

MRI Scoring Atlas

Juvenile Idiopathic Arthritis of the Hips

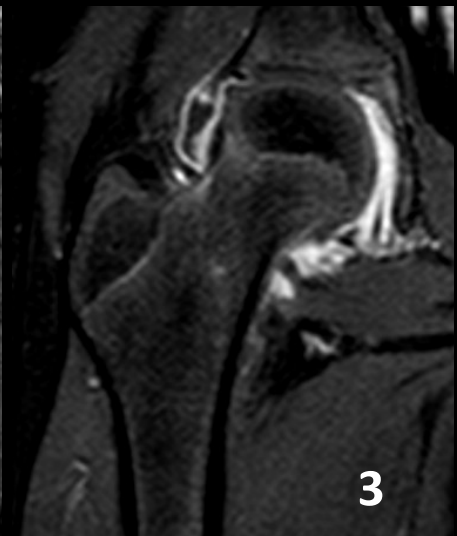
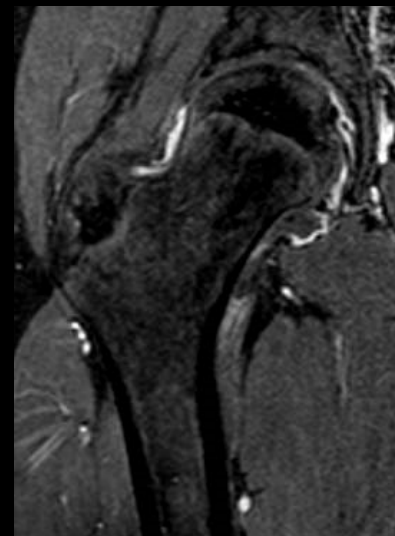
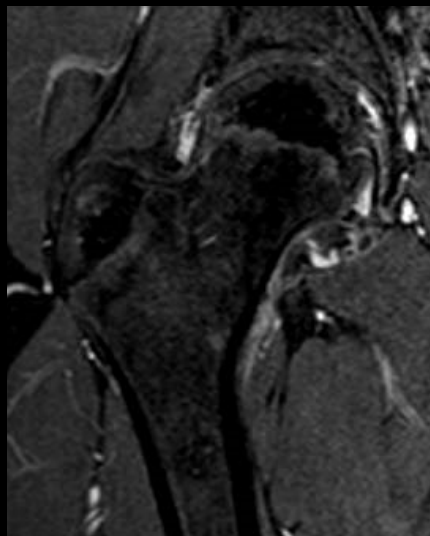
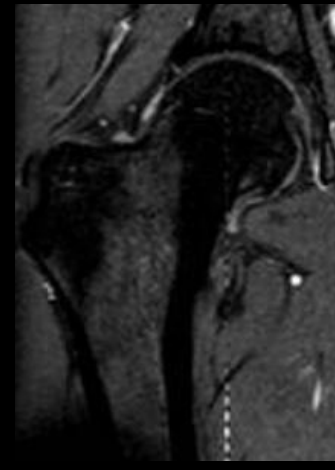
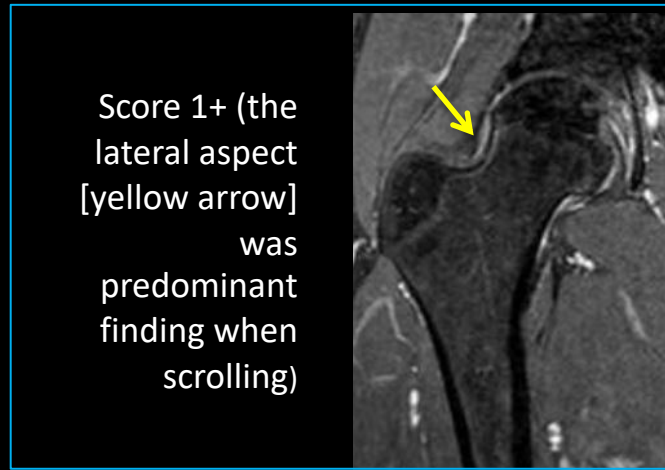
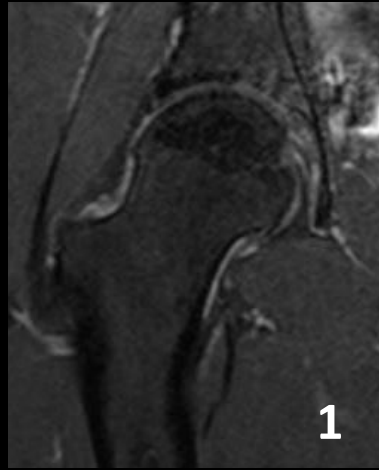
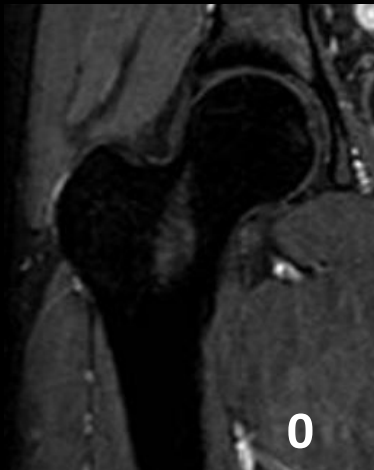
A Guide to Application of a Novel Scoring System

General Scoring Principles:

1. Score predominant finding
2. If in doubt, be conservative

ENHANCEMENT INTENSITY

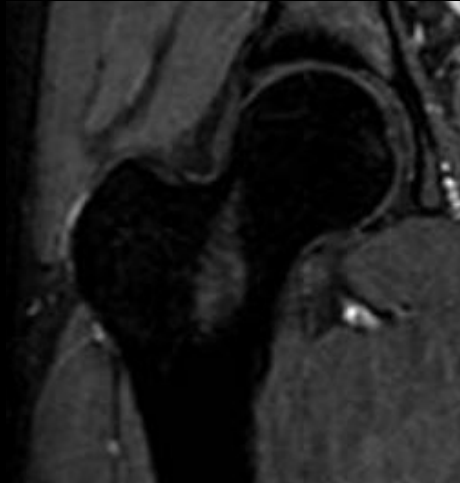
0 = NONE/ SUBTLE, 1 = MILD, 2 = MODERATE (SI < VESSELS), 3 = SEVERE (SI > VESSELS)



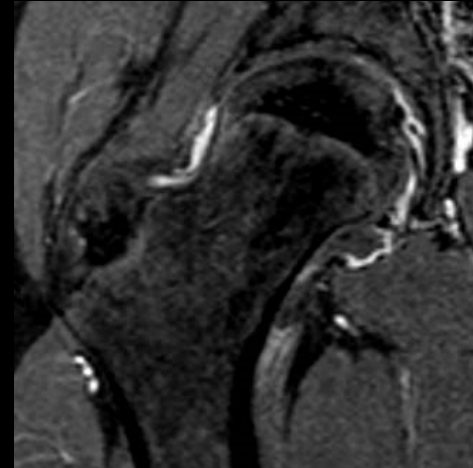
SYNOVIAL THICKENING (SUBJECTIVE SCORING – T1FS + Gd)

0 = NOTHING, 1 = MILD, 2 = MODERATE, 3 = SEVERE

0



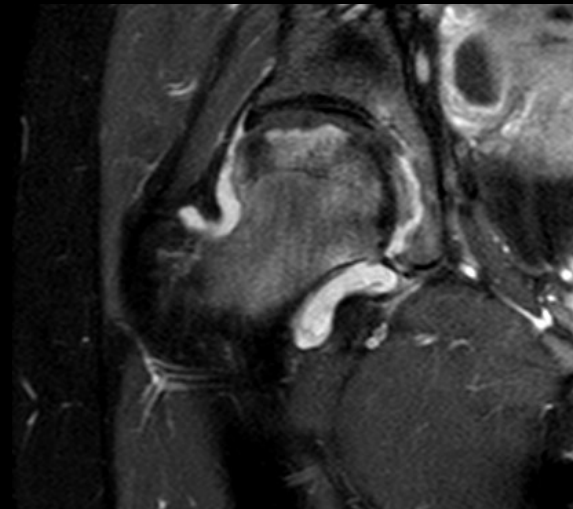
1



2



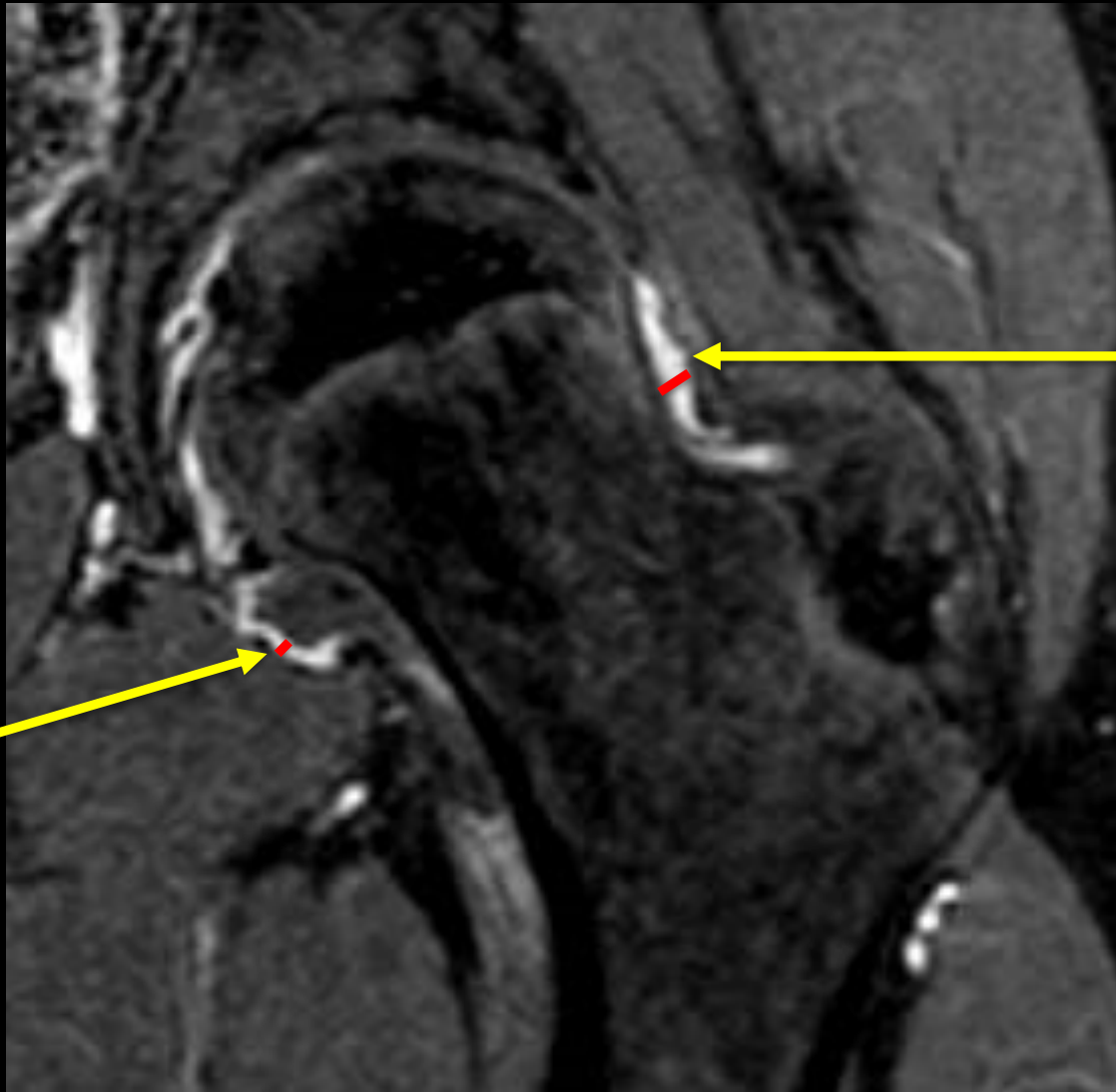
3



SYNOVIAL THICKENING

(MEDIAL AND LATERAL – T1FS + Gd)

FIND A MID SECTION, APPROX WHERE YOU SEE FOVEA



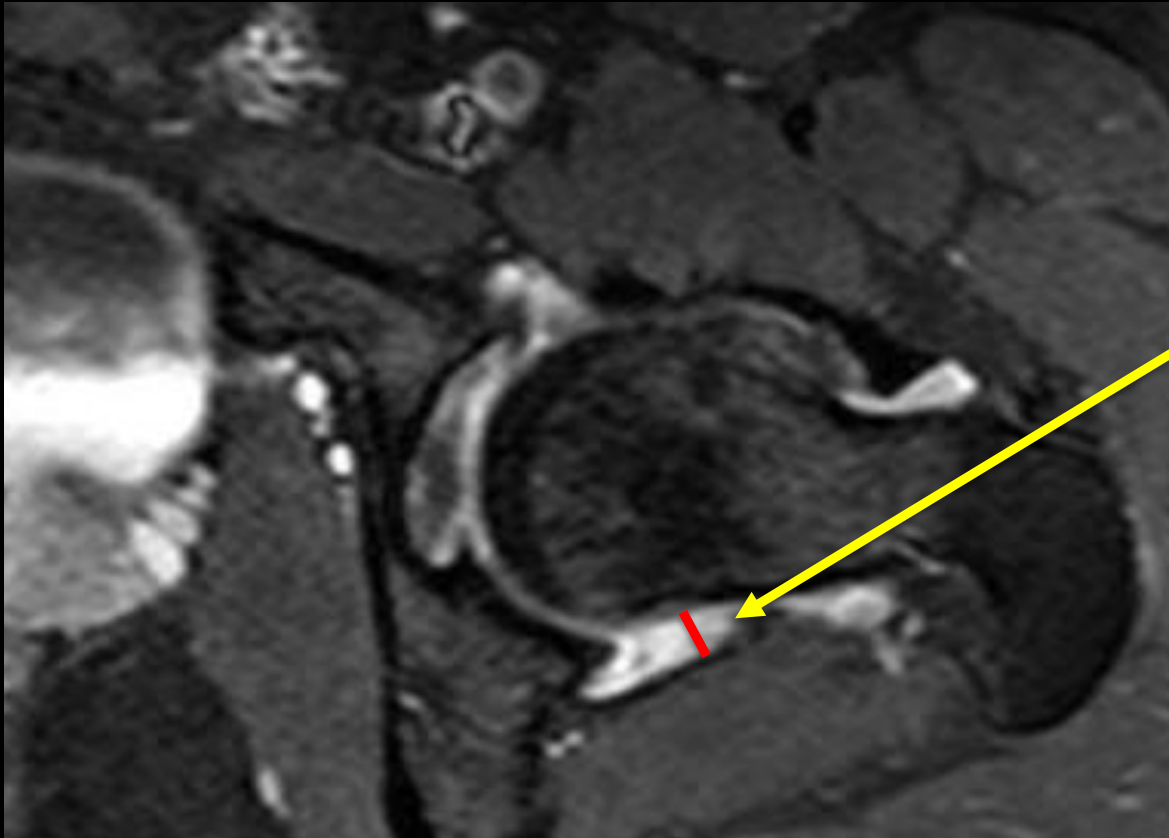
Medial – as you can see one layer this measure is ok

Lateral– here you must divide measurement by 2 (i.e. half the measurement)

SYNOVIAL THICKENING

(AXIAL – T1FS + Gd)

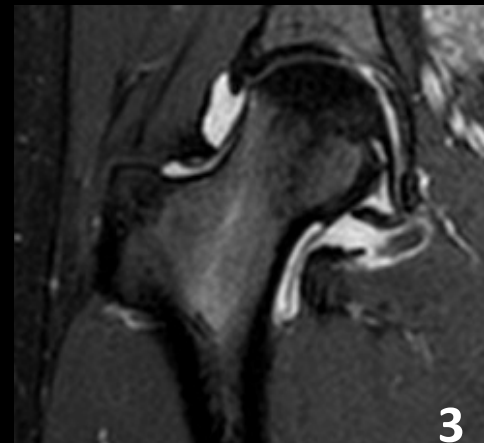
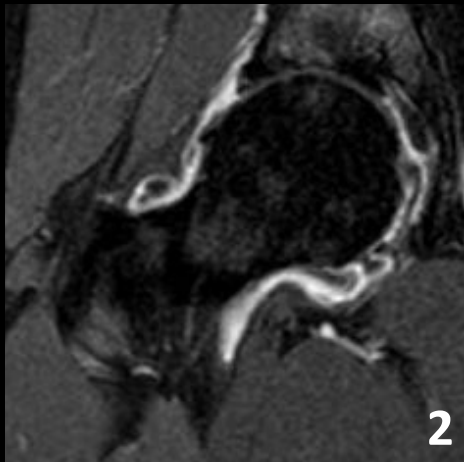
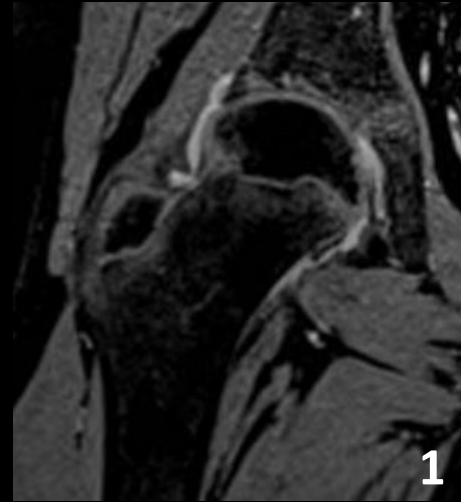
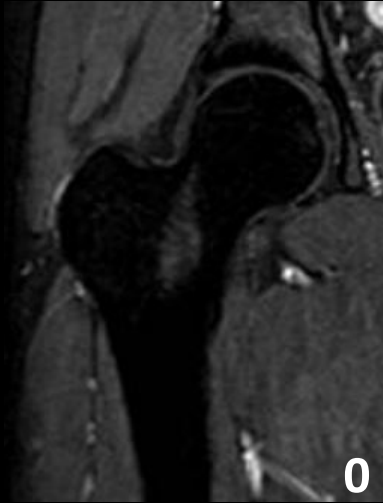
FIND A MID SECTION, NOT TOO SUPERIOR OR INFERIOR



MEASURE
ANTERIOR OR
POSTERIOR –
UP TO YOU.

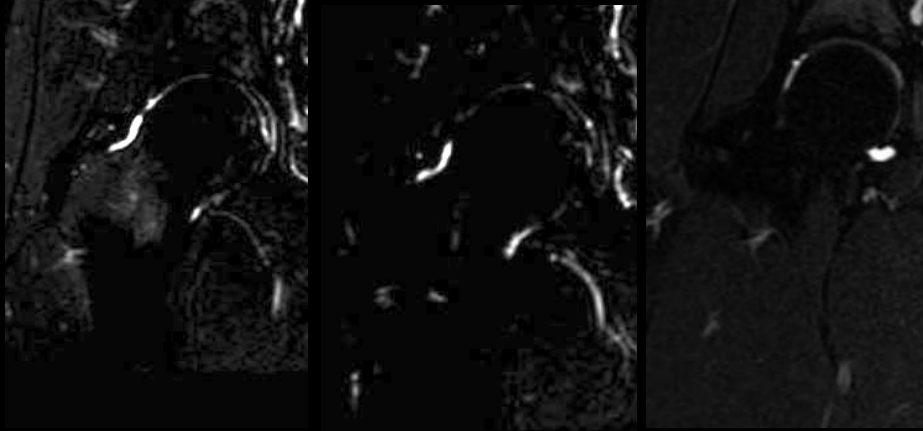
Remember to
divide by 2 if
you are
measuring 2
layers, as in
this example

OVERALL SYNOVIAL INFLAMMATION (ENHANCEMENT + THICKENING – T1+C)
0 = NONE/ SUBTLE, 1 = MILD, 2 = MODERATE, 3 = SEVERE

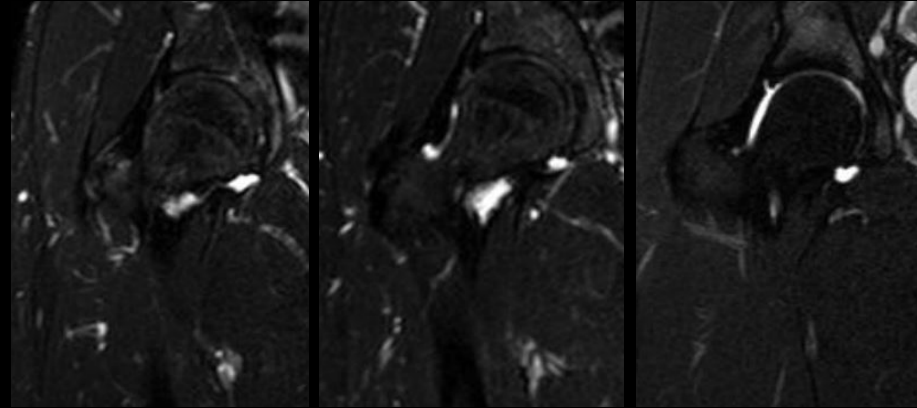


EFFUSION (T2FS)

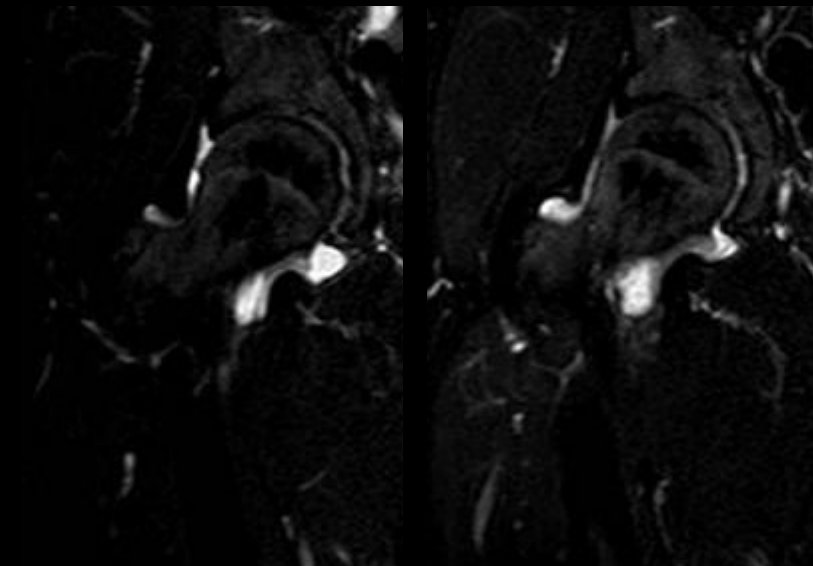
(0 = NONE), 1 = SLIVER, 2 = MILD, 3 = MODERATE, 4 = LARGE AMOUNT



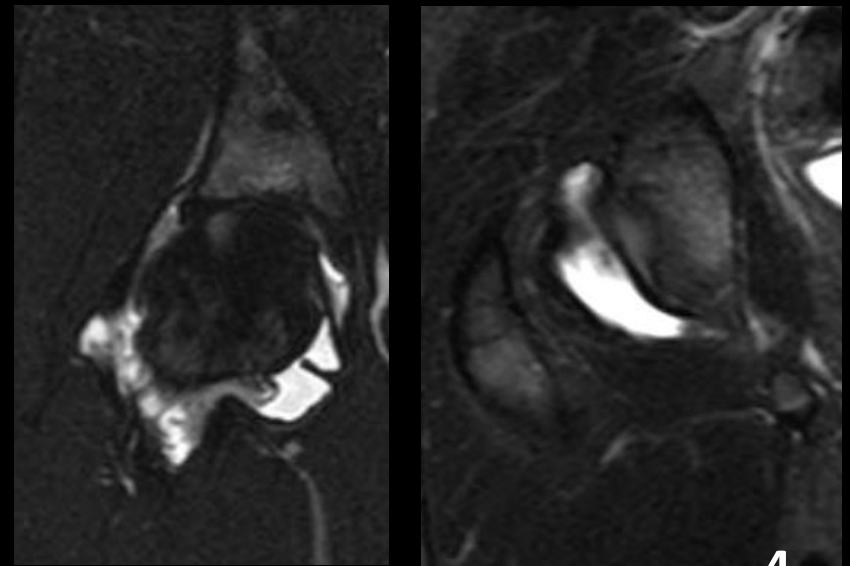
1



2



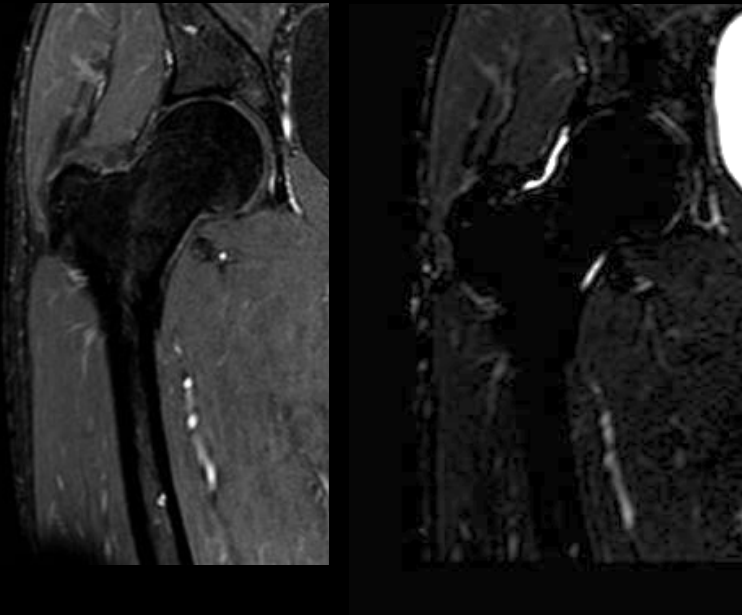
3



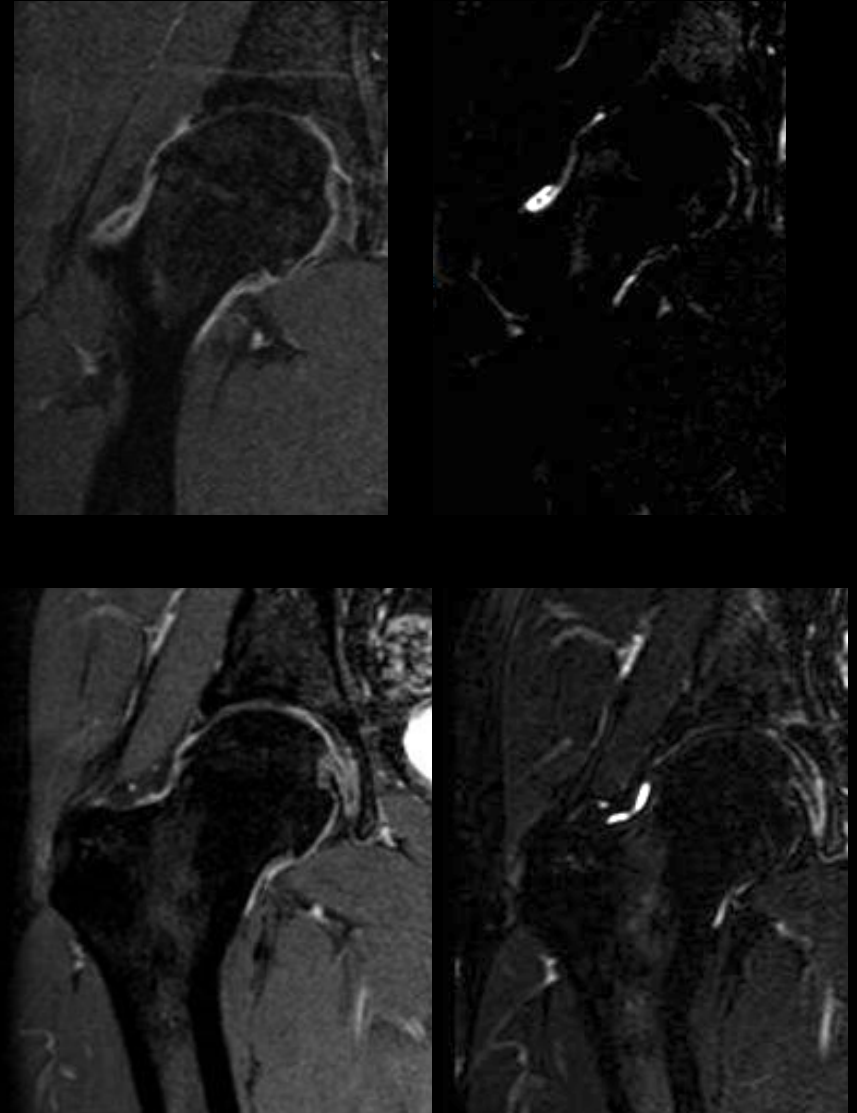
4

OVERALL INFLAMMATION inc EFFUSION (T1FS + Gad / T2FS)

0 = NONE

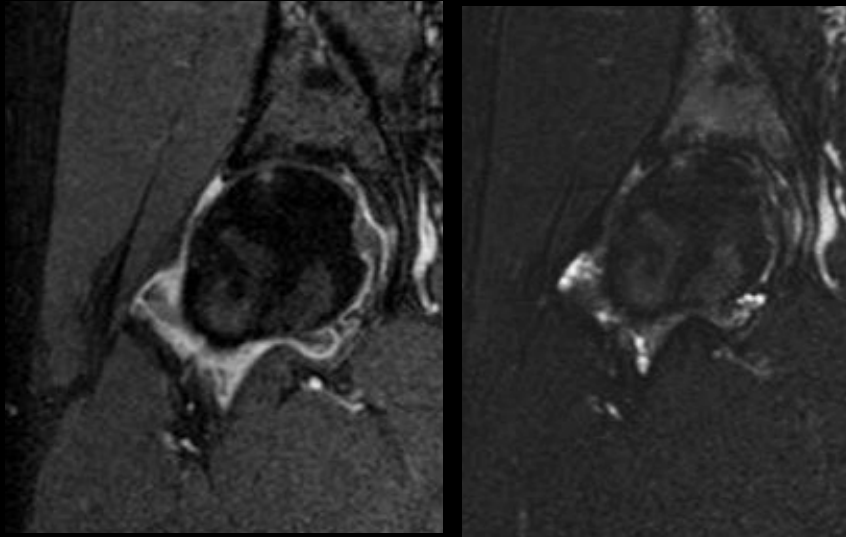


1 = MILD

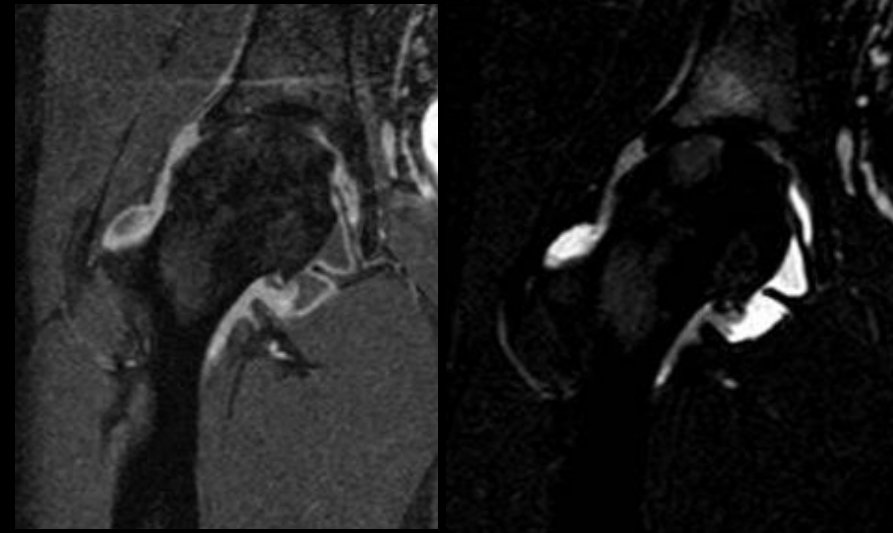


OVERALL INFLAMMATION inc EFFUSION (T1FS + Gad / T2FS)

2 = MODERATE



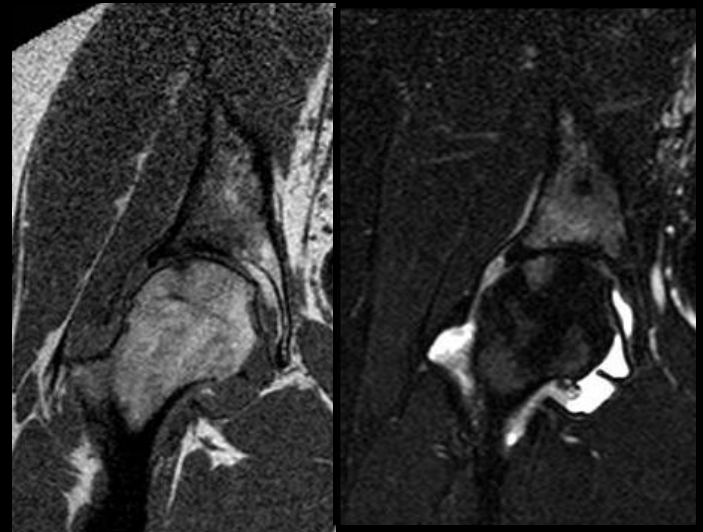
3 = SEVERE



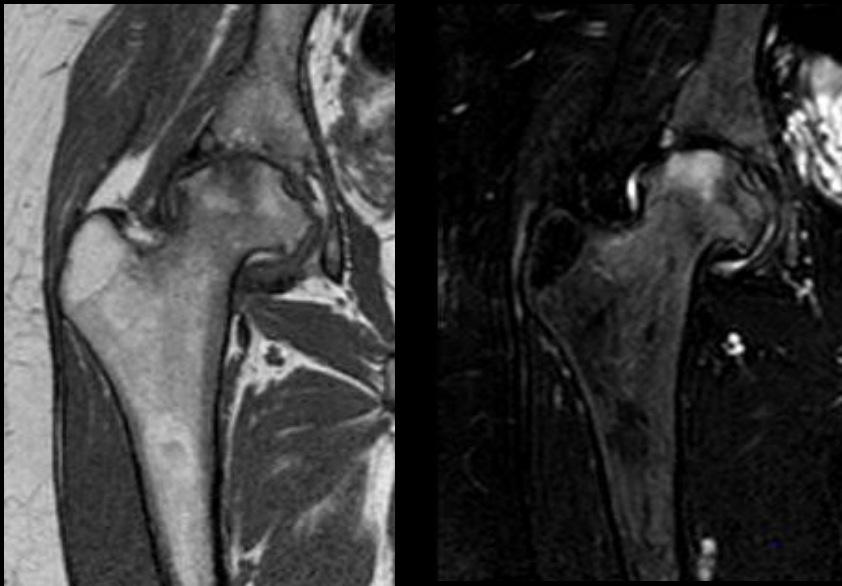
BONE MARROW CHANGES FEMORAL HEAD

- 0=0%
- 1=1-33%
- 2= 34-66%,
- 3= 67%-100%

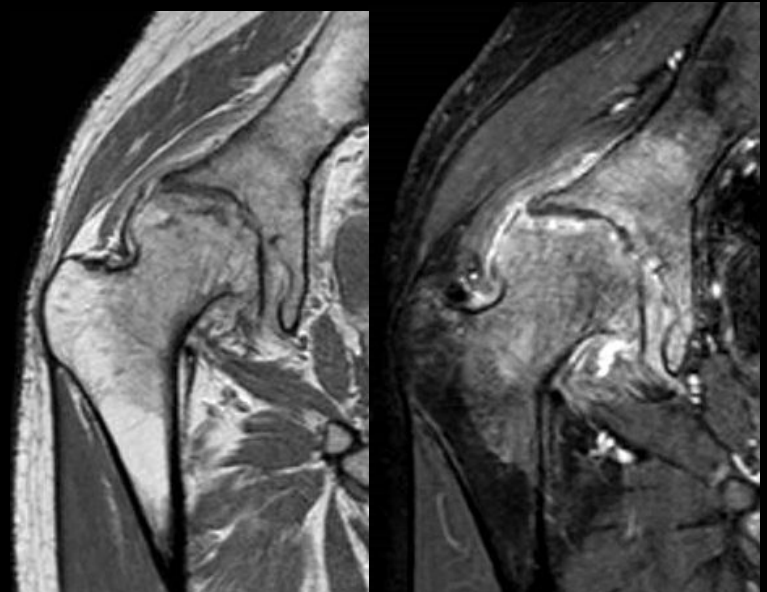
SCORE 1 – (T1 + T1C)



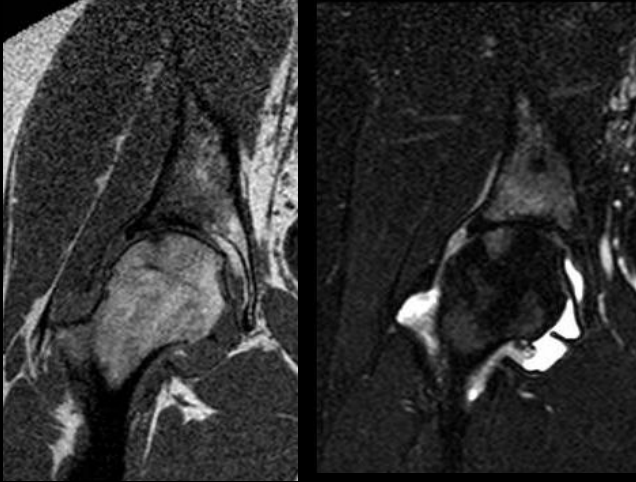
SCORE 2 – (T1 + T1C)



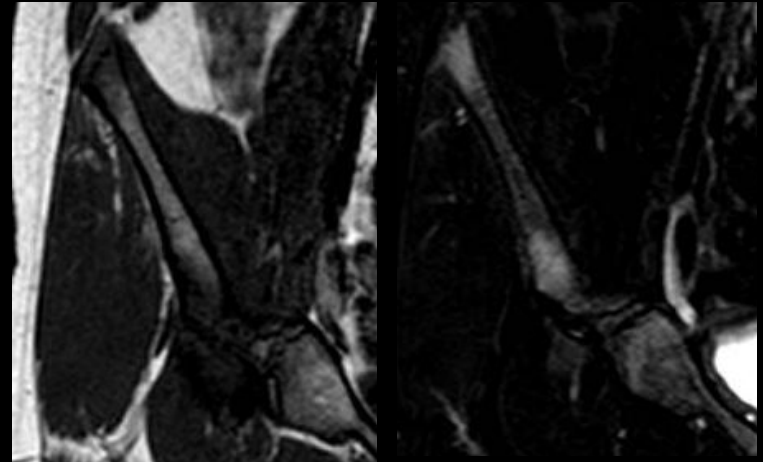
SCORE 3 – (T1 + T1C)



SCORE 1 – (T1 + T2FS)



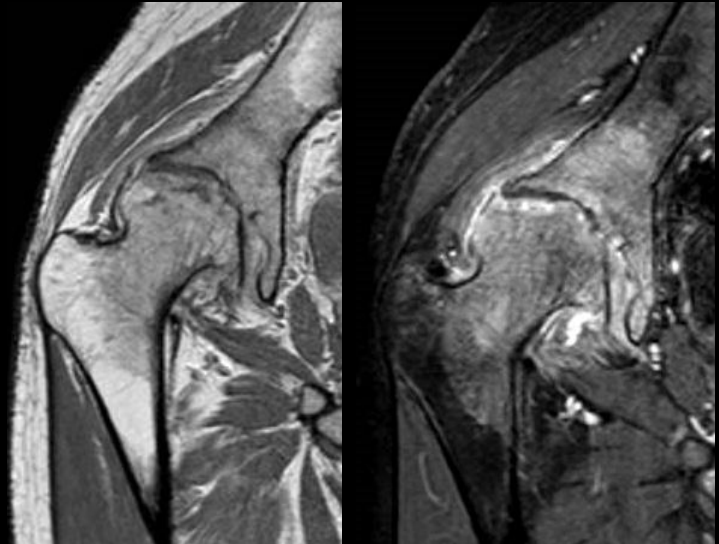
SCORE 1 – (T1 + T2FS)



**BONE MARROW
CHANGES
ACETABULUM (Joint
surface + 2cm rim)**

**0= NONE
1= MILD
2= MODERATE
/SIGNIFICANT**

SCORE 2 – (T1 + T2FS)



1= PRESENT

**BONE MARROW CHANGES
FEMORAL NECK**

0= NONE
1= PRESENT



T1



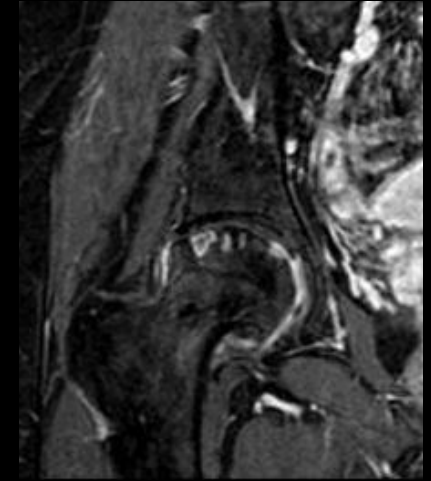
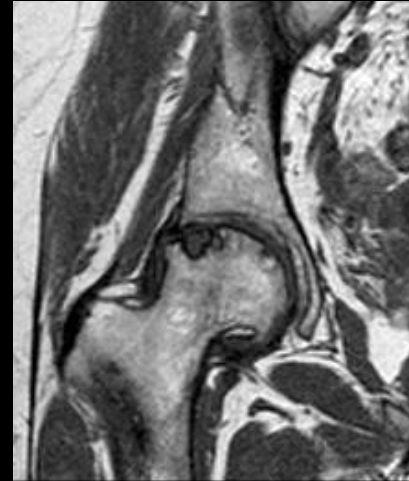
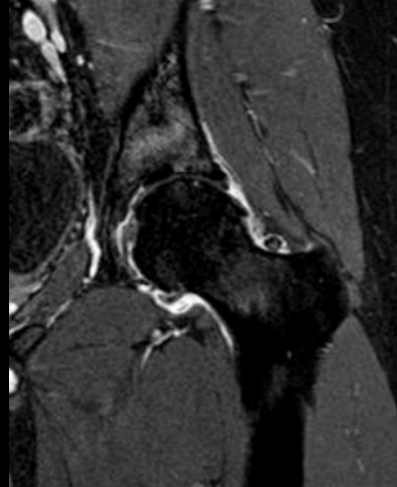
T2 + FS

EROSIONS OF FEMORAL HEAD :

0= 0%, 1= 1-25%, 2= 26-50%, 3 = 51 -75%, 4 = 76 - 100%

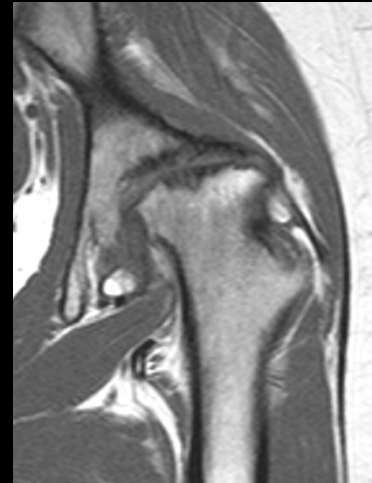
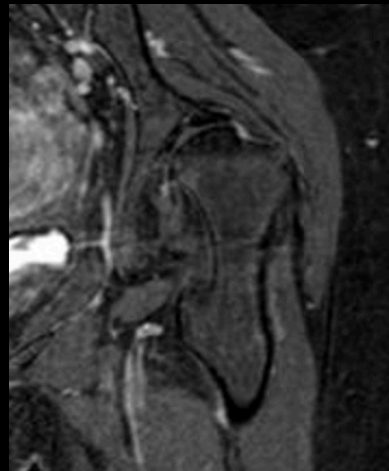
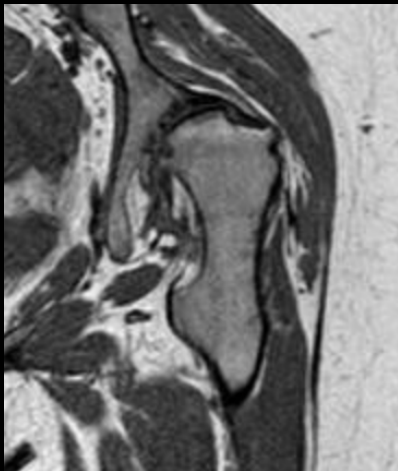
SCORE 1 (T1, T1c)

SCORE 2 (T1, T1c)



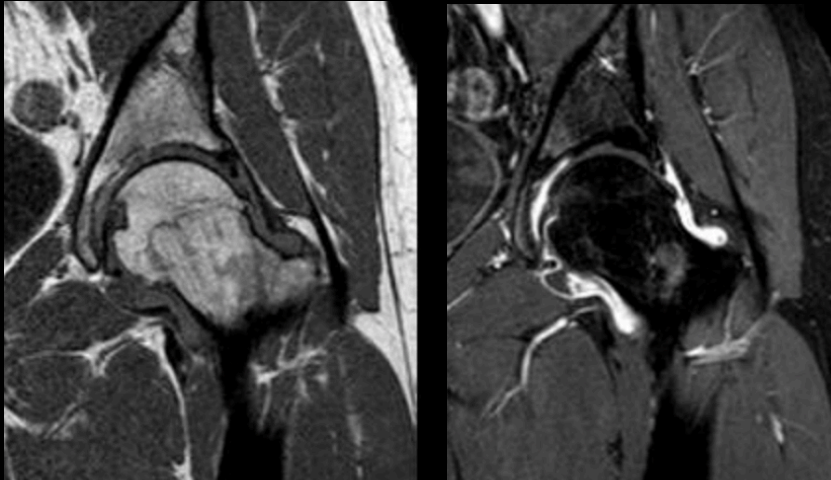
SCORE 3 (T1, T1c)

SCORE 4 (T1, T1c)

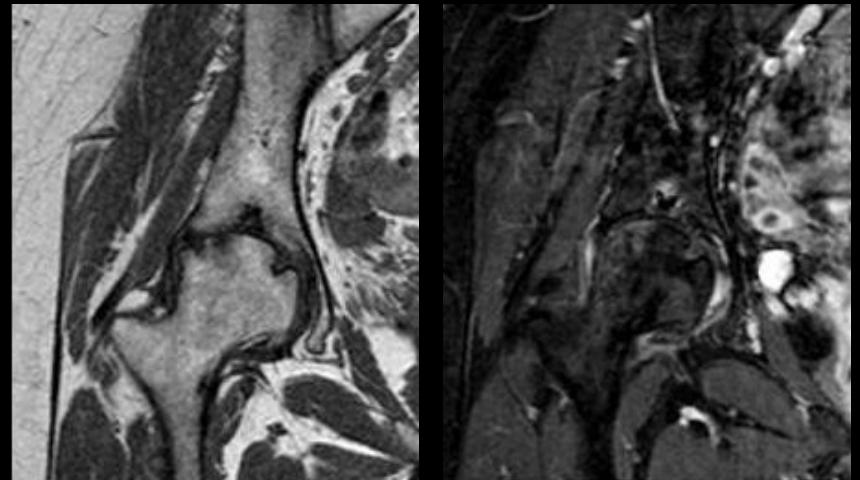


EROSIONS OF ACETABULUM: 0= 0%, 1= 1- 33%, 2= 34- 66%, 3 = 67 -100%

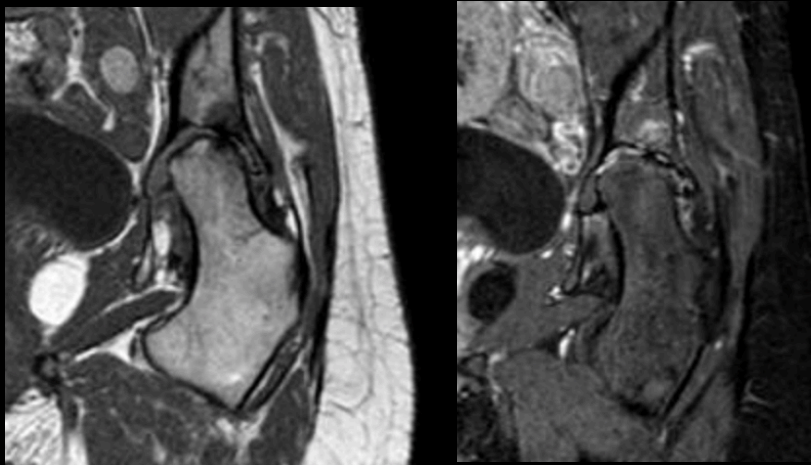
SCORE 0 (T1, T1c)



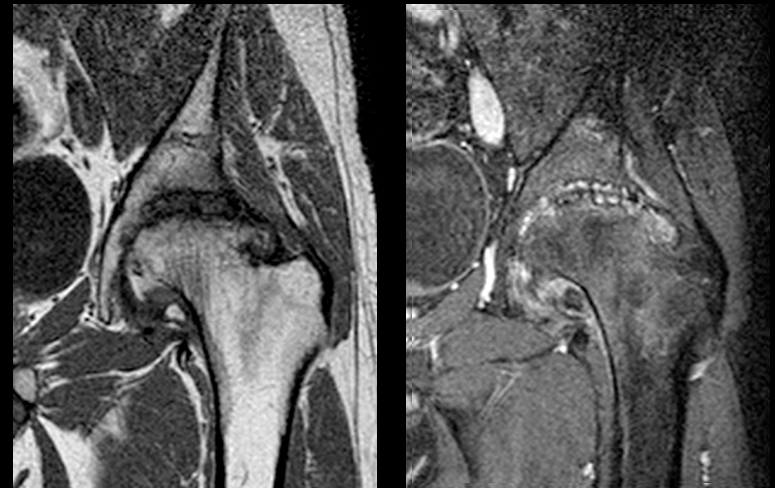
SCORE 1 (T1, T1c)



SCORE 2 (T1, T1c)



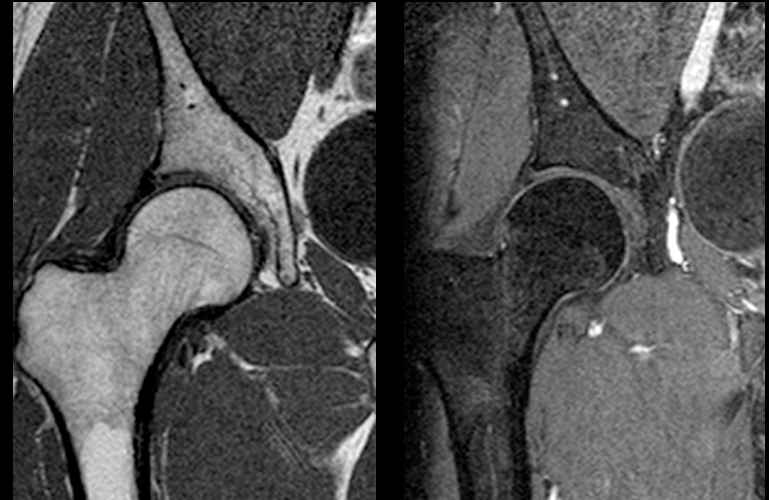
SCORE 3 (T1, T1c)



**EROSIONS OF
ACETABULUM (SIMPLIFIED)**

- 0= NONE**
- 1= BONY IRREGULARITIES**
- 2= BONE EROSION**

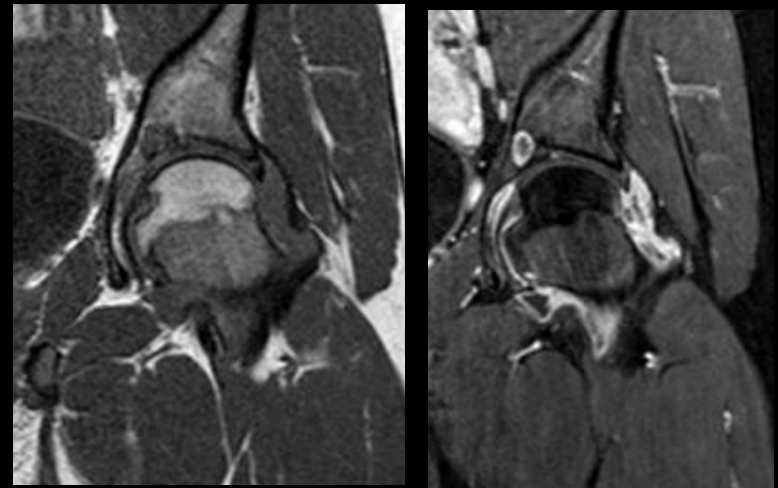
SCORE 0 – (T1, T1c)



SCORE 1 – (T1, T1c)



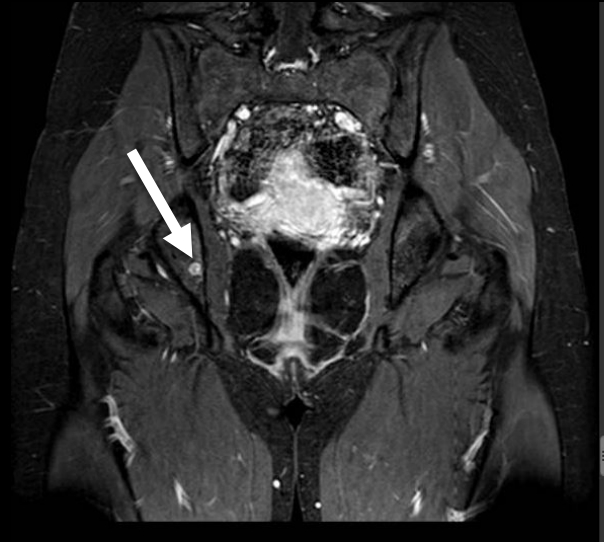
SCORE 2 – (T1, T1c)



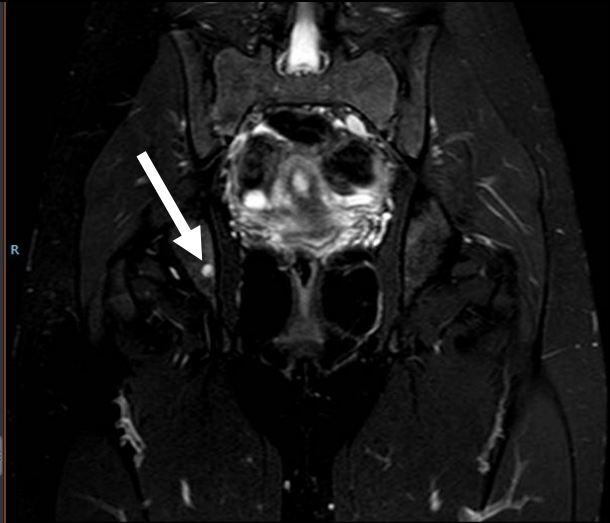
EXAMPLE OF BONE CYST : 0 = NONE, 1 = PRESENT



T1



T1 FS + CONTRAST



T2FS

**EXAMPLE OF ACTIVE
EROSION**

**0 = NONE
1 = PRESENT**



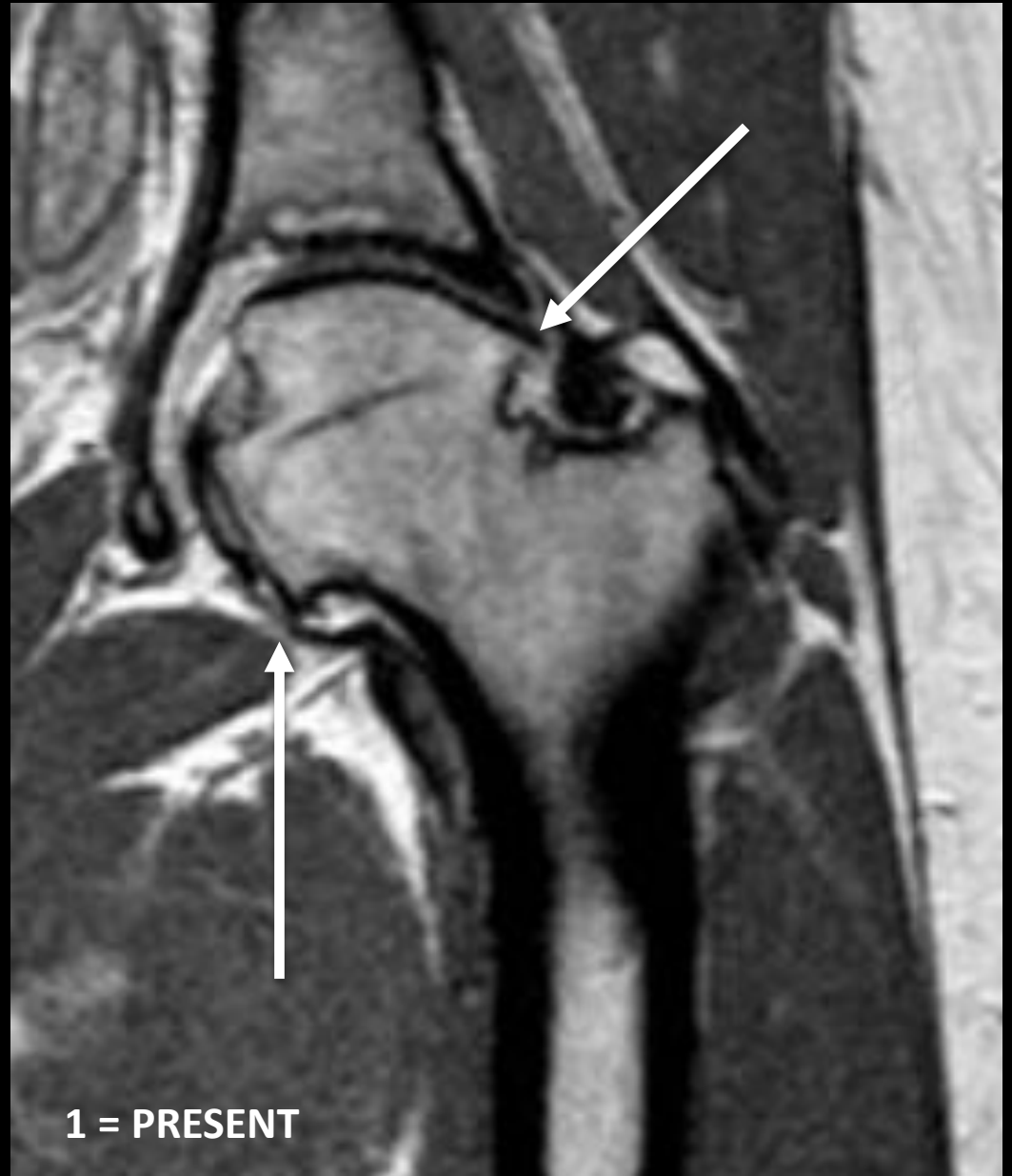
T1

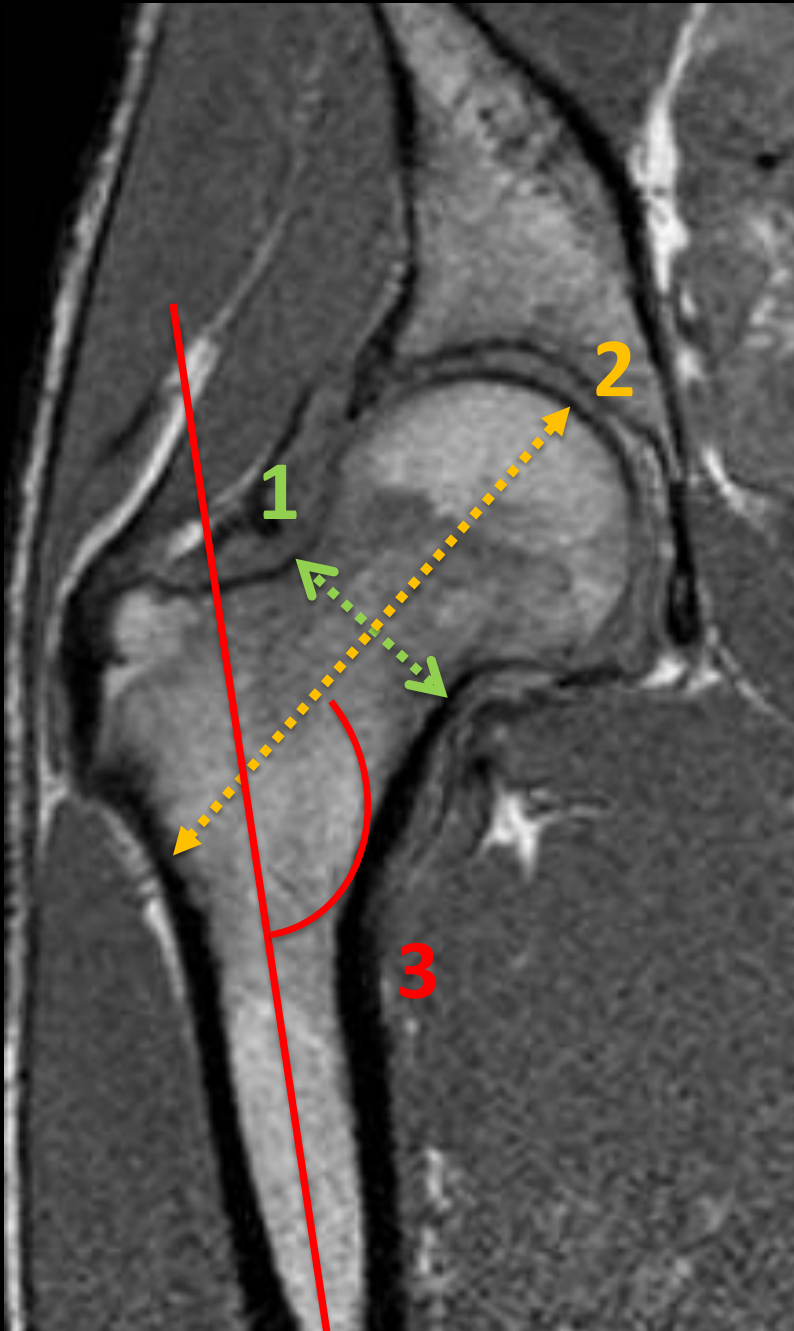


T1 FS + CONTRAST

EXAMPLE OF OSTEOPHYTES

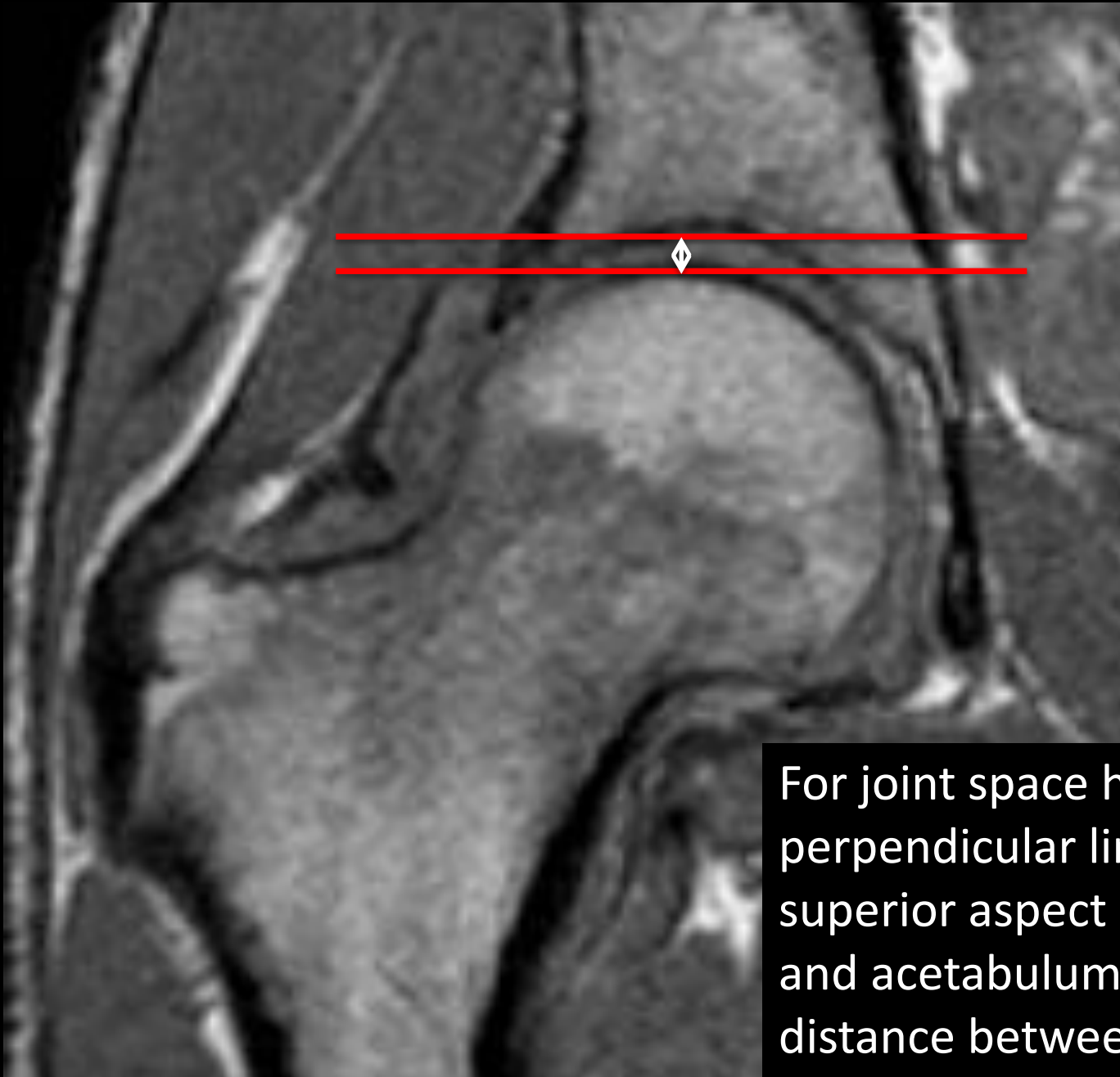
0 = NONE
1 = PRESENT



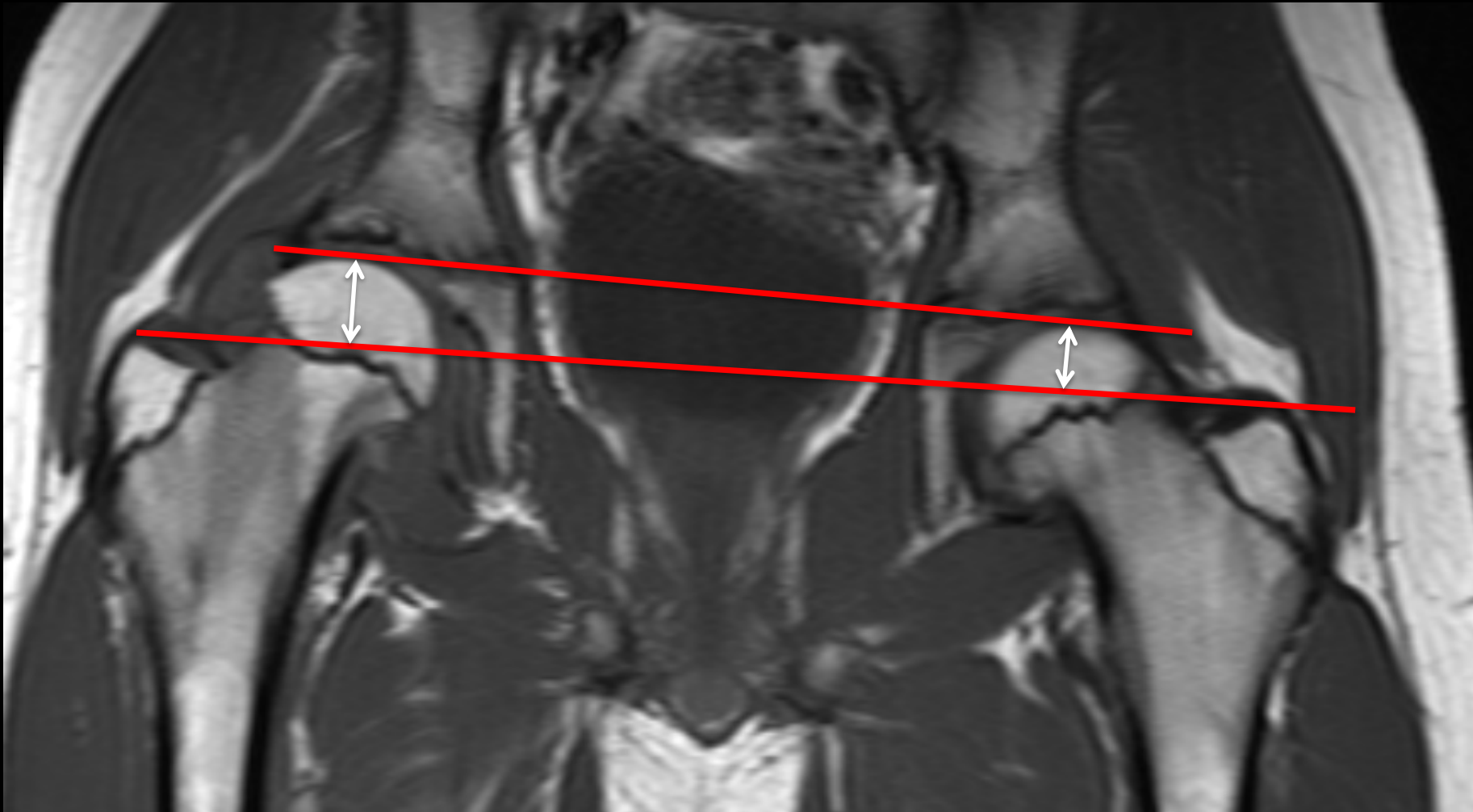


For all measurements, perform as per X-ray hip scoring paper, but pick a mid-section T1 image.

1. Draw a width of femoral neck (approx mid-neck)
2. At 90 degrees to this line, draw the femoral neck length
3. Draw a line through the femoral shaft. Where this line meets the femoral neck length line, measure the CCD angle.



For joint space height, draw two perpendicular lines along superior aspect of femoral head and acetabulum. Measure distance between these lines.



For trochanteric-femoral height, draw two lines, one along superior femoral head and one between the greater trochanters. Measure distance between the two lines at the femoral heads