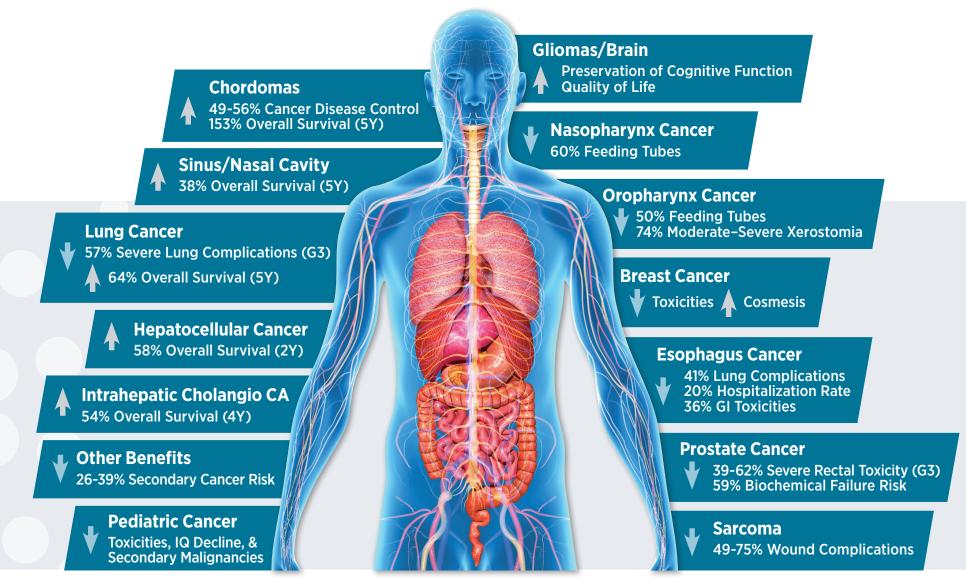


The Clinical Benefits of Proton Therapy

Compared to Conventional Radiation Treatments





Site Specific Indications

Breast

- Locally advanced (requiring IMN treatment)
- Patients with genetic syndromes (Li-Fraumeni, ATM, BRCA1/2)
- Bilateral radiation (especially with comprehensive treatment)
- Anatomic challenge (pectus excavatum or frozen shoulder)
- Significant cardiopulmonary comorbidity with inability to reduce dose with photon techniques
- Reirradiation

Central nervous system

- Low-grade/IDH mutated high grade gliomas
- Skull base/pituitary axis primary tumors
- Complex Meningiomas
- Hemangiopericytomas
- Medulloblastoma/Ependymoma
- Recurrent high-grade gliomas
- Reirradiation

Gastrointestinal

- Esophagus, especially trimodality patients
- Primary liver cancers (eg HCC, Cholangio CA)
- Locally recurrent, previously irradiated pancreas cancer
- Anal canal cancer Chemoradiation
- Reirradiation for locally recurrent rectal cancer

Genitourinary

- Low/favorable-intermediate risk prostate cancer (especially younger patients)
- High-risk prostate cancer
- Node-positive prostate cancer
- Adjuvant/Salvage post-prostatectomy radiation
- Seminoma
- Reirradiation (consider deep thermal therapy)

Gynecologic

- Gross nodal disease
- Medically inoperable sarcoma
- Patients requiring para-aortic treatment
- Reirradiation (consider deep thermal therapy)

Head and Neck

- Unilateral Head and Neck (Parotid, High Risk Cutaneous, Well Lateralized Tonsil, Etc.)
- Nasopharynx, Paranasal Sinuses, Nasal Cavity, Base of Skull
- Oropharyngeal (Definitive and Post-TORS)
- Benign (Paraganglioma, etc.)
- Reirradiation

Lymphomas

 Young patients, who have received chemotherapy, getting RT to eloquent normal tissue/at risk for RT induced malignances, with expected long life expectancy

Reirradiation

Sarcomas

- Extremity/Trunk Sarcoma Neoadjuvant/ Preoperative RT
- Extremity/Trunk Sarcomas Postoperative RT
- Retroperitoneal Sarcomas
- Spinal Tumors
- Chordoma/Chondrosarcoma of Base of Skull/ Spine
- Candidates for Concurrent Hyperthermia/ Radiotherapy
- Reirradiation

Thoracic

- Locally-advanced non-small/small cell lung cancer with bulky mediastinal disease
- Patients receiving pre-operative chemoradiation prior to lobectomy/ pneumenctomy
- Post-operative non-small cell lung cancer patients requiring RT due to +N2 disease/ positive margin
- Mesothelioma
- Ultra-central early-stage NSCLC patients (SBRT/hypofractionated treatment)
- Reirradiation