Guidelines for MR Imaging of Sports Injuries

European Society of Skeletal Radiology
Sports Sub-committee

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Abbreviations and clarifications

• Ax = axial
• Cor = coronal
• Sag = sagittal
• FOV = field of view
• PD = proton density
• TE = time to echo in milliseconds
• FS = fat suppressed
• Int = intermediate
• Int FS: this is a fat suppressed sequence with a long TR and a TE between that of a traditional PD (e.g. TE= 10-20) and a traditional T2 (e.g. TE=80-100). The advantage of this sequence is that the TE is short enough to maintain sufficient signal for visualisation of the anatomy (like a PD) yet long enough to be more fluid sensitive (like a T2)
• For STIR sequence, TI (inversion time) should be 140-150 at 1.5T
Foot (Mid- and Forefoot)

- Patient feet first in prone position (less magic angle effect, less patient movement, slight plantar shift of interdigital soft tissue); dedicated coil
- Limit examination to mid- and forefoot; may include anterior talus
- Foot axials (oblique): align axial plane along long axis of 1st metatarsal
- Foot sagittals (oblique): align plane along long axis of the 3rd metatarsal
- Straight coronal: 90° to distal tibia; oblique coronal: 90° to posterior facet

Axials (oblique) = long axis  Coronals (oblique) = short axis  Sagittals (oblique)
## Foot (Mid- and Forefoot)

<table>
<thead>
<tr>
<th></th>
<th>FOV (max)</th>
<th>Slice (max)</th>
<th>TE</th>
<th>Matrix (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sag STIR</td>
<td>18x10 cm</td>
<td>3 mm</td>
<td>30; TI:150</td>
<td>512x256</td>
</tr>
<tr>
<td>Sag T1</td>
<td>18x10 cm</td>
<td>3 mm</td>
<td>10-20</td>
<td>512x256</td>
</tr>
<tr>
<td>Ax Obl PD FS</td>
<td>12x10 cm</td>
<td>3 mm</td>
<td>40-60</td>
<td>512x320</td>
</tr>
<tr>
<td>Ax Obl T1</td>
<td>12x10 cm</td>
<td>3 mm</td>
<td>10-20</td>
<td>512x320</td>
</tr>
<tr>
<td>Cor Obl PD FS</td>
<td>16x8 cm</td>
<td>3 mm</td>
<td>40-60</td>
<td>256x256</td>
</tr>
<tr>
<td>Cor Obl T1 TSE</td>
<td>16x8 cm</td>
<td>3 mm</td>
<td>10-20</td>
<td>256x256</td>
</tr>
</tbody>
</table>
Foot (Mid- and Forefoot)

Sag STIR
Ax Obl PD FS
Cor PD FS

Sag T1
Ax Obl T1
Cor Obl T1 TSE