Radiotherapy
Total
body irradiation

azdelta
Uw ziekenhuis.

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Dear patient,

You have been referred to the Radiotherapy Department at AZ Delta hospital by your specialist or your general practitioner. This brochure is intended to inform you about the course of your treatment in our department. This brochure is a supplement to the conversations you will have with your radiotherapist (this is a doctor specialised in radiation treatment) and the various staff members of our department.

You will be given a general explanation here that applies to most patients. Your situation may be slightly different from what is described here. If you have any questions about your situation during your treatment, please ask one of our staff members.

We wish you a good recovery.

The Radiotherapy Department

Radiotherapy

Radiotherapy is treatment with ionising radiation. These are invisible high-energy rays. Malignant tumours can be treated with these rays. Radiotherapy can be used in two ways:

- external irradiation, which is common
- internal irradiation, which is used less and cannot be used for your treatment.

This brochure only contains information on external irradiation, i.e., total body irradiation.

The goal of total body irradiation is:

- destruction of malignant or abnormal blood cells
- suppression of the immune system to reduce rejection of the transplant (bone marrow or blood stem cells). This is to prevent your own immune system from attacking the cells supplied by the donor.

As the name suggests, this irradiation must irradiate the entire body.

Because the irradiation needs to be done so precisely, each patient is given his or her own precise treatment plan. An irradiation technique is chosen with the best energy or radiation intensity and with one or more radiation beams.

You cannot see, smell or feel radiation. It doesn't hurt. You are not radioactive after the irradiation. No radiation remains in the urine, stool, sweat or sperm.

The course of radiation treatment

Registration

On the day of your initial visit to our Radiotherapy Department, you must first register at the kiosk at the entrance to the hospital. You are then directed to the Radiotherapy Department's administration, where you will register again. The secretary will identify you by your surname, first name and date of birth. Please hand the labels you received at the reception/hospital kiosk to the secretary. You can then take a seat in the waiting room. One of our doctors will collect you there.



Registering at the administration

Consultation

Consultations with the radiotherapists take place by appointment from Monday to Friday from 8:30 a.m. to 12 p.m. and from 1:30 p.m. to 4 p.m. You can make an appointment by telephone on 051 23 75 82.



From left to right: Dr. Benedikt Engels, Dr. Caroline Sweldens, Dr. Lorenzo Staelens *Dr. Barbara Bussels, Dr. Didier Verniers*

During this initial consultation, the radiotherapist will ask you various questions to gain an understanding of your personal medical history and circumstances. Your current medical information has usually already been forwarded by your referring specialist physician.

The radiotherapist will discuss the treatment with you. He/she will explain the way our department works and how often you will be irradiated.

The radiotherapist will explain any side effects that may occur and the expected result of the treatment.



Consultation with a radiotherapist

A simulation will be carried out afterwards. This is where the further preparations that you need for the irradiation take place.

Simulation

You will be collected from the waiting room.

When you enter the room, you will be asked for your surname, first name and date of birth. This is a check for the nurses to know they have the right patient in front of them. Because the staff during the simulation are often not the same as the nurses during treatment, a photo of your face is taken. This is included with your details so that the staff members at the machine can be sure that they are treating the right patient.

The TBI chair is located in the treatment room. This chair is designed specifically for the administration of total body irradiation.

You undress: only underpants and possibly hosiery may remain on. The nurses will help you position yourself on the chair. You will be helped to sit in a semi-seated position using some supports. The chair used is height-adjustable, and there are attachments under the arms, bars to hold with the hands and a support for the head. What is important here is that you sit

well back on the chair with your seat against the supporting surface. A strap will be placed around your chest for support.

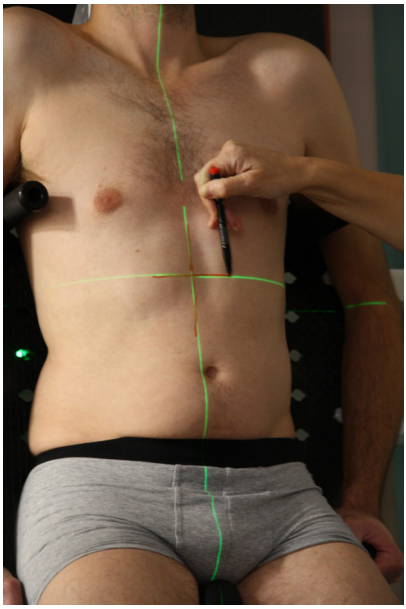
For the treatment, you must sit on the chair in exactly the same way as during the simulation. It is important that you indicate whether you are comfortable in that position so that you can sit still in that position for a longer period of time (the time needed for your irradiation treatment). The height of the chair or the position of the fittings can be adjusted so that you are comfortable. It is very important that you do not move or change your position.



Sitting on the TBI chair and adjusting it to the most comfortable position possible

A nurse records your position. The nurse draws the lines that are needed on your skin: the projection of the laser lights. Then standard photos are taken of your position on the TBI chair, the position of the fittings and the lines drawn. A spoiler is placed in front of you: this is a transparent Plexiglas plate that ensures that a sufficient dose is delivered to the surface of the body. A number of measurements must also be taken, such as height

measurements, the distance from the spoiler in front of you to your body and measurements at the level of your body. All these measurements are needed to calculate the correct dose for you.



Drawing the lines on the skin

Important during preparing for irradiation

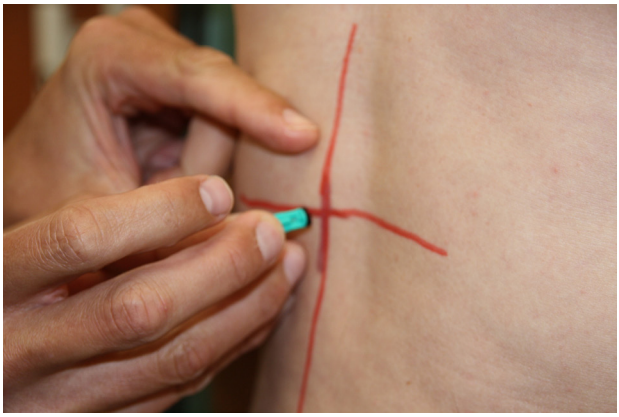
- **Try to relax as much as possible on the TBI chair in the position indicated.**
- **Try to sit as still as possible in the same position. If you are unable to do so, please tell the nurses why it is not possible. They will then help you to get into a more comfortable position.**

The lines on the skin are redrawn with a special ink. This ink is difficult to remove. These ink lines must remain visible

until the end of the irradiation treatment, so that the nurses can position you in exactly the same position that is needed for your irradiation. You can certainly still wash yourself or shower, but do not wash away what was drawn. You may not take a bath or go swimming. If the lines become less clear during the course of your treatment, you can contact our department to have the lines redrawn. You may not redraw these lines yourself.

Every time the ink is used, it can transfer to your clothing. This ink is difficult to wash out. Therefore, we advise you not to wear new clothing or underwear as the ink may leave permanent stains.

It is usually necessary to tattoo a dot on the lines that have been drawn. A nurse will apply this dot to the skin with a small needle. This is a small, permanent tattoo dot. The nurse will tell you where it will be placed.



Placing the tattoo dot

You will also receive a card with your name, date of birth, file number and a barcode. You must bring this card with you to your treatment. This card is scanned when you enter the radiation room. This system confirms that you are indeed the right person for whom the treatment has been prepared.



Barcode card

The simulation takes about half an hour.

(*) if you are having total body irradiation consisting of several treatments, an X-ray of your chest will be taken with an X-ray machine: an X-ray is made from the front and one from the back (the chair is turned for this so that you are facing the wall). These images are used to determine the placement of lung blocks. During the actual irradiation, the lungs are partially shielded with these lung blocks. This is so that the lungs receive a lower amount of radiation than the rest of the body.

The arrangements for the actual irradiation have already been established in advance and discussed with you together with the haematologist and the haematology transplant coordinator.

After the simulation, your GP will receive a letter about your treatment at our department.

The radiation treatment

On the day of your treatment, you are admitted to the hospital. You are accompanied to the Radiotherapy Department. After the treatment, you are accompanied back to your room.

You do not need to have fasted for the treatment.

When it is your turn, a nurse will ask you to enter the radiation

room. Keep your card with the barcode ready to have it scanned. A nurse scans your card so that your treatment plan can be accessed.



Scanning the personal barcode

Accompanied by a nurse, you go to the radiation room. Once again, you undress as required. You only keep on your underpants and support stockings.

You are helped onto the TBI chair in exactly the same position as during the simulation. With the help of attachments, the lines on your body, the laser lights projected from the wall and the light beam, you are positioned accurately again. The chair is then turned so that you are facing the wall. A diode is attached to read the dose administered immediately during irradiation. The spoiler is again placed between you and the radiation machine.



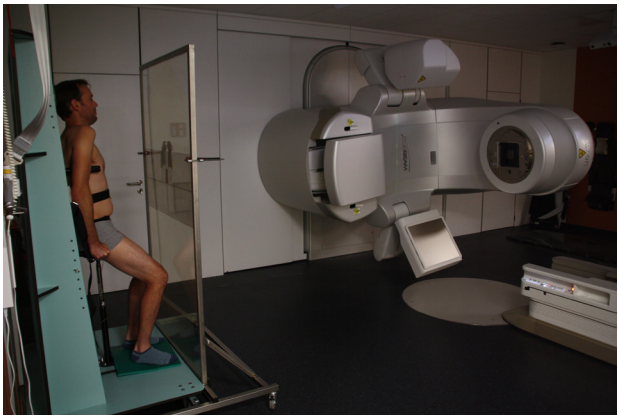
Fitting the spoiler

When all the data are correct, the nurses leave the radiation room. They can then see you through cameras and hear you through an intercom. If something happens during your treatment, e.g. you have to cough, the radiation is interrupted and the nurses return to the treatment room.



The control console of the radiation machine

After the first part of the irradiation, the nurses come back into the room. If necessary, you can step off the chair to relax. Then you return to the chair. The nurses help you get back into the right position.
You are now placed with your back to the wall. You are facing the radiation machine. Once again, a diode is attached to the skin to read the dose administered during irradiation. The spoiler is placed back in front of you for proper dose distribution. The nurses then leave the treatment room to monitor you and administer the treatment from the control console.

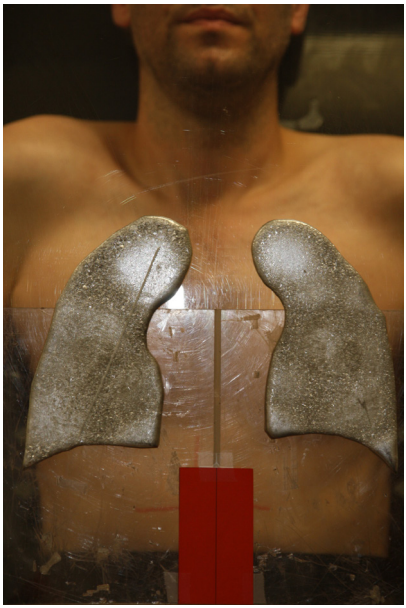


The second part of the irradiation

You sit still during the irradiation. You are allowed to breathe and to swallow. You do not see or feel the radiation. You also do not become radioactive from the radiation. During irradiation, the machine may make a sharp buzzing sound. When the radiation time is finished, the machine switches off automatically.

(*) If your treatment consists of several sessions, a Plexiglass plate with shielding blocks for the lungs is placed on the spoiler for each part of the treatment.

Photographs are first taken each time in order to assess immediately, together with the attending radiotherapist, whether the blocks are shielding the lungs correctly. Treatment will only be administered when the position of these blocks is correct.



Lead shielding blocks for the lungs

In addition to the nurses, a radiotherapist and a physicist (a radiation expert with knowledge of radiation physics in healthcare) are always present during each treatment.

Side effects

Some patients suffer a lot from side effects, while others notice very little. The presence or severity of side effects has nothing to do with the outcome of the treatment.

Side effects are usually transient. They disappear a few weeks after the end of treatment.

If you experience certain side effects, talk to a nurse, your radiotherapist or your haematologist. They can give you the appropriate advice. The doctor can prescribe medicines to ease the problem.

Temporary side effects

Fatigue
Fatigue is due to the treatment itself and the combination with chemotherapy.

Advice: sufficient rest, combined with light activity, such as walking.

Dry mouth
Irradiation of the salivary glands may temporarily cause a dry mouth, which may make swallowing difficult.

Nausea and changes in bowel habits
You will be irradiated over your entire body. This radiation may make you feel nauseous and suffer from queasiness or even vomiting. You may also suffer from intestinal cramps and diarrhoea. You can also discuss these matters with a nurse, your radiotherapist or your haematologist. They will give you the appropriate advice. The doctor may prescribe medicines to relieve the complaint.

Late side effects

Late side effects are side effects that only occur months to years after treatment. These late side effects only occur if you have total body irradiation treatments several days in a row.

Cataract
You might get cataracts in your eyes. This is a clouding of the lens of the eye due to the radiation. Cataracts are common in older people who have not undergone radiation. Cataracts can be treated with a simple procedure.

Infertility
Irradiating the testicles or ovaries may cause infertility. This is very likely. If you still want to have children, you should discuss this with your attending physician beforehand.

Practical information

The appointment system

You will have an appointment with your radiotherapist. This appointment is made in consultation with you, the transplant coordinator, the haematologist and the radiotherapist. The simulation takes place immediately after the consultation.

You are hospitalised for the actual irradiation.

Travel

The Radiotherapy Department contacts the hospital ward when you can come to the radiotherapy unit for the radiation treatment. You do not have to do anything yourself. You are accompanied to the Radiotherapy Department. After the treatment, you are accompanied back to your room.

Compensation

Radiation treatment entitles you to a legally determined transport allowance. When you come from home on the day of the simulation, the radiotherapist will give you a signed certificate for the reimbursement of your travel expenses. Send this certificate to your health insurance fund.

Additional costs

The costs of radiation treatment are borne by the health insurance fund. You must pay the patient fee for the consultation. If you have any questions about the cost of this treatment, please contact the hospital's invoicing

department: **t** 051 23 76 66 or
e factuur@azdelta.be

More information

You can also find more information at the following organisations:

Flemish League against Cancer (Vlaamse liga tegen kanker, VLK)

The VLK aims to inform and support people and those close to them during and after their treatment. A wide range of services has been developed for this purpose.

Kom op tegen kanker
Koningsstraat 217
1210 Brussels
t 02 227 69 69
f 02 223 22 00
www.komoptegenkanker.be

Stichting tegen kanker

The Stichting tegen kanker provides various services to promote the well-being of people with cancer and their loved ones.

Stichting tegen Kanker
Koningsstraat 479
1030 Brussels
t 02 736 99 99
f 02 734 92 50
www.kanker.be

Notes

Contact

Radiotherapy Department
AZ Delta
RUMBEKE CAMPUS
Deltalaan 1
8800 Roeselare

Administration
t 051 23 75 82
e secr.radiotherapie@azdelta.be

Availability by telephone on working days
between 8:30 a.m. and 4:30 p.m.

Consultation by appointment only
From Monday to Friday 8:30 a.m. - 12 p.m. and
1:30 p.m. - 4 p.m.

Social Services
e sociale.dienst.rumbeke@azdelta.be

www.azdelta.be

Source: Radiotherapy Department

AZ Delta Deltalaan 1, 8800 Roeselare **t** 051 23 71 11 **e** info@azdelta.be **w** www.azdelta.be
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