MRI Protocol for Bilateral Hip Joint Capsule Imaging

Aim

To acquire an oversight of the full pelvis and a high-resolution image of the affected hip joint capsule to assist in designing patient-specific implants and guides for treating hip dysplasia by Replasia B.V.

Precautions

- Ensure the patient has no contraindications for MRI (e.g., pacemakers, metallic implants, claustrophobia).
- Obtain informed consent and explain the procedure to the patient.
- Use ear protection to mitigate noise during the scan.
- Position the patient comfortably to minimize movement during the scan.

Scan Instructions

- Patient Positioning:
  - Feet first in supine position, maintaining a level pelvis without tilting or lifting. Legs extended flat on the table in a side-by-side position. Arms either raised above the head or folded upward away from the pelvis.
  - Ensure hips are centered in the coil and aligned with the scanner's isocenter.
  - Use cushions and straps to minimize patient movement.

- Magnet Strength:
  - This protocol is written for the preferred field strength: 3 Tesla

- Coil Selection:
  - Use a multi-channel phased-array body coil or dedicated pelvic coil for optimal signal reception.

- Contrast use:
  - Non-Contrast MRI

- Post-Processing Specifications:
  - No reconstruction or reformatting is needed
  - The required file format is DICOM.

Scan Range

- **Range:**
  - From 10 cm above the acetabulum to the lesser trochanter, covering both hips.
  - Detailed 3D of affected hip

Scan Parameters
3D Proton Density (PD) sequence

Sequence	**3D / PD on 3T**
Whole pelvis	Proton Density (PD) on 3T
Plane	Coronal
Type	Inversion Recovery with TI 190
Coverage	Whole Pelvis
TR (Repetition Time)	5230 ms
TE (Echo Time)	26 ms
FOV (Field of View)	Greater inter-trochanteric distance plus 2cm 200mm
Matrix	384 x 384 , pixel 0,5 x 0,5
Slice Thickness	5mm
Gap	0mm
Detailed affected hip	3D Proton Density (PD) on 3T
Plane	Coronal
Type	3D Block
Coverage	Affected hip joint capsule
TR (Repetition Time)	1100
TE (Echo Time)	22 ms
FOV (Field of View)	20 cm
Matrix	224 x 224, pixel 0.9
Slice Thickness	0.9 mm
Slice Increment	0.50 – 0.75 mm (50% overlap)

The required file format is DICOM.
For any questions, please contact Replasia at info@Replasia.com.