

# Temporomandibular Joint

## MRI Protocols of the ESSR Arthritis Subcommittee



Recommendations of the ESSR Arthritis Subcommittee for the Use of Magnetic Resonance Imaging in Musculoskeletal Rheumatic Diseases. Semin Musculoskelet Radiol 2015;19:396–411

# Acronyms

Ax= axial

CE= contrast enhanced

Cor= coronal

FOV= field of view

FS= fat suppressed

PD= proton density

Sag= sagittal

TE= echo time (ms)

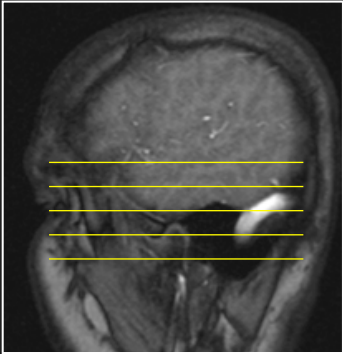
TMJ= Temporomandibular joint

TR= repetition time (ms)

# MRI scan

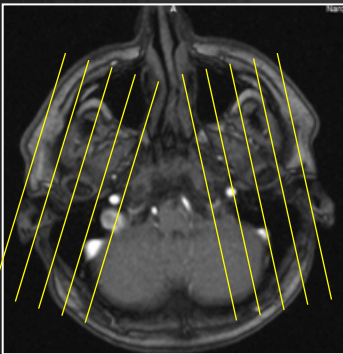
- Patient in supine position with the head first
- Head coil

# Localizer: Inflammatory disease



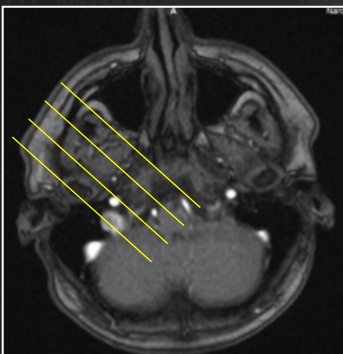
*Axial plane:* refer to the sagittal plane, orient the scan parallel to the hard palate and cover the entire TMJ from the corpus callosum up to the angle of the jaw.

If the head is tilted, the angulation has to be adjusted on the coronal plane.



*Sagittal plane:* refer to the axial plane, orient the scan perpendicular to the condyle of the mandible (i.e., of the same side that has to be examined). Check the correct positioning on the other two planes.

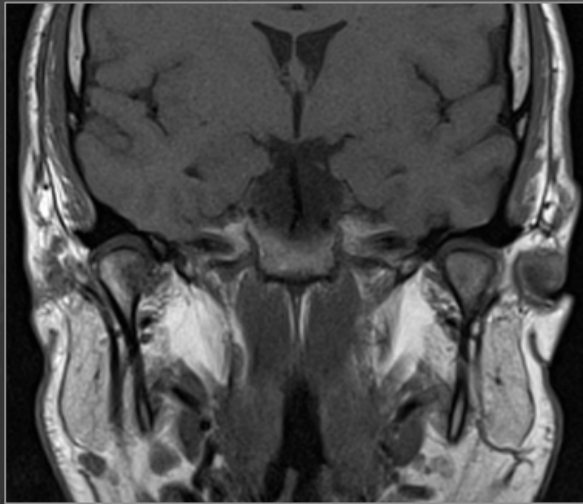
If the head is tilted, the angulation has to be adjusted on the coronal plane.



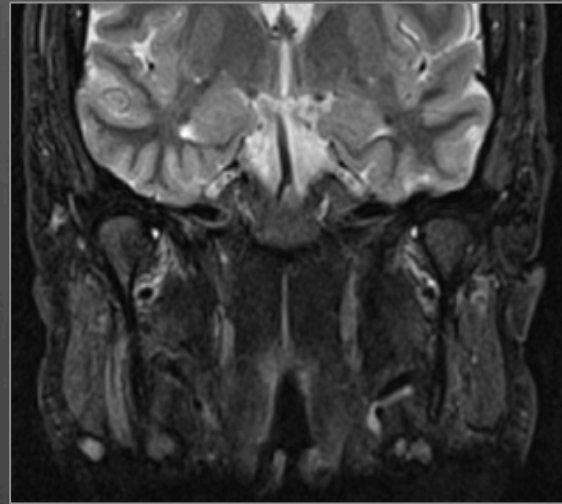
*Coronal plane:* refer to the axial plane, orient the scan parallel to the condyle of the mandible (i.e., of the same side that has to be examined). Check the correct positioning on the sagittal plane.

# Recommended Sequences: Inflammatory disease

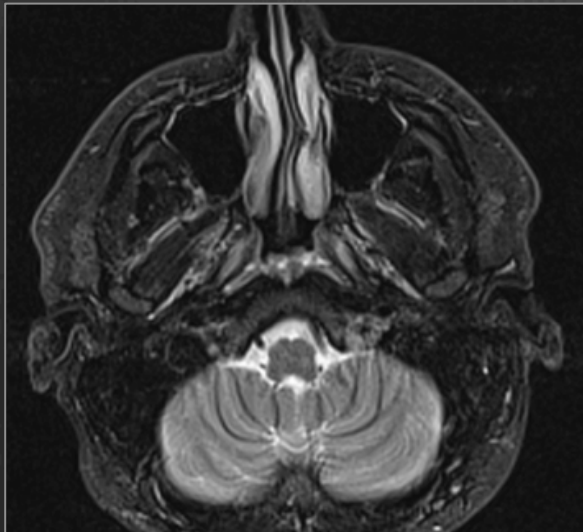
Cor T1  
(or Ax T1)



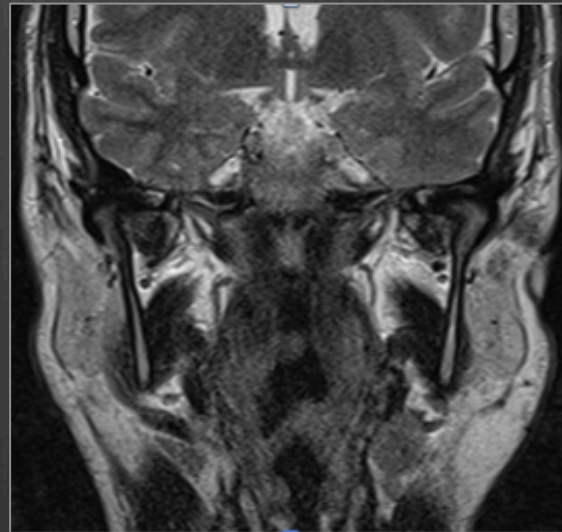
Cor T2 FS  
(or STIR  
or TIRM)



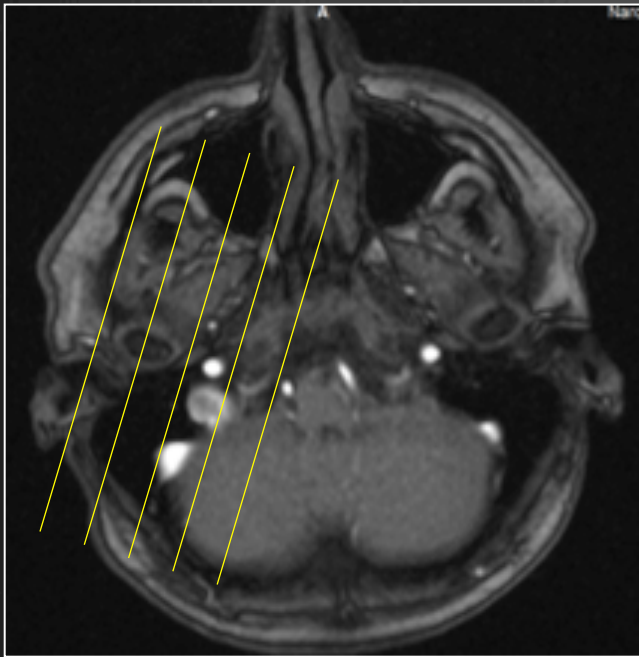
Ax T2 FS  
(or STIR  
or TIRM)



Cor T2



# Localizer: Joint derangement



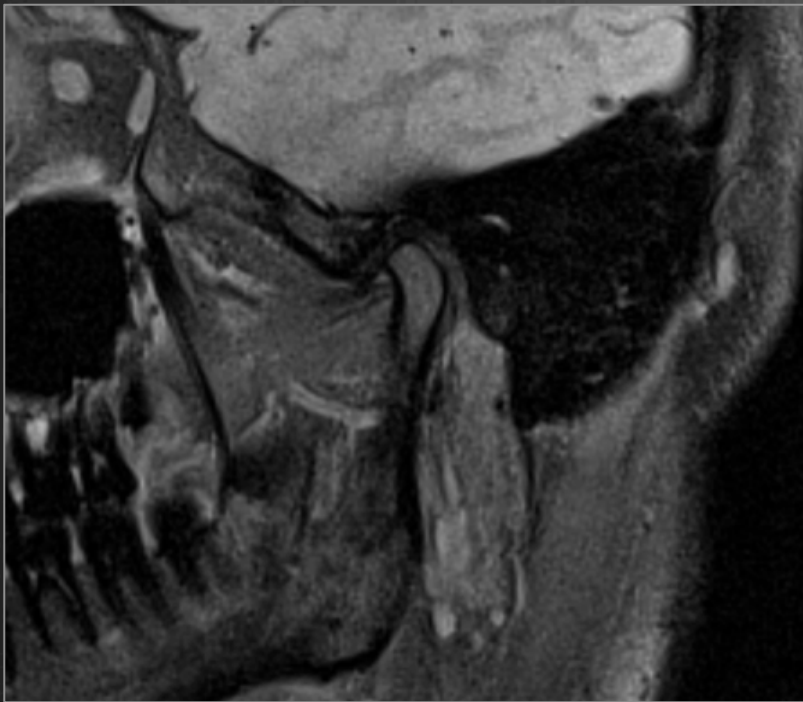
## *Sagittal oblique:*

- refer to the axial plane
- orient the scan perpendicular to the condyle of the mandible (i.e., of the same side)
- check the correct positioning on the other two planes
- the number of slices has to cover the joint from side to side

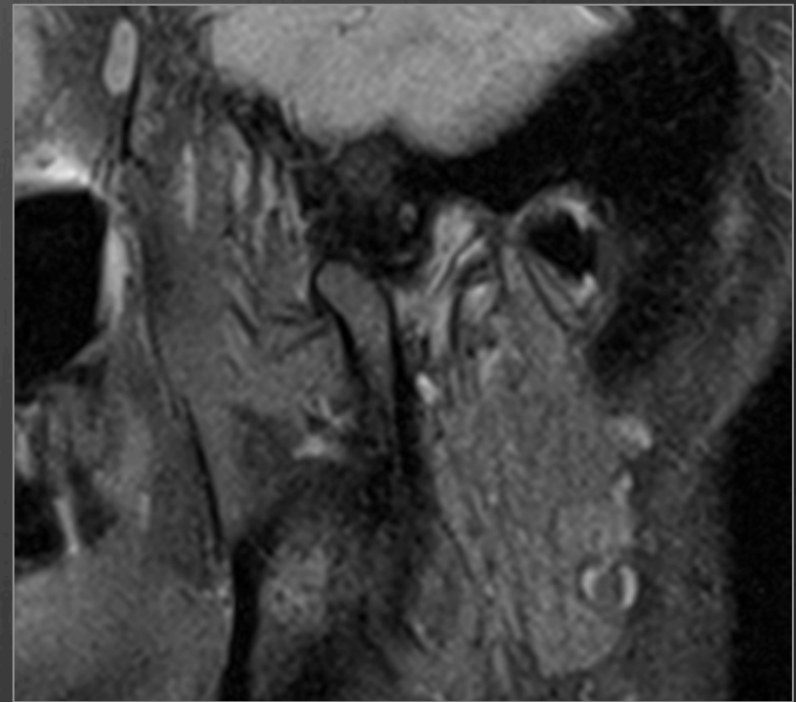
The MR scan has to be performed:

- with the mouth opened and closed
- on the right and on the left TMJ

## Recommended Sequences: Joint derangement



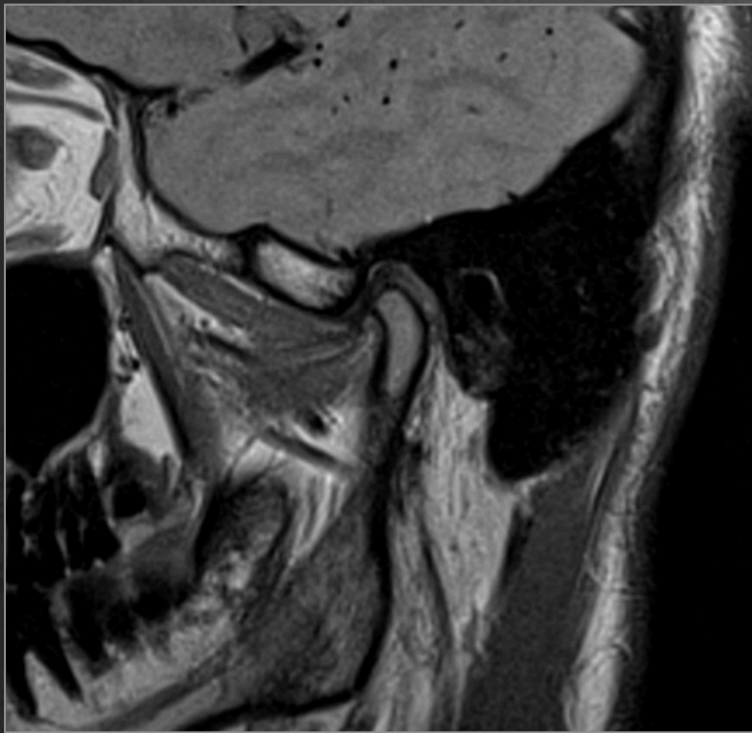
Sag oblique PD FS mouth closed



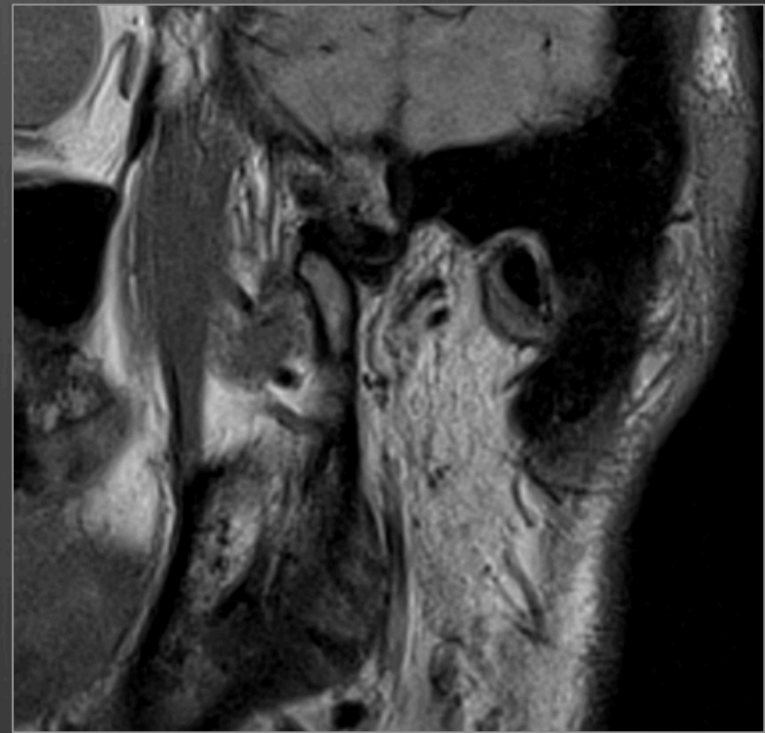
Sag oblique PD FS mouth opened



## Recommended Sequences: Joint derangement



Sag oblique PD mouth closed



Sag oblique PD mouth opened



# MRI protocols

Inflammatory disease	Recommended Sequences	FOV (mm)	Slice thickness (mm)	TR (ms)	TE (ms)	Matrix
	Cor T1	230	3	420-620	10	256x256
	Ax T2	230	5	2500-5500	90	256x256
	Cor T2 FS	230	3	2500-5000	100	256x256
	Cor T2	230	3	2200-3200	100	256x256
	CE T1 FS (for synovitis and/or osteitis)	140	2.5	420-620	10	256x256
	PD FS oblique mouth closed & opened	140	2.5	2200-3200	24	256x256
	PD oblique mouth closed & opened	140	2.5	2200-3200	24	256x256
Joint derangement						

# Contributors

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