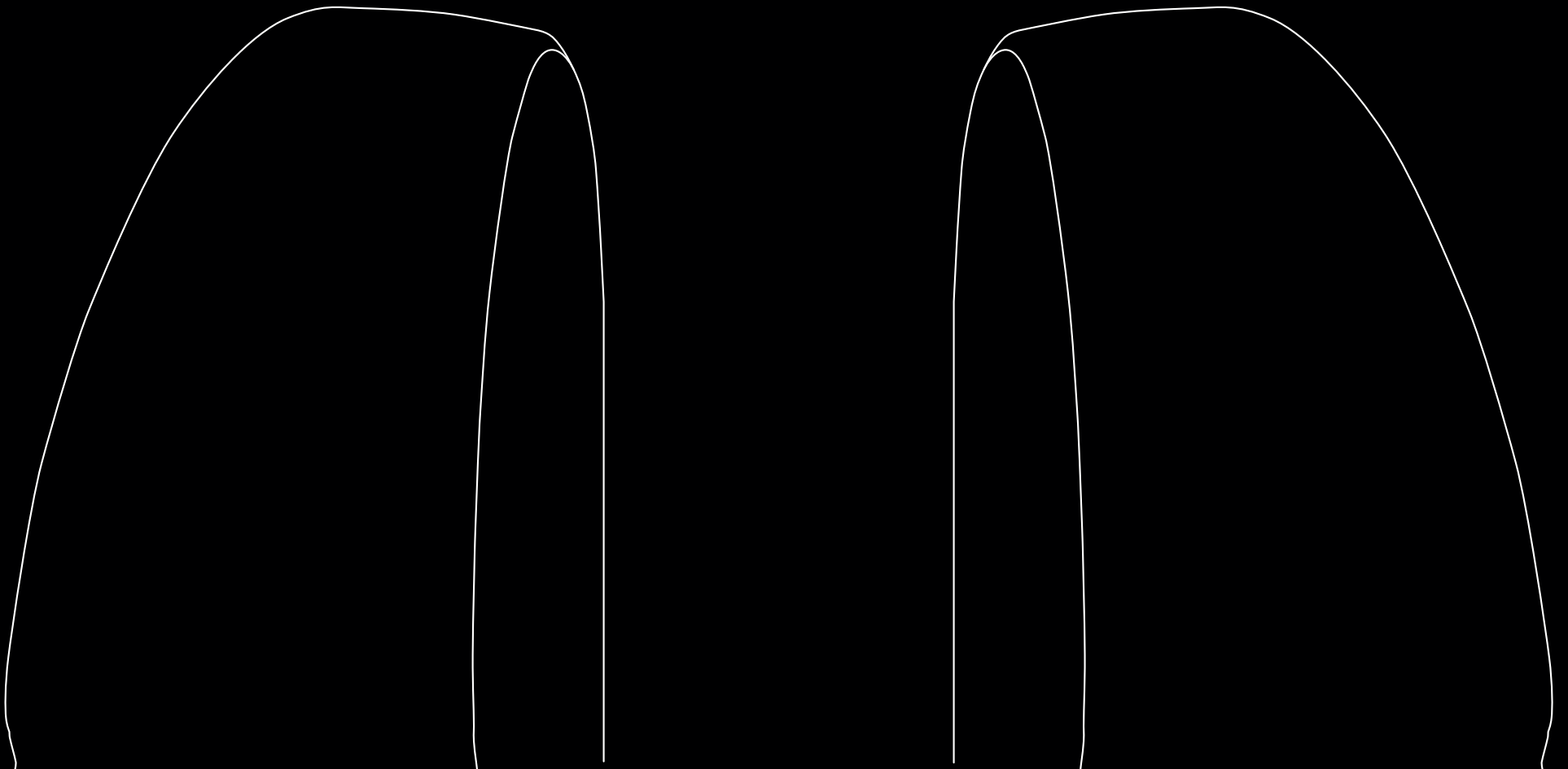




the best MRI experience







evo) **MROpen**







# **Stress free**

## The best MRI experience

Our key value has always been,  
since the very beginning, Patients First.  
MROpen Evo provides superior comfort,  
greatly reducing the problem of claustrophobia  
and patient anxiety that often occurs  
in closed "tunnel" systems, causing concern  
and distress in both patients and MRI operators.

The Patient can walk into the scanner, can sit,  
lie slightly backward, lie horizontally or even stand.  
With no barrier with the surrounding environment,  
patients can see around them at all times  
or enjoy watching TV while comfortably undergoing  
an MRI procedure.

All of this while improving the clinical outcome  
by being able to scan the patient in the position  
of maximum symptom.



# **Stand out**

## **Make your MRI centre truly unique**

Thanks to its unique design MROpen Evo offers something different to both patients and clinicians.

The unique vertical opening accommodates larger, claustrophobic, elderly and young patients, or those who are in pain, with no barrier between the patient and the environment.

To cover specific needs, differentiate your services and increase productivity MROpen Evo is the perfect choice for your centre as a stand-alone scanner or associated with a traditional MRI.







# **Don't guess. See**

## Upright and multi-position imaging

MROpen Evo changes the approach to the clinical investigation using positional symptom-driven imaging.

New clinical advantages come from MROpen Evo's Upright and multi-position imaging capabilities of the Spine and Joints in Weight Bearing mode as well as functional studies of the Spine and Joints in flex-extension.

Changing point of view makes the difference.







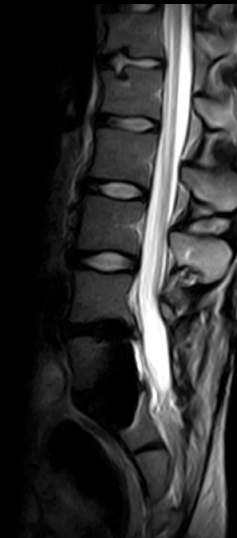
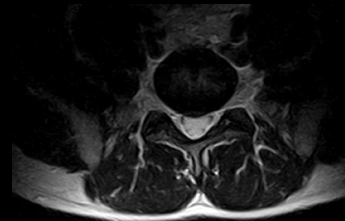
SUPINE FSE T2  
4 mm thk - 5'10"



SUPINE SE T1  
4 mm thk - 4'24"



SUPINE FIR PD  
4 mm thk - 5'19"



SUPINE FSE T2  
4 mm thk - 4'09"



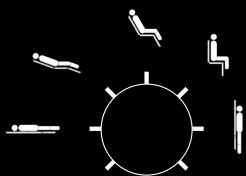
Same patient

SITTING FSE T2  
4 mm thk - 4'53"

STANDING FSE T2  
5 mm thk - 1'19"

**Thoracic Spine  
Lumbar Spine**

**Routine  
Flexion/Extension  
Weight Bearing**



Patient Positions:

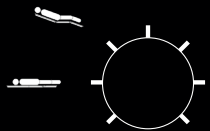
Supine  
Angle 20  
Angle 40  
Angle 60  
Sitting  
Standing





## Cervical Spine

Routine  
Flexion/Extension  
Soft tissue neck  
MRA carotids



### Patient Positions:

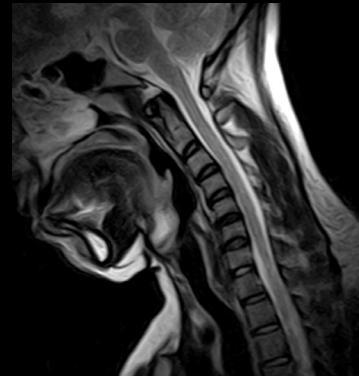
Supine  
Angle 20  
Angle 40  
Sitting



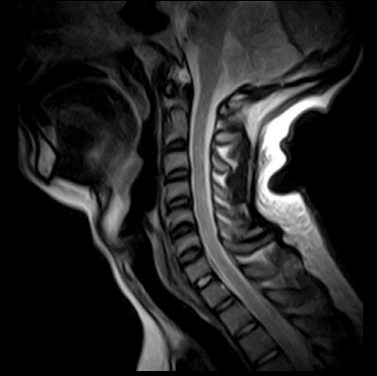
SUPINE FSE T2  
3 mm thk - 5'40"



SUPINE GE T2  
4 mm thk - 4'02"



FLEX FSE T2  
4,5 mm thk - 1'29"



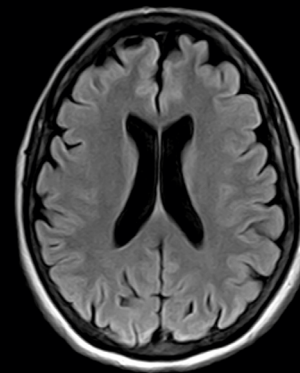
EXT FSE T2  
4,5 mm thk - 1'49"



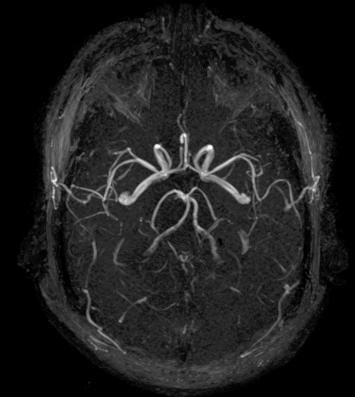
SUPINE SE T1  
5 mm thk - 4'27"



SUPINE FSE T2  
5 mm thk - 4'10"



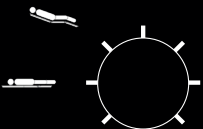
SUPINE FLAIR T2  
5 mm thk - 4'36"



SUPINE MRA  
1,2 mm thk - 6'27"

## Brain

IAC  
TMJ  
Pituitary gland  
Orbits  
MRA



## Patient Positions:

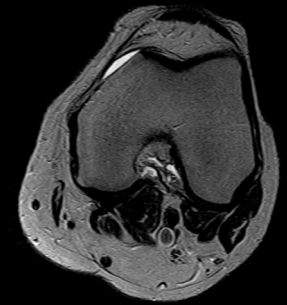
Supine  
Angle 20  
Angle 40  
Sitting



SUPINE SE T1  
3 mm thk - 5'13"



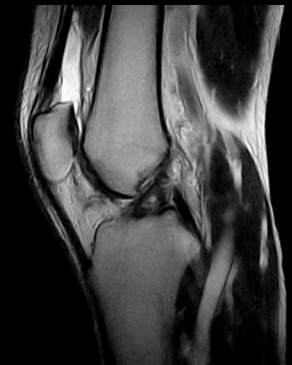
SUPINE FIR PD  
3 mm thk - 6'36"



SUPINE FSE T2  
3 mm thk - 5'40"

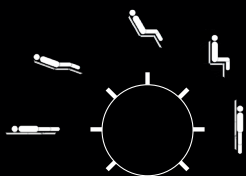


SUPINE FSE T2  
4,5 mm thk - 5'21"



STANDING FSE T2  
4,5 mm thk - 2'13"

## Knee



### Patient Positions:

Supine

Angle 20

Angle 40

Angle 60

Sitting

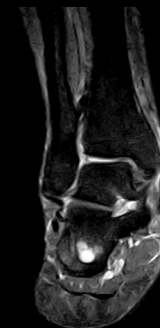
Standing

Bent knee





STANDING SE T1 -  
4 mm thk - 2'41"



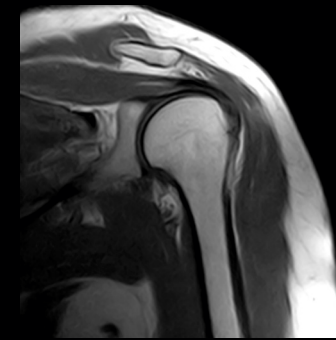
SUPINE FIR PD  
4 mm thk - 5'00"



SUPINE GE T2  
4 mm thk - 3'29"

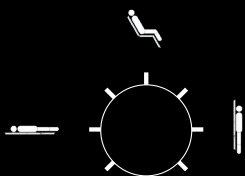


SITTING SE T1  
3 mm thk - 2'13"



SUPINE SE T1  
4 mm thk - 2'28"

## Extremities

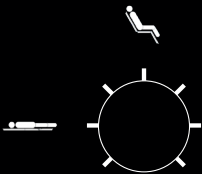


### Patient Positions:

Supine  
Angle 40  
Sitting  
Standing



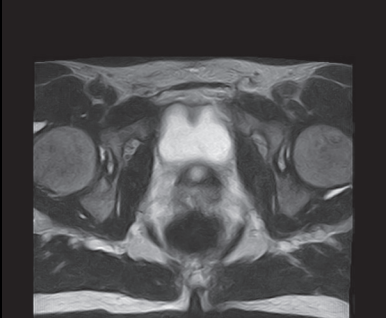
Pelvis



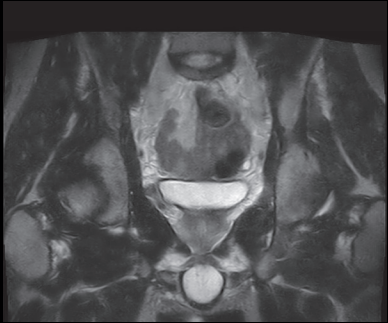
Patient Positions:  
Sitting  
Supine



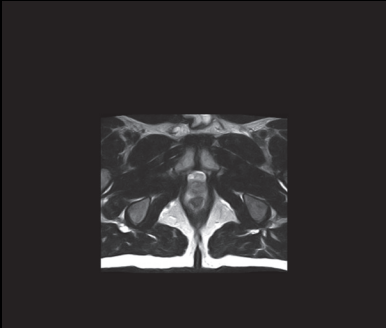
SUPINE FSE T2  
5 mm - 4'03"



SUPINE FSE T2  
5 mm - 4'09"



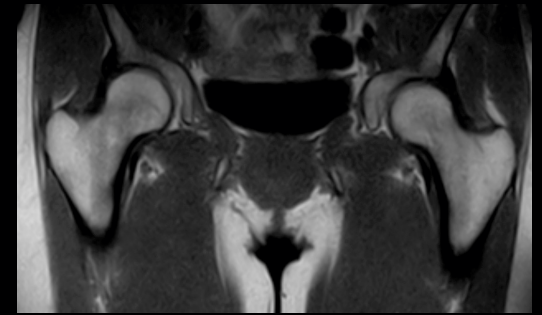
SUPINE FSE T2  
5 mm - 4'57"



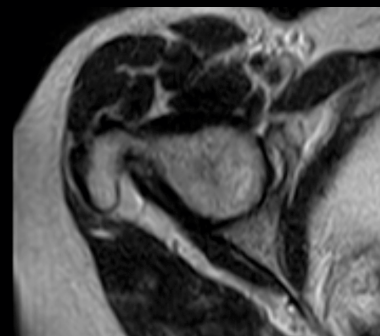
SUPINE FSE T2  
5 mm - 4'09"



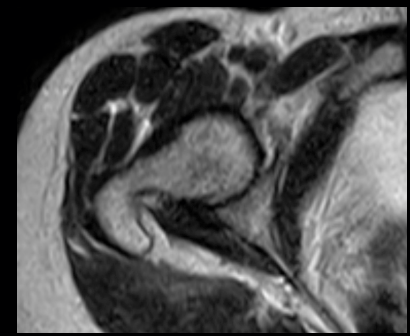
SUPINE FSE PD  
5,5 mm thk - 5'16"



STANDING SE T1  
4,5 mm thk - 2'44"

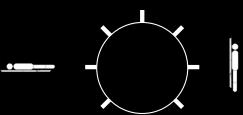


STANDING FSE T2  
5 mm thk - 1'38"



STANDING FSE T2  
5 mm thk - 1'38"

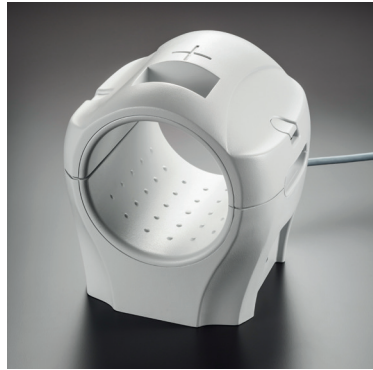
Hip



Patient Positions:  
Supine  
Standing  
Standing with hip rotation



## Receiving Coils



**KNEE**  
Channels: 2  
Clinical Applications: Knee, Ankle, Foot



**BODY SPINE**  
Channels: 4  
Clinical Applications: L-Spine, T-Spine, Pelvis, Bilateral Hips, Sacroiliac Joints



**WRIST-HAND**  
Channels: 2  
Clinical Applications: Hand, Wrist, Elbow



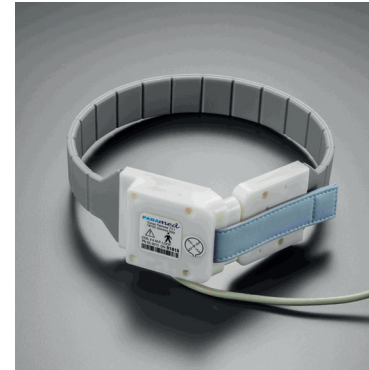
**MP-FLAT**  
Channels: 1  
Clinical Applications: Upright/Sitting Hip Pelvic Floor, Multipurpose



**SPINE FLAT**  
Channels: 4  
Clinical Applications: Upright/Sitting, L-Spine, T-Spine, Sacroiliac Joints



**CERVICAL SPINE**  
Channels: 2  
Clinical Applications: C-Spine



**MP-LOOP**  
Channels: 1  
Clinical Applications: Shoulder, Dynamic studies, Multipurpose



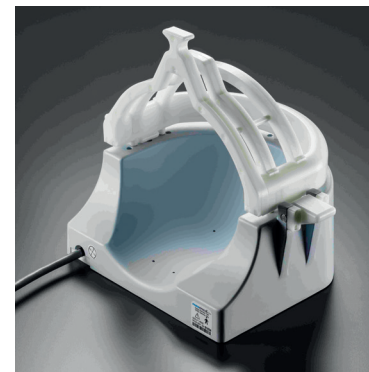
**SHOULDER**  
Channels: 2  
Clinical Applications: Shoulder



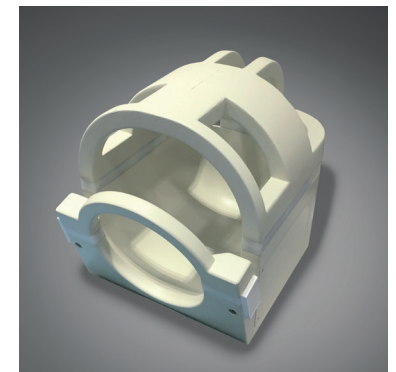
**WHOLE SPINE**  
Channels: 8  
Clinical Applications: Spine



**FLEX SMALL/LARGE**  
Channels: 1  
Clinical Applications: Upright/Sitting Pelvis, Bilateral Hips



**BRAIN**  
Channels: 2  
Clinical Applications: Head - Brain



**HEAD NECK**  
Channels: 3  
Clinical Applications: Brain, MRA

# The Helium-free MRI



## **UNIQUE DESIGN**

U-shaped design delivers unparalleled patient comfort with no barrier between the patient and the environment.

## **UPRIGHT IMAGING**

New approach towards pathologies of the Spine and Joints, by allowing earlier detection and more accurate diagnosis.

## **MgB<sub>2</sub> HELIUM-FREE TECHNOLOGY**

Innovative superconducting material (Magnesium Diboride – MgB<sub>2</sub>).  
Environmentally friendly.  
Quench-free safe operation.  
Lower power consumption.

## **HIGHEST PATIENT ACCEPTANCE**

Claustrophobic, anxious, larger, elderly or disabled patients, or those who are in pain, are able to undergo the examination in comfort and without anxiety.

## **MULTI-POSITION IMAGING**

Imaging can be performed with the patient positioned appropriately according to symptoms: standing, sitting, bending or lying down.

## **SPECIAL STUDIES & RESEARCH**

Unmatched versatility enables special MRI studies and clinical research: from dynamic studies, to imaging professional athletes with extreme ranges of flexion of the spine and joints.





# Testimonials

## Patients

"I'm a combat veteran from US Air Force and I'm suffering from PTSD. A closed bore MRI was not an option for me. In the MROpen Evo everything is different because you can sit and see all around you"



*Over the years my claustrophobia increased and it left me dreading necessary MRI scans. After experiencing the MROpen that all changed.*



*I had a problem with my lumbar spine. After the examination in the MROpen scanner, being in the flexion and extension position as well I got to see what my real problem had been this whole time.*



*A child suffering from Asperger syndrome, Tourette syndrome, and ADHD has had many terrible experiences with MRIs and finds relief with the MRI system at an Innovative MRI Partners facility.*



# Testimonials

## Professionals

**Penny Gowland**  
**Professor of Physics, Faculty of Science**  
**Sir Peter Mansfield Imaging Centre**  
**Nottingham University**



*Open scanners give a whole new dimension to MRI, which can be used to study the effects of gravity on structure and function, and also dynamic processes in the human body. This will provide new clinical information most obviously in MSK imaging but also in lung, GI and neuroimaging, and will also open up new avenues in experimental medicine research. Furthermore, the convenience of the scanner offers the chance for faster patient scanning with less risk of claustrophobia.*

**Alan Breen DC**  
**PhD Professor of MSK Healthcare**  
**AECC University College**  
**Bournemouth (UK)**



*MROpen can be used both to study the service uses of such scanners and to conduct spinal biomechanics research that uses positional data (e.g. measuring and comparing disc height, volume and area in different positions).*



# MROpen Evo Graphic User Interface

Easy, intuitive and designed with the workflow in mind



"The interface has made a real difference to our working day. We have been able to decrease our appointment times, and therefore have a greater patient throughput.

The calibration is very effective and takes no time at all. The sequences are of good quality and fast. We are able to modify them easily as well. It is easy on the eye, and very user friendly."

# MgB<sub>2</sub>

## The true Helium-free MRI innovation



### SMART

MROpen EVO makes the best use of the most recent MgB<sub>2</sub> high-temperature superconductor and helium-free cooling solutions in an open-sky magnet, enabling an innovative approach to imaging and therapy.



### SIMPLE

Eliminating the need for gas refills or helium venting lines makes magnet installation and running much simpler than with conventional solutions.



### SAFE

MgB<sub>2</sub> superconductor and helium-free cooling combined in a very stable magnet solution allow full control to the user, including switching on-off, and simplified start-up and maintenance.



### ADVANCED

We allow you to do what you would expect from a conventional MRI system and in the meantime we allow you to think differently and provide innovative clinical solutions that others cannot, always for better patient outcomes and cost savings throughout cycle of care.



### GREEN

Much reduced use of helium and of rare-earth elements compared to other magnet solutions and full reliance on electricity to operate all help to protect our environment.



# Technical Specification

Field Strength	0.5 T
Type	Superconductive "Cryogen-free" based on the technology of MgB2 (Magnesium Diboride)
Lateral Gap	56 cm 22 <sup>3</sup> / <sub>64</sub> in
Digital Spectrometer	I-box spectrometer
Receiving channels	8
Gradients max intensity	20 mT/m
Rise time	0.6 msec (0 – 20 mT/m)
Slew rate	33 mT/m/msec
Receiving coils technology	Multi array cross tuned
Max patient weight	200 kg / 440 lb
Patient position	Laying, sitting, standing
Graphic user interface	MR-GUI Pro

## SITING REQUIREMENTS

Total System Weight	28,000 kg / 61729 lb
Magnet Room Standard dimensions	6 mt X 5 mt (19' 8 <sup>7</sup> / <sub>32</sub> X 16' 4 <sup>27</sup> / <sub>32</sub> )
Technical Room Standard dimensions	3 mt X 4 mt (9' 10 <sup>7</sup> / <sub>64</sub> X 13')
Electronic Cabinets	3 x 250 kg / 3 x 551 lb
RF Shielding	Required
Power requirement	400V 3N ~50Hz 480V 3N ~50/60 Hz
Power Consumption	35 KVA

## PULSED SEQUENCES

Spin Echo  
Gradient Echo\*  
Multi Echo, PD-T2  
Gradient Echo Dual Echo (HiCon)\*

## Fast Spin Echo

Fast Spin Echo (FSE T2, FSE T1, FSE PD)\*  
Fast Inversion Recovery (FIR PD, FIR T2)\*  
Fast Spin Echo Fluid Attenuated Inversion Recovery (Fast FLAIR)\* Metal T1/T2  
HASTE  
Diffusion Weighted Imaging (DWI - HASTE)

\* Flow Compensation available

## Gradient Echo in Steady State Balanced

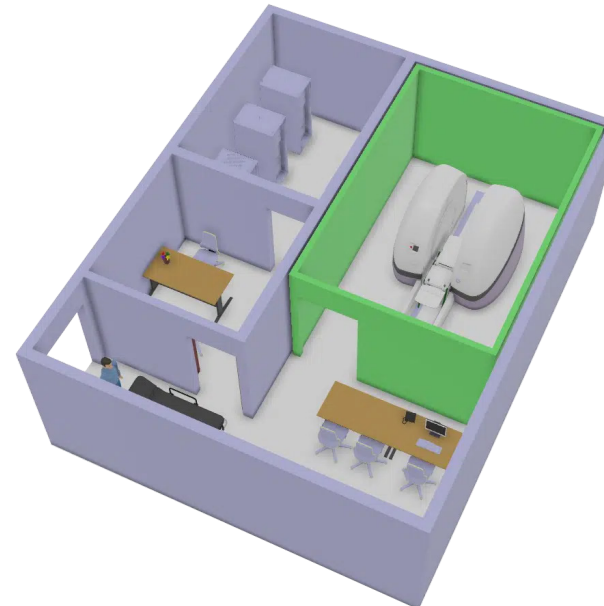
Steady State in Free Precession (GBASS 3D, GBASS 2D) Gradient Echo in Steady State (GE 3D)  
Gradient Echo in Steady State RF Spoiled (GE T1 3D)  
Time Reversed Gradient Field Echo (EMIT 3D)  
Dual Echo in Steady State (STSS 3D)

## MRA

Angio 2D  
Angio 3D

## Fat Suppression

Gradient Echo Fat Water Separation (FWS)  
Short time Inversion Recovery (GE-STIR, SE-STIR)







evo MROpen



the best MRI experience

[www.mropenevo.com](http://www.mropenevo.com)

