Long term side effects (weeks or months after radiation is completed)

**Rib fracture**
If the liver cancer is next to the rib bone, there is a small chance of rib bone damage caused by the radiation treatment.

**Liver damage**
Some parts of the normal liver can be damaged by the radiation. This is important especially if you do not have normal liver function before treatment. However, the affected parts can be minimized with careful radiation planning. The liver has an ability to regrow and fix a loss in function, this may help to maintain normal liver function after treatment.

**Medications**
Your doctor may prescribe a medication for you to take over the course of treatment or in preparation for treatment. If you have any questions about the medications, let your therapy team know.

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**Stereotactic Body Radiation Therapy (SBRT)**

- Planning and treatment for liver/abdomen

**Planning your treatment: Mould Room appointment**

For this appointment you will need to change into a hospital gown. In the Mould Room a form fitting device will be made to help keep you still during your treatment. This device is your custom mould. This will also provide support to keep you comfortable.

Your appointment in the Mould Room takes about 30 minutes. Please let your radiation therapy team know if you are uncomfortable as you will be in this position for up to 30 minutes each day during treatment.
CT Simulation

The next step is a CT Simulation appointment. This will be on the same day as your mould room appointment.

Radiation therapists will perform this procedure and explain it to you. During this process you will be placed in your custom fit mould and have a CT scan. You will be asked to lie still and breathe normally.

After the scan is done, you will need to have a few small tattoo dots placed on your skin. These are used by your treatment radiation therapists to position you in the same way each day.

Photos of your setup position will also be taken to help with your daily treatment set-up.

Mild skin irritation in the treatment area
The radiation dose to the exposed skin is very small. However, you may see mild redness and feel mild warmness of the skin in the area where the radiation beams get into your body. It is usually very mild and goes away on its own without medication or cream.

Stomach and/or duodenal (small bowel) ulcers
Depending on the location of your tumor, there is a small chance you may end up having stomach or duodenal ulcers that will need further management after your treatment is complete. Please tell your radiation team if you have stomach (abdomen) pain and discomfort, especially after meals.

Stomach and, duodenum (small bowel) and bowel perforations
Depending on the location of your tumor being treated, there is a rare chance that the damage by radiation to the area can cause perforations (holes) in your stomach or duodenum or your bowel. You may all of a sudden have sharp stomach pains and discomfort. You need to see a surgeon right away if this happens. You should contact your surgeon and your radiation team as soon as possible or go to the nearest emergency department.

Other side effects
There may be other minor organ (body parts) damage and rare side effects related to your radiation plan. Your radiation team will discuss this possibility with you.
**Pain or discomfort in the right or center upper abdomen**
Radiation can cause swelling in the part of the liver being treated. It depends on the location of the swelling, the liver capsule that has sensation can be stretched and you may have pain or discomfort in the right or centre part of the upper abdomen. There are medications to help to ease this pain and discomfort. Please tell your radiation team if it is a problem for you. It usually takes 1 to 2 weeks for the swelling to decrease and the pain to lessen.

**Nausea and vomiting**
Nausea and vomiting is quite common during the course of treatment if your treatment involves the part of the liver that is touching the stomach or gut. You may not feel like eating and drinking. There are medications and things you can do to lessen these symptoms. Please talk with your treatment team to discuss these options. You want to make sure that you get enough fluids and nutrition during treatment. These symptoms usually go away in a week or two after treatment.

**Dry cough**
Since the lower part of the right lung is next to the upper and back part of the liver, separated by a thin piece of muscle (the diaphragm), radiation to this part of the liver can cause a dry cough. You may need medication to stop your cough. The cough will usually go away on its own in a week or so.

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**When will my radiation treatments start?**
- After the treatment planning appointment, time is needed to design your treatment plan.
- Your planning team includes: radiation therapists, physicists, and your radiation oncologist, each of which ensures the highest standard of care for your safety.
- You will be called at home with the start date and time of your treatment.
- The JCC aims to give you at least 2 days notice before your treatment starts. This is not always possible.
- If you will be using volunteer drivers please let a radiation therapist know during your CT simulation appointment.
- Please make sure that your contact information is current.

**Where do I go for my appointments?**
- Once at the JCC, take the main elevators to Level 0.
- Check in at the reception desk. The receptionist will instruct you on how to get to the right area.
- Radiation Therapy Department regular clinic hours: 8 am to 6 pm, Monday to Friday. We are closed on holidays.
Treatment appointment(s)

- Please arrive for treatment at least 15 minutes before your appointment. Your appointment may last about 30 to 45 minutes. Some of that time is used for answering questions, as well as setting up and taking images to check your position.

- Treatment with SBRT uses high energy x-rays and is delivered by a machine called a LINAC. LINAC stands for Linear Accelerator.

- Your radiation therapists will position you the same way as you were during your planning appointment with your custom mould. They will need to line up your tattoos into the correct position. As you are being set-up and during treatment you will be asked to lie still and breathe normally.

- Each day before your treatment, x-rays will be taken to confirm your positioning. This may take about 5 minutes, and after you may feel your treatment table move slightly. This moves you into the final set-up position.

- The treatment is then delivered, which may take another few minutes. You can be seen and heard by your radiation therapy team at all times on a TV screen and intercom. During your treatment the LINAC will move around you slowly, and make a humming noise. You will not feel anything during the treatment. If you need assistance, call out and your therapists can stop treatment and help you right away.

What happens if I cannot make an appointment or will be late?

- Call 905-387-9495 and ask for the Radiation Therapy Department.
- Let the clerk know your name and what appointment you are calling about.
- Please give 48 hours notice if you need to change your appointment.

What if I have more questions?

If you have questions or concerns before or after the treatment planning appointment, call your radiation oncologist's office.

Side effects during treatment and shortly after

The side effects you have will depend on:

- previous treatments you may have had
- your general health
- your current treatment plan

Fatigue – more tired than usual

You may feel tired during the period of your treatment. The tired feeling will gradually go away in a week or two. Rest when needed. Please let us know if you are feeling more tired than usual.
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