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
Thigh / Calf

- Patient feet first in supine position, phased-array surface coil over thighs or calves, legs together, marker at site of pain
- Axials of both thighs or calves with wide margins above and below the markers (STIR/ T1/ GRE)
- Axial, coronal and sagittal PD & PD FS covering one thigh or calf
  - in calf, make sure coronals and sagittals are along axis of lower leg using tibia and fibula as landmarks since leg is often rotated
## Thigh / Calf

<table>
<thead>
<tr>
<th></th>
<th>Sequence</th>
<th>FOV (max)</th>
<th>Slice (max)</th>
<th>TE</th>
<th>Matrix (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BILATERAL SURVEY</strong></td>
<td>Ax T1</td>
<td>38 cm</td>
<td>7 mm</td>
<td>Min</td>
<td>256x256</td>
</tr>
<tr>
<td></td>
<td>Ax STIR/FS</td>
<td>38 cm</td>
<td>7 mm</td>
<td>40-60</td>
<td>256x256</td>
</tr>
<tr>
<td></td>
<td>Ax GRE</td>
<td>38 cm</td>
<td>7 mm</td>
<td>Min</td>
<td>256x256</td>
</tr>
<tr>
<td><strong>ONE THIGH/ONE CALF</strong></td>
<td>Ax PD</td>
<td>24 cm</td>
<td>5 mm</td>
<td>35</td>
<td>288x256</td>
</tr>
<tr>
<td></td>
<td>Ax PD FS</td>
<td>24 cm</td>
<td>5 mm</td>
<td>35</td>
<td>288x256</td>
</tr>
<tr>
<td></td>
<td>Cor/Sag PD FS</td>
<td>32 cm</td>
<td>3 mm</td>
<td>35</td>
<td>288x256</td>
</tr>
</tbody>
</table>
Thigh e.g. quadriceps

Ax T1

Ax STIR

Ax GRE

Ax PD

Ax PD FS

Cor PD FS
Calf e.g. gastrocnemius