# **Proton Therapy for Patients with Brain Tumors**

Talk to your doctor about how Proton Therapy can help you.



### Precision Therapy. Fewer side effects.

Proton Therapy is an advanced form of radiation therapy that precisely targets the tumor utilizing proton particles. Proton particles stop inside the body and do not deposit radiation beyond the tumor they are targeting, causing less damage to healthy tissue. Proton therapy is effective in treating a broad range of tumors including brain, prostate, head and neck, central nervous system, lung, breast, 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.

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

Visit **ProtonBenefits.com** for more information.

#### Brain tumors most appropriate for proton therapy:

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

#### **PROTON THERAPY BENEFITS**

# Brain tumor treatment with protons compared to treatment with conventional radiation/X-rays/IMRT

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

In the chart below, the grey/white areas indicate no radiation exposure, while the colored areas indicate radiation exposure.

