

Introducing the FONAR-360° ™





The "Open Sky[™]" option of the FONAR 360° ™

The FONAR 360° [™] features a revolutionary magnet configuration that embeds the magnet's steel returns into the walls, floor and ceiling of the scanner room. Patients don't realize it, but when they enter the scanner room, they are literally walking inside an MRI magnet; the only visible part of the magnet are its two magnetic poles. Since there is no structure – posts, the walls of a tube or anything else - between the patient and the walls of

Distinctive Magnet Specifications

Field Strength: 0.6 Tesla Type: Iron-Frame, Vertical Field, Electromagnet Patient Aperture: Vertical - 18 inches (46 cm) Horizontal - 360° Access

Gradients: Strength - 12 mT/m Slew Rate - 20 T/m/sec

Room Dimensions: Ceiling - 8 feet (2.4 m) Width - 14 feet (4.3 m) Depth - unlimited the scanner room, in any direction, the FONAR 360° boasts an unprecedented level of "openness."

FONAR's original introduction of Open MRI and its continuing position of leadership in the field is fundamentally attributable to Iron-Circuit Technology[™]. This patented feature contours and controls the scanner's magnetic flux to achieve a homogeneous, concentrated magnetic field in the patient gap, and



Iron-CircuitTM Technology

The FONAR 360° ™

- 0.6 Tesla Performance
- Ultra Patient-Friendly Environment
- High Resolution, Contrast and Speed
- Diagnostic Precision
- Quiet Gradients
- Versatility
- High Throughput
- Small Fringe Field

eliminates the unwanted stray flux, or fringe field, away from the gap. The FONAR 360° TM represents the most advanced application of this technology, bringing the concept of Open MRI to the ultimate level.

In its "Open Sky^{TM} " version, the unparalleled openness of the scanner is further enhanced by decorat-

features a transaxial magnetic field, where the direction of magnetic flux is perpendicular to orientation of the patient's body. The winning combination of the transaxial magnetic field and FONAR's full array of high signal-tonoise solenoidal surface coils is one of the key reasons why this scanner produces images that are second to none in comparison to any other MRI scanner, no matter what the field strength or magnet type. The full range of the FONAR 360° ™'s advanced software features and state-of-the-art pulse sequences provide the user with all the tools necessary to achieve diagnostic precision.







ing the entire room - walls, ceiling, floor, even the magnetic poles - with the customer's choice of several breathtaking, panoramic landscapes. The landscapes can be interchangeable to suit each patient's preference, including some for children with familiar nursery rhyme or cartoon characters. The beautiful scenery, coupled with short scan times and the extraordinary quietness of FONAR's Whisper Gradients[™], makes MRI scanning in the "Open Sky[™]" an unusually pleasant experience.

The FONAR 360° [™] is a highperformance scanner, featuring all the benefits of FONAR's proven 0.6 Tesla technology – high resolution, contrast and speed. Like all FONAR scanners, the FONAR 360° [™] This high throughput suite further enhances the speed of the FONAR 360° ™ by avoiding any betweenscan delays. Each patient is made ready in an off-line prep room and delivered to the scanner through the front door of the suite on a special FONAR gurney. Once scanned, the patient, still on his gurney, exits the room through the back door while the next patient is rolled in though the front door.

The High Throughput Suite



Works in Progress...

The FONAR 360° $^{\text{TM}}$ is also the basic platform for the future "OR-360° $^{\text{TM}}$," or the "MRI Operating Room," for MRI-guided interventions. With the scanner's unrestricted access to the patient and room enough for an entire surgical team and all the equipment now customary in standard operating rooms, it can easily be equipped for approved MRIguided interventional procedures.

The advancement of MRI-directed surgery has been severely impeded by the physical limitations imposed by the MRI scanners themselves. The OR-360° TM solves that problem. Surgeons have 360-degree access to the patient, and they may have their neurological microscope, life-support equipment, endoscopy equipment and anesthesiologist right beside them at the bedside where they are used to having them. The unique design of the magnet allows the entire medical team to stand in a relatively magnetic-free environment. The special in-gap, fully rotational gurney allows surgeons to position their patients, with finger-tip control, at any height, at any angle, at any time, as required by the interventional procedure. A flat RF transmitter maximizes the available gap and the pole surface without restricting the placement of orthopedic fixtures for large range-of-motion computer-controlled kinematic studies.

Surgeons have always needed to see more than what meets the eye. Although endoscopic procedures have been extremely useful in this regard, they only give surgeons a view of surfaces. However, surgeons have the additional need to fully visualize the tissues they are about to cut into. Because of its exquisitely detailed images, MRI meets that need far better than any other imaging modality, enabling the surgeon to take the appropriate course of action with absolute confidence. For example, the surgeon can use the MRI to simulate various paths to the target area. Once he determines the best one, he guides his catheter to the target for the delivery of treatment - RF, chemotherapy, microwave, drugs, etc. Since treatment agents can be

The Dual-Purpose Scanner

An MRI-guided surgical program can be costly in its beginning stages due to low utilization and the fact that physicians are still climbing the learning curve. Because the FONAR 360° TM is so versatile, it has the solution to the problem: when the scanner is not being used for surgery, it can be used to perform routine diagnostic examinations. The revenues from the conventional diagnostic scanning can subsidize the surgical program for as long as it takes for it to stand on its own financial feet.

delivered directly to the target tissue, the final dose can be achieved with certainty, without the constraint of having to limit dosages for fear of damaging healthy tissue. It is anticipated that innovative users of the OR-360° ™ will assemble MRI-compatible interventional instruments that are already FDAcleared for MRI-guided interventions and capitalize on the uniqueness of this full-access scanner.



The OR-360° ™ (The MRI Operating Room)

Works in Progress