

Evolut Clinical Guideline 014-2048 for Sinus, Face, Orbit, Neck, and Internal Auditory Canal Magnetic Resonance Imaging (MRI)

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STATEMENT

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.*
- *Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. -These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*
- *The guideline criteria in the following sections were developed utilizing evidence-based and peer-reviewed resources from medical publications and societal organization guidelines as well as from widely accepted standard of care, best practice recommendations.*

Purpose

~~Magnetic resonance imaging (MRI) is used in the evaluation of orbit, 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.~~

Special Note

- If there is a combination request* for an overlapping body part, either requested at the same time or sequentially (within the past 3 months) the results of the prior study should be:
 - Inconclusive or show a need for additional or follow up imaging evaluation **OR**
 - The office notes should clearly document an indication why overlapping imaging is needed and how it will change management for the patient.(*Unless approvable in the combination section as noted in the guidelines)
- See legislative language for specific mandates in the State of Washington

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.~~^(1,2)

Orbit MRI (1,2)

- Abnormal external or direct eye exam
 - Exophthalmos (proptosis) or enophthalmos (sunken eye)
 - Ophthalmoplegia with concern for orbital pathology
 - Unilateral optic disk swelling (3-5)
 - Documented visual field defect with any ONE of the following (6,7):
 - Unilateral visual defects or
 - ~~A~~with abnormal optic disc(s) (e.g., optic disc blurring, edema, or pallor) **AND**
 - ~~—~~
 - Not explained by underlying diagnosis, glaucoma, or macular degeneration
- Suspected optic neuritis with any ONE of the following (8):
 - ~~Atypical~~ presentation (such as bilateral, absence of pain, optic nerve hemorrhages, severe visual impairment, lack of response to steroids, poor recovery or recurrence) (9)
 - If needed to confirm optic neuritis and rule out compressive lesions
- Orbital trauma (10)
 - Physical findings of direct eye injury
 - Suspected orbital trauma with indeterminate or abnormal prior imaging
 - For further evaluation of an injury seen on prior imaging to assist in management decision-making
 - ~~Suspected or known Physical findings of direct eye injury~~
 - ~~Suspected orbital trauma with indeterminate x-ray or ultrasound~~
- ~~Orbital or ocular mass/tumor/neoplasm~~ (11), ~~suspected or known~~ (1,15)
- Clinical suspicion of orbital infection
- Clinical suspicion of osteomyelitis (12)
 - Direct visualization of bony deformity **OR**
 - Indeterminate or abnormal prior imaging
- ~~Abnormal x-rays~~
- Suspected Orbital Inflammatory Disease (also known as Orbital Inflammatory Pseudotumor)
- ~~Clinical suspicion of Orbital Inflammatory Disease (e.g., eye pain and restricted eye movement with suspected orbital pseudotumor)~~ (18)
 - Congenital orbital anomalies (such as coloboma, microphthalmia, anophthalmia,

- dermoid cysts, hypertelorism) ⁽¹³⁾
- Complex strabismus with ophthalmoplegia (ophthalmoparesis) to aid in diagnosis and/or management ⁽¹⁴⁾
- Suspected or known malignancy of the head and/or neck with any **ONE** of the following ⁽¹⁵⁾:
 - For initial staging, restaging, or suspected recurrence of head and neck cancer
 - For surgical or radiation planning
 - 3-4 months after end of treatment in patients with locoregionally advanced disease or with altered anatomy
 - Annually when specified that the area of original disease is difficult to follow with direct visualization and/or endoscopy

NOTE: CT/MRI of Sinus/Face, Neck, and/or PET may also be indicated~~Complex strabismus syndromes (with ophthalmoplegia or ophthalmoparesis) to aid in diagnosis, treatment and/or surgical planning~~ ^(19,20,21)

NOTE: See additional **ONCOLOGIC** Orbit MRI indications

Combination Studies with Orbit MRI

NOTE: When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated

Orbit/Brain MRI

- 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 ^(2,6)
- Bilateral optic disk swelling (papilledema) with vision loss ⁽²⁾
- Optic neuritis
 - If atypical presentation (bilateral, absence of pain, optic nerve hemorrhages, severe visual impairment, lack of response to steroids, poor recovery or recurrence) ^(2,9)
 - If needed to confirm optic neuritis and rule out compressive lesions
- Known or suspected neuromyelitis optica spectrum disorder with severe, recurrent, or bilateral optic neuritis ⁽²⁾
- Suspected retinoblastoma ⁽²⁾
- 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 ⁽¹⁶⁾

Face/Sinus/Orbit/Neck MRI and PET

rhinosinusitis

- Sinonasal obstruction, suspected mass, based on exam, nasal endoscopy, or prior imaging ^(29,31)
- Anosmia or Dysosmia that is persistent and of unknown origin after a thorough history and nasal and neurological examination ^(29,32,33)
- Suspected infection ⁽²⁹⁾
- Osteomyelitis (after x-rays) ^{(17, Lee 2016)(34)}
- Abscess based on clinical signs and symptoms of infection

Face mass ^(29,35,36)

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

Failed 2 weeks of treatment for suspected infectious adenopathy Facial trauma ^{(Parsons 2022)(38)}

Concern for soft tissue injury to further evaluate for treatment or surgical planning ⁽³⁹⁾

Granulomatosis with polyangiitis (Wegener's granulomatosis) disease ^{(Guzman-Soto 2021)(30)}

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 > 2 min, pain outside trigeminal nerve distribution, progression) ^(32,40)

NOTE: See additional ONCOLOGIC face/sinus MRI indications **Nasal Polyposis** ⁽¹⁸⁾

- Nasal polyps (unilateral or bilateral) noted on physical exam and/or endoscopy
- History of prior treatment of nasal polyps (medical or surgical) and suspicion for recurrence of nasal polyps based on symptoms (such as nasal obstruction, loss of sense of smell/taste)

Salivary Gland Infection/Inflammation (Sialadenitis) ^(19,20)

- After prior indeterminate or abnormal imaging
- Clinical concern for abscess formation (such as neck swelling, visualized purulence from salivary duct)
- Suspected or known salivary gland stones
- Bilateral salivary gland involvement
- Recurrent acute infection of the salivary gland(s)

Granulomatosis with Polyangiitis (GPA) (Formally Wegener's

Granulomatosis (21)

- Advanced imaging for GPA is indicated with any ONE of the following:
 - Suspected GPA based on clinical findings (such as biopsy results, lab testing including antineutrophil cytoplasmic antibodies (ANCA))
 - Known GPA when imaging results of a specific anatomic area is needed to guide systemic therapy decisions

NOTE: Imaging of the Neck, Chest, and/or Abdomen may also be indicated for GPA as involvement of the airway, lungs, and/or kidneys is common

Sinonasal/Facial Mass or Neoplasm (17)

- Known or suspected sinonasal/facial mass/neoplasm based on any ONE (or more) of the following:
 - Physical exam
 - Nasal endoscopy
 - Prior imaging
 - Suspicion of recurrence following surgical excision
- Known or suspected salivary gland neoplasm (parotid, submandibular, and/or sublingual gland) after prior indeterminate or abnormal imaging

NOTE: Ultrasound is the initial imaging study of a salivary gland mass. Biopsy is usually the next step in the evaluation of a possible salivary gland malignancy and advanced imaging is not typically needed prior to biopsy

- Suspected or known malignancy of the head and/or neck with any ONE of the following ⁽¹⁵⁾:
 - For initial staging, restaging, or suspected recurrence of head and neck cancer
 - For surgical or radiation planning
 - 3-4 months after end of treatment in patients with locoregionally advanced disease or with altered anatomy
 - Annually when specified that the area of original disease is difficult to follow with direct visualization and/or endoscopy (Such as nasopharynx, base of tongue, hypopharynx, pyriform sinus)

NOTE: CT/MRI of Orbit, Neck, and/or PET may also be indicated

Facial Trauma (22)

- Suspected facial injury with prior indeterminate or abnormal imaging
- Further evaluation of a known facial injury for treatment planning

Cerebral Spinal Fluid (CSF) Rhinorrhea (23)

- MRI Sinus/Face imaging for possible CSF rhinorrhea is indicated with any **ONE** of the following:
 - High index of suspicion of CSF leak based on clinical evidence (such as consistent nasal leaking, worse leaking with provocative maneuvers (Valsalva), positive Beta-2 transferrin assay of the leakage)
 - Prior imaging (such as CT, nuclear medicine imaging) is indeterminate or abnormal for a suspected CSF leak and further evaluation is needed.

Cranial Nerve Abnormalities

Anosmia, Hyposmia, or Dysosmia (CN I) (17,24,25)

- Advanced imaging for anosmia (complete loss of smell), hyposmia (reduced sense of smell) or dysosmia (abnormal sense of smell) is indicated with **ALL** of the following:
 - Persistent symptoms (generally considered to be 4 weeks or more)
 - Unknown origin (if related to rhinosinusitis, the indication for advanced imaging should meet the specific rhinosinusitis criteria)
 - Nasal endoscopy completed with indeterminate or abnormal findings **OR** nasal endoscopy documented as unavailable

NOTE: Advanced imaging for suspected olfactory disorders requires imaging the entire olfactory system. This can be accomplished with either an MRI of the Face or an MRI of the Brain depending on the institutional-specific MRI protocol.

Trigeminal Neuralgia/Neuropathy (CN V) (26)

- Suspected trigeminal neuralgia/neuropathy with atypical features requiring evaluation of the extracranial course of the trigeminal nerve (such as bilateral involvement, hearing loss, dizziness/vertigo, visual changes, sensory loss, pain > 2 min, pain outside trigeminal nerve distribution, progression)

NOTE: MRI of the brain (or CT of the head if MRI is contraindicated or not available) with complete imaging of the entire course of the trigeminal nerve is the preferred initial study for trigeminal neuralgia/neuropathy

Facial Nerve Paresis/Bell's Palsy/Hemifacial Spasm (CN VII) (27,28)

- Facial nerve paresis/ Bell's palsy / hemifacial with atypical features requiring evaluation of the extracranial course of the facial nerve (Such as incomplete/no improvement at three months, involvement of only specific branches of the facial nerve, second paralysis of the same side, or facial twitching/spasms prior to onset)

NOTE: MRI Brain with internal auditory canal (IAC) (or CT Head if MRI is contraindicated or not available) with imaging of the intracranial course of the facial

nerve is the preferred initial study for facial nerve paresis/ Bell's palsy / hemifacial spasm

Combinations Studies with Face/Sinus MRI

NOTE: When medical necessity is met for an individual study AND conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

Face/Sinus/Brain MRI

- Granulomatosis with polyangiitis (Wegener's granulomatosis) disease Trigeminal neuralgia or neuropathy for evaluation of the intracranial nerve course with an atypical presentation (such as bilateral involvement, hearing loss, dizziness/vertigo, visual changes, sensory loss, pain > 2 min, pain outside trigeminal nerve distribution, progression ⁽²⁵⁾ that meets the above criteria
- 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 ⁽¹⁶⁾

Face/Sinus/Orbit/Neck ~~CT~~/MRI and PET

- Suspected or known malignancy of the head and/or neck with any ONE of the following ⁽¹⁵⁾:
 - For initial staging, restaging, or suspected recurrence of head and neck cancer
 - For surgical or radiation planning
 - 3-4 months after end of treatment in patients with locoregionally advanced disease or with altered anatomy
 - Annually when specified that the area of original disease is difficult to follow with direct visualization and/or endoscopy

Sinus/Face/Neck/Chest/Abdomen MRI

- Advanced imaging for Granulomatosis with Polyangiitis (GPA) (formally Wegener's Granulomatosis) is indicated with any ONE of the following ⁽²¹⁾:
 - Suspected GPA based on clinical findings (such as biopsy results, lab testing including antineutrophil cytoplasmic antibodies (ANCA))
 - Known GPA when imaging results of a specific anatomic area is needed to guide systemic therapy decisions

INDICATIONS FOR NECK MRI

Suspected ~~tumor or cancer~~ Neoplasm or Malignancy (29,30)

- Suspicious lesion that is indeterminate or abnormal on prior imaging and requires further evaluation
- Suspicious lesion(s) seen on physical exam and/or endoscopy in the mouth or throat (such as a mass or ulceration in the oral cavity or pharynx)
- Known or suspected salivary gland neoplasm (parotid, submandibular, and/or sublingual gland) after prior indeterminate or abnormal imaging

NOTE: Ultrasound is the initial imaging study of a salivary gland mass. Biopsy is usually the next step in the evaluation of a possible salivary gland malignancy and advanced imaging is not typically needed prior to biopsy

- Suspected or known malignancy of the head and/or neck with any **ONE** of the following ⁽¹⁵⁾:
 - For initial staging, restaging, or suspected recurrence of head and neck cancer
 - For surgical or radiation planning
 - 3-4 months after end of treatment in patients with locoregionally advanced disease or with altered anatomy
 - Annually when specified that the area of original disease is difficult to follow with direct visualization and/or endoscopy (such as nasopharynx, base of tongue, hypopharynx, pyriform sinus)

NOTE: CT/MRI of Sinus/Face, Orbit, or PET may also be indicated

Neck Mass or Lymphadenopathy

- ~~Suspicious lesions in mouth or throat~~ ^(Lahiri 202336)
- ~~Suspicious mass/tumor found on another imaging study and needing clarification~~ ^(Garner 2023)
- Advanced Imaging of a neck mass/lymphadenopathy is indicated with any **ONE** of the following:
 - Indeterminate or abnormal prior imaging (such as ultrasound, non-neck CT/MRI) ^(29,31)
 - Neck mass/lymphadenopathy present in an anatomic area that is not evaluated adequately by ultrasound (such as oral cavity, oropharynx, behind (deep to) the mandible or behind (deep to) the airway/pharynx)
 - Increased risk for malignancy with **ONE** (or more) of the following findings ⁽³⁰⁾:
 - Fixation to adjacent tissues
 - Firm consistency
 - Size > 1.5 cm

- Ulceration of overlying skin
- Mass present \geq two weeks (or uncertain duration) without significant fluctuation and not considered to be from an infectious cause
- History of prior cancer
- Failed \geq 2 weeks treatment for suspected infectious etiology ⁽¹⁷⁾

~~Pediatric (\leq 18 years old) considerations ^(Weinstock 2018-44)~~

~~Ultrasound should be inconclusive or suspicious unless there is a history of malignancy ⁽²³⁾~~

~~**Note:** For discrete cystic lesions of the neck, an ultrasound should be performed as initial imaging unless there is a high suspicion of malignancy ^(Lahiri 2023)~~

~~Neck Mass (parotid) ⁽⁴²⁾~~

~~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) ⁽⁴⁵⁾~~

~~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 (46,47)~~

Vocal Fold (Cord) Lesions (32)

- Vocal cord lesion(s) that is suspicious for malignancy (such as ulceration, hyperkeratosis (leukoplakia))
- Vocal cord immobility (can be an indicator of malignancy in the neck and/or chest)

NOTE: Chest CT is also indicated in the evaluation of the vocal cord immobility

Throat Pain (Odynophagia) (33)

- Advanced imaging for unexplained throat pain (odynophagia) is indicated with **ALL** of the following:
 - Duration of \geq 2 weeks
 - Unknown etiology with no clinical evidence of infection (such as fever, swelling)
 - Otolaryngologic exam with laryngoscopy (endoscopy) showing no clear etiology of the pain
 - Prior failed treatment for laryngopharyngeal reflux (LPR) (such as diet alterations, proton pump inhibitor therapy, H2 blocker therapy)
 - Prior failed treatment for post-nasal drip (PND) (such as nasal saline irrigation, antihistamines, decongestants, antibiotics)
 - Clinical concern and risk factors for malignancy (such as prior tobacco use, alcohol use, dysphagia, weight loss, age **>older than** 50 years)

Ear Pain (Otalgia) (34)

- Advanced imaging for unexplained ear pain (otalgia) is indicated with ALL of the following:
 - Duration of \geq 2 weeks
 - Unknown etiology with no clinical evidence of infection (such as fever, swelling, middle ear fluid)
 - Otolaryngologic exam with laryngoscopy (endoscopy) **AND** ear exam showing no clear etiology of the pain
 - Clinical concern and risk factors for malignancy (such as prior tobacco use, alcohol use, dysphagia, dysphonia, weight loss, age $>$ 50 years)

Note: US is the initial imaging study of a thyroid region mass. Biopsy is usually the next step. In the evaluation of known thyroid malignancy, CT is preferred over MRI since there is less respiratory motion artifact. Chest CT may be included for preoperative assessment in some cases.

Thyroid Gland

- Initial staging and restaging of known thyroid cancer (35)
- To assess extent of enlarged thyroid tissue (Goiter) (benign **OR** malignant) with any **ONE** of the following:
 - When prior imaging or physical exam suggests extension through the thoracic inlet into the mediastinum
 - When prior imaging or physical exam suggests compression/involvement of the airway or esophagus
 - Clinical concern for airway compression/obstruction (such as symptoms of dyspnea, stridor, hoarseness) (36)
 - Clinical concern for esophageal compression/obstruction (such as symptoms of dysphagia, weight loss)

NOTE: Ultrasound is the initial imaging study of a thyroid region mass. Biopsy is usually the next step in the evaluation of a possible thyroid malignancy and advanced imaging is not typically needed prior to biopsy

Parathyroid Gland(s) (37)

- Diagnosed hyperparathyroidism when prior imaging (such as ultrasound, nuclear medicine scan) is indeterminate or abnormal and surgery is planned **OR** is being considered

Cranial Nerve Abnormalities

Facial Nerve Paresis/Bell's Palsy/Hemifacial Spasm (CN VII) (27,28)

- Facial nerve paresis/ Bell's palsy / hemifacial spasm with atypical features requiring evaluation of the extracranial course of the facial nerve (such as incomplete/no improvement at three months, involvement of only specific branches of the facial nerve, second paralysis of the same side, or facial twitching/spasms prior to onset)

NOTE: MRI Brain with internal auditory canal (IAC) (or CT Head if MRI is contraindicated or not available) with imaging of the intracranial course of the facial nerve is the preferred initial study for facial nerve paresis/ Bell's palsy / hemifacial spasm

Cranial Nerves IX-XII ⁽²⁵⁾

- Clinical evidence of cranial nerve (CN IX, X, XI, and/or XII) deficits or dysfunction (such as dysphagia, shoulder/neck movement abnormalities, tongue movement abnormalities, vocal fold movement or sensation abnormalities)

Brachial Plexopathy ⁽³⁸⁾

- Traumatic Brachial Plexopathy:
 - If mechanism of injury is highly suspicious for brachial plexopathy (such as birth trauma, mid-clavicular fracture, shoulder dislocation, contact injury to the neck (burner or stinger syndrome) or penetrating injury)
- Non-traumatic Brachial Plexopathy:
 - When Electromyography/Nerve Conduction Velocity (EMG/NCV) studies are suggestive of brachial plexopathy

NOTE: Either Neck MRI, Shoulder MRI or Chest MRI may be appropriate depending on the location of the injury/plexopathy. Only **ONE** of these three studies should be needed to appropriately image the brachial plexus

Other indications for a Neck MRI

~~Known or suspected deep space infections or abscesses of the pharynx or neck with signs or symptoms of infection ^(Rahim-2023,48)~~

~~MR Sialography to evaluate salivary ducts ^(Aulino-2019,49,50)~~

~~Vocal cord lesions or vocal cord paralysis ⁽⁶¹⁾~~

~~Unexplained ear pain when ordered by a specialist with all of the following ⁽⁶²⁾~~

~~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 ^(Zander-2021,53,54)~~

~~Hereditary Paraganglioma-Pheochromocytoma (PGL/PCC) Syndrome (SDHx mutations) every 2 years when whole body MRI (CPT 76498) is not available ^(Eise-2023, NCCN Neuro & Adrenal Tumors V2.2024)~~

~~Bell's palsy/hemifacial spasm (for evaluation of the extracranial nerve course) ^(Rath-2022)~~

~~If atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset ⁽⁵⁵⁾~~

~~Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) ^(32,56)~~

~~Brachial plexopathy ⁽⁵⁷⁾~~

~~Traumatic Brachial Plexopathy: If mechanism of injury is highly suspicious for brachial plexopathy (such as mid-clavicular fracture, shoulder dislocation, contact injury to the neck (burner or stinger syndrome) or penetrating injury)~~

~~Non-traumatic Brachial Plexopathy when Electromyography/Nerve Conduction Velocity (EMG/NCV) studies are suggestive of brachial plexopathy~~

~~**NOTE:** Either Neck MRI, Shoulder MRI or Chest MRI may be appropriate depending on the location of the injury/plexopathy. Only one of these three studies is indicated.~~

~~**NOTE:** See additional ONCOLOGIC Neck MRI indications~~

Combination Studies for Neck MRI

~~**NOTE:** When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)~~

Neck/Brain MRI

- ~~Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) ⁽²⁵⁾~~
- ~~Bell's Palsy/hemifacial spasm that meets the above criteria ⁽²⁵⁾~~
- ~~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 ⁽¹⁶⁾~~

Face/Sinus/Orbit/Neck MRI and PET

- ~~Suspected or known malignancy of the head and/or neck with any **ONE** of the following ⁽¹⁵⁾:~~
 - ~~For initial staging, restaging, or suspected recurrence of head and neck cancer~~
 - ~~For surgical or radiation planning~~
 - ~~3-4 months after end of treatment in patients with locoregionally advanced disease or with altered anatomy~~
 - ~~Annually when specified that the area of original disease is difficult to follow with direct visualization and/or endoscopy (such as orbit, nasopharynx, base of tongue, hypopharynx, pyriform sinus)~~

Sinus/Face/Neck/Chest/Abdomen MRI

- Advanced imaging for Granulomatosis with Polyangiitis (GPA) (formally Wegener's Granulomatosis) is indicated with any **ONE** of the following ⁽²¹⁾:
 - Suspected GPA based on clinical findings (such as biopsy results, lab testing including antineutrophil cytoplasmic antibodies (ANCA))
 - Known GPA when imaging results of a specific anatomic area is needed to guide systemic therapy decisions

Brain with IAC/Face/Sinus/Neck MRI

- Facial nerve paresis/Bell's Palsy/hemifacial spasm for evaluation of the entire intracranial and extracranial nerve course with an atypical presentation (such as bilateral involvement, multiple episodes, slow resolution beyond three weeks, incomplete/no improvement at three months, or facial twitching/spasms prior to onset
- Objective cranial nerve palsy (CN IX-XII) (for evaluation of the entire intracranial and extracranial nerve course) ⁽²⁵⁾
- Chest CT and Neck /Abdomen MRI
- PGL/PCC (Hereditary Paraganglioma/Pheochromocytoma syndromes or SDHx mutations): every 2 years **IF** whole body MRI (unlisted MRI CPT 76498) **not** available ^(58, NCCN Neuro & Adrenal Tumors V2.2024) (see Evolent Clinical Guideline 2061 for Unlisted Studies Evolent_CG_063) ⁽⁵⁹⁾

Combination Studies for Malignancy for Initial Staging or Restaging

Unless otherwise specified in this guideline, indication for combination studies for malignancy for initial staging or restaging:

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

INDICATIONS FOR INTERNAL AUDITORY CANAL (IAC) MRI

Suspected Neoplasm or Malignancy

- Suspicious lesion that is indeterminate or abnormal on prior imaging and requires further evaluation ⁽³¹⁾
- Suspected acoustic neuroma (Schwannoma) or cerebellar pontine angle tumor based on clinical signs and symptoms (such as unilateral sensorineural loss, vertigo, disturbed balance or gait, unilateral/asymmetric tinnitus, facial weakness, or altered sense of taste) ⁽³⁹⁾
- Suspected glomus tumor based on exam and/or prior imaging ⁽³⁹⁾

Infection and Inflammation

- Suspected necrotizing otitis externa (formally known as malignant otitis externa) particularly in high-risk populations (such as immunocompromised, poorly controlled diabetes, prior radiation therapy)
- Clinical suspicion of a complication of acute otitis media including any **ONE** of the following ^(40,41):
 - Systemic illness or toxic appearance
 - Signs/symptoms of possible intracranial complications (such as headache, tinnitus, vertigo, nystagmus)
- Known **OR** suspected cholesteatoma (abnormal growth of epithelial tissue within the middle ear) ⁽⁴²⁾

Cranial Nerve Abnormalities

Facial Nerve Paresis/Bell's Palsy/Hemifacial Spasm (CN VII) ^(27,28)

- Facial nerve paresis/ Bell's palsy / hemifacial spasm with poor prognostic clinical factors (such as complete paresis, incomplete improvement at 3 months, bilateral facial nerve involvement, other cranial nerve deficits, history of malignancy)

Hearing Loss (Documented on Audiogram) (CN VIII) ⁽⁴³⁾ ~~(30)~~

- Congenital hearing loss (unilateral or bilateral, conductive or sensorineural)

NOTE: Congenital refers to a condition, trait, or exposure that is present at birth that is due to genetic factors, non-genetic factors, or a combination of both. However, hearing loss can be mild initially and progress over time after birth, so the diagnosis of congenital hearing loss is not necessarily limited to young children only

- Cochlear implant evaluation (pre-operative or post-operative)
- Asymmetric or unilateral sensorineural hearing loss (SNHL)
- Suspected auditory neuropathy

Tinnitus (CN VIII) ^(39,44) ~~(39)~~

- Pulsatile tinnitus (unilateral or bilateral) ⁽⁴⁵⁾

NOTE: Vascular imaging (CTA or MRA) of the brain and/or neck may also be indicated in the evaluation of pulsatile tinnitus.

- Non-pulsatile, unilateral or asymmetric tinnitus

NOTE: For non-pulsatile, bilateral tinnitus advanced imaging is indicated **ONLY** based on the type and level of the associated hearing loss (see hearing loss criteria)

Peripheral Vertigo (CN VIII) (43,46) *(Sharma 2018, Bhattacharyya 2017)*

- Advanced imaging is indicated for peripheral vertigo (source within the temporal bone) with **ALL** of the following:
 - Clinical evidence of a peripheral source of vertigo (such as head-impulse with saccade, spontaneous unidirectional horizontal nystagmus, positive Dix-Hallpike maneuver, Electronystagmography (ENG) testing and/or rotary chair testing indicating peripheral vertigo)
 - Persistent symptoms after a trial of pharmacotherapy (such as meclizine, diazepam) **AND** four weeks or more of vestibular therapy (such as Epley's maneuvers, vestibular rehabilitation)

NOTE: For patients with suspected central vertigo (source within the central nervous system (CNS)) imaging with MRI Brain (or CT Head if MRI is contraindicated or not available) is indicated

Cerebral Spinal Fluid (CSF) Otorrhea (47,48)

- MRI IAC imaging for possible CSF otorrhea (or secondary CSF rhinorrhea via the eustachian tube) is indicated with any **ONE** of the following ⁽⁹⁾
 - High index of suspicion of CSF leak based on clinical evidence (such as persistent leaking, worse leaking with provocative maneuvers (Valsalva), positive Beta-2 transferrin assay of the leakage)
 - Prior imaging (such as CT, nuclear medicine imaging) suggesting bony defect/lesion contributing to suspected/known CSF leak

Vascular Abnormalities (49)

- Advanced imaging of a known or suspected vascular abnormality of the temporal bone is indicated for any **ONE** of the following:
 - Suspected glomus tumor based on exam and/or prior imaging
 - Other vascular abnormality where the need for advanced imaging is clearly documented

Imaging in Known Genetic Conditions

- Von Hippel-Lindau (VHL): once at age 15-20 (asymptomatic) **OR** at onset of hearing loss, tinnitus or vertigo ⁽⁵⁰⁾

NOTE: If performed with Brain MRI, separate authorization for IAC MRI is not needed

Combination Studies for MRI IAC

NOTE: When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

CT Internal Auditory Canal (IAC) / MRI IAC

- CT IAC/MRI IAC are both indicated prior to cochlear implantation with any **ONE** of the following:
 - Genetic syndrome diagnosis (such as Usher syndrome, Pendred syndrome, Waardenburg syndrome, Branchio-Oto-Renal (BOR) syndrome, Trisomy 21)
 - Known temporal bone anatomic abnormality (such as enlarged vestibular aqueduct, aural atresia, aberrant facial nerve)
 - History of prior temporal bone surgery
 - History of meningitis
 - Mixed hearing loss (conductive hearing loss and sensorineural hearing loss)
 - Extensive history of otitis media
 - Pediatric patient where sedation will be needed to complete either study

Not Including Brain

- ~~Unilateral non-pulsatile tinnitus ^(Jain-2023)~~
- ~~Pulsatile tinnitus ^(Jain-2023)~~
- ~~Suspected acoustic neuroma (Schwannoma) or cerebellar pontine angle tumor with any of the following signs and symptoms: unilateral hearing loss by audiometry, headache, disturbed balance or gait, unilateral tinnitus, facial weakness, or altered sense of taste ^(Jain-2023)~~
- ~~Suspected cholesteatoma ^(Sharma-2018)~~
- ~~Suspected glomus tumor ^(Jain-2023)~~
- ~~Asymmetric sensorineural hearing loss on audiogram ^(Sharma-2018)~~
- ~~Congenital/childhood sensorineural hearing loss suspected to be due to a structural abnormality ^(Sharma-2018,60,61,62) (CNVIII, the brain parenchyma, or the membranous labyrinth). CT is the preferred imaging modality for the osseous anatomy and malformations of the inner ear.~~
- ~~CSF otorrhea (MRI/Nuclear Cisternography for intermittent leaks, CT for active leaks); there should be a high suspicion or confirmatory CSF fluid laboratory testing (Beta-2 transferrin assay) ^(Hiremath-2019, Hagiwara-2022)~~
- ~~Bell's Palsy 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 ^(Rath-2022,55)~~

ADDITIONAL ONCOLOGIC INDICATIONS

- ~~Abdomen/Neck/Pelvis MRI and Chest CT~~
- ~~PGL/PCC (Hereditary Paraganglioma/Pheochromocytoma syndromes or SDHx mutations): every 2 years **IF** whole body MRI (unlisted MRI CPT 76498) **NOT** available (58, NCCN Neuro/Adrenal V2.2024) (see Evolent Clinical Guideline 2061 for Unlisted Studies Evolent_CG_063)⁽⁵⁹⁾~~

~~Neck/Face CT or MRI and PET~~

- ~~Neck/Face CT or MRI is indicated **in addition to PET** for Head and Neck Cancer~~
 - ~~For surgical or radiation planning~~
 - ~~3-4 months after end of treatment in patients with locoregionally advanced disease or with altered anatomy~~

~~Orbit/Face/Sinus/Neck MRI~~

~~Follow-up of known Tumor or Cancer~~⁽⁶³⁾

- ~~For initial staging, restaging, and suspected recurrence of head and neck cancer~~
- ~~Head and Neck cancer annually when specified that the area of original disease is difficult to follow on direct visualization (surveillance is typically with exam/scope rather than imaging)~~

PREOPERATIVE OR POSTOPERATIVE ASSESSMENT/PROCEDURAL EVALUATION

When not otherwise specified in the guideline:

Preoperative evaluation:

- Imaging of the area requested is needed to develop a surgical plan~~Pre-operative evaluation for a planned surgery or procedure~~

Post-Operative/Procedural Evaluation

Postoperative evaluation:

- Known or suspected complications
- A clinical reasoning is provided how ~~When imaging may change management, physical, or laboratory findings indicate surgical or procedural complications~~

NOTE: This section applies only within the first few months following surgery

FURTHER EVALUATION OF INDETERMINATE FINDINGS ~~ON PRIOR IMAGING~~

Unless follow-up is otherwise specified within the guideline:

- For initial evaluation of an inconclusive finding on a prior imaging report that requires further clarification ⁽³⁶⁾
- One follow-up exam of a prior indeterminate MR/CT finding to ensure no suspicious interval change has occurred. (No further surveillance unless specified as highly suspicious or change was found on last follow-up exam)

~~GENETICS AND RARE DISEASES~~

- ~~PGL/PCC (Hereditary Paraganglioma/Pheochromocytoma syndromes or SDHx mutations): every 2 years **IF** whole body MRI (unlisted MRI CPT 76498) **NOT** available ⁽⁵⁸⁾ (see Unlisted Studies Evolent_CG_063) ⁽⁵⁹⁾~~
- ~~For other syndromes and rare diseases not otherwise addressed in the guideline, coverage is based on a case-by-case basis using societal guidance~~

LEGISLATIVE LANGUAGE

Washington

20150515A – Imaging for Rhinosinusitis ⁽⁵¹⁾

Washington State Health Care Authority Technology Assessment

Health Technology Clinical Committee

HTTC Coverage Determination:

Imaging for Rhinosinusitis is a **covered benefit with conditions** consistent with the criteria identified in the reimbursement determination.

HTCC Reimbursement Determination:

Limitations of Coverage

Imaging with Sinus Computed Tomography (CT) is covered in the context of rhinosinusitis for the following:

- Red Flags* OR
- Persistent Symptoms** > 12 weeks AND failure of medical therapy; OR
- Surgical planning
- Repeat scanning is not covered except for Red Flags or Surgical Planning

Magnetic Resonance Imaging (MRI) of the sinus is covered in the context of rhinosinusitis for the following:

- As above for sinus CT AND < 18 years of age OR pregnant

***Red Flags in the setting of Rhinosinusitis:** (From American Academy of Otolaryngology – Head and Neck Surgery (AAO-HNS))

- Swelling of orbit
- Altered mental status
- Neurological findings
- Signs of meningeal irritation
- Severe headache
- Signs of intracranial complication, including, but not limited to:
 - Meningitis,
 - Intracerebral abscess
 - Cavernous sinus thrombosis
- Involvement of nearby structures, including, but not limited to:
 - Periorbital cellulitis

****Persistent Symptoms defined as \geq two of the following:** (From AAO-HNS)

- Facial pain-pressure-fullness
- Mucopurulent drainage
- Nasal obstruction (congestion)
- Decreased sense of smell

Non-Covered Indicators

- Imaging of the sinus for rhinosinusitis using X-ray OR Ultrasound is not covered.

CODING AND STANDARDS

Codesing

CPT Codes

70540, 70542, 70543, +0698T

Applicable Lines of Business

<input checked="" type="checkbox"/>	CHIP (Children’s Health Insurance Program)
<input checked="" type="checkbox"/>	Commercial
<input checked="" type="checkbox"/>	Exchange/Marketplace
<input checked="" type="checkbox"/>	Medicaid
<input checked="" type="checkbox"/> <input type="checkbox"/>	Medicare Advantage

BACKGROUND

Sinus

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^(65,66,67) MRI Orbits, Face, and Neck MRI rather than MRI Brain is the mainstay for directly imaging the olfactory apparatus and sinonasal or anterior cranial fossa tumors that may impair or directly involve the olfactory apparatus.⁽⁶⁸⁾

CSF (Cerebrospinal Fluid) Leaks

For CSF rhinorrhea, Sinus CT is indicated when looking to characterize a bony defect. For CSF otorrhea, Temporal Bone CT is indicated. For intermittent leaks and complex cases, consider CT/MRI/Nuclear Cisternography. There should be a high suspicion or confirmatory CSF fluid laboratory testing (Beta-2 transferrin assay).^(69,70)

Trigeminal Neuralgia

According to the International Headache Society, Trigeminal Neuralgia (TN) is defined as a disorder characterized by recurrent unilateral brief electric shock-like pain, abrupt in onset and termination, limited to the distribution of one or more divisions of the trigeminal nerve and triggered by innocuous stimuli.⁽⁷⁴⁾

Contraindication and Preferred Studies

- Contraindications and reasons why a CT/CTA cannot be performed may include: impaired renal function, significant allergy to IV contrast, pregnancy (depending on trimester)
- Contraindications and reasons why an MRI/MRA cannot be performed may include: impaired renal function, claustrophobia, non-MRI compatible devices (such as non-compatible defibrillator or pacemaker), metallic fragments in a high-risk location, patient exceeds weight limit/dimensions of MRI machine

SUMMARY OF EVIDENCE

ACR Appropriateness Criteria® Orbits Vision and Visual Loss ⁽²⁾

Study Design: This document is a guideline developed by the American College of Radiology (ACR) for the appropriate use of imaging in patients with visual loss. It is based on a systematic review of the medical literature and expert consensus.

Target Population: Patients with visual loss, including those with traumatic visual defects, nontraumatic orbital asymmetry, suspected orbital cellulitis, optic neuritis, and other conditions affecting the visual pathway.

Key Factors: The guideline emphasizes the use of CT and MRI as primary imaging modalities, with specific recommendations for different clinical scenarios. It also highlights the importance of a compartmental approach to establish a differential diagnosis based on lesion location and clinical features.

Clinical Practice Guideline (Update): Adult Sinusitis ⁽¹⁸⁾

Study Design: This is an update of a 2007 clinical practice guideline by the American Academy of Otolaryngology—Head and Neck Surgery Foundation. It is based on evidence from systematic reviews, randomized controlled trials, and expert consensus.

Target Population: Adults with rhinosinusitis, including acute bacterial rhinosinusitis (ABRS) and chronic rhinosinusitis (CRS).

Key Factors: The guideline provides recommendations for the diagnosis and management of rhinosinusitis, including the use of antibiotics, imaging, and symptomatic relief. It emphasizes the importance of distinguishing between viral and bacterial rhinosinusitis and includes new recommendations for managing CRS with nasal polyps.

ACR Appropriateness Criteria® Cranial Neuropathy: 2022 Update ⁽²⁵⁾

Study Design: This document is an update of the ACR Appropriateness Criteria for imaging in patients with cranial neuropathy. It is based on a systematic review of the medical literature and expert consensus.

Target Population: Patients with cranial neuropathy, including those with anosmia, trigeminal neuralgia, facial nerve palsy, and other cranial nerve disorders.

Key Factors: The guideline provides recommendations for the use of MRI and CT in the evaluation of cranial neuropathy, with specific imaging protocols for different cranial nerves. It also discusses the importance of a detailed neurological examination and the use of advanced imaging techniques.

ANALYSIS OF EVIDENCE

Analysis ^(2,18,25):

While all three articles emphasize the importance of imaging and evidence-based guidelines, they differ in their focus areas, clinical scenarios, and management recommendations. Kennedy 2018 focuses on visual loss, Rosenfeld 2015 on rhinosinusitis, and Rath 2022 on cranial neuropathies. Each article provides valuable insights and guidelines for their respective areas, highlighting the importance of a multidisciplinary approach and the use of appropriate imaging techniques.

Shared Conclusions

- **Imaging Modalities:** All three articles emphasize the importance of imaging in diagnosing and managing various conditions. They agree that MRI and CT scans are primary tools for evaluating different pathologies. For instance, Kennedy 2018 highlights the use of CT and MRI for visual loss, Rath 2022 discusses MRI and CT for cranial neuropathies, and Rosenfeld 2015 mentions CT for sinusitis.
- **Evidence-Based Guidelines:** Each article stresses the importance of evidence-based guidelines. Kennedy 2018 and Rath 2022 both follow the ACR Appropriateness Criteria, which are reviewed annually by expert panels. Similarly, Rosenfeld 2015 provides evidence-based recommendations for managing adult rhinosinusitis.
- **Multidisciplinary Approach:** The articles advocate for a multidisciplinary approach to diagnosis and treatment. Kennedy 2018 and Rath 2022 involve expert panels from various specialties, while Rosenfeld 2015 includes a guideline update group with diverse medical professionals.

POLICY HISTORY

Date	Summary
<u>July 2025</u>	<ul style="list-style-type: none"> ● <u>Added a Summary of Evidence and Analysis of Evidence</u>

<p><u>June 2025</u></p>	<ul style="list-style-type: none"> ● <u>This guideline replaces Evolent Clinical Guideline 014 for Sinus, Face, Orbit, Neck, and Internal Auditory Canal MRI</u> ● <u>Added in general information statement regarding guideline criteria development by reputable sources, standard of care, and best practices</u> ● <u>Clarified indications for anosmia, facial nerve paresis, tinnitus, vertigo, granulomatosis polyangiitis (GPA), nasal polyposis, and CSF leak</u> ● <u>Added necrotizing otitis externa, thyroid goiter indications</u> ● <u>Segment added to combinations studies about if the required use of conscious sedation is needed the entire combination is indicated</u> ● <u>Updated language in the preoperative/postoperative section</u> ● <u>Removed Genetics section</u> ● <u>Updated and expanded references</u> ● <u>Reduced background</u>
<p>June 2024</p>	<ul style="list-style-type: none"> ● References Updated ● Background updated ● Contraindications and preferred studies section added to the background ● Expanded combination section ● Clarified traumatic and non-traumatic brachial plexopathy ● Added Hereditary Paraganglioma-Pheochromocytoma (PGL/PCC) Syndrome (SDHx mutations) every 2 years when whole body MRI (CPT 76498) is not available ● Added follow-up of known cancer section (initial staging, restaging, surveillance) ● Added Legislative Language for the State of Washington

LEGAL AND COMPLIANCE

Guideline Approval

Committee

Reviewed / Approved by Evolent Specialty Services Clinical Guideline Review Committee

Disclaimer

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