Embrace human nature at 3T
MAGNETOM Vida with BioMatrix
usa.siemens.com/vida
Our journey to precision medicine

The world’s population will grow by 30% to 9.6 billion by 2050, with life expectancy increasing by 10%\(^1\). A higher number of ill patients and chronic disease cases will lead to greater cost pressure on healthcare systems. Each patient, as well as his or her disease state, is different and an individualized treatment path is necessary.

The future of healthcare can be precision medicine: the right treatment for any patient, anytime, and anywhere.

In order to pave the way for precision medicine in MRI, one of the greatest challenges—the variability of the patient population—needs to be addressed. Only by overcoming the challenge of patient variability can healthcare institutions provide standardized results.

Standardization means that robust, consistent results are made available, aiding in diagnosis. In the future, this will enable treatment response assessment through quantitative tissue characterization.

Only then can providers deliver individualized therapy guidance, as well as predict survival and prognosis. MRI will play a major role in this context.

“MAGNETOM Vida and BioMatrix will help our customers achieve fewer rescans, predictable scheduling, and consistent, high-quality personalized examination results. This is just the beginning of where we can go with the technology; we will continue to develop it further to help foster a new era in precision medicine.”

Christoph Zindel, MD
Senior Vice President, General Manager
Magnetic Resonance, Siemens Healthineers
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Embrace human nature with BioMatrix

Patients have unique characteristics. Different physiologies and anatomies—but also the way we interact with them and technology—cause unwanted variability in MRI exams.

These unique human characteristics, or bio-variabilities, present a challenge and are a source of errors, rescans, and inefficiencies when it comes to MR imaging. This intrinsic patient variability needs to be addressed in order to truly personalize MRI, and pave the way toward precision medicine. To turn this challenge into an opportunity, we must think differently. Instead of adapting human variability to technology, we must adapt technology to humans. We do this by embracing their individual nature—with BioMatrix Technology.

“To provide our patients with individual therapies, we need every piece of information available. In imaging, this means we need robust, standardized, and reproducible image data, always of the same quality regardless of the patient or user. MAGNETOM Vida with BioMatrix Technology gives us this data quality and comprehensive image information and is helping us on our way to quantitative radiology.”

Professor Konstantin Nikolaou, MD
University Hospital Tübingen, Germany
Anticipate challenges before they happen with BioMatrix Sensors.

Adapt to all patients, even critical ones, with BioMatrix Tuners.

Accelerate workflows while increasing quality of care with BioMatrix Interfaces.
BioMatrix Sensors capture physiological characteristics of the patient, allowing users to anticipate challenging situations before they arise. New ultra-high-density BioMatrix coils utilize seamlessly integrated sensors to acquire and display the patient’s respiration data automatically. Knowing the breathing capacity of a patient enables the user to choose the optimal exam strategy right from the beginning. This information can also be used to actively trigger sequences—combining a streamlined workflow with excellent results.

usa.siemens.com/BioMatrix-Sensors

See how they work
Display of patient’s respiration data, acquired by BioMatrix Sensors.

Sensors integrated directly into the spine coil measure the patient’s respiratory curve in the head-first and feet-first positions. This data helps identify potential challenges so that the exam strategy can be adapted. The signal can also be used for respiratory triggering (see images below).

Excellent quality results without having to set up a respiratory belt or perform extra measurements utilizing navigators.


Adapt to all patients, even critical ones, with BioMatrix Tuners

BioMatrix Tuners use CoilShim and SliceAdjust technologies to adapt to challenging anatomical regions. This enables robust and reproducible high-quality imaging for all patients.

CoilShim technology, integrated into the new BioMatrix Head/Neck coils, reduces repeat scans by delivering significantly improved fat saturation and better DWI quality in the head/neck region. SliceAdjust provides reliable and distortion-free whole-body DWI scans.

Additional shim elements integrated directly into the BioMatrix Head/Neck coil perform region-specific shimming for a more homogeneous B0 field in the challenging head/neck region.

usa.siemens.com/BioMatrix-Tuners

See how they work
CoilShim

SliceAdjust

1st volume shim

2nd volume shim

3rd volume shim

Conventional Volume Adjust

New SliceAdjust
Accelerate workflows while increasing quality of care with BioMatrix Interfaces

BioMatrix Interfaces simplify how the user interacts with the MRI scanner, as well as the patient. With one-touch positioning, integrated on the new Select&GO screen, and the underlying BioMatrix BodyModel, patients can be positioned 30% faster. The user simply selects the region or organ to be scanned with one touch and the MRI scanner takes care of the rest by reliably positioning the patient.

eDrive support in the BioMatrix patient table provides motorized assistance so that even the heaviest patient can be moved effortlessly to and from the scanner.

usa.siemens.com/
BioMatrix-Interfaces

See how they work
Simplify and accelerate patient set up and transportation with BioMatrix Interfaces and eDrive support.

Fast and easy positioning with the Select&GO display.
Embrace human nature at 3T with MAGNETOM Vida

The increasing number of exams, their complexity, and cost pressure are presenting challenges in MRI. 3T MRI needs to better handle patient variability, deliver robust results for all patient types, and become more cost-effective. MAGNETOM Vida, the first MRI scanner with BioMatrix Technology, is equipped to master the challenges facing MRI today. 3T MRI with BioMatrix meets these needs with fewer rescans, predictable patient scheduling, and consistent, high-quality personalized exams.
Embrace human nature at 3T with MAGNETOM Vida and BioMatrix

**Embrace full 3T performance**
- An all-new exceptional 3T magnet design with a large 55 x 55 x 50 cm³ Field of View and the siting requirements of a conventional 70 cm 3T MRI scanner
- Up to 60/200 XT gradients for up to 25% higher SNR² for diffusion-weighted imaging
- Unifying 3T performance, patient comfort, and cost efficiency with 30% lower energy consumption than the industry average²

**Embrace true 3T productivity**
- Select&GO for easy, fast, and reproducible patient positioning
- DotGO protocol management and intelligent scan automation for high consistency and robustness
- Recon&GO automated inline reconstruction for fast preparation of scan results
- MR View&GO viewing and postprocessing capabilities make cases ready-to-read

**Embrace new 3T clinical capabilities**
- Enable free-breathing dynamic liver exams for patients who cannot reliably hold their breath with Compressed Sensing GRASP-VIBE®
- Enable cardiac exams under free breathing, capturing the full cardiac MRI picture, even for severely ill patients
- Perform whole-body MRI exams reliably and predictably in just 25 minutes³

¹510(k) pending.
The world’s first BioMatrix system
3T MRI is synonymous with high-performance clinical MRI, as well as research. With 3T MRI, the expectation is to push and redefine the limits of what is possible in diagnostic imaging. It will set you apart by serving your specific clinical needs and help distinguish your institute as a center of clinical excellence. MAGNETOM Vida exceeds the level of performance for which 3T MRI was designed with unparalleled magnet and gradient power to support the clinical, operational, and financial requirements MRI is facing today.

**Embrace full 3T performance**
Embrace full 3T performance with unparalleled magnet and gradient power

An exceptional 3T magnet design

The foundation of MAGNETOM Vida is an all-new exceptional 3T magnet that incorporates aspects of Siemens Healthineers’ ultra-high-field research scanners. MAGNETOM Vida delivers not only a large Field of View, but also excellent homogeneity throughout the entire measurement volume. The result: robust and reliable fat saturation throughout the entire imaging volume, especially important in abdominal or off-center applications. Large Field of View applications and long-bone imaging will also profit from this.

A new level of gradient power

MAGNETOM Vida distinguishes itself with a gradient strength of up to 60/200 simultaneously, powered by the strongest gradient amplifiers with up to 2.7 MW per axis. It offers the power previously only available on 3T research scanners, now in a patient-friendly 70 cm scanner. Clinical, as well as research MRI applications such as diffusion-weighted imaging, benefit greatly from powerful gradients through the increased SNR—up to 25% more than with conventional gradient systems—as well as increased scan efficiency.

Ensure long-term frequency stability with Frequalizers

Demanding applications can induce temperature changes, leading to center frequency shifts and decreased image quality. To avoid this, an array of temperature sensors ensures stability throughout the entire measurement. The benefit: the scanner always stays on resonance. This ensures higher consistency and reproducibility of results, especially when it comes to follow-up exams.
“MAGNETOM Vida brings the performance of a true research system—large Field of View and very strong gradients and combines it with a 70 cm bore which is, of course, more comfortable for patients.”

Professor Mike Notohamiprodjo, MD
University Hospital Tübingen, Germany
BioMatrix: a paradigm shift in MRI to sense patient respiration prior to scanning, to adjust to any patient’s body, and to simplify and speed up challenging interactions.

**BioMatrix Technology**

**A new technology that taps 3T’s full potential with ease**

BioMatrix Technology combines the power of Siemens Healthineers’ unique Tim 4G architecture with the ability to embrace the individual nature of each patient, and overcomes the challenge of biovariability. BioMatrix Sensors capture patient respiration data prior to scanning. BioMatrix Tuners adjust to the patient’s body, even for regions that are difficult to scan. BioMatrix Interfaces simplify patient handling, independent of patient mobility and scan region.
GPU-accelerated Inline Compressed Sensing

MAGNETOM Vida redefines 3T performance with a new reconstruction architecture that brings Compressed Sensing applications into the clinical routine, enabling you to access patient groups previously excluded from MRI. High-quality images based on substantially undersampled data allow for much faster acquisitions, enabling free-breathing exams in cardiac and abdominal MRI. A powerful reconstruction engine employing parallel GPU computing delivers five times faster4 reconstructions of complex compressed sensing data sets, finally making it viable in the clinical routine.

Optimizing Total Cost of Ownership

Effective energy management ensures that the exceptional performance of MAGNETOM Vida is provided in a resource-friendly manner. Intelligent power management solutions, such as magnet cold head EcoPower or disabling of power-consuming components during scan breaks, contribute to overall energy savings of up to 30% compared to the industry average (COCIR average of MRI vendors5). This makes MAGNETOM Vida the most energy efficient MRI scanner in its class. In addition, MAGNETOM Vida reduces costs even further; additional construction costs are avoided since siting requirements are the same as for conventional 70 cm 3T systems.

Compressed Sensing for free-breathing exams.

Parallel GPU computing delivers 5 times faster and fully inline reconstruction.
BioMatrix Coils: a new generation of ultra-high-density coils that offer more accuracy, flexibility, and speed.

The BioMatrix Spine 32 RS and BioMatrix Spine 72 RS utilize seamlessly integrated BioMatrix Sensors to acquire and display the patient’s respiration data without the need for user interaction.

The integrated CoilShim technology in the BioMatrix Head/Neck 20 and BioMatrix Head/Neck 64 ensures that the challenging head/neck region is automatically and optimally shimmed for reproducible quality in every patient.
New ultra-high element density coils with patient adaptive design.

For orthopedic applications, the new Shoulder Shape 16 and the new Tx/Rx Knee 18 deliver greater flexibility to accommodate larger patients through their anthropomorphic design.

The new UltraFlex 18 Large and UltraFlex 18 Small combine ultra-high coil element density with high flexibility for multipurpose imaging. Compared to the standard 4-channel flex coils, resolution can be increased and acquisition can be accelerated by up to 54%.

The new design of the Breast BI 7 allows all coil elements to be included in the exam for uncompromised image quality—even during a biopsy. It provides a better and more homogeneous distribution of SNR than conventional 8-channel breast coils. To aid the biopsy procedure, user-friendly features like LED lighting make the coil easy to use.
Two monitors enable a comprehensive overview of the scanning. Clever interactions and automation steps make the job easier.
A new user environment

With its full 3T performance, MAGNETOM Vida offers a new workspace for technicians. Evolving from the proven syngo MR E11 platform, the new syngo MR XA10 offers a dual-monitor scanning workplace with larger monitors and a reorganized user interface for a more comfortable scanning and viewing experience.

This dual-monitor setup with separate scan and viewing monitors provides a more natural layout, offering the technician a complete overview of the examination and results. The new user interface reduces constant context switches and user distraction, enabling true multitasking for increased quality and productivity.
For routine MRI exams, such as neuro or orthopedic exams, the most challenging developments for customers are reimbursement pressure and a substantial increase in patient referrals due to changing demographics. This forces imaging providers to shorten exam slot assignments, increasing the risk that any unpredictable event may lead to scheduling delays as well as personnel and patient frustration.

MAGNETOM Vida, with syngo MR XA10 and the new GO technologies, embraces true 3T productivity and makes push-button exams a clinical reality, by addressing the complete workflow, from patient positioning to result distribution.
Embrace true 3T productivity with GO technologies

Preparation with Select&GO.

Touch panels with the intelligent BioMatrix BodyModel.
GO technologies accelerate workflow beyond scan time reduction, enabling higher throughput and robustness in clinical routine. They consist of four main components, each contributing to a specific aspect of workflow optimization.

**Acquisition** with DotGO.
Easy protocol management with the Dot Cockpit; consistent and reproducible imaging with Dot engines.

**Reconstruction** with Recon&GO.
Multiple Inline functions facilitate useful preprocessing in the background.

**Distribution** with MR View&GO.
All-in-one viewing, quality control, advanced processing, and result distribution.

Productivity is further enhanced with BioMatrix Technology, which overcomes the challenge of patient and user variability, enabling fewer rescans, predictable scheduling, and consistent, high-quality personalized exams.
This multistep approach makes routine imaging simple and fluid, even for challenging patient conditions. GO and BioMatrix technologies enable push-button routine exams, while delivering high-quality images in less time.

Spine exams can pose a challenge as a result of varying anatomies, such as scoliosis and kyphosis. This can often cause delays and lead to diminished image quality.

**Preparation with Select&GO**

BioMatrix Select&GO enables exam positioning with one touch on the display—by anyone, on any patient. The intelligent body model will correctly center the region to be examined, allowing support staff to set up the patient while the technician prepares the scan.

**Acquisition with DotGO**

An intuitive Dot workflow with automatic placement of the imaging slices (e.g., using AutoAlign Spine) turns whole-spine imaging into a push-button exam. User guidance and scan assistance save time. New technologies such as CoilTilt and CoilShim reduce the need for rescans in the critical head/neck region.
Reconstruction with Recon&GO

Recon&GO automatically performs postprocessing steps in the background. For example, vertebrae in the sagittal, axial, and coronal views are automatically labeled in all contrasts with Inline Spine Labeling, multi-station exams are composed, and Inline MPRs can be calculated without user interaction.

Distribution with MR View&GO

Dual screens allow the user to control scans on the left monitor while checking the results on the right monitor in real time. Steps such as generating computed high b-value images or 3D reconstructions of the plexus can be performed easily right at the scanner.

20% faster spine exams

Total workflow for whole-spine exam (in minutes)

<table>
<thead>
<tr>
<th></th>
<th>Conventional system</th>
<th>MAGNETOM Vida</th>
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<tbody>
<tr>
<td>Total workflow</td>
<td>30</td>
<td>24</td>
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20% faster spine exams
MAGNETOM Vida will help institutions gain access to patients previously excluded from MRI because of their medical condition or the exam’s prohibitively complicated nature.

Advanced MR imaging techniques like cardiac MRI or whole-body MRI provide key information for earlier treatment decisions. To make them a reliable clinical reality, technical as well as user- and patient-dependent challenges have to be met. With its patient-focused technologies and Inline Compressed Sensing applications, MAGNETOM Vida turns challenges into opportunities.
**Embrace new 3T clinical capabilities with Inline Compressed Sensing**

Expand the population eligible for MRI with free-breathing exams to care for patients previously excluded from MRI. Compressed Sensing can eliminate barriers by accelerating imaging, typically by a factor of 10, and can help enable abdominal and cardiac MRI for challenging patients. Dynamic liver perfusion can now be performed under free breathing, making MRI accessible to patients who are unable to hold their breath*. Cardiac function evaluation can now be offered to all patients, even those with arrhythmia. Inline reconstruction enabled by a powerful GPU reconstruction architecture provides immediate access to the results, freeing the scanner for further use.

*Compressed Sensing GRASP-VIBE is 510(k) pending.
Compressed Sensing GRASP-VIBE*

Dynamic contrast-enhanced imaging is a key test to characterize liver lesions, but can be challenging for many patients because it requires them to hold their breath several times over a short period. For patients who cannot do this, the result is often a nondiagnostic image.

Compressed Sensing GRASP-VIBE enables push-button, free-breathing exams of liver dynamics with an extremely simplified workflow. An intelligent framework recognizes the relevant phases of liver dynamics automatically, and only the clinically relevant phases are reconstructed with automatic labeling (e.g., arterial phase). Reliable dynamic contrast-enhanced imaging can now be performed for patients previously excluded from MRI.

Compressed Sensing Cardiac Cine

MR cardiac function imaging is the gold standard for the diagnosis and prognosis of a variety of cardiac diseases, but it is time-consuming and requires a challenging number of breath holds. Image quality for patients with arrhythmia is particularly impaired.

Compressed Sensing Cardiac Cine provides image quality and resolution comparable to conventional CINE imaging in free breathing instead of 7–14 breath holds. In combination with leading applications for cardiac imaging, this enables free-breathing cardiac MRI exams in high quality.

*510(k) pending
Dynamic liver perfusion can now be performed under free breathing—making MRI accessible to critical patients with limited or no breath-hold capability, dementia, or hearing impairment.

**Compressed Sensing GRASP-VIBE**
- Push-button, free-breathing liver dynamics
- Removes timing challenges in dynamic imaging and respiratory artifacts
- Outperforms Cartesian VIBE acquisition under free breathing
- Ultra-high temporal resolution enables pharmacokinetic modeling of the data

*510(k) pending*
Conventional VIBE, free breathing
Enable free-breathing Cardiac MRI with our two new Cardiac applications—Compressed Sensing Cardiac Cine and Extended HeartFreeze—and expand the patient population eligible for Cardiac MRI.

**Compressed Sensing Cardiac Cine**
Cardiac function evaluation can now be offered to all patients—even those with arrhythmia.

- Acquire free-breathing, high-resolution Cardiac Cine images
- Capture the whole cardiac cycle for precise quantification
- Expand patient population eligible for Cardiac MRI

**Conventional Cardiac Cine**
Multiple breath holds

**Compressed Sensing Cardiac Cine**
Real-time, free-breathing with adaptive trigger

**Compressed Sensing Cardiac Cine**
Real-time, multi-slice, single breath hold with adaptive trigger
Extended HeartFreeze

Motion-robust, phase-sensitive inversion recovery imaging is now feasible under free breathing with Extended HeartFreeze.

“MAGNETOM Vida with Compressed Sensing Cardiac Cine and [Extended] HeartFreeze enables us to scan patients without breathing commands. We have compared the free breathing technology to a conventional breath hold approach and beyond time advantage, patients are more compliant and no diagnostic information is lost.”

Associate Professor Wolfgang Wüst, MD
University Hospital Erlangen, Germany
Whole-body MRI has been proven to have great potential in supporting the treatment of oncology patients. However, it is often seen as complex and difficult to perform since it covers multiple stages and requires a high skill level to be performed consistently and efficiently.

**Whole-body imaging:** Treatment and therapy guidelines are evolving just as fast as imaging technology. MRI has recently appeared in numerous guidelines around the world as the imaging modality of choice to answer a number of clinical questions.

MAGNETOM Vida with BioMatrix Technology opens up possibilities to serve new patient populations, enabling healthcare providers to efficiently perform reproducible follow-up exams for response assessment according to MET-RADS-P in patients with metastatic disease.

The new **Whole-Body Dot Engine** ensures highly reproducible exams and reduces planning and execution of complex whole-body studies to a few clicks in minimal and predictable time slots. Simply select which regions need to be measured and then configure a few patient-specific settings. AutoCoverage and AutoPositioning as part of the guided workflow ensure that all stages are consistent and overlap properly. Images are composed automatically once all data has been acquired.

Diffusion-weighted imaging (DWI) is a key component to whole-body imaging; however, it can be time-consuming and prone to anatomy-related artifacts. BioMatrix Tuners utilizing **SliceAdjust** make it possible to adapt shim parameters for individual slices rather than a global volume. The result: high-quality and reproducible diffusion imaging with excellent SNR, empowered by the strongest gradients in its class.

After acquiring the whole-body data, the **extended postprocessing capabilities** of MR View&GO makes it possible to prepare complex oncology cases directly at the scanner and send them to PACS ready to read. With the inline launch capability of the MR Oncology engine on syngo MR XA10, prior exams can be prefetched and registered with the newly acquired data. ROIs can be easily propagated to the new data sets, providing quantitative information about the treatment response.
Whole-Body Dot Engine:
intuitive and guided workflow
Whole-body MRI from head to pelvis in 25 minutes

The new Whole-Body Dot Engine reduces the planning and execution of complex whole-body exams to a few clicks: simply select which regions need to be scanned, whether a focus region shall be investigated, and set a few patient-specific settings (e.g., breath-hold capability).

High-resolution T2w STIR images
T1w VIBE images with excellent fat suppression
Distortion-free whole-body DWI with SliceAdjust
Extended preprocessing capabilities enable further time savings. OncoCare, for example, enables assessment of treatment response over time with ADC histograms.
Neurology

Ultra-fast, high SNR head/neck imaging with the tiltable BioMatrix Head/Neck 20 and the BioMatrix Head/Neck 64

T2 TSE, TA 3:49 min
BioMatrix Head/Neck 20

T1 TSE Inversion Recovery, TA 2:47 min
BioMatrix Head/Neck 20

T1 MPRAGE, TA 3:51 min
BioMatrix Head/Neck 64

T2 SPACE STIR, TA 3:31 min
Ultra-thin 0.86 mm slices achievable with BioMatrix Head/Neck 64
RESOLVE

4 scan trace
BioMatrix Head/Neck 20

ADC map

DTI fibertracking, 256 directions, postprocessed with syngo via Frontier TDI prototype

BOLD imaging, postprocessed with Neuro 3D

RESOLVE
Outstanding diagnostic performance with sharp, high-resolution DWI and DTI of the brain and spine—standard with MAGNETOM Vida.

DTI fibertracking 64 directions, postprocessed with Neuro 3D
Head/Neck and Spine imaging

Achieve high-quality head/neck and spine imaging for all patients and conditions.

In the new BioMatrix Head/Neck coils, CoilShim technology helps prevent repeat scans due to significantly improved fat saturation and better DWI quality.

RESOLVE with CoilShim
18° coil tilt, DTI 6 directions
BioMatrix Head/Neck 20,
BioMatrix Spine 32

MR Angiography of the carotids
1.2 x 1.0 x 1.0 mm³
TA 17 sec
BioMatrix Head/Neck 20,
BioMatrix Spine 32

Radiologie München Harlaching, Munich, Germany
Imaging of the brachial plexus with 3D T2 SPACE
1.0 x 1.0 x 1.0 mm³
TA 3.57 min
BioMatrix Head/Neck 64

Whole spine T2
3 stations
TA 6.11 min
BioMatrix Spine 32,
BioMatrix Head/Neck 64

Benson Radiology
City West practice,
Adelaide, Australia

Whole spine T1
3 stations
TA 6.08 min
BioMatrix Spine 32,
BioMatrix Head/Neck 64

Benson Radiology
City West practice,
Adelaide, Australia
Orthopedics

Ultra-high-density coils for orthopedic imaging with maximized SNR and anatomic coverage

The Shoulder Shape 16 is a new ultra-high element density coil with an innovative, flexible, and patient-adaptive design.

PD FatSat
Shoulder Shape 16, TA 3:14 min

T1 TSE
Shoulder Shape 16, TA 2:20 min

High-resolution hip imaging with ultra-high-density Body 30

Radiologie München Harlaching, Munich, Germany
The large Field of View of MAGNETOM Vida enables long-bone exams in one step, with excellent fat saturation and image homogeneity.
New UltraFlex coils for orthopedic imaging offer flexibility to apply in various anatomical regions.

0.40 x 0.57 x 2.00 mm³
TA 3:28 min
UltraFlex Large 18

Radiologie München Harlaching, Munich, Germany

UltraFlex coils allow for high-resolution unilateral hip imaging at a small Field of View.

0.35 x 0.48 x 3.0 mm³
TA 3:37 min
UltraFlex Large 18
The new Tx/Rx Knee 18 offers high-resolution knee imaging with a larger coil opening to accommodate a broader patient population.

Benson Radiology  
City West practice,  
Adelaide, Australia

**Advanced WARP²**

Artifact reduction techniques enable the correction of image distortions, allowing for more accurate assessment of tissue surrounding orthopedic implants.

Advanced WARP comes standard with MAGNETOM Vida.

Radiologie München Harlaching,  
Munich, Germany

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**PD TSE**  
3.75 x 4.69 x 3.00 mm³  
TA: 2:48 min  
Tx/Rx Knee 18

**PD TSE FatSat**  
2.99 x 2.38 x 3.00 mm³  
TA: 2:22 min  
Tx/Rx Knee 18

**Advanced WARP**  
View Angle Tilting

**Advanced WARP**  
SEMAC

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Orthopedic implant
Body imaging

High-channel body imaging thanks to the combination of ultra-high-density body and spine coils

Full abdominal coverage from the liver dome down to the pelvis enable for comprehensive oncological scans in one station with excellent quality.

3D VIBE Dixon Water, 50 cm z-FoV
Body 18, BioMatrix Spine 72

Large Field of View and homogeneous fat saturation for enterography imaging

High-resolution MRCP using T2 SPACE with the Body 30

Radiologie München Harlaching, Munich, Germany
Simultaneous Multi-Slice significantly reduces acquisition time for abdominal diffusion

Diffusion accelerated with Simultaneous Multi-Slice

SMS 2
TR: 2700 ms
TE: 55 ms
2.8 x 2.8 x 5.0 mm³
TA: 2:08 min
Body 18, BioMatrix Spine 72

Early arterial phase, 17 sec post-contrast
Late arterial phase, 33 sec post-contrast
Portal-venous phase, 50 sec post-contrast
Delayed phase, 4:30 min post-contrast

Diffusion without Simultaneous Multi-Slice

TR: 6900 ms
TE: 44 ms
2.8 x 2.8 x 5.0 mm³
TA: 5:07 min
Body 18, BioMatrix Spine 72

Compressed Sensing GRASP-VIBE*

High-resolution liver dynamics under free breathing supports expanding the patient population suitable for liver MRI to patients with limited or no breath-hold capability.

1.6 x 1.6 x 3.0 mm³
8.4 sec/phase
Body 18, BioMatrix Spine 72

University Hospital Tübingen, Germany

*S10(p) pending
Men’s health

Comprehensive prostate exam according to PI-RADS v2 in less than 13 minutes acquisition time

**RESOLVE**
Experience outstanding diagnostic performance with sharp, high-resolution DWI in the prostate with reduced blurring and susceptibility artifacts.
Women’s health

Coils and imaging applications provide excellent image quality for diagnosis and MRI-guided breast interventions.
Cardiology

Expand the patient population eligible for Cardiac MRI with trendsetting applications.

Comparison of conventional and Compressed Sensing Cardiac Cine

Conventional Cardiac Cine
multiple breath-holds, TA 2:39 min

Compressed Sensing Cardiac Cine
single breath-hold, TA 20 sec

Compressed Sensing Cardiac Cine
free breathing, TA 35 sec

MyoMaps

Benefit from inline myocardial quantification; detect normally missed global, diffuse, and myocardial pathologies (T1 Map), and better depict cardiac edema (T2 Map) with MyoMaps, based on HeartFreeze.

MyoMaps T1 map

MyoMaps T2 map

Extended HeartFreeze

HeartFreeze motion-correction technique enables phase-sensitive inversion recovery imaging under free breathing.
Peripheral Angiography

High-resolution, non-contrast and contrast-enhanced angiographic techniques.

Contrast-enhanced peripheral angiography in 3 steps

QISS: High-resolution peripheral angiography without a contrast agent

University Hospital Erlangen, Germany
Comprehensive offerings for service and exchange

**Digital Ecosystem**
Easy and fast access to smart health

**teamplay**
Make fast and well-informed decisions

**Evolve Program**
Stay in the future

**Proven upgrade paths**
Future-proof your investment

**LifeNet**
Comprehensive fleet management – more control, less hassle

**Education Services**
Enabling users with expertise and efficiency in the long run

**Siemens Guardian Program™**
Providing proactive service with real-time monitoring

**Digital Ecosystem**
Integrating and interconnecting data, participants, applications, and services are key goals of the Siemens Healthineers Digital Ecosystem. The growing data lake is intended to support the development of cloud-deployed and locally installed applications and services. As a result, our Ecosystem will serve the wide spectrum of clinical, operational, and financial tasks and functions in healthcare delivery.

**teamplay**
teamplay grants instant access to statistics from your imaging device fleet. Its multi-vendor support empowers you to identify improvement potential on all levels of execution. teamplay provides an easy-to-grasp overview of your institution’s imaging workflow for enhancing efficiency, competitiveness, and quality of care in one intuitive Plug & Play solution.
Education Services

Personalized education and training keeps your staff’s knowledge up to date and leads to enhanced expertise, greater efficiency, and higher productivity. Maintain or improve your staff’s expertise as well as the efficiency of your systems at a predictable cost with Siemens Healthineers Education Services. By providing a flexible and efficient training and education experience, Siemens Healthineers helps unlock your staff’s potential and keep your organization at the forefront of clinical diagnosis and corresponding outcome-based treatments.

usa.healthcare.siemens.com/education

Evolve Program

This investment protection program enables you to cost-effectively keep your imaging system technology current and extend the life of your equipment. It ensures that your imaging system uses the latest software versions and cutting-edge applications to support more accurate diagnostics and greater speed.

Proven upgrade paths

With MAGNETOM scanners, taking your MRI system to the next level is simple, thanks to clearly defined upgrade paths. In fact, Siemens Healthineers has built an entire organization to help customers truly maximize their system life—and in turn, increase their return on investment.

Siemens Guardian Program™

By continuously monitoring systems for possible deviations from current norms, the Siemens Guardian Program helps maximize system availability, makes it easy to detect and resolve system errors, prevents downtime, and avoids the rescheduling that disrupts patient care.

LifeNet

This personalized control center offers more control and less hassle in safeguarding your fleet’s productivity. The web-based portal bundles all service-related activities, documents, and reports in one comprehensive online resource available 24/7, whenever it is needed. LifeNet is provided at no charge to all Siemens Healthineers customers.
Peer-to-peer information exchange

usa.siemens.com/magnetom-world

Visit MAGNETOM World
MAGNETOM World

The global MRI community of Siemens Healthineers offers peer-to-peer support and information. Radiologists, cardiologists, technologists, and physicists all have contributed with protocols, presentations, application tips, case studies, and more—all freely available to you via this unique network.

MAGNETOM Flash

The MRI customer magazine features up-to-date clinical case studies, application tips, as well as technical and product information. All content is carefully compiled by experts to meet the needs of today’s MRI users in both clinical and research scenarios.

USA.siemens.com/magnetom-flash

Special Issue on MAGNETOM Vida and BioMatrix

Professor Konstantin Nikolaou (University Hospital Tübingen, Germany) is guest editor of this special issue of MAGNETOM Flash. Read about improved image quality with SliceAdjust (Peking Union Medical College Hospital, China); automated chest, abdomen, and pelvis exams with the Whole-Body Dot Engine (University of Zurich, Switzerland); free-breathing dynamic liver MRI (New York University, NY, USA); and many more clinical advantages of MAGNETOM Vida.

IDEA

IDEA10 is an open development platform supporting the largest and most active MR research community in the world. It brings users from across the globe together and fosters innovation in the field of MRI. Members collaborate online at mr-idea.com.
### MAGNETOM Vida Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field strength</td>
<td>3 Tesla</td>
</tr>
<tr>
<td>Bore size</td>
<td>70 cm Open Bore design</td>
</tr>
<tr>
<td>System length</td>
<td>186 cm cover to cover</td>
</tr>
<tr>
<td>System weight (in operation)</td>
<td>7.35 tons</td>
</tr>
<tr>
<td>Minimum room size</td>
<td>31 m² / 334 ft²</td>
</tr>
<tr>
<td>RF</td>
<td>Tim [204x64]; Tim [228x128]</td>
</tr>
<tr>
<td>Gradient strength</td>
<td>XQ gradients 45/200 simultaneously [2.03 MW]</td>
</tr>
<tr>
<td></td>
<td>XT gradients 60/200 simultaneously [2.70 MW]</td>
</tr>
<tr>
<td>Helium consumption</td>
<td>Zero Helium boil-off technology</td>
</tr>
</tbody>
</table>
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At Siemens Healthineers, our focus is to help healthcare providers succeed in today’s dynamic environment.

Healthcare providers around the world have long relied upon our engineering excellence: leading-edge, high-quality medical technologies across a broad portfolio. Our technologies touch an estimated five million patients globally every day. At the same time, they help hospital departments to continuously improve their clinical, operational, and financial outcomes.

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Resources
2 Data on file.
3 Values for a 196 cm person.
4 Compared to reconstructions with CPU alone.
5 Based on CDCIR SRI Status Report 2015, data on file.
6 For research use only. Not for clinical use.
7 MR imaging of patients with metallic implants brings specific risks. However, certain implants are approved by the governing regulatory bodies to be MR conditionally safe. For such implants, the previously mentioned warning may not be applicable. Please contact the implant manufacturer for the specific conditional information. The conditions for MR safety are the responsibility of the implant manufacturer, not of Siemens.
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11 Minimum total space requirement for magnet, electronics, and console room.