

**TIME MEDICAL  
SYSTEMS**

**PICA**

whole body MRI system





# TIME MEDICAL SYSTEMS

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## Vision

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Time Medical (TM) pursues global scientific, technological and clinical excellence to develop the world's most sensitive and accurate MRI systems for early detection of major illnesses. TM's focus is to develop the Next Generation MRI, which is poised to completely transform the MRI industry!

## We See, We Care

TM aligned with World Health Organization (WHO) visions:

- A world in which everyone can live healthy, productive lives
- Putting people first
- Placing health at the centre of the global agenda
- Engaging countries and strengthening partnerships by deploy TM innovation technology to develop AAA (Affordable, Accessible, Advanced) medical devices for the world's 55% population whom didn't have access to general healthcare.

TM will continue to break new ground with innovative technology, patents and market ready MRIs and related technology that will meet the 21st century needs of the Global Community.



# PICA

whole body MRI system



# TIME MEDICAL Systems



May 2007: Columbia University (New York, USA) grants TIME MEDICAL Systems the exclusive right to develop and commercialize HTS Technology for its new line of MRI Scanners.



June 2010: US Patent Office issues patent to TIME MEDICAL Systems for the world's first HTS MRI Scanner.



July 2010: Frost & Sullivan awards TIME MEDICAL Systems the coveted "Innovation of the Year" for its patented **HTS Technology**.



May 2011: The Coalition for Imaging in Biomedical Research (CIBR) welcomes TIME MEDICAL Systems as its newest member and facilitates an HTS Technology demonstration for the NIH Director in Washington, DC.



Aug 2011: FDA 510(k) clearance for PICA's 33mT/m gradient upgrade.  
Sept 2011: FDA 510(k) clearance for PICA's HTS RF Coil Technology.  
Aug 2011: TIME MEDICAL received the CE certification for PICA.



May 2013: Time Medical's first PICA installation in USA received ACR Accreditation for MRI which sets the approval for MRI providers to receive reimbursement from Medicare, and other payors, for their MRI services in the US.



Apr 2016: Time Medical participated in the Inventions Geneva 2016 with the NEONA - World's First Neonatal MRI System and won the Prix de l'Etat de Genève award which is also the highest award among the medical class.



Dec 2017: First PICA MRI System installation in South Africa, Time Medical Systems completed the first PICA MRI installation on African soil, in Gauteng, Johannesburg, South Africa which marks the beginning of a new page for Time Medical in the African market.

# Features & Benefits



**Strongest** Gradients - at 33mT/m & Slew Rate of 90 T/m/s, PICA is unmatched by any system below 1.5T.



**Widest** Range of Clinical Applications including: ce-MRA, DIXON Fat & Water Separation, DWI & ADC map.



**PRODIVA** drives user-friendly clinical workflows during patient set-up, scanning and data management.



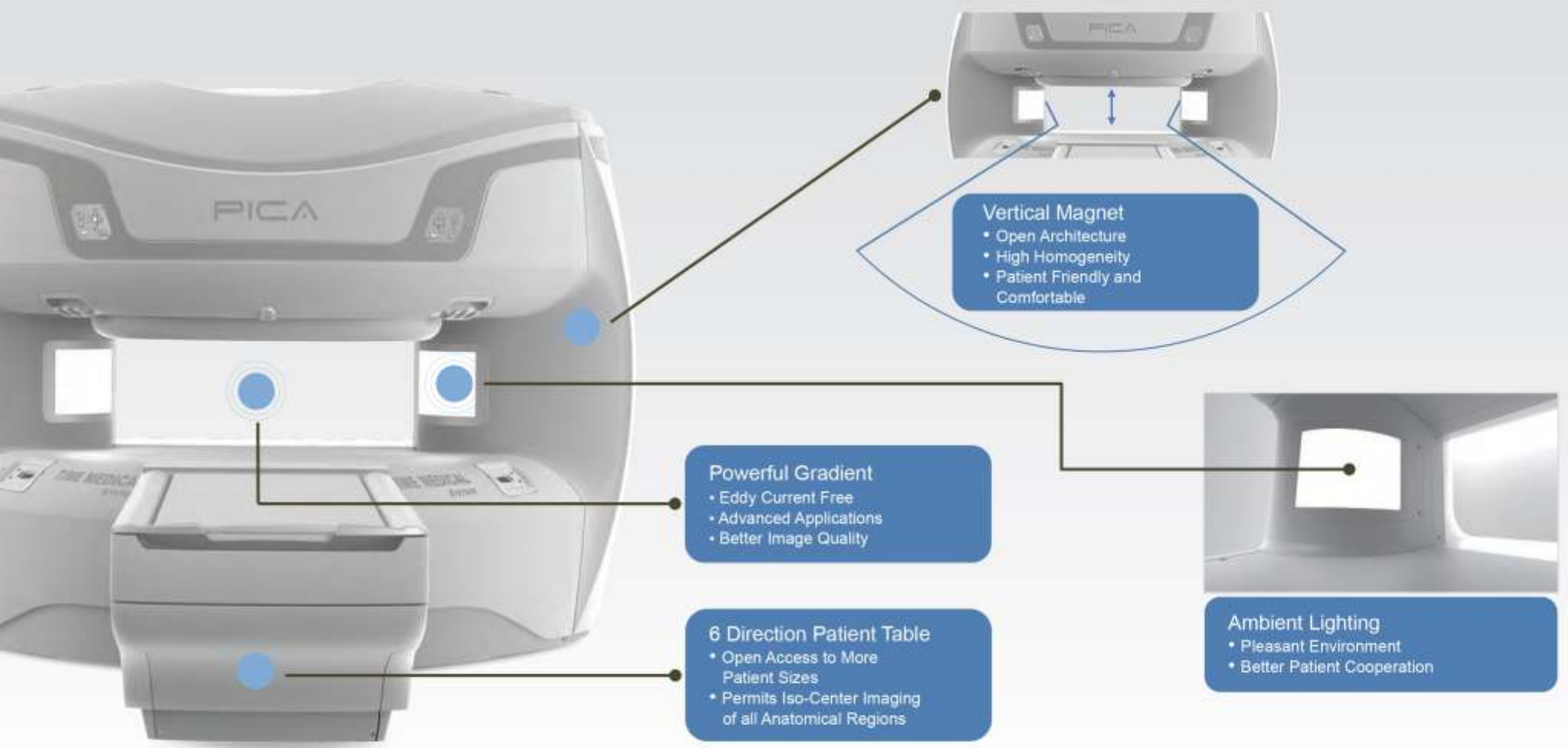
**HTS Coils** deliver increased SNR (per unit time), enabling reduced scan times & high patient throughput.



**Open** MRI comes with the double-pole magnet design which offers maximum comfort for all patients.







# Product Specifications

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## Magnet System

- Type: Permanent, active shims
- Material: Neodymium Ferrite Boron (**NdFeB**)
- Field Strength: 0.35 Tesla
- Opening: 400 mm
- Fringe Field: 5 Gauss line 2.5 m axial x 2.5 m radial .
- Size with chassis: 2260 x 2740 x 1996 mm (L x W x H)
- Field Stability: < 0.2 ppm/hr
- Magnet Weight: 17,200 kg / 37,840 lbs

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## Gradient System

- Amplitude: 25 mT/m
- Rise Time: 0.50 ms
- Slew Rate: 50 T/m/s
- Upgradable to:
  - Amplitude: 33 mT/m
  - Rise Time: 0.37 ms
  - Slew Rate: 90 T/m/s

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## RF System

- Frequency: 15 MHz  $\pm$  200 kHz
- RF Power: 6000 W peak rms, 600 W average
- Image BW: 4 kHz - 100kHz
- Preamp Noise Figure < 0.5 dB
- Pre-amplifier integrated in all receiving coils
- Automatic receiving coil recognition
- 2 Channels standard, upgradable to 8 channels

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## RF Receiver Coils

- Quad Head Coil
- Quad Neck Coil
- Quad Shoulder Coil\*
- Quad Wrist Coil\*
- Quad Body / Spine Coil (S/M/L/XL\*/XXL\*)
- Quad Knee Coil
- Quad Foot/Ankle Coil\*

\* Optional

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## System / Power Supply Cabinets

- Cooling: Air cooled with internal fans
- Cooling Thermal Loading: 2.8 kW – 5.85 kW
- Line Voltage: 380 VAC 3-phase, neutral  $\pm$  10%
- AC power requirements: 63A / 42kVA
- Dimensions (LWH): 910 x 610 x 1735 mm / 670 x 820 x 970 mm
- Unit weight: 426 kg (939 lbs) / 390 kg (860 lbs)

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## Patient Table

- Size: 2600 x 800 x 780 mm (L x W x H)
- IN/OUT movement – 2000 mm
- LEFT/RIGHT movement –  $\pm$ 120 mm
- UP/DOWN movement – 200 mm
- Min height from floor – 550 mm
- Loading capacity – 200 kg / 440 lbs

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## Computer System

- Host Computer: Dell™ Windows based PC
- OS: Microsoft Windows
- Imaging Software: Prodiva MRI Platform with Patient Flow Technology
- Data Archive: DVD-RW 4.7 GB
- Display: 24" HD LCD Monitor
- Data Transfer & Handling (HIS/RIS): DICOM 3.0
- Printing Support: DICOM Print, All Windows Printer & PDF

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## Image Reconstruction

- Multithreaded reconstruction
  - 2D > 1000 images/s, 256 x 256
  - 3D > 200 planes/s, 256 x 256 x 64
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## Pulse Sequences

- SE 2D & 3D
- GRE 2D & 3D
- FLASH 2D & 3D
- FSE 2D
- FSE 3D / HASTE
- FLAIR 2D
- Fast-FLAIR 2D
- STIR 2D
- IR-FSE 2D (T2 STIR, PD-STIR)
- MRA-TOF 2D & 3D
- MRV-TOF 2D
- 3PT DIXON SE 2D\*
- 3PT DIXON GRE 2D\*
- SE-DWI 2D\*

\* Optional

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## Imaging Parameters

- Min / Max Phase Matrix: 64 / 512
  - Min / Max Frequency Matrix: 64 / 512
  - Max Reconstruction Matrix: 1024
  - Bandwidth: 4 kHz – 100 kHz
  - Rectangular FOV (increment in % in full FOV): 0.1%
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## Image Visualization

Features: Visualization with auto Window/Level, pan, zoom, rotate, flip, multiple image display, ROI, annotate, measurements, cross series marker, color mapping, image analysis, reformat, real-time MIP, CINE, multiple viewport.

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# Site Planning

Specification	Magnet Room	Equipment Room	Control Room
Recommended room size (inside dimensions) *	6.5 x 4.5 m (21.3 x 14.7 ft)	3 x 3 m (9.8 x 9.8 ft)	3 x 4 m (9.8 x 13.1 ft)
Minimum ceiling height	3 m (9.8 ft)	2.8 m (9.2 ft)	no requirement
Floor requirements	antistatic, level	antistatic	antistatic
Total Floor Loading	20 kPa 417.7 lbs / sqft	-	-
Floor Leveling	5 mm / 3 m	-	-
RF shielding	90 dB attenuation over 10 – 100 MHz	not required	not required
Magnetic field shielding	depends on site	not required	not required
Power outlets	3 x 110 VAC or 220 VAC	3 x 120 VAC or 220 VAC 380 VAC 3-phase, neutral $\pm$ 10%	at least 6 x 110 VAC or 220 VAC
Air conditioning	15 kW	3 kW	3 kW
Humidity	40%-70% without condensation	40%-70% without condensation	40%-70% without condensation
Network outlets	No requirement	1 (directly connected to Control Room)	1 (directly connected to Equipment Room)





## PRODIVA

*The comprehensive and user-friendly GUI with embedded clinical workflows.*



rodiva

Efficient workflow from start to finish



Built-in optimized scan protocols with simple drag-and-drop workflow to initiate scanning.



PRODIVA Cloud telemedicine platform allows image access for reporting anywhere, anytime.



# IMAGE GALLERY

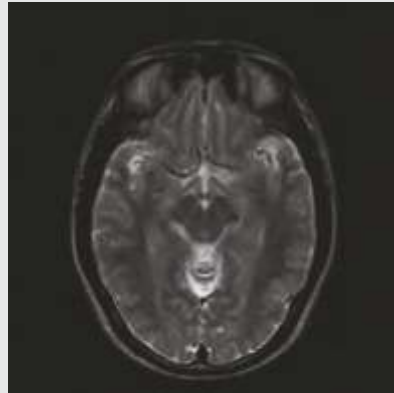






## Neuro Imaging

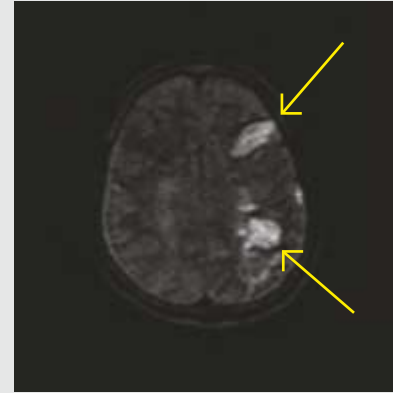
The Neuro Suite provides optimized scanning protocols with high resolution and high SNR image quality for diagnosis.



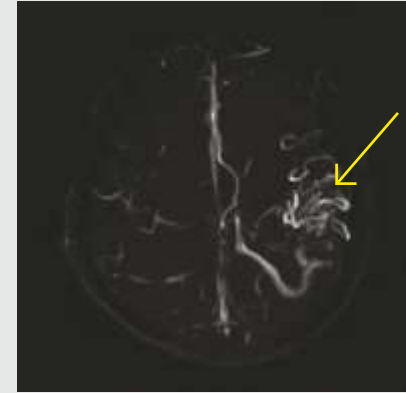
T2 FSE 512 matrix



T1 SE Contrast Enhanced



DWI



3D MRA-TOF



T2 FSE



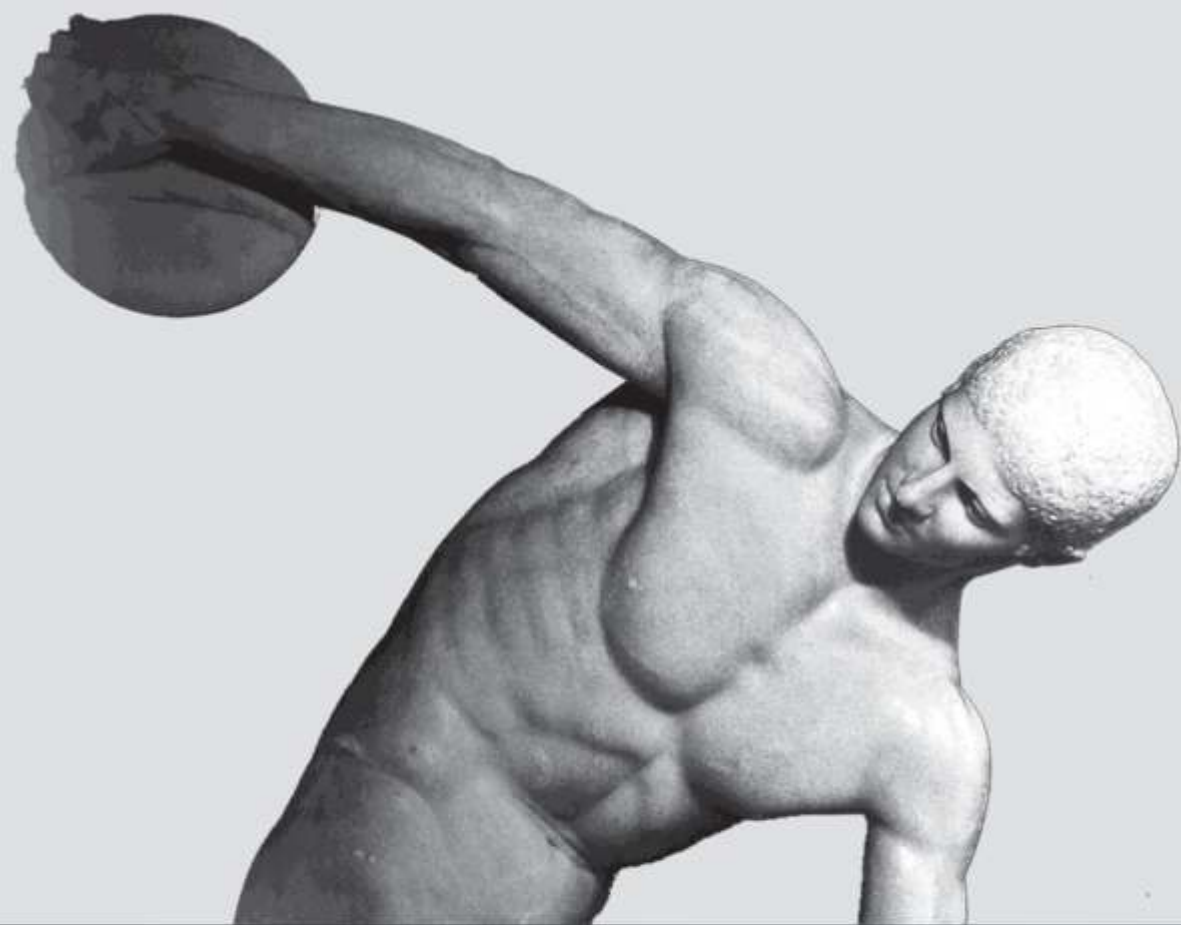
IR FSE



T1 SE Contrast Enhanced



2D MRA-TOF



## MSK Imaging

The Ortho Suite provides a wide variety of optimized protocols for extremities imaging.



T1 GRE 3 Pt Dixon



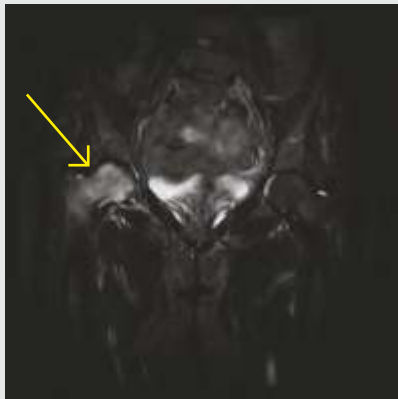
T1 SE 3 Pt Dixon



T1 SE



IR FSE



IR FSE



PD STIR



IR FSE



PD STIR

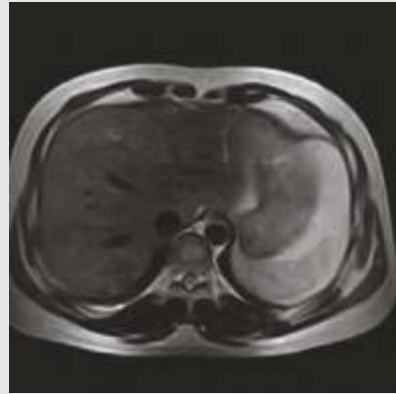


## Body Imaging

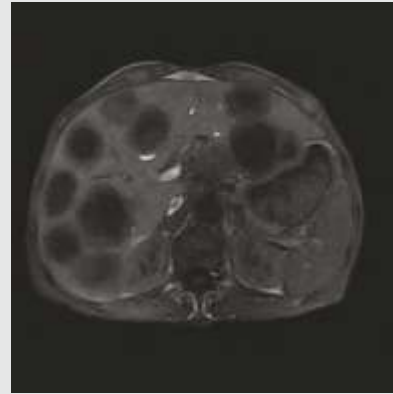
The Body Suite is specialized for clinical body examinations.



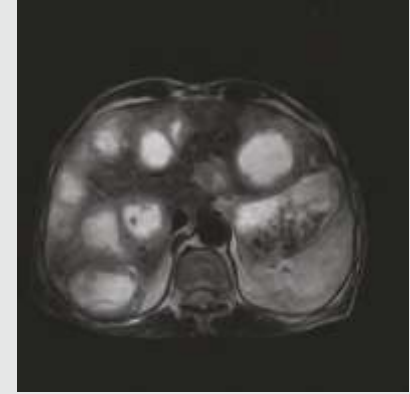
T1 GRE Breathhold



T2 FSE Respiratory Gating



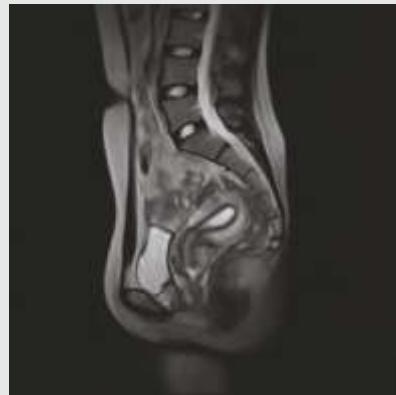
T1 GRE Breathhold



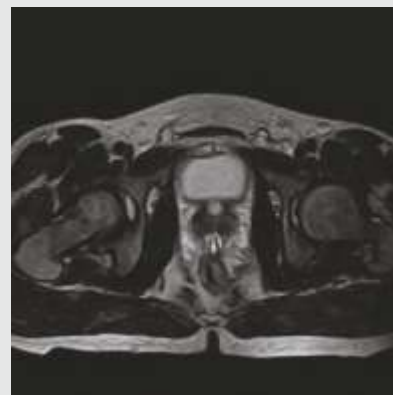
T2 FSE Respiratory Gating



IR FSE Respiratory Gating



T2 FSE



T2 FSE



T2 FSE

# TIME MEDICAL SYSTEMS

## Time Medical Hong Kong

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Hong Kong Science & Technology Park,  
Shatin, N.T. Hong Kong

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website: [www.timemedical.in](http://www.timemedical.in)  
Chennai Tel: +91 4424321447

## Manufacturing Plant

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Andhra Pradesh Medtech Zone,  
Administrative Office Building,  
Near Steel Plant Pragathi Maidan,  
Vishakapatnam,  
AndhraPradesh - 530032

## Time Medical USA

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