PATIENT INFORMATION

Radiotherapy for
Prostate Cancer

Liverpool and Macarthur
Cancer Therapy Centres

SYDNEY SOUTH WEST
AREA HEALTH SERVICE
NSW HEALTH
1. Introduction

This booklet is designed to provide you with general information about radiotherapy for prostate cancer at our treatment centres. In some cases, the information may not apply to you. If you have any doubts or concerns, please ask any member of the treatment team.

2. Radiation Therapy Planning and Treatment

Radiation treatment to the prostate generally involves 37 to 39 treatment visits to the radiotherapy department over a period of approximately 8-9 weeks. Before treatment starts you will have separate visits which are required to plan the treatment.

Some patients will need to have gold seeds inserted into the prostate before attending for a CT planning session (see Appendix 1: “fiducial markers”). If you are having gold seeds inserted a radiation therapist will call you following your clinic visit to book an education session. In this session the radiation therapist will provide more detailed information about the gold seed insertion and its preparation, the planning CT scan, radiotherapy treatment and associated side-effects.

At the planning appointment you will have a CT scan of your pelvis (simulation). This scan will help us determine the position of the prostate and the surrounding tissues so we can accurately direct the radiation beams. Because the position of the prostate gland can vary according to the fullness of the bladder and rectum, we request that you have a comfortably “full” bladder and an empty rectum before the CT scan and for each of your treatments so that the prostate is in the same approximate position each day. For most patients, this involves emptying your bowel and bladder 1 hour before the CT scan (simulation) or treatment and then taking 2 glasses (250mls each) of water or some other liquid within 10-15 minutes. This is also designed to reduce the amount of bladder and bowel side effects from treatment. At least one week before your CT scan, or following your education session, you will be required to start taking a fibre supplement, Benefiber. (see Appendix 2 regarding bowel and bladder instructions).

Three permanent skin tattoos are used as reference points to mark the area we plan to treat. They are the size of a small freckle and are given with a small needle into the skin. We will also use some temporary texta ink marks on your skin, which are fine to wash away after the planning session.
After the planning session, a radiation therapist will call you by telephone with a date to start treatment. Most patients are able to drive themselves to the centre for treatment and to continue their usual daily activities including working at their regular jobs.

The actual radiation treatment is given by radiation therapists. Generally, each daily treatment session takes about 15 minutes and you should expect to be in the Cancer Therapy Centre anywhere between 30 and 60 minutes (this depends on the number of patients waiting and if the machines are on schedule). After checking in at reception, you should proceed to the waiting room where you will be called by the radiation therapy staff and asked to change into a gown (the gown will be provided at your first visit). You will then be asked to wait in the waiting area next to your treatment machine. When the radiation therapists are ready for you they will call you into the treatment room where you will be asked to lie on the treatment couch. Most of the time in the room will be spent making sure that you are in the correct position and checking that the same area receives radiation each day. Please ensure that you have followed the instructions for having a full bladder and an empty rectum. (see appendix 2).

Treatment is given daily on weekdays and is not given on weekends or public holidays. The machines are serviced once a fortnight and on these days treatment will not occur. Very occasionally, you may be asked to have two radiotherapy treatments in one day to make up for these non-treatment days. If this occurs then the treatments will need to be delivered at least six hours apart that day. The machine staff will inform you of any changes to your treatment schedule.
You will be asked to attend the clinic area once every week to be reviewed by your specialist or their registrar (specialist-in-training). They will discuss any side effects or concerns you may have with treatment.

4. Daily Localisation of the Prostate

The position of the prostate can vary subtly each day. Because of this we need to make a daily check and adjust the treatment as necessary. We use gold seeds to check the position of the prostate.

Approximately one week before the planning CT scan, 3 gold seeds are inserted into the prostate in much the same way as a biopsy procedure is performed. The seeds are about the size of a small grain of rice. Daily x-rays are taken during treatment to detect the gold seeds and therefore verify the position of the prostate (see picture below). This is available at both the Liverpool and Campbelltown units. More information on this procedure is attached in Appendix 1.
5. Side-Effects of Radiotherapy

Radiotherapy works by killing cancer cells using penetrating x-rays. The normal cells in the area being treated may also be affected and cause side-effects. However, normal tissue cells have a greater capacity to recover from the radiation compared to cancer cells. The gap between each day of treatment allows the normal cells to recover. The following is a list of possible side effects that you may experience.

**Early Side-Effects**
Great care is taken to minimise the exposure of the tissues surrounding the prostate gland but there is no way of avoiding small amounts of the bladder and rectum. You may experience some bladder or bowel symptoms (*see below*) at about two to three weeks after starting treatment that may become more uncomfortable towards the end of the 8 weeks. In most cases the symptoms will settle within about four weeks after completing radiotherapy.

**The main side effects during treatment may include:**

**Bowel Irritation**
Changes to your bowel habits may occur during treatment. You may notice that stools are a looser consistency, you need to go to the toilet more frequently, pass a lot of wind or have a feeling of urgency and develop discomfort when passing a motion. Some people may also experience bleeding from the rectum or a mucous discharge.

If the skin around the anus becomes sore, take care not to wipe too hard with toilet paper. Occasionally your doctor will give you creams or suppositories that can be soothing.

If you develop diarrhoea, advise your doctor. You may be given diarrhoea medication.

The following diet changes are recommended:

- **Step 1:** reduce your fibre supplement (*Benefiber*) from twice to once per day. If diarrhoea continues, move to Step 2.
  - **Step 2:** stop taking Benefiber. If diarrhoea continues, move to Step 3.
  - **Step 3:** reduce the amount of insoluble fibre in your diet by avoiding:
    - skins, pips, and seeds from fruits and vegetables.
    - wholegrain breads, bran, and muesli based cereals.
    - nuts and legumes eg baked beans, kidney beans, lentils.
    - spicy foods (eg pepper, chilli, curry, mustard).
    - alcohol.
    - caffeine (from tea, coffee, chocolate and cola).
    - foods high in fat (eg. pastry, fried or greasy foods).
    - carbonated drinks e.g. beer, soft drinks.

Once your diarrhoea settles, slowly reintroduce fibre and aim to follow a healthy well balanced diet.
General healthy eating information is available from the Cancer Council information brochures. If you have specific health needs, please ask to see the Dietitian.

**Urinary Problems**

Most people will find that they need to pass urine more frequently, especially at night. There may be a burning sensation when passing urine.

Generally we like people to drink plenty of fluids. If you notice a “burning” sensation when you are passing urine, try Ural sachets added to water (these can be purchased at the chemist without a prescription). The Ural sachets can take the acidity out of urine and reduce discomfort.

If you have urinary irritation, drinking cranberry juice may be helpful.

**Skin**

The skin around the anus may become quite sore and red like “sunburn”. It is also common to lose some of the pubic hair in the weeks following treatment. This is temporary and should grow back over several months.

**Sexual Function**

There is no need to refrain from sexual activity either during or after the treatment. Occasionally a "burning" sensation may be experienced on ejaculation. The prostate cancer and the radiation treatment will not harm your partner. **However, if there is a chance that your partner may become pregnant, it is critically important to use contraception for the entire duration of radiotherapy and for 12 months following as radiotherapy may cause mutations to your sperm cells over that time.**

**General**

Tiredness is very common although many people do continue to work and lead a normal life. It is very rare to experience nausea from this treatment and you will not lose hair, other than from the pubic area.

*Please mention any problems to the radiation therapists or radiation nurses giving your treatment. Your doctor will also see you regularly during treatment so problems can also be discussed at these visits.*
Long Term Side-Effects

The majority of patients make a good recovery from their radiation treatment and do not experience side-effects that are a bother to them. In some cases however, patients may experience some problems which if they do occur, generally start many months after the radiation treatment has completed and can be ongoing.

These late side effects that can occur include:

**Bowel (or rectal) injury**

The most common symptom of late radiation bowel damage is rectal bleeding which can be a bother in approximately 10% of patients. For these patients it may be necessary to have a colonoscopy to settle the bleeding. It is important to note that if you do ever develop rectal bleeding after radiation treatment, a colonoscopy is recommended to determine the exact cause of the bleeding. Sometimes patients with bowel damage may experience greater urgency in having to go to the toilet and rarely may have “accidents” if they do not find a toilet quickly enough. Some patients may also notice a mucous discharge coming from the rectum.

**Urinary problems**

Problems with passing urine due to radiotherapy are relatively uncommon. In some unusual cases radiotherapy may cause a worsening of a patient’s urinary function due to scarring of the urinary passage (urethra), which may require a surgical procedure to open this up again. It is also possible for radiotherapy to cause bleeding in the urine, but again this is unusual and all such cases should be reported to your doctor and investigated.

**Sexual Functioning**

There are many men who are sexually active before treatment who are still sexually active years after having radiotherapy. Studies of radiotherapy of the prostate have shown that approximately 50% of men who are sexually active before radiotherapy are still able to have sexual intercourse 2 years after radiotherapy has finished. However in 50% of men, erection function declines following radiotherapy. If there are problems with sexual functioning following radiotherapy, it is fine to consider treatments such as viagra (a tablet) or injections (of prostaglandin into the penis) which can help. There is absolutely no risk of transferring the prostate cancer from one person to another and that having intercourse in no way increases the risk of the prostate cancer coming back.

For all men, as the prostate gland has been destroyed, when ejaculation occurs very little fluid comes out. Most men will be infertile after radiotherapy, and if you are considering having children in the future you should speak to your radiation oncologist to arrange sperm banking before radiotherapy starts. However, it is possible you will remain fertile after radiotherapy, so you should use contraception if you do not want your partner to become pregnant.

Please feel free to discuss any concerns about sexual functioning with your doctor. Assistance can also be obtained from the Clinical Psychologist regarding adjustment to changes in sexuality and relationship issues.
Hip Injury
Some radiation dose also goes through both hips and it is possible that the hips may become more fragile (osteoporotic) many years after treatment has completed. This may place men at a slightly higher risk of having a hip fracture if they have some form of injury or a fall.

*If you have any concerns or questions about late radiation damage, please discuss this with your doctor.*

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6. Looking After Yourself During Radiotherapy

General Health
In general, we encourage people to lead as normal life as possible during their radiotherapy. Many people continue to work during their treatment.

You may bath or shower using warm water. Avoid using soap in the treated area and do not scrub at the skin. Just let the water run over the area and then gently pat dry.

You will see your doctor regularly while on treatment so you can discuss any problems or possible side effects you may be having. Please mention any of these problems to the radiation therapists or radiation nurses who will be seeing you each day.

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7. Review during treatment

You will be reviewed every week usually by your oncologist or their registrar to discuss any side-effects or issues you may have.

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8. Follow-up after treatment

Success of the treatment is usually assessed using the blood test (PSA), and occasionally by examining the prostate through a rectal exam and testing for any evidence of spread.

It is important that you see your doctor periodically after the full course of treatment is completed. An appointment will be made for you to come back to the clinic to see the doctor at about 6 weeks after the treatment has finished. Generally speaking we like people to be checked three to six monthly for the first 5 years, then once a year thereafter. A blood test (PSA) is generally performed prior to each checkup. Your follow-up may be shared among the urologist who referred you, your radiation oncologist and your local doctor. On occasions, follow-up checks may be by telephone.

At the Cancer Therapy Centre we collect information regarding the outcome of your treatment including any side-effects that may occur. This is very important to us as we are trying to deliver the best treatment possible and we wish to measure and improve the effectiveness of what we do. It is therefore very much appreciated if you maintain contact with us and notify us if you move.
9. Cost

Radiotherapy

All radiation oncology consultations, planning and treatment procedures are fully covered by Medicare. If you have any queries about the billing process you may ask to speak to the billing clerk or the office manager. Tests conducted outside the Cancer Therapy Centre such as blood tests or x-rays may carry a charge and you will need to check this with the people conducting the test.

10. Transport

Macarthur Cancer Therapy Centre

Campbelltown hospital is a 15 minute walk from Campbelltown and Macarthur train stations. Buses are available from these stations to the hospital. A free shuttle bus takes patients and relatives between Camden and Campbelltown Hospitals. A Transport Access Guide (TAG) for travelling to Campbelltown Hospital is available at front reception.

Free parking is available outside the Macarthur Cancer Therapy Centre, and in the main hospital car park.

For those patients, who have no means of transport for radiotherapy treatment, there is a transport bus available within the local area. You can have an eligibility assessment for this at the time of radiotherapy planning. Please let your doctor know if you require this service.

For those patients commuting from the Southern Highlands, there is a daily transport service run by the NSW Cancer Council. Brochures for this transport service are available within the centre.

Liverpool Cancer Therapy Centre

Liverpool hospital is within walking distance of Liverpool and Warwick Farm train stations.

Street parking is limited to two hours in most cases. You can park in the undercover car park at Liverpool Hospital (off Campbell Street) for a small fee.

For those patients, who have no means of transport for radiotherapy treatment, there is a transport bus available. You can have an eligibility assessment for this at the time of radiotherapy planning. Please let your doctor know if you require this service.
11. Support Services

The Cancer Therapy Centre has a range of allied health professionals who provide support services. Appointments to see any of these people can be made through the reception staff at the Cancer Therapy Centre.

12. Helpful Sources of Further Information

You may find the need for further information. Please discuss your needs with your doctor. You may consult the Cancer Therapy Centre Resource Library at both Liverpool and Macarthur Cancer Therapy Centres and borrow a book or video. The library is located near the clinic area. The Support and Information pack you will receive as a new patient contains helpful booklets that are yours to keep.

Websites and Organizations that may be helpful

- [http://www.macmillan.org.uk/Home.aspx](http://www.macmillan.org.uk/Home.aspx) UK- Leading cancer information service
- [www.prostate.org.au](http://www.prostate.org.au) Prostate Cancer Foundation of Australia

Contact details:

- Assoc. Prof. Martin Berry 02 9828 5270
- Dr. Karen Wong 02 9828 5282
- Dr Mark Sidhom 02 9828 5282
APPENDIX 1

Patient Information

IMPLANTATION OF GOLD SEEDS INTO THE PROSTATE

Introduction and background

The aim of your prostate cancer treatment is to deliver radiation therapy as precisely as possible to the prostate and spare the surrounding structures such as the bladder and rectum. However, even when lying still, the prostate continually moves due to the bladder and rectum constantly changing size and position. This means that the radiotherapy “margins” around the prostate need to be generous and even then, we are not always certain that all of the prostate cancer is being treated every day. To overcome this problem, we use a system of placing gold seeds (fiducial markers) into the prostate and monitoring the position of the prostate every day during treatment. This improves the accuracy of our treatment and may also reduce the risk of early and late side-effects when we can reduce the margins that we need.

Gold markers are small gold beads measuring 3x1.5mm in size that, when inserted into the prostate, can be seen on special X-rays taken by your radiotherapy machine just prior to your treatment being given. We can then make movements to ensure that your prostate is in exactly the right position during your treatment. These corrections are only possible because the change in the position of the gold markers indicates movement of the prostate. Recent reports have shown that radiation therapy treatments using gold markers have been much more precise than the traditional approach of relying on the position of bony structures.

The implantation of the gold markers into the prostate can be an uncomfortable procedure and should be very similar to your biopsy experience though only 3 needles will be inserted. As with the prostate biopsy experience however, this procedure has shown to be safe and reliable. The gold markers are placed in the prostate, under local anaesthesia, by a radiologist under ultrasound guidance in the Medical Imaging Department. Patients are required to take antibiotics for one week (starting the morning of the procedure) to reduce the risk of potential infection. The fiducial markers stay in the prostate permanently but cannot be felt and are not known to cause any long term complications.

Potential Risks

Gold seed marker implantation is an invasive technique with a less than 5% risk of infection. However in some rare cases the infection can spread to the blood (septicaemia) which can be very serious. To minimise the risk of infection, you will be given a short course of antibiotics.

Minimal bruising that lasts for one to two days that might be experienced by gold seed implantation can be treated with paracetamol. You may notice some blood in your ejaculate or urine which in rare cases can require treatment (this is why warfarin or aspirin needs to be stopped).
How is the procedure performed?

Prior to the actual procedure an appointment will be made for you to see one of our radiation therapists at the Cancer Therapy Centre who will explain the process, obtain the antibiotics and suppository from pharmacy and book the procedure in medical imaging department. Please bring all your prescriptions with you. The procedure is done without a general anaesthetic (you are awake during the procedure) and feels much the same as the rectal examination already performed by your doctor, or a prostate biopsy.

A probe with an ultrasound device about the size of a finger is inserted through the anus to visualise the prostate. Using a probe, a very fine needle, with a gold seed marker at its tip, can be directed into the prostate. When the needle is in the correct position the gold seed marker is implanted from the needle tip. Three gold seed markers will be inserted into your prostate.

Is the procedure painful?

The procedure is usually uncomfortable rather than painful. Local anaesthetic is used. There are less pain receptors in the rectum and therefore only a little discomfort or some pressure is felt as the needle is inserted.

What must you do before the procedure?

If you are currently taking blood-thinning agents e.g. Warfarin or Aspirin, please discuss this with your doctor as they will need to be stopped prior to your procedure. These need to be ceased for at least 1 week.

You do not need to fast as you would for an operation. On the morning of the procedure, however you should not eat any solid foods. Fluids such as jellies and clear soups are fine. You should commence the antibiotics on the morning of the procedure and continue until the pack is completed. Use the Fleet enema to clear the bowel also on the morning of the procedure.

After the procedure

1. Drink plenty of fluids after the procedure.
2. Continue taking your antibiotics.
3. You will probably notice some blood in your urine, your bowel motion or in your semen. Do not be alarmed, this should settle down within a few days.
4. Problems are uncommon but if you experience any of the following:
   a. excessive bleeding
   b. increased difficulty passing urine
   c. fever above 37.5C, rigors, shivers or shakes

   You must go to the Emergency Department at your nearest hospital.

5. If you have any concerns or questions, contact your radiation oncologist.
Patient Consent

I………………………………………………….. request the implantation of gold seed fiducial markers to be given to……………………………………..…(patient’s name).

I understand that complications may occur with any medical treatment and accept the possible risks associated with this procedure.
The side-effects have been discussed with me.
I have had the opportunity to discuss and ask questions about the procedure and am satisfied with the information I have been given.

……………………………………………..  ………………………..        Signature of patient/guardian/relative             Date

……………………………………………          …………………………...……………………  Signature of witness               Full name of witness
APPENDIX 2

Patient Information

Preparation for the Planning and Treatment of your Prostate cancer

In order to help us plan and deliver your radiotherapy treatment as accurately as possible, please follow the instructions below carefully. By following these instructions you will improve the accuracy of the radiation treatment, and reduce the potential side-effects.

Bowel preparation
If your rectum becomes larger during treatment, it can move the prostate outside of its normal position. This could mean that a greater amount of the rectum receives radiation, which increases the risk of side-effects. The instructions below aim to have the rectum the same size each day during treatment as it was at the planning appointment, in order to avoid or minimise treatment side-effects.

Preparation for your Planning/CT appointment

- Either the day after your seed insertion or your education session begin taking Benefiber twice daily as per directions on the bottle. If your bowels become loose, refer to the bowel information in Section 5 of this booklet.

- Reduce your intake of gas producing foods for one week prior to your treatment planning session and during treatment. Gas producing foods include legumes (such as baked beans, kidney beans, 4 bean mix), cabbage, brussel sprouts, broccoli, cauliflower, onion, garlic, carbonated drinks, beer, eggs, and some spicy foods such as curries. Other tips to minimise gas formation include:
  - Eat more slowly and chew thoroughly
  - Sip rather than gulp fluids and drink without a straw
  - Avoid eating and drinking at the same time, as this frequently encourages swallowing of excess air.
  - Avoid chewing gum.
  - Don’t talk whilst eating.
  - Increase gentle physical activity such as walking.
Bladder preparation

- 1 hour before your appointment time please empty your bladder and open your bowels. It is important to at least open your bowels once per day, and it is preferable if your bowels are opened 1 hour before the initial planning scan, and before radiotherapy treatment each day.

- After emptying your bladder and bowel, drink 500ml of water within 10-15 minutes. (This is about 2 glasses, or you can get a drink bottle that fills up to around 500 ml).

- Please avoid emptying your bladder following your drink until after the planning or treatment is completed.

- It is important that your bladder is not too uncomfortable during planning or treatment as this may cause you to move around. If you find it difficult to “hold on” for an hour after drinking two glasses, please discuss with your radiation therapists or doctor about reducing the amount that you drink.

- Please avoid drinking more than one cup of coffee before your radiotherapy treatment, as this is a stimulant that will make you want to empty your bladder sooner.

- If your treatment machine is running late and your appointment will be delayed, the radiation therapists will let you know if you need to empty your bladder and drink the water again.
APPENDIX 3
Timeline

Initial Clinic visit with Radiation Oncologist
Within 1-2 weeks

Education session with Radiation Therapist about gold seeds and radiotherapy planning and treatment
Within 1-2 weeks

Gold seed insertion
Within 1 week

CT Scan
Within 2-3 weeks

Radiotherapy treatment commences. Usually 39 treatments