MAGNETOM Lumina[1] provides you the confidence to deliver

As the reimbursement landscape in the healthcare industry shifts from volume to value, the pressure for operational discipline grows on care providers. At the same time the market is becoming increasingly competitive as consumerism in healthcare has gained significant traction.

In this challenging environment, MAGNETOM Lumina[1] is the new 3T Open Bore system that gives you full confidence to deliver the productivity, reproducibility, and patient satisfaction that you demand. Powered by our premium MR technology, MAGNETOM Lumina[1] combines our unique BioMatrix technology, the new *syngo* MR XA software platform and our exclusive Turbo Suite to fundamentally transform care delivery for the better.

With a clear focus on financial sustainability, MAGNETOM Lumina[1] also gives you full confidence that your MR asset will deliver the expected returns on investment. Throughout the entire system life cycle, Siemens Healthineers provides you with tailored products and services that guarantee future security.

Contents

MAGNETOM Lumina[1]

Confidence to deliver

As part of our groundbreaking new BioMatrix scanner generation MAGNETOM Lumina[1] is the 3T Open Bore system designed to fundamentally transform care delivery in the clinical key areas and provide financial sustainability.

New 3T magnet
with 70 cm Open Bore and large 55 x 55 x 50 cm^3 FoV

Tim [180x32] RF technology
with powerful XK gradients
(36 mT/m @ 200 T/m/s simultaneously)

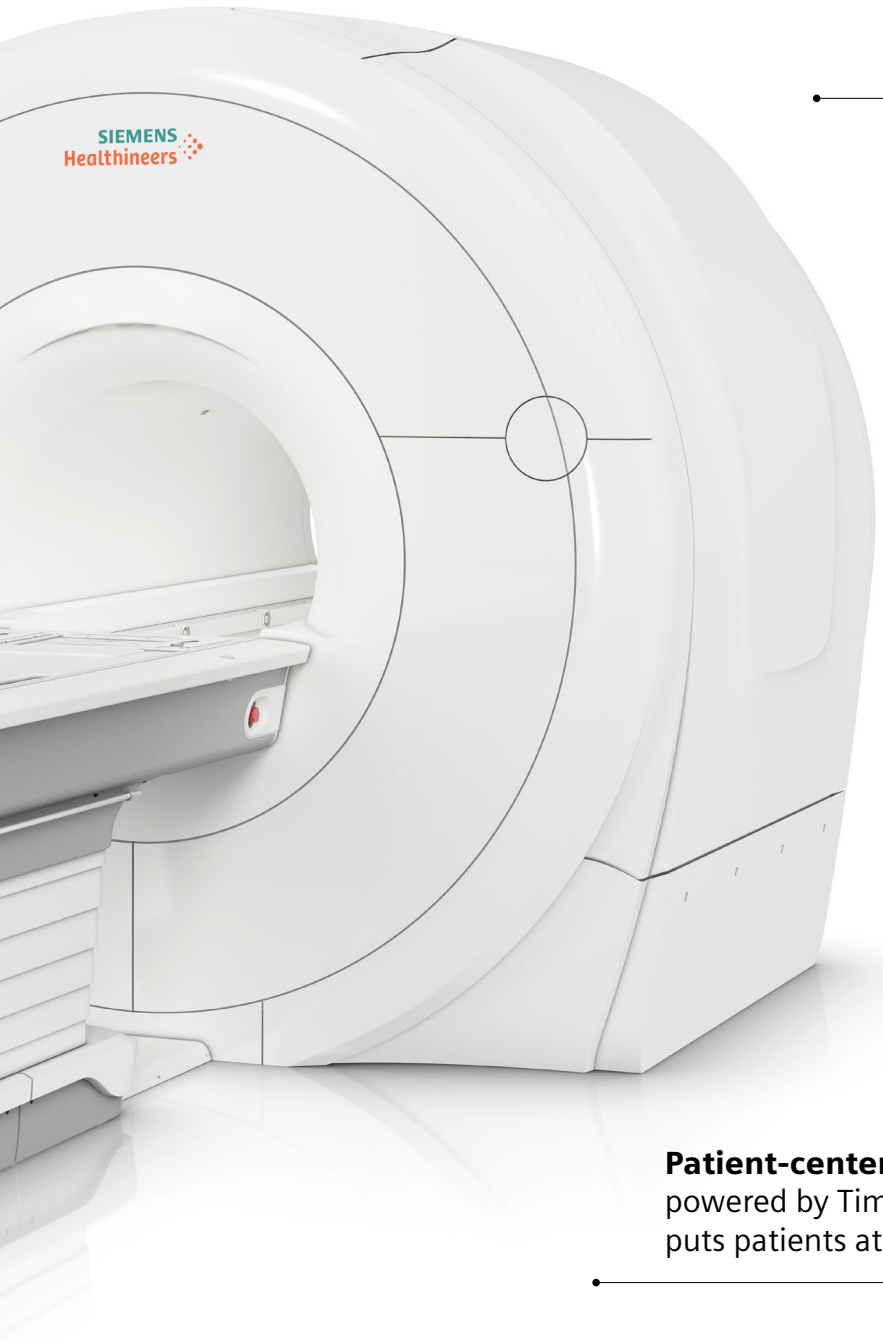
***syngo* MR XA software platform**
for intuitive system operation and
one user interface across your fleet

Innovision[3] – the revolutionary patient infotainment solution
designed to redefine the in-bore experience

Transforming
care delivery

Unique BioMatrix Technology
automatically adjusts to patient biovariability

Turbo Suite
acceleration packages enable up to 50%[2] faster scanning



8 unique Dot Engines
provide highly automated scan procedures for more than 90 %[2] of all MRI exams

GO technologies
powered by artificial intelligence boost patient throughput

***syngo* Virtual Cockpit[8]**
the game-changing remote scanning assistance for standardized results across your system fleet

Patient-centered coil portfolio
powered by Tim 4G and BioMatrix Technology puts patients at greater ease

MAGNETOM Lumina[1]

Your confidence to deliver productivity gains

MAGNETOM Lumina[1] is designed with the clear goal to deliver significant productivity gains. At the core of its impressive acquisition speed lies our exclusive Turbo Suite allowing for up to 50%[2] faster routine scans. And with the further objective to reduce the overall patient time slot in your institution, MAGNETOM Lumina[1] offers additional remarkable innovations to boost workflow efficiency and ensure your return on investment.

Setting the pace in MR acceleration with Turbo Suite

Turbo Suite for MAGNETOM Lumina[1] is comprised of two packages with unique parallel imaging, Simultaneous Multi-Slice, and planned Compressed Sensing[3] technologies that are tailored to your clinical needs.

And – with Turbo Suite, you gain access to future developments in MR acceleration, keeping you up to date.

Reduce the total exam time by
up to 50%[2]

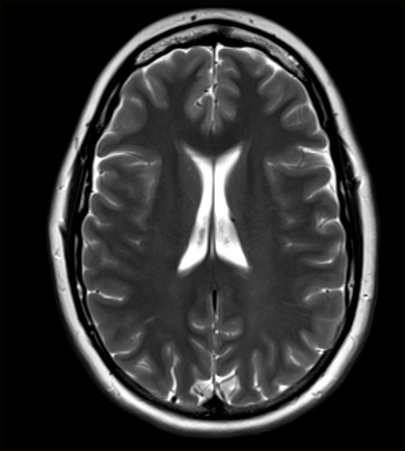
Further information on Turbo Suite:
siemens-healthineers.com/turbo-suite

Turbo Suite Essential

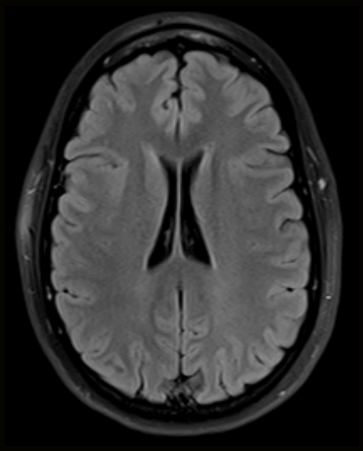
Be ahead in scan time and maximize productivity with core MR acceleration technologies

Turbo Suite Essential is our standard acceleration package for MAGNETOM Lumina[1]. This package leverages high element density coils, the parallel imaging techniques GRAPPA and our unique CAIPIRINHA to deliver routine exams in 10 to 15 minutes[2].

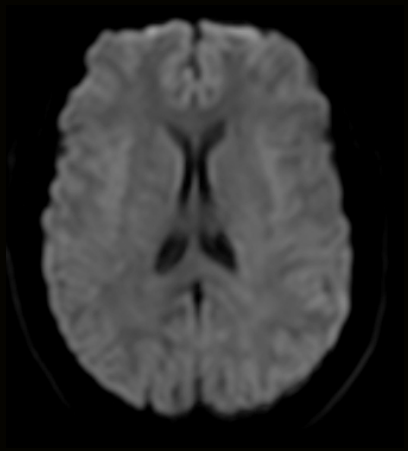
Neuro imaging



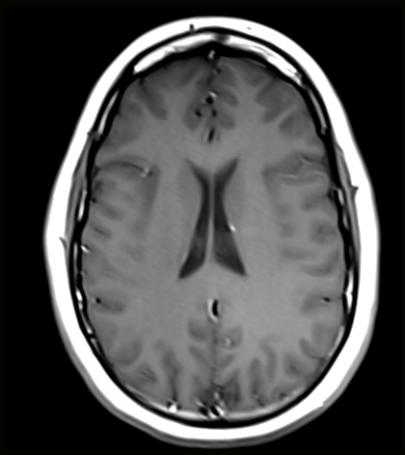
2D T2 TSE
0.6 x 0.6 x 4 mm³, TA 1:30 min



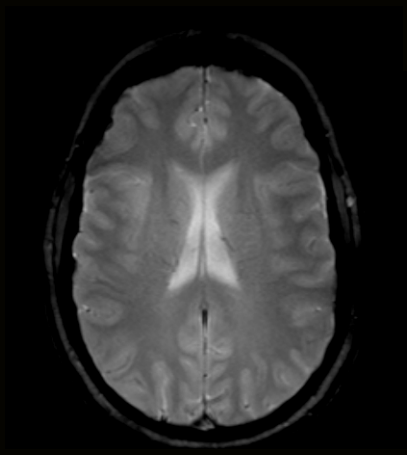
T2 Dark Fluid
0.8 x 0.8 x 4 mm³, TA 1:21 min



DWI, b1000,
1.1 x 1.1 x 4 mm³, TA 1:01 min

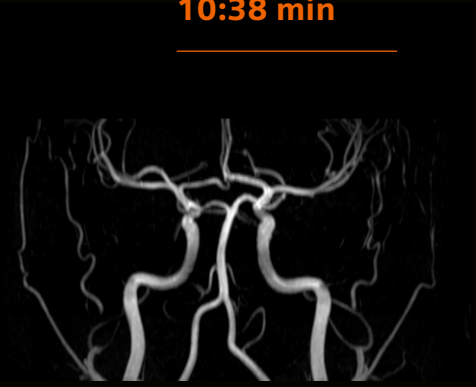


2D T1 SE
0.6 x 0.6 x 4 mm³, TA 1:10 min



T2*
0.8 x 0.8 x 4 mm³, TA 1:27 min

Total exam
10:38 min

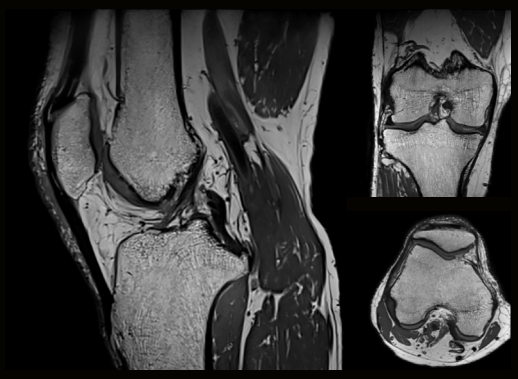


3D TOF
0.3 x 0.3 x 0.6 mm³, TA 4:08 min

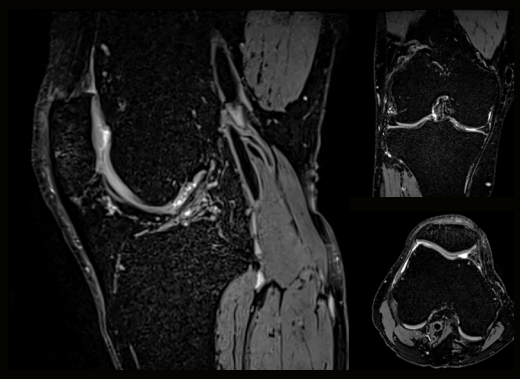
Routine exams in
10–15 minutes[2]

Isotropic 3D MSK exams utilize the power of CAIPIRINHA, delivering all clinically relevant contrasts in 10 minutes. For body imaging, up to 50%[2] shorter breath-holds and high-resolution scans are possible with CAIPIRINHA.

MSK imaging – 3D exam



T2w
0.5 mm iso, TA 4:34 min

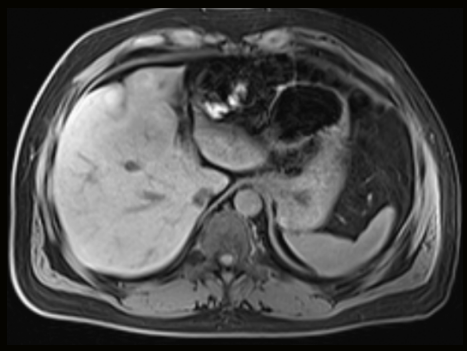


PD FS
0.6 mm iso, TA 4:31min

Total exam
9:05 min
enabled by unique CAIPIRINHA SPACE

Abdominal imaging – significantly shorter breath-holds and improved resolution

CAIPRINHA VIBE, CAIPI 6,
Matrix 320, SL 1.4, TA 17.2 s



CAIPIRINHA VIBE, CAIPI 4, TA 14 s

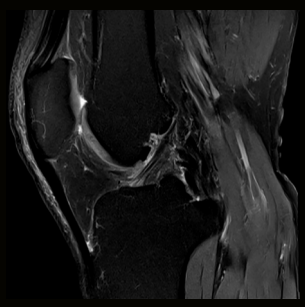
Turbo Suite Excelerate

Be up to 50%[2] faster for routine, clinical exams

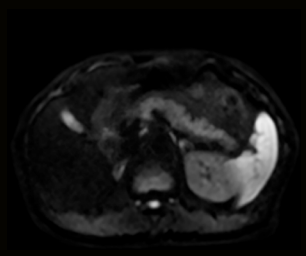
Turbo Suite Excelerate introduces a paradigm shift in productivity with up to 50%[2] time savings, for all contrasts, orientations, and body regions. Dramatically transform care delivery with cutting-edge acceleration technologies Simultaneous Multi-Slice and planned Compressed Sensing[3] for static 2D and 3D imaging, for neurological, orthopedic, and body MRI.

Simultaneous Multi-Slice

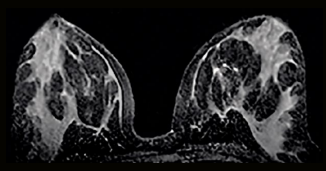
Conventional



PD TSE FS, PAT 2
0.5 x 0.4 x 3 mm³,
TA 2:42 min



DWI, PAT 3, b800
1.4 x 1.4 x 5 mm³,
TA 4:07 min

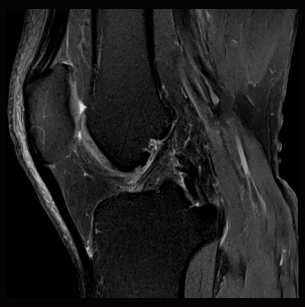


RESOLVE[9], b800
1.2 x 1.2 x 5.00 mm³,
TA 4:21 min

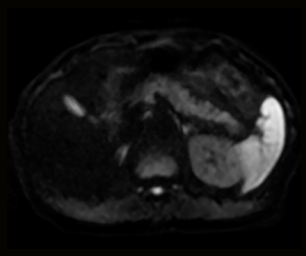
Turbo Suite Excelerate

50% reduction | **40% reduction** | **60% reduction**

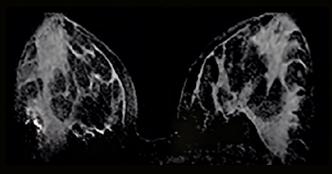
Powered by Simultaneous Multi-Slice and Compressed Sensing



SMS TSE, PAT 2, SMS 2
0.5 x 0.4 x 3 mm³,
TA 1:21 min



SMS DWI, PAT 2, SMS 2, b800
1.4 x 1.4 x 5 mm³,
TA 2:27 min



SMS RESOLVE[3,9], SMS 3, b800
1.2 x 1.2 x 5.00 mm³,
TA 1:44 min

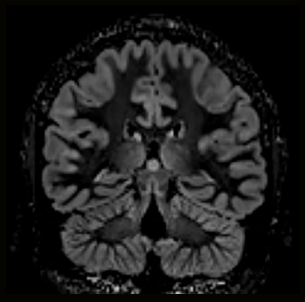
Up to
50% time savings[2]

In addition to our latest Simultaneous Multi-Slice applications for EPI and TSE this package provides future security with granted access to planned new acceleration techniques Simultaneous Multi-Slice RESOLVE[3] as well the Compressed Sensing acceleration for SPACE[3], TOF[3] & SEMAC[3].

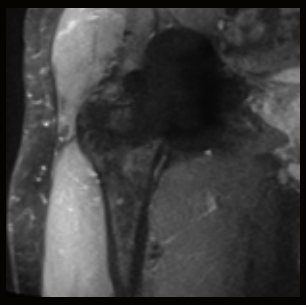
Compressed Sensing

TOF Angio[7], PAT 2
0.4 x 0.4 x 0.4 mm³,
TA 4:28 min

3D T2 SPACE MRCP[7]
0.5 x 0.5 x 1.0 mm³,
TA 7:16 min



T2 SPACE DIR[9]
1.4 x 1.4 x 1.4 mm³,
TA 6:07 min



SEMAC[9,10]
1.2 x 1.2 x 3 mm³,
TA 11:10 min

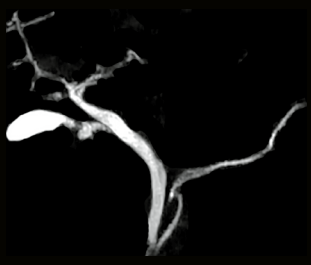
56% reduction

97% reduction

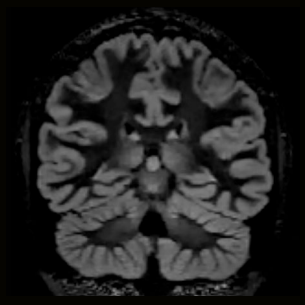
49% reduction

51% reduction

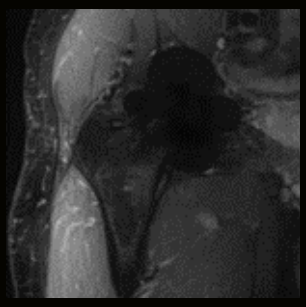
CS TOF Angio[3,9]
0.4 x 0.4 x 0.4 mm³,
TA 1:58 min



CS 3D T2 SPACE MRCP[3,9]
0.5 x 0.5 x 1.0 mm³,
TA 0:15 min



T2 CS SPACE DIR[3,9]
1.0 x 1.0 x 1.0 mm³,
TA 3:07 min



CS SEMAC[3,9,10]
1.2 x 1.2 x 3 mm³,
TA 5:30 min

Automate your MR workflow with GO technologies

GO technologies powered by artificial intelligence and BioMatrix are a holistic set of intuitive workflow automations that enable you to reduce the overall patient time slot. GO technologies consist of four main components which accelerate the entire workflow from patient positioning to reporting:

30% faster[2] patient positioning

Select&GO

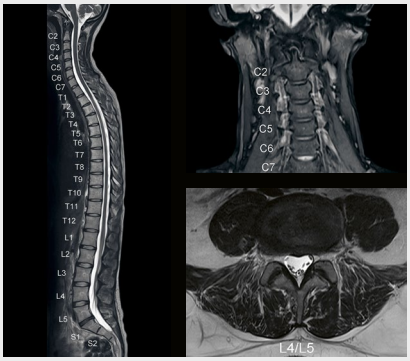
BioMatrix Select&GO, powered by AI, enables fully automated exam positioning with one touch on the display.

Push-button planning & scanning

DotGO

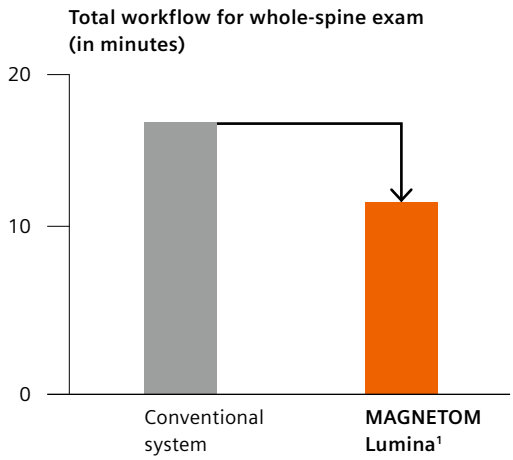
The intuitive Dot workflow offers automatic placement of imaging slices with the AI empowered AutoAlign functionality – making even whole-spine imaging a push-button exam.

Zero click fully automated inline processing



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.



21% faster
spine exams[2] with GO technologies

Reduced workload for radiologists through advanced applications

View&GO

Dual screens allow the user to efficiently check and distribute results in real time. In addition advanced applications such as generating computed high b-value images or 3D reconstructions of the plexus can be performed directly at the scanner – reducing the workload for radiologists.

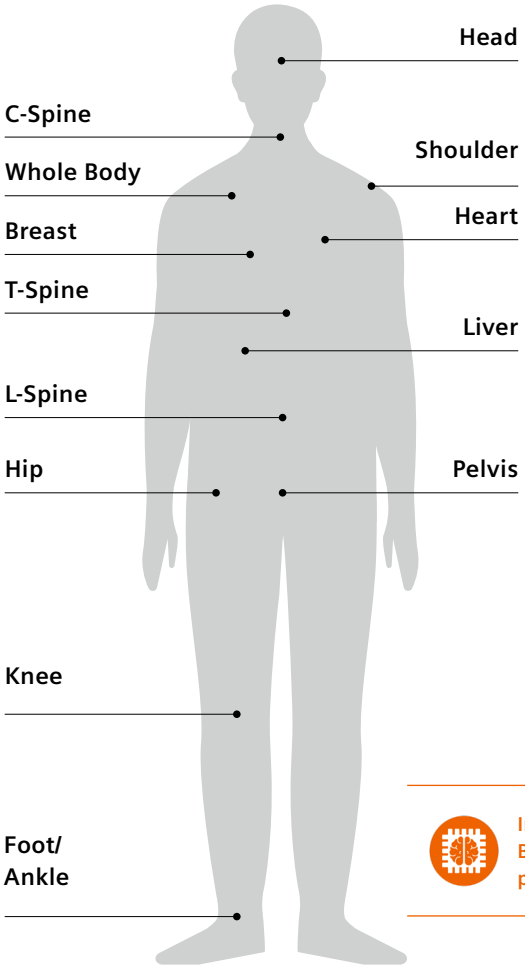
Streamline patient handling with BioMatrix Technology

BioMatrix Technology automatically adjusts to patient biovariability. It allows you to anticipate motion and adapt to any patient's body type. As a result BioMatrix Technology additionally introduces a significant lever to accelerate patient handling.

30% faster
patient positioning[2]

BioMatrix Select&GO

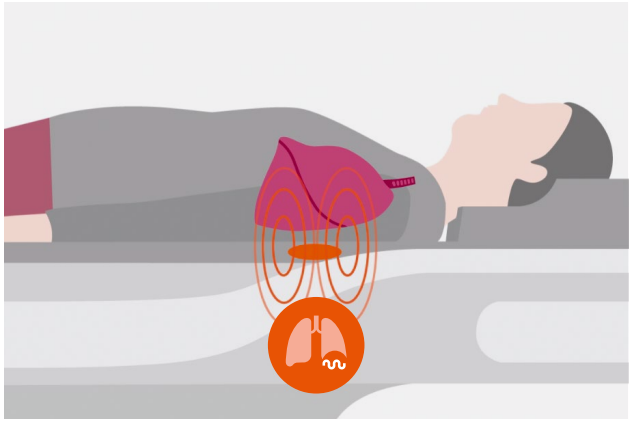
Based on the underlying BioMatrix Body Model – powered by artificial intelligence – the BioMatrix Select&GO touch display enables patient positioning with one-touch, increasing throughput with 30% faster patient positioning[2].



Intelligent Body Model powered by AI

Further information on BioMatrix:
siemens-healthineers.com/biomatrix

BioMatrix Respiratory Sensors



Integrated into the BioMatrix Spine coil Respiratory Sensors automatically detect breathing patterns as soon as the patient lies on the table. Respiratory-triggered scans can be performed without additional user interaction to help simplify and accelerate workflow.

Patient respiration data, acquired by the BioMatrix Sensors, are displayed on the user interfaces, also directly at patient-side. By viewing the patient's respiration rate, technologists have a sense for how patients are reacting to the exam and can adapt their patient and scanner interactions.

BioMatrix Beat Sensor[7]

The Beat Sensor is seamlessly integrated into the BioMatrix Body 12. It is designed for automatic cardiac triggering[7] – without the need for the time-consuming application of ECG leads.

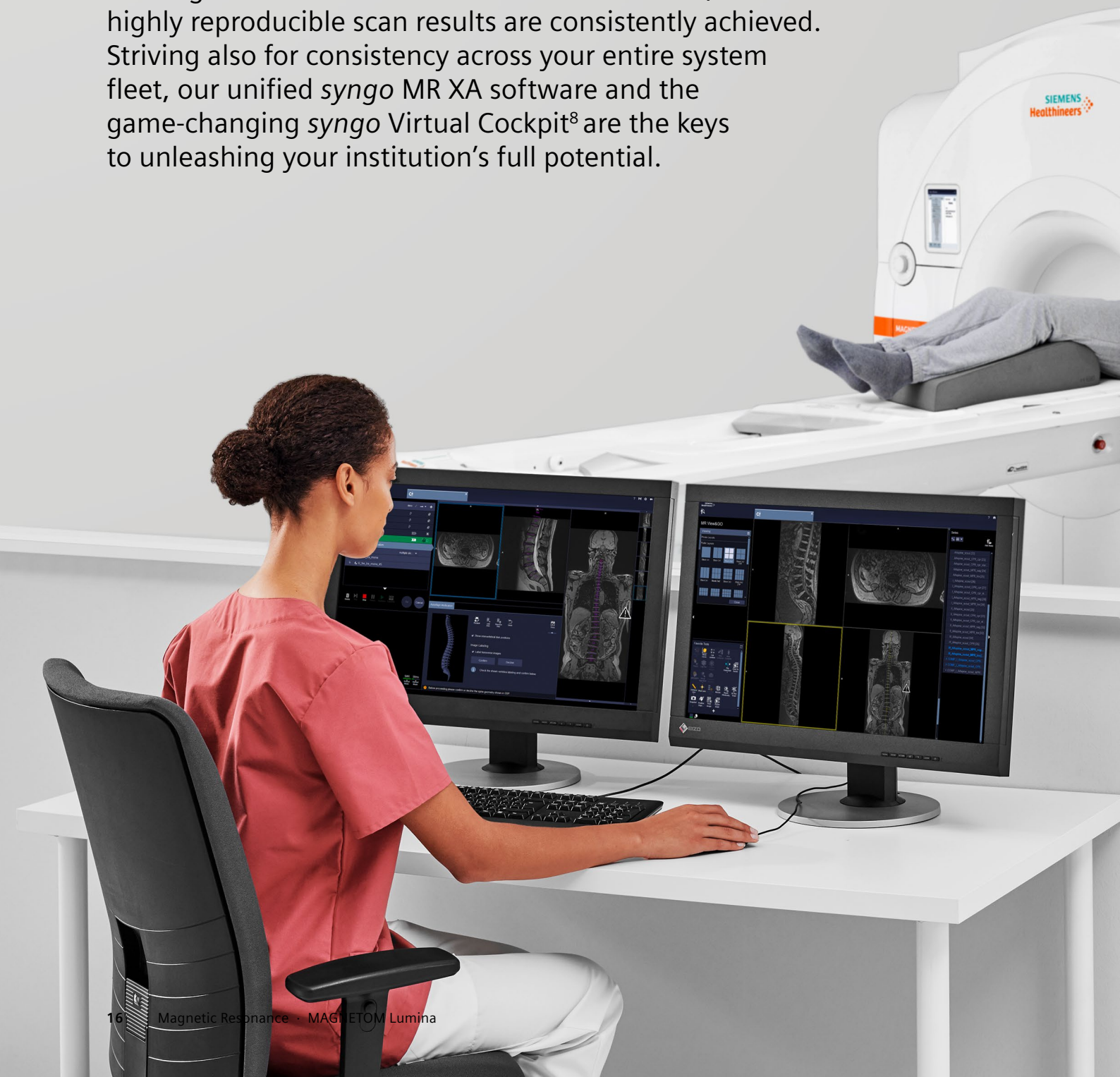
BioMatrix Dockable Table

The BioMatrix Dockable Table with its intuitive control panel streamlines your patient flow especially for immobile patients.

MAGNETOM Lumina[1]

Your confidence to deliver reproducible results

MAGNETOM Lumina[1] delivers consistent diagnostic results across your institution. With our eight unique Dot Engines and the innovative BioMatrix Tuners, highly reproducible scan results are consistently achieved. Striving also for consistency across your entire system fleet, our unified *syngo* MR XA software and the game-changing *syngo* Virtual Cockpit[8] are the keys to unleashing your institution's full potential.



Automated reproducibility with Dot Engines

MAGNETOM Lumina's[1] eight unique Dot Engines tailored to different body regions provide highly automated scan procedures for more than 90%[2] of all MRI exam requests. Each Dot Engine provides a comprehensive guidance system and predefined scan strategies. AutoAlign, powered by artificial intelligence, delivers automatic placement of imaging slices to ensure reproducible scan results – every time.

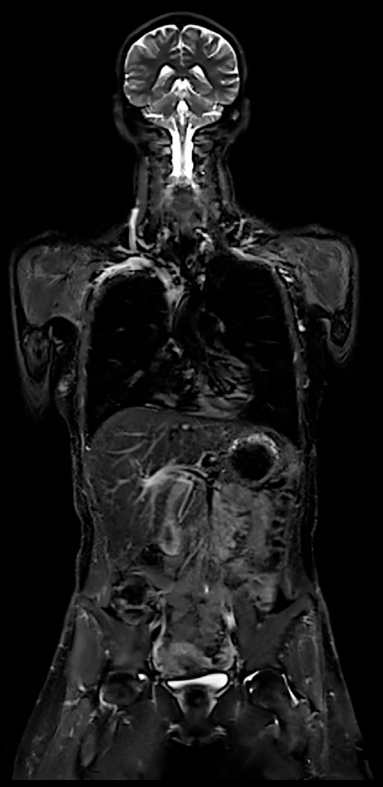
Over 90%
of MRI exams covered

Intelligent Body Model
powered by artificial intelligence

Whole-body MRI from head to pelvis in less than 24 min² scan time!

The 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, choose whether a focus region should be investigated, and set a few patient specific parameters (e.g., breath-hold capability).

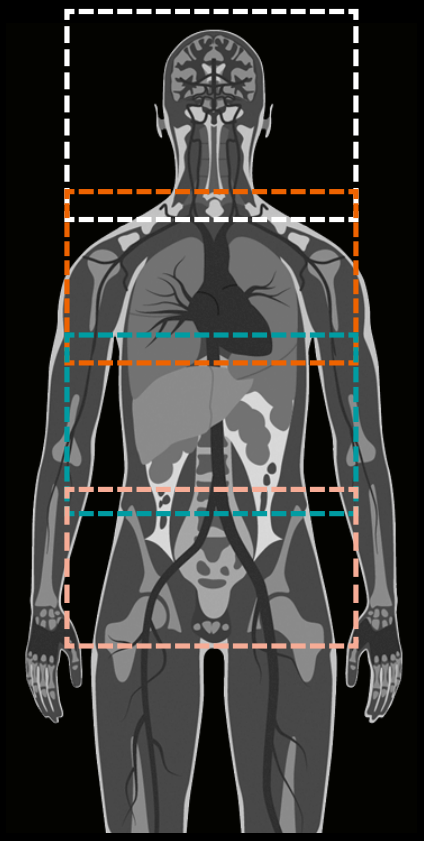
All core protocols for bone and lymph node metastasis detection are covered.



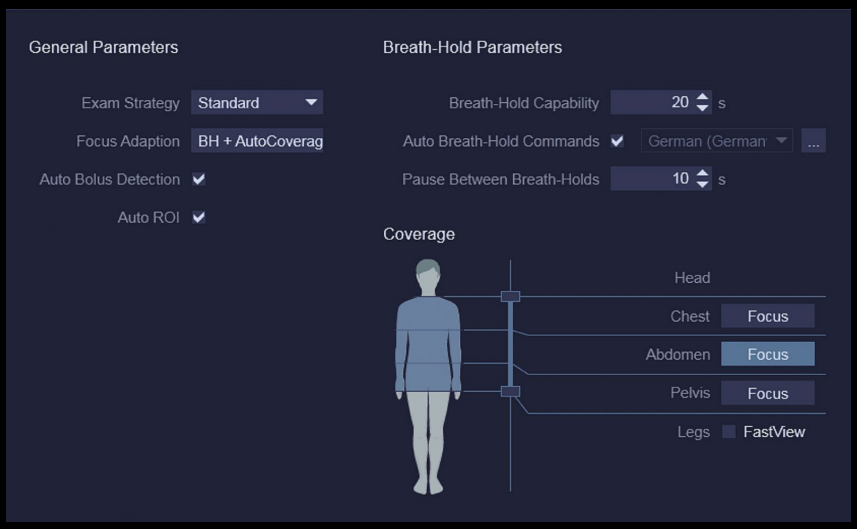
T2 HASTE STIR

VIBE DIXON Water image

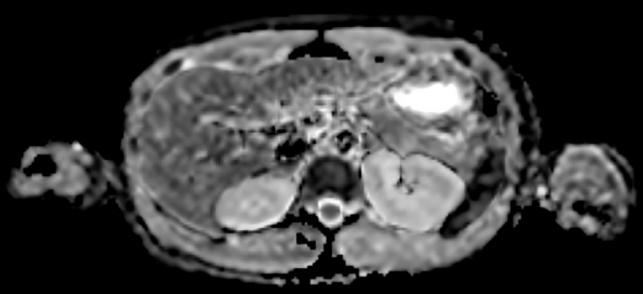
DWI b1400 MIP



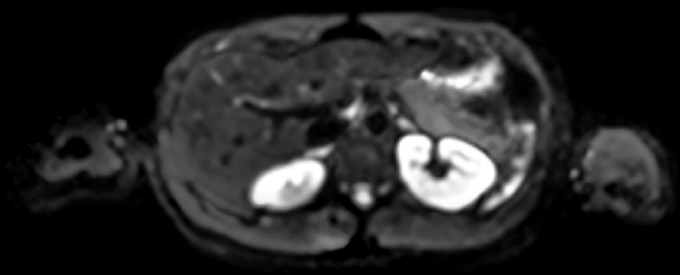
Intelligent Body Model powered by artificial intelligence



Whole-Body Dot Engine: intuitive and guided workflow

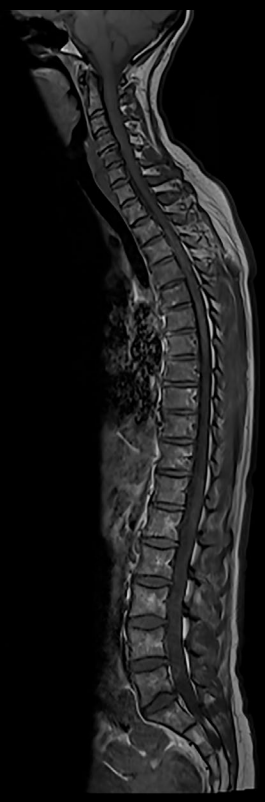


ADC map



DWI b800

T2 STIR

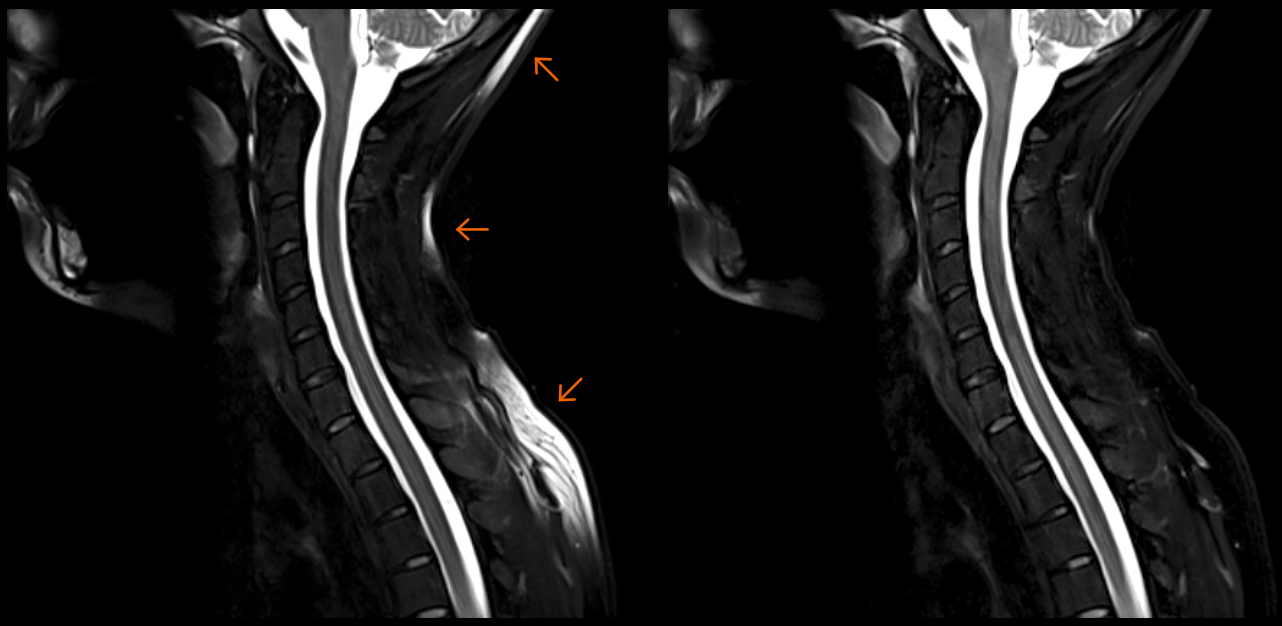


T1 TSE

Adapt to challenging anatomies for reliable results with BioMatrix Tuners

BioMatrix Tuners adapt to challenging anatomies, such as the head/neck area, the spine and the abdomen, for reliable exam results. Even for difficult scan regions, our intelligent coil technology consistently delivers excellent homogenity and fat saturation – driving robustness and reproducible high-quality imaging – for every patient, every time.

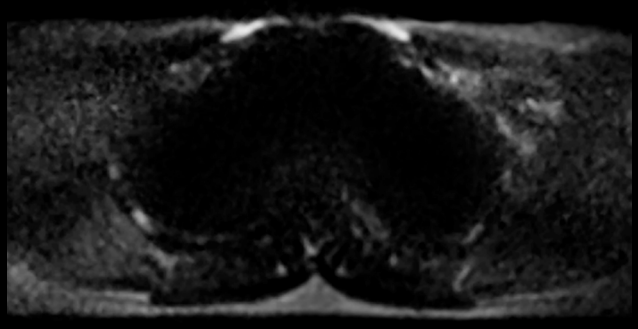
Significantly improved fat saturation and image quality with BioMatrix Tuner CoilShim



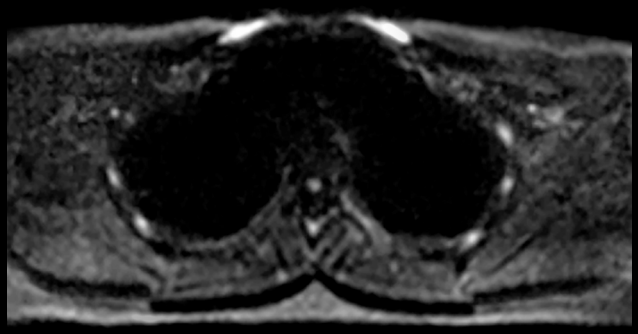
Conventional Shim

With CoilShim

Integrated into the new BioMatrix Head/Neck 20 coil, CoilShim increases diagnostic quality and reduces the need for repeat scans by delivering improved fat saturation and better DWI quality in the neck region. CoilShim technology ensures that the challenging area is automatically and optimally shimmed for reproducible quality in every patient.



Conventional Volume Adjust



With SliceAdjust

Improved image quality in the entire imaging volume with BioMatrix Tuner SliceAdjust

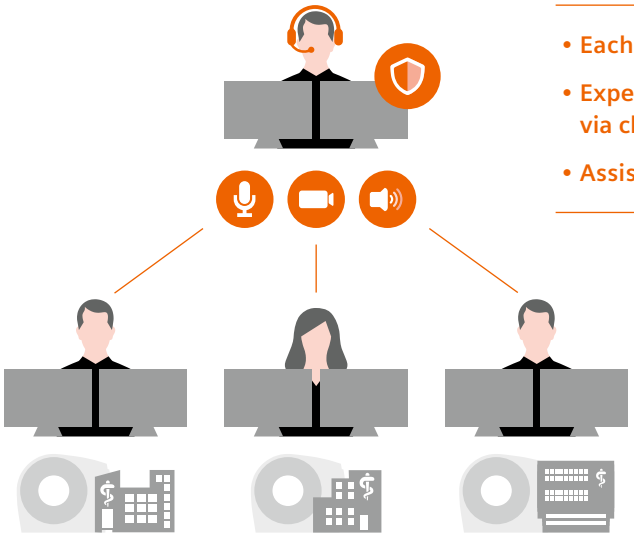
Conventional Volume Adjust

With SliceAdjust

SliceAdjust technology provides reliable fat saturation for both TSE and DWI sequences, as well as distortion-free whole-body DWI scans. It avoids broken spine artifacts in whole-body DWI for excellent correlation with anatomical scans.

Reproducible results across your fleet with *syngo* Virtual Cockpit[8]

syngo Virtual Cockpit[8] is designed to assist scan procedures – from a distance. Expert colleagues receive access to the scanner and can support less-experienced technologists – ensuring reproducible results across your entire MR system fleet.



- Each expert can assist up to 3 scanners, simultaneously
- Expert communicates with scanner operator via chat, video, and voice
- Assist MR, MR-PET, CT & PET/CT scanners

Further information on *syngo* Virtual Cockpit: siemens-healthineers.com/syngo-virtual-cockpit

Digitalizing
healthcare

***syngo* Virtual Cockpit[8] can assist you in a great variety of everyday use cases:**

Routine examinations
Less-trained technologists can receive live support

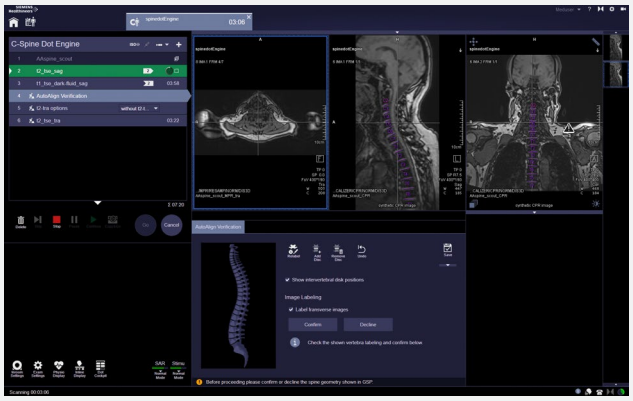
Staff bottlenecks
Personnel from distant sites can fill in without the need to commute

Complex examinations
An expert can assist from remotely, e.g. for protocol adjustment or contrast timing

Training
Staff members get hands-on training remotely

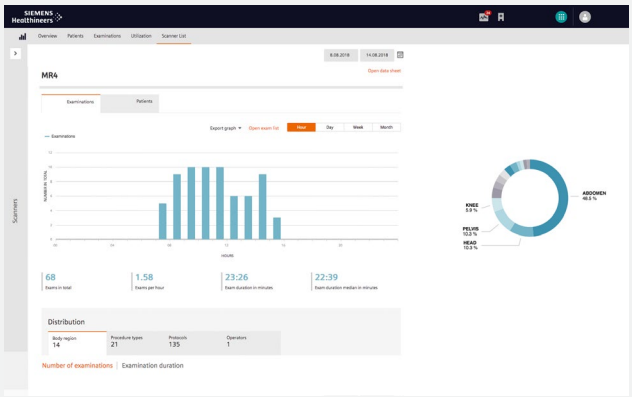
Additional fleet management solutions for consistency across your MR scanner fleet

syngo MR XA-line



One common software platform and user interface across our entire BioMatrix scanner generation. Ensuring consistency and reproducible results, no matter which scanner is operated.

teamplay



Optimize your scanner performance and ensure protocol consistency across your fleet with our cloud-based performance management solution teamplay.

MAGNETOM Lumina[1]

Your confidence to deliver patient satisfaction

Patient experience matters. MAGNETOM Lumina[1] was designed with the clear goal to transform the MRI experience and put patients at ease.

Redefine the MRI experience with Innovision[4]

Innovision[4] is designed to redefine the patient experience, using a revolutionary in-bore infotainment solution. Patients are engaged with an immersive video and audio experience as soon as they lie on the table. Along the entire MRI journey Innovision[4] thereby puts patients at greater ease.

Enhance the patient experience
with customizable video content

Reduce claustrophobia
with a video display that creates a virtually larger bore

Keep the patient informed
by displaying the scan progress

Stellar sound quality
for voice commands and entertainment

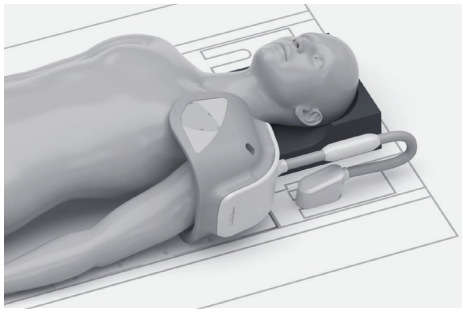
Effective noise reduction
with unique memory foam pillow

Further information on Innovision:
siemens-healthineers.com/innovision

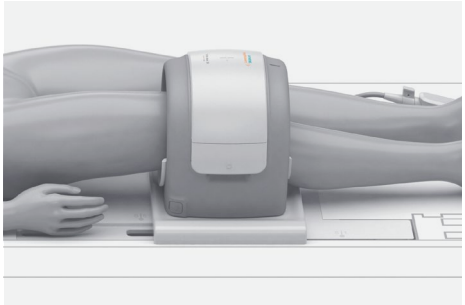
Tim 4G ultra-light and high-density coils are designed for patient comfort

Based on our proven Tim 4G technology MAGNETOM Lumina[1] offers a broad range of ultra-light and high-density coils that strongly support patient comfort.

New anatomy-adaptive coils for greater flexibility to accommodate larger patients



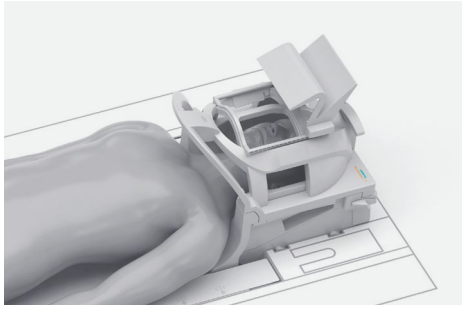
Shoulder Shape 16



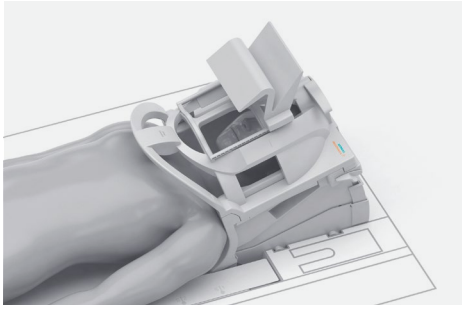
Tx/Rx Knee18

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.

Better address kyphotic patients with the tiltable BioMatrix Head/Neck 20



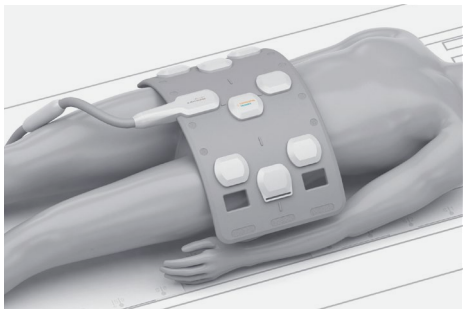
BioMatrix Head/Neck 20



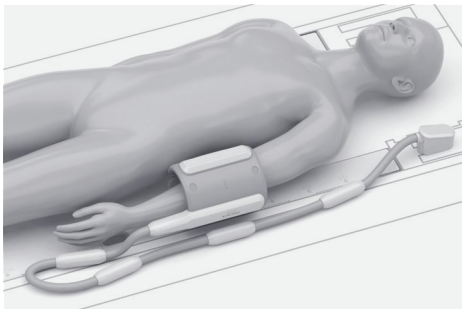
Head tilting between 0° and 18°

Increase patient comfort, better address kyphotic patients, and improve your imaging results with the tiltable BioMatrix Head/Neck 20.

Maximize flexibility with the new UltraFlex 18 coils in small & large



UltraFlex Large 18



UltraFlex Small 18

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

MAGNETOM Lumina[1]

Product Services

Siemens Healthineers takes care of your equipment throughout the entire equipment lifecycle. We offer a comprehensive product service approach that ensures a smooth clinical workflow based on maximum equipment availability.

MAGNETOM Lumina's[1] equipment service is based on Siemens Healthineers' matchless service infrastructure around the world:

250 billion
data points for AI based error pattern analysis

400
system components constantly monitored

> 70%
first visit fix rate

> 1,600
service engineers worldwide

Based on this exceptional infrastructure and connected through our Smart Remote Services MAGNETOM Lumina offers unique services to continuously ensure system availability:

Condition Based Maintenance

50% reduced maintenance downtime through system load specific maintenance intervals

Remote Diagnosis & Repair

50% remote fix rate & minimum workflow interruptions

Guardian Program

23% reduced downtime through preventive monitoring of 400 critical system components

Smart Remote Services

MAGNETOM Lumina[1]

Technical specifications

Field strength	3 Tesla
Bore size	70 cm Open Bore design
System length from cover to cover	1.86 m
System weight (in operation)	5.5 tons
Minimum room size[5]	31 m²
RF technology	
Maximum number of channels[4]	180
Number of independent receiver channels that can be used simultaneously in one single scan and in one single FoV, each generating an independent partial image	32
Gradient strength	XK gradients 36/200 simultaneously [1.7 MVA]
Helium consumption	Zero Helium boil-off technology

International version. Not for distribution or use in the U.S.

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For accessories, please visit:
siemens.com/medical-accessories

[1] *MAGNETOM Lumina is 510(k) pending. It is not commercially available in all countries. Due to regulatory reasons the future availability cannot be guaranteed.*

[2] *Data on file.*

[3] *Still under development for MAGNETOM Lumina and not yet commercially available. Its future availability cannot be guaranteed.*

[4] *Innovision is still under development and not yet commercially available. Its future availability cannot be guaranteed.*

[5] *Channels (coil elements) that can be connected simultaneously.*

[6] *Minimum total space requirements for magnet, electronics, and console room.*

[7] *Cardiac Triggering is still under development and not commercially available yet. Its future availability cannot be ensured.*

[8] *syngo Virtual Cockpit is not commercially available yet in all countries. Its future availability cannot be guaranteed.*

[9] *The exemplary images and scan times displayed were acquired on MAGNETOM Vida.*

[10] *The MRI restrictions (if any) of the metal implant must be considered prior to patient undergoing MRI exam. MR imaging of patients with metallic implants brings specific.*

Siemens Healthineers Headquarters
Siemens Healthcare GmbH
Henkestr. 127
91052 Erlangen, Germany
Phone: +49 9131 84-0
siemens-healthineers.com

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