| *National Imaging Associates, Inc. | |
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| **Clinical guidelines**<br>**NECK CT (Soft Tissue)** | **Original Date: September 1997** |
| **CPT Codes: 70490, 70491, 70492** | **Last Revised Date: April 2023** |
| **Guideline Number: NIA_CG_008-1** | **Implementation Date: January 2024** |

## 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.*

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## INDICATIONS FOR NECK CT[1, 2]

### Suspected tumor or cancer

- Suspicious lesions in mouth or throat[3]
- Suspicious mass/tumor found on another imaging study and needing clarification[1]
- Neck mass or lymphadenopathy (not parotid region and not thyroid region):
    - Present on physical exam and remains non-diagnostic after ultrasound is completed[3]
    - Mass or abnormality found on other imaging study and needing further evaluation
    - Increased risk for malignancy[4] with one or more of the following findings[5]:
        - 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[6]

- Pediatric (≤ 18 years old) considerations[7]
  - Ultrasound should be inconclusive or suspicious unless there is a history of malignancy[8]

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

- Neck Mass (parotid region)[1]
  - Parotid mass found on other imaging study and needing further evaluation

**Note**: US is the initial imaging study of a parotid region mass to determine if the location is inside or outside the gland[1, 9, 10]

- Neck Mass (thyroid region)[2]
  - Staging and monitoring for recurrence of known thyroid cancer[2]
  - To assess extent of thyroid tissue when other imaging suggests extension through the thoracic inlet into the mediastinum or concern for airway compression[11, 12]

**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.

**Known or suspected deep space infections or abscesses of the pharynx or neck with signs or symptoms of infection[13]**

**Known tumor or cancer of skull base, tongue, larynx, nasopharynx, pharynx, or salivary glands[14]**

- Initial staging[3]
- Restaging during treatment
- Areas difficult to visualize on follow-up examination
- Suspected recurrence or metastases based on symptoms or examination findings[15]
  - New mass
  - Change in lymph nodes

**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 (e.g., post neck dissection)**

- A follow-up study may be needed to help evaluate a patient's progress after treatment, procedure, intervention, or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested.

**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
- 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)

**Other indications for a Neck CT**

- Sialadenitis (infection and inflammation of the salivary glands) with indeterminate ultrasound, bilateral symptoms or concern for abscess[16]
- Suspected or known salivary gland stones [10, 16-19]
- To assess for foreign body when radiograph is inconclusive or negative[20]
- Vocal cord lesions or vocal cord paralysis[21]
- For evaluation of tracheal stenosis[22, 23]
- Dysphagia after appropriate work up including endoscopy and fluoroscopic studies (modified barium swallow, or biphasic Esophogram)[24, 25]
- Unexplained throat pain for more than 2 weeks when ordered by a specialist with all of the following[26-28]
    - Complete otolaryngologic exam and laryngoscopy
    - No signs of infection
    - Evaluation for and failed treatment of laryngopharyngeal reflux
    - Risk factor for malignancy, i.e., tobacco use, alcohol use, dysphagia, weight loss OR age older than 50 years
- Unexplained ear pain when ordered by a specialist and MRI is contraindicated with all of the following[29]
    - 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[30]
    - Previous nondiagnostic ultrasound or nuclear medicine scan[31]
- Bell's palsy/hemifacial spasm, if MRI is contraindicated or cannot be performed (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[32]
- Objective cranial nerve palsy (CN IX-XII) if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)[33, 34]

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**BACKGROUND**

High resolution CT can visualize both normal and pathologic anatomy of the neck. It is used in the evaluation of neck soft tissue masses, abscesses, and lymphadenopathy. For neck tumors, it defines the extent of the primary tumor and identifies lymph node spread. CT provides details about the larynx and cervical trachea and its pathology. Additional information regarding airway pathology is provided by three-dimensional images created from the CT dataset. Neck CT can also accurately depict and characterize tracheal stenoses.

With the rise of human papillomavirus-related oral, pharyngeal, and laryngeal cancers in adults, contrast-enhanced neck CT has become more important for the evaluation of a neck mass, deemed at risk for malignancy, surpassing ultrasound for the initial evaluation in many cases. The American Academy of Otolaryngology-Head and Neck Surgery recently issued strong recommendations for neck CT or MRI, emphasizing the importance of a timely diagnosis.[5]

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**POLICY HISTORY**

| Date | Summary |
|---|---|
| April 2023 | Updated references<br>Removed additional resources<br>Added:<br>• Section on further evaluation of indeterminate or questionable findings on prior imaging<br>• General Information moved to beginning of guideline with added statement on clinical indications not addressed in this guideline |
| March 2022 | Reformatted indications<br>Clarified:<br>• Thyroid imaging<br>• Abscess<br>• Suspected or known salivary gland stones<br>Added: Sialadenitis (infection and inflammation of the salivary glands) with indeterminate ultrasound, bilateral symptoms, or concern for abscess |

**Reviewed / Approved by NIA Clinical Guideline Committee**

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