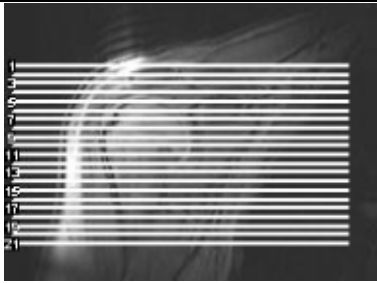
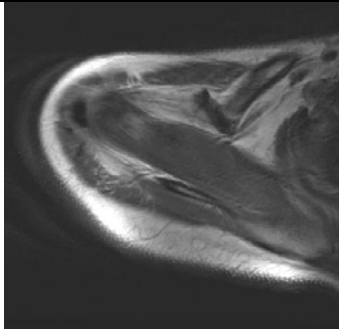
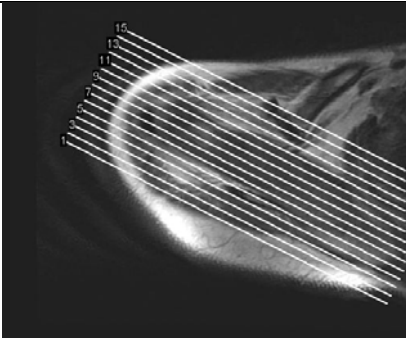

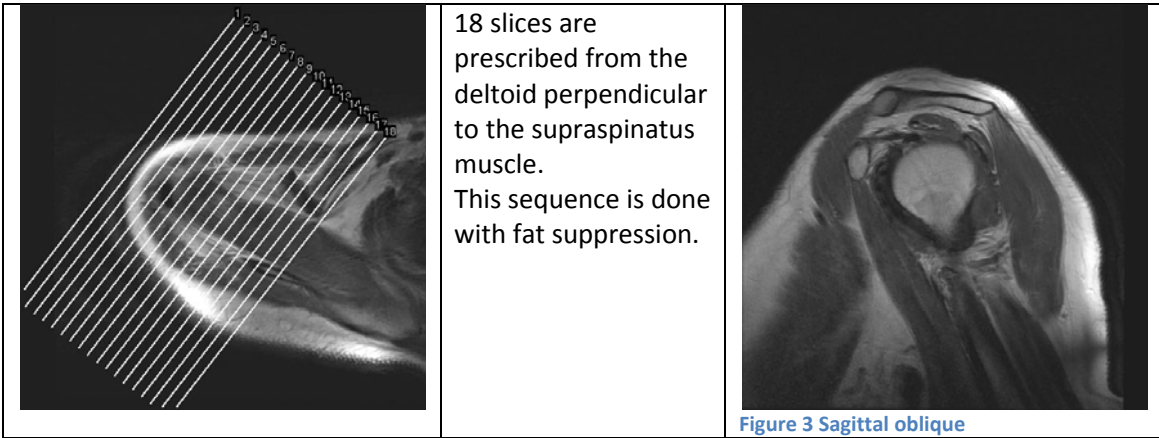


# Shoulder Routine Protocol

The site protocol used is standard and it has been developed so that it not only evaluates rotator cuff disease but also evaluate the disease continuum and other pathologies. A high-resolution axial proton density (long TR/Short TE) is obtained first in order to evaluate all the muscles surrounding the joint and particularly the glenohumeral cartilage and labrum. It is also used to plan accurately the oblique coronals. Two sequences are obtained in this plane: 1) Fast Spin Echo Proton Density (Long TR/Short TE) with Fat Suppression and 2) a Fast Spin Echo (Long TR/TE). Various studies have shown that most cuff tears can be seen with this sequence. Patten et al also suggested that oblique sagittal images provide 10% improvement in the accuracy of tears. While this may seem insignificant I feel more confident to identify tear/pathology from another perspective. Thus two sagittal oblique sequences are also obtained: 1) Fast Spin Echo Proton Density (long TR/Short TE) with fat saturation and 2) STIR. This last sequence is sometimes prescribed in the coronal plane if assessing denervation of the supraspinatus muscle. As we do not have experience with T2\* gradient echo sequence in the shoulder joint, T2\* gradient echo is just used when more information is required about the state of the labrum.

	<p>Patient position is extremely important. Patient supine with the 4 fingers of the arm under investigation tucked under the thigh. The thumb must be pointing up (neutral position). Ensure that the shoulder is relaxed to remove upward hunching. 19 (4mm/0.4) slices from the top of the acromio-clavicular joint to below the inferior border of the glenoid cavity.</p>	 <p>Figure 1 – Axial PD</p>
	<p>Using the Axial PD, the slices (15) are prescribed from the infraspinatus posteriorly to the supraspinatus anteriorly and angled parallel to the supraspinatus tendon.</p>	 <p>Figure 2 Coronal oblique PD and T2</p>



	TR	TE	TI	F A	Matrix	NEX	ETL	FOV	THK	RBW
Ax PD	2800	34			320x224	2	8	18	4.0/0.4	19.23
Cor T2 FSE	3550	85			320x224	3	16	16	3/1	31.25
Sag PD fs	3200	68			320x224	2	12	16	3/1	31.25
STIR	3775	35	120		320x224	2	12	16	3/1	31.25