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2025 Magnetic Resonance Imaging (MRI) Cervical Spine

Diagnostic Imaging

MRI-CSpine-HH

Last Review Date: 05/16/2025
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Magnetic Resonance Imaging (MRI) Cervical Spine

MRI Cervical Spine Related National Coverage Determination (NCD)/Local Coverage Determination (LCD)

Please refer to https://www.cms.gov/medicare-coverage-database/search.aspx if applicable to the individual's health plan membership.

Type/ID Number	Title
LCD 35175	CT and MRI Scans of the Head and Neck
LCD 35391	Multiple Imaging in Oncology
LCD 37373	CT and MRI Scans of the Head and Neck

Clinical Judgment

These medical policies are designed to provide clinical guidance and do not supplant a provider's independent professional judgment. Physicians retain full and independent authority to determine appropriate care based on each patient's individual clinical circumstances. Although services may be subject to documentation requirements, medical necessity review, or coverage limitations, nothing in this policy is intended to restrict or interfere with a physician's independent medical judgment.

MRI General Contraindications

MRI is contraindicated for **ANY** of the following:

- Safety, related to clinical status (body mass index exceeds MRI capability, intravascular stents within recent 6 weeks)
- Safety, related to implanted devices (aneurysm clips, cochlear implant, implantable cardio-defibrillators, insulin pump, permanent pace maker, spinal cord stimulator)[1]
  References: [22] [10] [16]

Preamble: Pediatric Diagnostic Imaging

HealthHelp's clinical guidelines for the Diagnostic Imaging program, are intended to apply to both adults and pediatrics (21 years of age or younger), unless otherwise specified within the criteria.

[1]Some implanted devices that were once absolute contraindications to a MRI may now be accepted, including if the specific MRI is able to accommodate the device or the device itself is deemed safe for MRI.

MRI Cervical Spine Guideline

Magnetic resonance imaging (MRI) of the cervical spine is considered medically appropriate when the documentation demonstrates **ANY** of the following:

1. Cervical radiculopathy is demonstrated on electromyography (EMG) or nerve conduction study. (*__NOTE:__ *An EMG is **NOT** recommended to determine the cause of axial lumbar, cervical or thoracic spine pain.*)
   References: [23]
2. Pain in the neck and **ANY** of the following:
   a. Conservative management, active (chiropractic treatments, physical therapy), and **EITHER** of the following:
      i. Attempted within the last 6 months, for at least 6 weeks **AND** symptoms persist or worsen.
      ii. Symptoms progress or worsen during current course of conservative management
   b. Neck pain, in a pediatric individual and **EITHER** of the following:
      i. Chronic **AND** inflammation, infection or malignancy is suspected.
      ii. Isolated neck pain, X-ray is completed and **ANY** of the following: (**NOTE**: *Conservative management is **NOT** required if any of these "red flags" exist*.)
         A. Age is 5 years or younger.
         B. Fever
         C. Malaise
         D. Pain at night that disrupts sleep.
         E. Pain is constant.
         F. Pain lasts more than 4 weeks.
         G. Postural changes (kyphosis or scoliosis)
         H. Radicular pain
         I. Stiffness or gelling in the early morning.
         J. Weight loss (more than 5% in 2 months or 10% in 6 months)

   References: [4] [23] [8]
3. Arnold-Chiari malformation is known, demonstrated on prior imaging.
   References: [31] [29] [28]

4. Brachial plexopathy is suspected or known **AND** location of injury includes the cervical spine.
   References: [9]
5. Cancer, tumor, recurrence or metastasis evaluation for **ANY** of the following: (*__NOTE__: *X-rays are only required at initial diagnosis of cancer*.)
   a. Prior imaging for metastasis or tumor is abnormal, non-diagnostic or indeterminate.
   b. Spinal tumor is known **AND** signs are new or progressing (eg, non-traumatic pain is new or increasing).
   c. Surveillance following the **National Comprehensive Cancer Network (NCCN) Guideline's** surveillance recommendations (*see **Surveillance** section*).

   References: [20] [6]
6. Cerebrospinal fluid (CSF) leak is suspected (eg, cerebrospinal-venous fistula, CSF rhinorrhea, orthostatic headache, otorrhea, post lumbar puncture headache, post spinal surgery headache, spontaneous idiopathic intracranial hypotension [SIH]).
   References: [13]
7. Compression fracture(s) evaluation and **ANY** of the following:
   a. **ALL** of the following:
      i. Demonstrated on X-ray
      ii. Neck pain is worsening.
      iii. New
      iv. **NO** known malignancy
   b. Compression fractures are known, demonstrated on prior imaging, and treated **AND** neck pain is new.

   References: [20]
8. Infection (eg, abscess, discitis, osteomyelitis) is suspected or known (pain, redness, swelling) and **ANY** of the following:
   a. Active treatment, to assess response
   b. Immune system suppression-related (eg, cancer, diabetes, dialysis, human immunodeficiency virus [HIV], intravenous drug use) spinal infection is suspected, from signs/symptoms (eg, abnormal white blood cell count, erythrocyte sedimentation rate [ESR], back pain).
   c. Prior imaging is abnormal, non-diagnostic or indeterminate.

d. Signs/symptoms are present (eg, chills, complete blood count [CBC], c-reactive protein [CRP], ESR, fever, pain)

References: [27] [23]

9. Inflammatory disease or atlantoaxial instability is suspected or known, and **ANY** of the following:
    a. Atlantoaxial articulation disorder (eg, Down syndrome, Marfan syndrome) is known and **ANY** of the following:
        i. Cervical spine X-ray(s) are abnormal, non-diagnostic or indeterminate.
        ii. Neurological physical exam is abnormal (eg, abnormal gait or reflexes, bowel/bladder dysfunction, extremity weakness).
    b. Neuroinflammatory conditions (eg, Behcet's syndrome, sarcoidosis) are suspected with abnormal neurologic physical exam (eg, abnormal gait or reflexes, bowel/bladder dysfunction, extremity weakness) **AND** rheumatology evaluation (eg, CRP, ESR) is completed.
    c. Rheumatoid arthritis with abnormal neurologic physical exam (eg, abnormal gait or reflexes, bowel/bladder dysfunction, extremity weakness) **OR** X-ray demonstrates subluxation. (*__NOTE__: *Initial imaging should be a lateral X-ray in flexion and neutral. MRI is indicated with negative X-rays when neurological deficit is present or symptoms suggest cervical instability.*)
    d. Spondyloarthropathies are suspected or known, X-ray(s) are non-diagnostic or indeterminate **AND** rheumatology evaluation (eg, CRP, ESR) is completed.

References: [21] [11] [18] [24] [3]

10. Multiple Sclerosis (MS) is suspected or known with **ANY** of the following: [15]
    a. Brain MR is suspicious for MS (eg, demyelinating lesions), baseline.
    b. Cervical spinal cord disease symptoms (eg, focal neurologic deficit, Lhermitte sign [electric shock-like sensation that occurs with flexion of the neck]) are new or worsening.
    c. Pediatric demyelinating disease (acute disseminated encephalomyelitis [ADEM] or MS) is suspected or known (eg, fatigue, numbness, tingling).
    d. Signs/symptoms (eg, fatigue, numbness, tingling) are new or progressing **OR** to assess response to treatment.

References: [33]

11. Myelopathy (eg, abnormal gait or reflexes, bowel/bladder dysfunction, extremity weakness) is suspected and **ANY** of the following: (*__NOTE__: *Conservative care is **NOT** required prior to ordering imaging*.)

    a. Abnormal neurologic physical exam (eg, abnormal gait or reflexes, bowel/bladder dysfunction, extremity weakness) is demonstrated on physical exam (eg, digital rectal exam, examination of balance and reflexes).

    b. Symptoms or neurologic physical exam (eg, balance, difficulty with ambulation, diffuse numbness in the hands, grasping and holding objects, hand clumsiness, pins and needles sensation) are progressing.

    References: [1] [14] [23]

12. Neurological deficits (eg, abnormal reflexes, loss of sensation, numbness/tingling) are known based on neurological exams (eg, Lhermitte's sign, shoulder abduction test, spurling test).

13. Post-surgical assessments for evaluation of complications or disease recurrence (within 90 days)

14. Scoliosis with **ANY** of the following:

    a. Age of onset is early (before age 10 years).

    b. Atypical curve (eg, Kyphosis more than 30 degrees, left thoracic curve, short segment)

    c. Neurological deficit is new or unexplained.

    d. Pre-operative planning

    e. Spinal deformity is progressive.

    f. Treatment planning depends on imaging

    References: [12] [17]

15. Syrinx or syringomyelia is suspected or known, and **ANY** of the following:

    a. Predisposing conditions are known (eg, Arnold-Chiari malformation, neoplasm, prior trauma, severe spondylosis).

    b. Prior imaging demonstrates an abnormality (eg, deformities, nodules, septations).

    References: [12]

16. Tethered cord or spinal dysraphism is suspected or known from preliminary imaging, neurological exam **OR** high risk cutaneous stigmata.
    References: [2]

17. Toe walking, in a pediatric individual, with signs/symptoms of upper motor neuron abnormalities (eg, hyperreflexia, orthopedic deformity with concern for spinal cord pathology, spasticity)
18. Trauma or acute injury evaluation with **ANY** of the following:
    a. National emergency X-Radiography utilization study (NEXUS) or Canadian cervical rules (CCR) criteria for imaging are met for **ANY** of the following: (*__NOTE:__ *CT and MRI provide complementary information. When indicated it is appropriate to perform both*.)
        i. Evaluation with CT for initial imaging
        ii. Obtunded and CT is negative.
        iii. Spine is unstable, CT or MRI for treatment planning.
        iv. Spinal cord or nerve root injury is suspected **AND** CT is negative.
    b. Spinal abnormalities (eg, ankylosing spondylitis, diffuse idiopathic skeletal hyperostosis) are known. (*__NOTE__: *Both a MRI and CT are appropriate.*)

References: [19] [4] [26] [32]

Combination CT and MRI for Metastases Evaluation Guideline

Combination CT/MRI studies (5 or less concurrent studies, with a CT or MRI appropriate for cancer location: abdomen, brain, cervical spine, chest, lumbar spine, neck, pelvis and/or thoracic spine) for **ANY** of the following situations:

1. Staging evaluation, for baseline pre-therapy
2. Surveillance following the National Comprehensive Cancer Network (NCCN) Guidelines recommended schedule (*See **Surveillance** section*)

Combination CT Cervical Spine and MRI Cervical Spine Guideline

Computed tomography (CT) cervical spine **combined** with magnetic resonance imaging (MRI) cervical spine is considered medically appropriate when the documentation demonstrates the following: (*__NOTE__: ***NOT*** *an all inclusive list*)

1. Bony and soft tissue abnormality is known (eg, deformity, prior imaging, physical exam) **AND** imaging may change the treatment plan.
2. Craniocervical junction is unstable (based on prior imaging or pronounced bulbar or myelopathic signs).

3. Fractures are complex or pathological.
4. Malignant process of spine is suspected or known (eg, neurological deficits, worsening back pain), with **BOTH** bony and soft tissue involvement.
5. Ossification of posterior longitudinal ligament (OPLL) is suspected (eg, myelopathy, radiculopathy, spinal cord compression) **OR** for re-evaluation of known OPLL.

Spine Surveillance section

Bone Cancer Surveillance

Bone cancer surveillance includes **ANY** of the following:

1. Chondrosarcoma surveillance for **ANY** of the following:
    a. Atypical cartilaginous tumor surveillance with cross-sectional imaging (CT + contrast, MRI ± contrast) every 6 to 12 months for 2 years, then annually as clinically indicated
    b. Low-grade, extracompartmental appendicular tumor, grade I axial tumors or high-grade (grade II or III, clear cell or extracompartmental) tumors surveillance with **ALL** of the following:
        i. Chest CT at least every 6 months for 5 years, then annually for at least 10 years, then if symptoms are new or progressing.
        ii. MRI (± contrast) or CT (+ contrast) if symptoms are new or progressing.
2. Chordoma surveillance with **ALL** of the following:
    a. Chest CT imaging every 6 months, annually for 5 years, then annually thereafter, then if symptoms are new or worsening.
    b. Imaging of primary site, timing and modality (eg, MRI ± CT [both + contrast]) if symptoms are new or progressing, up to 10 years
3. Ewing Sarcoma after primary treatment completed surveillance with **ALL** of the following:
    a. Chest CT: every 3 months
    b. Primary site imaging with MRI ± CT (both + contrast), increase intervals after 24 months and after 5 years, annually, then if symptoms are new or progressing (indefinitely) (*__NOTE__: *PET/CT [head-to-toe] is appropriate*)
4. Giant cell tumor of the bone surveillance with **ALL** of the following:
    a. Chest CT or MRI imaging every 6 to 12 months for 4 years, then annually thereafter, then if symptoms are new or progressing

b. Surgical site imaging if symptoms are new or progressing (eg, CT and/or MRI, both with contrast)

5. Osteosarcoma surveillance with primary site and chest imaging (using same imaging that was done for initial work-up) for **ANY** of the following: (*__NOTE__: *PET/CT [head-to-toe] is appropriate*.)

   a. Image every 3 months for years 1 and 2

   b. Image every 4 months for year 3

   c. Image every 6 months for years 4 and 5

   d. Image annually for year 6 and thereafter, then if symptoms are new or progressing

References: [2025 Bone Cancer Version 1.2026]

Central Nervous System (CNS) Cancer Surveillance

Central nervous system (CNS) cancer surveillance includes **ANY** of the following:

1. Brain metastasis, limited **OR** extensive, image with brain magnetic resonance imaging (MRI) every 2 to 3 months for 1 to 2 years, then every 4 to 6 months indefinitely
2. Glioblastoma, *IDH* wild-type, magnetic resonance imaging with (MRI) of the brain and **ANY** of the following:
   a. Pre-operative and post-operative; within 48 hours
   b. Pre-radiation planning; every 3 to 5 weeks, post-operatively
   c. Post-radiation; 3 to 6 weeks post-radiation, then every 2 to 3 months for 3 years, then every 2 to 4 months indefinitively
3. Glioma, imaging with MRI of the brain and **ANY** of the following:
   a. Astrocytoma, *IDH* mutated and **ANY** of the following:
      i. Grade 2 and **ANY** of the following:
         A. After radiation therapy (RT) **AND** chemotherapy: every 6 months until tumor progression
         B. After RT **OR** chemotherapy: every 3 to 4 months for the 1st 5 years, then every 3 to 4 months until tumor progression
         C. After surgery: every 3 to 4 months until tumor progression
      ii. Grade 3 and **ANY** of the following;
         A. After RT **AND** chemotherapy: every 6 months until tumor progression

B. After RT **OR** chemotherapy: every 3 to 4 months for the 1st 5 years, then every 3 to 4 months until tumor progression

iii. Grade 2 or 3, recurrent; image every 2 to 3 months

b. Oligodendroglioma, *IDH* mutated, 1p/19q co-deleted and **ANY** of the following:

i. Grade 2 and **ANY** of the following:

A. After radiation therapy (RT) **AND** chemotherapy: every 6 to 9 months until tumor progression

B. After RT **OR** chemotherapy: every 3 to 4 months for the 1st 5 years, then every 3 to 4 months until tumor progression

C. After surgery: every 3 to 4 months until tumor progression (*__NOTE__: *For individuals who underwent gross total resection, every 6 to 9 months for 5 years post-surgery until tumor progression*)

ii. Grade 3 and **ANY** of the following:

A. After radiation therapy (RT) **AND** chemotherapy: every 6 to 9 months until tumor progression

B. After RT **OR** chemotherapy: every 3 to 4 months for the 1st 5 years, then every 3 to 4 months until tumor progression

iii. Grade 2 or 3, recurrent, image every 3 to 4 months

4. Leptomeningeal metastases imaging with MRI of the brain and/or total spine every 2 to 3 months for the 1st 2 years, every 6 months until year 5, then annually indefinitively
5. Medulloblastoma, imaging with MRI of the brain every 2 to 3 months for 2 years
6. Primary CNS lymphoma, image every 2 to 3 months for 2 years

References: [25]

Neuroendocrine and Adrenal Tumors Surveillance

Neuroendocrine and adrenal cancer surveillance includes **ANY** of the following:[2]

1. Adrenal gland tumors surveillance imaging includes **ANY** of the following:
   a. Localized disease: chest computed tomography (CT) (± contrast) and abdominal CT or magnetic resonance imaging (MRI) (+ contrast) every 3 to 12 months up to 5 years, then if symptoms are new or progressing.

[2]**NO** surveillance is indicated for appendiceal tumors 2 cm or smaller **WITHOUT** aggressive features (eg, high-grade cytologic atypia, infiltrative invasion lymphatic and hematogenous metastases).

b. Locoregional unresectable or metastatic disease; chest CT (± contrast) and CT or MRI abdomen and pelvis (+ contrast) or FDG positron emission tomography (PET)/CT every 3 to 12 months up to 5 years, then if symptoms are new or progressing.

2. Carcinoid syndrome surveillance imaging includes **BOTH** of the following:

   a. Abdominal/pelvic multiphasic CT or MRI every 3 to 12 months and chest CT (± contrast) if symptoms are new or progressing.

   b. Echocardiogram (ECHO) every 1 to 3 years or as clinically indicated **WITHOUT** known carcinoid heart disease (CHD) and at least annually for individuals with established CHD.

3. Gastrointestinal tract (well-differentiated grade 1/2), lung and thymus imaging and **ANY** of the following:

   a. Lung nodules, multiple or tumorlets, image with chest CT (- contrast) every 12 to 24 months if symptoms are new or progressing.

   b. Rectal tumor is 1 cm to 2 cm or less: image with rectal MRI at 6 and 12 months if symptoms are new or progressing.

4. Gastrointestinal (GI) tract (jejunum/ileum/colon, duodenum, rectum), lung and/or thymus neuroendocrine tumor (NET) surveillance includes imaging post-resection with **ANY** of the following:

   a. Jejunum/ilium/colon, duodenum, rectum and thymus, surveillance imaging with abdominal ± pelvic multiphasic CT or MRI according to **ONE** of the following levels of frequency[3]:

      i. Within 3 months to 12 months post-operatively

      ii. After 12 months, image every 12 to 24 months for 10 years

      iii. After 10 years if symptoms are new or progressing.

   b. Lung/thymus tumors surveillance chest CT (± contrast) for primary tumors, (as clinically indicated for primary GI tumors) according to **ONE** of the following levels of frequency:

      i. Within 12 weeks to 12 months post-operatively

      ii. After 12 months, image every 12 to 24 months for 10 years

      iii. After 10 years if symptoms are new or progressing.

[3]High-grade tumors are appropriate for more frequent monitoring.

5. Grade 3, well-differentiated neuroendocrine surveillance includes chest CT (± contrast) as clinically indicated for **ANY** of the following:
    a. Locally advanced/metastatic disease with favorable biology (low Ki-67 [eg, less than 55%], positive somastatin receptor [SSTR] based PET imaging) includes abdominal/pelvic MRI (+ contrast) or abdominal/pelvic multiphasic CT for surveillance with **ANY** of the following:
        i. Resectable disease surveillance every 3 to 6 months for 2 years, then every 6 to 12 months for up to 10 years **AND** chest CT if symptoms are new or progressing.
        ii. Unresectable disease surveillance every 12 weeks to 24 weeks (depending on tumor biology) **AND** chest CT (± contrast), SSTR-PET/CT, SSTR-PET/MRI or FDG-PET/CT; if symptoms are new or progressing.
    b. Locally advanced/metastatic disease with unfavorable biology (high Ki-67 [eg 55% or higher], rapid growth rate, FDG avid tumors, negative SSTR-based PET imaging), includes surveillance imaging, every 8 weeks to 12 weeks (depending on tumor biology) with **ALL** of the following:
        i. Abdominal/pelvic MRI (+ contrast) or abdominal/pelvic multiphasic CT and FDG PET/CT as clinically indicated
        ii. Chest CT (± contrast) if symptoms are new or progressing.
        iii. FDG-PET/CT, if symptoms are new or progressing.
    c. Locoregional disease (resectable) abdominal/pelvic MRI (+ contrast) or abdominal/pelvic multiphasic CT with frequency of **ONE** of the following:
        i. Every 3 to 6 months for 2 years (depending on tumor biology, Ki-67) and chest CT as clinically indicated
        ii. Every 6 months to 12 months for up to 10 years (depending on tumor biology, Ki-67) and chest CT as clinically indicated
    d. Multiple endocrine neoplasia, type 1 (MEN1) screening surveillance for **ANY** of the following tumor types: (*__NOTE__: *For prolonged surveillance, use imaging studies without radiation.*)
        i. Lung/thymic NETs: chest CT or MRI (+ contrast) every 1 to 3 years
        ii. PanNET: abdominalpelvic CT or MRI (+ contrast) every 1 to 3 years
        iii. Parathyroid: if calcium rises, re-image with single-photon emission computed tomography (SPECT) scan (SPECT-CT preferred) or 4D-CT
        iv. Pituitary: pituitary or sella MRI (+ contrast) of the pituitary every 3 to 5 years

e. Poorly differentiated large or small cell carcinoma and/or mixed neuroendocrine/ non-neuroendocrine neoplasm or unknown primary, imaging surveillance includes **ALL** of the following:

i. Locoregional unresectable or metastatic disease surveillance imaging includes **EITHER** chest CT (± contrast) with abdominal/pelvic MRI (+ contrast) **OR** chest/abdominal/pelvic multiphasic CT; every 6 weeks to 16 weeks

ii. Resectable surveillance imaging includes **EITHER** chest CT (± contrast) with abdominal/pelvic MRI (+ contrast) **OR** chest, abdomenl and pelvis multiphasic CT; every 12 weeks for the 1st year, and every 6 months thereafter

f. Post-operative from potentially curative surgery surveillance for at least 10 years (longer if high-risk)

6. Pancreatic neuroendocrine tumor surveillance imaging, post-resection, includes chest CT (± contrast) as clinically indicated and abdominal multiphasic CT or MRI with imaging frequency of **ONE** of the following[4]:

a. Within 3 to 12 months post-operatively

b. After 12 months, image every 6 to 12 months for 10 years

c. After 10 years if symptoms are new or progressing.

7. Pheochromocytoma/paranganglioma surveillance imaging and **ANY** of the following:

a. Locally unresectable disease or distant metastases, imaging every 12 weeks for 12 months, includes **ANY** of the following:

i. Chest, abdomen and pelvis CT with contrast

ii. Chest CT (± contrast) and abdominal/pelvic MRI (- contrast) (if risk for hypertensive episode)

iii. FDG-PET/CT for bone dominant disease

iv. SSTR-PET/CT or SSTR-PET/MRI (if previous SSTR-positive or concern for disease progression) prior to radionuclide therapy

b. Resectable disease, post-resection includes chest CT (± contrast) and abdominal/ pelvic CT or MRI (+ contrast), if clinically indicated with imaging frequency of **ONE** of the following:

i. 12 weeks to 12 months after resection

[4]High-grade tumors are appropriate for more frequent monitoring.

ii. Every 6 to 12 months for the 1st 3 years

iii. Annually from year 4 to 10.

iv. More than 10 years, then as clinically indicated

TIP

NCCN recommends following the surveillance protocols from designated guidelines for the following hereditary endocrine neoplasia syndromes :

- Thyroid cancer guideline, use for: Multiple endocrine neoplasia, type 2 (MEN2) with genetic evaluation of inherited syndromes
- Kidney cancer, use for:
  - Hereditary paraganglioma/pheochromocytoma syndrome
  - Tuberous sclerosis complex (TSC1 and TSC2)
  - von Hippel Lindau syndrome (VHL)
- Genetic/Familial High-Risk Assessment: Breast, Ovarian, and Pancreatic, use for:
  - Neurofibromatosis type 1 (NF1)
  - Li-Fraumeni syndrome (TP53)
  - Lynch syndrome (MLH1, EPCAM/MSH2, MSH6, PMS2)
- Genetic/Familial High-Risk Assessment: Colorectal, use for:
  - Lynch syndrome (MLH1, EPCAM/MSH2, MSH6, PMS2)
  - Familial adenomatous polyposis (APC)

References: [2025 Neuroendocrine and Adrenal Tumors Version 3.2025]

Occult Primary Cancer Surveillance

Occult primary cancer surveillance imaging for long-term surveillance includes diagnostic tests based on symptomatology.

References: [30]

MRI Cervical Spine Summary of Changes

MRI Cervical Spine guideline had the following version changes from 2024 to 2025:

Table 1. 2025 MRI Cervical Spine Summary of Changes

Date	Type of Change	Summary
05/16/2025	Annual	• Added the following to keep in line with current evidence: ▪ (*__NOTE__: *X-rays are only required at initial diagnosis*.) at "Cancer, tumor, recurrence or metastasis evaluation" as increased imaging increases radiation exposure ▪ "Scoliosis" indication per ACR • Removed the following as current evidence no longer supports the indication: ▪ Combination studies as they are redundant ▪ "Limp or refusal or walk" as it in regards to a child whose age is 5 years or less and this is redundant with earlier indication ▪ NCD 220.1 as there are no clinical indications for MRI ▪ "Nerve root injury is suspected." from under "Trauma" as it was redundant ▪ "Prior MRI Cervical Spine is non-diagnostic or indeterminate" as it is too broad ▪ "Unexaminable condition" from under "Trauma" as it was redundant

MRI Cervical Spine Procedure Codes

Table 1. MRI Cervical Spine Associated Procedure Codes

CODE	DESCRIPTION
72141	Magnetic resonance (eg, proton) imaging, spinal canal and contents, cervical; without contrast material
72142	Magnetic resonance (eg, proton) imaging, spinal canal and contents, cervical; with contrast material(s)
72156	Magnetic resonance (eg, proton) imaging, spinal canal and contents, without contrast material, followed by contrast material(s) and further sequences; cervical
0649T	Quantitative magnetic resonance for analysis of tissue composition (eg, fat, iron, water content), including multiparametric data acquisition, data preparation and transmission, interpretation and report, obtained with diagnostic MRI examination of the same anatomy (eg, organ, gland, tissue, target structure); single organ

MRI Cervical Spine Definitions

Abscess is a swollen area within body tissue, containing an accumulation of pus.
Achondroplasia is a rare autosomal dominant condition characterized by impaired endochondral ossification, resulting in disproportionate short stature and abnormal growth of long bones, vertebrae, and several bones in the skull.
Ankylosing spondylosis (spondylitis) is a chronic inflammatory disease that affects the spine, sacroiliac joints and often other joints (such as the shoulder), and is marked by pain and stiffness.

Atlantoaxial refers to the anatomical and functional relationship between the first cervical vertebra (atlas, C1) and the second cervical vertebra (axis, C2), primarily responsible for the rotation of the neck.

Babinski reflex, also known as the Babinski reflex, is a neuro-pathological response in the foot that occurs when the sole of the foot is firmly stroked and the big toe moves upward or toward the top of the foot. The other toes may also fan out.

Behcet's disease is a chronic, relapsing systemic vasculitis characterized by recurrent oral and genital ulcers, uveitis, and various other systemic manifestations.

Bone scan is a nuclear imaging procedure that examines the bones in the skeleton. It can help diagnose and track bone diseases, and can also be used to monitor the progress of certain treatments.

Brachial plexopathy is a type of peripheral neuropathy that occurs when the brachial plexus is damaged. The brachial plexus is a group of nerves that run from the lower neck to the upper shoulder. These nerves send signals from the spine to the shoulder, arm and hand.

Canadian Cervical Rules (CCR) are a set of guidelines that help clinicians decide if cervical spine imaging is needed for trauma patients in the emergency department. The CCR are used to rule out cervical spine injuries in low-risk patients. An example can be found at: https://www.physio-pedia.com/Canadian_C-Spine_Rule

Cerebrospinal fluid (CSF) is a colorless liquid that is comparable to serum, is secreted from the blood into the lateral ventricles of the brain, and serves chiefly to maintain uniform pressure within the brain and spinal cord.

Cerebrospinal fluid (CSF) leak is a leak of cerebrospinal fluid that results from a hole or tear in the dura (the outermost layer of the meninges).

Cerebrospinal fluid (CSF) rhinorrhea is a condition where the fluid that surrounds the brain leaks into the nose and sinuses.

Chaddock reflex is a diagnostic reflex similar to the Babinski reflex. Chaddock's sign is present when stroking of the lateral malleolus causes extension of the great toe, indicating damage to the corticospinal tract.

Chiari malformation (Arnold-Chiari syndrome) is a congenital abnormality in which the lower surface of the cerebellum and the lower brain stem protrude into the spinal canal through the foramen magnum.

Chronic refers to 3 months or more.

Compression fracture is a break in the vertebrae and can cause the vertebrae to collapse, making them shorter.

Computed tomography (CT) is an imaging test that uses X-rays to computer analysis to generate cross sectional images of the internal structures of the body that can be displayed in multiple planes.

Conservative management is an approach to treating pain utilizing non-surgical treatments that are both passive **AND** active, for a designated time (usually 4 to 6 weeks). Passive

conservative management includes acupuncture, braces, ice/heat, injections, medications (NSAIDS, Tylenol). Active conservative management includes physical therapy (PT) program, supervised by a licensed physical therapist and/or osteopathic manipulative medicine (OMT) or chiropractic care.

C-reactive protein (CRP) is a pentameric protein synthesized by the liver, whose level rises in response to inflammation.

Demyelination is any condition that causes damage to the protective covering (myelin sheath) that surrounds nerve fibers.

Dermatome is a skin area that receives sensory innervation from a single spinal nerve dorsal root.

Diffuse idiopathic skeletal hyperostosis (DISH) is a condition that causes ligaments to become calcified and hard. It usually affects the ligament around the spine, but it can also affect other areas of the body where ligaments join to bone.

Diplegia is a type of paralysis that affects similar body parts on both sides of the body, such as both arms or both legs. It's the most common cause of paralysis in children, but can affect people of any age. Unlike other forms of paralysis, diplegia is unpredictable and may improve, worsen or change over time.

Discitis is an uncommon primary infection of the vertebral disc, specifically the nucleus pulposus, often involving the cartilaginous end plate and vertebral body, and is most commonly caused by Staphylococcus aureus.

Down syndrome is a congenital condition characterized especially by developmental delays, usually mild to moderate impairment in cognitive functioning, short stature, upward slanting eyes, a flattened nasal bridge, broad hands with short fingers and decreased muscle tone caused by trisomy of the human chromosome numbered 21.

Drop metastases are intradural extramedullary spinal metastases that arises from intracranial lesions.

Electromyogram (EMG) is a diagnostic test that measures the electrical activity of muscles at rest and during contraction using a needle electrode inserted into the muscle.

Erythrocyte sedimentation rate (ESR) is a blood test that measures the rate at which red blood cells settle at the bottom of a test tube over one hour, indicating the presence of inflammation in the body.

Fistula is an abnormal connection between two epithelialized surfaces, often involving organs such as the gut, bladder, vagina, or skin, and can result from various causes including surgery, trauma, Crohn's disease, diverticular disease, or malignancy.

Glasgow Coma Scale (GCS) is a clinical tool used to assess a patient's level of consciousness, particularly after traumatic brain injury (TBI). The GCS evaluates three aspects of responsiveness: eye opening, verbal response, and motor response. Scores range from 3 to 15, with higher scores indicating better neurological function.

Hemiparesis is muscular weakness or partial paralysis restricted to one side of the body.

Hoffmann's sign, also known as Hoffmann's reflex, is a neurological exam that involves flicking a patient's middle fingernail to see if their thumb or index finger flexes involuntarily. A positive result, also known as hyperreflexia, indicates that the nervous system is overreacting to the flick and upper motor neuron lesion or corticospinal pathway dysfunction may be present.
Human Immunodeficiency Virus (HIV) is a retrovirus that primarily infects CD4+ T lymphocytes, leading to progressive immunodeficiency and potentially resulting in AIDS.
Immunosuppression is the deliberate reduction or inhibition of the immune system's ability to respond to antigens, typically achieved through medications or therapies, to prevent organ rejection or treat autoimmune diseases, but it increases the risk of infections and malignancies.
Indeterminate findings are inconclusive or insufficient for treatment planning.
Kyphosis is the exaggerated outward curvature of the thoracic region of the spine resulting in a rounded upper back.
Leptomeningeal carcinomatosis is a severe complication of late-stage cancer characterized by the spread of malignant cells to the leptomeninges, including the pia mater, arachnoid, and subarachnoid space, leading to rapid mortality despite treatment.
Lhermitte's sign is an electric-like pain or tingling down the spine or limbs triggered by neck flexion or extension.
Magnetic resonance imaging (MRI) is a non-invasive diagnostic technique that produces computerized images of internal body tissues and is based on nuclear magnetic resonance of atoms within the body induced by the application of radio waves.
Malaise is an indefinite feeling of debility or lack of health often indicative of or accompanying the onset of an illness.
Marfan syndrome is a disorder of connective tissue inherited as a dominant trait, characterized by abnormal elongation of the long bones and often with ocular and circulatory defects.
McDonald criteria are diagnostic criteria for multiple sclerosis (MS) that require evidence of dissemination in space and time.
Metastases is the spread of a disease-producing agency (such as cancer cells) from the initial or primary site of disease to another part of the body.
Multiple sclerosis (MS) is a demyelinating disease marked by patches of hardened tissue in the brain or the spinal cord and associated especially with partial or complete paralysis and jerking muscle tremor.
Myelopathy is a disease or disorder of the spinal cord or bone marrow.
National Emergency X-ray Utilization Study (NEXUS) is a very large, federally supported, multi-center, prospective study designed to define the sensitivity, for detecting significant cervical spine injury, of criteria previously shown to have high negative predictive value. Trauma patients who **DO NOT** require cervical spine imaging require **ALL** of the following:

- Alert and stable
- **NO** altered level of consciousness

- **NO** distracting injury
- **NO** focal neruological deficit
- **NOT** intoxicated
- **NO** midline spinal tenderness

Website for more information: https://www.mdcalc.com/calc/703/nexus-criteria-c-spine-imaging#:~:text=The%20NEXUS%20Criteria%20were%20developed,safely%20avoided%20in%20appropriate%20patients.

Nerve conduction study (NCS) is a test that measures how fast an electrical impulse moves through the nerve and can identify nerve damage.

Neurocutaneous disorders are disorders that affect the brain, spinal cord, organs, skin and bones. The diseases are lifelong conditions that can cause tumors to grow in these areas.

Neuromyelitis optica spectrum disorder (NMOSD) is an inflammatory disorder of the central nervous system characterized by severe, immune-mediated demyelination and axonal damage predominantly targeting optic nerves and the spinal cord.

Non-diagnostic is a result that does not lead to a confirmed diagnosis.

Obtunded is mild to moderate alertness reduction (altered level of consciousness) with decreased interest in the environment and slower than normal reactivity to stimulation.

Optic neuritis is inflammation of the optic nerve.

Orthostatic headache is a headache while upright, that is relieved by lying down.

Ossification of the Posterior Longitudinal Ligament (OPLL) is a condition where the ligament, that runs along the back of the bone (vertebral body) and disc, hardens into bone.

Osteomyelitis is an infectious, inflammatory disease of bone. It is often painful, bacterial in origin and may result in the death of bone tissue.

Otorrhea is drainage of liquid from the ear.

Pediatric approximate ages are defined by the US Department of Health (USDH), the Food and Drug Administration (FDA), and the American Academy of Pediatrics (AAP) as the following:

1. Infancy, between birth and 2 years of age
2. Childhood, from 2 to 12 years of age
3. Adolescence, from 12 to 21 years of age, further defined by the AAP into:
    a. Early (ages 11–14 years)
    b. Middle (ages 15–17 years),
    c. Late (ages 18–21 years)
    d. Older ages may be appropriate for children with special healthcare needs.

Radiculopathy is an irritation of or injury to a spinal nerve root (as from being compressed) that typically causes pain, numbness or muscle weakness in the part of the body which is supplied with nerves from that root.
Recurrence is a new occurrence of something that happened or appeared before.
Rheumatoid arthritis (RA) is an autoimmune disease (usually chronic) that is characterized by pain, stiffness, inflammation, swelling and sometimes destruction of the joints.
Rhinorrhea is excessive mucous drainage from the nose.
Sarcoidosis is a chronic disease of unknown cause, that is characterized by the formation of nodules, especially in the lymph nodes, lungs, bones and skin.
Scoliosis is a lateral curvature of the spine of at least 10° with vertebral rotation, presenting as a three-dimensional spinal deformity.
Short segment is a curve in the spinal column that is less than 6 segments.
Spinal dysraphism is a congenital abnormality that results in an abnormal structure in the spine, including the bony structure, the spinal cord and the nerve roots.
Spondylarthropathy is an inflammatory arthritis affecting the spine.
Spontaneous intracranial hypotension (SIH) is a condition characterized by cerebrospinal fluid (CSF) hypovolemia due to a noniatrogenic spinal CSF leak, often presenting with orthostatic headache.
Staging in cancer is the process of determining how much cancer is within the body (tumor size) and if it has metastasized (spread).
Stenosis is a narrowing or constriction of the diameter of a bodily passage or orifice.
Stigmata is a mental or physical mark that indicates a disease or defect. It can also refer to a specific diagnostic sign of a disease.
Subluxation is an incomplete or partial dislocation of a joint or organ.
Surveillance is ongoing systematic collection and analysis of data and the provision of information which leads to action being taken to prevent and control a disease.
Syringomyelia is a chronic progressive disease of the spinal cord associated with sensory disturbances, muscle atrophy and spasticity.
Syrinx is a cerebrospinal fluid-filled cyst which collects inside of the spinal cord or brain stem. A syrinx in the spinal cord is called syringomyelia, and a syrinx in the brain stem is called syringobulbia.
Tethered spinal cord syndrome (TSCS) is a disorder of the nervous system caused by tissue that attaches itself to the spinal cord and limits the movement of the spinal cord.
Transverse myelitis is a neurological disorder that causes inflammation on both sides of a section of the spinal cord. It can damage the myelin, the insulating material that covers nerve cell fibers. This prevents the spinal cord nerves from sending messages throughout the body.
Trigeminal neuralgia is an intense paroxysmal neuralgia (pain radiating along the course of one or more nerves usually without demonstrable changes in the nerve structure) involving one or more branches of the trigeminal nerve.

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Disclaimer section

Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

Payment

The use of these clinical guidelines does not provide authorization, certification, explanation of benefits, or guarantee of payment; nor do the guidelines substitute for, or constitute, medical advice. Federal and State law, as well as member benefit contract language (including definitions and specific contract provisions/exclusions) take precedence over clinical guidelines and must be considered first when determining eligibility for coverage. All final determinations on coverage and

payment are the responsibility of the health plan. Nothing contained within this document can be interpreted to mean otherwise.

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National and Local Coverage Determination (NCD and LCD)

NOTICE
To ensure appropriate review occurs to the most current NCD and/or LCD, always defer to https://www.cms.gov/medicare-coverage-database/search.aspx.

Background

National Coverage Determinations (NCD) and Local Coverage Determinations (LCD) are payment policy documents outlined by the Centers for Medicare and Medicaid Services (CMS) and the government's delegated Medicare Audit Contractors (MACs) that operate regionally in jurisdictions.
CMS introduced variation between different jurisdictions/Medicare Audit Contractors (MACs) and their associated covered code lists with the transition to ICD 10. The variation resulted in jurisdictions independently defining how codes are applied for exclusions, limitations, groupings, ranges, etc. for the medical necessity indications outlined in the NCD and LCD. Due to this variation, there is an inconsistent use/application of codes and coverage determinations across the United States between the different MACs.
In addition, **WITHOUT** notice, CMS can change the codes that indicate medical necessity and the format of the coverage determinations/associated documents (eg, Articles). This is an additional challenge for organizations to keep up with ongoing, unplanned changes in covered codes and medical necessity indications.

Medical Necessity Codes

Due to the variation in code application between jurisdictions/MACs and that updates can happen without notification, HealthHelp is not able to guarantee full accuracy of the codes listed for any Coverage Determination, and advises that prior to use, the associated Coverage Determination

Articles are reviewed to ensure applicability to HealthHelp's programs and any associated NCDs and LCDs.

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11248 11249 11253 11282 11325 11328 11333 11349 11350 11351 11352 11354 11355 11356 11358 11359 11360 11361 11362 11365 11366 11367 11368 11369 11370 11374 11375 11394 11395 11396 11565