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PATIENT & CAREGIVER EDUCATION

# Low Dose Total Body Irradiation

This information will help you prepare for low dose total body irradiation (TBI) at Memorial Sloan Kettering (MSK). It will help you know what to expect before, during, and after your treatment. It will also help you learn about side effects and how to care for yourself during your treatment.

Read through this resource before you start TBI.

## About Radiation Therapy

Radiation therapy uses high-energy beams to treat cancer. You won't see or feel the beams.

Radiation therapy works by damaging the cancer cells and making it hard for them to reproduce. Your body is then naturally able to get rid of the damaged cancer cells. Radiation therapy also affects normal cells. However, your normal cells can repair themselves in a way that cancer cells can't.

## About TBI

TBI is radiation therapy that's given to your entire body. Many people have TBI before their stem cell transplant.

Low-dose TBI may be given to decrease the response of your immune system. If you're having an allogeneic stem cell transplant (getting bone marrow or stem cells from a donor), your body may see the cells as foreign. If this happens, your immune system will try to destroy them. Having low-dose TBI before your transplant can help keep this from happening.

You will be admitted to the hospital for your TBI treatment.

# Your Role on Your Radiation Therapy Team

You will have a team of healthcare providers working together to provide the right care for you. You're part of that team, and your role includes:

- Asking questions and talking about your concerns. We have included a list of possible questions at the end of this resource.
- Telling someone on your radiation therapy team when you have side effects.
- Telling your doctor or nurse if you're in pain.
- Caring for yourself at home, including:
  - Quitting smoking, if you smoke. If you want to quit, call our Tobacco Treatment Program at 212-610-0507.
  - Following your healthcare team's instructions to care for your skin.
  - Drinking liquids as instructed by your healthcare team.
  - Eating the foods suggested by your healthcare team.
  - Maintaining your weight.

## Your Simulation Appointment

Before you start TBI, you will have a treatment planning procedure called a simulation. This is done to make sure that your treatment area is mapped out and you get the right dose of radiation. This includes measurements of your height and chest measurements.

When you arrive for your appointment, a member of your radiation therapy team will check you in. You will be asked to state and spell your full name and birth date many times. This is for your safety. People with the same or a similar name may be having care on the same day as you.

Your radiation therapist will greet you. They will take a photograph of your face. This picture will be used to identify you throughout your treatment.

Your radiation therapist will then explain what to expect during your simulation. If

you haven't already signed a consent form, your radiation oncologist will review everything with you and ask for your signature.

## **Appointment scheduling**

Your radiation oncologist will plan your exact treatment schedule. A member of your radiation therapy team can give you more information. You can write notes in the space below.

You will have a total of 1 or 2 daily treatments.

## **Remove devices from your skin**

If you wear any of the following devices on your skin, the manufacturer recommends you remove it before your simulation or treatment:

- Continuous glucose monitor (CGM)
- Insulin pump

Talk with your radiation oncologist about whether you may need to remove your device before your simulation or treatment. Make sure you have an extra device with you to put on after your simulation or treatment.

If you're not sure how to manage your glucose while your device is off, talk with the healthcare provider who manages your diabetes care before your appointment.

## **Your TBI Treatments**

A patient escort will bring you from your hospital room to your treatments.

- Wear your hospital gown or comfortable clothes. Don't wear clothes with metal.
- You may wear hospital socks, but you must take off your shoes or slippers.
- Don't wear jewelry or metal objects (such as rings or hairpins). These may increase the radiation dose to that area.
- Don't wear powders or lotions.

## Positioning

It's important that you're in the correct position during your TBI treatments. Your radiation therapists will help you.

- You will be positioned on a platform. You will stand over a seat that's like a bicycle seat and put your hands on handles next to your hips (see Figure 1).
- A large Plexiglass® screen will be placed in the front of your body. The Plexiglass will make sure that the radiation is evenly distributed.

You will face the machine for the first half of your treatment and will be turned away from it for the second half.

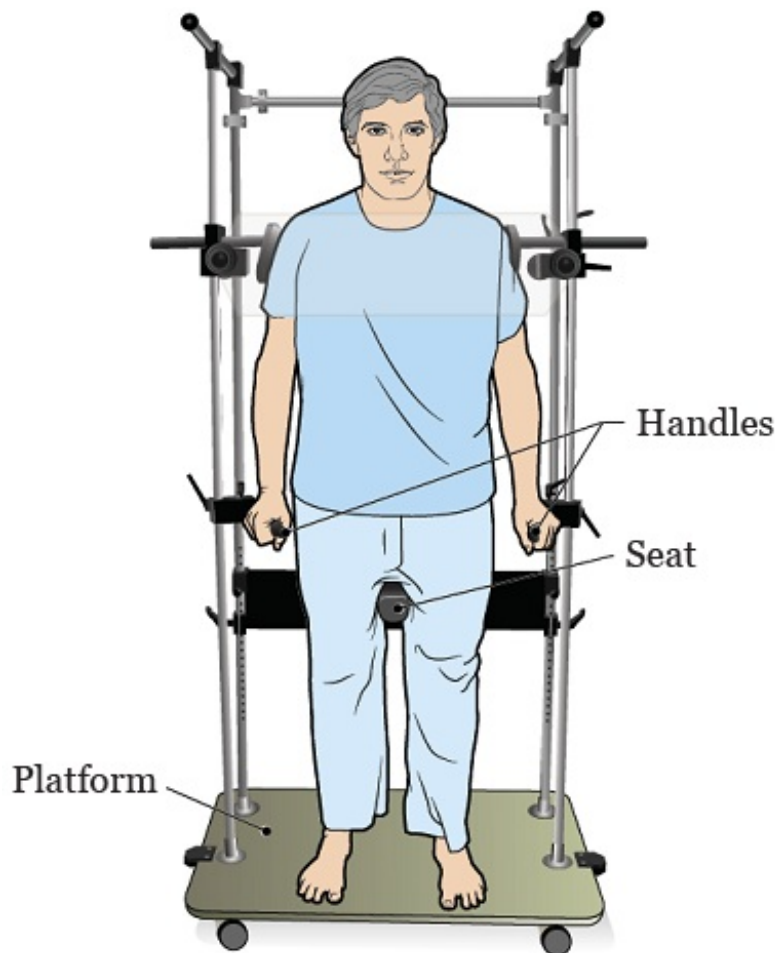


Figure 1. Treatment position

## During your TBI treatments

Once you're in the correct position, your radiation therapists will leave the room, close the door, and start your treatment. You won't see or feel the radiation, but you may hear the machine as it moves around you and is turned on and off.

You will be alone in the room during your treatment, but your radiation therapists will see you on a monitor and hear you through an intercom at all times. They will make sure you're comfortable during your treatment.

Breathe normally during your treatment, but don't move. However, if you're uncomfortable or need help, tell your radiation therapists. They can turn off the machine and come in to see you at any time, if needed.

**Neither you nor your clothes will become radioactive during or after treatment. It's safe for you to be around other people.**

## Boosts

A boost is an extra dose of radiation given to an area that's included in the TBI treatment area. You may have boosts as an outpatient before you're admitted to the hospital for your regular TBI treatments.

## Your inpatient care team

Any concerns you have during treatment will be managed by your inpatient team. Your inpatient team will contact your radiation therapy team, if needed. Tell your inpatient team if you have chills or any new or unusual symptoms.

## During treatment

Your radiation oncologist and radiation nurse will see you once during your treatment to ask you about any side effects you're having, talk with you about your concerns, and answer your questions. This visit will be before or after your treatment on \_\_\_\_\_.

If you need to speak with your radiation oncologist or radiation nurse, call your radiation oncologist's office. You can also ask the support staff or your radiation therapists to contact them.

## **Vitamins and dietary supplements**

Many people ask about taking vitamins during treatment. If you want to take a daily multivitamin, you can. Don't take more than the recommended daily allowance of any vitamin. Don't take any other vitamins or any supplements without talking to your doctor. This includes both nutritional and herbal supplements.

## **Side Effects of TBI**

You may have side effects from TBI. The type and degree of side effects depends on many things. These include the dose of radiation, the number of treatments, and your overall health.

### **Short-term side effects**

The most common side effects happen during or within 24 hours after your treatment and don't last very long. Common side effects include nausea (feeling like you're going to throw up) and vomiting (throwing up).

Some people also have swelling of their salivary glands. This causes pain in front of their ear and in their jaw. This is a less common side effect.

### **Long-term side effects**

Some side effects can happen months or years after your treatment and last for a long time. One example is becoming sterile (not able to have a biological child). Your sexual function and pleasure won't be affected.

Other long-term side effects are rare but can happen. Examples include cataracts and new cancers.

## **Managing side effects**

### **Nausea and vomiting**

You will be given medication to keep this side effect from happening and lessen it if it does happen.

Tell your nurse if you have nausea or vomiting. They may give you more medication to help.

## Sexual health

You may have concerns about how cancer and your treatment may affect your sexuality. You aren't radioactive. You can't pass radiation to anyone else, so it's safe to be in close contact with other people.

The American Cancer Society has excellent resources that discusses sexual health issues during treatment. The one for men is called [Sex and the Man with Cancer](#). The one for women is called [Sex and the Woman with Cancer](#). You can search for them at [www.cancer.org](http://www.cancer.org) or call 800-227-2345 for a copy.

MSK also has sexual health programs to help you address the impact of your disease and treatment on your sexual health. You can meet with a specialist before, during, or after your treatment.

- [Female Sexual Medicine & Women's Health Program](#): For more information or to make an appointment, call 646-888-5076.
- [Male Sexual & Reproductive Medicine Program](#): For more information or to make an appointment, call 646-888-6024.

## Emotional health

Cancer diagnosis and treatment can be a very stressful and overwhelming.

You may feel:

<ul style="list-style-type: none"><li>• Anxious</li><li>• Afraid</li><li>• Alone</li><li>• Ambivalent</li></ul>	<ul style="list-style-type: none"><li>• Angry</li><li>• Depressed</li><li>• Helpless</li><li>• Frustrated</li></ul>	<ul style="list-style-type: none"><li>• Nervous</li><li>• Numb</li><li>• Worried</li></ul>
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All of these feelings are normal if you or someone you love has a serious illness.

You may also worry about telling your employer that you have cancer or about paying your medical bills. You may worry about how your family relationships may

change, about the effect of cancer treatment on your body, or if you will continue to be sexually attractive. You may worry that the cancer will come back. We're here to support you.

## Ways to cope with your feelings

- Talk with other people. When people try to protect each other by hiding their feelings, they can feel very alone. Talking can help the people around you know what you're thinking. It may help to talk about your feelings with someone you trust. You can talk with your spouse or partner, a close friend, family member, chaplain, nurse, social worker, or psychologist. You may also find it helpful to talk to someone who's going through radiation therapy, or a cancer survivor or caregiver who has been through a similar treatment. Through our Patient and Caregiver Support Program, you have a chance to speak with former patients and caregivers. To learn more about this service, call 212-639-5007.
- Join a support group. Meeting other people with cancer will give you a chance to talk about your feelings and listen to other people who have the same concerns. You will learn how others cope with their cancer and treatment. Your doctor, nurse, or social worker can tell you about the support groups you might be interested in.
- Try relaxation and meditation. You might try thinking of yourself in a favorite place while breathing slowly, paying attention to each breath, or listening to a soothing music or sound. For some people, praying is another form of meditation. These kinds of activities can help you feel relaxed and calm.
- Exercise. Many people find that light activity like walking, biking, yoga, or water aerobics helps them feel better. Talk with your doctor or nurse about types of exercise you can do.

We all have our own way of dealing with difficult situations. Generally, we use whatever has worked for us in the past. However, sometimes this isn't enough. We encourage you to speak with your doctor, nurse, or social worker about your concerns.



# Contact Information

If you have any questions or concerns, talk with a member of your healthcare team. You can reach them Monday through Friday from 9:00 AM to 5:00 PM at the numbers listed below.

Radiation oncologist: \_\_\_\_\_

Phone number: \_\_\_\_\_

Radiation nurse: \_\_\_\_\_

Phone number: \_\_\_\_\_

After 5:00 PM, during the weekend, and on holidays, call \_\_\_\_\_ and ask for the radiation oncologist on call. If there's no number listed, or you're not sure, call 212-639-2000.

## Resources

Many of the resources listed in this guide can be found on the Internet. If you don't have a computer or if you don't know how to use the Internet, check with your local public library or community center.

### MSK support services

#### Counseling Center

646-888-0200

Many people find that counseling helps them. We provide counseling for individuals, couples, families, and groups, as well as medications to help if you feel anxious or depressed.

#### Female Sexual Medicine & Women's Health Program

646-888-5076

This program helps female patients who are dealing with cancer-related sexual health challenges, including premature menopause and fertility issues.

## **Integrative Medicine Service**

646-888-0800

MSK's Integrative Medicine Service offers patients many services to complement traditional medical care. These include music therapy, mind/body therapies, dance and movement therapy, yoga, and touch therapy.

## **Male Sexual & Reproductive Medicine Program**

646-888-6024

This program helps male patients who are dealing with cancer-related sexual health challenges, including erectile dysfunction.

## **Nutrition Services**

212-639-7312

MSK's Nutrition Service offers nutritional counseling with one of our certified dietitians. Your dietitian will review your current eating habits and give advice on what to eat during and after treatment.

## **Patient and Caregiver Support Program**

212-639-5007

You may find it comforting to talk with a cancer survivor or caregiver who has been through a similar treatment. Through our Patient and Caregiver Support Program, we're able to offer you a chance to talk with former patients and caregivers.

## **Resources for Life After Cancer (RLAC) Program**

646-888-8106

At MSK, care doesn't end after active treatment. The RLAC Program is for patients and their families who have finished treatment. This program has many services, including seminars, workshops, support groups, counseling on life after treatment, and help with insurance and employment issues.

## **Tobacco Treatment Program**

212-610-0507

If you want to quit smoking, MSK has specialists who can help. Call for more information.

## External resources

### **American Cancer Society (ACS)**

[www.cancer.org](http://www.cancer.org)

800-ACS-2345 (800-227-2345)

Offers a variety of information and services, including Hope Lodge, a free place for patients and caregivers to stay during cancer treatment.

### **American Society for Therapeutic Radiology and Oncology**

[www.rtanswers.org](http://www.rtanswers.org)

800-962-7876

A group of radiation oncology professionals that specializes in treating patients with radiation therapy. Provides detailed information on treating cancer with radiation and contact information for radiation oncologists in your area.

### **CancerCare**

[www.cancercare.org](http://www.cancercare.org)

800-813-HOPE (800-813-4673)

275 Seventh Avenue (Between West 25<sup>th</sup> & 26<sup>th</sup> Streets)

New York, NY 10001

Provides counseling, support groups, educational workshops, publications, and financial assistance.

### **Cancer Support Community**

[www.cancersupportcommunity.org](http://www.cancersupportcommunity.org)

Provides support and education to people affected by cancer.

### **National Cancer Institute (NCI) Cancer Information Service**

[www.cancer.gov](http://www.cancer.gov)

800-4-CANCER (800-422-6237)

Provides education and support to people with cancer and their families. Publications are available online and in print.

# Questions to Ask Your Doctor or Nurse

We recommend that you write down the questions to ask during your visit with your doctor or nurse. Write down the answers during your appointment so that you can review them again later.

What kind of radiation therapy will I get?

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How many treatments will I get?

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What side effects should I expect during radiation therapy?

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Will these side effects go away after radiation therapy is finished?

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What kind of late side effects should I expect after radiation treatment?

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For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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