

THE SPONDYLOARTHRITIS RESEARCH CONSORTIUM OF CANADA MAGNETIC RESONANCE IMAGING INDEX FOR SCORING INFLAMMATION IN THE SACROILIAC JOINTS

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MRI METHODOLOGY

Positioning

1. Patients lie supine, as straight as possible. We only use posterior coils. Record relationship of anatomical structures to coil elements for follow-up reference.

Scouts

2. Scout images in 3 planes, axial scout to include hip joints. Repeat axial if necessary.

3. True sagittal scout –

a. Centre - S1 vertebral body

b. Angle 1 - from axial scout - perpendicular to line between hip joints

c. Angle 2 - from coronal scout - longitudinal axis of sacrum

Sequence - location and angles

4. A coronal sequence is performed that is tilted forward to parallel the longitudinal axis of the sacrum (“tilted coronal” or “semi-coronal”).

5. Centering point of stack –

a. Left/right - midline

b. Head/Foot - At the sclerotic scar formed by the vestigial disc between the S1 and S2 vertebral bodies

c. Anterior/Posterior - place the posterior edge of the stack of slices (the posterior slice) at the posterior border of S2 vertebral body

6. Angles –

a. Perpendicular to above “true sagittal scout”

b. Tilt forward until parallel to posterior surface of S2 vertebral body

Sequence - parameters

These are suggestions and can be adjusted according to magnet specifications.

7. T1 TSE and Short Tau Inversion Recovery (STIR) sequences.

8. Common parameters:

1. 15 slices

2. 4 mm thick, 10% gap

3. FOV 300mm, square

4. Phase encode left/right (can be anterior/posterior whichever produces less artifact on your system)

5. NSA 1, Oversampling 100%

9. T1 TSE- TR 423ms (2 concatenations), TE 13ms, ETL 3, Matrix frequency 512, phase 256.

10. STIR- TR 3700ms, TI 145ms, TE 50ms, ETL 7, Matrix frequency 384, phase 256.