Cohere Medical Policy - Computed Tomography (CT), Neck (Soft Tissue)

Clinical Guidelines for Medical Necessity Review

Version: 3
Effective Date: October 30, 2024

Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

Cohere Health, Inc. ("**Cohere**") has published these clinical guidelines to determine the medical necessity of services (the "**Guidelines**") for informational purposes only, and solely for use by Cohere's authorized "**End Users**". These Guidelines (and any attachments or linked third-party content) are not intended to be a substitute for medical advice, diagnosis, or treatment directed by an appropriately licensed healthcare professional. These Guidelines are not in any way intended to support clinical decision-making of any kind; their sole purpose and intended use is to summarize certain criteria Cohere may use when reviewing the medical necessity of any service requests submitted to Cohere by End Users. Always seek the advice of a qualified healthcare professional regarding any medical questions, treatment decisions, or other clinical guidance. The Guidelines, including any attachments or linked content, are subject to change at any time without notice.

Other Notices:

Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

Guideline Information:

Specialty Area: Diagnostic Imaging
Guideline Name: Cohere Medical Policy - Computed Tomography (CT), Neck

Date of last literature review: 8/7/2024
Document last updated: 10/30/2024
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

Table of Contents

Important Notices **2**
Table of Contents 3
Medical Necessity Criteria **4**
Service: Computed Tomography (CT), Neck **4**
Recommended Clinical Approach 4
Medical Necessity Criteria 4
Indications 4
Non-Indications 6
Disclaimer on Radiation Exposure in Pediatric Population 6
Level of Care Criteria 7
Procedure Codes (CPT/HCPCS) 8
Medical Evidence **9**
References **11**
Clinical Guideline Revision History/Information **12**

Medical Necessity Criteria

Service: Computed Tomography (CT), Neck

Recommended Clinical Approach

Computed tomography (CT) is a radiological method for assessing various conditions affecting the head and neck outside the skull. Its utilization should be limited to genuine medical necessities, minimizing radiation exposure while ensuring an effective examination. Supplementary or specialized tests might be warranted. While CT may not identify all abnormalities, adherence to specified criteria enhances the likelihood of their detection. CT is often the first-line advanced imaging modality for many neck disorders due to its speed, availability, and high resolution. CT Neck for soft tissue evaluation is routinely performed with contrast; compared to magnetic resonance imaging (MRI), CT is less sensitive to patient motion.[1]

Medical Necessity Criteria

Indications

➔ **Computed tomography (CT), neck (soft tissue)** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Initial staging, treatment assessment, and surveillance of known malignant conditions in the neck (e.g., nasopharynx, oropharynx, hypopharynx, larynx, salivary glands, jaw, oral cavity); **OR**
- ◆ Thyroid masses or goiter when ultrasound is non-diagnostic or requires further work-up; **OR**
- ◆ Mass or lymphadenopathy when **ANY** of the following is **TRUE**:
  - Unlikely to be due to infection or not resolving despite treatment; **OR**
  - Lymphadenopathy in a patient older than 50 years; **OR**
  - Mass or lesion detected on laryngoscopy; **OR**
- ◆ Assessment of signs and symptoms, including **ANY** of the following:
  - Odynophagia; **OR**
  - Globus sensation or dysphagia when clinical examination, including endoscopy and fluoroscopy, are negative or require further evaluation; **OR**

- Vocal cord paralysis; **OR**
- Neck pain that is not related to cervical spine or dissection and has not resolved with conservative treatment (e.g., rest and analgesics) that is documented for a period of greater than 4 weeks; **OR**
- Cranial neuropathy of cranial nerves (CN) 9-11; **OR**
- Ear pain unexplained by ENT evaluation and a trial of conservative therapy (e.g., topical and systemic antibiotics, ear drops); **OR**

◆ Infectious conditions (e.g., tonsillitis, epiglottitis, cellulitis, etc.) when **ANY** of the following is **TRUE**:
- Suspected compromise of the airway; **OR**
- Surgery is planned; **OR**
- Not improving with appropriate therapy; **OR**

◆ Suspected Ludwig's angina; **OR**

◆ Localization of parathyroid adenoma when lab tests indicate primary hyperparathyroidism and neck ultrasound and Sestamibi scan (nuclear medicine scan) are normal or nondiagnostic[3]; **OR**

◆ Presurgical evaluation, planning, or guidance, including radiation planning; **OR**

◆ Evaluation for **ANY** of the following[2]:
- Trauma that is not related to the cervical spine; **OR**
- Suspected Eagle's syndrome when a long styloid process is detected on prior imaging; **OR**
- Foreign body when initial radiographs are non-diagnostic; **OR**
- Suspected extracapsular spread of a tumor into the surrounding neck structures; **OR**
- Suspected recurrent thyroid cancer or rising thyroglobulin, with negative ultrasound and physical exams to detect occult neck nodes; **OR**

◆ Repeat imaging (defined as repeat request following recent imaging of the same anatomic region with the same modality), in the absence of established guidelines, will be considered reasonable and necessary if **ANY** of the following is **TRUE**:
- New or worsening symptoms, such that repeat imaging would influence treatment; **OR**
- One-time clarifying follow-up of a prior indeterminate finding; **OR**

- In the absence of change in symptoms, there is an established need for monitoring which would influence management.

Non-Indications

➔ **Computed tomography (CT), neck (soft tissue)** is not considered appropriate if **ANY** of the following is **TRUE**:
- ◆ The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms[10]; **OR**
- ◆ The request is for CT with contrast, and the patient has a history of anaphylactic allergic reaction to iodinated contrast media.

*NOTE: The referring professional and radiologist should discuss the risks and benefits of contrast media administration, including possible prophylaxis, in patients with chronic or worsening kidney disease or severe renal failure.[9]
**NOTE: CT in patients with claustrophobia should be requested at the discretion of the ordering provider.
***NOTE: CT in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.

Disclaimer on Radiation Exposure in Pediatric Population

Due to the heightened sensitivity of pediatric patients to ionizing radiation, minimizing exposure is paramount. At Cohere, we are dedicated to ensuring that every patient, including the pediatric population, has access to appropriate imaging following accepted guidelines. Radiation risk is dependent mainly on the patient's age at exposure, the organs exposed, and the patient's sex, though there are other variables. The following technical guidelines are provided to ensure safe and effective imaging practices:

Radiation Dose Optimization: Adhere to the lowest effective dose principle for pediatric imaging. Ensure that imaging protocols are specifically tailored for pediatric patients to limit radiation exposure.[4-5]

Alternative Modalities: Prioritize non-ionizing imaging options such as ultrasound or MRI when clinically feasible, as they are less likely to expose the patient to ionizing radiation. For instance, MRI or ultrasound should be considered if they are more likely to provide an accurate diagnosis than CT,

fluoroscopy, or radiography.[4-5]

Cumulative Dose Monitoring: Implement systems to track cumulative radiation exposure in pediatric patients, particularly for those requiring multiple imaging studies. Regularly reassess the necessity of repeat imaging based on clinical evaluation.[4-5]

CT Imaging Considerations: When CT is deemed the best method for achieving a correct diagnosis, use the lowest possible radiation dose that still yields reliable diagnostic images.[4-5]

Cohere Imaging Gently Guideline

The purpose of this guideline is to act as a potential override when clinically indicated to adhere to Imaging Gently and Imaging Wisely guidelines and As Low As Reasonably Possible (ALARA) principles.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
70490	Computed tomography (CT), soft tissue neck; without contrast material
70491	Computed tomography (CT), soft tissue neck; with contrast material(s)
70492	Computed tomography (CT), soft tissue neck; without contrast material, followed by contrast material(s) and further sections
76380	Computed tomography, limited or localized follow-up study

Medical Evidence

Bedernik et al. (2022) conducted a randomized control trial (RCT) to assess image quality by comparing single-energy computed tomography (SECT) with automated tube voltage adaptation (TVA) to dual-energy CT (DECT) weighted average images. A total of 80 patients underwent SECT or radiation dose-matched DECT. The effective radiation dose (ED) showed no significant difference between the SECT and DECT study groups. Compared to the SECT group, the DECT group exhibited significantly higher contrast-to-noise ratio differences (CNRD) for jugular veins relative to fatty tissue and muscle tissue relative to fatty tissue. However, the CNRD for jugular veins relative to muscle tissue was comparable between groups. Image artifacts were also less pronounced, and overall diagnostic acceptability was higher in the DECT group. Overall, DECT-weighted average images demonstrate superior objective and subjective image quality compared to SECT performed with TVA in head and neck imaging.[6]

Smith-Bindman et al. (2020) performed an RCT to study the efficacy of interventions to lower the amount of radiation patients are exposed to. The RCT included 864,080 adults at 100 facilities who underwent a CT scan, including head CT (n = 1,156,657 scans). The study included two primary measures: the percentage of high-dose CT scans and the average effective dose administered at the facility level. The study's secondary measure included the doses received by specific organs. Outcomes were assessed with respect to the impact of the interventions and outcomes post-intervention. Data were contrasted with pre-intervention data, utilizing hierarchical generalized linear models that accounted for temporal patterns and patient attributes. In conclusion, data regarding CT radiation dosage and practical recommendations may improve quality, including significant dose reductions, especially for organ-specific doses.[7]

Baba et al. (2022) published a systematic review related to advanced imaging of head and neck infections. The authors state that contrast-enhanced CT is the primary and standard imaging modality of choice for head and neck infections. They state that magnetic resonance imaging (MRI) does have advantages compared to CT, including less artifact related to dental treatment and higher contrast resolution. Intracranial

spread of head and neck infections is better detected by MRI. Technological developments in mitigating dental-related artifact on CT have been shown to be effective. Subtraction technique CT has been found to be useful in evaluating skull base invasive nasopharyngeal carcinoma, skull base osteomyelitis, and evaluation of recurrence and spread of middle ear cholesteatoma.[8]

References

1. American College of Radiology (ACR), American Society of Neuroradiology (ASNR), Society for Pediatric Radiology (SPR). ACR–ASNR–SPR practice parameter for the performance of computed tomography (CT) of the extracranial head and neck - resolution 5. Updated 2021. Accessed July 31, 2024. https://www.acr.org/-/media/ACR/Files/Practice-Parameters/CT-Head-Neck.pdf.
2. Hoang JK, Oldan JD, et al. ACR appropriateness criteria - thyroid disease. *J Am Coll Radiol.* 2019 May;16(5S):S300-S314. doi: 10.1016/j.jacr.2019.02.004. PMID: 31054756.
3. Naik M, Khan SR, Owusu D, et al. Contemporary multimodality imaging of primary hyperparathyroidism. *RadioGraphics.* 2022; 42:841-860. doi.org/10.1148/rg.210170.
4. The Image Gently Alliance. Procedures - cardiac imaging. Updated 2014. Accessed July 31, 2024. https://www.imagegently.org/Procedures/Cardiac-Imaging.
5. National Cancer Institute. Radiation risks and pediatric computed tomography (CT): A guide for health care. Updated September 4, 2018. Accessed July 31, 2024. https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/pediatric-ct-scans.
6. Bedernik A, Wuest W, May MS, et al. Image quality comparison of single-energy and dual-energy computed tomography for head and neck patients: A prospective randomized study. *Eur Radiol*. 2022 Nov;32(11):7700-7709. doi: 10.1007/s00330-022-08689-4. PMID: 35441839; PMCID: PMC9668949.
7. Smith-Bindman R, Chu P, Wang Y, et al. Comparison of the effectiveness of single-component and multicomponent interventions for reducing radiation doses in patients undergoing computed tomography: A randomized clinical trial. *JAMA Intern Med*. 2020 May 1;180(5):666-675. doi: 10.1001/jamainternmed.2020.0064. PMID: 32227142; PMCID: PMC7105953.
8. Baba A, Kurokawa R, Kurokawa M, et al. Advanced imaging of head and neck infections. *J Neuroimaging*. 2023;33:477-492. doi /10.1111/jon.13099.
9. Davenport MS, Perazella MA, Yee J, et al. Use of Intravenous Iodinated Contrast Media in Patients with Kidney Disease: Consensus Statements from the American College of Radiology and the National Kidney Foundation. Radiology. 2020;294(3):660-668. doi:10.1148/radiol.2019192094
10. Wasser EJ, Prevedello LM, Sodickson A, Mar W, Khorasani R. Impact of a real-time computerized duplicate alert system on the utilization of

computed tomography. *JAMA Intern Med*. 2013;173(11):1024-1026. doi: 10.1001/jamainternmed.2013.543. PMID: 23609029.

Clinical Guideline Revision History/Information

Original Date: May 6, 2022		
Review History		
Version 2	8/8/2024	Annual review and policy restructure. Updated indications, non-indications, medical evidence section, references
Version 3	10/30/2024	Edited repeat imaging criteria language.