

**TOSHIBA  
MEDICAL**



***Vantage Titan***<sup>™</sup>

**Zen Edition**

Quiet. Intelligent.  
Complete.

Quiet and comfortable  
Intelligent technology  
Complete clinical solution

Vantage Titan™ / Zen Edition delivers new clinical capability, streamlined workflows and patient comfort like never before.

This MR system is designed to perform even the most complex of exams, while delivering high image quality and uncompromised patient safety.

With revolutionary comfort features incorporated in Vantage Titan / Zen Edition, patients can now undergo quiet, comfortable and quick exams.

Both Intelligent technology and an intuitive user interface increase efficiency and workflow.



# A quieter and more comfortable MR exam for every patient, every sequence, every time

Vantage Titan is designed to maximize patient comfort without compromising image quality. Its 71 cm wide bore aperture allows you to image even large patients comfortably and efficiently. The slim gradient design provides significantly more space between the patient and the inside of the bore, greatly reducing acoustic noise with the Toshiba Medical's Pianissimo™ technology.

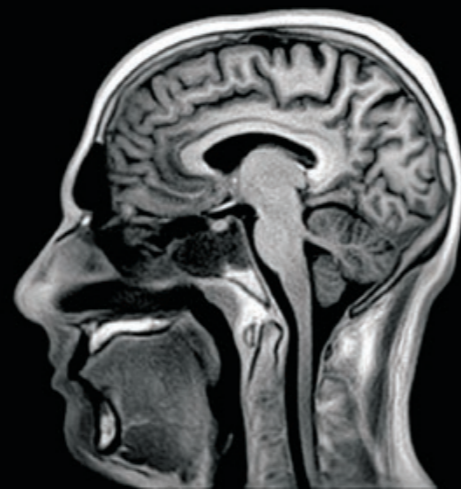
## Pianissimo Zen

MR acoustic noise is one of the major complaints of patients and medical staff. With Toshiba Medical's Pianissimo technology, noise is significantly reduced in and around the MRI environment for every sequence, every scan and every patient thanks to innovations such as the vacuum enclosure around the Super Slim Gradient Coil which reduces sound. Pianissimo Zen quiet sequences further reduce noise to just above ambient noise level, making exams even more comfortable and easier to complete.



### mUTE<sup>2</sup> 3D T1

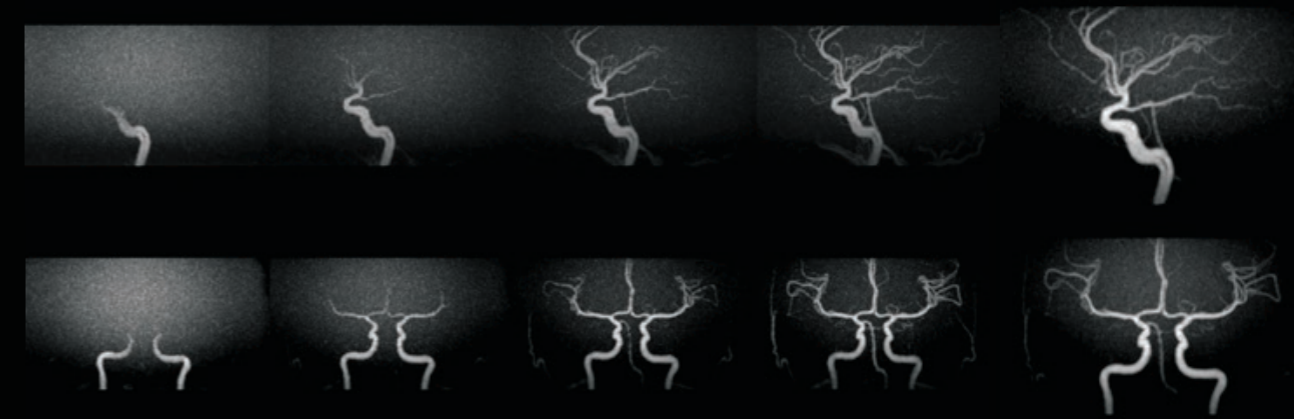
The mUTE application suppresses high-speed gradient field switching, making it possible to provide quiet scanning.



<sup>1</sup> Depending on the condition of usage and examination  
<sup>2</sup> mUTE: minimized acoustic noise utilizing UTE

### Capturing hemodynamics with mUTE 4D MRA

Vantage Titan's UTE sequences allow for less dephasing and more homogeneous vessel signals. At the same time, the multiple TI (4D) generates dynamic images visualizing the blood flow without the need for contrast agents.



Contrast in your images, not in your patients

Patient safety and comfort continues to be the driving force behind Toshiba Medical's unique non-contrast MRA techniques minimizing patient risk while producing exceptional image quality.

An MR that will put your patients at ease

### MR Theater

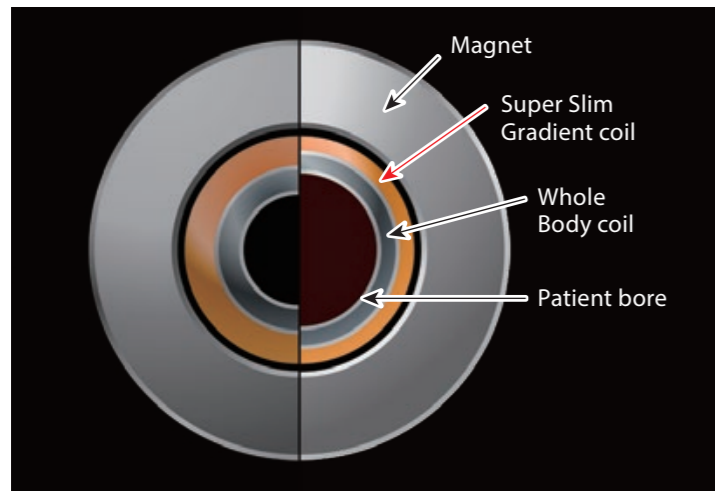
Vantage Titan offers an immersive in-bore MR Theater option. As the images displayed appear to be much farther away than the actual bore, the MR Theater provides a uniquely comfortable experience, encouraging patients to relax and stay still during the MR exam.



[global-madeforlife.com/mrtheater.html](https://global-madeforlife.com/mrtheater.html)

# Intelligent technology for high quality imaging

Vantage Titan introduces an MRI system that overcomes the challenge of focusing on the patient experience without sacrificing image quality. The result is a comfortable exam for the patient in a 71 cm wide bore aperture while delivering high-quality images for an accurate diagnosis.



The Super Slim Gradient coil allows for a wider patient bore without having to increase the size of the magnet.

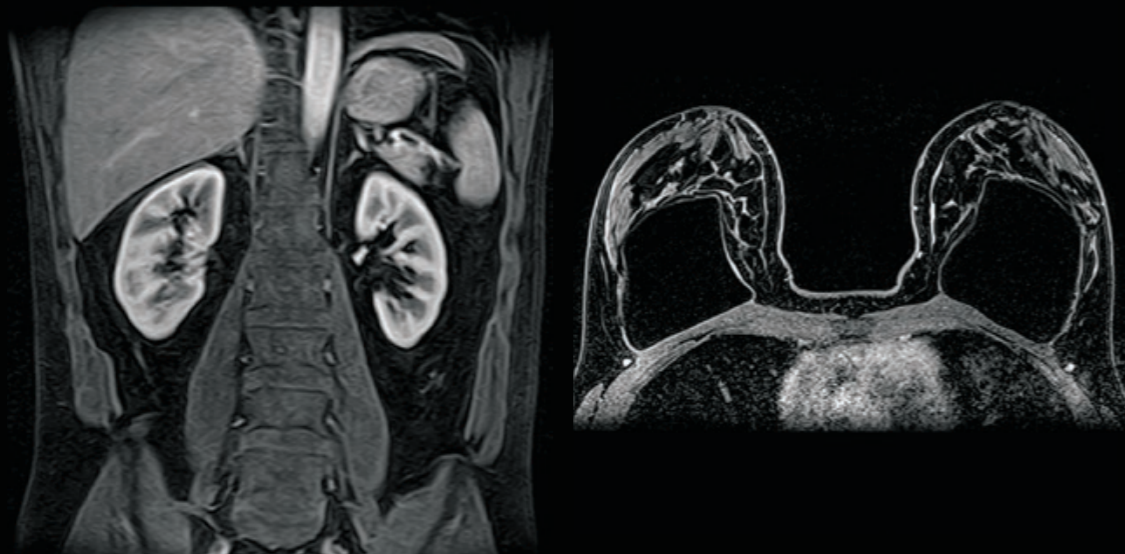
## Super Slim Gradient

A combination of Toshiba Medical's thin gradient and patented MSOFT technology allows for Large Field of View imaging while maintaining Fat Suppression and Homogeneity throughout entire slice volume.



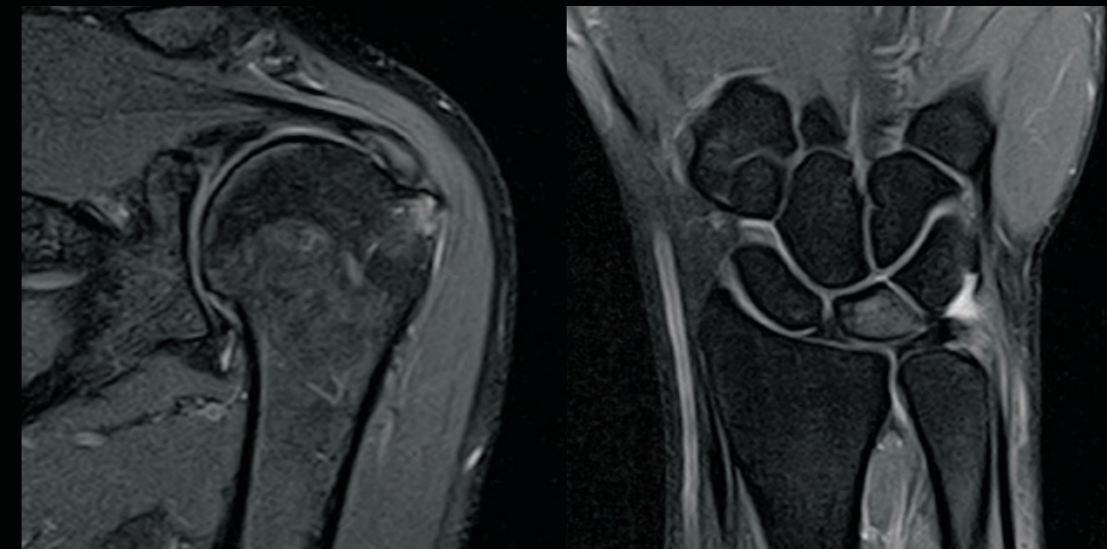
## MSOFT for Fat Free Imaging

With high quality magnet homogeneity and Toshiba Medical's exclusive slice selective fat suppression called MSOFT, Vantage Titan's innovative design delivers uniform fat suppression, even on large areas such as the abdomen.



## Off-center Imaging

High Magnetic field homogeneity provides high-quality images, even for off-center images like shoulders or wrists.



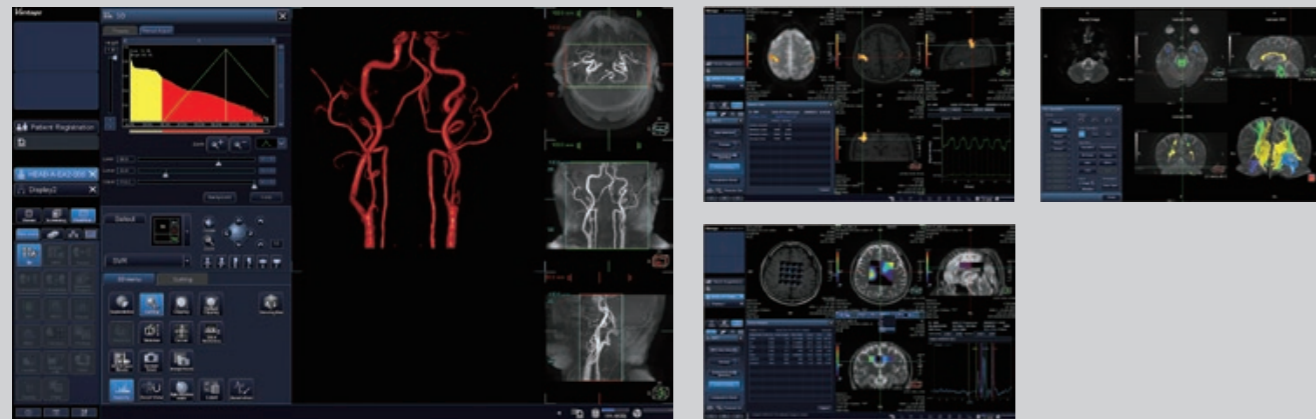
# Consistent results with intelligent technology

Optimize daily workflow and productivity with Toshiba Medical's user interface, M-Power™. Intuitively designed based on clinical workflow, M-Power enhances daily productivity and makes MR operations remarkably easy to learn and use, enabling technologists and physicians to easily access its full range of functionality.



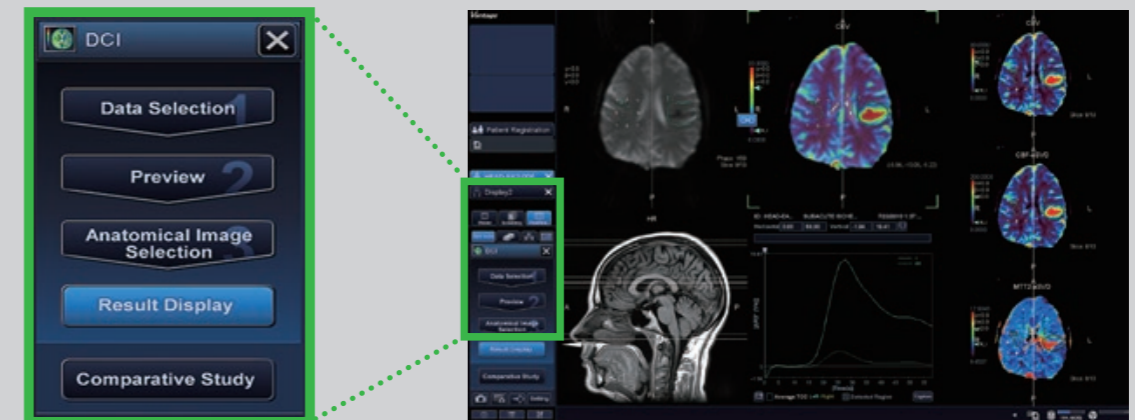
## M-Power User Interface

M-Power intuitive icons and operation windows are designed for ease of use. For operators, colors were specifically chosen to reduce eye fatigue.



## Advanced post-processing as easy as 1-2-3

Advanced post-processing functions such as fMRI, spectroscopy, diffusion or tensor tractography can be accessed directly on the main console using a simple, three-step process. These optional applications can be added as your clinical practice grows.

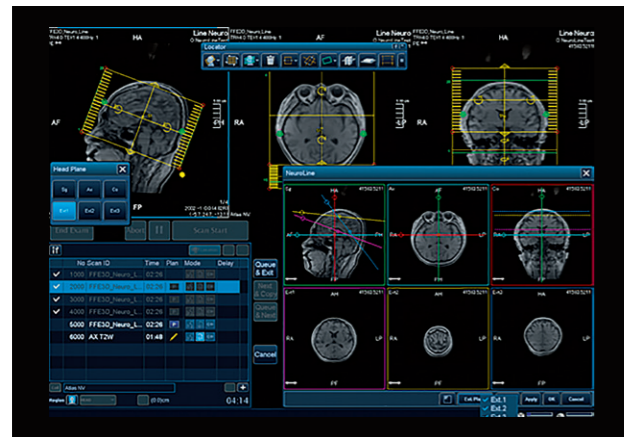


# Automated, reliable and robust

With the complexity of scan planning, achieving scan plane reproducibility can be quite challenging and time-consuming. EasyTech technology helps you improve workflow with automatic slice alignment for brain, spine and cardiac exams, standardizing your workflow with automatic positioning.

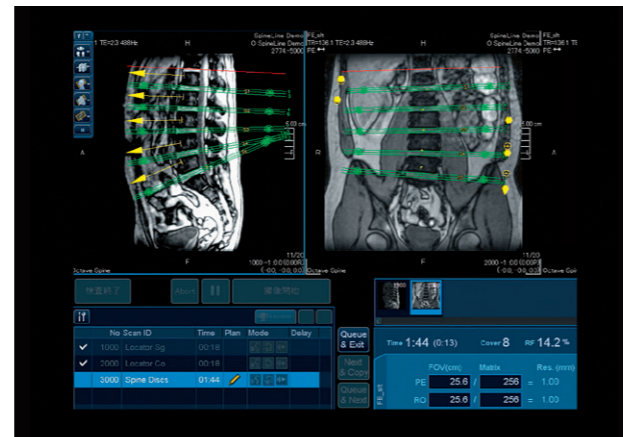
## NeuroLine+

Achieve outstanding scan consistency for all your brain exams with NeuroLine+. The function's intelligent alignment algorithm allows you to automatically set up according to AC-PC and OM line.



## SpineLine

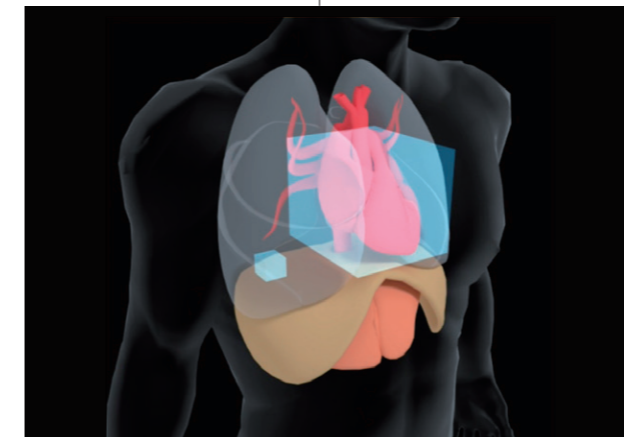
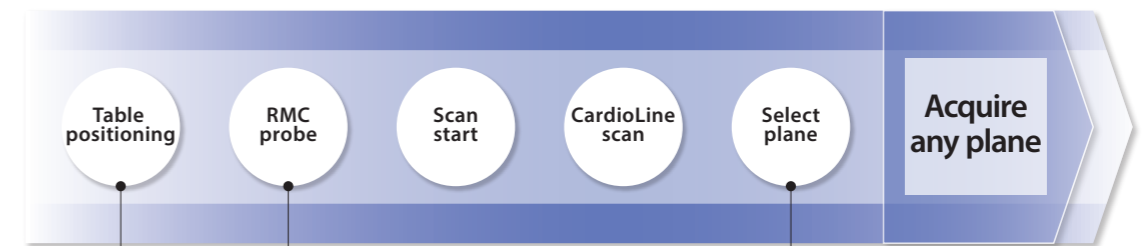
With its auto-locator functionality, SpineLine allows you to plan spine studies quickly and easily. Sagittal and coronal locators allow you to set double-oblique slices, enhancing the reproducibility of follow-up exams.



[global-madeforlife.com/spine.html](http://global-madeforlife.com/spine.html)

## Fast, high-quality cardiac exams

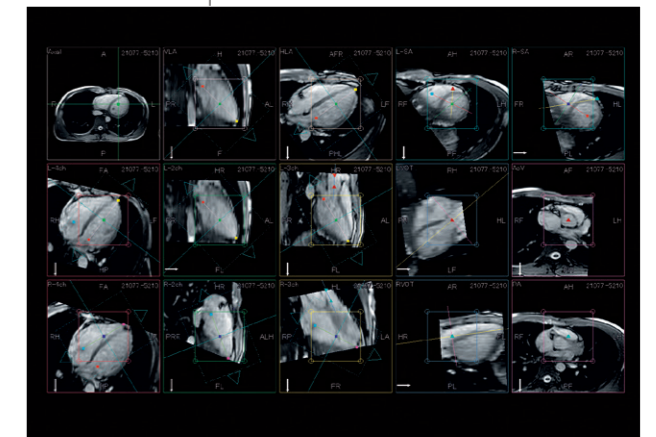
SUREVOI™ Cardiac and CardioLine+ allow you to significantly reduce the scan time and increase throughput. Challenging cardiac examinations can now be performed as part of your daily routine.



## SUREVOI Cardiac

Automatic detection of heart and liver with a non-rigid model allows for full workflow automation from table positioning to the Real-time Motion Correction (RMC), probe placement and fully automated cardiac planning.

[global-madeforlife.com/surevoi.html](http://global-madeforlife.com/surevoi.html)



## CardioLine+

CardioLine+ automatically identifies the 14 standard cardiac planes including right and left ventricle, as well as the four cardiac valves in a single breath-hold scan.

*"From the time we started the cardiac MRI program at St. Mary's, Toshiba Medical's CardioLine technology has made a significant impact," said Dr. Erick Avelar, medical director, Cardiac MRI and CT, St. Mary's Health Care System, GA, USA. "The system reduces cardiac plane scanning time from ten minutes to one, and decreases breath hold time, which is frequently a challenge when scanning cardiac patients."*



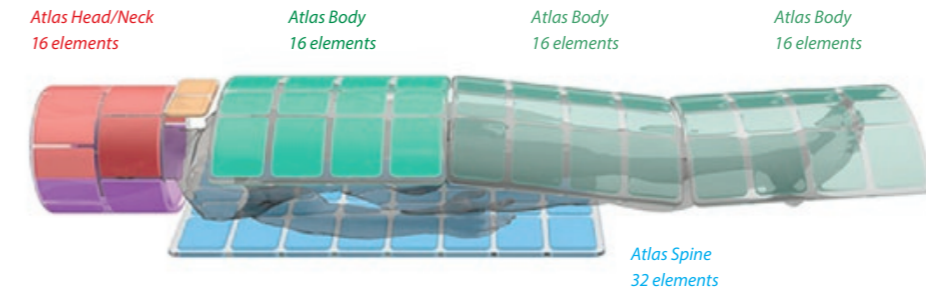
# Atlas SPEEDER technology empowers the technologist

Atlas SPEEDER™ coil technology utilizes a unique combination of smaller elements, which deliver a higher SNR, and larger elements which provide greater penetration. With up to 128 connected elements at one time, most body types can be feasibly covered in a single setup.



## Integrated workflow solution

Atlas SPEEDER coils are uniquely designed to improve workflow and patient comfort. Vantage Titan easily handles multiple studies by allowing you to position the patient and utilize the coils you need in one easy step.



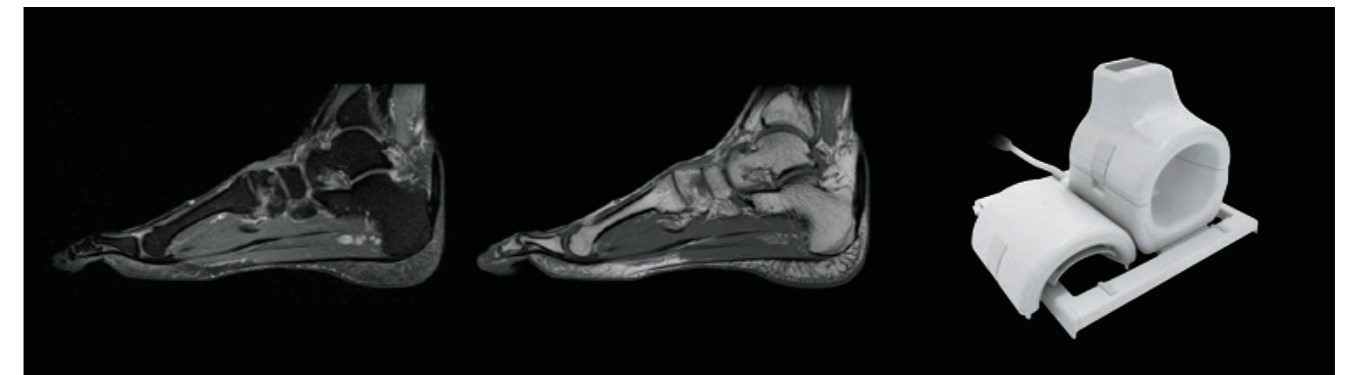
## 16ch Tx/Rx Knee SPEEDER

The 16ch Tx/Rx Knee SPEEDER coil is uniquely designed for streamlined workflow and patient comfort. Ease of positioning for this coil allows researchers, technologists, and radiologists to get set up with minimal hassle. The coil design also allows you to acquire different anatomies such as knee, wrist, hand and forefoot.



## Knee/ Foot SPEEDER

Knee, foot and ankle imaging are available by utilizing the different attachment. This coil provides easy patient set up and enhanced workflow for knee foot and ankle examinations with FOV up to 30 cm while maintaining a high signal level and good homogeneity.





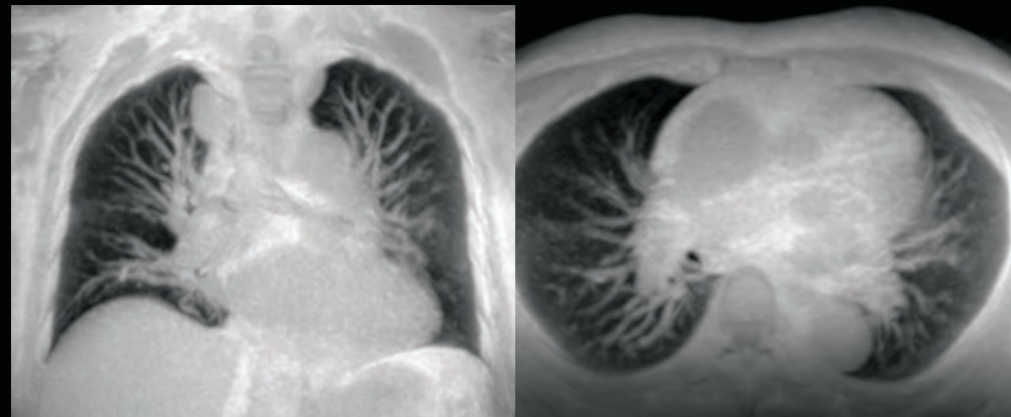
# A complete clinical solution for you and your patients

Vantage Titan allows you to expand patient access by offering a wide range of diagnostic solutions through high-end applications such as UTE imaging.



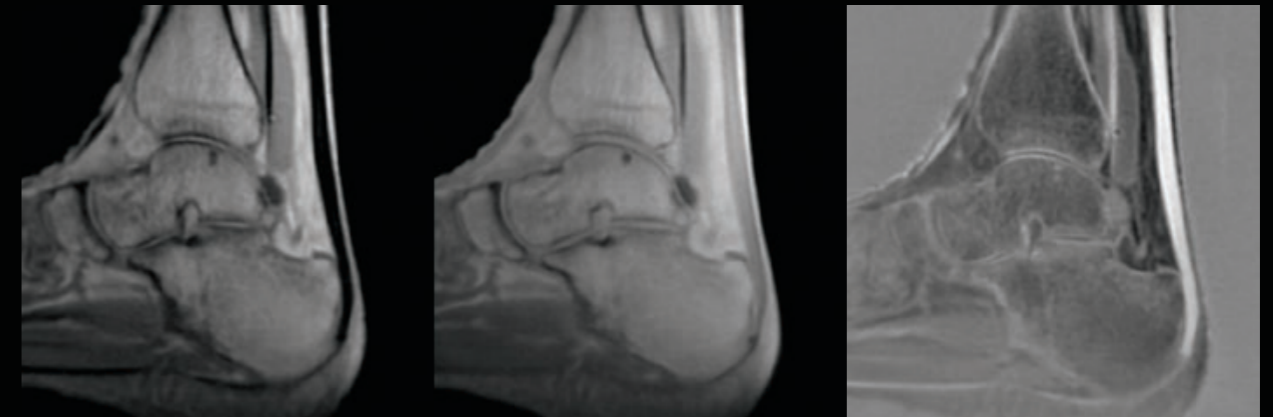
## Ultrashort Echo Time (UTE)

Allows clinicians to capture images in tissues that generally disappear too quickly for accurate MR imaging. This enables imaging of anatomy such as the lungs, helping providers obtain information to diagnose and treat their patients.



## UTE imaging on MSK

Allows clinicians to evaluate structures with very short echo times such as connective tissue, fibrosis, and osteochondral unions. Most important amongst these structures are connective tissues and their derivatives (such as tendons, meniscus, ligaments, and osteochondral structures).



# Taking cardiac imaging to new heights

Vantage Titan offers comprehensive applications for cardiac examinations such as MOLLI, PSIR, and T2\* mapping, to help cardiologists and radiologists improve their workflow and patient comfort.

Vantage Titan

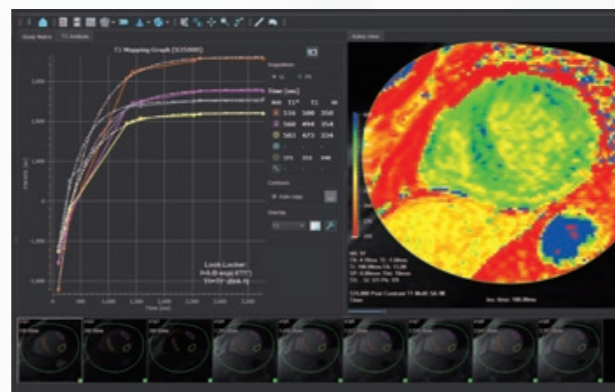
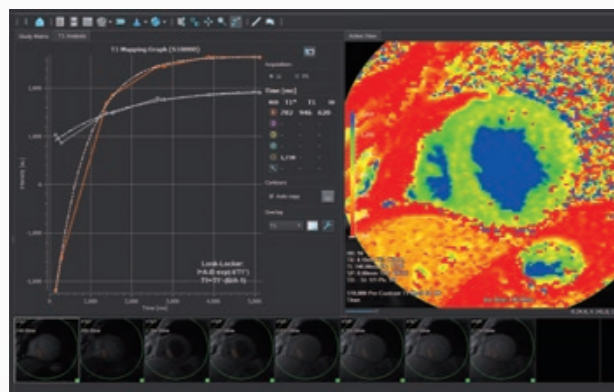
TOSHIBA



## MOLLI MODified Look-Locker Inversion recovery

Expand your cardiac toolset with T1 mapping, allowing you to acquire a much more quantitative characterization of myocardial tissue. Toshiba Medical's T1 mapping utilizes a MOLLI sequence, enabling the acquisition of a full T1 map within a single breath hold.

Post-processed by Vitrea™/Medis

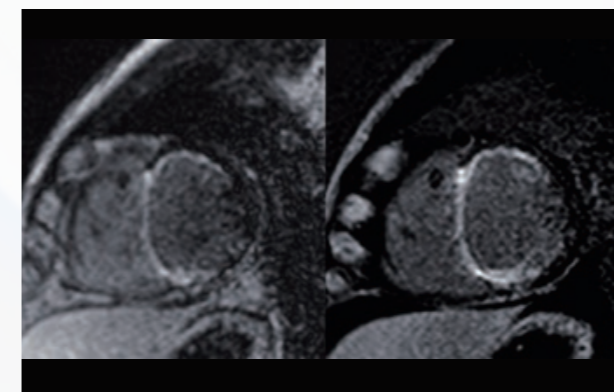


Courtesy of Instituto do Coração

## PSIR Phase Sensitive Inversion Recovery

PSIR in the heart provides improved contrast in late-enhanced imaging by using a more robust nulling of healthy myocardial signal without the need for an inversion time (TI) calibration scan. By eliminating the need for calibration, cardiac examinations can be completed with fewer breath holds and greater patient comfort.

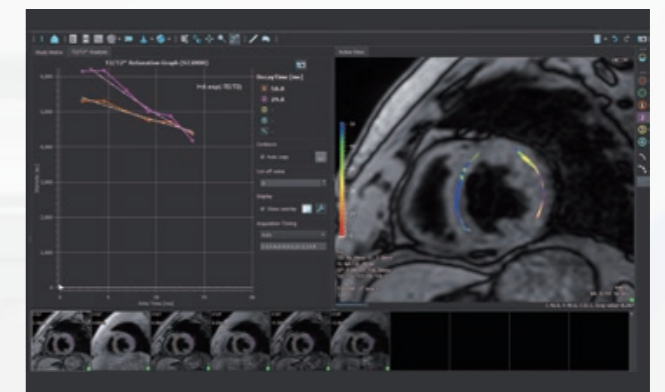
Left : Delayed Enhancement, Right : PSIR



## T2\* mapping

Take your cardiac workflow one step further with T2\* mapping. By utilizing Toshiba Medical's updated FFE2D mEcho sequence, T2\* maps can be used in the quantification and analysis of myocardial iron overload.

Post-processed by Vitrea/Medis



Courtesy of Instituto do Coração

# Workflow-driven applications Making your work easier

Toshiba Medical provides an advanced image processing environment that is designed to work in the most effective way with Vantage Titan. Olea advanced image processing technologies are available through the Vitrea workstation.



## Vitrea multi-modality workstation

The Vitrea workstation is the foundation of Toshiba Medical's advanced visualization. It includes 2D, 3D and 4D viewing with stitching and subtraction, 3D analysis for vascular and organ post-processing along with basic export and reporting tools.

## MR advanced applications

The advanced applications provide access to enhanced clinical routine tools including Diffusion, Perfusion, Curve Kinetics with streamlined application workflows for a variety of target organs.

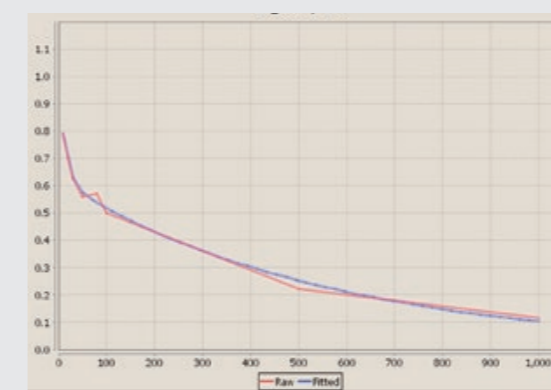
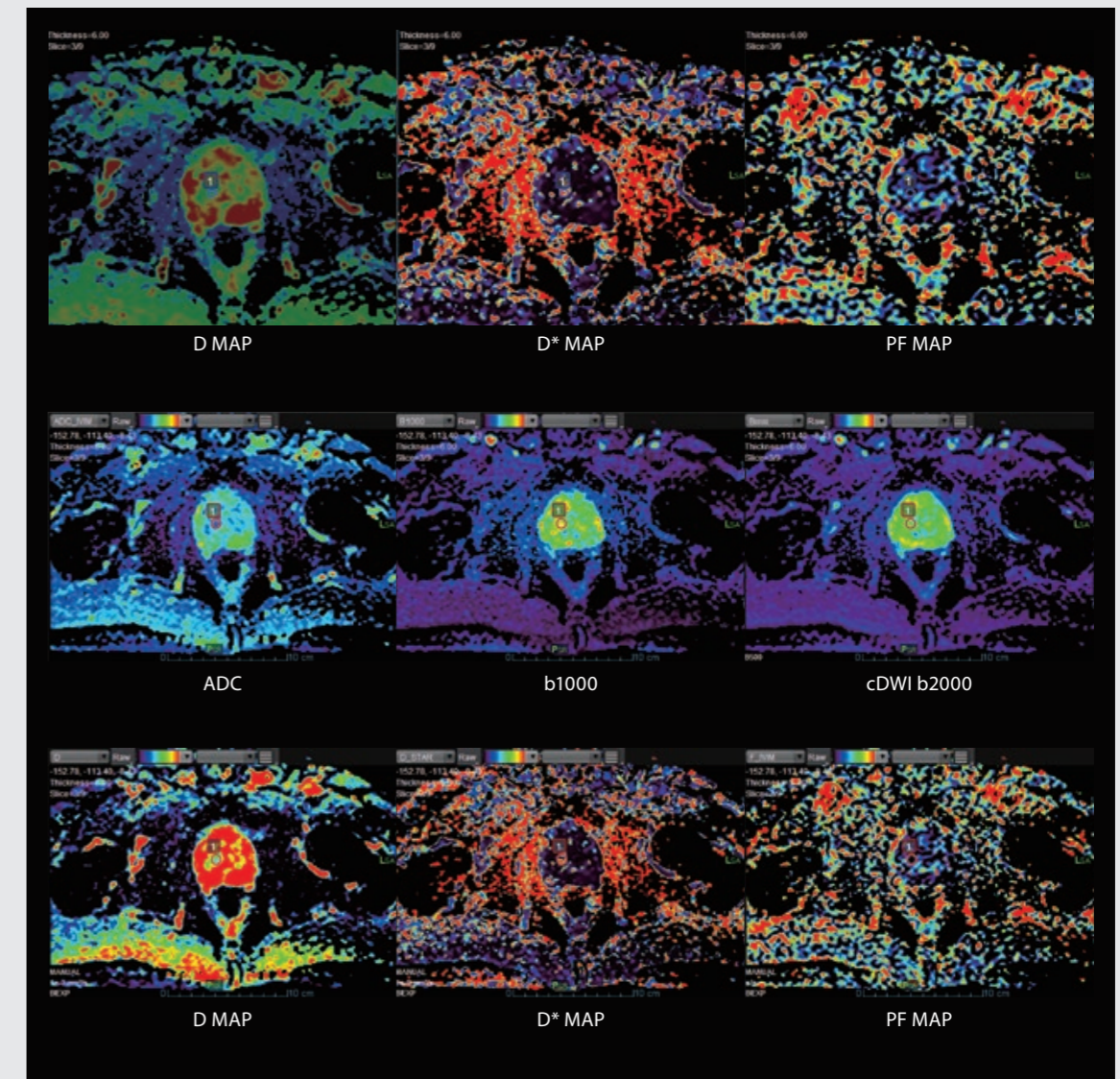
## MR Expert packages

The MR Expert packages provide access to the latest and most advanced tools and application to expert users for a wide variety of neuro, cardiac, orthopedic and body examinations.

## IVIM

Intravoxel incoherent motion (IVIM), as provided by Olea, allows for the separation of perfusion and diffusion from diffusion weighted imaging (DWI) exams using multiple b-values.

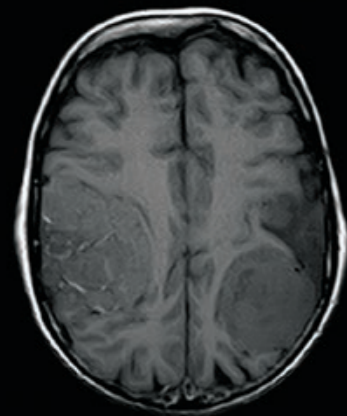
Using IVIM, physicians have an additional tool in the quantitative assessment of lesions in regions such as liver and prostate.



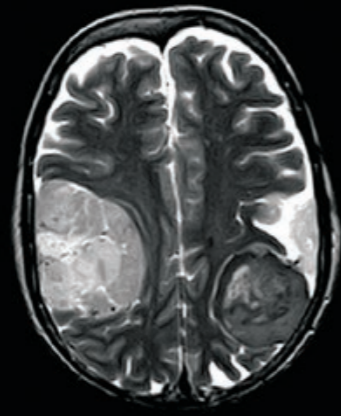
Voxels inside the lesion presents a bi-exponential behavior, confirming the presence of both diffusional and perfusional components of IVIM imaging.

# Brain

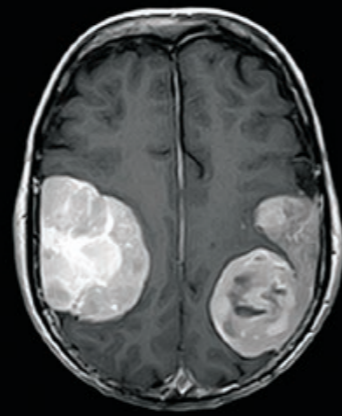
Head



Ax T1

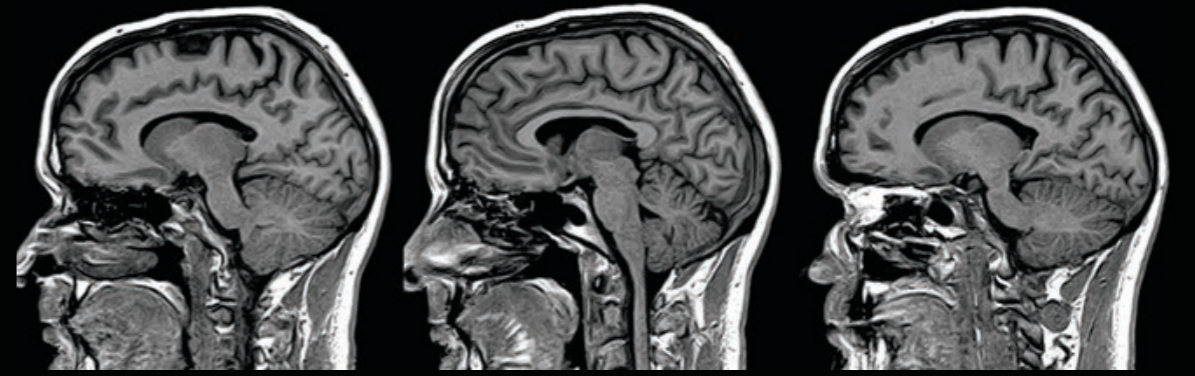


Ax T2



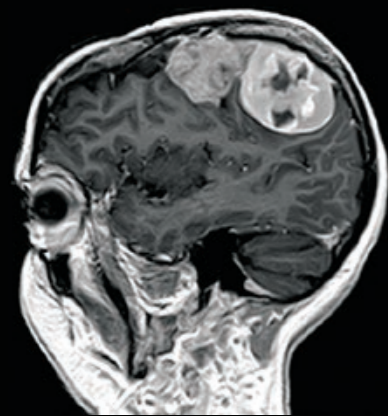
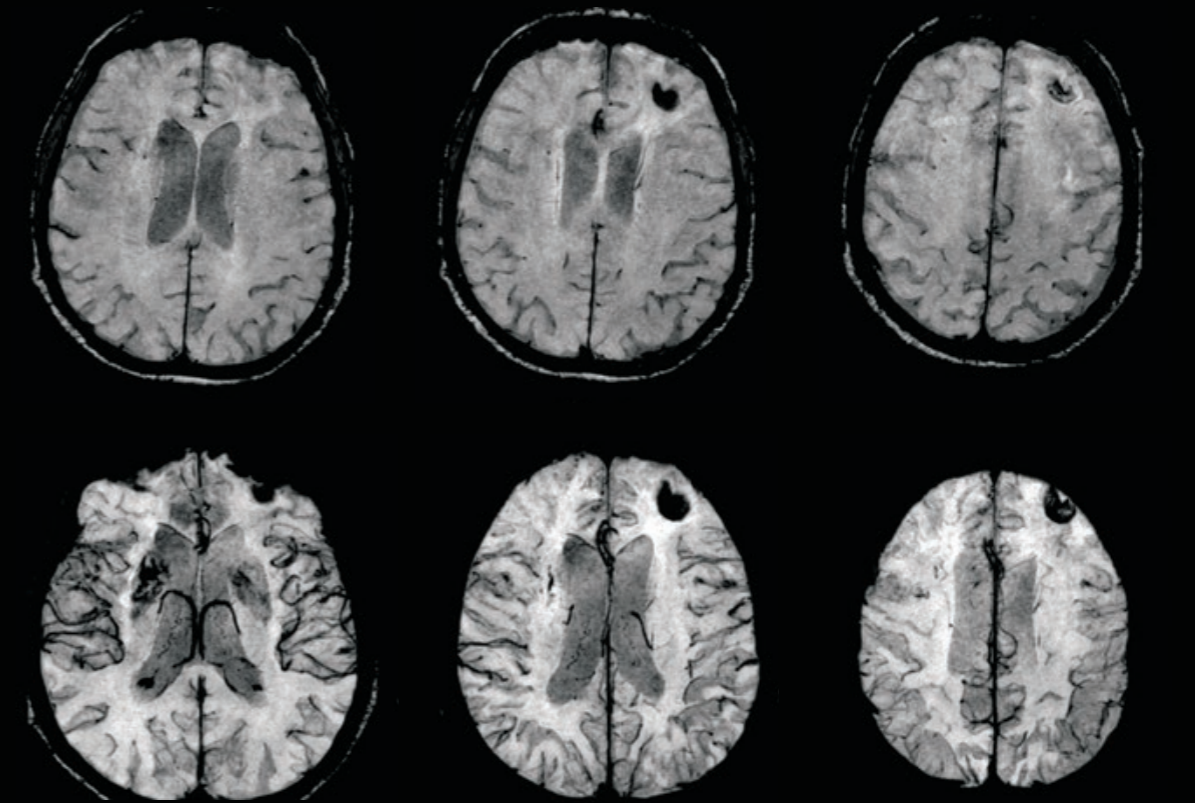
Ax T1 Gadolinium

MPRAGE

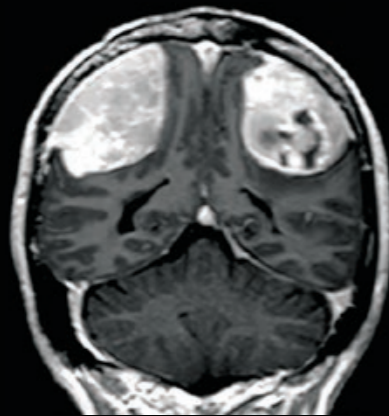


Sg 3D T1 MPRAGE 1 mm isotropic

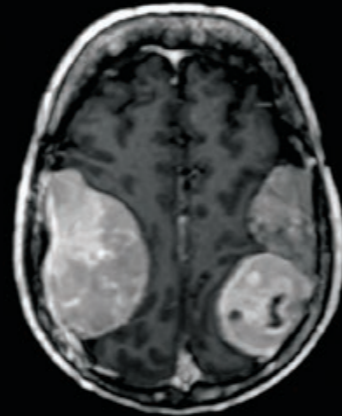
eFSBB



Sg 3D T1 MPRAGE



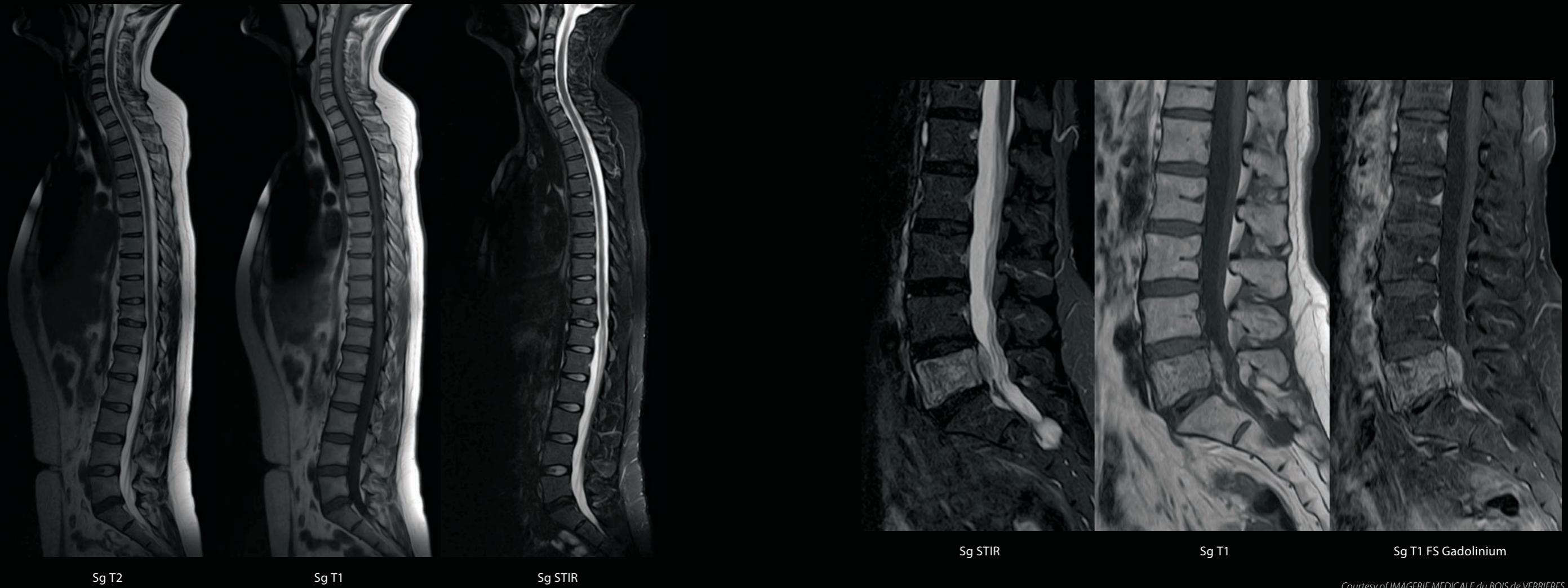
Co reformat



Ax reformat

Courtesy of IMAGERIE MEDICALE du BOIS de VERRIERES

# Spine

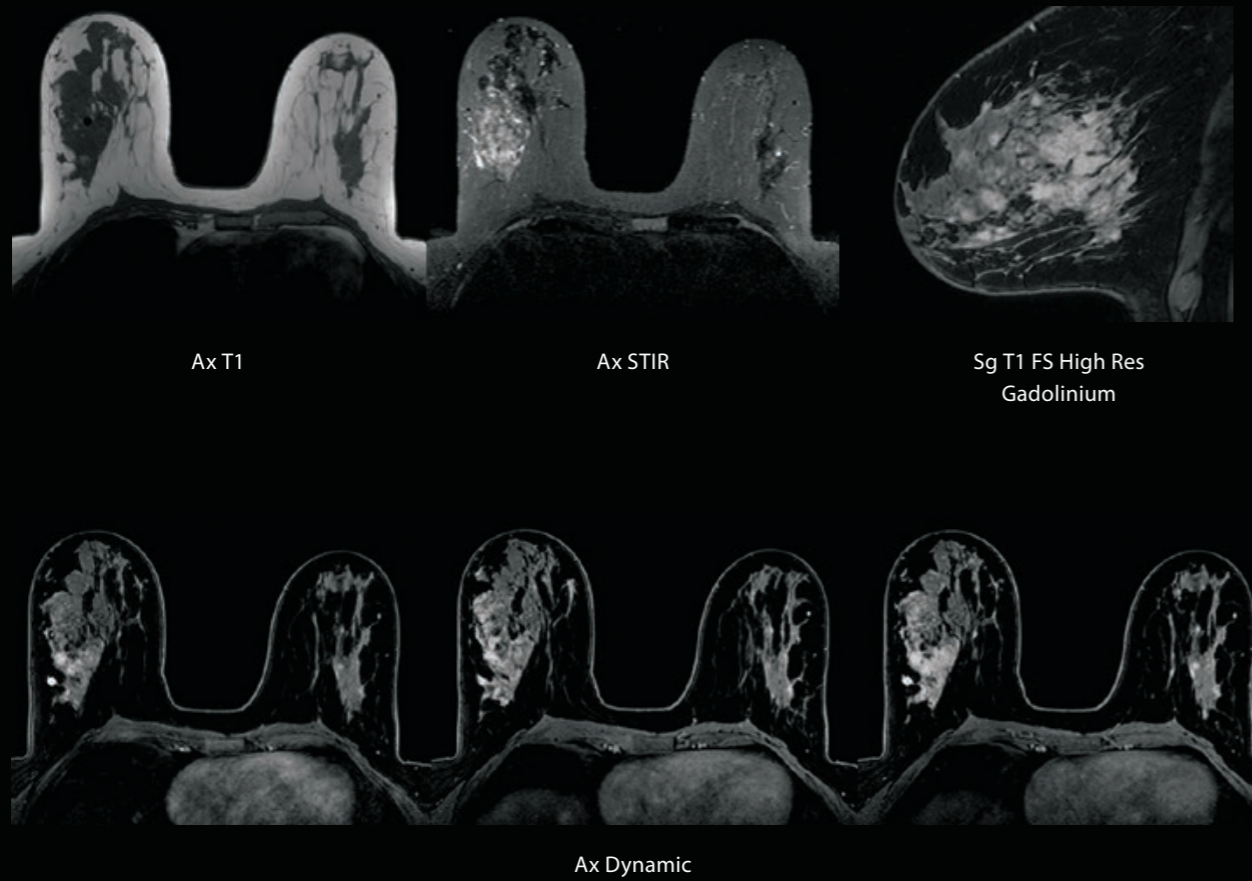


*Courtesy of IMAGERIE MEDICALE du BOIS de VERRIERES*

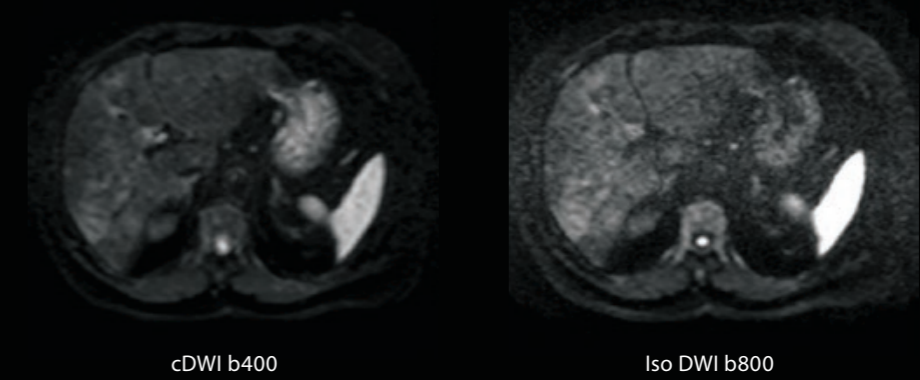
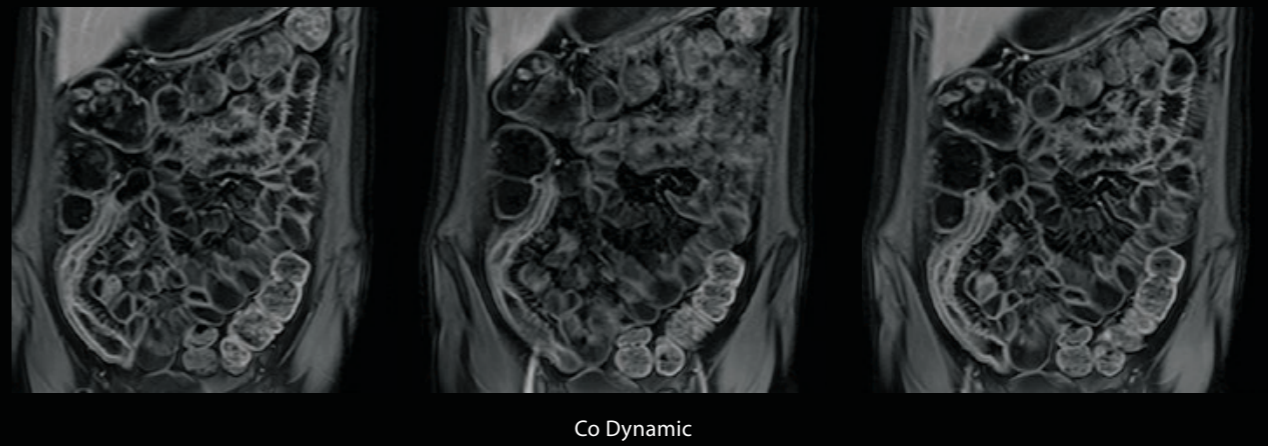
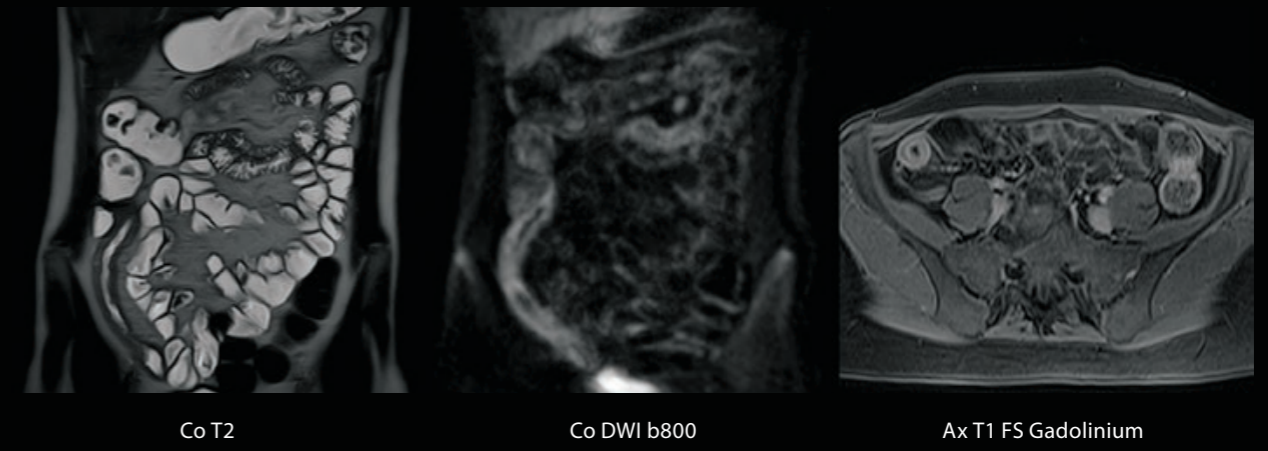
Whole spine imaging in 2 steps using automatic stitching

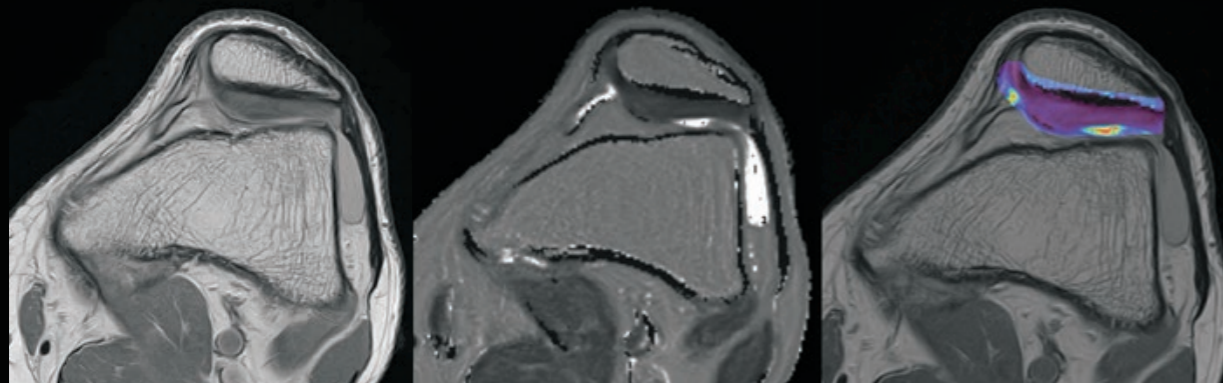
# Breast

# Abdomen



Courtesy of IMAGERIE MEDICALE du BOIS de VERRIERES

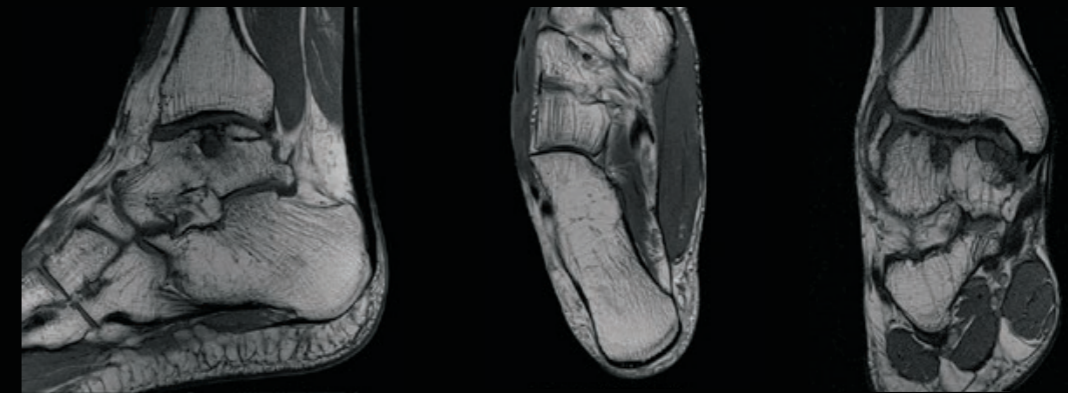




Ax SE PD

Ax SE T2 map

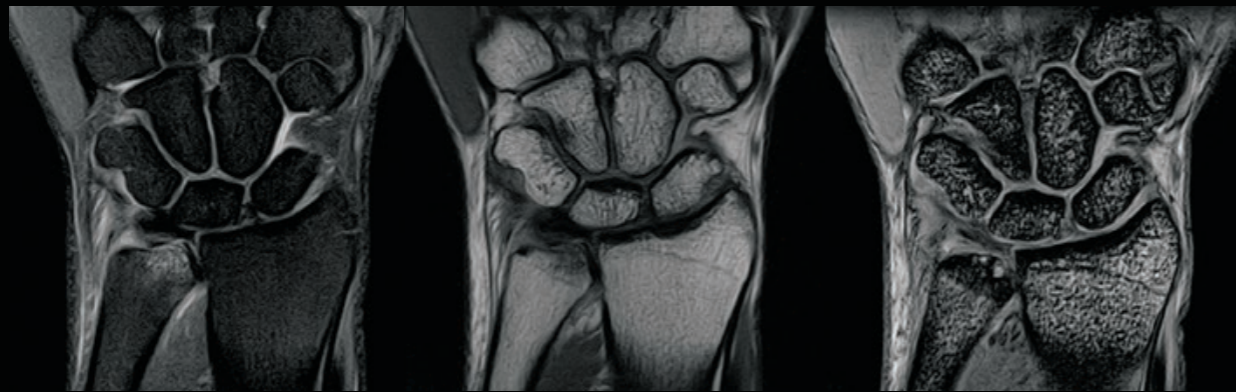
Color fusion map



Sg T1

Ax PD

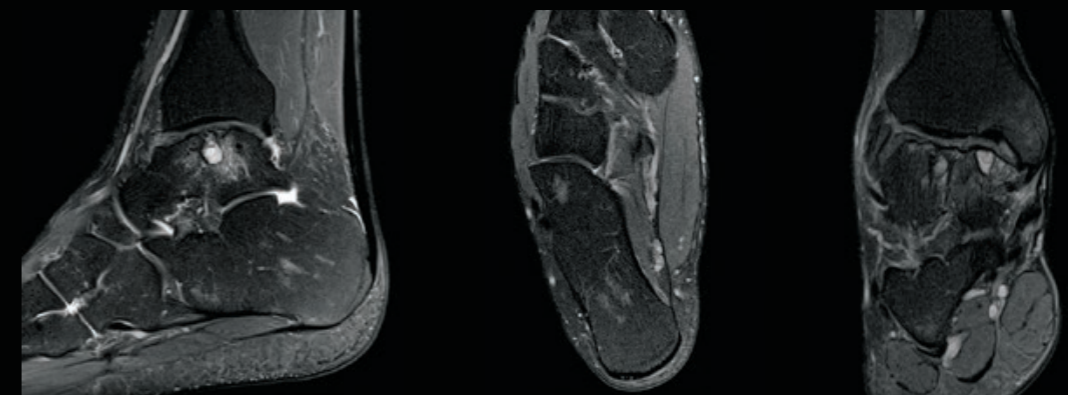
Co T1



Co PD FS

Co PD

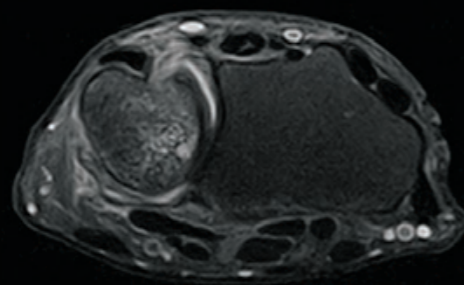
Co T2\*



Sg PD FS

Ax PD FS

Co PD FS

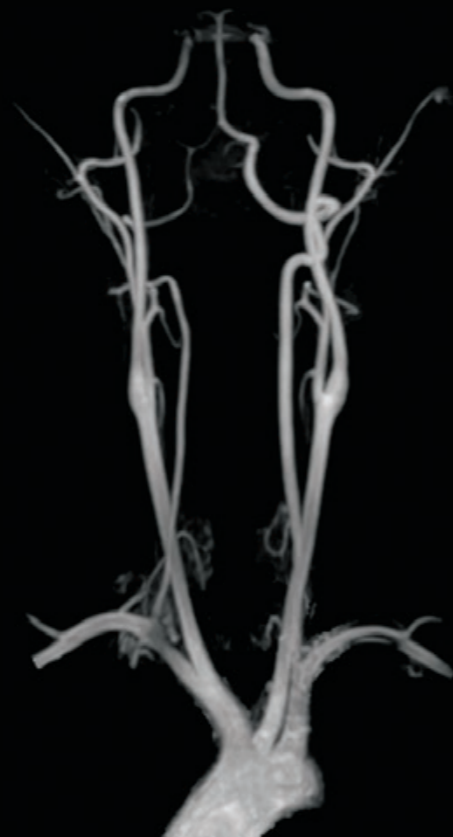


Ax PD FS

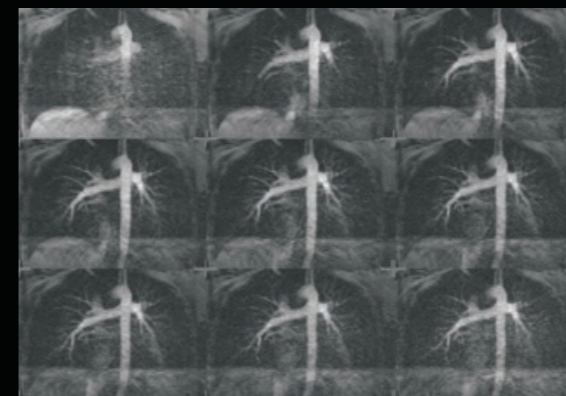
# Non-contrast



3D TOF



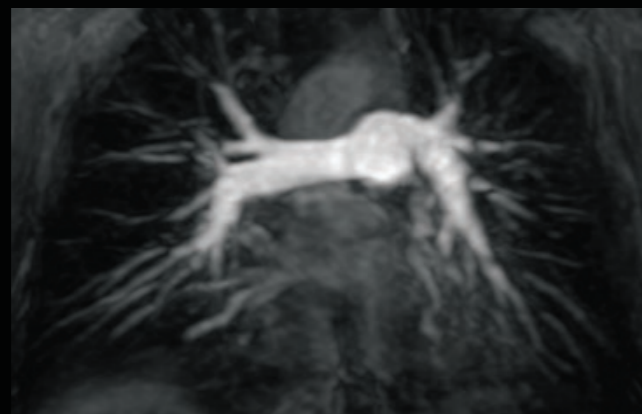
Time SLIP



mASTAR Co FFE 3D 9 Phases



MIP Phase 1+2+3+4+5+6+7+8+9



Time SLIP



Time SLIP



FS-FBI



**Disclaimer:** Some features presented in this brochure may not be commercially available on all systems shown or may require the purchase of additional options. Please contact your local Toshiba Medical representative for details.

# *Vantage Titan*

## **TOSHIBA MEDICAL SYSTEMS CORPORATION**

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Toshiba Medical Systems Corporation Nasu Operations meets the Environmental Management System standard ISO 14001.

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