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** (Hepatocellular)
- 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

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

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

*References available upon request. Results from separate studies compared in some instances. The benefits of proton therapy for each individual patient will vary based on their individual diagnosis. A personal consultation with a proton-experienced radiation oncologist is recommended in all cases. Visit ProtonBenefits.com for more information.*