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Leading.
With
MAGNETOM.

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Head/Neck 64

Ultra-fast, high SNR, head and neck imaging.

Answers for life.

Head/Neck 64

Ultra-fast, high SNR, head and neck imaging.

The industry's highest density Head/Neck coil

- Anthropomorphic geometry with full head/neck coverage
- Highest SNR for high-resolution, large FoV imaging
- Extreme iPAT performance for ultra-fast imaging with minimal SNR loss

Designed for ease of use and high patient comfort

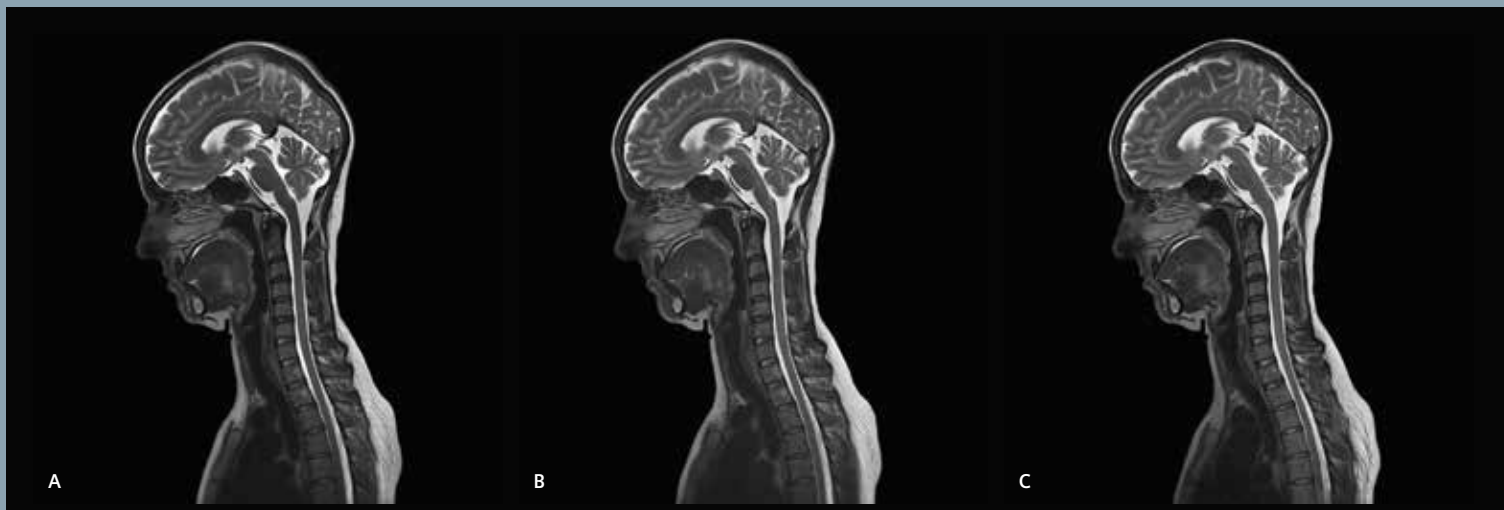
- Ultra light-weight with a single SlideConnect plug
- Posterior half connects directly into patient bed with DirectConnect technology
- Can be used in combination with spine and body coils for efficient whole body imaging
- Open, patient-friendly design

Open up new fields for exploration

- Highest SNR to reveal the smallest details
- Open, accessible design to facilitate fMRI visual stimulation and eye tracking experiments
- Rear port for EEG cables for simultaneous EEG/MR imaging for up to 128 electrodes

Achieve high iPAT factors with minimal loss of SNR

T2 TSE Dixon Water, voxel 0.9x0.9x3.0 mm
A: GRAPPA 2, TA 4 :43 min; B: GRAPPA 4, TA 2:38 min; C: GRAPPA 6, TA 1:56 min



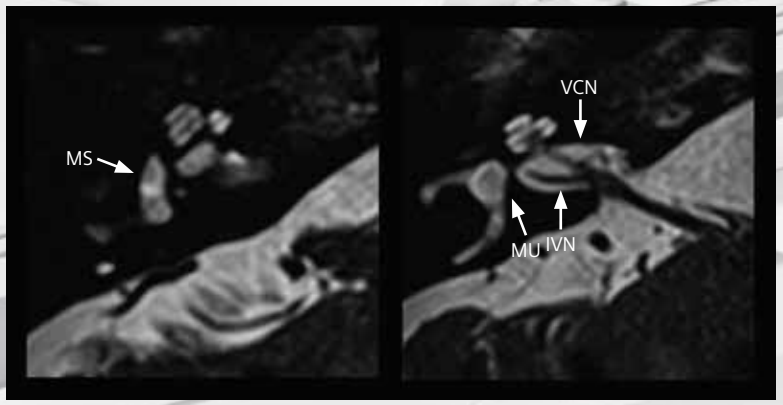
T2 TSE, voxel 0.5x0.5x3.0 mm
A: GRAPPA 2, TA 2:26 min; B: GRAPPA 4, TA 1:20 min; C: GRAPPA 6, TA 1:02 min

Images acquired on MAGNETOM Prisma.

Clinical applications

"The Head/Neck 64 reveals previously hard-to-recognize, but pertinent anatomical and disease-related details for a spectrum of pathologies within the brain, inner ear, orbits, skull base and neck, as well as the cervical spinal cord. This leads to improved insight into neuro-anatomy relevant to an extended range of diseases. All this can be achieved, fortunately, at advanced speed and resolution."[2]

Prof. Dr. med. Bernhard Schuknecht, MD
Diagnostic, Vascular and Interventional Neuroradiology
MRI-Medical Radiological Institutes Zurich, Switzerland



Images acquired on MAGNETOM Skyra.

High-resolution imaging of the inner ear to appreciate the smallest anatomical details.

T2 SPACE, Axial, GRAPPA 2, voxel 0.3x0.3x0.4 mm, TA 2:54 min

VCN: Vestibulocochlear nerve
IVN: Inferior vestibular nerve
MU: Macula utriculi
MS: Macula sacculi

MRI-Medical Radiological Institutes Zurich, Switzerland

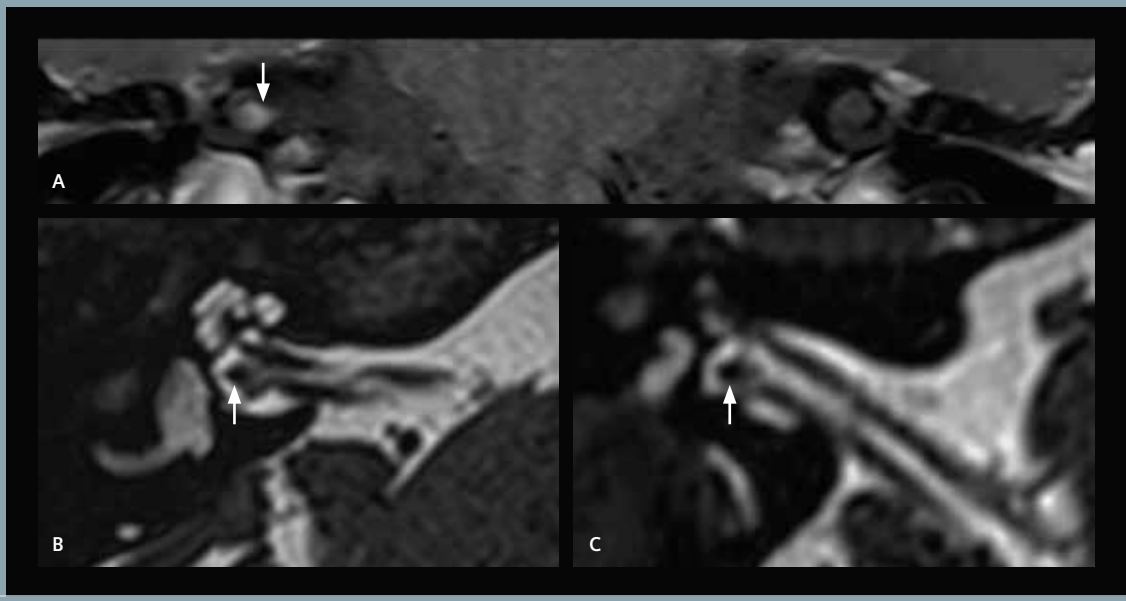
Tumor, right vestibular nerve

66 year old with recurrent right vestibulopathy. High resolution imaging reveals focal tumor along the right inferior vestibular nerve.

A
T1 TSE, Coronal, voxel 0.3x0.3x2.0 mm, TA 2:45 min

B and C
T2 SPACE, Axial, GRAPPA 2, voxel 0.3x0.3x0.4 mm, TA 2:54 min, and Coronal MPR

MRI-Medical Radiological Institutes Zurich, Switzerland



Neurovascular conflict, trigeminal nerve and superior cerebellar artery

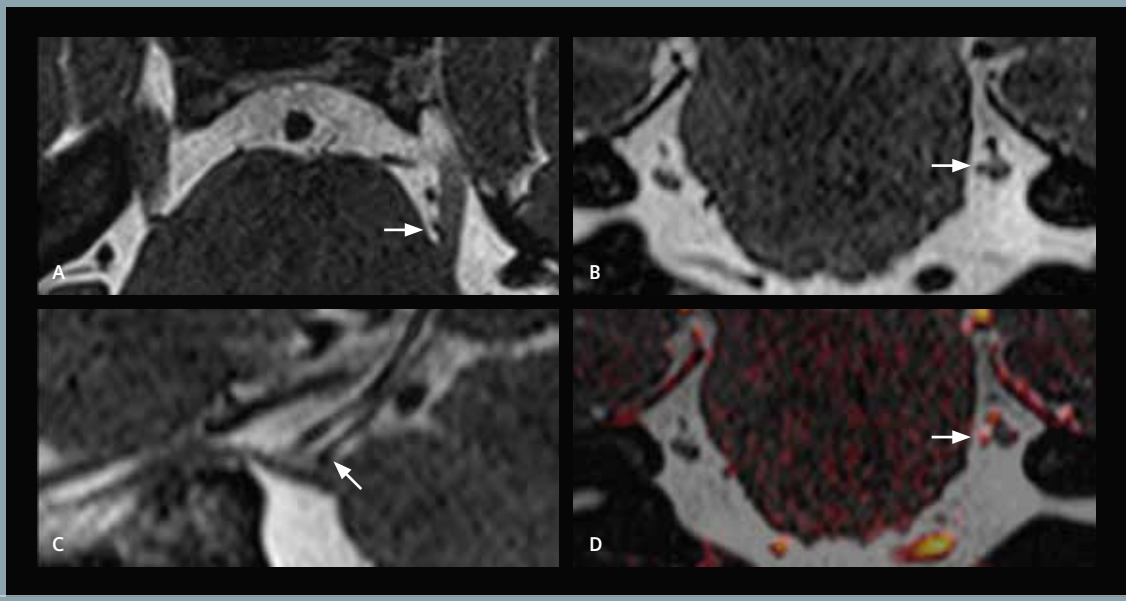
63 year old with trigeminal neuralgia within the maxillary division. Imaging revealed a conflict with a lower branch of the superior cerebellar artery.

A
T2 SPACE, Axial, GRAPPA 2, voxel 0.3x0.3x0.4 mm, TA 2:49 min

B and C
T2 SPACE, Coronal (B) and Sagittal MPR (C)

D
T2 SPACE, Coronal MPR fused with TOF MIP

MRI-Medical Radiological Institutes Zurich, Switzerland



Images acquired on MAGNETOM Skyra.

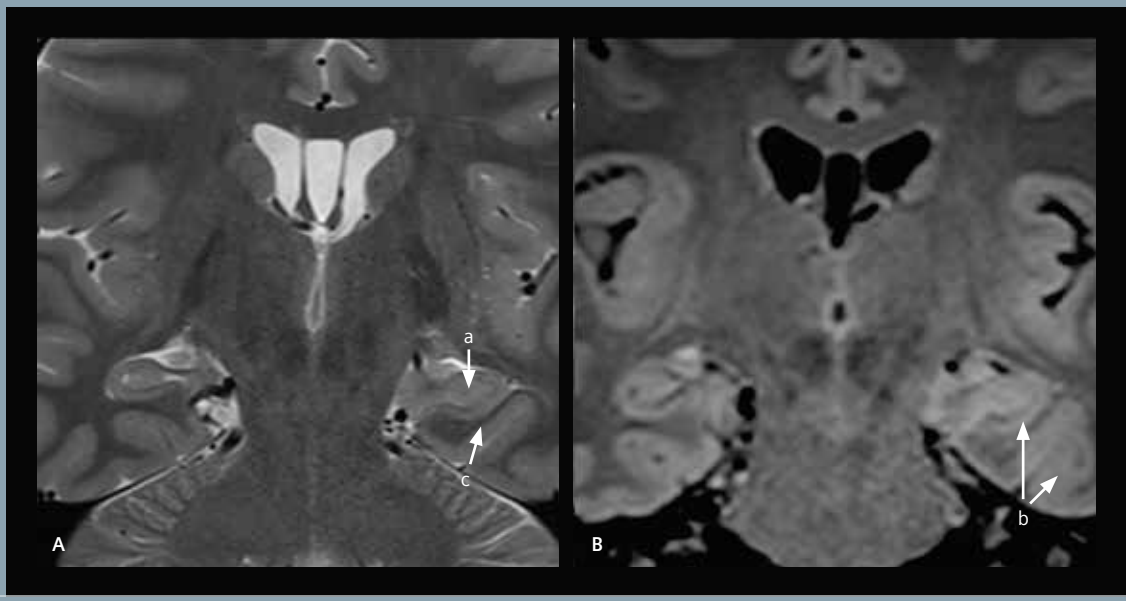
Focal cortical dysplasia Type I

17 year old with epilepsy. Imaging reveals edema of left hippocampus (a), cortical thinning in parahippocampal and medial occipitotemporal gyrus (b), and focal reduction of white matter with white matter signal lesions (c), likely corresponding to focal cortical dysplasia Type I.

A
T2 TSE, Coronal,
voxel 0.2x0.2x2.5 mm, T
A 2:40 min

B
T2 DarkFluid SPACE, Coronal MPR, GRAPPA 2, voxel 0.5x0.5x0.9 mm, TA 4:47 min

MRI-Medical Radiological Institutes Zurich, Switzerland



Abscess within floor of mouth

37 year old with progressive swelling due to an abscess in the floor of mouth. Edema was additionally present in the adjacent geniohyoid muscle.

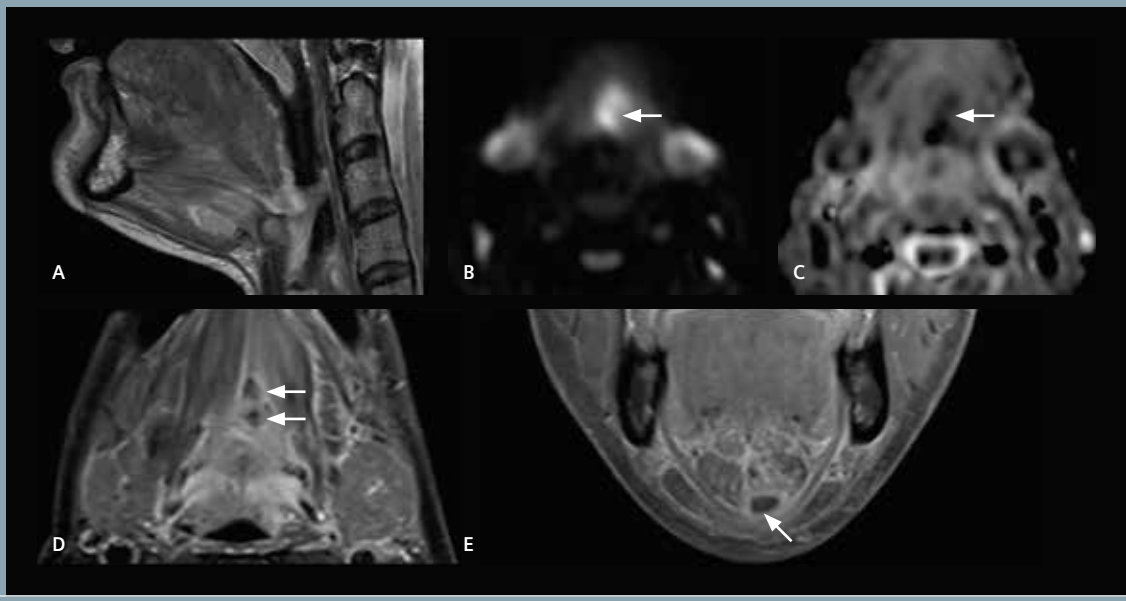
A
T2 TSE, Sagittal, GRAPPA 2, voxel 0.3x0.3x3.0 mm, TA 1:49 min

B and C
DWI, Axial, b800 and ADC, GRAPPA 2, voxel 1.3x1.3x6.5 mm, TA 5:43 min

D
T1 TSE FS, Axial, pc, GRAPPA 2, voxel 0.3x0.3x3.0 mm, TA 2:22 min

E
T1 TSE FS, Coronal, pc, GRAPPA 2, voxel 0.3x0.3x3.0 mm, TA 2:25 min

MRI-Medical Radiological Institutes Zurich, Switzerland



Images acquired on MAGNETOM Skyra.

Capillary teleangiectasia

21 year old with a capillary telangiectasia in the pontine region. Its location and imaging features distinguish it from a cavernous angioma.

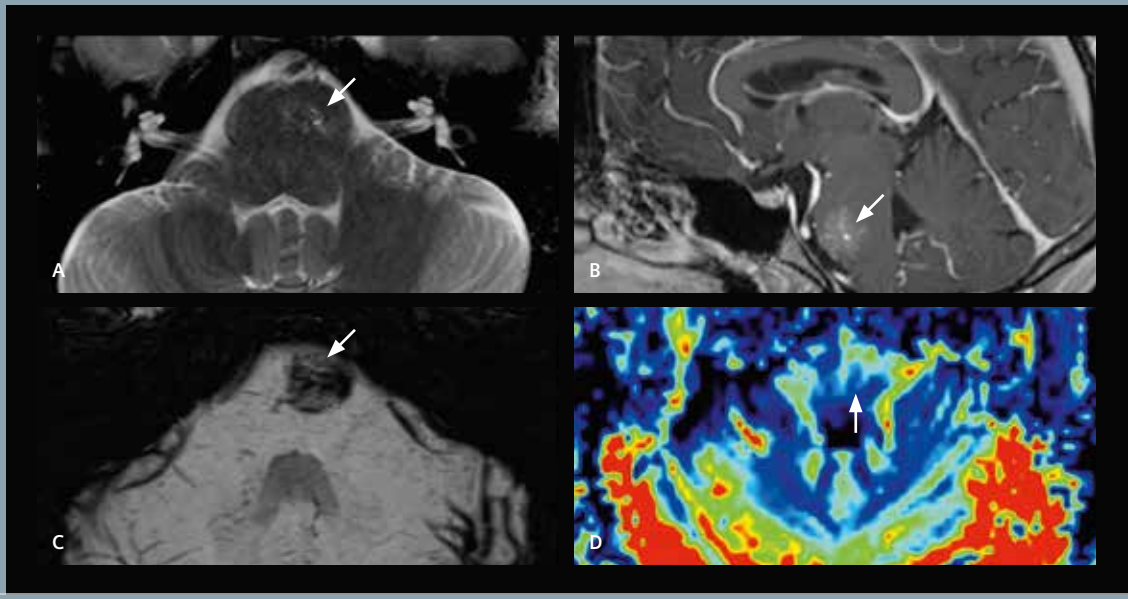
A
T2 TSE, Axial, GRAPPA 2, voxel 0.2x0.2x3.0 mm, TA 2:16 min

B
T1 MPRAGE, Sagittal, sag MPR, voxel 0.7x0.7x0.9 mm, TA 3:36 min

C
SWI, Axial, GRAPPA 3, voxel 0.3x0.3x1.6 mm, TA 3:00 min

D
DSC Perfusion, Axial, relCBV map, GRAPPA 2, voxel 1.7x1.7x4.0 mm, TA 2:04 min

MRI-Medical Radiological Institutes Zurich, Switzerland



Cavernous angioma, cervical cord

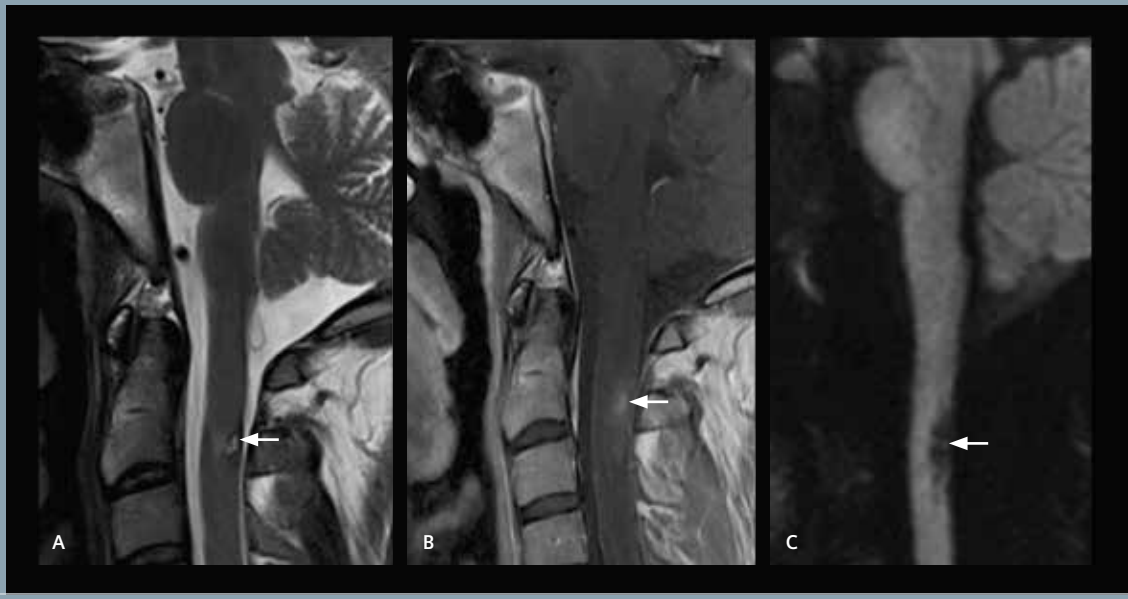
23 year old with sudden onset of lower limb, predominantly left, hemihypesthesia. Imaging revealed a cavernous angioma within the cervical cord with mild central edema.

A
T2 TSE, Sagittal, GRAPPA 2, voxel 0.5x0.5x3.0 mm, TA 2:04 min

B
T1 TSE, Sagittal, GRAPPA 2, voxel 0.2x0.2x3.0 mm, TA 3:08 min

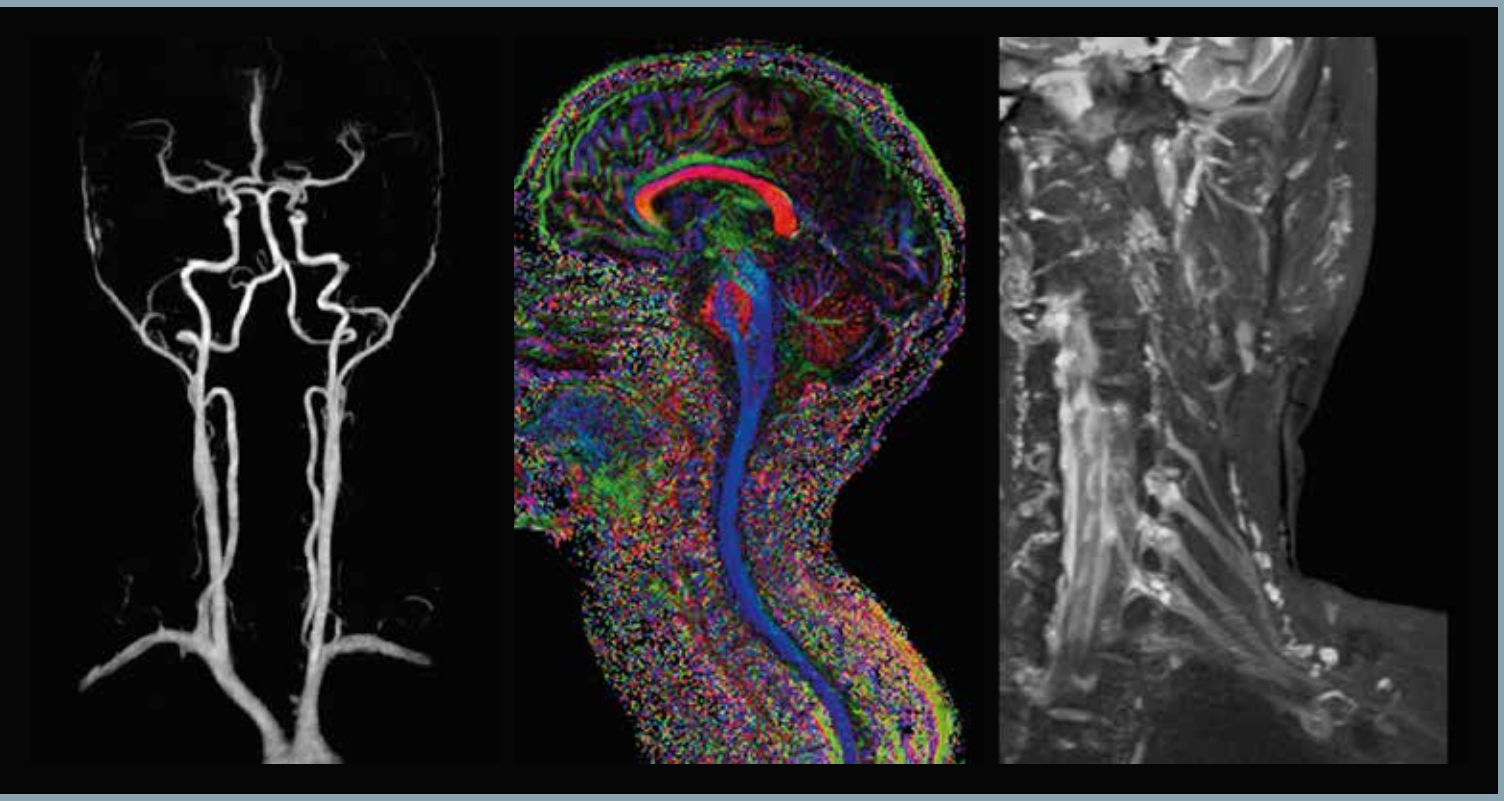
C
RESOLVE, Sagittal, b600, GRAPPA 2, voxel 1.1x1.1x3.0 mm, TA 3:48 min

MRI-Medical Radiological Institutes Zurich, Switzerland



Images acquired on MAGNETOM Skyra.

Emerging clinical applications



Non contrast-enhanced ToF imaging of the brain and carotids

3D FLASH ToF MIP, GRAPPA 3, voxel 0.3x0.3x0.8 mm, TA 7:41 min. MAGNETOM Prisma

DTI of brain and spine with RESOLVE, showing high anatomical accuracy

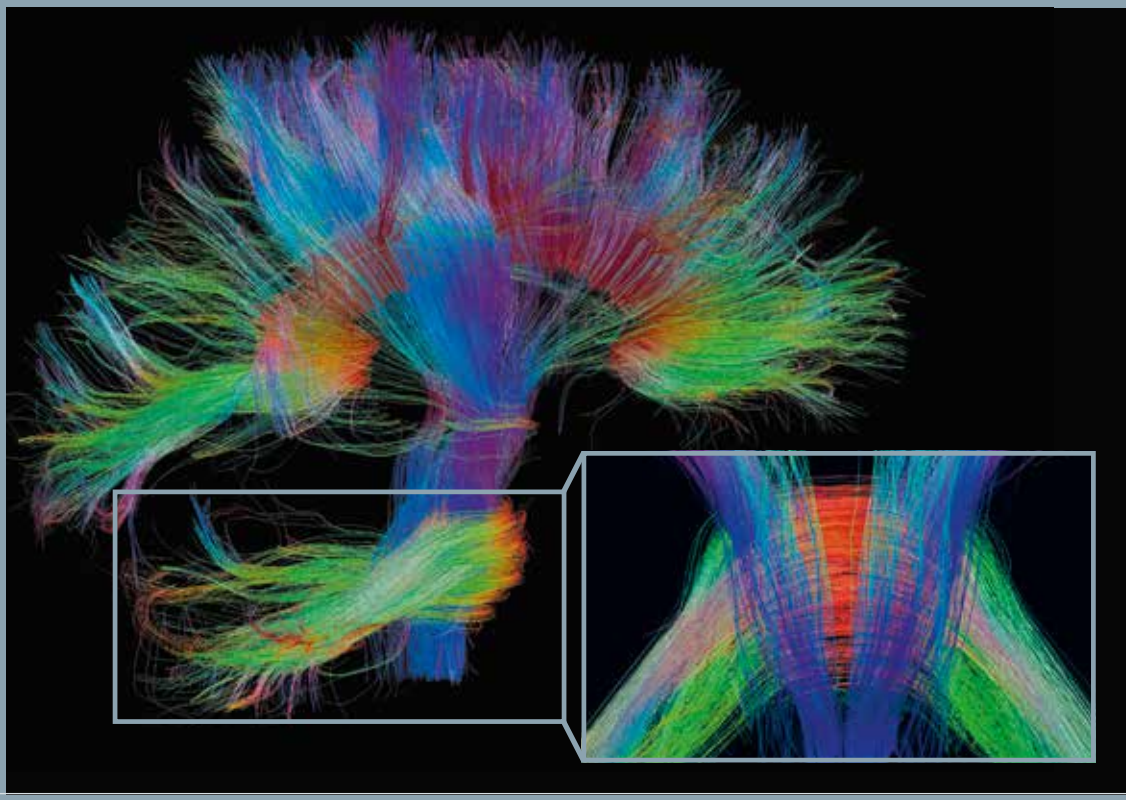
RESOLVE, b0 and b800, 6 directions, GRAPPA 2, voxel 1.1x1.1x3.0 mm, TA 20:24 min. MAGNETOM Prisma

Fast, selective neurography of the brachial plexus with ZOOMit

ZOOMit, 3D SPACE T2 IR, voxel 0.8x0.8x1.2 mm, TA 5:24 min. MAGNETOM Skyra

St Andrew's Hospital, Adelaide, Australia

Neuroscience research



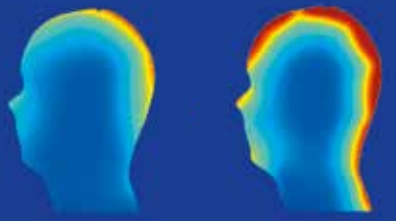
Whole brain DSI, 514 directions, b-max 8000, voxel 2.0x2.0x3.0 mm
Image rendering courtesy of TrackVis.
Scan the QR Code®,[1] and watch this DSI in 3D.

Scan the QR Code[1] to hear Prof. Rainer Goebel's opinion about the benefits of imaging with the Head/Neck 64.

The Head/Neck 64 allows us to get better signals from the cortex and also cover the cerebellum and the neck very well. This can further open new research fields for exploration.[2]

Prof. Rainer Goebel, PhD
Professor, Maastricht University & Scientific Director, Scannexus, Maastricht, The Netherlands

52% increase in overall SNR[3] and
92% increase in peripheral SNR[4]



Head/Neck 20 Head/Neck 64

Cover page image: Whole-brain DSI, b 8000, 514 directions. MAGNETOM Prisma. Image rendering courtesy of TrackVis.

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[3] Based on average SNR for the entire imaging volume. Data on file; results may vary.
[4] Based on 15 ROIs located systematically around the periphery of the imaging volume. Data on file; results may vary.

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