

— an INTRODUCTION to —
RADIATION ONCOLOGY



KNOWLEDGE FROM THE INSIDE OUT





MedXray: Your Trusted Healthcare Partner

MedXray has been providing diagnostic and therapeutic subspecialty radiology services to hospitals and clinics across the region since 1961. This private practice clinic has over thirty board-certified physicians on staff, all of them with residency training (and many with added fellowship training) that make them among the best in the nation. Our broad range of services includes:

- **Diagnostic Imaging**

- **Interventional Radiology**

- **Radiation Oncology**

- **Pediatric Radiology**

- **Neuroradiology**

The entire staff at MedXray is committed to treating patients with integrity, confidentiality and expertise. In addition to physicians certified by the American Board of Radiology, we also offer the assistance of trained technologists, therapists, Certified Nurse Practitioners, Physician's Assistants, registered and licensed practical nurses and medical physicists. Their in-depth knowledge, combined with advanced technology and compassionate care, are the reasons so many physicians refer their patients to us.

Radiation Oncology: We Care From The Inside Out

Cancer has advanced to become the second leading cause of death following heart disease. At MedXray, we take cancer very seriously by offering advanced diagnosis and treatment plans, as well as the expertise of our Board Certified Radiation Oncologists. These specialists work with medical oncologists and primary care providers to treat patients diagnosed with cancer. Following the initial diagnostic tests, radiation oncologists, physicists and dosimetrists plan each individual therapy using a precise 3-dimensional treatment planning system. Comprehensive patient care is provided at each of our Sioux Falls treatment sites.

You Can Trust The Leader

The Radiation Oncology division of MedXray offers the most advanced technology, much of which is not available elsewhere in the region.

Our radiation oncology services include:

External Beam Radiation Therapy: External beam radiation treatment uses high-powered x-rays to precisely focus radiation that targets the cancer in the tumor while minimizing harm to surrounding tissue.

Intensity Modulated Radiotherapy (IMRT): A type of conformal radiation in which radiation beams are shaped to closely approximate the shape of the tumor. In order to spare healthy tissue, the intensity of the radiation can be changed during treatment.

Image-Guided Radiotherapy (IGRT): The process of taking frequent two and three-dimensional imaging scans, during a course of radiation treatment, used to direct radiation therapy utilizing the imaging coordinates of the actual radiation treatment plan.

- a. **MVision Cone Beam** allows the Radiation Oncologist to actually “see inside” the patient at the time of treatment to better localize and target movable tumors.
- b. **B-Mode Acquisition & Targeting (BAT) Ultrasound Imaging** is an ultrasound-based, tumor locating device system, designed to maximize the precision of external beam radiation.
- c. **SonArray 3D Ultrasound Imaging** is an advanced, high-precision patient positioning device.

X-Knife Stereotactic Radiosurgery: Uses precisely focused radiation to deliver high doses of radiation to tumors with minimal exposure to surrounding healthy tissue.

Stereotactic Body Radiosurgery: Used to deliver very high doses of radiation very accurately to tumors in the body.

High Dose Rate (HDR) Brachytherapy: The temporary placement of a high dose rate Iridium 192 source within the tumor. The goal is to maximize dose to tumor while minimizing the dose to the adjacent normal tissues.

Prostate Seed Implantation: Radioactive "seeds" are implanted into the prostate gland through a hollow needle. By delivering the radiation directly to the cancer, the prostate itself receives higher doses of radiation in a more directed manner.

PET/CT Treatment Planning Fusion: State-of-the-art PET/CT scanning technology is used to more accurately pinpoint the location of cancer for radiation therapy to preserve healthy tissue. This will assist in the diagnosis, stage evaluation and treatment of cancer.

Total Body Irradiation (TBI): A form of radiotherapy used primarily as part of the preparative regimen for bone marrow transplantation. As the name implies, TBI involves irradiation of the entire body.

Mammosite Breast Brachytherapy: Treatment is administered to the tissue surrounding a tumor after a lumpectomy has occurred. At the time of surgery an inflatable balloon is inserted with a catheter. The balloon fills the region that the tumor occupied. During outpatient treatments, high doses of radiation are given to a very specific region while not threatening healthy tissue.

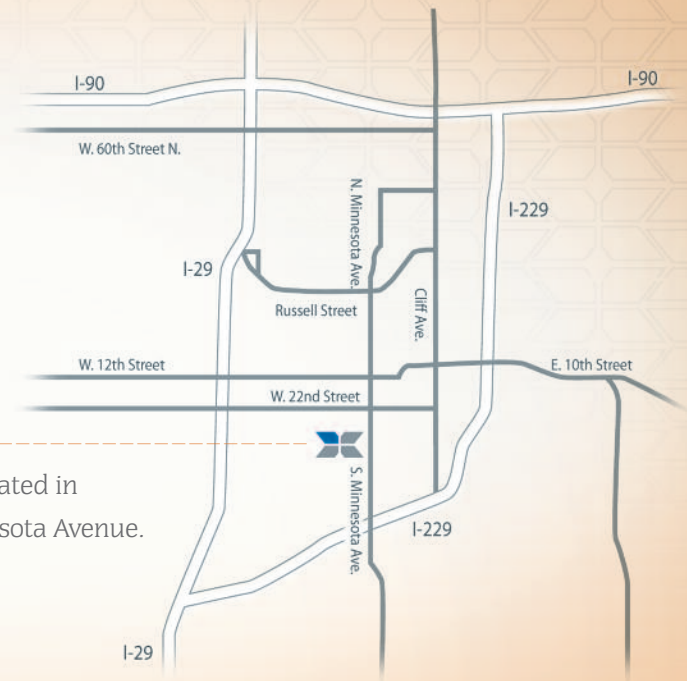
MLC (Multileaf Collimator): A device made up of individual 'leaves' that can move independently in and out of the path of a radiation in order to block it, allowing radiation to target the tumor and exclude the healthy cells around it.

CT based 3-Dimensional Treatment Planning: Uses 3-D images from PET/CT technology to evaluate tumors and recommend the most effective treatment plan with more accuracy and less side effects than traditional planning methods.

Physics Consulting Services: MedXray provides physics consulting services through our Radiation Oncology department.

Our Location:

Our main office is conveniently located in central Sioux Falls at 1417 S. Minnesota Avenue.



The Expertise You Need, Where You Need It

The Radiation Oncologists at MedXray are Board Certified in Radiation Oncology and provide extensive knowledge, expertise and consultation services in the areas of cancer diagnosis, treatment plans and the most advanced procedures. Thank you for partnering with us.

Physicians may make direct referrals to the Radiation Oncologists by calling **605.336.0515** or toll free **1.800.473.0271**.



1417 SOUTH MINNESOTA, SIOUX FALLS | 605-336-0515 | WWW.MEDX-RAY.COM



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