SyntheticMR

Confident care. Intelligent imaging.

Gain more information with SyMRI MSK

In healthcare, there is always the present pressure to save time and improve quality. The amount of MRI scans performed around the world is increasing and so is the demand for objective data.

SyMRI MSK provides more information in less time. One single fast scan produces quantitative T1, T2, and PD maps and a series of contrast-weighted images, for both clinical use and advanced research. SyMRI MSK also gives the radiologist more control over the image quality by making it possible to change echo time (TE), repetition time (TR), and inversion delay (TI) post-scan.
The images can be individually optimized towards specific patients, depending on the situation.

- Up to 8 different dynamic contrast-weighted images
- T1W, T2W, PDW, STIR, FLAIR, DIR and PSIR
- Perfect coregistration of images every time
- Possibility to adjust TE, TR, & TI post-scan
- Contribute to new insights about the anatomy

Fast scan **SyMAPS** **Multiple contrast weighted images**

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SyMRI Spine

The most important contrast-weighted images in one plane, with and without fat-saturation is provided in a single fast scan. Images that can be difficult or take a long time to obtain conventionally, such as DIR and PSIR are also effectively generated by **SyMRI Spine**. Mapping can characterize vertebrae and disk properties, for example vertebral bone density and disk Pfirrmann grade.

Resolutions of 0.7 x 0.9 x 3.0 mm (cervical), 0.9 x 1.1x 4.0 mm (lumbar).

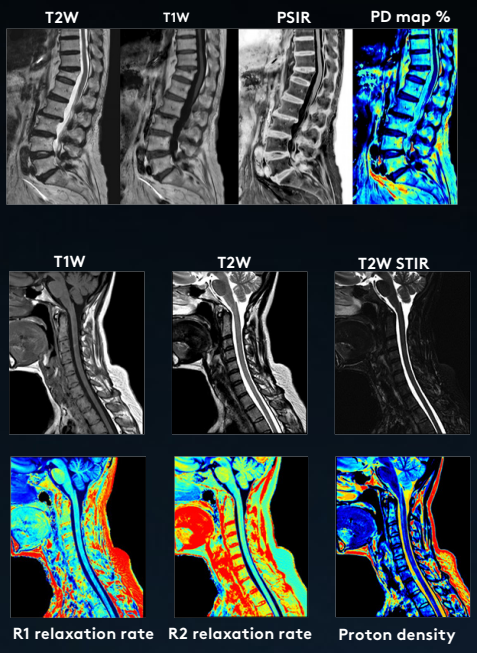

Fig 1: Example of synthetic images of the spine of an 86 years-old female patient with an old fracture at 3T. Displayed are the synthetic T2W (TE/TR = 100/4500 ms), T1W (TE/TR = 10/650 ms) and a PSIR (TE/TR/TI = 25/15000/10 ms). On the far right the Proton Density map is shown on a scale 50-150%. Proton density is believed to be inversely proportional to bone density.

Further reading
Feasibility of a Synthetic MR Imaging Sequence for Spine Imaging.2018; 39:1756-1763

Synthetic MRI of the lumbar spine at 3.0 T: feasibility and image quality comparison with conventional MRI2020; 61:461-470

SyMRI Knee

The unique acquisition sequence measure tissue properties on an absolute scale. **SyMRI Knee** includes motion correction, which can reduce the need for rescans.

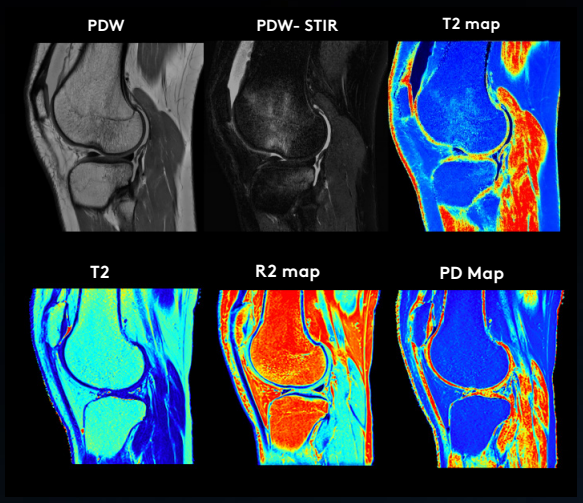

Fig 2: Synthetic images of a knee with a cruciate ligament tear, cartilage damage and distinct bone edema: PDW (TE/TR = 10/8000 ms) and PDW STIR (TE/TR/TI = 10/15000/290 ms). On the right there is T2 relaxation rate map. The T2 relaxation map has been validated and can be used to characterize the cartilage damage.

Further reading:
Synthetic MRI of the Knee:
Phantom Validation and Comparison with Conventional MRI
2018;289:465-477

Quantitative T2 Mapping of Knee Cartilage
2018;17:344-349

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