

SIEMENS



[siemens.com/skyra](https://www.siemens.com/skyra)

MAGNETOM Skyra

Image Gallery

Clinical excellence, consistently. With Tim+Dot.

Tim 4G (Total imaging matrix) Technology

Tim® 4G is Siemens ultimate innovation technology that unlocks imaging power like never before.

4G Flexibility

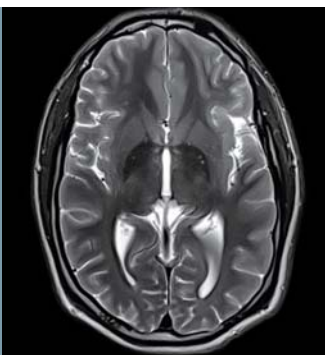
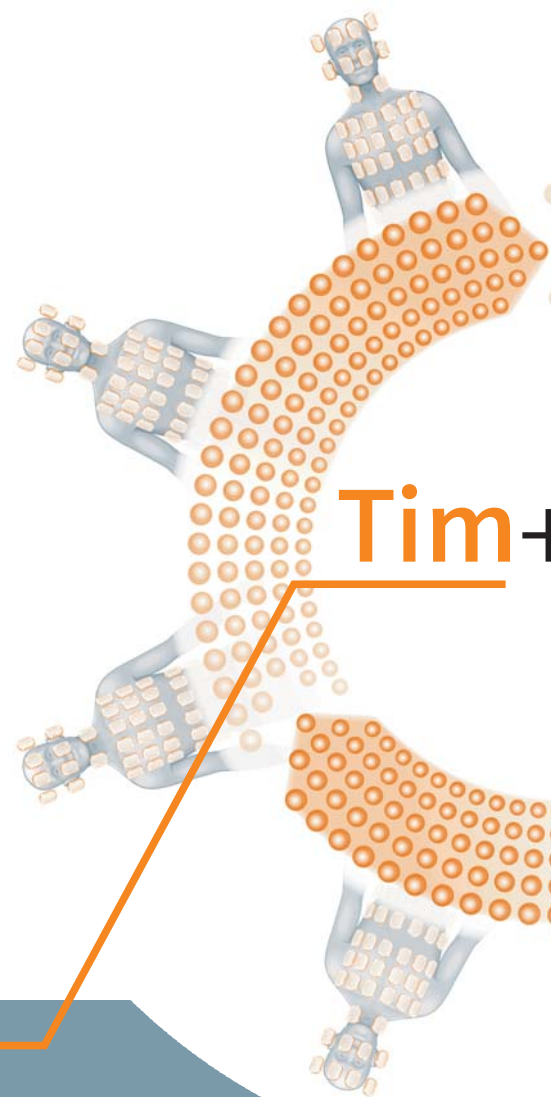
- Up to [204x128]. Ultra high-density coil array for high resolution and an imaging distance up to 205 cm with no coil repositioning
- Excellent flexibility of any coverage up to whole body
- Up to 204 coil elements combined with up to 128 channels* for flexible Parallel Imaging

4G Accuracy

- DirectRF™. Tim's new all digital-in/digital-out design for true signal purity
- From meters to microns. High resolution imaging even when zooming in on multistation images
- TimTX TrueForm. Optimized RF transmission for excellent B1 homogeneity

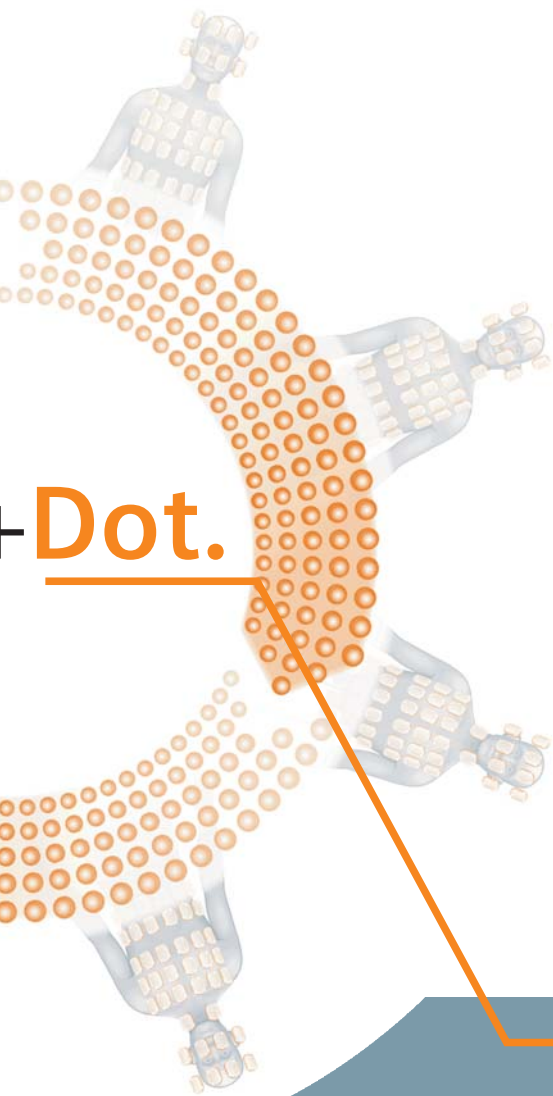
4G Speed

- Faster and simpler exam set-up and improved SNR with DirectConnect™ coils
- Tim 4G processing speed
- iPAT² technology. Parallel acquisition in two directions for fast 3D data



High image quality with
Tim's new 4G technology

Tim+Dot. Together, they



Dot.

Dot (Day optimizing throughput) Engine

Dot® offers a customizable framework to help optimize every part of your MR workflow.

Dot is personalized

- Optimized exam strategies. Your customized protocols are proposed based on the patient's condition or clinical indication
- Consistent, high quality exams even when conditions change
- Dot speaks your clinical language. Customize Dot to create strategies tailored to your clinical practice

Dot is guided

- Real-time on-board guidance. Dot guides you, intuitively, even through complicated exams
- Integrated decision points. The user can add or eliminate protocols or groups of protocols with the click of a button
- Customizable to your standards, to follow your standards of care

Dot is automated

- Intelligent, workflows. Dot engines can be tailored to your clinical needs
- Effortless set-up. Dot links your protocols and procedures
- Timing is synchronized. Dot integrates AutoVoiceCommands ensuring the synchronized timing of breathing, scanning. In addition, contrast timing is more accurate due to AutoBolus Detection.

Image consistency and
diagnostic confidence with
Siemens unique Dot engines



redefine productivity.

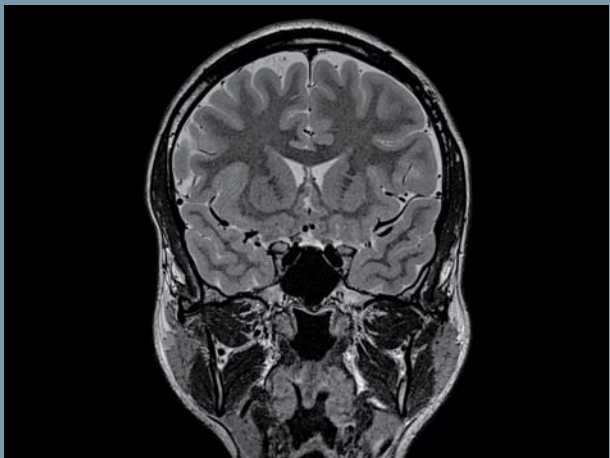
Brain

Head/Neck 20

Tim 4G offers a 20-channel Head/Neck coil designed to accommodate a wide variety of patients while offering a superb signal-to-noise ratio (SNR) for both clinical and research imaging. The unique Dual-Density Signal Transfer architecture enables a DirectConnect design eliminating cables to reduce set-up time.



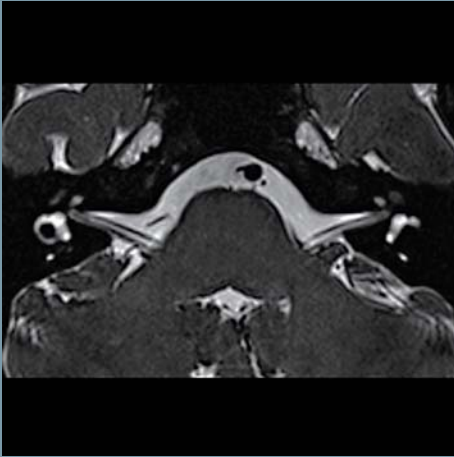
T2 TSE, 512 matrix, SL 4 mm, TR 6000, TE 100, TA 1:30 min
University Hospital Mannheim, Mannheim, Germany



T2 TSE, 512 matrix, SL 1.5 mm, TR 4440, TE 73, TA 3:25 min

Tim coil activation:

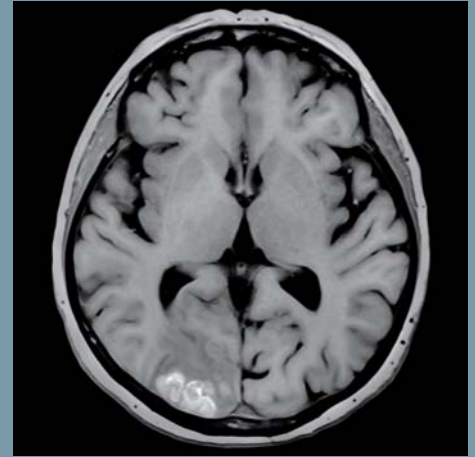
| | | | |
|---------------------|----------|---------|--------------|
| Peripheral Angio 36 | Body 18 | Body 18 | Head/Neck 20 |
| | Spine 32 | | |



T2 3D SPACE, isotropic, 384 matrix, SL 0.5 mm, TR 1000, TE 138, TA 4:15 min



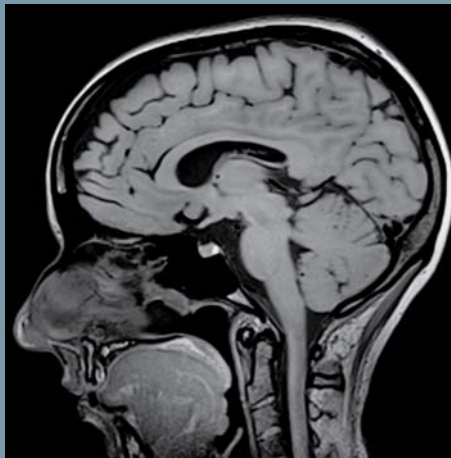
T2 3D SPACE, VRT, isotropic, 384 matrix, SL 0.5 mm, TR 1000, TE 138, TA 4:15 min



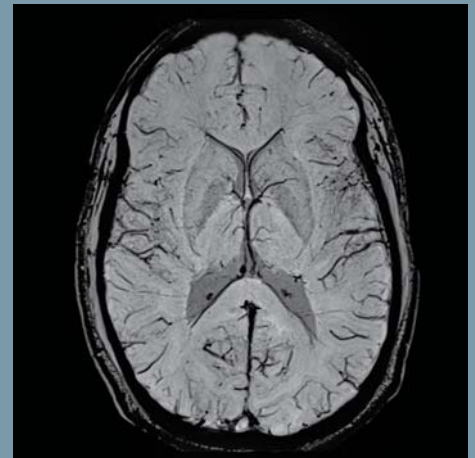
T1 FLASH, native, 320 matrix, SL 4 mm, TR 250, TE 2.5, TA 1:16 min
MRI Bethanien, Zuerich, Switzerland



T1 TSE FatSat, 320 matrix, SL 3 mm, TR 600, TE 9, TA 4:46 min



T1 3D SPACE, GRAPPA 2, isotropic, 256 matrix, SL 0.9 mm, TR 700, TE 12, TA 5:59 min



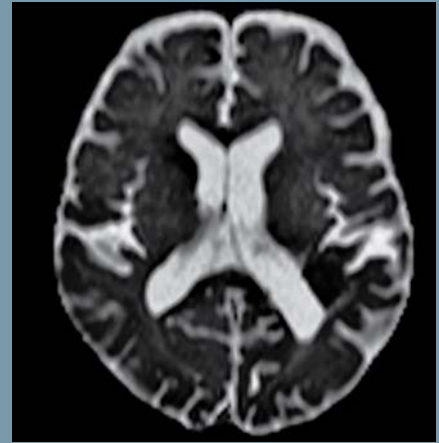
3D SWI minIP, GRAPPA 2, 384 matrix, SL 1.2 mm, TR 28, TE 20, TA 6:36 min



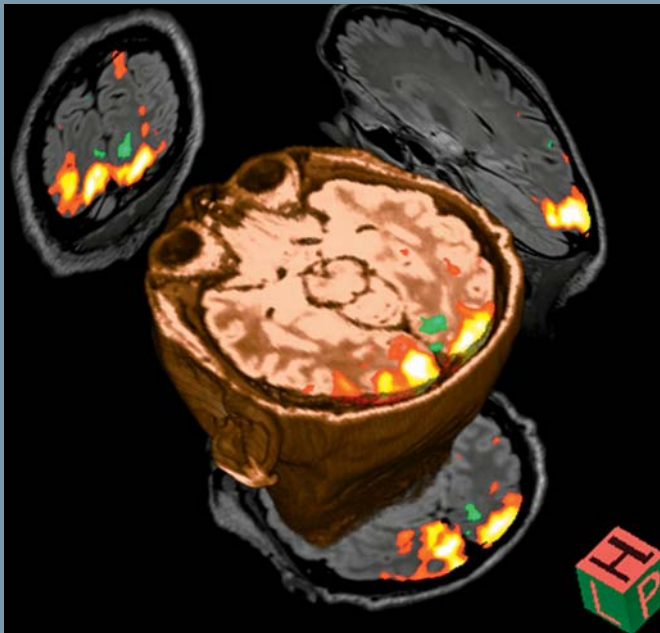
T2 TSE, GRAPPA 2, 448 amtrix, SL 3 mm,
TR 3000, TE 81, TA 1:48 min
Kyoto University Hospital, Kyoutoshi
Sakyoku, Japan



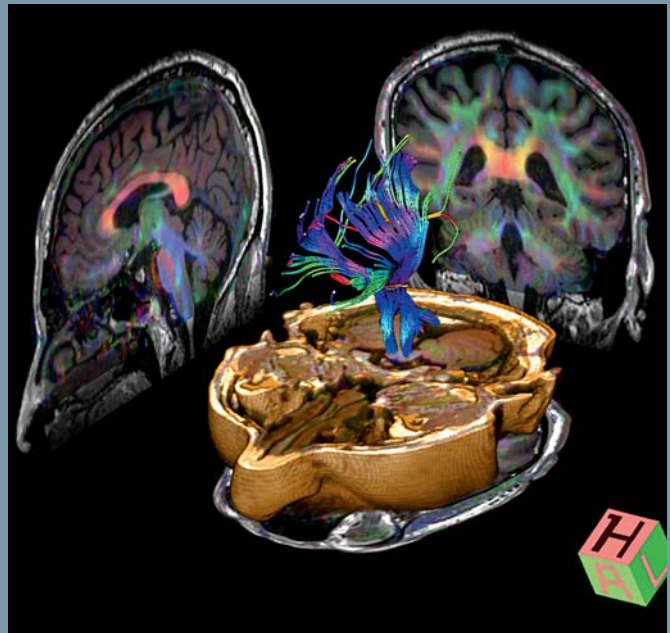
EPI Diffusion b-value 1000, GRAPPA 3, 160
matrix, SL 3 mm, TR 4400, TE 80, TA 0.03 s/slice
Kyoto University Hospital, Kyoutoshi
Sakyoku, Japan



EPI Diffusion ADC map, GRAPPA 3, 160 matrix,
SL 3 mm, TR 4400, TE 80, TA 0.03 s/slice
Kyoto University Hospital, Kyoutoshi
Sakyoku, Japan



EPI FatSat, coloured 3d, fused with 3D SPACE Dark Fluid, GRAPPA 2,
94 matrix, SL 3 mm, TR 3010, TE 30, TA 0.03 s/slice



DTI Fibertracking, 20 directions, GRAPPA 2, 128 matrix,
SL 4 mm, TR 3800, TE 95, TA 0.03 s/slice

Tim coil activation:

Peripheral Angio 36

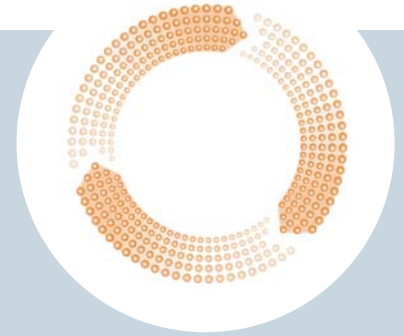
Body 18

Body 18

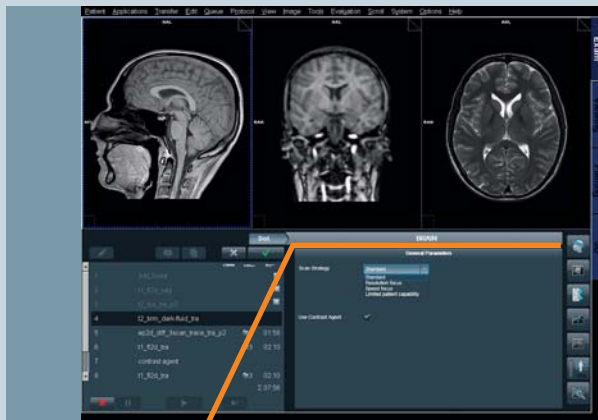
Head/Neck 20

Spine 32

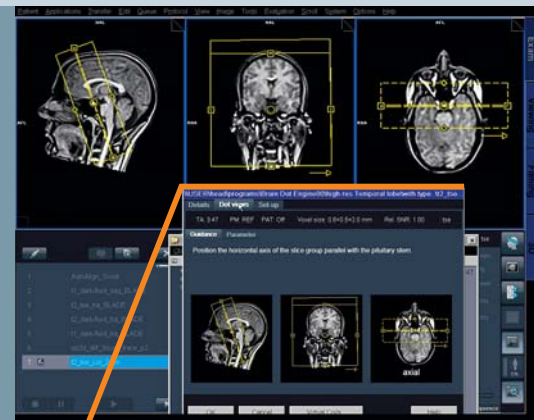
Brain Dot Engine



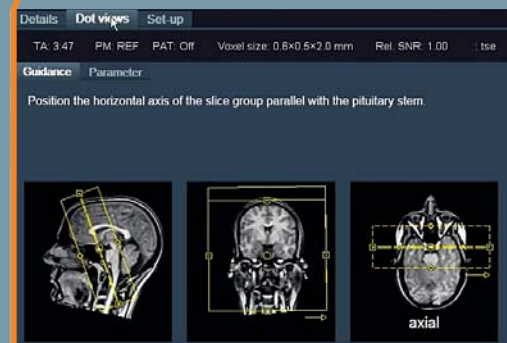
The Brain Dot Engine simplifies general brain examinations with guided and automated workflows customized to your standards of care. It supports the user in achieving reproducible image quality with increased ease of use and time efficient exams. With *syngo* BLADE the Brain Dot Engine improves image quality by correcting for the effects of motion during an MR acquisition. With Inline Technology automatic calculation of trace-weighted images and ADC maps are available, i.e. Inline Diffusion. The Brain Dot Engine has been shown to reduce exam times by 20% and significantly reduce the need for manual parameter adjustments.*



Dot Exam Strategies: With an intuitive drop-down menu, different protocols from your institution are automatically selected to get the best possible results – for virtually any type of patient.



Dot Guidance View: Step-by-step user guidance for more efficient scanning. Images and texts are easily customizable.



*Results may vary, data on file – Results: Prof. Forsting, Prof. Antoch, Department of Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Germany

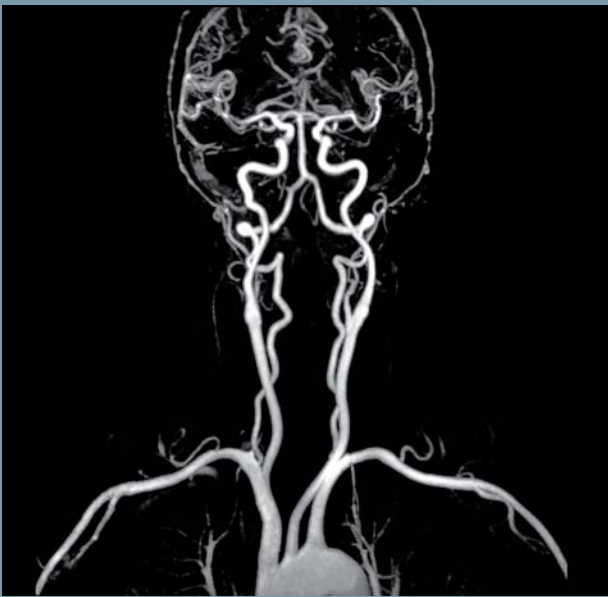
Neurovascular

Head/Neck 20, Body 18 and Spine 32

The flexibility of Tim 4G allows you to easily create your own neurovascular array. The combination of Tim's Head/Neck 20, Body 18, and Spine 32 coils enables a seamless imaging field of view from the heart to the top of the head to ease examinations such as the carotid arteries or brachial plexus.



3D FLASH ToF, MIP, GRAPPA 2, 384 matrix, SL 0.5 mm, TR 22, TE 4.8, TA 5:32 min, Jacksonville Site, Jacksonville, USA



3D FLASH ce-MRA, MIP, GRAPPA 2, 384 matrix, SL 0.9 mm, TR 3, TE 1.1, TA 16 s MRI Bethanien, Zuerich, Switzerland

Tim coil activation:

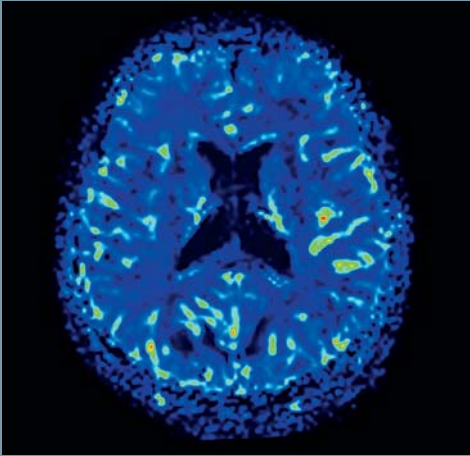
Peripheral Angio 36

Body 18

Body 18

Head/Neck 20

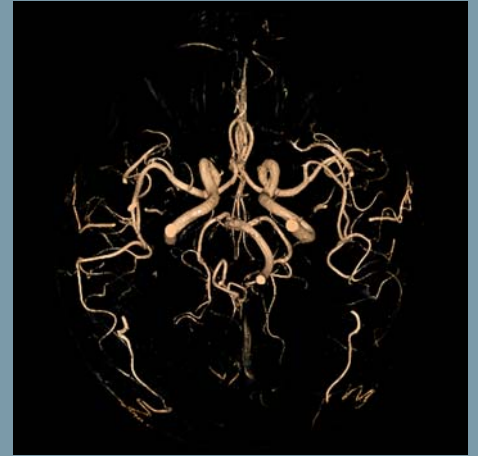
Spine 32



EPI Perfusion relCBF, GRAPPA 3, 128 matrix,
SL 4 mm, TR 1350, TE 30, TA 0.04 s/slice
MRI Bethanien, Zuerich, Switzerland



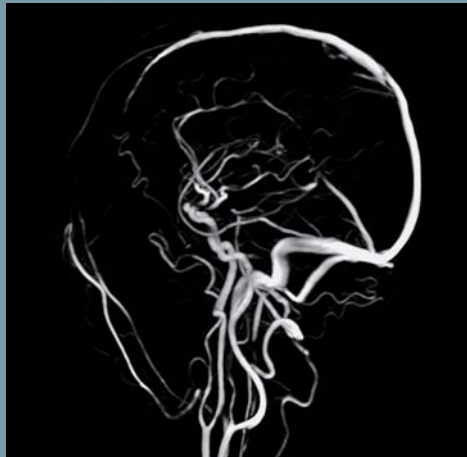
3D FLASH ToF Tone, MIP, GRAPPA 2, 512 matrix,
SL 0.5 mm, TR 23, TE 4, TA 6:36 min



3D FLASH ToF, VRT, GRAPPA 2, 384 matrix,
SL 0.5 mm, TR 21, TE 3.4, TA 10:36 min
*University Hospital Kyoto, Kyotoshi Sakyouku,
Japan*



3D FLASH ToF, MIP, GRAPPA 2, 384 matrix,
SL 0.5 mm, TR 21, TE 3.4, TA 10:36 min
*University Hospital Kyoto, Kyotoshi Sakyouku,
Japan*

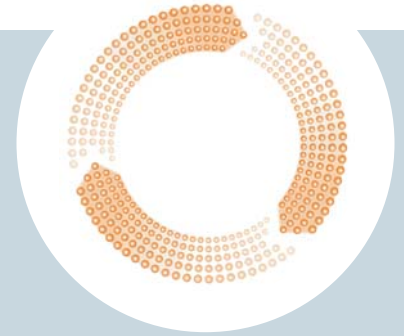


Phasec Contrast, MIP, GRAPPA 2, SL 3 mm,
TR 35.7, TE 7.9, TA 2:03 min
Cardiocentro Ticino, Lugano, Switzerland



3D FLASH ce-MRA, VRT, GRAPPA 2, 384 matrix,
SL 0.9 mm, TR 3, TE 1.1, TA 16 s
MRI Bethanien, Zuerich, Switzerland

TimCT Angio Dot Engine



TimCT Angio Dot Engine employs the revolutionary TimCT (Continuous Table move) technology for large field of view angiographies with smooth workflow and homogeneous image quality. There is no time lost due to inter station table move, and no need to compose images. Thanks to the streamlined and automated workflow and the fast acquisition time with TimCT Angio Dot Engine, a complete peripheral vessel runoff exam can be performed in less than 15 minutes* with homogeneous image quality.

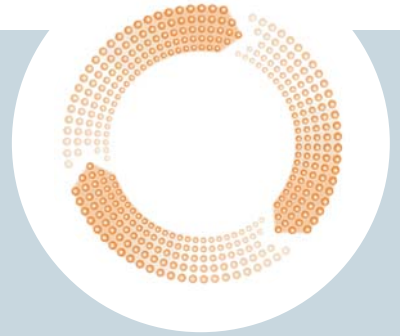
TimCT Angio Dot Engine offers optimized protocols for peripheral vessel runoff exams. It allows CT-like scanning with MR: Just define start and end of the scan range. There is no need to plan multiple steps or overlapping sections.

3D FLASH ce-MRA, MIP, GRAPPA 3,
320 matrix, SL 1.1 mm, TR 2.5,
TE 0.9, TA 43 s
*University Hospital Mannheim,
Mannheim, Germany*

*Results may vary. Data on file.

Angio Dot Engine

The Angio Dot Engine helps take the complexity out of MR angiography examinations. It enables the user to perform high spatial resolution, contrast-enhanced MR angiography with optimized contrast to noise ratio.

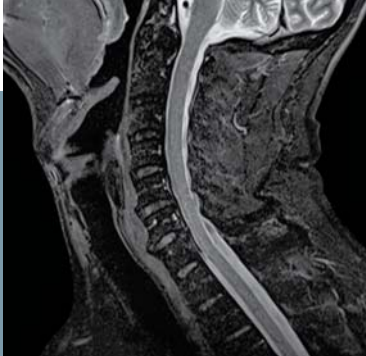


After a simple click the localizer and vessel scout are acquired and loaded into the Graphical Slice Positioning (GSP). The next workflow step opens a customizable Guidance View that visually explains how to set up the test bolus measurement correctly. According to the instructions, you adjust the test bolus slice in the GSP. The planning of the test bolus step is completed by simply clicking on apply.

Spine cervical/ Neck imaging

Head/Neck 20 and Spine 32

The neck portion of the Head/Neck 20 coil enables excellent cervical spine imaging through a combination of high SNR and an open design to accommodate a wide variety of patient shapes and sizes. The Head/Neck 20 coil can be combined with the Spine 32 coil to image further down the spine at any time during the exam and without patient repositioning.



TIRM, GRAPPA 2, 320 matrix, SL 3 mm,
TR 2500, TE 47, TI 220, TA 2:24 min
*University Hospital Mannheim,
Mannheim, Germany*



T1 TSE, 320 matrix, SL 3 mm, TR 650,
TE 9.7, TA 4:40 min
*University Hospital Mannheim,
Mannheim, Germany*



T2 TSE DIXON water image, GRAPPA 2, 320 matrix,
SL 3 mm, TR 4300, TE 105, TA 1:56 min

Tim coil activation:

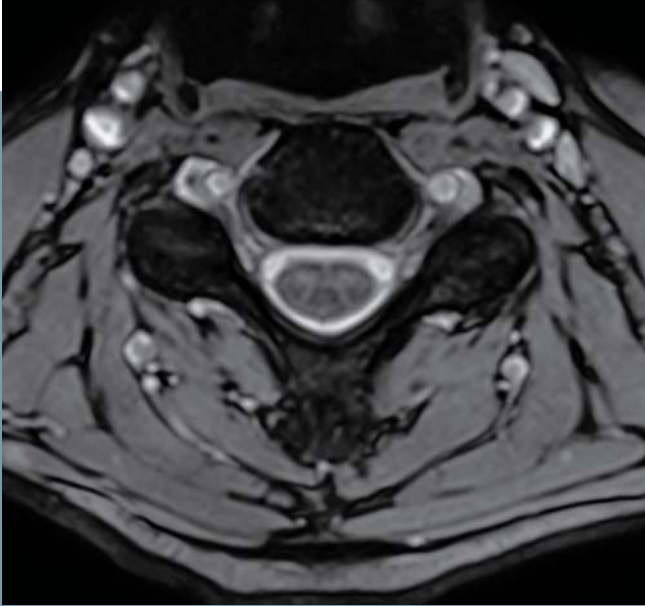
Peripheral Angio 36

Body 18

Body 18

Head/Neck 20

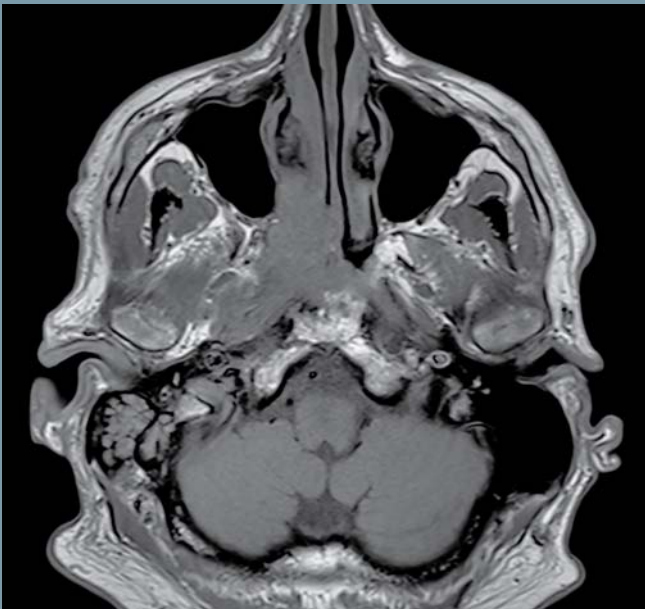
Spine 32



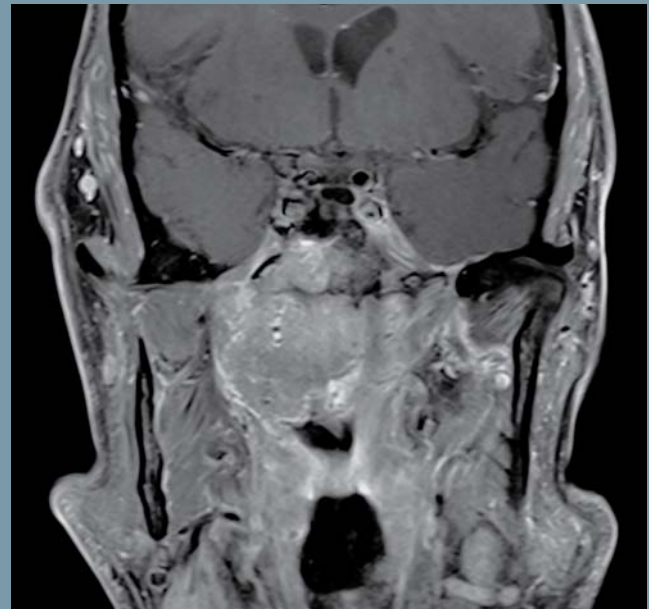
T2 MEDIC, GRAPPA 2, 256 matrix, SL 3 mm, TR 512, TE 14,
TA 4:44 min



T2 3D SPACE, GRAPPA 2, 256 matrix, SL 1.5 mm,
TR 1500, TE 128, TA 4:56 min
University Hospital Mannheim, Mannheim, Germany



T1 TSE, 320 matrix, SL 3 mm, TR 500, TE 9, TA 2:38 min
MRI Bethanien, Zuerich, Switzerland



T1 TSE FatSat, 320 matrix, SL 3 mm, TR 718, TE 9, TA 3:44 min
MRI Bethanien, Zuerich, Switzerland

Spine thoracic lumbar

Spine 32

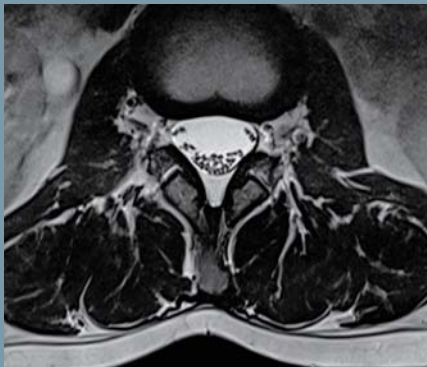
With a high density of elements, Tim 4G's Spine 32 coil offers a flexible solution that accommodates a wide variety of lumbar spine patients. The extensive coverage of the coil makes patient positioning easier and each row of elements can be switched on or off from the user console to maximize speed and SNR. A total of 12 elements would normally be selected for routine lumbar exams enabling iPAT to reduce exam times.



TIRM, GRAPPA 2,
256 matrix, SL 3 mm,
TR 3600, TE 46,
TI 220, TA 2:06 min



T1 TSE, GRAPPA 2, 320
matrix, SL 3 mm, TR 650,
TE 8.1, TA 1:21 min
*University Hospital
Mannheim, Mannheim,
Germany*



T2 TSE, 448 matrix,
SL 3 mm, TR 3500,
TE 101, TA 4:18 min
*Jacksonville Site,
Jacksonville, USA*

Tim coil activation:

Peripheral Angio 36

Body 18

Body 18

Head/Neck 20

Spine 32



T1 TSE, 384 matrix, SL 3 mm, TR 650, TE 9.5,
TA 4:30 min



T1 FLASH opposed phase, 320 matrix, SL 3 mm, TR 200,
TE 3.7, TA 3:04 min

Whole Spine

Head/Neck 20 and Spine 32

Whole spine imaging in two or three steps without the need for patient repositioning is easily achieved with the Head/Neck 20 coil and the Spine 32 coil. In addition, the *syngo* user interface allows you to quickly move back and forth between spinal regions if exams call for images before and after contrast agents. *syngo* Composing makes it possible to view the entire spine as one, seamless image for a comprehensive evaluation.



T1 TIRM dark fluid, 3 steps, GRAPPA 3, 448 matrix, SL 4 mm, TR 4000, TE 47, TI 220, TA 3x4:28 min

Tim coil activation:

| | | | |
|---------------------|---------|---------|--------------|
| Peripheral Angio 36 | Body 18 | Body 18 | Head/Neck 20 |
| Spine 32 | | | |



TIRM, 2 steps, GRAPPA 2, 448 matrix, SL 3.5 mm, TR 2000, TE 9.5, TI 800, TA 2x2 min
Jacksonville Site, Jacksonville, USA

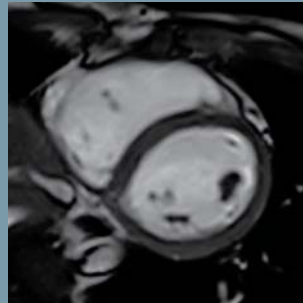


T2 TSE, 2 steps, GRAPPA 2, 512 matrix, SL 3.5 mm, TR 3600, TE 112, TA 2x2:02 min
Jacksonville Site, Jacksonville, USA

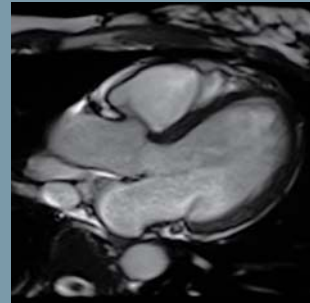
Chest & Heart

Body 18 and Spine 32

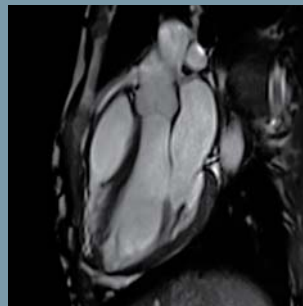
Imaging of the chest and heart is challenging due to the complexity of respiratory and cardiac motion. The Body 18 coil combines with the Spine 32 coil to offer up to 30 elements in a single field of view for chest or cardiac exams. This high density of elements enables high SNR and increased parallel imaging factors in any direction to achieve ultra-fast acquisition times. In addition, *syngo* PACE offers software based triggering and gating resulting in superb thoracic and abdominal image quality.



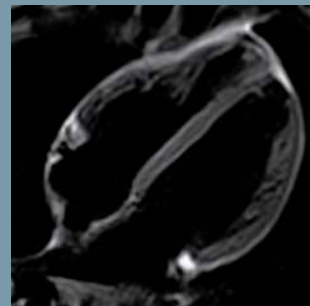
TrueFISP cine retro, GRAPPA 2, 256 matrix, SL 5 mm, TR 51.5, TE 1.5, TA 10x4.9 s



TrueFISP cine retro, GRAPPA 3, 256 matrix, SL 6 mm, TR 41.3, TE 1.5, TA 7.28 s



TrueFISP cine retro, GRAPPA 3, 256 matrix, TR 41.3, TE 1.5, TA 7.58 s



T2 TSE Dark Blood, GRAPPA 4, 256 matrix, SL 6 mm, TR 2180.6, TE 71, TA 8.8 s



T2 HASTE, GRAPPA 3, 320 matrix, SL 8 mm, TR 200, TE 22, TA 0.25 s/slice

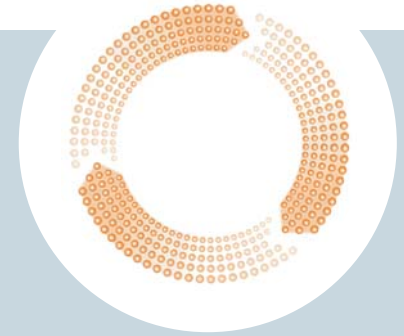


T2 3D SPACE, MIP inverted, GRAPPA 2, 320 matrix, SL 4 mm, TR 3688.4, TE 89, TA 4:33 min

Tim coil activation:

| | | | |
|---------------------|----------|---------|--------------|
| Peripheral Angio 36 | Body 18 | Body 18 | Head/Neck 20 |
| | Spine 32 | | |

Cardiac Dot Engine



Cardiac imaging is widely regarded as one of the most complex exams in MRI. To help make Cardiac MRI routine, the Cardiac Dot Engine guides through the examination to achieve excellent results, consistently. Clinical testing of the Cardiac Dot Engine showed a significant increase in cardiac MR patient throughput by 50%.*



Cardiac exams are easier and more consistent with the Cardiac Dot Engine. 5 simple guidance steps assist the user in acquiring the basic cardiac views. The intuitive text and image examples provide support throughout the exam.

*Results may vary, data on file – Results: Dr. Russell Bull, Royal Bournemouth Hospital, U.K.

Abdomen

(1 Body 18 coil)

Body 18 and Spine 32

The all new Body 18 coil advances abdominal imaging with an ultra-high density array of elements and extended coverage in a light and flexible design. Combining the Body 18 coil with the Spine 32 coil enables 30 channel imaging. The Body 18 coil can also be rotated 90 degrees to extend the z-direction coverage.



T2 TSE, GRAPPA 2, respiration-triggered, 448 matrix, SL 5 mm, TR 5978.3, TE 100, TA 6 min

Tim coil activation:

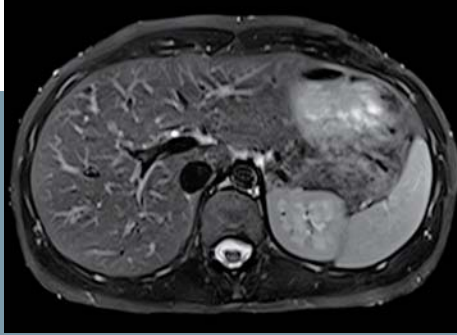
Peripheral Angio 36

Body 18

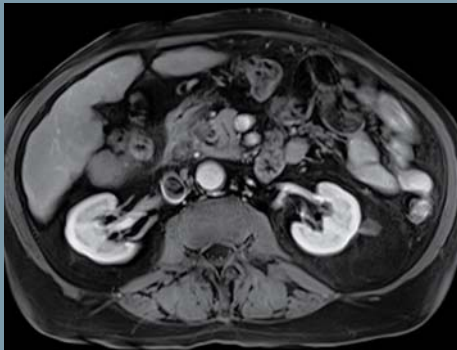
Body 18

Head/Neck 20

Spine 32



TIRM, GRAPPA 2, respiration-triggered,
384 matrix, SL 5 mm, TR 5474.2, TE 82,
TI 220, TA 3:56 min



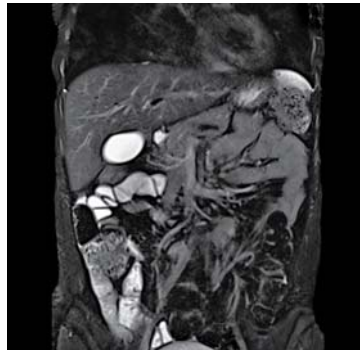
T1 3D VIBE FatSat, GRAPPA 2, 320 matrix,
SL 3 mm, TR 4.3, TE 1.9, TA 15 s
*University Hospital Mannheim, Mannheim,
Germany*



T2 HASTE, GRAPPA 2, 320 matrix, SL 5 mm,
TR 1600, TE 95, TA 0.96 s/slice

Abdomen

(2 Body 18 coils)



T2 TSE SPAIR, GRAPPA 3, respiration-
triggered, 320 matrix, SL 6 mm,
TR 3300, TE 105, TA 1:24 min



T1 3D VIBE FatSat, GRAPPA 3,
288 matrix, SL 0.9 mm, TR 3.2, TE 1.1,
TA 18 s



Tim coil activation:

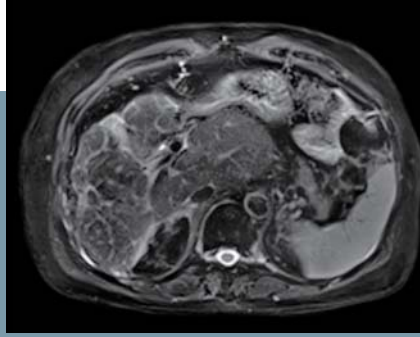
Peripheral Angio 36

Body 18

Body 18

Head/Neck 20

Spine 32



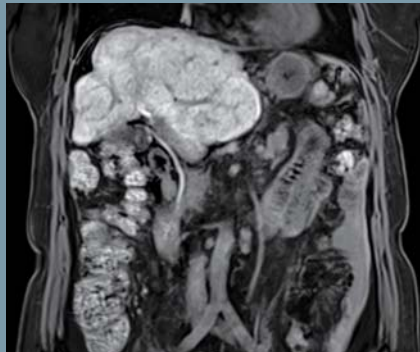
T2 TSE SPAIR, with BLADE, GRAPPA 3, respiration-triggered, 256 matrix, SL 5 mm, TR 5945.6, TE 90, TA 5:10 min, *University Hospital Kyoto, Kyoutoshi Sakyoku, Japan*



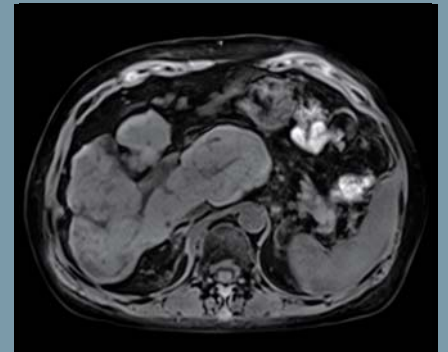
3D VIBE dynamic, 25 s post contrast, GRAPPA 2, 320 matrix, SL 3 mm, TR 3.6, TE 1.3, TA 21 s, *University Hospital Kyoto, Kyoutoshi Sakyoku, Japan*



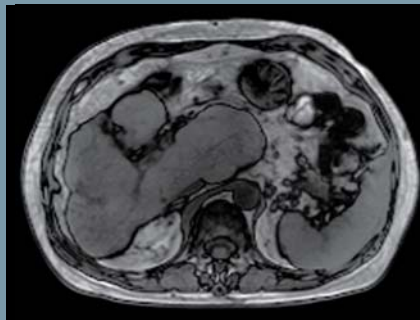
T2 HASTE, 2 steps, GRAPPA 4, 384 matrix, SL 7 mm, TR 1400, TE 92, TA 30x1.24 s
Jacksonville Site, Jacksonville, USA



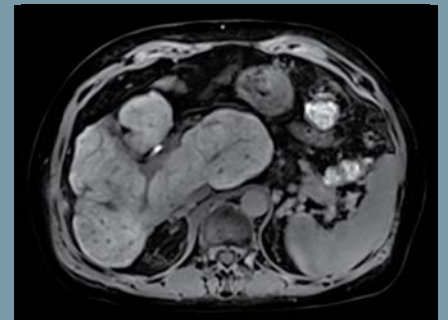
3D VIBE, GRAPPA 3, 320 matrix, SL 3.5 mm, TR 3.2, TE 1.2, TA 20 s
University Hospital Kyoto, Kyoutoshi Sakyoku, Japan



3D VIBE dynamic, native, GRAPPA 2, 320 matrix, SL 3 mm, TR 3.6, TE 1.3, TA 21 s
University Hospital Kyoto, Kyoutoshi Sakyoku, Japan



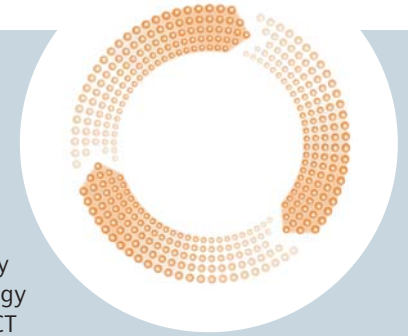
T1 FLASH, opposed phase, GRAPPA 2, 256 matrix, SL 5 mm, TR 165, TE 1.2, TA 29 s
University Hospital Kyoto, Kyoutoshi Sakyoku, Japan



3D VIBE dynamic, 20 min post contrast, GRAPPA 2, 320 matrix, SL 3 mm, TR 3.6, TE 1.3, TA 21 s, *University Hospital Kyoto, Kyoutoshi Sakyoku, Japan*

TimCT Onco Dot Engine

TimCT Onco Dot Engine employs the revolutionary TimCT (Continuous Table move) technology for large field of view exams, even up to whole body. Combined with our unique Dot technology providing additional workflow benefits such as AutoBolusDetection, Timeline, AutoFOV, TimCT helps users achieve a smooth workflow and homogeneous image quality. There is no time lost in examinations due to inter-station table move and no need to compose images. Thanks to the streamlined and automated workflow and the fast acquisition time with TimCT Onco Dot Engine, a comprehensive and complete whole body scan i.e., for staging of advanced tumors, can be performed in less than 30 min total exam time.*

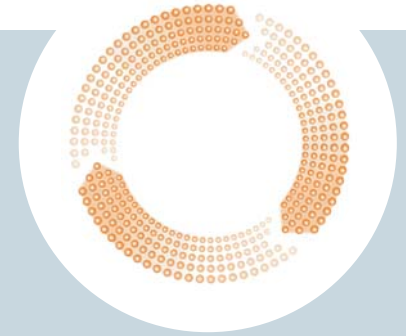


TimCT Onco Dot Engine includes all sequences required for a comprehensive and fast assessment of pathologies: axial 2D multi-slice sequences for both T1-weighted FLASH and T2-weighted TSE imaging. The TSE variant can also be combined with *syngo* BLADE for motion insensitivity. The FLASH variant can also be combined with DIXON to acquire inphase, opposed-phase, water and fat images in one measurement. And for assessment of the liver, our unique imaging technologies for easy and patient-tailored dynamic scans are fully integrated. No need to plan in multiple steps. No need to plan overlapping areas.

*Results may vary. Data on file.

Abdomen Dot Engine

One of the most complex MR exams is an exam of the liver. Today, the challenge is the calculation of the timing. The Abdomen Dot Engine gives unique guidance through the examination and assists the user in important workflow steps to achieve excellent results, consistently. Clinical testing of the Abdomen Dot Engine showed a 28% increase in timing accuracy for enhanced liver examinations.*



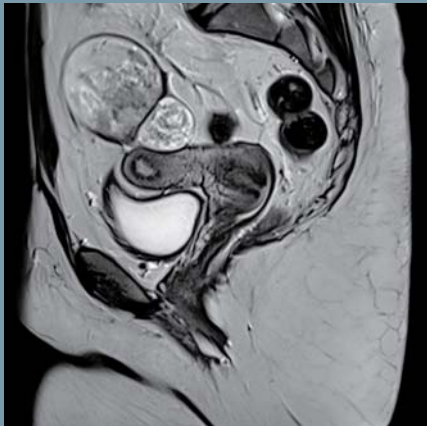
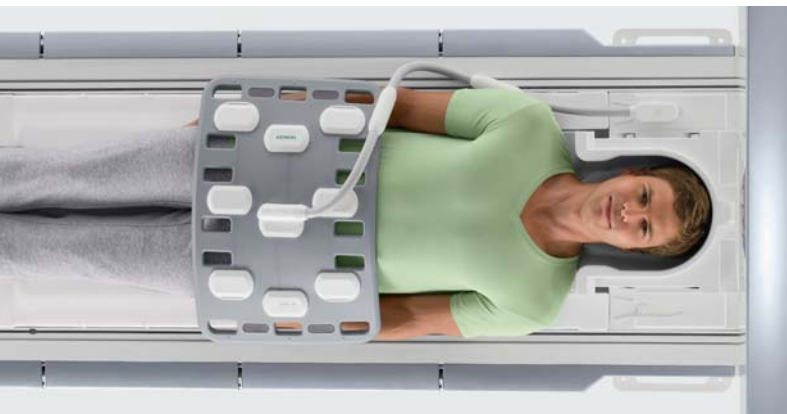
Dot's Guidance View intuitively displays the different phases of the liver dynamics. On this timeline, the user can easily plan the liver dynamics patient-specifically. After the user has input the settings and started the scan, the liver dynamic scans run without any further user interaction. The same timeline is displayed online in the monitoring area while the liver dynamic examination is performed. This makes it easy to keep an eye on the timing and directly observe which phase is already measured and what phase comes next.

*Results may vary. Data on file. Results: D.R. Martin, Emory University, United States

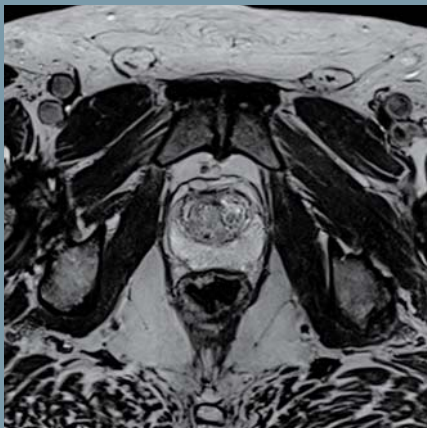
Pelvis

Body 18 and Spine 32

MR exams of the pelvis can now be acquired routinely with up to 30 channels for outstanding SNR and parallel imaging performance. The extended coverage of the Body 18 coil makes it possible to cover the entire pelvis and is combined with the Spine 32 coil to improve SNR.



T2 TSE, GRAPPA 2,
320 matrix, SL 4 mm,
TR 4000, TE 81,
TA 3:36 min



T2 3D SPACE,
GRAPPA 2, 320 matrix,
SL 1 mm, TR 1700,
TE 100, TA 8:24 min



TIRM, GRAPPA 2,
384 matrix, SL 4 mm,
TR 5000, TE 57,
TI 220, TA 2:45 min

Tim coil activation:

Peripheral Angio 36

Body 18

Body 18

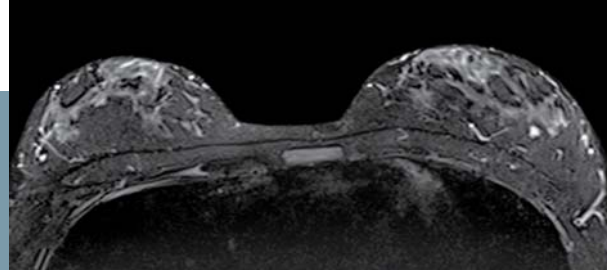
Head/Neck 20

Spine 32

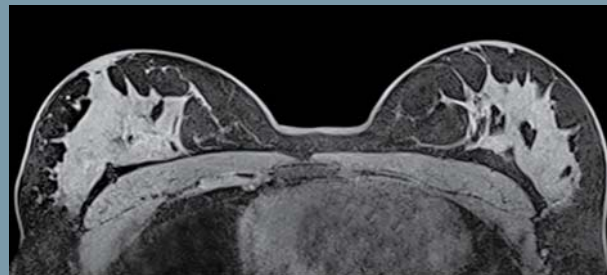
Breast

Breast coils

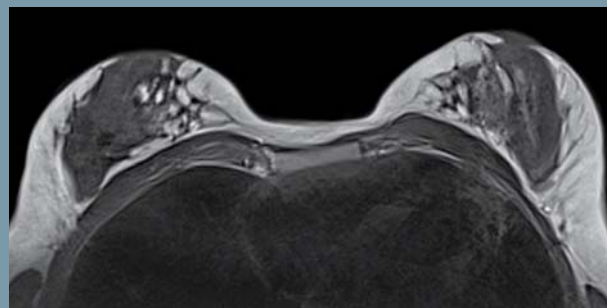
A variety of breast coils are enabled by the Tim Coil Interface resulting in flexible breast imaging options to meet a variety of needs. From clinical imaging to biopsy guidance, the MAGNETOM Skyra offers a wide selection of breast coils and enables outstanding image quality. Additionally, the 70 cm Open Bore of MAGNETOM Skyra makes it possible to comfortably accommodate more patients.



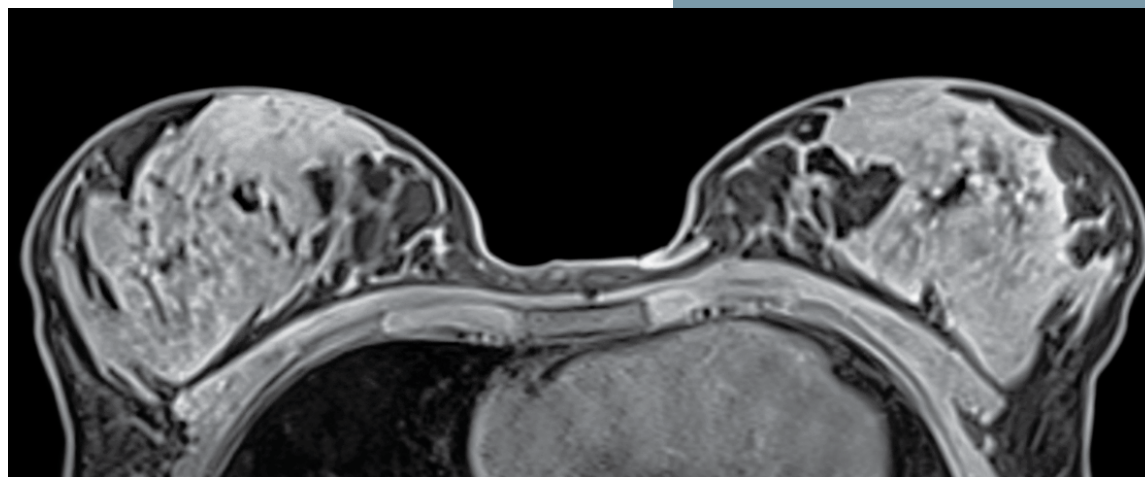
TIRM, GRAPPA 3, 448 matrix, SL 4 mm, TR 3500, TE 70, TI 230, TA 2:12 min



3D delVIEWS, GRAPPA 3, 448 matrix, SL 0.8 mm, TR 8, TE 3.9, TA 2:32 min



T2 TSE, with BLADE, GRAPPA 2, 384 matrix, SL 4 mm, TR 6160, TE 104, TA 2:53 min

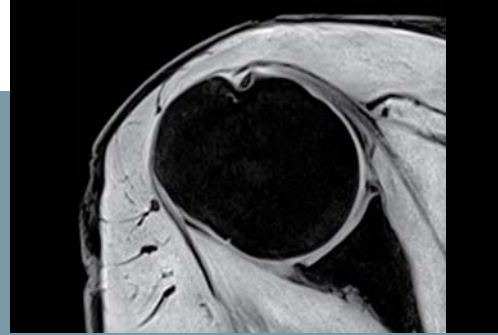
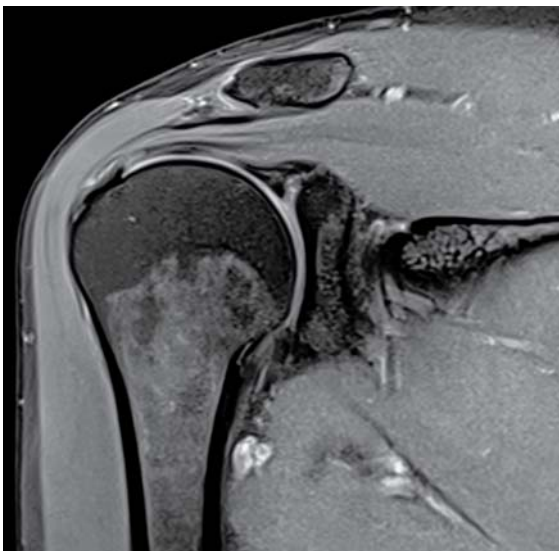


3D dynVIEWS SPAIR, GRAPPA 2, 384 matrix, SL 1.5 mm, TR 4.8, TE 1.7, TA 1:02 min

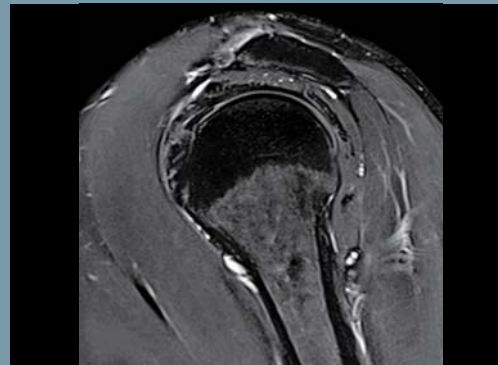
Shoulder

Shoulder 16

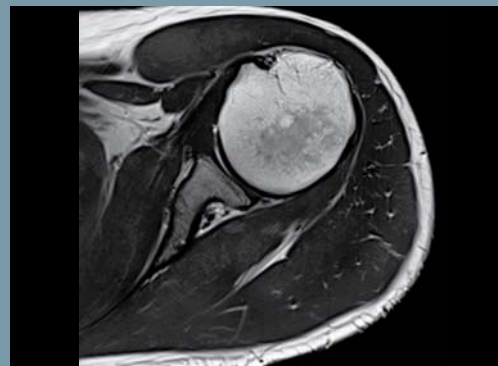
The Shoulder 16 coil currently offers the industry's highest number of elements for shoulder imaging. This high density of elements can be used to achieve excellent shoulder exams with outstanding speed. The Shoulder 16 coil is delivered in both small and large versions to accommodate more patient sizes and shapes.



T1 3D VIBE water excitation, GRAPPA 2, 320 matrix, SL 1.5 mm, TR 13.90, TE 7.3, TA 2:20 min
University Hospital Mannheim, Mannheim, Germany



T2 TSE FatSat, GRAPPA 2, 320 matrix, SL 2.5 mm, TR 5000, TE 64, TA 3:05 min
University Hospital Mannheim, Mannheim, Germany



T2 TSE, with BLADE, 320 matrix, SL 3 mm, TR 4500, TE 70, TA 4:13 min

T1 TSE FatSat, GRAPPA 2, 320 matrix, SL 3 mm, TR 664, TE 21, TA 2:48 min

Elbow

Flex Small 4 and Flex Large 4

Examinations of the elbow require a highly flexible coil solution. The small and large Flex coils offer 4 channels in a design that easily fits the shape of the elbow. And with the access provided by MAGNETOM Skyra's 70 cm Open Bore, it's possible to perform most elbow exams with the patients arm at their side.



PD TSE, 384 matrix, SL 3 mm, TR 3000, TE 36, TA 3:21 min



PD TSE FatSat, 320 matrix, SL 3 mm, TR 3000, TE 34,
TA 3:45 min



T2 FLASH, 384 matrix, SL 2 mm, TR 500,
TE 10, TA 3 min



T2 TSE, 384 matrix, SL 3 mm, TR 4000, TE 82,
TA 2:32 min
*University Hospital Mannheim, Mannheim,
Germany*

Hand/Wrist

Hand/Wrist 16

The Hand/Wrist 16 coil concentrates 16 channels over the hand and wrist area to enable superb imaging. The coil is large enough to accommodate a wide variety of patients while still providing excellent SNR. The rigid design reduces involuntary patient motion for superb image quality.



T1 TSE, GRAPPA 3, 640 matrix, SL 3 mm, TR 500, TE 12, TA 1:17 min



PD TSE FatSat, 320 matrix, SL 3 mm, TR 3000,
TE 31, TA 2:57 min
University Hospital Mannheim, Mannheim, Germany



T2 TSE, 320 matrix, SL 3 mm, TR 4000,
TE 75, TA 2:20 min

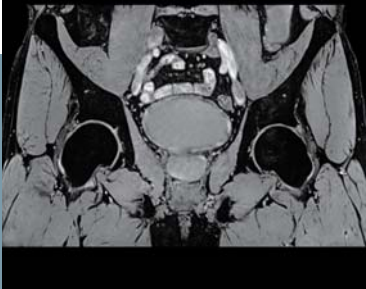


T2 TSE FatSat, 320 matrix,
SL 2.5 mm, TR 4000, TE 75,
TA 2:20 min

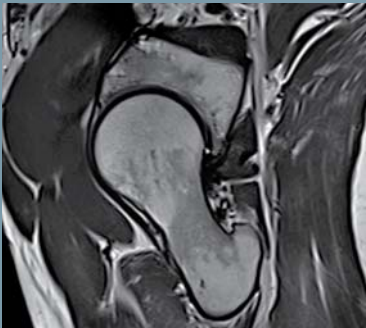
Hip

Body 18 and Spine 32

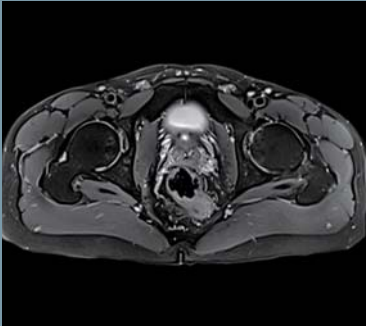
The Body 18 coil combines a high-density array with large or small field of view coverage for hip imaging. Hip exams with high SNR and high resolution are easily achieved. The coil is generally large enough to cover both hips for bilateral imaging or can be wrapped around one side to increase the element density when examining unilaterally.



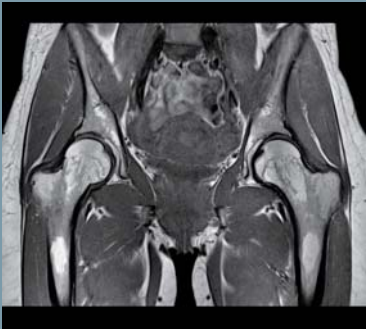
T2 3D MEDIC water excitation, isotropic, GRAPPA 2, 576 matrix, SL 0.7 mm, TR 23, TE 13, TA 6:25 min



T2 TSE, 320 matrix, SL 3 mm, TR 4500, TE 85, TA 2:56 min



PD TSE SPAIR, GRAPPA 2, 320 matrix, SL 3 mm, TR 3000, TE 38, TA 3:42 min



T1 TSE, GRAPPA 2, 512 matrix, SL 3 mm, TR 600, TE 20, TA 3:30 min

Tim coil activation:

Peripheral Angio 36

Body 18

Body 18

Head/Neck 20

Spine 32

Knee

Tx/Rx 15-Channel Knee Coil

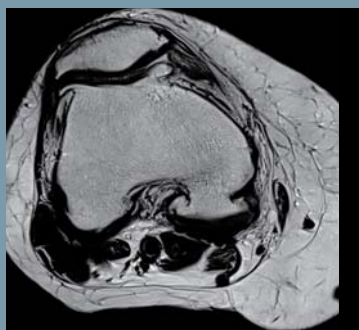
The Tx/Rx 15-Channel Knee Coil enables parallel imaging in any direction to power 2D and 3D knee exams with excellent resolution and a fast exam time. The coil's large architecture accommodates a wide variety of patients. If necessary, the Body 18 coil can also be used to image knees.



PD TSE, 384 matrix, SL 3 mm,
TR 3100, TE 39, TA 3:16 min



T2 3D DESS water excitation,
GRAPPA 2, 256 matrix,
SL 0.6 mm, TR 14.8, TE 5,
TA 3:42 min

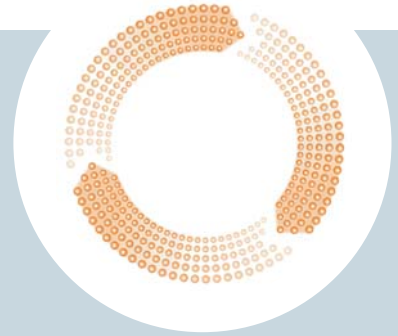


T2 TSE, GRAPPA 2, 384 matrix,
SL 3 mm, TR 4500, TE 95,
TA 2:47 min
*University Hospital Mannheim,
Mannheim, Germany*



T2 TSE FatSat, GRAPPA 2,
384 matrix, SL 3 mm,
TR 4614.3, TE 61, TA 2:13 min
*Jacksonville Site, Jacksonville,
USA*

Knee Dot Engine



MR examinations of the knee are commonly performed in a variety of settings. The Knee Dot Engine is designed to provide an efficient and flexible 2D or 3D imaging workflow for all. The 3D Knee Dot Engine supports the paradigm shift to increased 3D imaging in musculoskeletal examinations.



In the Guidance View the user gets intuitive, step-by-step guidance for expert scans. Here customizable reference images are displayed to check if the automatically initiated slice positioning is correct. If the positioning is done, the user just needs to confirm and start the high-resolution imaging scan.



Plan the Multi-Planar Reconstructions (MPRs) while scanning. The user can easily plan the MPRs of the 3D scans to be performed in-line. For this an option for the three main slice orientations is suggested. The user simply selects the orientation and plans the 3D reconstruction on the localizer images in the image display area on the screen. After that the postprocessing is readily prepared even before the 3D scanning has finished. With this planning, the Knee Dot Engine will generate the reformatted images as soon as the first 3D sequence data are available.

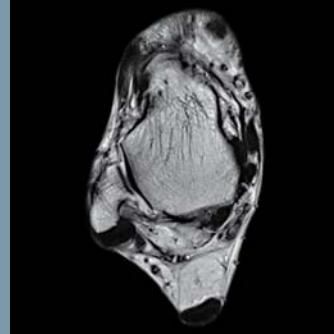
Foot/Ankle

Foot/Ankle 16

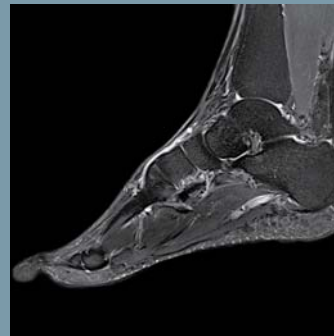
The Foot/Ankle 16 coil provides extended coverage to cover both the foot and ankle and yet provides a high concentration of elements for small fields of view with high resolution. The rigid design holds the patients foot and ankle securely in place and is large enough to accommodate a wide range of patients.



T1 TSE, GRAPPA 2, 384 matrix,
SL 2 mm, TR 700, TE 20,
TA 1:51 min



T2 TSE, with BLADE, 384
matrix, SL 3 mm, TR 5200,
TE 112, TA 2:05 min



TIRM, GRAPPA 2, 512 matrix,
SL 2.5 mm, TR 4590, TE 37,
TI 190, TA 2:22 min

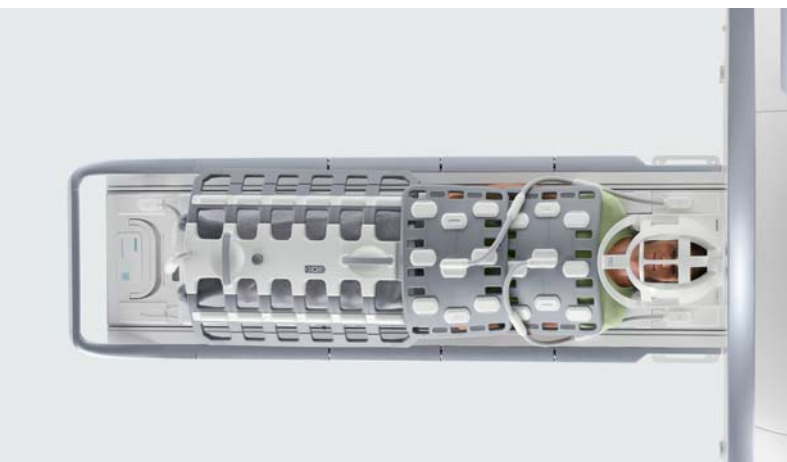


T1 TSE, GRAPPA 2, 448 matrix,
SL 3 mm, TR 700, TE 21,
TA 1:57 min

Peripheral & Whole Body Angiography

Whole body coverage of coils

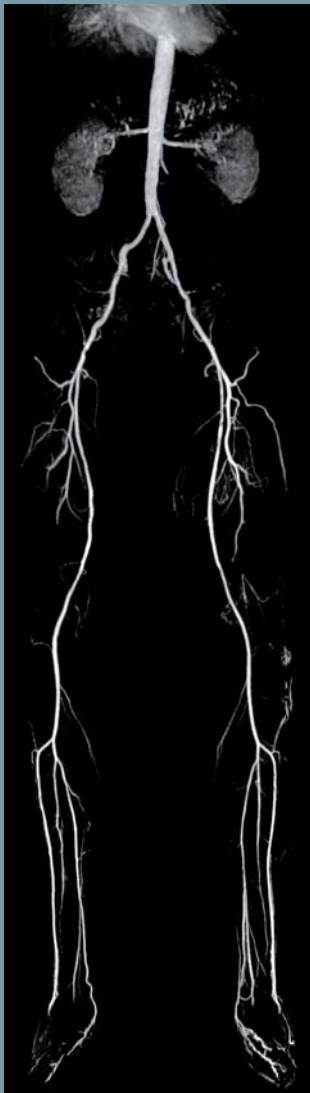
Imaging the vessels of the peripheral vasculature or even the whole body is made possible by the highly flexible combination of Tim 4G coils and the *syngo* user interface. Moving from region to region and dynamically turning coils on and off allows you to perform these complex exams quickly and consistently.



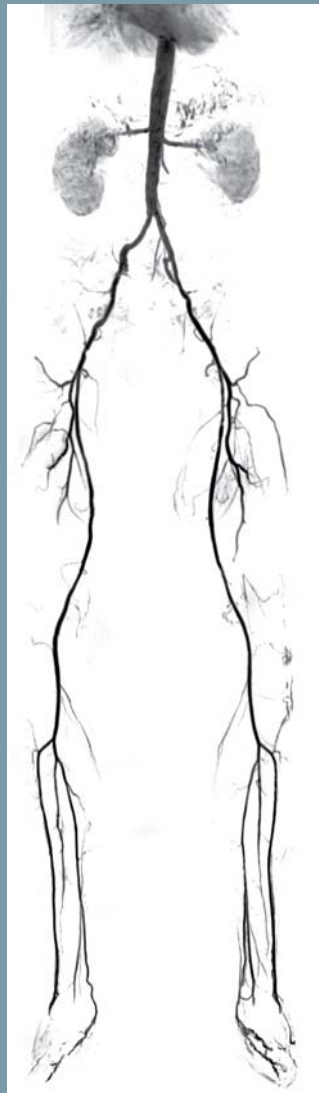
3D FLASH ce-MRA, MIP, 3 steps, GRAPPA 3,
320 matrix, SL 1.1 mm, TR 2.5, TE 0.9,
TA 3x1:02 min,
*University Hospital Mannheim, Mannheim,
Germany*

Tim coil activation:

| | | | |
|---------------------|---------|---------|--------------|
| Peripheral Angio 36 | Body 18 | Body 18 | Head/Neck 20 |
| Spine 32 | | | |



3D FLASH ce-MRA, MIP, 4 steps,
GRAPPA 3, 384 matrix, SL 1.2,
TR 2.9, TE 1.1, total TA 1 min
*University Hospital, Würzburg,
Germany*



3D FLASH ce-MRA, MIP, inverted,
4 steps, GRAPPA 3, 384 matrix,
SL 1.2, TR 2.9, TE 1.1, total TA 1 min
*University Hospital, Würzburg,
Germany*



3D FLASH ce-MRA, MIP, 4 steps,
GRAPPA 3, 384 matrix, SL 1.3,
TR 2.5, TE 0.9, total TA 1 min
*University Hospital, Würzburg,
Germany*

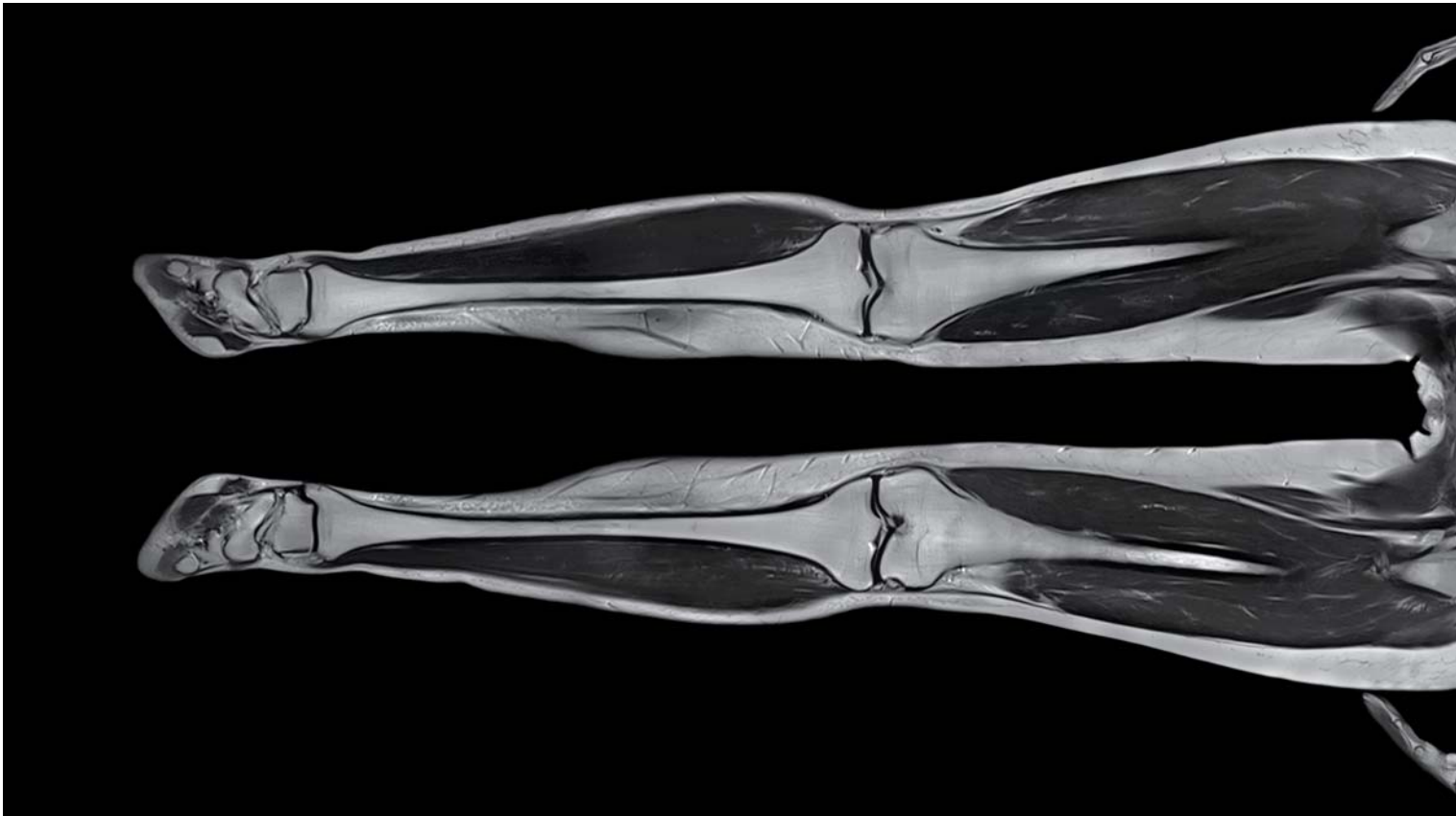


3D FLASH ce-MRA, MIP, inverted,
4 steps, GRAPPA 3, 384 matrix,
SL 1.3, TR 2.5, TE 0.9, total TA 1 min
*University Hospital, Würzburg,
Germany*

Whole Body

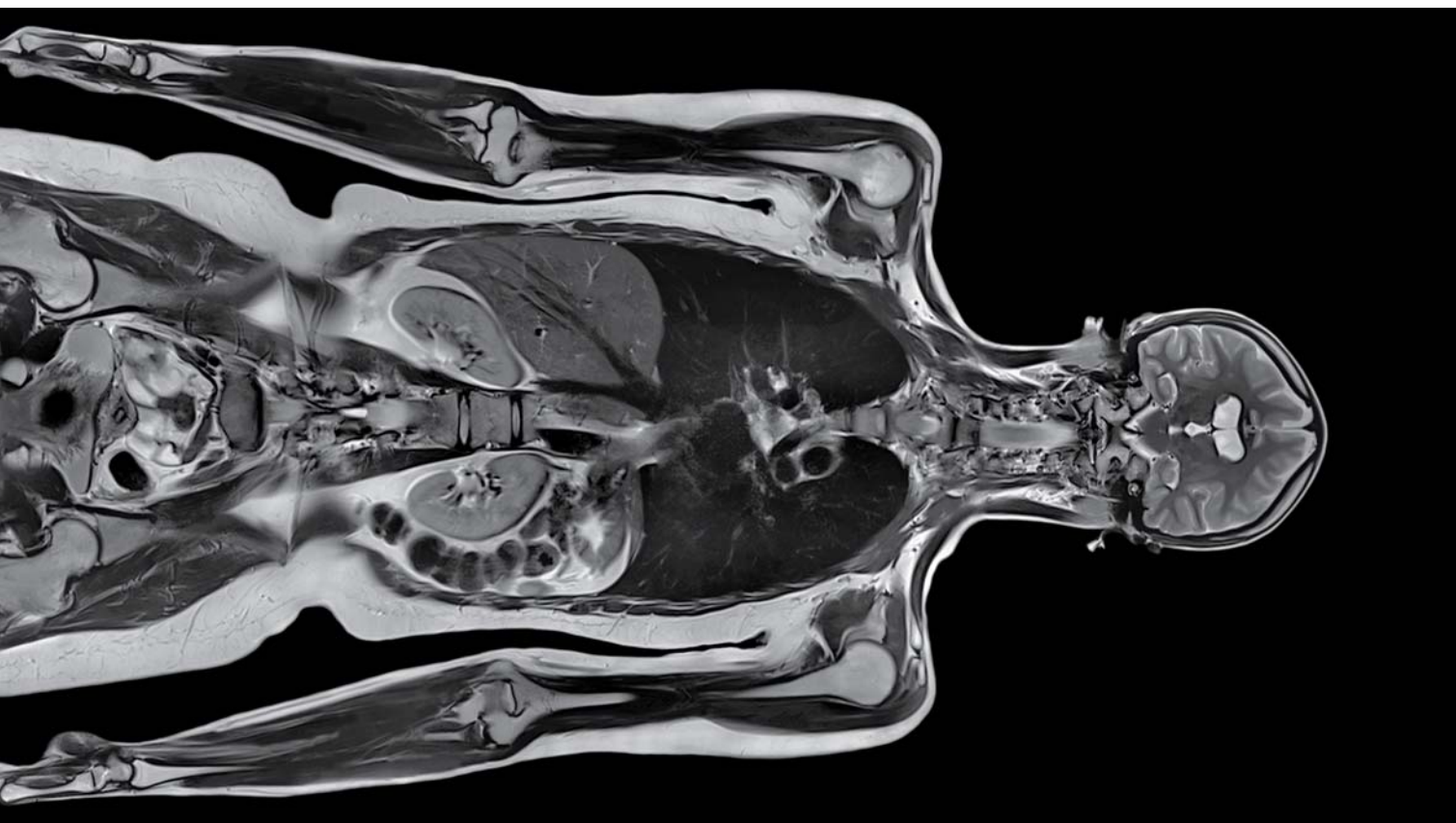
Whole body coverage of coils

Imaging from meters to microns. The flexibility of Tim 4G makes it possible to cover the entire body up to 205 cm so you can examine large organs or organ systems and still have the signal and resolution to view small details.



Tim coil activation:

| | | | |
|---------------------|---------|---------|--------------|
| Peripheral Angio 36 | Body 18 | Body 18 | Head/Neck 20 |
| Spine 32 | | | |



T2 TSE, 7 steps, GRAPPA 2, 512 matrix, SL 5 mm, TR 2210, TE 106, total TA 14:10 min

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