



## Neuro Adult Brain and ENT Protocols

Carolina Radiology

**Please name all sequences and protocols as described herein.**

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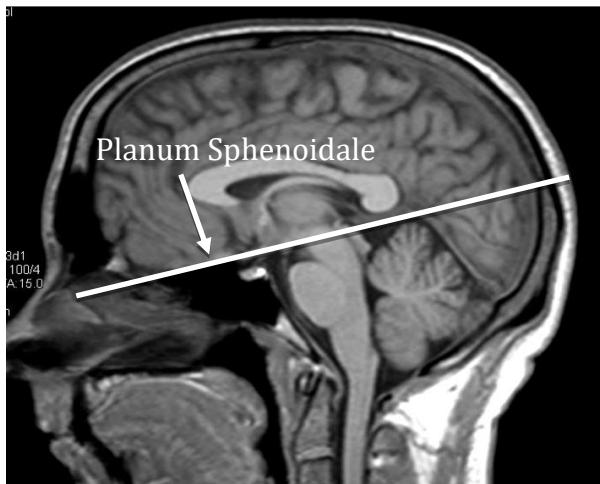
# SEQUENCES

## BRAIN - ROUTINE WITHOUT CONTRAST

### PACS Description: MRI Brain WO

**Indications** – Stroke, acute mental status changes, memory loss, non-focal symptoms.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
1	Sag	FSPGR	N	N	2mm	0mm	25.6cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	
4	Axial	FLAIR	N	N	4mm	1mm	24cm	BottomUp	
5	Axial	SWI (or GRE)	N	N	4mm	1mm	24cm	BottomUp	SWI/SWAN preferred
6	Axial	T1	N	N	4mm	1mm	24cm	BottomUp	
7	Cor	T2	N	N	4mm	1mm	24cm	A to P	



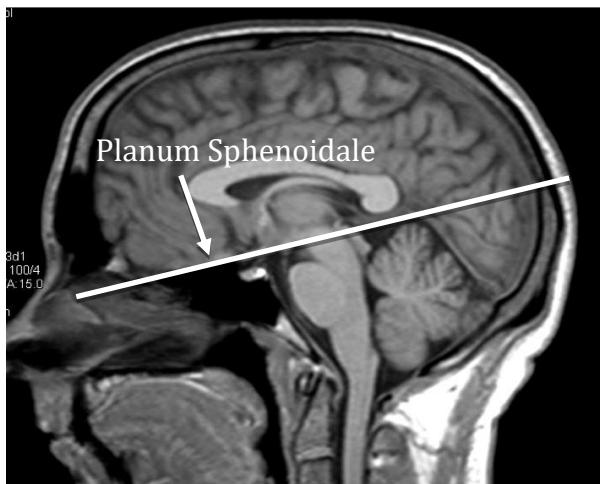
**Position:** Axial images should be parallel to the planum sphenoidale and the hard palate and cover the entire brain (including the scalp at the vertex and through the foramen magnum inferiorly). Coronal and sagittal images can be aligned perpendicular to the axial slices and should include the entire brain.

# BRAIN – ROUTINE WITHOUT AND WITH CONTRAST

## PACS Description: MRI Brain WO and W

**Indications** – Metastatic disease, infection, inflammation, new seizure in adults, headache in adults.

#	Orient	Seq	Contrast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Sag	T1	N	N	4mm	1mm	24cm	L to R	
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	
4	Axial	SWI	N	N	4mm	1mm	24cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
<b>POST-CONTRAST</b>									
5	Axial	FLAIR	Y	N	4mm	1mm	24cm	BottomUp	
6	Axial	T1	Y	N	4mm	1mm	24cm	BottomUp	
7	Sag	FSPGR	Y	N	2mm	0mm	25.6cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.
<b>OPTIONAL SEQUENCES IF NEW/DE NOVO TUMOR</b>									
8	Cor	FLAIR	N	N	4mm	1mm	24cm	A to P	If new onset seizures. <a href="#">Align to hippocampus</a> .
9	DTI								
10	Perfusion								
11	Spectroscopy								



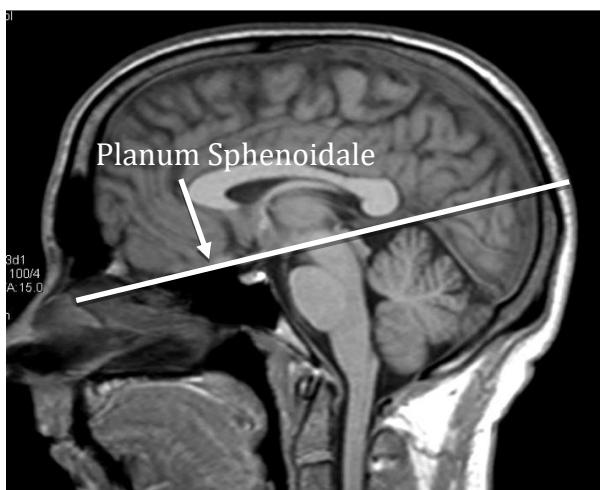
**Position:** Axial images should be parallel to the planum sphenoidale and the hard palate and cover the entire brain (including the scalp at the vertex and through the foramen magnum inferiorly). Coronal and sagittal images can be aligned perpendicular to the axial slices and should include the entire brain.

# BRAIN – PEDIATRIC 0-18 MONTHS OF AGE

## PACS Description: MRI Brain WO and W

**Indications** – Metastatic disease, infection, inflammation, new seizure, headache.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Sag	FSPGR	N	N	1mm	0mm	20cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.
2	Axial	T2	N	N	3mm	1mm	20cm	BottomUp	
3	Axial	FLAIR	N	N	3mm	1mm	20cm	BottomUp	
4	Axial	T1	N	N	3mm	1mm	20cm	BottomUp	I
5	Axial	SWI	N	N	3mm	1mm	20cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
6	Axial	DWI	N	N	3mm	1mm	20cm	BottomUp	
<b>POST-CONTRAST (CHECK WITH NEURORADIOLOGIST FIRST)</b>									
7	Axial	T1	Y	N	3mm	1mm	24cm	BottomUp	
8	Sag	FSPGR	Y	N	1mm	0mm	25.6cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.
<b>OPTIONAL SEQUENCES IF NEW/DE NOVO TUMOR</b>									
9	DTI								
10	Perfusion								
11	Spectroscopy								



**Position:** Axial images should be parallel to the planum sphenoidale and the hard palate and cover the entire brain (including the scalp at the vertex and through the foramen magnum inferiorly). Coronal and sagittal images can be aligned perpendicular to the axial slices and should include the entire brain.

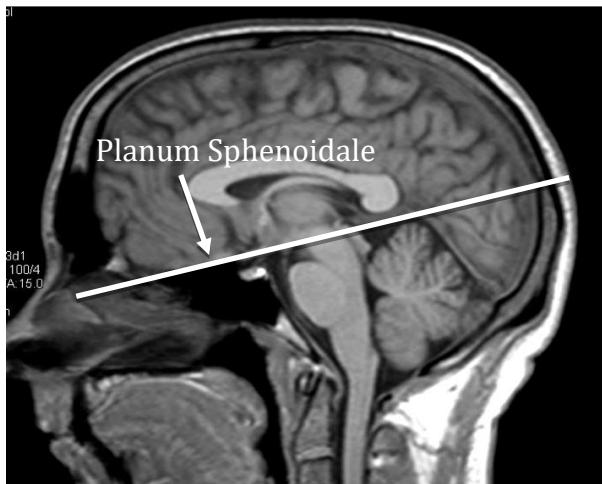
**NOTE:** Run DWI last so as not to prematurely wake a sedated child.

# BRAIN – PEDIATRIC GREATER THAN 18 MONTHS

## PACS Description: MRI Brain WO and W

**Indications** – Metastatic disease, infection, inflammation, new seizure, headache.

#	Orient	Seq	Con- trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Sag	FSPGR	N	N	1mm	0mm	25.6cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.
2	Axial	T2	N	N	4mm	1mm	23cm	BottomUp	
3	Axial	FLAIR	N	N	4mm	1mm	23cm	BottomUp	
4	Axial	T1	N	N	4mm	1mm	23cm	BottomUp	I
5	Axial	SWI	N	N	4mm	1mm	23cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
6	Axial	DWI	N	N	4mm	1mm	23cm	BottomUp	
<b>POST-CONTRAST (CHECK WITH NEURORADIOLOGIST FIRST)</b>									
7	Axial	T1	Y	N	4mm	1mm	23cm	BottomUp	
8	Sag	FSPGR	Y	N	1mm	0mm	25.6cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.
<b>OPTIONAL SEQUENCES IF NEW/DE NOVO TUMOR</b>									
9	DTI								
10	Perfusion								
11	Spectroscopy								



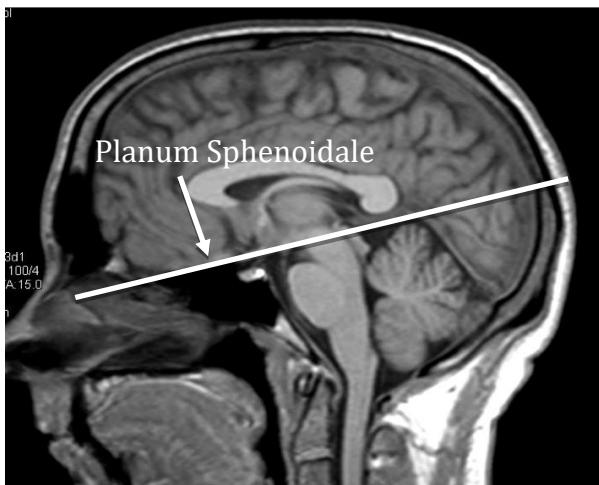
**Position:** Axial images should be parallel to the planum sphenoidale and the hard palate and cover the entire brain (including the scalp at the vertex and through the foramen magnum inferiorly). Coronal and sagittal images can be aligned perpendicular to the axial slices and should include the entire brain.

# BRAIN – MULTIPLE SCLEROSIS

## PACS Description: MRI Brain WO and W

**Indications** – Suspected or follow-up multiple sclerosis/demyelinating disease.

#	Orient	Seq	Con- trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Sag	T1	N	N	4mm	1mm	24cm	L to R	
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	
4	Axial	SWI	N	N	4mm	1mm	24cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
<b>POST-CONTRAST</b>									
5	Axial	FLAIR	Y	N	4mm	1mm	24cm	BottomUp	
6	Sag	FLAIR	Y	N	3mm	0mm	24cm	L to R	<b>Prefer 3D FLAIR where available.</b> Otherwise, use this 2D Sag FLAIR protocol.
7	Axial	T1	Y	N	4mm	1mm	24cm	BottomUp	
8	Sag	FSPGR	Y	N	2mm	0mm	25.6cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.



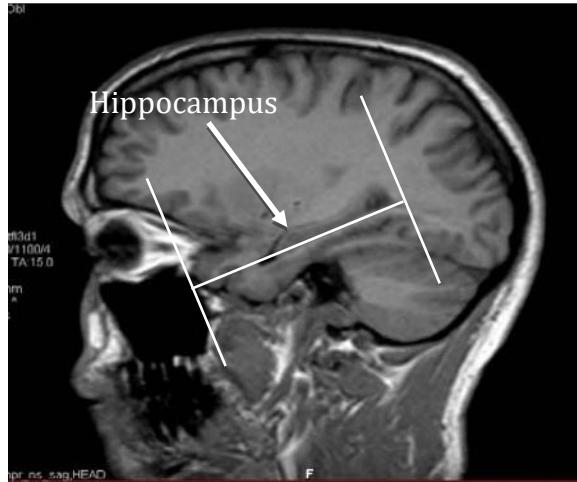
**Position** Axial images should be parallel to the planum sphenoidale and the hard palate and cover the entire brain (including the scalp at the vertex and through the foramen magnum inferiorly). Coronal and sagittal images can be aligned perpendicular to the axial slices and should include the entire brain. The Sagittal FLAIR should use the same positioning as the Sag T1.

# BRAIN – EPILEPSY, CHRONIC SEIZURES

## PACS Description: MRI Brain WO

**Indication** - Use for all adult and pediatric **chronic** seizure disorders

#	Orient	Seq	Contrast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
1	Sag	FSPGR	N	N	2mm	0mm	25.6cm	L to R	Axial recon: Align to planum sphenoidale Cor recon: Perpendicular to axial.
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	
4	Axial	SWI	N	N	4mm	1mm	24cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
5	Cor	T2	N	N	4mm	1mm	24cm	A to P	Through hippocampus
6	Cor	FLAIR	N	N	4mm	1mm	24cm	A to P	Whole brain



**Position:** Same as Routine Brain without sequences 1-4. The Coronal T2 should be set up perpendicular to the hippocampus and should cover the entire temporal lobe. The Coronal FLAIR should use the same orientation as the Coronal T2, but should cover the whole brain. The Coronal recons from the FSPGR should match the Coronal T2 and FLAIR studies in orientation.

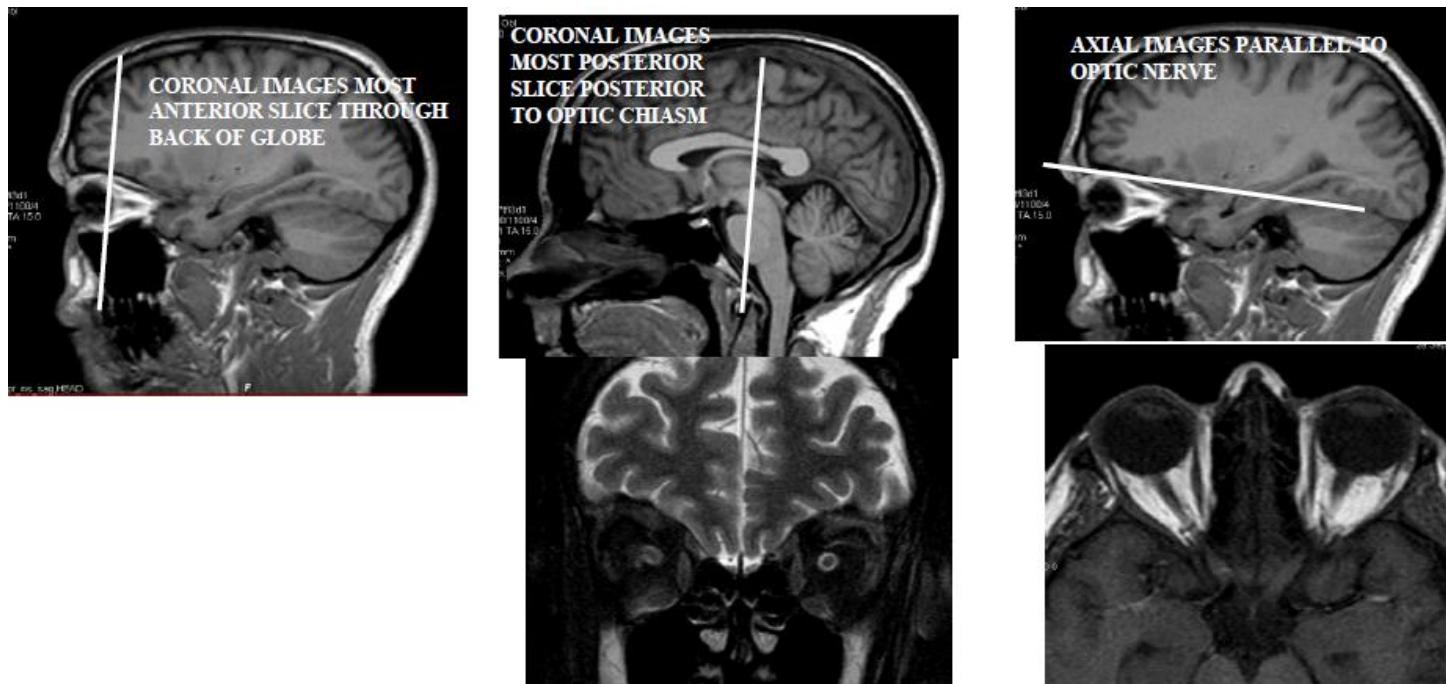
## BRAIN – ORBITS

### PACS Description: MRI Orbit WO and W

**Indication** – Optic neuritis, orbital mass, thyroid ophthalmopathy.

NOTE: In most cases, the patient will also need a separate order for an [MRI of the Brain WO and W contrast](#).

#	Orient	Seq	Con- trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Cor	STIR	Y	N	3mm	0.5mm	18cm	A to P	Orbits. See below.
2	Axial	T1	N	N	3mm	0.5mm	18cm	BottomUp	Orbits. See below.
3	Cor	T1	N	N	3mm	0.5mm	18cm	A to P	Orbits. See below.
<b>POST-CONTRAST</b>									
4	Axial	T1 FS	Y	Y	3mm	0.5mm	18cm	BottomUp	Orbits. See below.
5	Cor	T1 FS	Y	Y	3mm	0.5mm	18cm	A to P	Orbits. See below.



**Position:** Same as Routine Brain without for sequences 1-4. The Coronal T2 should be set up perpendicular to the hippocampus and should cover the entire temporal lobe. The Coronal FLAIR should use the same orientation as the Coronal T2, but should cover the whole brain. The Coronal recons from the FSPGR should match the Coronal T2 and FLAIR studies in orientation.

# BRAIN – MRA Circle of Willis WITHOUT and/or WITH CONTRAST

## PACS Description: MRA Head WO

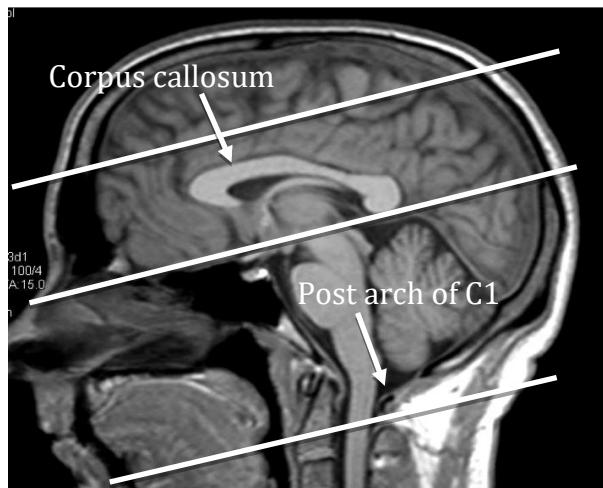
**Indication** – Aneurysm, stroke, vascular malformation, vasculitis.

-or-

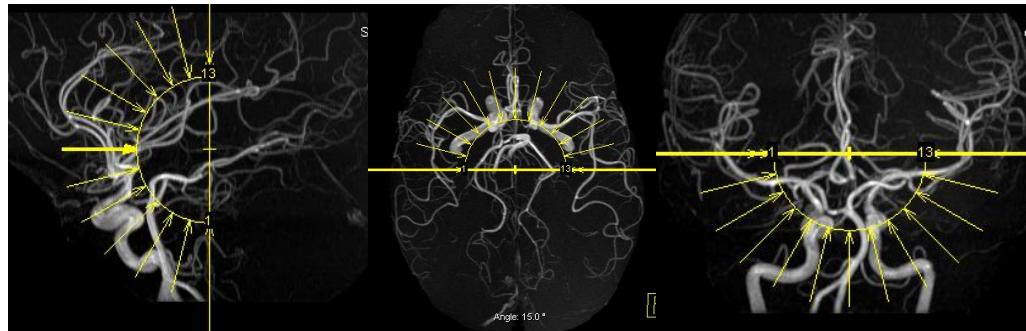
## PACS Description: MRA Head WO and W

**Indication** – Aneurysm, vascular malformation. Only performed by special request and should include without and with sequences below.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Localizer								
2	COW TOF	N	N	1mm	0mm	20cm			Circle of Willis
<b>POST-CONTRAST</b>									
3	MRA CE	Y	N	1mm	0mm	20cm			Circle of Willis
<b>RECONSTRUCTIONS</b>									
4	MIP Recons								
5	MIP Recons								
6	MIP Recons								



**Position:** Include circulation from C1 to 1cm above the corpus callosum.



# BRAIN – MRA Whole Brain WITHOUT and/or WITH CONTRAST

## PACS Description: MRA Head WO

Indication – Vascular malformation, vasculitis.

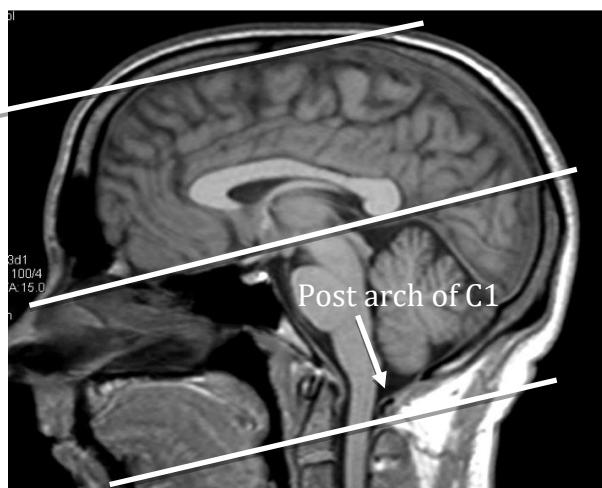
-or-

## PACS Description: MRA Head WO and W

Indication – Vascular malformation, vasculitis. Only performed by special request.

**NOTE:** *MRA of the Head without and with contrast (aneurysm protocol)* requires both the standard MRA TOF without and the MRA post-contrast.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
PRE-CONTRAST									
1	Localizer								
2	COW TOF	N	N	1mm	0mm	20cm			Whole brain
OPTIONAL POST-CONTRAST									
3	MRA CE	Y	N	1mm	0mm	20cm			When specifically requested (aneurysm protocol)
4	TWIST/TRICKS	Y	N						When specifically requested (AVM protocol)
OPTIONAL									
5	MIP Recons of TOF and MRA CE								



**Position:** Include circulation form C1 to the superior sagittal sinus.

# NECK – MRA NECK WITHOUT and/or WITH CONTRAST

NOTE: Please do not use this protocol for a dissection. Use the separate dissection protocol.

## PACS Description: MRA Neck WO and W

**Indication** – Stroke, carotid stenosis, vascular malformation, subclavian steal (should use TRICKS/TWIST w any vascular malformation or subclavian steal).

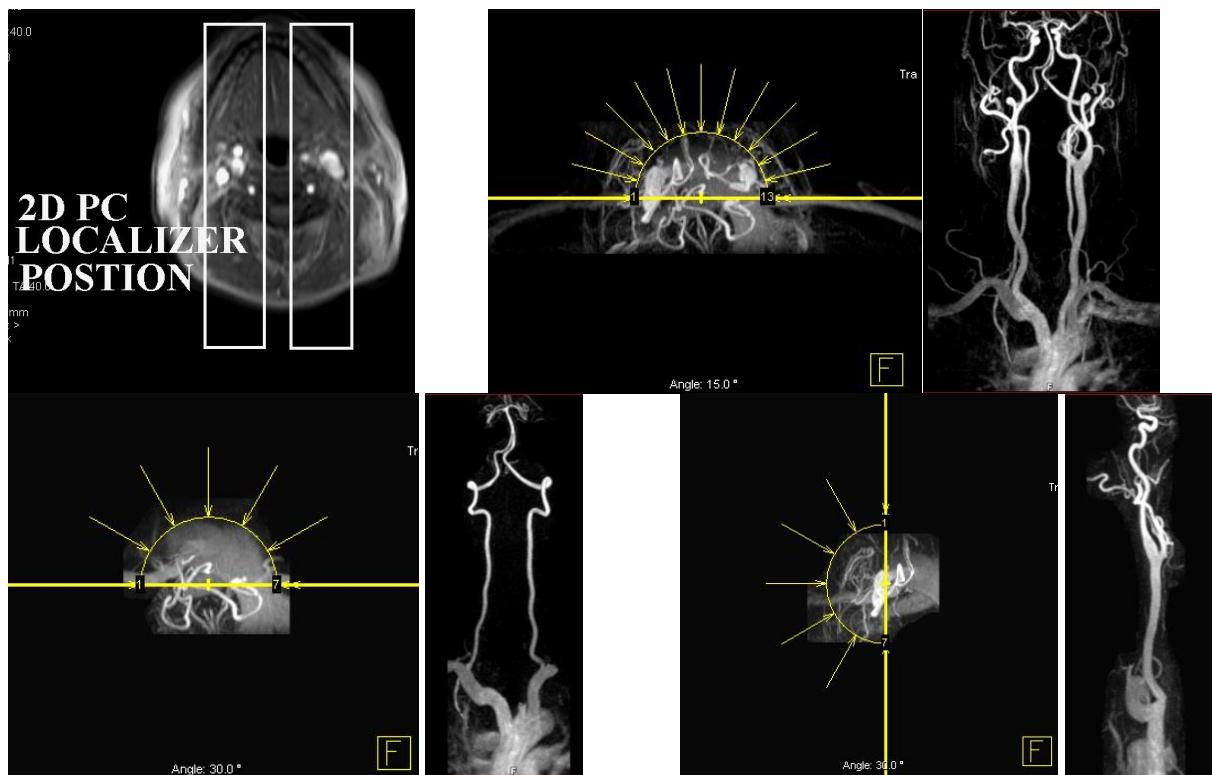
-or-

## PACS Description: MRA Neck WO

**Indication** – (Only if they cannot have contrast). Stroke, carotid stenosis, vascular malformation, subclavian steal.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Localizer								
2	MRA 2D TOF	N	N	3mm	0mm	20cm			
3	MRA 3D CE Pre	N	N	1.2mm	0mm	35cm			Only if going to admin contrast.
<b>POST-CONTRAST</b>									
4	MRA 3D CE Post	Y	N	1.2mm	0mm	35cm			
<b>OPTIONAL</b>									
5	TRICKS/TWIST								For vascular malformation or subclavian steal
<b>RECONSTRUCTIONS</b>									
6	MIP Recons of 2D TOF and CE Post								
7	Subtractions for MRA 3D CE								

**Position:** Cover from aortic arch through circle of Willis.



# NECK - RULE OUT DISSECTION

## PACS Description:

1. MRI Neck WO
2. MRA Neck WO and W

**Indications** - TIA/Stroke patient with associated neck or retro-orbital pain, child or young adult with stroke, trauma patients developing infarcts.

**Note:** Need orders for both the MRI Neck and MRA Neck.

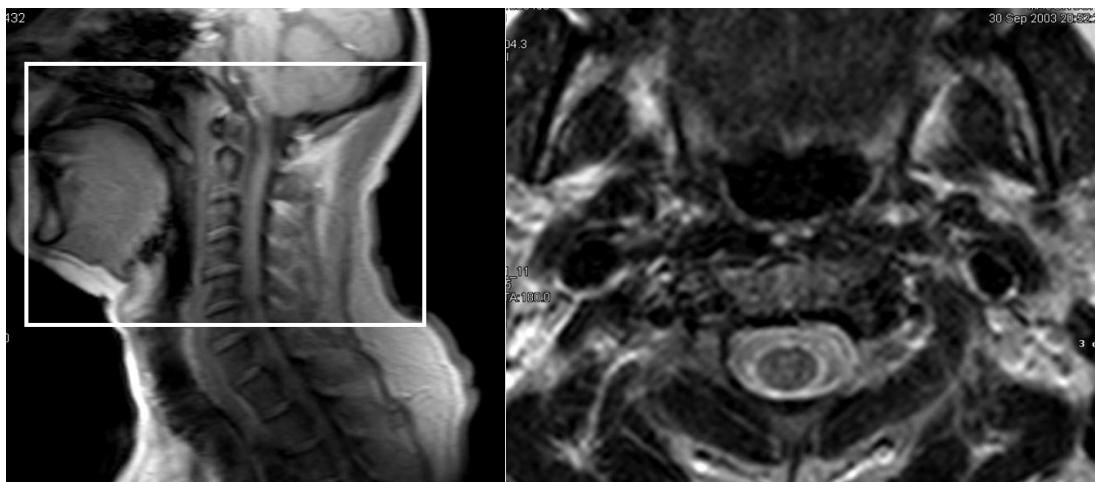
## 1. MRI NECK (VESSEL WALL IMAGING)

**NOTE: THESE SEQUENCES MUST BE ACQUIRED PRE-CONTRAST!!!**

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
1	Axial	T1 FS	N	Y	4mm	1mm	20cm	BottomUp	
2	Axial	T2	N	N	3mm	1mm	20cm	BottomUp	

## 2. MRA NECK

Per MRA Neck WO and W protocol



**A. MR Neck Position:** Cover from vertebrobasilar junction through C5.

**B. MRA Neck:** Use MRA Neck positioning from above.

# **BRAIN and NECK - Stroke**

## **PACS Description:**

- 1. MRI Brain WO and W**
- 2. MRA Head WO**
- 3. MRA Neck WO and W**

**Indications** - TIA/Stroke patient with associated neck or retro-orbital pain, child or young adult with stroke, trauma patients developing infarcts.

### **1. MRI BRAIN**

[Routine Brain without and with contrast protocol](#)

### **2. MRA HEAD**

[MRA Circle of Willis protocol](#) (no contrast)

### **3. MRA NECK**

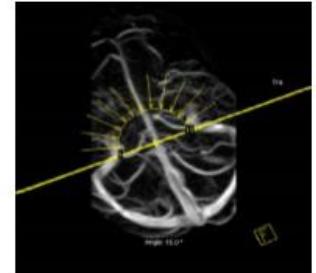
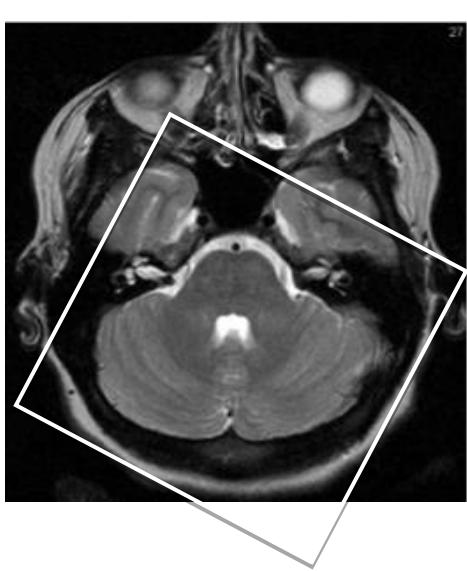
[MRA Neck without and with contrast protocol](#)

# BRAIN – MRV HEAD WITHOUT

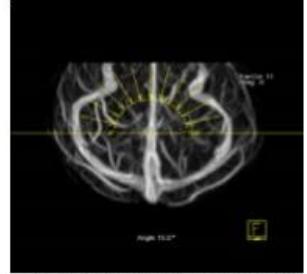
## PACS Description: MRV Head WO

**Indication** – Atypical/venous stroke, venous thrombosis, pseudotumor, papilledema with unexplained cause, unexplained increased ICP; lethargy, headache, seizure, or new focal deficit in patient with hypercoaguable state, leukemia, or dehydration; complicated meningitis.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Localizer								
2	Sag Obl 2D TOF MRV	N	N	2mm	0mm	24cm			Vencs of 20 and 30
3	Cor Obl 2D TOF MRV	N	N	2mm	0mm	24cm			Vencs of 20 and 30
4	Sag 2D Phase Contrast			4mm	0mm	24cm			Vencs of 20 and 30 acquired in same scan
5	Cor Obl 2D TOF MRV			4mm	0mm	24cm			Vencs of 20 and 30 acquired in same scan
<b>POST-CONTRAST</b>									
6	Sag 3D Phase contrast			1mm	0mm	28cm			Velocity 10
<b>RECONSTRUCTIONS</b>									
7	MIP Recons								



SAGITTAL SINUS MIP DIRECTION



TRANSVERSE SINUS MIP DIRECTION

**Position:** Acquire two planes to distinguish actual findings from artifact.

# BRAIN – CSF FLOW STUDY, CHIARI MALFORMATION

## PACS Description:

1. MRI Brain WO
2. MRI Brain Cine Flow

Indication - Chiari malformation, evaluation for restriction of CSF flow through the foramen magnum.

### 1. MR Brain

#	Orient	Seq	Contrast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
1	Sag	T1	N	N	4mm	1mm	24cm	L to R	
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	

**Position:** Use positioning from [Routine Brain protocol](#).

### 2. MR Brain Cine Flow

#	Orient	Seq	Contrast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
1	Sag FLASH CINE		N	N	10mm	0mm	18cm		Venc 2cm/s
2	Sag FLASH CINE		N	N	10mm	0mm	18cm		Venc 10cm/s
OPTIONAL									
3	Ax FLASH CINE		N	N	10mm	0mm	18cm		Venc 2cm/s
4	Ax FLASH CINE		N	N	10mm	0mm	18cm		Venc 10cm/s



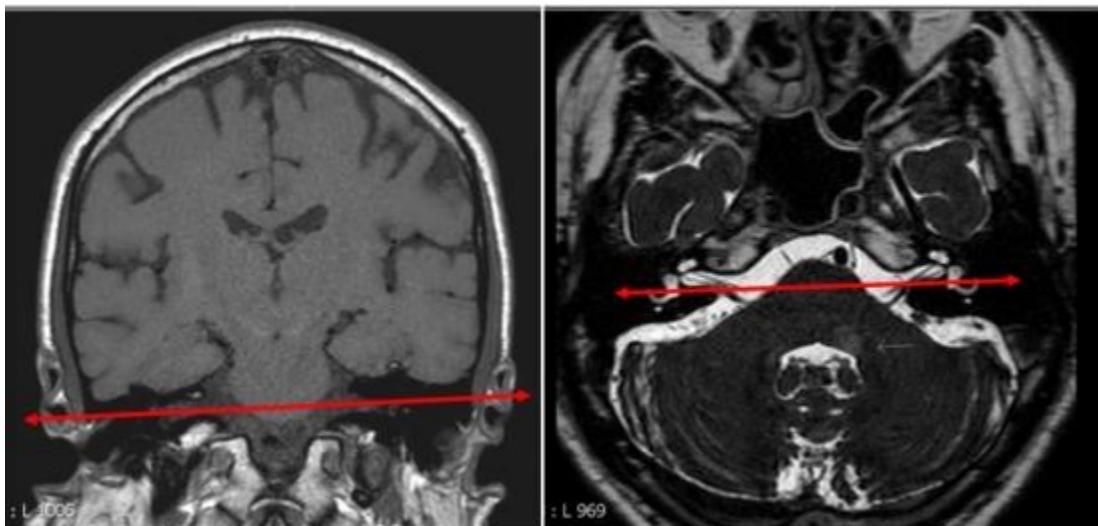
**Position:** The optional axial sequence should be positioned parallel to C1.

# ENT – IAC

## PACS Description: MRI IACs WO and W

**Indication** – Vertigo, sensorineural hearing loss (SNHL), Bell's palsy, **non-pulsatile** tinnitus, cerebellopontine angle mass

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST BRAIN</b>									
1	Sag	T1	N	N	4mm	1mm	24cm	L to R	
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	
4	Axial	SWI	N	N	4mm	1mm	24cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
<b>PRE-CONTRAST IACs</b>									
5	Axial	T1	N	N	2mm	0mm	18cm	BottomUp	
6	Axial	3D T2	N	N	1mm	0mm	18cm	BottomUp	Or CISS/SPACE/FIESTA. If none are available, then 2mm thick with no gap and 18cm FOV.
<b>POST-CONTRAST BRAIN</b>									
7	Axial	FLAIR	Y	N	4mm	1mm	24cm	BottomUp	
8	Axial	T1	Y	N	4mm	1mm	24cm	BottomUp	
<b>POST-CON IACs</b>									
9	Axial	T1	Y	Y	2mm	0mm	18cm	BottomUp	
10	Cor	T1	Y	Y	2mm	0mm	18cm	L to R	
<b>OPTIONAL (if cholesteatoma)</b>									
11	Axial	DWI	N	N	1mm	0mm	18cm	BottomUp	Same coverage as IAC



**Position:** Align the axial and coronal images so that the IACs are symmetric on each slice.

## ENT – PULSATILE TINNITUS

### PACS Description:

#### 1. MRI IACs WO and W

[MRI IACs wo and w](#)

#### 2. MRA Head WO

[MRA Head WO](#)

#### 3. MRV Head WO

[MRV Head WO](#)

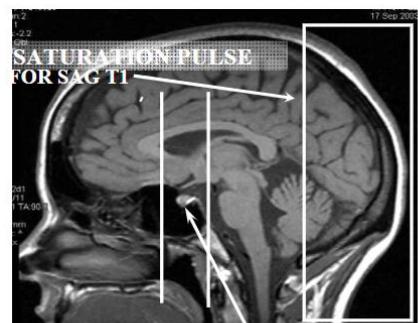
**Indication** – Pulse synchronous tinnitus.

# ENT – SELLA, INITIAL EVALUATION

## PACS Description: MRI Sella WO and W

**Indication** – Suspected pituitary or sellar mass (microadenoma). Only for initial evaluation.

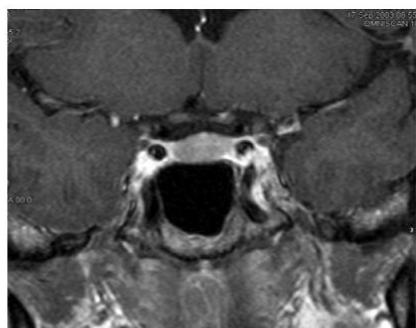
#	Orient	Seq	Contrast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST BRAIN</b>									
1	Sag	T1	N	N	4mm	1mm	24cm	L to R	
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	
4	Axial	SWI	N	N	4mm	1mm	24cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
<b>PRE-CONTRAST SELLA</b>									
5	Cor	T1	N	Y	2mm	0mm	13cm	A to P	
6	Cor	T2	N	N	2mm	0mm	13cm	A to P	
<b>POST-CONTRAST BRAIN</b>									
7	Axial	FLAIR	Y	N	4mm	1mm	24cm	BottomUp	
8	Axial	T1	Y	N	4mm	1mm	24cm	BottomUp	
<b>POST-CON SELLA</b>									
9	Cor	T1	Y	Y	3mm	0.2mm	13cm	A to P	Dynamic; 18 measurements
10	Cor	T1	Y	Y	2mm	0mm	13cm	A to P	
11	Sag	T1	Y	Y	2mm	0mm	18cm	L to R	



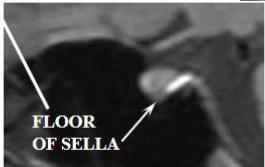
COR SELLA COVERAGE



CORONAL T2 IMAGE



CORONAL T1 IMAGE



FLOOR OF SELLA

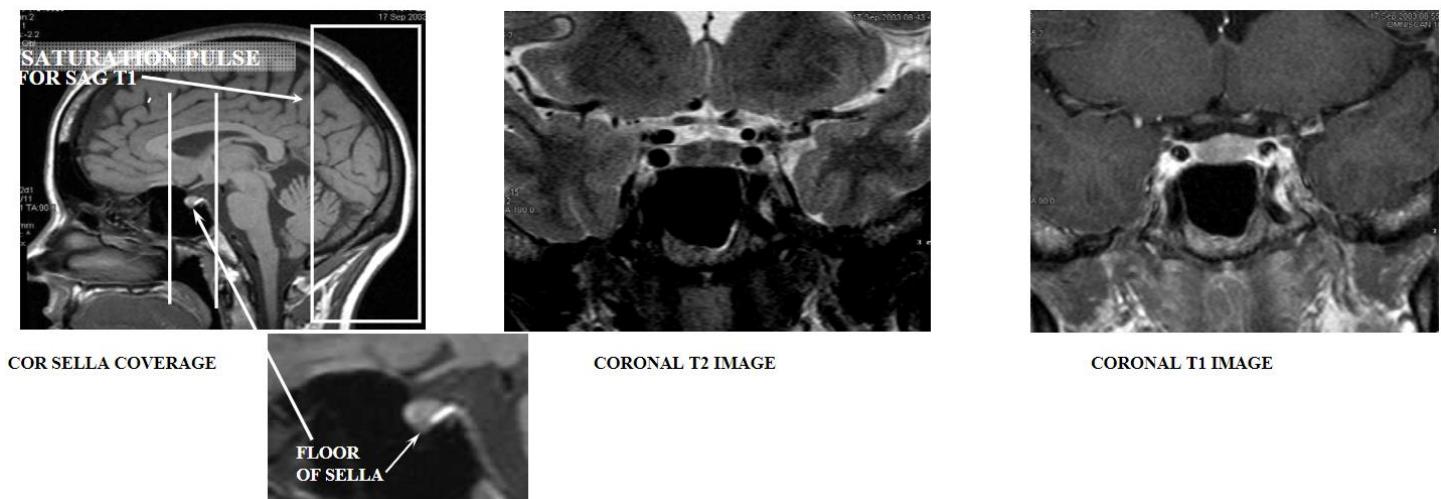
**Position:** Coronal sella sequences should be aligned perpendicular to the sella floor. Sagittal sella sequences should be perpendicular/orthogonal to the coronal sequences.

# ENT – SELLA, FOLLOW-UP EVALUATION

## PACS Description: MRI Sella WO and W

**Indication** – Known pituitary or sellar mass. If microadenoma, include DYNAMIC. If macroadenoma, do not include DYNAMIC.

#	Orient	Seq	Con- trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST BRAIN</b>									
1	Sag	T1	N	N	4mm	1mm	24cm	L to R	
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	N	4mm	1mm	24cm	BottomUp	
4	Axial	SWI	N	N	4mm	1mm	24cm	BottomUp	SWI/SWAN preferred. Otherwise, GRE
<b>PRE-CONTRAST SELLA</b>									
5	Cor	T1	N	Y	2mm	0mm	13cm	A to P	
6	Cor	T2	N	N	2mm	0mm	13cm	A to P	
<b>POST-CONTRAST BRAIN</b>									
7	Axial	FLAIR	Y	N	4mm	1mm	24cm	BottomUp	
8	Axial	T1	Y	N	4mm	1mm	24cm	BottomUp	
<b>POST-CON SELLA</b>									
9	Cor	T1	Y	Y	3mm	0.2mm	13cm	A to P	ONLY IF MICROADENOMA. Dynamic; 18 measurements
10	Cor	T1	Y	Y	2mm	0mm	13cm	A to P	
11	Sag	T1	Y	Y	2mm	0mm	18cm	L to R	



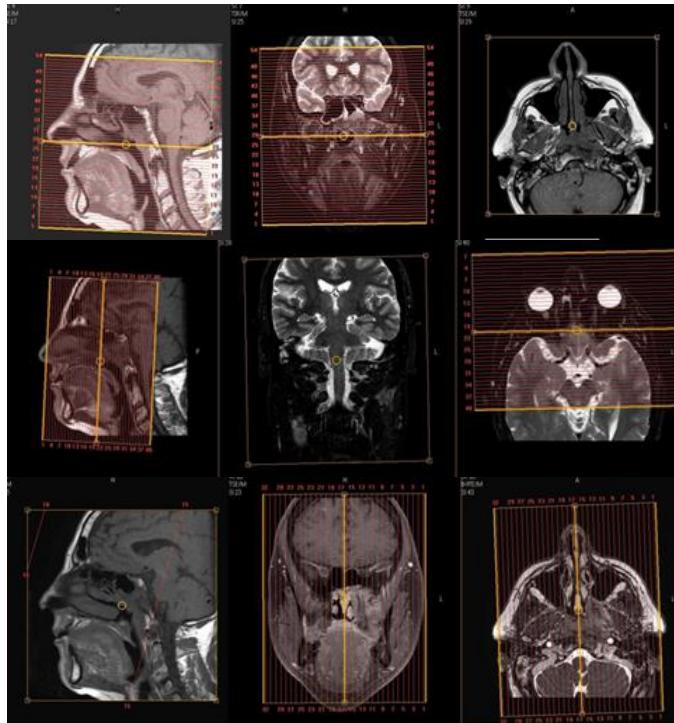
**Position:** Coronal sella sequences should be aligned perpendicular to the sella floor. Sagittal sella sequences should be perpendicular/orthogonal to the coronal sequences.

# ENT – SKULL BASE AND TRIGEMINAL NEURALGIA

## PACS Description: MRI Skull Base WO and W

**Indication** – Suspected skull base, clivus tumor, or perineural spread. Include TOF if indication is CN3 palsy.

#	Orient	Seq	Contrast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST BRAIN</b>									
1	Sag	T1	N	N	4mm	1mm	24cm	L to R	
2	Axial	DWI	N	N	4mm	1mm	24cm	BottomUp	
3	Axial	T2	N	Y	4mm	1mm	24cm	BottomUp	
<b>PRE-CONTRAST SKULL BASE</b>									
4	Axial	T1	N	Y	3mm	0.5mm	18cm	BottomUp	
5	Cor	T1	N	Y	3mm	0.5mm	18cm	A to P	
6	Cor	T2	N	Y	2mm	0.5mm	18cm	A to P	
7	Axial	3D T2	N	N	1mm	0mm	18cm	BottomUp	Or CISS/SPACE/FIESTA. If not available, then T2 at 2mm with 0mm gap, 18cm FOV.
<b>POST-CONTRAST BRAIN</b>									
8	Axial	FLAIR	Y	N	4mm	1mm	24cm	BottomUp	
9	Axial	T1	Y	N	4mm	1mm	24cm	BottomUp	
<b>POST-CON SKULL BASE</b>									
10	Axial	T1	Y	Y	3mm	0.5mm	18cm	BottomUp	
11	Cor	T1	Y	Y	3mm	0.5mm	18cm	A to P	
<b>OPTIONAL (if indication is CN3 palsy)</b>									
12	MRA COW TOF								Will need a separate MRA Head order.



**Position:** Axial skull base sequences should extend from hyoid through the frontal sinuses. Coronal sequences should extend from the nose to back of the brain stem.

# ENT – SCREENING NECK, LARYNX/HYPOPHARYNX, OROPHARYNGEAL

## PACS Description: MRI Neck WO and W

**Indication** – Nodal disease evaluation.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Sag	T1		N	3mm	0.5mm	25cm	L to R	
2	Cor	T1		N	3mm	0.5mm	25cm	A to P	
3	Axial	T2		N	4mm	1mm	20cm	BottomUp	
4	Axial	T1		N	3mm	0.5mm	20cm	BottomUp	
<b>POST-CONTRAST</b>									
5	Axial	T1		Y	3mm	0.5mm	20cm	BottomUp	
6	Axial	T1		Y	3mm	0.5mm	20cm	BottomUp	
7	Cor	T1		Y	3mm	0.5mm	25cm	A to P	



**Position:** Axial coverage is from skull base to thoracic inlet. Coronal coverage is entire neck posterior to anterior.

# ENT – MID-FACE, NASOPHARYNX, PARAPHARYNGEAL

## PACS Description: MRI Neck or Face WO and W

**Indication** – Lesions of the maxilla, palate, mandible, and anterior/posterior skull base.

#	Orient	Seq	Con-trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
<b>PRE-CONTRAST</b>									
1	Sag	T2	N	Y	3mm	0.5mm	25cm	L to R	
2	Cor	T1	N	N	3mm	0.5mm	25cm	A to P	
3	Cor	T2	N	Y	3mm	0.5mm	25cm	A to P	
4	Axial	T2	N	Y	4mm	1mm	20cm	BottomUp	
5	Axial	T1	N	N	3mm	0.5mm	20cm	BottomUp	
<b>POST-CONTRAST</b>									
6	Sag	T1	Y	Y	3mm	0.5mm	25cm	L to R	
7	Axial	T1	Y	Y	3mm	0.5mm	20cm	BottomUp	
8	Cor	T1	Y	Y	3mm	0.5mm	25cm	A to P	



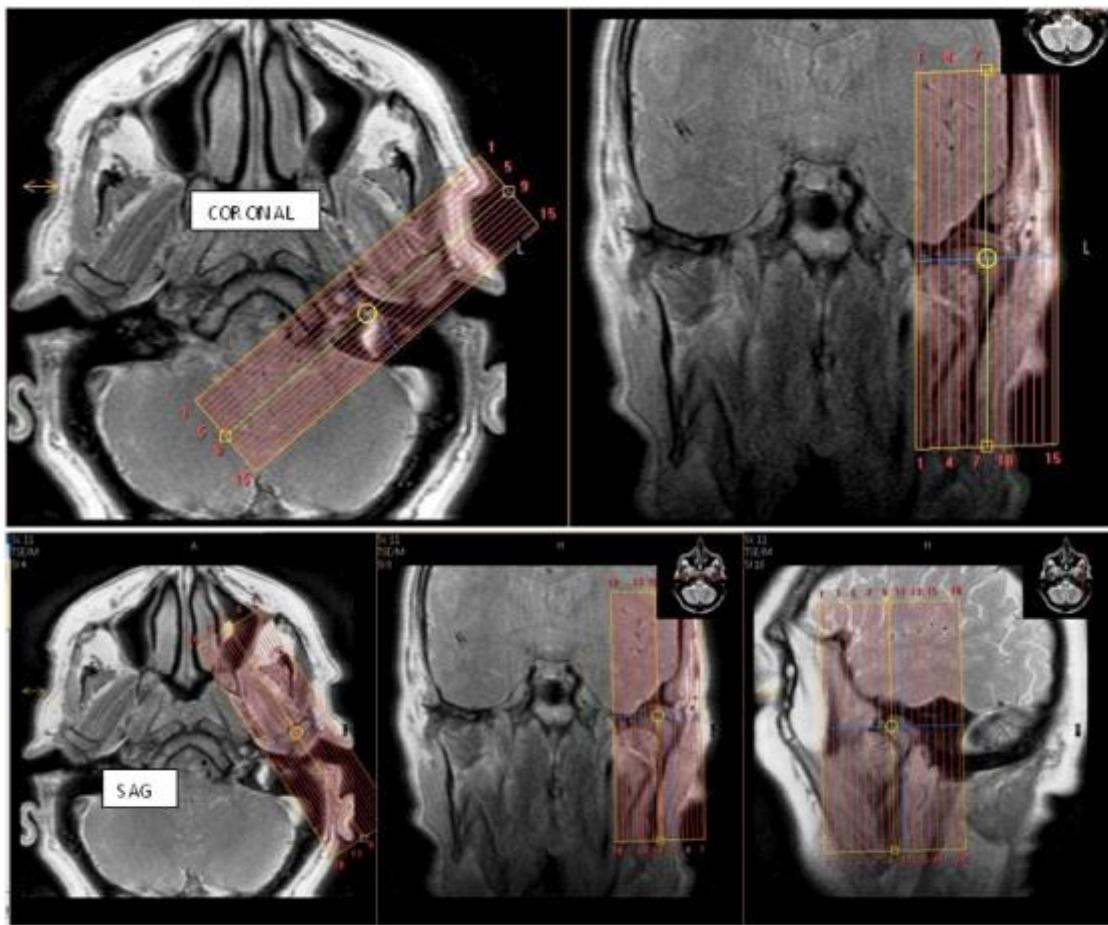
**Position:** Axial coverage is from frontal sinuses through mandible. Coronal coverage is from tip of nose through back of neck.

## ENT – TMJ

### PACS Description: MRI Temporomandibular Joint WO

Indication – TMJ dysfunction.

#	Orient	Seq	Con- trast	Fat Sat	Slice Thick	Gap	FOV	View Order	Comment
1	Axial	T2	N	N	4mm	1mm	25cm	BottomUp	
2	Sag	T2	N	N	2mm	0mm	12cm	L to R	Closed
3	Sag	GRE	N	N	3mm	0.5mm	12cm	L to R	Closed
4	Sag	T1	N	N	3mm	0.5mm	12cm	L to R	Closed
5	Cor	T1 Left	N	N	2mm	0mm	12cm	A to P	Closed
6	Cor	T1 Right	N	N	2mm	0mm	12cm	A to P	Closed
7	Sag	T1	N	Y	3mm	0.5mm	12cm	L to R	Open
8	Sag	Cine Left	N	N	4mm	0mm	15cm	L to R	
8	Sag	Cine Right	N	N	4mm	0mm	15cm	L to R	



**Position:** Coverage through the TMJs.