

CHU de Québec
Université Laval

RADIATION THERAPY INFORMATION GUIDE

External radiation therapy and brachytherapy for cervix cancer

Name of my radiation oncologist: _____

Department phone no.: **418-691-5264**

Consult this document on: **www.chudequebec.ca/Curietherapie_col**

Introduction

Your health condition requires you to have radiation therapy and brachytherapy.

This pamphlet contains information about:

- what radiation therapy is;
- what brachytherapy is;
- the steps involved in planning your treatments;
- what will happen during your treatments;
- the possible side effects;
- recommendations during and after the treatments.

The centre

The radiation oncology centre at CHU de Québec-Université Laval is a supraregional centre with a mission to

- Provide quality treatments;
- Promote research;
- Participate in student training;
- Evaluate new technologies.

You may be asked to participate in research projects during your treatments.

You may also be seen by students during your appointments. Students are always closely supervised by a health professional in their field.

Your team

- The radiation oncologist (your doctor) will meet you for a consultation. After reviewing your file, speaking to you and examining you, the doctor will decide whether you are a candidate for brachytherapy. He will oversee every step of your treatment.
- The nurse will be involved in assessing your physical and mental condition and will manage your symptoms during your treatments.
- Radiation therapists will be there to support you during your brachytherapy treatments (from preparation to administration).
- Medical physicists will calculate your brachytherapy dose.
- Depending on your condition, you may need to see other team members before or after your brachytherapy treatments, including a nutritionist, social worker, psychologist or pivot nurse.

What is radiation therapy?



Radiation therapy is a treatment that uses high energy X-rays or electrons to treat tumours (benign or malignant).

A machine called a linear accelerator is placed near your body. This machine gives a predetermined dose of radiation at the part of the body where the tumour is located. It can be moved in different directions.

Your treatment team checks the machines daily to make sure they're accurate and working properly.

The goal of the treatment is to destroy the cancer cells, while protecting the surrounding healthy tissue as much as possible.

Radiation therapy is painless, odourless and invisible. As soon as the treatment is over, the machine stops releasing radiation. You will not become radioactive after your treatments, and there is no danger to anyone around you.

What is high-dose-rate brachytherapy?

High-dose-rate brachytherapy (HDR-BT) is a procedure that involves placing a high dose of radiation directly into the tumour to preserve as much of the surrounding normal tissue as possible. The objective is to maximise the control of the disease with minimal side effects.

In HDR-BT, an applicator is placed at the tumour site. The applicator is then connected to the treatment device.

The device contains a radioactive source of iridium-192. The radioactive source moves to different positions inside the applicator. At the end of the treatment, the source returns to its sealed capsule. This device lets us administer a very high dose of radiation in a short period of time.

The device does not release any radioactivity. You will not become radioactive after your treatments, and there is no danger to anyone around you.

Other treatments

For some types of tumours, radiation therapy is used on its own. In other cases, it is used in combination with surgery and/or chemotherapy.

The treatment choice is based on accepted practices and a joint decision between you and your doctors.



First visit

Review of your medical file

In most cases, you will not have any treatment at your first radiation oncology visit. Your radiation oncologist will review your medical file and examine you, after which he will prescribe the appropriate treatment.

It's important to know that other steps need to be taken before your first treatment, which explains the delay between your first appointment and your first treatment.

At this visit, it's important to tell your doctor if you have an implantable electronic or other medical device (e.g., pacemaker, insulin pump, hearing aid). To avoid breakage, manufacturers recommend removing some of these devices during pre-treatment examinations or treatments.



Second visit

Planning your external radiation therapy treatment

These steps take anywhere from 3 to 4 hours..

1. **CT scan**

   A CT scan will be done to pinpoint the area to be treated. It will give measurements to decide the best way to administer the radiation needed to treat your tumour.

You must lie completely still during the CT scan.

Your doctor may order a CT scan with contrast (iodine injection). If so, you'll be given the instructions for this test.

Marks will be drawn on your skin. They will be used as landmarks by the radiation therapists during your treatments. Don't worry—the marks are often bigger than the area to be treated

- **The red markings** are temporary. You will need to keep them on throughout your treatments. Do not remove them, as they are needed to ensure accuracy.
- **A few tips:**
  - When washing, do not place your marks directly under the running water.
  - Pat yourself dry with a towel. Do not rub the skin.
  - The ink will stain clothing.

If the marks look like they're fading, call the radiation oncology department.

We will tell you what to do.

A few dots can be tattooed on your skin. These are permanent, so there's no risk of them being washed off.



2. **MRI**

   A MRI can be done to help us locate the area to be treated.

3. **PET scan**

   A PET scan can be done to help us locate the area to be treated.

4. **Pre-treatment waiting period**

   After those exams, there will be a delay while the team plans your treatment. The radiation therapists will let you know how long this will take. It may take longer if your doctor is waiting for test results. In all cases, we will adhere to the standards set by the Ministère de la Santé et des Services sociaux.

   You will be notified by phone of the date and time of your first treatment. Treatments can begin any day of the week.



External radiation therapy treatments

Number of treatments required

The number of radiation therapy treatments depends on the assessment of your health condition and your file. This number is not a reflection of the seriousness of your cancer.

Treatments are usually given daily, five days a week, from Monday to Friday. They last from 1 to 8 weeks, depending on the type of cancer.

Your machine may be out of commission one day or two for maintenance. In that case, you will be notified a few days in advance.

Brachytherapy will take place once the external radiation therapy is completed.

You will meet other patients during your visits, but it's important to remember that your treatments are personalized and tailored to your individual needs.

During the treatment

You will always be greeted by radiation therapists. They are familiar with your treatment plan. They will take the time to answer your questions.

You were told to come to your treatments with a full bladder, it's important you follow the instructions you received at your planning appointment (CT scan).

Based on the marks on your skin, you will be lined up under the machine in the proper position.

For accuracy reasons, it's important to lie very still during the treatments. However, you can breathe normally.

The radiation therapists will leave the room while the machine is running. They will be in an adjacent control room watching you on a screen. They can hear everything you say and speak to you over an intercom.

The radiation lasts only a few minutes. However, it takes about 20 minutes to get set up.

Verification images are taken at each treatment to check your position and not to see how your tumour is responding to treatment.

Brachytherapy treatments

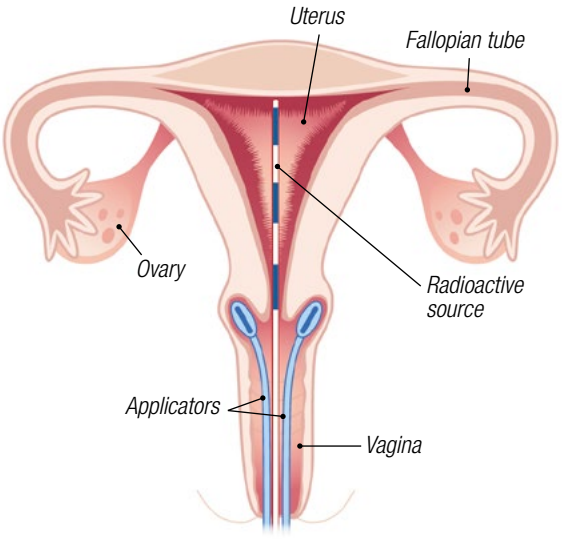
The number of treatments varies and depends on the assessment of your health condition and your tumour. Applicators are inserted before each brachytherapy treatment in our department's operating room. Most often, you will have four sessions spread over two weeks.

You will be given instructions during a pre-op appointment with a member of our team.

It is important to remember that your treatment is individualized. It is personalized and tailored to your needs.

Preparatory steps for treatment

- A few days before the series of procedures, you will be contacted by the preoperative program team to schedule the tests to be completed and the instructions to be followed before the procedure. You may need to see other specialists before treatment.
- A brachytherapy nurse will contact you to review the documents received during the consultation and the instructions to follow before the brachytherapy procedure.
- A magnetic resonance imaging (MRI) scan will be performed a few days before treatment in order to plan the brachytherapy treatments.



What will happen on treatment day

- You will need to do two enemas (bowel preparation) at home, 90 minutes before your appointment.
- A urinary catheter will be inserted at the beginning of the procedure. It will be removed when you wake up before you leave for home.
- The applicators will be inserted under anesthesia.
- Imaging tests will be done to check the position of the applicators and calculate the treatment dose.
- As needed, other catheters may be added to adequately treat the tumour.
- The radiation sources will then be placed inside the applicators. This step usually takes 10 to 15 minutes.
- After the applicators are removed, you will be kept for observation until you're ready to leave the hospital.
- The same steps are repeated for each treatment.
- You should expect the entire process to take all day. You will therefore leave the hospital at the end of the day or in the evening, depending on the time of your procedure. You must be accompanied by someone when you return home.

There will be times during the day when you will have to wait, so you should consider bringing a book, music, etc.

Side effects

Radiation therapy and brachytherapy are treatments that can affect normal tissue and cause side effects.

The side effects of radiation therapy and brachytherapy can also be affected by chemotherapy and/or surgery. However, the effects of these other treatments will not be discussed here.

These side effects don't always happen. Their seriousness depends on the person, the type of disease, the dose of radiation, and the area treated.

Here is a list of possible side effects and when they tend to appear:

A few days after the beginning of the treatments

Most of these side effects are temporary and will disappear within a few weeks after the radiation therapy.

Most common side effects

- Fatigue
- Redness, pain and skin irritation in the treated area
- Decreased appetite
- Hair loss in the treated area
- Mild-to-severe diarrhea
- Pain and/or burning during bowel movements
- Abdominal cramps
- More frequent urination
- Pain or burning during urination
- Increased vaginal discharge
- Permanent menopause and symptoms of menopause, such as hot flashes
- Permanent infertility

Side effects of the brachytherapy

Most common side effects

- Discomfort (related to placement of the applicators)
- Vaginal bleeding
- Urinary tract infection

Less common side effects

(< 5 in 100 patients: < 5 %))

- Perforated uterus
- Formation of blood clots in the lungs (pulmonary embolism)
- Formation of blood clots in the legs (phlebitis)

*In **the months or years following** treatments of radiation therapy or brachytherapy*

These effects can be **permanent**.

Most common side effects

- Narrowing and shortening of the vagina
- Vaginal dryness
- Pain during intercourse
- Hair loss in the treated area
- Permanent infertility and menopause
- More frequent urge to urinate

Continued on next page

Side effects related to the overall treatment

Less common side effects

(< 5 in 100 patients: < 5 %)

- Diarrhea or loose stools
- Bowel obstruction
- Burning during urination
- Difficulty urinating
- Swollen legs (lymphedema)
- Weakening of the pelvic bones that can lead to a fracture
- Opening (fistula) between the vagina and the bladder or the rectum

Rare but serious side effects

- Blood in the stools or urine
- Rectal ulcer
- Vaginal ulcer

Very rare side effects

(1 in 1,000 patients: 0.1 %)

- Decreased sensitivity and/or strength in the legs
- Cancer caused by radiation therapy (the benefits of treatment outweigh this very low risk)

Medical follow-up

During your treatments, your radiation oncologist will meet with you about once a week. No appointments are necessary. A schedule is posted in the waiting room each week indicating the day your radiation oncologist will see you. This schedule will be explained at your first treatment.

Generally, your radiation oncologist will see you again 4-6 weeks after your brachytherapy.

Recommendations during treatments

General advice

- Tell the radiation therapists, the nurse or the radiation oncologist if you develop any side effects.
- Make sure you get plenty of rest but still stay active.
- Maintain your weight. If you notice that you've lost weight, it's important to mention this to your doctor.

Hygiene and skin care

- As needed, apply a fragrance-free moisturizer at least once a day to the treated area.
- Wash the treated area (in moderation) with warm water and a mild, unscented soap.
- Avoid taking baths and swimming for two weeks after brachytherapy.

418 691-5264

Rarely, other side effects may occur that we cannot predict.

However, if you develop side effects that are causing discomfort, ***feel free to contact us***



Nutrition



- You will be followed by a nutritionist. To reduce your risk of diarrhea, make sure you follow their advice.
- Here are some general tips to reduce the amount of air in your intestines and minimize flatulence, which will make your treatments easier.

  This is not long-term advice; follow it only for as long as you're undergoing radiation therapy.

  1. **Eat slowly and chew your food well.** When you eat fast, you swallow a lot of air, which ends up in your intestines.
  2. **Ingest less air**: Avoid chewing gum and drinking sparkling water, beer, sparkling wine and other carbonated beverages. You should also avoid drinking through a straw.
  3. **Limit gassy and fermentable foods**
     - Certain vegetables: onions, garlic, radishes, peas, corn, turnips and rutabaga
     - Cruciferous vegetables: cabbage, brussels sprouts, cauliflower, broccoli, sauerkraut
     - Certain fruits: prunes, plums, raw apples (for some people)
     - Legumes: lentils, chickpeas, kidney beans, pea soup, baked beans
     - Sorbitol: sorbitol is found in some sugar-free products, such as sugar-free candy, chocolate, cookies, etc.
  4. **Avoid becoming constipated.** It's important to have a bowel movement as soon as you feel the urge. Good hydration and an active lifestyle can also reduce the risk of constipation. You can ask your doctor for a mild laxative if you suffer from constipation**.**

Sexual activity



- Avoid sexual intercourse during your treatments and for four weeks after brachytherapy.
- In order to preserve tissue flexibility for sexual intercourse and gynecological examinations, you will receive a prescription to obtain a vaginal dilator from one of our nurses at the end of the treatment series. You will receive instruction from our nurses or the women's health clinic.
- Tell the radiation oncologist if you develop:
  - a fever;
  - persistent irritation;
  - foul-smelling discharge;
  - persistent discharge or bleeding;
  - severe pain in the treated area;
  - persistent pain when urinating.

If you have the potential to get pregnant, use an effective method of birth control during your treatments.

Smoking



- You should abstain from smoking during your treatments and quit permanently afterwards. Support is available at www.tobaccofreequebec.ca/iquitnow or by calling 1-866 JARRETE (1-866-527-7383). You can also talk to your doctor or pharmacist about other resources to help you quit.

Recommendations following brachytherapy treatments

- You must not be alone for 24 hours after your treatment.
- The sedation may cause difficulty concentrating. It's recommended you avoid driving and operating machinery for 24 hours.
- Once you're back at home, you can gradually resume your normal activities (eating when you're hungry and taking your usual medications), unless your doctor says otherwise. You should drink 1.5 to 2 liters (6 to 8 glasses) of water per day for the next few days.
- Avoid alcohol for 48 hours after your treatment.
- You can gradually resume physical activities at your own pace.
- You can shower the day after the procedure. Avoid baths and swimming for the first 72 hours.
- If you feel pain, you can take Tylenol (or another pain reliever, as prescribed by your radiation oncologist).
- Avoid sexual intercourse for four weeks after the brachytherapy. You should be able to tolerate the third exercise in the vaginal stenosis guide issued by the women's health clinic (WHC).
- A few weeks after your treatment, start using the vaginal dilator as instructed by your radiation oncologist or the WHC nurse.

Notes

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Radio-oncologie

This guide contains recommendations consistent with the scientific information available at the time of publication in september 2023.
However, these recommendations are no replacement for medical advice. If you have and questions, please speak to your health provider.

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