

PROTON THERAPY Clinical Benefits

Brain/Head & Neck

- 45% reduction** in overall risk of needing a feeding tube for **nasopharyngeal cancer**
- 27% reduction** in overall risk of needing a feeding tube for **oropharyngeal cancer**
- 44% increase** of relative 5-year disease free survival rate for **nasal and paranasal sinus cavity cancers**
- 50% overall increase** of disease control for **chordomas**
- Less side effects** during first 3 months after treatment, quicker return to normal function
- 50% less likely** to have secondary tumor from treatment

Breast

- Delivers 8-18 times less** overall radiation to the heart than IMRT
- 50-83% less** relative risk of heart attack or another major coronary event depending on age
- 50% reduction** of clinically significant radiation doses to the heart
- 97%** of partial breast irradiation patients experience **no breast tumor recurrence at 5 years**
- 90% of cases result in good to excellent** cosmetic outcomes at 5 years

Liver

- 58% higher** overall survival rate (2 years)

Bile Duct

- 54% higher** overall survival (4 years)

Sarcoma

- 49-75%** reduction in complications

Lung

- 56% relative reduction** in incidences of grade 3 esophagitis
- 50% reduction** in relative risk of recurrence
- Higher radiation dose** to the tumor while reducing risks of overall side effects
- 64% relative increase** in 5-year overall survival

Esophageal

- 3 to 4-day reduction** in average hospital stay
- 5.1-22.8% overall reduction** in pulmonary complications
- 68% relative reduction** in wound complications

Prostate

- 4.9% higher overall** 5 year survival rate
- 35% less radiation** to bladder and **59% less radiation** to the rectum
- Proton patients** are almost twice as likely to report **treatment had NO IMPACT on their quality of life** compared to surgery, conventional radiation, and brachytherapy
- Half as many incidences** of long term (2+ years) moderate or severe bowel problems
- 42% reduction** in relative risk of developing a secondary malignancy
- Significantly fewer** reports of gastrointestinal, genitourinary, endocrine, or "other" complications

Rectal/Anal

- More than 50% reduction** in radiation dose to critical structures including bone marrow

Overall

- 31% relative reduction** in occurrence of secondary cancers after treatment

