about what happens during SBRT simulation, planning, and treatment.

**Background**

Unlike “conventional” radiation, SBRT gives you a very high dose of radiation during each treatment. It is important for you healthcare team to find the exact position of your tumour(s) before and during each treatment. You will need to keep your body still during the treatment. This will make sure the treatment is given correctly.

**Simulation**

Simulation is the first step of preparing you for SBRT treatment. During this visit you will have a 4-dimensional (4D-CT) simulation or “planning” CT scan. This scan captures the motion of your breathing so that your radiation oncologist will be able to outline your tumour(s).

To help position you for your treatments, a custom “cushion” will be made for you. It will mould to your back for comfort and help keep you still during the treatment. An inflatable belt will be placed around your abdomen and comfortably tightened (See Figure 1). This helps to reduce tumour motion during your breathing. Always let your radiation team know if you are unable to continue for any reason.

![Image of a person lying down on a cushion with an inflatable belt over their abdomen.]

**Figure 1.** The picture above shows how you will be lying down on your cushion with the inflatable belt over your abdomen.

Finally, you will be given permanent tattoos (small markings) at this appointment. These tattoos will be used to position you for daily treatment.
Treatment Planning

The next step is treatment planning where a team of medical professionals will find the best way to direct the radiation to your tumour(s) (See Figure 2). You do not need to be present during this step.

![Figure 2](image)

Figure 2. This picture is an example of how radiation beams are directed to your tumour(s) during SBRT treatment planning.

Treatment

Your next visit will be your first treatment appointment. This appointment will give you an idea of how long each treatment will be. Treatment time will not always be the same. It may take up to an hour.

Your radiation oncologist may give you a prescription for a medication (steroid) that helps to reduce lung inflammation due to radiation. If you have a problem with muscle or bony pains, it may help to take a pain medication (analgesic) before your appointments. This will help you to be comfortable during your treatment.

The treatments do not hurt. You will lie on your cushion and wear the belt around your abdomen. You will be positioned using your tattoos. Once you are in the right position on the treatment bed, it is important that you keep as still as possible and **breathe**.

Next, a Cone Beam CT (CBCT) scan will be taken to verify the position of your tumour. Changes to your position will be made if needed. To make these changes the treatment bed you are lying on may move a little (See Figure 3).

![Figure 3](image)

Figure 3. This picture shows the type of radiation machine that is typically used to give your SBRT treatment.
The CBCT scan may be repeated after any changes are made, and also during and at the end of each of your treatments. This whole process is repeated for several days. After this, your treatment is complete. You will be scheduled for follow up appointments with your radiation oncologist.

**Preparing for Your Treatments**

- Take the steroid medication if it was prescribed for you by your radiation oncologist.
- Keep taking your regular medications (unless your radiation oncologist tells you not to).
- It is okay to eat and drink before your treatment. Do not eat a heavy meal.

Please talk to any member of your healthcare team if you have questions or if you do not understand any of the information in this handout. Your nurse will have given you a card with the number for you to call between the hours of 8:30am and 4:00pm from Monday to Friday. The Cancer Centre is closed on weekends and holidays.

References are available upon request.

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