30 subjects with confirmed axSpA, qualitative MRI (per subject)
- 30 pre-biological treatment scans
- 30 post-biological treatment scans

Scans to standardize procedures

Based on visual assessment by reader 1

Scans for studies

Manual segmentation guidelines (5 different subjects)
- 2 pre-biological treatment scans
- 3 post-biological treatment scans

Manual segmentation of inflammatory lesions on STIR MRI (8 different subjects)
- 4 pre-biological treatment scans
- 4 post-biological treatment scans

Procedure to remove residues on automatic segmentations of inflammatory lesions (2 subjects: pre-biological treatment scans)

Reader 1
Two independent trials (R_{11}, R_{12})

Reader 2
Two independent trials (R_{21}, R_{22})

Intra-Reader Variability Study
- $R_{11} vs\ R_{12}$
- $R_{21} vs\ R_{22}$

Inter-Reader Variability Study
- $R_{11} vs\ R_{21}$
- $R_{11} vs\ R_{22}$
- $R_{12} vs\ R_{21}$
- $R_{12} vs\ R_{22}$

Scans for deep learning algorithm training and testing

Automating segmentation of disease region on T1W MRI (10 different subjects)

* *Data split at subject level*

*

training: 200 image slices | test

subset 1

*

fold 1			
	fold 2		
		fold 3	
			fold 4

subset 4

Hyper-parameters search

Automatic segmentation of inflammatory lesions on STIR MRI via two thresholds within disease region

Reader 1
Removal of residues (R_1)

Reader 2
Removal of residues (R_2)

Inter-Reader Variability Study
- $R_1 vs\ R_2$

Optimal model — training — testing (48 image slices)

Final model — training: 248 image slices — evaluation (500 image slices; remaining 20 subjects (40 scans))