



Colorado Medicaid Benefit Coverage Standard

MAGNETIC RESONANCE IMAGING

Brief Coverage Statement

Magnetic resonance imaging (MRI), also called nuclear magnetic resonance imaging, is a medical imaging technique that uses a magnetic field and radio waves to see detailed internal structure and limited function of the body. An MRI provides greater contrast between the different soft tissues of the body than a computed tomography (CT). This policy addresses anatomical diagnostic uses only.

Note: This policy applies to outpatient providers only and is not intended to address coverage for inpatient hospital stays, hospital observation, or emergency department care.

Services Addressed in Other Benefit Coverage Standards

1. Radiography
2. Cardiac Stress Testing
3. Echocardiography
4. CAT Scans
5. PET Scans
6. Ultrasounds
7. Angiography
8. Bone Mass Measurement
9. Low Back Pain Imaging

Eligible Providers

Providers must be enrolled with Colorado Medicaid. Provider sites must maintain a certification for Medicare accreditation through a Medicare approved accreditation agency, and provide proof of Medicare certification on the Medicaid provider enrollment forms. Eligible sites of service must be certified by the Colorado Department of Public Health and Environment and must provide proof of Medicare certification on the Medicaid provider enrollment forms.

- All providers must be trained in the principles of radiation physics and radiation safety.

RENDERING PROVIDERS

1. Radiologist
2. Specialty Physicians with specialized, certified, and recognized training in Magnetic Resonance Imaging
3. Medical Physicist
4. ARRT Certified Radiologic Technologist



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Note: The rendering provider is the practitioner who can render the service within the scope of their practice, certifications, and licensure. The rendering provider may or may not be the rendering provider on the claim form, as not all provider types are able to enroll as a Colorado Medicaid provider.

Eligible Place of Service

1. Outpatient Hospitals
2. Free standing Radiology Centers
3. Ambulatory Surgery Center
4. Physician Office
5. Mobile Radiology Unit (in rural areas)

Eligible Clients

All Colorado Medicaid-enrolled clients, who have documented medical indications listed within the Covered Services and Limitations section.

Covered Services and Limitations

MRI services are covered when ordered by a physician to diagnose or guide the course of treatment for a specific condition based on the client's signs, symptoms, and relevant history, including known or provisional diagnoses. Coverage is limited to MRI units that have received FDA approval. Such units must be operated within the parameters specified by the approval.

Specific clinical indications for coverage include:

1. HEAD
 - 1.1. With signs and symptoms or suspicion of:
 - 1.1.1. Mass or lesion of the brain or pituitary
 - 1.1.2. Complicated seizure syndromes, particularly involving a temporal lobe
 - 1.1.3. CNS infections
 - 1.1.4. Vasculitis
 - 1.1.5. Vascular malformations, including arterial or venous/dural sinus abnormalities
 - 1.1.6. Ischemic disease and infarction
 - 1.1.7. Aneurysm
 - 1.1.8. Brain maturation abnormalities
 - 1.1.9. Hydrocephalus
 - 1.1.10. Multiple sclerosis
 - 1.1.11. Sensorineural lesion (e.g. hearing loss)



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- 1.1.12. Orbital lesions
- 1.1.13. Any cranial nerve abnormality
- 1.1.14. Evaluation of the fetus in utero for congenital anomalies/CNS
- 1.2. Limitations: CT is the preferred test for:
 - 1.2.1. Acute intra-cranial hemorrhage
 - 1.2.2. Recent head trauma
 - 1.2.3. Skull base and facial bone assessment, including detection of bone fractures as well as assessment of the temporal bones for conductive hearing loss
 - 1.2.4. Calcified lesions
- 2. ORBIT/FACE/NECK:
 - 2.1. For evaluation of:
 - 2.1.1. Congenital anomalies
 - 2.1.2. Glottic lesion (see Limitations below)
 - 2.1.3. Infectious or inflammatory process, such as abscess, cellulitis, osteomyelitis (see Limitations below)
 - 2.1.4. Persistent, unexplained lymphadenopathy
 - 2.1.5. Recurrent epistaxis or nasal airway obstruction or polyposis (see Limitations below)
 - 2.1.6. Palpable mass/lesion:
 - 2.1.6.1. Neck masses in the pediatric population (such as branchial cleft cyst, thyroglossal duct);
 - 2.1.6.2. Cyst and lymphangioma;
 - 2.1.6.3. Obstructive thyroid nodule or goiter (see Limitations below)
 - 2.1.7. Orbital indications of underlying pathology, such as: extraocular myopathy; non-conjugate eye movements; nystagmus; optic neuritis; orbital pseudotumor; papilledema; strabismus; unexplained visual loss
 - 2.1.8. Persistent hoarseness (see Limitations below)
 - 2.1.9. Stridor (see Limitations below)
 - 2.1.10. Tumor (primary neoplasm or metastatic disease) of the structures of the face, throat, eye, sinuses, thyroid/parathyroid
 - 2.1.11. Trauma to the soft tissues of the neck, orbit, face (See Limitations below)
 - 2.1.12. Unexplained vocal cord paralysis (see Limitations below)
 - 2.1.13. Brachial plexus imaging (a network of nerves in the neck)
 - 2.2. Limitations: CT is the preferred test for:
 - 2.2.1. Traumatic injury
 - 2.2.2. Calcified lesions
 - 2.2.3. Localized infection (e.g. orbital extension of complicated sinusitis)
 - 2.2.4. Assessment of bony structures



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- 2.2.5. Foreign body evaluation (after initial radiographic evaluation)
 - 2.2.6. Evaluation of glottic lesion should be preceded by endoscopy
 - 2.2.7. Evaluation of infectious process only when unresponsive to treatment
 - 2.2.8. Evaluation of nasal problems only when refractory to medical therapy
 - 2.2.9. Evaluation of thyroid nodule or enlargement only:
 - 2.2.9.1. Following thyroid ultrasound; and
 - 2.2.9.2. When mass effects the upper airway or esophagus; and
 - 2.2.9.3. For pre-operative evaluation
 - 2.2.10. Endoscopic examination or prior imaging of neck and upper chest must precede MRI for unexplained persistent hoarseness or vocal cord paralysis
 - 2.2.11. Neck (soft tissue) radiographs and ENT evaluation must precede MRI for chronic stridor
3. ABDOMEN
- 3.1. Magnetic Resonance Cholangiopancreatography (MRCP) is used to evaluate the biliary, hepatic and pancreatic ductal systems non-invasively
 - 3.2. Signs and symptoms or suspicion of anatomic disruption or neoplasia in the liver, urogenital system and retroperitoneum, adrenals, and pelvic organs (See Limitation below)
 - 3.3. Limitations:
 - 3.3.1. Abdominal MRI studies are only allowed for further evaluation of indeterminate or questionable findings identified on more standard imaging tests such as ultrasound and CT
4. CHEST
- 4.1. Cancer staging (See Limitations).
 - 4.2. Diagnosis of abnormalities of the large vessels such as aneurysms and dissection
 - 4.3. Cardiac imaging
 - 4.3.1. Limitations and Non-Covered Services
 - 4.3.1.1. When the purpose of a study is imaging of the heart, including the coronary arteries, a chest CT and a dedicated cardiac/coronary artery CT cannot both be ordered
 - 4.3.1.2. Chest/cardiac CT is not a suitable imaging modality for morbidly obese patients
 - 4.3.1.3. Cardiac CT is not covered for quantitative evaluation of coronary artery calcification
 - 4.3.1.4. Cardiac PET scans are not covered. See PET Policy Statement. Cardiac MRI is not covered without prior authorization
 - 4.4. Limitations:



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- 4.4.1. MRI is only covered for imaging of lung lesions if a CT has not given adequate information. Lung lesions are usually better imaged with CT
 - 4.4.2. MRI may be used to supplement the information from a CT after a CT is done
5. BREAST
 - 5.1. Diagnostic evaluation of Breast Carcinoma (See Limitations below)
 - 5.2. Detection of Breast Implant Rupture
 - 5.3. Limitations:
 - 5.3.1. Breast MRI may be indicated when other imaging examinations, such as ultrasound and mammography, and physical examination are inconclusive for the presence of breast cancer, and biopsy could not be performed (e.g., possible distortion on only one mammographic view without a sonographic correlate)
 - 5.3.2. Breast MRI is not covered to assess suspicious breast lesions in order to avoid a biopsy
 - 5.3.3. Breast MRI is not covered for differentiating cysts from solid lesions. Ultrasound is used for this
6. PELVIS (INCLUDING URINARY BLADDER, LOWER RETROPERITONEUM, ILIOFEMORAL LYMPH NODE; SACRUM AND ILIAC BONES; SACROILIAC (SI) JOINT; PROSTATE GLAND AND SEMINAL VESICLES IN MALES; UTERUS, CERVIX, VAGINA AND OVARIES IN FEMALES)
 - 6.1. Pelvic MRI is used as a follow-up evaluation after completion of one of the other tests, such as Ultrasound or CT (See Limitations below)
 - 6.2. Evaluation of pelvic (such as Ovarian) masses to further clarify equivocal findings from ultrasound or CT
 - 6.3. Abdominal/Pelvic MRI is used in the evaluation of abdominal pain in the pregnant client
 - 6.4. Limitations:
 - 6.4.1. MRI should be used to further clarify equivocal findings from ultrasound or CT of gynecologic abnormalities
 - 6.4.2. Urinary bladder assessment (Use transabdominal pelvic sonography to assess post-void residual urine volume)
 - 6.4.3. Intestinal evaluation (Use endoscopy and barium examinations)
 - 6.4.4. Lower urinary tract assessment (Use cystoscopy)
7. SPINE (CERVICAL, THORACIC, LUMBAR) WITH SIGNS AND SYMPTOMS, OR SUSPICION OF:
 - 7.1. Tumors of spinal cord
 - 7.2. Suspected spinal infections
 - 7.3. Syringomyelia/syringohydromyelia
 - 7.4. Cord infarction
 - 7.5. Vertebral fractures



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- 7.6. Radiation myelitis
 - 7.7. Developmental abnormalities
 - 7.8. Spinal cord compression
 - 7.9. Radiculopathy
 - 7.10. Demyelination or inflammation
 - 7.11. Primary and metastatic neoplasm of the spine
 - 7.12. Discitis and vertebral osteomyelitis
 - 7.13. Spinal cord trauma
 - 7.14. Spinal stenosis
 - 7.15. Limitations:
 - 7.15.1. MRI may be used only after an attempt at conservative treatment
 - 7.15.2. CT scanning should be used for the following disorders/situations:
 - 7.15.2.1. Fractures:
 - 7.15.2.1.1. MRI is preferred for osteoporotic compression fractures and to assess for canal/cord impingement in trauma. Exceptions: The patient should be assessed for potential permanent loss of function before moving in a conservative manner.
 - 7.15.2.2. Arthritis:
 - 7.15.2.2.1. Arthritides, including spondylosis evaluation requires MRI to evaluate degree of canal and foraminal compromise
 - 7.15.2.3. Bone neoplasms:
 - 7.15.2.3.1. MRI is required in spinal neoplasm to assess for spinal canal compromise
 - 7.15.2.4. Spinal CT myelography.
 - 7.15.2.5. Congenital vertebral defects in the pediatric population
 - 7.15.2.5.1. MRI is preferred for pediatric congenital anomalies to assess spinal cord and to eliminate radiation exposure
 - 7.15.3. For acute low back pain, symptoms will improve or resolve during a trial of conservative treatment and diagnostic imaging is not covered
8. UPPER EXTREMITY (JOINT & NON-JOINT)
- 8.1. Evaluation of most musculoskeletal conditions (See Limitations below)
 - 8.2. Evaluation of internal derangements of the joints and related tendonitis, ligamentous and cartilaginous structures
 - 8.3. Evaluation of possible osteomyelitis
 - 8.4. Evaluation of musculoskeletal tumors
 - 8.5. Evaluation of shoulder ligament, tendon, tissue damage (e.g. Rotator Cuff)
 - 8.6. Pre and post operative evaluation when ordered by Orthopedic or Sports Medicine specialist



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8.7. Limitations:

8.7.1. Conventional radiographs of the upper extremity must be done before using MRI.

8.7.2. For evaluation of fractures, use CT

8.7.2.1. MRI is preferred for insufficiency/stress fractures and nondisplaced medullary fractures

9. LOWER EXTREMITY (JOINT & NON-JOINT)

9.1. Evaluation of soft tissue abnormalities and to evaluate possible osteomyelitis (See Limitations below)

9.2. An MRI may be requested for each major area of the right and left lower extremities: hip, thigh, knee, lower leg (calf), ankle, foot (includes toes)

9.3. For imaging both hips, a MRI of the pelvis may be sufficient

9.4. Limitations:

9.4.1. MRI may be used only after failed conservative treatment

9.4.2. Conventional radiographs must be used before using MRI

9.4.3. CT is the preferred test for evaluation of displaced fractures and subluxations

10. OTHER LIMITATIONS

10.1. Diagnostic imaging is indicated only when the results are expected to determine or change the course of treatment for the patient

10.2. Multiple simultaneous MRI, or MRI scheduled simultaneously with other advanced imaging tests (e.g. CT, MRA), are only appropriate for:

10.2.1. Follow-up of oncology patients who have had operative procedures on multiple anatomic sites

10.2.2. Patients in whom the suspected anatomic abnormality might extend into multiple regions

10.3. Duplicative services, such as concurrent requests for upper extremity CT and MRI, are subject to review for evaluation of medical necessity

Prior Authorization Requirements

1. All outpatient magnetic resonance imaging (MRI) tests require prior authorization. Emergency room and inpatient imaging procedures do not require prior authorization.
2. A prior authorization request will not be approved if other modalities are generally accepted as first line for the condition

Non-Covered Services and Contraindications

NON-COVERED SERVICES

1. Mobile MRIs are non-covered if there is an MRI available within 50 miles of the client's place of residence



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2. Imaging of cortical bone and calcifications, and procedures involving spatial resolution of bone and calcifications are not covered
3. Imaging of the same anatomic area to address patient positional changes, additional sequences, or equipment failure is not allowed. These variations or extra sequences are included within the original imaging authorization request
4. An MRI of the orbit, face and neck is not allowed for imaging the inner auditory canals.
5. Duplicate test requests for two or more MRI studies of the head (for example, bilateral head MRIs for right and left orbital evaluation) or neck are not allowed
6. MRI is not covered as the primary imaging modality for the following listed conditions. For these conditions MRI should be performed only to clarify equivocal findings on ultrasound or CT examinations
 - 6.1. Gynecologic abnormalities
 - 6.2. Urinary bladder assessment
 - 6.3. Intestinal symptoms/conditions
 - 6.4. Lower urinary tract assessment

CONTRAINDICATIONS:

1. MRI is contraindicated and not covered for patients with non-compatible cardiac pacemakers or with metallic clips on vascular aneurysms, certain neurostimulators, cochlear implants, and other ferromagnetic bodies or devices. Compatibility documentation is required prior to scanning
2. Patients who have a history of claustrophobia may be unsuitable candidates for MRI procedures

References

42 CFR 440.230 - Amount, scope, and duration
42 CFR 493 – Laboratory Requirements
CRS 25.5-5-102(2) and 25.5-5-202(3) - Amount, scope, and duration
10 CCR 2505-10 § 8.600 – Laboratory and X-Ray

ACR- ASNR Practice Guidelines for the performance of the Head and Neck MRI 2007, Res 6
ACR Practice Guideline for Performing and Interpreting MRI Revised 2006 (Res. 15 16g,34,35,36)*

ACR PRACTICE GUIDELINE FOR THE PERFORMANCE OF MAGNETIC RESONANCE IMAGING (MRI) OF THE ABDOMEN (Excluding the Liver) Revised 2010 (Res. 16)*

ACR PRACTICE GUIDELINE FOR THE PERFORMANCE OF MAGNETIC RESONANCE IMAGING (MRI) OF THE LIVER Revised 2010 (Res. 14)*

ACR–NASCI–SPR PRACTICE GUIDELINE FOR THE PERFORMANCE OF PEDIATRIC AND ADULT BODY MAGNETIC RESONANCE ANGIOGRAPHY (MRA) Revised 2006 (Res. 8,35)*

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ACR PRACTICE GUIDELINE FOR THE PERFORMANCE OF MAGNETIC RESONANCE IMAGING (MRI) OF THE SOFT-TISSUE COMPONENTS OF THE PELVIS Revised 2010 (Res. 15)*

ACR–ASNR PRACTICE GUIDELINE FOR THE PERFORMANCE AND INTERPRETATION OF MAGNETIC RESONANCE IMAGING (MRI) OF THE BRAIN Revised 2008 (Res. 21)*

ACR–ASNR–SNIS–SPR PRACTICE GUIDELINE FOR THE PERFORMANCE OF PEDIATRIC AND ADULT CERVICOCEREBRAL MAGNETIC RESONANCE ANGIOGRAPHY (MRA) Revised 2010 (Res. 21)*

ACR–ASNR PRACTICE GUIDELINE FOR THE PERFORMANCE OF MAGNETIC RESONANCE IMAGING (MRI) OF THE ADULT SPINE Revised 2006 (Res. 8,35)*

http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/breast/mri_breast.aspx

http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/dx/mri_performing_interpreting.aspx (American College of Radiology)

<http://www.cms.gov/manuals/downloads/clm104c13.pdf> (CMS Manual)

http://www.cms.gov/mcd/viewncd.asp?ncd_id=220.6&ncd_version=3&basket=ncd%3A220%2E6%3A3%3APET+Scans

www.cms.gov/mcd/overview.asp (CMS National Coverage Determinations)

http://www.americanimaging.net/education/AIMGuidelines.pdf?utm_source=CorporateSite&utm_medium=AcceptButton&utm_content=GuidelinesPDF (American Imaging Management)

Roudsari, B; Jarvik, J. *Lumbar Spine MRI for Low Back Pain: Indications and Yield.* AJR:195, September 2010; 195:550-559



Medicaid Director Signature



Date