Foot

MRI Protocols of the ESSR Arthritis Subcommittee

Acronyms

Ax= axial
Cor= coronal
FOV= field of view
FS= fat suppressed
PD= proton density
Sag= sagittal
STIR= short tau inversion recovery
TE= echo time (ms)
TIRM= turbo inversion recovery magnitude
TR= repetition time (ms)
MRI scan

- Patient in supine position with feet first
- Foot in slight (10 degree) plantar flexion
- Surface coil
- Adequate immobilisation (padding)
Localizer

**Axial plane:** perpendicular to the metatarsal and phalanges bones. Cover the foot from the tip of the toe to the tarsal bones.

**Coronal plane:** parallel to the metatarsal and phalanges bones. Cover the foot from the dorsal to the plantar surface.

**Sagittal plane:** parallel to the metatarsal and phalanges bones. Cover the foot from side to side.
Recommended sequences

Ax PD FS (or STIR/TIRM or T2 FS)

Ax T1

Cor PD FS (or STIR or TIRM or T2 FS)

Sag PD FS
## MRI protocols

<table>
<thead>
<tr>
<th>Recommended Sequences</th>
<th>FOV (cm)</th>
<th>Slice thickness (mm)</th>
<th>TR (ms)</th>
<th>TE (ms)</th>
<th>Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sag PD FS</td>
<td>8-10</td>
<td>3</td>
<td>3500</td>
<td>40</td>
<td>288x384</td>
</tr>
<tr>
<td>Ax STIR or T2 FS or PD FS</td>
<td>8-10</td>
<td>3</td>
<td>1800</td>
<td>25</td>
<td>192x256</td>
</tr>
<tr>
<td>Ax T1</td>
<td>8-10</td>
<td>3</td>
<td>400</td>
<td>15</td>
<td>288x380</td>
</tr>
<tr>
<td>Cor T2 FS or STIR or PD FS</td>
<td>8-10</td>
<td>3</td>
<td>3000</td>
<td>110</td>
<td>256x220</td>
</tr>
</tbody>
</table>
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