# PROTON THERAPY

## A Powerful Tool in Your Fight Against Cancer

BEST HOSPITALS
U.S.News & WORLD REPORT
NATIONAL CANCER
2017-18 *

University Hospitals

To make an appointment, call 1-866-303-4510.

# Fighting Cancer With the Precision of Proton Therapy

When hearing the words, "It's cancer," it's only human nature to wonder, "Why me? How did I get this disease?"

Only rarely is there a clearcut answer to these questions. Cancer is a complex group of diseases with many possible causes, including:

- Genetic factors
- Lifestyle choices such as tobacco use, diet and physical inactivity
- Certain types of infections
- Environmental exposure to certain types of chemicals and radiation

Although in many cases the cause is still a mystery, recent advances in medical science have made huge strides in the diagnosis and treatment of cancer. New treatments and medications are now available to extend and enhance life, and many more are currently being researched and developed.

**One important treatment option is proton therapy.**
This exciting and innovative therapy is now offered at the University Hospitals Proton Therapy Center. Although nothing can replace the advice and guidance you receive during an in-person visit with a trusted physician, we hope this booklet serves as a starting point for a discussion about proton therapy and whether it's a treatment option for you.

University Hospitals is the first and only hospital in Northeast Ohio to offer proton therapy.

# What is proton therapy?

Proton therapy is a relatively new type of therapy available to patients for whom radiation treatment is appropriate. It uses robotic technology and an image guidance system to deliver a precise, focused beam of radiation to cancerous and noncancerous tumors or lesions.

Proton therapy is relatively noninvasive and is delivered on an outpatient basis with little if any recovery time required (unless sedation has been administered). It can be used in conjunction with chemotherapy or surgery as needed, but when used alone, there are minimal side effects and patients can return to their normal routine after each treatment.

Proton therapy is NOT experimental. It has been approved by the U.S. Food and Drug Administration (FDA) and has proven to be a safe and effective option for many patients.

## How is it different from traditional radiation therapy?

Traditional radiation therapy, which uses photons or X-ray technology to treat the tumor, has been used for decades and remains an effective treatment for a broad range of cancers. It does, however, have some significant side effects.

The photons used in traditional radiation therapy do not have charge or mass. This means the radiation dose can damage the healthy tissue in front of, behind and around the tumor as well as the tumor itself.

With proton therapy, the heavily charged particles penetrate the tumor but, because the proton beam is precisely controlled by robotic technology, damage to healthy tissue is minimized. The concentrated energy targets only the tumor and delivers a much lower entrance dose and no exit dose.

Other benefits of proton versus traditional radiation therapy include:

- There may be less cosmetic damage to the skin (minimal entrance skin damage).
- There is little to no impact on the patient's energy level.
- When used to treat prostate cancer, there is a low risk of incontinence or impotence.
- It may be a good option for patients who cannot tolerate traditional radiation therapy.
- It can be used on patients who have already received radiation treatment for recurring tumors.
- It is of particular benefit to pediatric and adolescent patients. Because of the targeted nature of the therapy, their growth and development is less likely to be affected.
- The risk of secondary cancers is lower.

## What types of cancer can be treated?

Proton therapy is used to treat tumors or lesions in adults and children that have not spread to other parts of the body. Treatment is most successful when the tumor is contained and has well-defined borders. It is most commonly used for tumors of the:

- Brain
- Head and neck
- Lungs
- Prostate
- Spine

It has also proven effective for treating early-stage breast cancer. When breast tumors are located on the left side, there is less risk of damage to the nearby heart muscle.

## What are the side effects/risks?

Although side effects will vary depending on the patient's age, medical history, diagnosis, tumor size and location, proton therapy typically results in fewer long- and short-term side effects than other types of cancer treatment.

It does not cause the side effects often experienced with chemotherapy such as mouth sores, nausea, vomiting, diarrhea or constipation. However, some patients may receive chemotherapy in conjunction with proton therapy and in these cases, some of these symptoms may be experienced.

Proton therapy will not cause your body to become radioactive and poses no risk of radiation exposure to others. Because of the accuracy of the therapy, there is a much lower risk of secondary cancers developing and less chance of side effects.

Depending on your radiation dose and the size of your tumor, the following post-treatment symptoms may be experienced to some degree:

- Temporary hair loss
- Skin irritation at the treatment site
- Fatigue (typically when large areas are being treated)

## What will my treatments be like? How long will they last?

Proton radiation therapy is commonly given five days a week for several weeks, with each treatment lasting 20 – 90 minutes based on the type, size, location and stage of your tumor or lesion. Before treatments begin, there will be a planning process that can take up to two weeks. Pediatric treatments may take longer if sedation is needed.

### The planning process

Once it has been determined that proton therapy is a promising treatment option for you, your doctor will obtain a three-dimensional reconstruction of the tumor using computed tomography (CT) scans of the area to be treated. These scans will be used to plan your proton therapy treatment including the strength, direction and number of radiation beams that will be sent to the tumor. In some cases, your doctor may surgically implant markers in your tumor to aid the precision of the proton beam during treatment. These are placed in the tumor by a surgeon on an outpatient basis when needed. No hospital stay is required.

Tumors located in the head, neck or upper spine, require a customized mask. This mask ensures that at each treatment, the patient receives precise delivery of the radiation beam to the tumor location.

The next step is to determine the best, most comfortable position for you on the treatment table. Because it is important that you remain still during treatment, your team will work with you, using cushions and supports to place you in the best position for both treatment and your comfort. This position will be duplicated exactly at each treatment session. Your team may also place marks on your body to identify the treatment zone. Additional scans may be ordered to determine the best path for the proton beams to reach the tumor.

### Treatments

At your first appointment, you will be made comfortable on the treatment table in the position that was determined during the planning phase. If you have been fitted with a custom mask for your face, it will be put into place.

The robotic table, which can be adjusted into many treatment angles, will slowly move you into the predetermined positions, and the radiation beams will be delivered to the targeted area. Your first treatment may take up to 90 minutes, after which you may go home and resume your normal activities. If sedation was given, you will be closely monitored until you are fully awake and ready to go home.

Once all your scheduled treatments are finished, you will have follow-up visits with your doctor for repeat scans to track the tumor and determine if additional treatments are required.

## How much does it cost? Is it covered by insurance?

Often times, proton therapy is covered by insurance. Your proton therapy team will work with you to submit all necessary insurance paperwork and work with your insurance company if coverage has been denied. Additionally, we will assist you in obtaining the cost prior to any treatment being administered.

## How do I know if it's right for me?

Proton therapy is just one of the many tools at your physician's disposal for the treatment of cancer. Additionally, although it is an excellent option for many people and types of cancer, not every patient will be a candidate for proton therapy nor is every type of cancer appropriate for treatment with proton therapy.

If our team determines proton therapy isn't the best treatment option for you, we will design a treatment plan using our other advanced and targeted therapies, ensuring that you receive the best, most effective care for your cancer.

Talk to your cancer doctor or contact us at **1-866-303-4510** to determine if proton therapy is right for you.

## Why choose the UH Proton Therapy Center?

### Convenient location

The UH Proton Therapy Center is housed at UH Cleveland Medical Center, which also features nationally ranked children's hospital UH Rainbow Babies & Children's Hospital and UH Seidman Cancer Center – providing patients access to a comprehensive array of expertise and services on the same campus.

### Unparalleled expertise

At UH Seidman Cancer Center, we treat cancer every day. It's our expertise. Not only do you get the right treatment at the right time, but each cancer case is treated using a multidisciplinary approach to evaluate and determine the best possible treatment options. There's no need to seek a second opinion, because with this team, second and third opinions are part of the discussion. The doctors at UH Seidman Cancer Center have received extensive training and education in the use of proton therapy, so you can rest assured that you are getting the best treatment available.

### Compassionate care

In addition to offering the most comprehensive suite of cancer-fighting technology available in the region, we are committed to providing our patients with the care they need in a warm, nurturing environment.

UH Seidman Cancer Center is consistently ranked by U.S. News & World Report* as one of the nation's best hospitals for the treatment of cancer. We are also a founding member of the National Cancer Institute (NCI)-designated Case Comprehensive Cancer Center at Case Western Reserve University, making us one of only 47 centers in the nation to hold this designation.

## Schedule a Consultation

For more information about proton therapy or to schedule a consultation with one of our specialists, call **1-866-303-4510**.

University Hospitals

** U.S. News & World Report ranking awarded to UH Cleveland Medical Center, University Hospitals' flagship academic medical center.*