

CANCER RADIATION TREATMENT



A guide for conversations with your healthcare professional

For most patients, everything about radiation therapy is new. This handout provides some key information and questions to ask your healthcare professional, to help you receive the best possible treatment and care.



Quick Facts: Radiation Therapy



Approximately 50% of cancer patients receive some type of radiation therapy during their cancer treatment. Radiation therapy can be used on its own, or in combination with chemotherapy, surgery, or hormone therapy. It is used to destroy cancer cells and is completely painless, similar to getting a chest x-ray. It is usually given once a day for between 1 day and 8 weeks.

How Does Radiation Therapy Work?

Normal cells grow and divide to form new cells. Cancer cells grow and divide faster than normal cells. Radiation works by making small breaks in the DNA inside the cells as they divide. This makes cancer cells a lot more vulnerable to radiation than normal cells, as they divide more often. These breaks in the DNA keep cancer cells from growing and dividing, causing them to die.



Ensure Accurate Positioning



If you need radiation therapy, it's important to ensure radiation reaches the right place, while avoiding vital organs, like the heart for left breast cancer treatment. To do this, a variety of methods are used to ensure you are in the right place before and during treatment. These methods range from tattooing & marking your body, to taking additional X-Rays and using devices that limit movement of certain areas of the body, known as immobilization devices.

AlignRT® - A new standard of care

AlignRT® is an innovative technology which increases treatment accuracy and patient comfort during radiation therapy. It has been shown to help deliver optimal patient positioning, across many different cancer treatment sites, to include breast, brain, head and neck, prostate, lung, and extremity.

Around 70% of the US News & World Report "Best 50 Hospitals for Cancer" use AlignRT®



Questions to Ask your Healthcare Professional

As part of your shared treatment decision-making, you may consider asking your healthcare professional if your radiation treatment plan delivers on the below important benefits.

If you have left breast cancer, please see our “Left Breast Cancer Discussion Guide” for more specific information related to your cancer type.

What to ask your healthcare professional	Why is it important	What answer gives you confidence
How can I be sure that my radiation is accurately delivered?	If you need radiation therapy, it's important to ensure the radiation reaches the right place, while avoiding vital organs and healthy tissue.	You will be monitored using AlignRT® so you can be confident that the treatment will pause if you move from the safe position - even by an amount that humans can't detect.
Has the approach you use been shown to avoid extra X-ray images?	Before treatment, X-ray images will sometimes be used to ensure you are in the right position before treatment. Avoiding some of these images reduces radiation dose to your healthy cells.	Yes, studies suggest our system helps us position you better before treatment, which in turn may mean we don't need as many X-rays to double-check you are in the right position before treatment.
Can I safely avoid having tattoos and / or marks drawn on my body for radiation therapy?	You may prefer to avoid tattoos or marks. Tattoos are permanent; marks can rub off onto clothing and need to be kept for the whole course of treatment.	Yes, we use a system which is supported by studies ^{1,2,3} , showing it is at least as accurate as tattoos or marks. If you want, we can skip the tattoos and marks. *not all centers with AlignRT® are tattooless.
For my head, neck or brain radiation, what type of mask will you use?	Open and closed masks are used to help reduce movement and ensure proper positioning. Some patients may be claustrophobic and prefer an open faced mask.	With AlignRT®, an open-faced mask can be used. AlignRT® will be used to track your position, ensuring a highly accurate treatment.
Will anything touch me during treatment?	Certain systems include breathing devices that are placed in your mouth, clips on your nose, or goggles over the eyes, which you may find uncomfortable.	With AlignRT®, nothing will touch you during treatment. A small screen may be placed in your line of sight to help you breathe in to exactly the right level during treatment.
What technology are the best centers using?	A technology well-used by the best centers may make you more comfortable that you are getting the best care.	Around 70% of the US News & World Report “Best 50 Hospitals for Cancer” use AlignRT®.

¹ Herron E, et al. Surface guided radiation therapy as a replacement for patient marks in treatment of breast cancer. International Journal of Radiation Oncology • Biology • Physics 2018;102 (3):e492-e493.

² Shah AP, et al. Clinical evaluation of interfractional variations for whole breast radiotherapy using 3-dimensional surface imaging. Pract Radiat Oncol 2013;3 (1):16-25.

³ Sueyoshi, et al Eliminating Daily Shifts, Tattoos, and Skin Marks: Streamlining Isocenter Localization With Treatment Plan Embedded Couch Values for External Beam Radiation Therapy PRO <https://doi.org/10.1016/j.prro.2018.08.011>