AmeriHealth Caritas Louisiana

National Imaging Associates, Inc. *	
Clinical guidelines **ORBIT, FACE, NECK, SINUS MRI**	**Original Date: November 2007**
CPT Codes: 70540, 70542, 70543, +0698T	**Last Revised Date: April 2021**
Guideline Number: NIA_CG_014	**Implementation Date: TBD**

INDICATIONS FOR ORBIT MRI

MRI is superior for the evaluation of the visual pathways, globe and soft tissues; CT is preferred for visualizing bony detail and calcifications (Hande, 2012; Kennedy, 2018)

- **Abnormal external or direct eye exam**
  - Exophthalmos (proptosis) or enophthalmos
  - Ophthalmoplegia with concern for orbital pathology
  - Unilateral optic disk swelling (Hata, 2017; Margolin, 2019; Passi, 2013)
  - Documented visual field defect (Fadzil, 2013; Kedar, 2011; Prasad, 2012; Sadun, 2011)
    - Unilateral or with abnormal optic disc(s) (e.g., optic disc blurring, edema, or pallor); AND
    - Not explained by underlying diagnosis, glaucoma, or macular degeneration

- **Optic neuritis**
  (CMSC, 2018; Gala, 2015; Srikajon, 2018; Voss, 2011)
  - If atypical presentation, severe visual impairment, or poor recovery following initial onset or treatment onset OR
  - If needed to confirm optic neuritis and rule out compressive lesions

* **National Imaging Associates, Inc. (NIA) is a subsidiary of Magellan Healthcare, Inc.**

- **Orbital trauma**
  (Lin, 2012; Sung, 2014)
    - Physical findings of direct eye injury
    - Suspected orbital trauma with indeterminate x-ray or ultrasound

- **Orbital or ocular mass/tumor, suspected or known**
  (Hande, 2012; Kedar, 2011)

- **Clinical suspicion of orbital infection**
  (Hande, 2012; Kennedy, 2018)

- **Clinical suspicion of osteomyelitis**
  (Arunkumar, 2011; Lee, 2016)
    - Direct visualization of bony deformity **OR**
    - Abnormal x-rays

- **Clinical suspicion of Orbital Inflammatory Disease** (e.g., eye pain and restricted eye movement with suspected orbital pseudotumor)
  (Pakdaman, 2014)

- **Congenital orbital anomalies**

- **Complex strabismus to aid in diagnosis, treatment and/or surgical planning (Demer, 2002; Kadom, 2008)**

NOTE: FOR OTHER ORBIT MRI INDICATIONS, CLICK HERE

INDICATIONS FOR ORBIT AND BRAIN MRI COMBINATION STUDIES:

- Optic neuropathy or unilateral optic disk swelling of unclear etiology to distinguish between a compressive lesion of the optic nerve, optic neuritis, ischemic optic neuropathy (arteritic or non-arteritic), central retinal vein occlusion or optic nerve infiltrative disorders (Behbehani, 2007)
- Bilateral optic disk swelling (papilledema) with vision loss (Margolin, 2019)
- Optic neuritis if atypical presentation, severe visual impairment, or poor recovery following initial onset or treatment onset (CMSC, 2018)
- Known or suspected neuromyelitis optica spectrum disorder with severe, recurrent, or bilateral optic neuritis (Wingerchuk, 2015)
- For approved indications as noted above and being performed in a child under 8 years of age who will need anesthesia for the procedure and there is a suspicion of concurrent intracranial pathology (Lawson, 2000)

2— Sinus Face Orbit MRI

INDICATIONS FOR FACE/SINUS MRI:

- **Rhinosinusitis** (Kirsch, 2017)
    - Clinical suspicion of fungal infection (Gavito-Higuera, 2016)
    - Clinical suspicion of orbital or intracranial complications (Arunkumar, 2011; Lee, 2016), such as
        - Preseptal, orbital, or central nervous system infection
        - Osteomyelitis
        - Cavernous sinus thrombosis

- **Sinonasal obstruction, suspected mass, based on exam, nasal endoscopy, or prior imaging** (Kirsch, 2017; Rosenfeld, 2015)

- **Suspected infection**
    - Osteomyelitis (after x-rays) (Pincus, 2009)
    - Abscess

- **Anosmia or Dysosmia based** on objective testing that is persistent and of unknown origin (Policeni, 2017; Rouby, 2011; Zaghouani, 2013)

- **Granulomatosis** with polyangiitis (Wegener's granulomatosis) disease (Pakalniskis, 2015)

- **Face mass**
  (Kirsch, 2017; Koeller, 2016; Kuno, 2014):
    - Present on physical exam and remains non-diagnostic after x-ray or ultrasound is completed
    - Known or highly suspected head and neck cancer on examination (Kirsch, 2017)
    - Failed 2 weeks of treatment for suspected infectious adenopathy (Haynes, 2015)

- **Facial trauma**
  (Echo, 2010; Lin, 2012; Raju, 2017; Sung, 2014)
    - Physical findings of direct facial bone injury
    - For further evaluation of a known fracture for treatment or surgical planning

  Note: CSF (cerebrospinal fluid) rhinorrhea - Sinus CT is indicated when looking to characterize a bony defect. CSF otorrhea - Temporal Bone CT is indicated. For intermittent leaks and complex cases, consider CT/MRI/Nuclear Cisternography). CSF fluid should always be confirmed with laboratory testing (Beta-2 transferrin assay)

- **Trigeminal neuralgia/neuropathy** (for evaluation of the extracranial nerve course)

- If atypical features (e.g., bilateral, hearing loss, dizziness/vertigo, visual changes, sensory loss, numbness, pain > 2min, pain outside trigeminal nerve distribution, progression) (ACR, 2017; Hughes, 2016; Policeni, 2017)

NOTE: FOR OTHER FACE/SINUS MRI INDICATIONS, CLICK HERE

INDICATIONS FOR FACE/SINUS AND BRAIN MRI COMBINATION STUDIES:

- Anosmia or dysosmia on objective testing that is persistent and of unknown origin (ACR, 2017; Decker, 2013; Policeni, 2017; Zaghouani, 2013)
- Granulomatosis with polyangiitis (Wegener's granulomatosis) disease (Pakalniskis, 2015)
- Trigeminal neuralgia that meets the above criteria (Hughes 2016; Policeni, 2017)
- For approved indications as noted above and being performed in a child under 8 years of age who will need anesthesia for the procedure and there is a suspicion of concurrent intracranial pathology (Lawson, 2000).

INDICATIONS FOR NECK MRI:

Suspected tumor or cancer:
(ACR, 2018a)

- Suspicious lesions in mouth or throat (Kuno, 2014).
- Suspicious mass/tumor found on another imaging study and needing clarification
- Neck mass or lymphadenopathy (non-parotid or thyroid)
    - Present on physical exam and remains non-diagnostic after ultrasound is completed (Kuno, 2014)

      Note: For discrete cystic lesions of the neck, an ultrasound should be performed as initial imaging unless there is a high suspicion of malignancy

    - Increased risk for malignancy with one or more of the following findings (Pynnonen, 2017):
        - Fixation to adjacent tissues
        - Firm consistency
        - Size >1.5 cm
        - Ulceration of overlying skin
        - Mass present ≥ two weeks (or uncertain duration) without significant fluctuation and not considered of infectious cause
        - History of cancer
    - Failed 2 weeks of treatment for suspected infectious adenopathy (Haynes, 2015).
- Neck Mass (parotid) (ACR, 2018a)
    - Parotid mass found on other imaging study and needing further evaluation (US is the initial imaging study of a parotid region mass)

- Neck Mass (thyroid) (ACR, 2018b)
    - Staging and monitoring for recurrence of known thyroid cancer (ACR, 2018b).
    - To assess extent of thyroid tissue when other imaging suggests extension through the thoracic inlet into the mediastinum or concern for airway compression (Gharib 2016; Lin, 2016)

    Note: US is the initial imaging study of a thyroid region mass. CT is preferred over MRI in the evaluation of thyroid masses since there is less respiratory motion artifact. Chest CT may be included for preoperative assessment in some cases

Pediatric patients (≤ 18 years old):
(Wai, 2020)

- Neck masses if ultrasound is inconclusive or suspicious (Brown, 2016)
- History of malignancy

Known or suspected deep space infections or abscesses of the pharynx or neck
(Meyer, 2009)

Other indications for a Neck MRI:

- MR Sialography to evaluate salivary ducts (Burke, 2011; Ren, 2015)
- Vocal cord lesions or vocal cord paralysis (Dankbaar, 2014).
- Unexplained ear pain when ordered by a specialist with all of the following (Earwood, 2018)
    - Otoscopic exam, nasolaryngoscopy, lab evaluation (ESR, CBC) AND
    - Risk factor for malignancy i.e., tobacco use, alcohol use, dysphagia, weight loss OR age older than 50 years
- Diagnosed primary hyperparathyroidism when surgery is planned
    - Previous nondiagnostic ultrasound or nuclear medicine scan (Khan, 2014; Piciucchi, 2012).
- Bell's palsy/hemifacial spasm (for evaluation of the extracranial nerve course)
    - If atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset (Quesnel, 2010)
- Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) (ACR, 2017; Mumtaz, 2014; Policeni, 2017)
- Brachial plexopathy if mechanism of injury or EMG/NCV studies are suggestive (Vijayasarathi, 2016)

    Note: Chest MRI is preferred study, but neck and/or shoulder (upper extremity) MRI can be ordered depending on the suspected location of injury

NOTE: FOR OTHER NECK MRI INDICATIONS, CLICK HERE

INDICATIONS FOR NECK AND BRAIN MRI COMBINATION STUDIES:

- Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) (ACR, 2017; Mumtaz, 2014; Policeni, 2017)
- For approved indications as noted above and being performed in a child under 8 years of age who will need anesthesia for the procedure and there is a suspicion of concurrent intracranial pathology (Lawson, 2000).

OTHER INDICATIONS FOR ORBIT/FACE/SINUS/NECK MRI

Known tumor or cancer of skull base, orbits, sinuses, face, tongue, larynx, nasopharynx, pharynx, or salivary glands

- Initial staging (Kuno, 2014)
- Restaging during treatment
- Suspected recurrence or new metastases based on symptoms or examination findings
    - New mass
    - Change in lymph nodes (Hoang, 2013)
- Surveillance appropriate for tumor type and stage

Indication for combination studies for the initial pre-therapy staging of cancer, OR active monitoring for recurrence as clinically indicated OR evaluation of suspected metastases

- < 5 concurrent studies to include CT or MRI of any of the following areas as appropriate depending on the cancer: Neck, Abdomen, Pelvis, Chest, Brain, Cervical Spine, Thoracic Spine or Lumbar Spine

Pre-operative/procedural evaluation

- Pre-operative evaluation for a planned surgery or procedure

Post- operative/procedural evaluation

- When imaging, physical, or laboratory findings indicate surgical or procedural complications

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BACKGROUND:

Magnetic resonance imaging (MRI) is used in the evaluation of face and neck region masses, trauma, and infection. The soft-tissue contrast between normal and abnormal tissues provided by MRI is sensitive for differentiating between inflammatory disease and malignant tumors and permits the precise delineation of tumor margins. MRI is used for therapy planning and follow-up of face and neck neoplasms. It is also used for the evaluation of neck lymphadenopathy and vocal cord lesions.

CT scanning remains the study of choice for the imaging evaluation of acute and chronic inflammatory diseases of the sinonasal cavities. MRI is not considered the first-line study for

routine sinus imaging because of limitations in the definition of the bony anatomy and length of imaging time. MRI for confirmation of diagnosis of sinusitis is discouraged because of hypersensitivity (overdiagnosis) in comparison to CT without contrast. MRI, however, is superior to CT in differentiating inflammatory conditions from neoplastic processes. MRI may better depict intraorbital and intracranial complications in cases of aggressive sinus infection, as well as differentiating soft-tissue masses from inflammatory mucosal disease. MRI may also identify fungal invasive sinusitis or encephaloceles.

Anosmia - Nonstructural causes of anosmia include post viral symptoms, medications (Amitriptyline, Enalapril, Nifedipine, Propranolol, Penicillamine, Sumatriptan, Cisplatin, Trifluoperazine, Propylthiouracil). These should be considered prior to advanced imaging to look for a structural cause. Anosmia and dysgeusia have been reported as common early symptoms in patients with COVID-19, occurring in greater than 80 percent of patients. For isolated anosmia, imaging is typically not needed once the diagnosis of COVID has been made given the high association. As such, COVID testing should be done prior to imaging (Geyer, 2008; Lechien, 2020; Saniasiaya, 2020).

POLICY HISTORY

Date	Summary
May 2021	**Updated References** **Reordered Indications** **Added hyperlinks to OTHER indications** **Orbit** **Added:** • **Complex strabismus to aid in diagnosis, treatment and/or surgical planning** • **If needed to confirm optic neuritis and rule out compressive lesions** **Clarified:** • **Documented visual defect if MRI is contraindicated or cannot be performed - *Unilateral or with abnormal optic disc(s) (i.e. Optic disc blurring, edema, or pallor);*** • **Clinical Suspicion of osteomyelitis: Direct visualization of bony deformity *OR* Abnormal X-rays** • ***Optic neuropathy* or unilateral optic disk swelling of unclear etiology (Combo Orbit/Brain CT)** **Sinus/Face** **Added:**

	• **Facial Trauma- For further evaluation of a known fracture for treatment or surgical planning**
	• **Dysosmia**
	
	Clarified:
	• **Sinonasal obstruction, suspected mass, *based on exam, nasal endoscopy, or prior imaging***
	• **Note: CSF (cerebrospinal fluid) rhinorrhea - Sinus CT is indicated when looking to characterize a bony defect. CSF otorrhea - Temporal Bone CT is indicated. For intermittent leaks and complex cases consider CT/MRI/Nuclear Cisternography). CSF fluid should always be confirmed with laboratory testing (Beta-2 transferrin assay)**
	
	Deleted:
	
	• Trigeminal neuralgia – if Age < 40
	
	Neck
	Added:
	• **Neck Mass or *lymphadenopathy* (non-parotid region or thyroid)**
	• **Unexplained ear pain when ordered by a specialist with all the following (Earwood, 2018)**
	  ○ **Otoscopic exam, nasolaryngoscopy, lab evaluation (ESR, CBC) AND**
	  ○ **Risk factor for malignancy ie tobacco use, alcohol use, dysphagia, weight loss OR age older than 50 years**
	
	• **Brachial Plexopathy (Vijayasarathi, 2016) if mechanism of injury or EMG/NCV studies are suggestive**
	Note: Chest MRI is preferred study, but neck and/or shoulder (upper extremity) MRI can be ordered depending on the suspected location of injury
	
	All
	• Removed statement: A single authorization for CPT code 70540, 70542, or 70543 includes imaging of the Orbit, Face, Sinuses, and Neck. Multiple authorizations are not required

May 2020	**<u>Clarified</u>:** **Orbit**

	• **Ophthalmoplegia with concern for orbital pathology**
	• **Documented visual field defect if MRI is contraindicated or cannot be performed**
	• **Orbital or ocular mass/tumor, suspected or known**
	• **Clinical Suspicion of orbital infection**
	• **Clinical Suspicion of Orbital Inflammatory Disease (e.g., eye pain and restricted eye movement with suspected orbital pseudotumor)**
	Face/Sinus
	• **Suspected infection**
	  ○ **Osteomyelitis (after x-rays)**
	  ○ **Abscess**
	• **Facial Trauma**
	  ○ **Post traumatic CSF rhinorrhea (for CSF otorrhea Temporal Bone imaging is recommended)**
	• **Anosmia on objective testing that is persistent and of unknown origin (also in Brain and Sinus combo section)**
	Neck
	• **Neck mass (non-parotid or thyroid)**
	  ○ **Note: For discrete cystic lesions of the neck, an ultrasound should be performed as initial imaging unless there is a high suspicion of malignancy**
	• **MR Sialography to evaluate salivary ducts**
	• **Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) (also in Brain and Neck combo section)**
	Combo - Brain and Orbit
	• **Reworded: Unilateral optic disk swelling/optic neuropathy of unclear etiology to distinguish between a compressive lesion of the optic nerve, optic neuritis, ischemic optic neuropathy (arteritic or non-arteritic), central retinal vein occlusion or optic nerve infiltrative disorders**
	• **Bilateral optic disk swelling (papilledema) with vision loss**
	<u>Added</u>:
	Orbit
	• **MRI is superior for the evaluation of the visual pathways, globe and soft tissues, CT is preferred for visualizing bony detail and calcifications**
	• **Unilateral optic disk swelling**
	• **Under documented visual field defect**
	  ○ **Unilateral or with optic disc abnormality**
	• **Congenital orbital anomalies**
	<u>Added</u>:

	Face/Sinus
	• **Examples of orbital or intracranial complications**
	  ○ **Preseptal, orbital, or central nervous system infection**
	  ○ **Osteomyelitis**
	  ○ **Cavernous sinus thrombosis**
	• **Face mass**
	  ○ **Known or highly suspected head and neck cancer on examination**
	• **Trigeminal neuralgia/neuropathy (for evaluation of the extracranial nerve course)**
	  ○ **If < 40 years of age or atypical features (e.g. bilateral, hearing loss, dizziness/vertigo, visual changes, sensory loss, numbness, pain > 2min, pain outside trigeminal nerve distribution, progression)**
	<u>Added</u>:
	Neck
	• **Suspicious mass/tumor found on another imaging study and needing clarification**
	• **Under increased risk for malignancy**
	  ○ **History of cancer**
	  ○ **Mass present ≥ two weeks (or uncertain duration) without significant fluctuation and not considered of infectious cause**
	• **Neck Mass (parotid)**
	  ○ **Parotid mass found on other imaging study and needing further evaluation**
	<u>Added</u>:
	Neck
	• **Neck Mass (thyroid) - US is the initial imaging study of a thyroid region mass. CT is preferred over MRI in the evaluation of thyroid masses since there is less respiratory motion artifact**
	  ○ **Staging and monitoring for recurrence of known thyroid cancer**
	  ○ **To assess extent of thyroid tissue when other imaging suggests extension through the thoracic inlet into the mediastinum or concern for airway compression (Lin, 2016; Gharib 2016)**
	  NOTE: Chest CT may be included for preoperative assessment in some cases
	• **Pediatric patients (≤18 years old)**
	  ○ **Neck masses in the pediatric population if ultrasound is inconclusive or suspicious**

	○ **History of malignancy** **<u>Added</u>:** **Neck** • **Known or suspected deep space infections or abscesses of the pharynx or neck** **Combo** • **Known tumor or cancer of skull base, orbits, sinuses, face, tongue, larynx, nasopharynx, pharynx, or salivary glands** ○ **Surveillance appropriate for tumor type and stage** • **For approved indications as noted above and being performed in a child under 8 years of age who will need anesthesia for the procedure and there is a suspicion of concurrent intracranial pathology** **<u>Added</u>:** **Combo** • **Added sub Combo sections** ○ **Brain and Orbit** ▪ **Optic Neuritis if atypical presentation, severe visual impairment or poor recovery following initial onset or treatment onset** ○ **Brain and Sinus** ○ **Brain and Neck** **<u>Deleted:</u>** **Orbit** • **Unilateral optic disk swelling papilledema approve dedicated Orbits MRI even if Brain MRI approved** **<u>Deleted:</u>** **Face/Sinus** • **Clinical Suspicion of osteomyelitis** ○ **Direct visualization of lesion over bone** ○ **Abnormal x-ray** • **Face Mass** ○ **Prior history of tumor with suspicion of recurrence** • **Facial trauma** ○ **Suspected orbital trauma with indeterminate x-ray or ultrasound** **Neck** • **Palpable from Palpable suspicious lesions in mouth or throat** • **Salivary gland stones or clinical concern for abscess** • **Thoracic Outlet Syndrome** **Combo**

	• **Trigeminal neuralgia** • **Cranial neuropathy (weakness or sensory abnormalities of the head and neck**

July 2019	**<u>ORBIT MRI:</u>**
	• **Removed: Orbital asymmetry and Suspected hyperthyroidism (such as Graves' disease)**
	• **Added: Clinical suspicion of osteomyelitis**
	
	<u>Face/Sinus MRI</u>
	• **Added specifics to Face Mass:**
	  ○ **Present on physical exam and remains non-diagnostic after x-ray or ultrasound is completed (Kuno, 2014)**
	  ○ **Clinical concern for abscess**
	  ○ **Failed 2 weeks of treatment for suspected infectious adenopathy (Haynes, 2015).**
	  ○ **Prior history of tumor with suspicion of recurrence**
	• **Added: Facial trauma with physical findings of direct facial bone injury; suspected orbital trauma w/indeterminate x-ray or US; CSF leak (rhinorrhea or otorrhea)**
	
	<u>Other Indications</u>
	• **Added: Suspected recurrence or new metastases based on symptoms or examination findings with new mass or change in lymph nodes; Anosmia on objective testing; Trigeminal neuralgia if <40 years of age or atypical features; Objective cranial nerve palsy; and Granulomatosis with polyangiitis (Wegener's granulomatosis) disease**
	
	Indications for combo studies orbit/face/sinus neck MRI with brain MRI
	• **Added: Bilateral papilledema with vision loss AND Known or suspected neuromyelitis optica spectrum disorder with severe, recurrent, or bilateral optic neuritis**

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Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.