

# 3T Applications



**MAGNETOM Trio**  
3T Unlimited in Musculoskeletal MR

# MAGNETOM Trio

## 3T Unlimited in Musculoskeletal MR

### MAGNETOM Trio is 3T Unlimited

3T MR systems are attracting a great deal of attention as new hardware and software become available for whole-body applications. In the field of musculoskeletal MR, the higher 3T signal-to-noise ratio (SNR) enables you to increase the resolution within the same acquisition time or reduce acquisition time.

MAGNETOM Trio has been optimized at every level so that these advantages can be fully exploited in all applications. The best homogeneity, array coil technology, standard 8 RF channels and iPAT applications are some of the many components that contribute to the quality of 3T MR on MAGNETOM Trio. Optimization of protocols allows you to eliminate chemical shift artifacts. All this makes MAGNETOM Trio a solid investment for musculoskeletal applications.



### The benefits of MAGNETOM Trio in musculoskeletal MR:

- 3T signal-to-noise for increased resolution or decreased acquisition time
- Unmatched homogeneity for excellent fat saturation
- Circularly polarized extremity and wrist coils to maximize your SNR
- 3D DESS sequences for excellent fluid/cartilage differentiation
- *syngo* ergonomic user-interface so that you can concentrate on your examination and not the handling

### Increased resolution at 3T with 3D DESS

#### Extremity coil

*The increased SNR at 3T enables increasing resolution without any apparent loss of SNR. (Courtesy of B. Wietek, U. Tübingen, Germany).*



0.8 mm<sup>3</sup> isotropic



0.6 mm<sup>3</sup> isotropic

3.0T



#### 3D DESS

*3T enables isotropic resolution of 0.6 mm<sup>3</sup> instead of 0.8 mm<sup>3</sup> at 1.5T.*

1.5T

# 3T Unlimited

**Increased resolution in 3T extremity imaging**

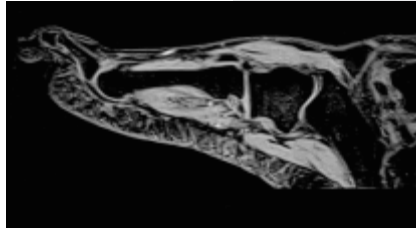
*Wrist: 3D FISP FatSat,  
1 mm slice thickness*

*Wrist coil*

*3T high SNR enables the acquisition of small FoV, thin slices (1 or 2 mm) and high matrices (512) so that you can confidently visualize small tendons and ligaments of the wrist.*

*Foot:  
3D FLASH water excitation,  
1 mm slice thickness, 512 matrix  
CP head coil*

*3D imaging at high resolution of the foot enables to do curved cut reconstruction in any plane to visualize all structures with very good quality.*

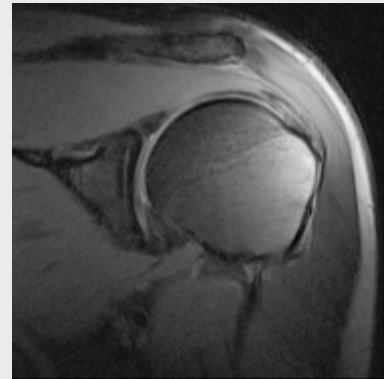


**High resolution knee imaging at 3T**

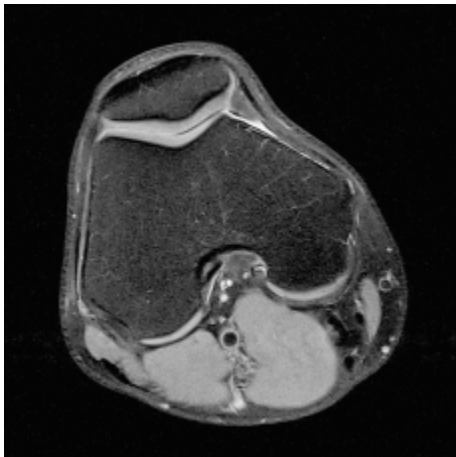
*2D PD TSE-Restore with FatSat  
Extremity coil*

*With the increased 3T SNR, protocols enable high-resolution or faster acquisitions.*

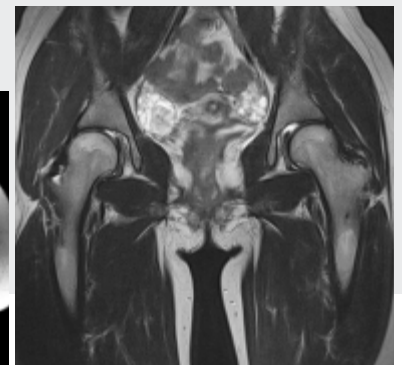
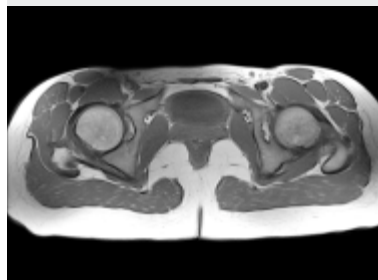
*MAGNETOM Trio offers a homogeneity of 0.30 ppm on a 40 cm DSV. This enables to perform very good fat saturation spectrally or with the use of "water excitation".*



**Shoulder imaging at 3T**  
*2D FLASH*



**Hip imaging at 3T**  
*T1 SE in coronal and transverse orientations*





## MAGNETOM Trio<sup>[UHF Class]</sup> 3T Unlimited

Siemens' successful 3T strategy is called simply 3T Unlimited. Our 3T systems match all the performance parameters of a high-end 1.5T system: 3T Technology – Unlimited.

We have developed applications offering all the 3T benefits without the 3T limitations: 3T Applications – Unlimited.

We provide systems that include all the workflow benefits expected in a MAGNETOM: 3T Efficiency – Unlimited.

### 3T Technology – Unlimited

- Uncompromised homogeneity in a 40 x 40 x 40 cm field of view
- 8 fast RF-channels are standard
- Fastest gradients in the industry: 200 T/m/s

### 3T Applications – Unlimited

- 3TCare to reduce SAR and maximize anatomical coverage (Hyperechoes, iPAT, and body coil)
- Largest diversity of array coils
- iPAT to get a hold on susceptibility

### 3T Efficiency – Unlimited

- *syngo* – optimized for clinical workflow
- Inline Technology – processing instead of post-processing
- EVOLVE – a subscription for the future

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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#### Please contact in USA:

Siemens Medical Solutions USA, Inc.  
51 Valley Stream Parkway  
Malvern, PA 19355  
Tel.: +1 888-826-9702  
Tel.: 610-448-4500  
Fax: 610-448-2254

#### Japan:

Siemens-Asahi  
Medical Technologies Ltd.  
Takanawa Park Tower 14 F  
20-14, Higashi-Gotanda 3-chome  
Shinagawa-ku  
Tokyo 141-8644  
(+81) 354238489

#### Asia:

Siemens Medical Solutions  
Asia Pacific Headquarters  
c/o Siemens Pte Ltd.  
Block 28 Ayer Rajah Crescent No. 06-06  
Singapore 139959  
(+65) 6341 0990

#### Or contact your local Siemens sales representative

Siemens AG · Medical Solutions  
Magnetic Resonance  
Henkestr. 127, D-91052 Erlangen  
Germany  
Telephone: ++49 9131 84-0  
www.SiemensMedical.com

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