

*National Imaging Associates, Inc.	
Clinical guidelines	Original Date: September 1997
NECK CT (Soft Tissue)	
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.

INDICATIONS FOR NECK CT^{1, 2}

Suspected tumor or cancer

- Suspicious lesions in mouth or throat³
- Suspicious mass/tumor found on another imaging study and needing clarification¹
- Neck mass or lymphadenopathy (not parotid region and not thyroid region):
 - Present on physical exam and remains non-diagnostic after ultrasound is completed³
 - Mass or abnormality found on other imaging study and needing further evaluation
 - Increased risk for malignancy⁴ with one or more of the following findings⁵:
 - 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 adenopathy⁶

Page **1** of **9** Neck CT (Soft Tissue)

- Pediatric (≤ 18 years old) considerations⁷
 - Ultrasound should be inconclusive or suspicious unless there is a history of malignancy⁸

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
 - \circ 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 cancer²
 - 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 infection¹³

Known tumor or cancer of skull base, tongue, larynx, nasopharynx, pharynx, or salivary glands¹⁴

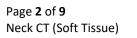
- Initial staging³
- Restaging during treatment
- Areas difficult to visualize on follow-up examination
- Suspected recurrence or metastases based on symptoms or examination findings¹⁵
 - New mass
 - Change in lymph nodes

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 abscess¹⁶
- Suspected or known salivary gland stones ^{10, 16-19}
- To assess for foreign body when radiograph is inconclusive or negative²⁰
- Vocal cord lesions or vocal cord paralysis²¹
- 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 following²⁶⁻²⁸
 - 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 following²⁹
 - 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 planned³⁰
 - Previous nondiagnostic ultrasound or nuclear medicine scan³¹
- Bell's palsy/hemifacial spasm, if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)

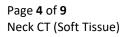


- If atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset³²
- Objective cranial nerve palsy (CN IX-XII) if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)^{33, 34}

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





REFERENCES

1. American College of Radiology. ACR Appropriateness Criteria[®] Neck Mass/Adenopathy. American College of Radiology. Updated 2018. Accessed January 22, 2023.

https://acsearch.acr.org/docs/69504/Narrative/

2. American College of Radiology. ACR Appropriateness Criteria[®] Thyroid Disease. American College of Radiology. Updated 2018. Accessed January 22, 2023.

https://acsearch.acr.org/docs/3102386/Narrative/

3. Kuno H, Onaya H, Fujii S, Ojiri H, Otani K, Satake M. Primary staging of laryngeal and hypopharyngeal cancer: CT, MR imaging and dual-energy CT. *Eur J Radiol*. Jan 2014;83(1):e23-35. doi:10.1016/j.ejrad.2013.10.022

4. Aulino JM, Kirsch CFE, Burns J, et al. ACR Appropriateness Criteria([®]) Neck Mass-Adenopathy. J Am Coll Radiol. May 2019;16(5s):S150-s160. doi:10.1016/j.jacr.2019.02.025

5. Pynnonen MA, Gillespie MB, Roman B, et al. Clinical Practice Guideline: Evaluation of the Neck Mass in Adults. *Otolaryngol Head Neck Surg*. Sep 2017;157(2_suppl):S1-s30. doi:10.1177/0194599817722550

6. Haynes J, Arnold KR, Aguirre-Oskins C, Chandra S. Evaluation of neck masses in adults. *Am Fam Physician*. May 15 2015;91(10):698-706.

7. Wai KC, Wang TJ, Lee E, Rosbe KW. Management of Persistent Pediatric Cervical Lymphadenopathy. *Archives of Otorhinolaryngology-Head & Neck Surgery (AOHNS)*. 2020;4(1):1. doi:10.24983/scitemed.aohns.2020.00121

8. Brown RE, Harave S. Diagnostic imaging of benign and malignant neck masses in children-a pictorial review. *Quant Imaging Med Surg*. Oct 2016;6(5):591-604.

doi:10.21037/qims.2016.10.10

9. Burke CJ, Thomas RH, Howlett D. Imaging the major salivary glands. *Br J Oral Maxillofac Surg*. Jun 2011;49(4):261-9. doi:10.1016/j.bjoms.2010.03.002

10. Cicero G, D'Angelo T, Racchiusa S, et al. Cross-sectional Imaging of Parotid Gland Nodules: A Brief Practical Guide. *J Clin Imaging Sci.* 2018;8:14. doi:10.4103/jcis.JCIS_8_18

11. Gharib H, Papini E, Garber JR, et al. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS, AMERICAN COLLEGE OF ENDOCRINOLOGY, AND ASSOCIAZIONE MEDICI ENDOCRINOLOGI MEDICAL GUIDELINES FOR CLINICAL PRACTICE FOR THE DIAGNOSIS AND MANAGEMENT OF THYROID NODULES--2016 UPDATE. *Endocr Pract*. May 2016;22(5):622-39. doi:10.4158/ep161208.Gl

12. Lin YS, Wu HY, Lee CW, Hsu CC, Chao TC, Yu MC. Surgical management of substernal goitres at a tertiary referral centre: A retrospective cohort study of 2,104 patients. *Int J Surg*. Mar 2016;27:46-52. doi:10.1016/j.ijsu.2016.01.032

13. Kauffmann P, Cordesmeyer R, Tröltzsch M, Sömmer C, Laskawi R. Deep neck infections: A single-center analysis of 63 cases. *Med Oral Patol Oral Cir Bucal*. Sep 1 2017;22(5):e536-e541. doi:10.4317/medoral.21799

14. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Head and Neck Cancers Version 1.2023. National Comprehensive Cancer Network (NCCN). Updated December 20,



2022. Accessed March 24, 2023. https://www.nccn.org/professionals/physician_gls/pdf/head-and-neck.pdf

15. Tshering Vogel DW, Thoeny HC. Cross-sectional imaging in cancers of the head and neck: how we review and report. *Cancer Imaging*. Aug 3 2016;16(1):20. doi:10.1186/s40644-016-0075-3

16. Abdel Razek AAK, Mukherji S. Imaging of sialadenitis. *Neuroradiol J*. Jun 2017;30(3):205-215. doi:10.1177/1971400916682752

 Gadodia A, Bhalla AS, Sharma R, Thakar A, Parshad R. Bilateral parotid swelling: a radiological review. *Dentomaxillofac Radiol*. 2011;40(7):403-414. doi:10.1259/dmfr/17889378
 Kalia V, Kalra G, Kaur S, Kapoor R. CT Scan as an Essential Tool in Diagnosis of Nonradiopaque Sialoliths. *J Maxillofac Oral Surg*. Mar 2015;14(Suppl 1):240-4. doi:10.1007/s12663-012-0461-8

19. Terraz S, Poletti PA, Dulguerov P, et al. How reliable is sonography in the assessment of sialolithiasis? *AJR Am J Roentgenol*. Jul 2013;201(1):W104-9. doi:10.2214/ajr.12.9383

20. Guelfguat M, Kaplinskiy V, Reddy SH, DiPoce J. Clinical guidelines for imaging and reporting ingested foreign bodies. *AJR Am J Roentgenol*. Jul 2014;203(1):37-53. doi:10.2214/ajr.13.12185 21. Dankbaar JW, Pameijer FA. Vocal cord paralysis: anatomy, imaging and pathology. *Insights Imaging*. Dec 2014;5(6):743-51. doi:10.1007/s13244-014-0364-y

22. Chung JH, Kanne JP, Gilman MD. CT of diffuse tracheal diseases. *AJR Am J Roentgenol*. Mar 2011;196(3):W240-6. doi:10.2214/ajr.09.4146

23. Heidinger BH, Occhipinti M, Eisenberg RL, Bankier AA. Imaging of Large Airways Disorders. *AJR Am J Roentgenol*. Jul 2015;205(1):41-56. doi:10.2214/ajr.14.13857

24. American College of Radiology. ACR Appropriateness Criteria[®] Dysphagia. American College of Radiology. Updated 2018. Accessed January 22, 2023.

https://acsearch.acr.org/docs/69471/Narrative/

25. Pasha SF, Acosta RD, Chandrasekhara V, et al. The role of endoscopy in the evaluation and management of dysphagia. *Gastrointest Endosc*. Feb 2014;79(2):191-201. doi:10.1016/j.gie.2013.07.042

26. Feierabend RH, Shahram MN. Hoarseness in adults. *Am Fam Physician*. Aug 15 2009;80(4):363-70.

27. Jones D, Prowse S. Globus pharyngeus: an update for general practice. *Br J Gen Pract*. Oct 2015;65(639):554-5. doi:10.3399/bjgp15X687193

28. Shephard EA, Parkinson MA, Hamilton WT. Recognising laryngeal cancer in primary care: a large case-control study using electronic records. *Br J Gen Pract*. Feb 2019;69(679):e127-e133. doi:10.3399/bjgp19X700997

29. Earwood JS, Rogers TS, Rathjen NA. Ear Pain: Diagnosing Common and Uncommon Causes. *Am Fam Physician*. Jan 1 2018;97(1):20-27.

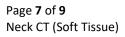
30. Piciucchi S, Barone D, Gavelli G, Dubini A, Oboldi D, Matteuci F. Primary hyperparathyroidism: imaging to pathology. *J Clin Imaging Sci*. 2012;2:59. doi:10.4103/2156-7514.102053

31. Tian Y, Tanny ST, Einsiedel P, et al. Four-Dimensional Computed Tomography: Clinical Impact for Patients with Primary Hyperparathyroidism. *Ann Surg Oncol*. Jan 2018;25(1):117-121. doi:10.1245/s10434-017-6115-9

32. Quesnel AM, Lindsay RW, Hadlock TA. When the bell tolls on Bell's palsy: finding occult malignancy in acute-onset facial paralysis. *Am J Otolaryngol*. Sep-Oct 2010;31(5):339-42. doi:10.1016/j.amjoto.2009.04.003

33. Mumtaz S, Jensen MB. Facial neuropathy with imaging enhancement of the facial nerve: a case report. *Future Neurol*. Nov 1 2014;9(6):571-576. doi:10.2217/fnl.14.55

34. American College of Radiology. ACR Appropriateness Criteria[®] Cranial Neuropathy. American College of Radiology (ACR). Updated 2022. Accessed January 22, 2023. https://acsearch.acr.org/docs/69509/Narrative/



NA

POLICY HISTORY

Date	Summary
April 2023	Updated references
	Removed additional resources
	Added:
	Section on further evaluation of indeterminate or questionable
	findings on prior imaging
	General Information moved to beginning of guideline with added
	statement on clinical indications not addressed in this guideline
March 2022	Reformatted indications
	Clarified:
	Thyroid imaging
	Abscess
	Suspected or known salivary gland stones
	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

Disclaimer: National Imaging Associates, Inc. (NIA) authorization policies do not constitute medical advice and are not intended to govern or otherwise influence the practice of medicine. These policies are not meant to supplant your normal procedures, evaluation, diagnosis, treatment and/or care plans for your patients. Your professional judgement must be exercised and followed in all respects with regard to the treatment and care of your patients. These policies apply to all Evolent Health LLC subsidiaries including, but not limited to, National Imaging Associates ("NIA"). The policies constitute only the reimbursement and coverage guidelines of NIA. Coverage for services varies for individual members in accordance with the terms and conditions of applicable Certificates of Coverage, Summary Plan Descriptions, or contracts with governing regulatory agencies. NIA reserves the right to review and update the guidelines at its sole discretion. Notice of such changes, if necessary, shall be provided in accordance with the terms and conditions of provider agreements and any applicable laws or regulations.

