

# LARGEST CLINICAL STUDIES TO DATE\* SUPPORT CYBERKNIFE® SBRT FOR LOCALIZED PROSTATE CANCER

Two large prospective, multi-institutional and CyberKnife® System only clinical studies report excellent clinical outcomes at five years post-treatment. These studies, conducted at academic and community medical centers across the United States, provide robust clinical data supporting the safety and efficacy of CyberKnife Stereotactic Body Radiotherapy (SBRT) for patients with low- and intermediate-risk prostate cancer. The following table describes and differentiates these studies.

Study Title	Prospective evaluation of CyberKnife System stereotactic radiosurgery for low and intermediate risk prostate cancer: Homogenous Dose Distribution https://clinicaltrials.gov/ct2/show/NCT00643994	Prospective evaluation of CyberKnife System stereotactic radiosurgery for low and intermediate risk prostate cancer: Emulating HDR brachytherapy dosimetry https://clinicaltrials.gov/ct2/show/study/NCT00643617
Principal Investigator	Dr. Robert M. Meier, Swedish Radiosurgery Center, Swedish Medical Center, Seattle	Dr. Donald B. Fuller, CyberKnife Centers of San Diego, A Division of Genesis Healthcare Partners, San Diego
Design	Prospective, multi-institutional; 21 centers; CyberKnife System only	Prospective, multi-institutional; 18 centers; CyberKnife System only
Number of Patients Analyzed	309 patients: • 172 low-risk • 137 intermediate-risk	<ul><li>259 patients:</li><li>112 low-risk</li><li>147 intermediate-risk</li></ul>
Dose Prescription	<ul><li>36.25 Gy/five fractions to PTV</li><li>40 Gy to the prostate</li></ul>	<ul><li>38 Gy/four fractions to PTV</li><li>&gt;57 Gy to peripheral and posterior regions</li></ul>
Isodose Distribution	Homogenous dose distribution; typical external beam dose distribution with the same dose to the entire prostate	Heterogeneous dose distribution; typical brachytherapy dose distribution with higher dose to the peripheral and posterior regions. Studies have shown a higher density of cancer cells in these regions. <sup>1</sup>
Isodose Distribution Screenshot		
Efficacy	Median 5-year DFS** • 97.3% for low-risk • 97.1% for intermediate-risk	Median 5-year DFS** • 100% for low-risk • 88.5% for intermediate-risk
Toxicity	Despite the large dose delivered to the prostate, toxicity rates compare favorably to conventional radiotherapies, based on results from other studies.	Despite the large dose delivered to the peripheral and posterior regions, toxicity rates compare favorably to conventional radiotherapies, based on results from other studies.
Published	Meier R., et al. "Multicenter Trial of Stereotactic Body Radiotherapy for Low- and Intermediate-Risk Prostate Cancer: Survival and Toxicity Endpoints" Int. J. Radiat. Oncol. Biol. Phys. 2018; 102(2): 296-303 https://doi.org/10.1016/j.ijrobp.2018.05.040	Fuller D.B. et al. "Phase 2 Multicenter Trial of Heterogeneous-dosing Stereotactic Body Radiotherapy for Low- and Intermediate-Risk Prostate Cancer: 5-year Outcomes" European Urology Oncology. 2018; Article in Press <a href="https://doi.org/10.1016/j.euo.2018.06.013">https://doi.org/10.1016/j.euo.2018.06.013</a>

 $<sup>^{\</sup>star}$  As of September 1st, 2018

<sup>\*\*</sup> Disease-free survival (DSF) describes survival without any signs of symptoms of the cancer at a certain time point (in this case 5-year time point). It is expressed in percentage of all surviving patients.





### CYBERKNIFE® PROSTATE SBRT

#### **Proven**

The CyberKnife System is recognized and established for prostate SBRT

- Supported by the largest prospective prostate SBRT studies to date\* on low- and intermediate-risk prostate cancer<sup>2,3</sup>. These studies provide reassurance to patients and providers that excellent clinical results are reproducible at any CyberKnife center
- Supported by the most extensive clinical experience with 15 years of expertise<sup>4,5</sup>, nearly 100 peer-reviewed articles, and more than 20,000 prostate patients treated<sup>6</sup>

#### **Precise**

The CyberKnife System's precise robotic treatment streamlines prostate SBRT

- Automatically delivers a wide range of non-coplanar beams which improves sparing of surrounding organs and normal tissue compared to conventional coplanar beams<sup>7,8</sup>
- Automatically maintains sub-millimeter accuracy with continual intrafraction imaging and prostate motion synchronization, including rotation, throughout treatment delivery9
  - o The prostate may move unpredictably during treatment delivery as much as 10 mm in as little as 30 seconds<sup>10</sup> and rotate as much as 10 degrees<sup>11</sup>
  - o When the target volume includes the proximal seminal vesicle, rotational corrections may be important to prevent under-dosing of the seminal vesicles<sup>12</sup>

#### **Effective**

The CyberKnife System yields clinical outcomes that compare favorably to historical data

- Excellent disease-free survival rates at five years<sup>2,3</sup> and 10 years<sup>13</sup> for low-risk patients
  - o Superior to conventional radiotherapy historical data 14,15,16
  - o Equivalent to low dose rate (LDR)<sup>17, 18</sup> and high dose rate (HDR) brachytherapy<sup>19</sup>
- Excellent disease-free survival rates at five years for intermediate-risk patients<sup>2,3</sup>
  - o Equal to or higher than conventional radiotherapy historical data<sup>20,21</sup>

#### Convenient

The CyberKnife System eases the return to daily life for patients

- · Compared to surgery, this nonsurgical and outpatient procedure does not require general anesthesia, invasive incisions, hospitalization, and long recovery time
- · Compared to brachytherapy, this minimally invasive procedure eliminates the inconvenience and risk associated with radioactive seed or catheter implants
- Compared to conventional radiotherapy, this treatment is completed in only 4-5 sessions instead of the 30-40 sessions which offers convenience to patients and cost savings to healthcare providers<sup>22,23,24</sup>





**IMAGING** 



## PRECISE ROBOTIC

AUTOMATIC PROSTATE MOTION **SYNCHRONIZATION** 

\* As of September 1st, 2018

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Most side effects of radiotherapy, including radiotherapy delivered with Accuray systems, are mild and temporary, often involving fatigue, nausea, and skin irritation. Side effects can be severe, however, leading to pain, alterations in normal body functions (for example, urinary or salivary function), deterioration of quality of life, permanent injury, and even death. Side effects can occur during or shortly after radiation treatment or in the months and years following radiation. The nature and severity of side effects depend on many factors, including the size and location of the treated tumor, the treatment technique (for example, the radiation dose), and the patient's general medical condition, to name a few. For more details about the side effects of your radiation therapy, and to see if treatment with an Accuray product is right for you, ask your doctor.

