

# Proton Therapy for Patients with Brain Tumors

Talk to your doctor about how proton therapy can help.

brain

## Precision Therapy. Fewer side effects.

Proton therapy is an advanced form of radiation cancer treatment that precisely targets tumors. Because this precision causes less damage to healthy tissue, proton therapy patients experience fewer side effects than with standard X-ray radiation. Proton therapy is effective in treating a broad range of tumors including brain, prostate, head and neck, central nervous system, lung, sarcoma, gastrointestinal and many pediatric cancers.

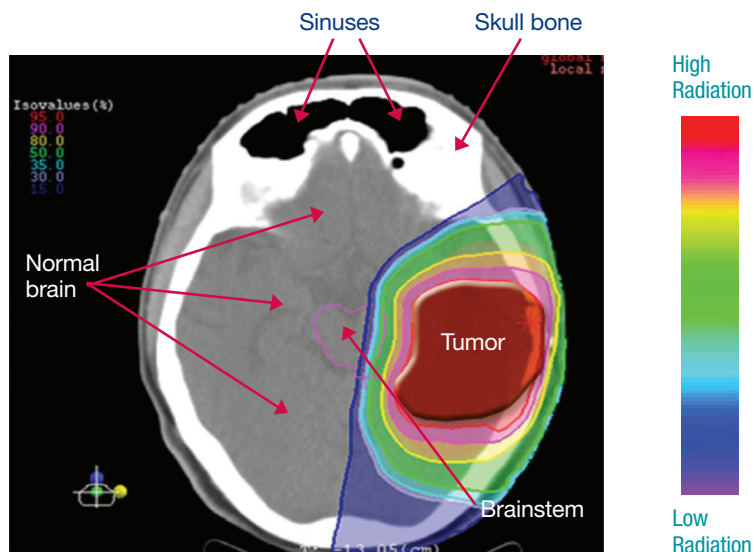
## Particularly effective in treating brain tumors.

Because the brain is in close proximity to other critical organs and parts of the nervous system, brain tumors require precise treatment and care. While surgery, chemotherapy and/or standard X-ray radiation may be used to treat brain tumors, proton therapy's ability to precisely target a tumor makes it an ideal treatment option for patients to consider.

## Brain tumor treatment with protons.

With proton therapy, much of the healthy tissue and critical organs surrounding the tumor is spared from receiving additional radiation. Some of the normal brain tissue receives 50% less radiation than with X-rays/IMRT.

*Grey/white area indicates no radiation exposure.*



## The brain tumors most appropriate for proton therapy include:

- Gliomas (astrocytomas)
- Ependymomas
- Medulloblastomas
- Pineoblastomas
- Supratentorial PNET
- Germ cell tumors
- Pituitary gland tumors
- Almost all pediatric brain tumors

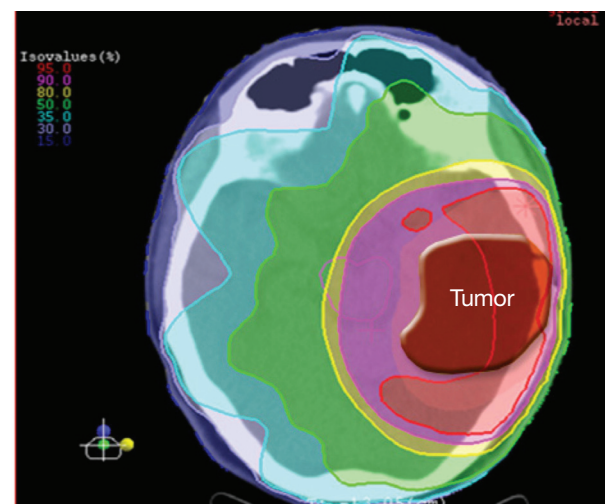
*Arteriovenous malformations (AVMs) of the brain can also be treated using protons.*

Compared to other forms of radiation therapy, proton therapy results in less radiation to normal brain tissue, eyes and the optic nerve, so patients experience fewer side effects.

## Brain tumor treatment with X-rays/IMRT.

With X-rays/IMRT, much of the healthy tissue and critical organs surrounding the tumor receives radiation. The extra dose to healthy tissue from X-ray radiation therapy is equivalent to exposing the brain to 75,000 - 450,000 dental X-rays.

*Colored area indicates radiation exposure.*



Call a ProCure center for more information.

ProCure Proton Therapy Center in Oklahoma City 866-204-9863  
CDH Proton Center, A ProCure Center in suburban Chicago 630-393-7030

Source of treatment plans:  
ProCure Training and Development Center.

## Be prepared when talking to your doctor about your treatment options, including proton therapy.

It is important to consider all of your treatment options before you decide on one. The first step is discussing your options, including proton therapy, with your doctor to determine the best treatment for you. Your doctor may not be as familiar with proton therapy as with other treatment options so be sure to **bring this sheet with you**.

### Below are a few questions to help you discuss proton therapy with your doctor:

- Is proton therapy an option for me? What are the pros and cons?  
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- How does proton therapy compare with my other options?  
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- What short-term and long-term side effects or complications can I expect with each treatment option?  
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- How long would my treatment last—at each appointment and the entire course?  
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- Where do I go to receive proton therapy?  
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- Once I have decided a course of treatment, what are the next steps?  
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### Frequently asked questions:

#### Can proton therapy be used in conjunction with other forms of cancer treatment?

Yes. Depending on the diagnosis, proton therapy may be used in combination with conventional radiation, chemotherapy, hormone therapy and/or as a follow-up to surgery.

Proton therapy is a precise, effective option with fewer side effects than traditional radiation therapy.

To learn more about the benefits of proton therapy or to request a consultation, call our centers at:

ProCure Proton Therapy Center in Oklahoma City  
866-204-9863

CDH Proton Center, A ProCure Center in suburban Chicago  
630-393-7030

#### Is proton therapy covered by most insurance plans?

Proton therapy is covered by most insurance providers nationwide and the U.S. Medicare program. The financial counselors at ProCure will work with you and your insurance provider to get you all the coverage information you may need.

#### What will I feel like during the course of my proton therapy? What are the side effects?

There is no discomfort or sensation during the actual radiation treatment. Most brain tumor patients have few, or very mild, side effects from proton therapy. If you do experience any side effects they can be managed with medications, if necessary.