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Subject: Cervical Spine Surgery

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DESCRIPTION:

Degenerative cervical spine disorders, while often benign and episodic in nature, can become debilitating, resulting in axial pain and neurological damage to the spinal cord. Compression on the nerve root and / or spinal cord may be caused by (1) a herniated disc with or without extrusion of disc fragments and/or (2) degenerative cervical spondylosis.

Spine surgery is a complex area of medicine. Operative treatment is indicated only when the natural history of an operatively treatable problem is better than the natural history of the problem without operative treatment. Choice of surgical approach is based on anatomy, the candidate’s pathology, and the surgeon's experience and preference. All operative interventions must be based on a positive correlation with clinical findings, the natural history of the disease, the clinical course, and diagnostic tests or imaging results.

Anterior Approaches

Anterior surgical approaches to cervical spine decompression emerged in the 1950s in response to technical limitations experienced with posterior approaches, including restricted access to and exposure of midline bony spurs and disc fragments.

The first reports in the literature describe anterior cervical discectomy combined with a spinal fusion procedure (ACDF). Fusion was added to address concerns about potential for loss of spinal stability and disc space height, leading to late postoperative complications such as kyphosis and radicular pain.

Anterior cervical fusion (ACF) accounted for approximately 80% of cervical spine procedures performed in the United States between 2002 and 2009, while posterior cervical fusion (PCF) accounted for 8.5% of these procedures.

Anterior cervical discectomy and fusion (ACDF) is the removal of all or part of a herniated or ruptured disc, or spondolytic bony spur to alleviate pressure on the nerve roots or on the spinal cord in those with symptomatic radiculopathy. Discectomy is most often combined with fusion to stabilize the spine.

Cervical artificial disc replacement involves the insertion of a prosthetic device into the cervical intervertebral space with the goal of maintaining physiologic motion at the treated cervical segment. The use of artificial discs in motion-preserving technology is based on the surgeon's preference and training. Only FDA-approved artificial discs are appropriate.

Posterior Approaches

Laminectomy is the removal of the bone between the spinal process and facet pedicle junction to expose the neural elements of the spine. This allows for the inspection of the spinal canal, identification and removal of pathological tissue, and decompression of the cord and roots.

Laminoplasty is the opening of the lamina to enlarge the spinal canal. There are several laminoplasty techniques; all aim to alleviate cord compression by reconstructing the spinal canal. Laminoplasty is commonly performed to decompress the spinal cord in those with multilevel degenerative spinal stenosis and neutral or lordotic alignment.

Laminoforaminotomy (also known as posterior discectomy) is the creation of a small window in the lamina to facilitate removal of arthritic bone spurs and herniated disc material pressing on the nerve root as it exits through the foramen. The procedure widens the opening of the foramen so that the nerve exits without being compressed.

POSITION STATEMENT:

NOTE: For procedures that include fusion, it is required that the surgical candidate refrain from smoking/nicotine for at least six weeks prior to surgery and during the time of healing.

Anterior Cervical Decompression with Fusion (ACDF) (Single Level)

Anterior cervical decompression with fusion at a single level **meets the definition of medical necessity** when:

- There are positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with spinal cord compression (immediate surgical evaluation is indicated, no conservative treatment required); symptoms may include:
    - Upper extremity weakness
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Disturbance with coordination
    - Hyperreflexia
    - Hoffmann sign
    - Positive Babinski sign and/or clonus

OR

- There is progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on MRI or CT imaging (immediate surgical evaluation is indicated, no conservative treatment required)

OR

- When **ALL** of the following are met:
    - Cervical radiculopathy or myelopathy from ruptured disc, spondylosis, spinal instability, or deformity
    - Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to conservative treatment
    - Documented failure of at least 6 consecutive weeks of any 2 of the following physician-directed conservative treatments:
        - Analgesics, steroids, and/or NSAIDs
        - Structured program of physical therapy
        - Structured home exercise program prescribed by a physical therapist, chiropractic provider, or physician
        - Epidural steroid injections and/or selective nerve root block
    - Imaging studies (MRI or CT with or without myelography) confirm the presence of spinal cord or spinal nerve root compression (disc herniation or foraminal stenosis) at the level corresponding with the clinical findings

OR

- As first-line treatment without conservative treatment in the following clinical cases:
    - As outlined above for myelopathy or progressive neurological deficit scenarios
    - Significant spinal cord or nerve root compression due to tumor, infection or trauma
    - Fracture or instability on radiographic films measuring:
        - Sagittal plane angulation of greater than 11 degrees at a single interspace, or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction, **OR**
        - Subluxation at the (C1) level of the atlantodental interval of more than 3mm in an adult and 5mm in a child

ACDF at a single level **does not meet the definition of medical necessity:**

- In asymptomatic or mildly symptomatic cases of cervical spinal stenosis
- In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT (Refer to Cervical Fusion for Treatment of Axial Neck Pain section)

Anterior Cervical Decompression with Fusion (ACDF) (Multiple Level)

Anterior cervical decompression with fusion at multiple levels **meets the definition of medical necessity** when:

- There are positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening spinal cord compression (immediate surgical evaluation is indicated; no conservative treatment required); symptoms may include:

- Upper extremity weakness
- Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
- Disturbance with coordination
- Hyperreflexia
- Hoffman sign
- Positive Babinski sign and/or clonus

OR

- Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on MRI or CT scan images (immediate surgical evaluation is indicated; no conservative treatment required)

OR

- When **ALL** of the following criteria are met:
    - Cervical radiculopathy or myelopathy due to ruptured disc, spondylosis, spinal instability, or deformity
    - Persistent or recurrent pain/symptoms with functional limitations that are unresponsive to conservative treatment
    - Documented failure of at least 6 consecutive weeks of any 2 of the following physician-directed conservative treatments:
        - Analgesics, steroids, and/or NSAIDs
        - Structured program of physical therapy
        - Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
        - Epidural steroid injections and/or selective nerve root block
    - Imaging studies (MRI or CT with or without myelography) confirm the presence of spinal cord or spinal nerve root compression (disc herniation or foraminal stenosis) at multiple levels corresponding with the clinical findings

OR

- As first-line treatment without conservative treatment in the following clinical cases:
    - As outlined above for myelopathy or progressive neurological deficit scenarios
    - Significant spinal cord or nerve root compression due to tumor, infection or trauma
    - Fracture or instability on radiographic films measuring:
        - Sagittal plane angulation of greater than 11 degrees at a single interspace, or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction, **OR**
        - Subluxation at the (C1) level of the atlantodental interval of more than 3mm in an adult and 5mm in a child

ACDF at multiple levels **does not meet the definition of medical necessity**:

- In asymptomatic or mildly symptomatic cases of cervical spinal stenosis
- In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT (Refer to Cervical Fusion for Treatment of Axial Neck Pain section)

Posterior Cervical Decompression with Fusion (Single Level)

Posterior cervical decompression with fusion at a single level **meets the definition of medical necessity** when:

- There are positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening spinal cord compression (immediate surgical evaluation is indicated, no conservative treatment required); symptoms may include:
    - Upper extremity weakness
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Disturbance with coordination
    - Hyperreflexia
    - Hoffmann sign
    - Positive Babinski sign and/or clonus

OR

- There is progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on MRI or CT scan images (immediate surgical evaluation is indicated, no conservative treatment required)

OR

- When **ALL** of the following are met:
    - Cervical radiculopathy or myelopathy from ruptured disc, spondylosis, spinal instability, or deformity
    - Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to at least 6 weeks of conservative treatment
    - Documented failure of at least 6 consecutive weeks of any 2 of the following physician-directed treatments:
        - Analgesics, steroids, and/or NSAIDs
        - Structured program of physical therapy
        - Structured home exercise program prescribed by a physical therapist, chiropractic provider, or physician
        - Epidural steroid injections and/or selective nerve root block
    - Imaging studies (MRI or CT with or without myelography) confirm the presence of spinal cord or spinal nerve root compression (disc herniation or foraminal stenosis) at a single level corresponding with the clinical findings

OR

- As first-line treatment without conservative treatment in the following clinical cases:

- As outlined above for myelopathy or progressive neurological deficit scenarios
- Significant spinal cord or nerve root compression due to tumor, infection or trauma
- Fracture or instability on radiographic films measuring:
    - Sagittal plane angulation of greater than 11 degrees at a single interspace, or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction, **OR**
    - Subluxation at the (C1) level of the atlantodental interval of more than 3mm in an adult and 5mm in a child

Posterior cervical decompression with fusion at a single level **does not meet the definition of medical necessity** for the following:

- In asymptomatic or mildly symptomatic cases of cervical spinal stenosis
- In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT (Refer to Cervical Fusion for Treatment of Axial Neck Pain section)

Posterior Cervical Decompression with Fusion (Multiple Levels)

Posterior cervical decompression with fusion at multiple levels **meets the definition of medical necessity** when:

- Positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening spinal cord compression (immediate surgical evaluation is indicated, no conservative treatment required); symptoms may include:
    - Upper extremity weakness
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Disturbance with coordination
    - Hyperreflexia
    - Hoffmann sign
    - Positive Babinski sign and/or clonus

OR

- Progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on MRI or CT scan images (immediate surgical evaluation is indicated, no conservative treatment required)

OR

- When **ALL** of the following criteria are met:
    - Cervical radiculopathy or myelopathy from ruptured disc, spondylosis, spinal instability, or deformity
    - Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to conservative treatment
    - Documented failure of at least 6 consecutive weeks of any 2 of the following physician-directed conservative treatments:

- Analgesics, steroids, and/or NSAIDs
- Structured program of physical therapy
- Structured home exercise program prescribed by a physical therapist, chiropractic provider or physician
- Epidural steroid injections and/or selective nerve root block

- Imaging studies (MRI or CT with or without myelography) indicate significant spinal cord or spinal nerve root compression at multiple levels corresponding with the clinical findings

OR

- As first-line treatment without conservative treatment in the following clinical cases:
  - As outlined above for myelopathy or progressive neurological deficit scenarios
  - Significant spinal cord or nerve root compression due to tumor, infection or trauma
  - Fracture or instability on radiographic films measuring:
    - Sagittal plane angulation of greater than 11 degrees at a single interspace,or greater than 3.5mm anterior subluxation in association with radicular/cord dysfunction, **OR**
    - Subluxation at the (C1) level of the atlantodental interval of more than 3mm in an adult and 5mm in a child

Posterior cervical decompression with fusion at a multiple levels **does not meet the definition of medical necessity** for the following:

- In asymptomatic or mildly symptomatic cases of cervical spinal stenosis.
- In cases of neck pain alone, without neurological deficits, and no evidence of significant spinal nerve root or cord compression on MRI or CT (Refer to Cervical Fusion for Treatment of Axial Neck Pain section)

Cervical Fusion for Treatment of Axial Neck Pain

Cervical fusion for the treatment of axial neck pain **meets the definition of medical necessity** when **ALL** of the following are met:

- There is non-radicular cervical pain
- Improvement of symptoms has failed or plateaued
- Residual symptoms of pain and functional disability are unacceptable at the end of 6 to 12 consecutive months of appropriate, active treatment, or at the end of longer duration of non-operative treatment for debilitated individuals with complex problems
- All pain generators are adequately defined and treated
- All physical medicine and manual therapy interventions are completed
- X-ray, MRI, or CT demonstrates disc pathology or spinal instability
- Spine pathology is limited to one or two levels unless other complicating factors are involved
- Psychosocial evaluation for confounding issues, if any, have been addressed

Three-level or greater cervical fusion for non-radicular pain **does not meet the definition of medical necessity.**

Posterior Cervical Decompression

Posterior cervical nerve root decompression **meets the definition of medical necessity** when:

- There are positive clinical findings of myelopathy with evidence of progressive neurologic deficits consistent with worsening spinal cord compression (immediate surgical evaluation is indicated, no conservative treatment required); symptoms may include:
    - Upper extremity weakness
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Disturbance with coordination
    - Hyperreflexia
    - Hoffmann sign
    - Positive Babinski sign and/or clonus

OR

- There is progressive neurological deficit (motor deficit, bowel or bladder dysfunction) with corresponding evidence of spinal cord or nerve root compression on MRI or CT imaging (immediate surgical evaluation is indicated, no conservative treatment required)

OR

- When **ALL** of the following are met:
    - Cervical radiculopathy from ruptured disc, spondylosis, or deformity
    - Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to appropriate conservative treatment
    - Documented failure of at least 6 consecutive weeks of any 2 of the following physician-directed conservative treatments:
        - Analgesics, steroids, and/or NSAIDs
        - Structured program of physical therapy
        - Structured home exercise program prescribed by a physical therapist, chiropractic provider, or physician
        - Epidural steroid injections and/or facet injections/selective nerve root block
    - Imaging studies (MRI or CT with or without myelography) confirm the presence of spinal cord or spinal nerve root compression at the level(s) corresponding with the clinical findings

OR

- As first-line treatment without conservative care in the following clinical cases:
    - As outlined above for myelopathy or progressive neurological deficit scenarios
    - Significant spinal cord or nerve root compression due to tumor, infection or trauma

Posterior cervical decompression **does not meet the definition of medical necessity** for the following:

- In asymptomatic or mildly symptomatic cases
- In cases of neck pain alone, without neurological deficits, and abnormal imaging findings (Refer to Cervical Fusion for Treatment of Axial Neck Pain section)
- In those with kyphosis or those at risk for development of post-operative kyphosis

Cervical Artificial Disc (**Single or Two Level**)

Artificial cervical disc replacement **at one or two levels meets the definition of medical necessity** when **ALL** of the following are met:

- Skeletally mature
- Intractable radiculopathy caused by one or two level disease (either herniated disc or spondolytic osteophyte) located at C3-C7
- Persistent or recurrent symptoms/pain with functional limitations that are unresponsive to appropriate conservative treatment
- Documented failure of at least 6 consecutive weeks of any 2 of the following physician-directed conservative treatments:
    - Analgesics, steroids, and/or NSAIDs
    - Structured program of physical therapy
    - Structured home exercise program prescribed by a physical therapist, chiropractic provider, or physician
    - Epidural steroid injections and/or facet injections/selective nerve root block
- Imaging studies confirm the presence of compression at the level(s) corresponding with the clinical findings (MRI or CT)
- Use of FDA-approved prosthetic intervertebral discs

Artificial cervical disc replacement **does not meet the definition of medical necessity** for any of the following:

- At more than 2 levels
- Symptomatic multiple level disease affecting 3 or more levels
- Infection (at site of implantation or systemic)
- Osteoporosis or osteopenia
- Instability:
    - Translation greater than 3mm difference between lateral flexion-extension views at the symptomatic levels**, OR**
    - 11 degrees of angular difference between lateral flexion-extension views at the symptomatic levels

- Sensitivity or allergy to implant materials
- Severe spondylosis defined as:
    - >50% disc height loss compared to minimally or non-degenerated levels, **OR**
    - Bridging osteophytes, **OR**
    - Absence of motion on lateral flexion-extension views at the symptomatic site
- Severe facet arthropathy
- Ankylosing spondylitis
- Rheumatoid arthritis
- Previous fracture with anatomical deformity
- Ossification of the posterior longitudinal ligament (OPLL)
- Active cervical spine malignancy

Cervical Fusion without Decompression

Cervical fusion without decompression is reviewed on a case-by-case basis. Atraumatic instability due to Down Syndrome-related spinal deformity, rheumatoid arthritis, or basilar invagination is uncommon, but may require cervical fusion.

Cervical Anterior Decompression without Fusion

Anterior decompression without fusion is reviewed on a case-by-case basis.

Additional information

Conservative therapy

Conservative musculoskeletal therapy includes primarily physical therapy and/or injections; and a combination of modalities, such as rest, ice, heat, modified activities, medical devices (such as a cervical collar), medications, diathermy, chiropractic treatments, or physician supervised home exercise program.

Home Exercise Program (HEP)

The following 2 elementsare required to meet guidelines for completion of a Home Exercise Program (HEP):

- Information on exercise prescription/plan provided to the member
- Follow up with member with documentation provided regarding completion of HEP (after 4 – 6 week period), or documentation provided of inability to complete HEP due to physical reason (e.g., increased pain, inability to physically perform exercises). Inconvenience or noncompliance without explanation does not constitute an “inability to complete” HEP.

BILLING/CODING INFORMATION:

CPT Coding

0095T	Removal of total disc arthroplasty (artificial disc), anterior approach, each additional

	interspace, cervical (List separately in addition to code for primary procedure)
0098T	Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, each additional interspace, cervical (List separately in addition to code for primary procedure)
0375T	Total disc arthroplasty (artificial disc), anterior approach, including discectomy with end plate preparation (includes osteophytectomy for nerve root or spinal cord decompression and microdissection), cervical, three or more levels **(investigational)**
22548	Arthrodesis, anterior transoral or extraoral technique, clivus-C1-C2 (atlas-axis), with or without excision of odontoid process
22551	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophytectomy and decompression of spinal cord and/or nerve roots; cervical below C2
22552	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophytectomy and decompression of spinal cord and/or nerve roots; cervical below C2, each additional interspace (List separately in addition to code for separate procedure)
22554	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); cervical below C2
22585	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure)
22590	Arthrodesis, posterior technique, craniocervical (occiput-C2)
22595	Arthrodesis, posterior technique, atlas-axis (C1-C2)
22600	Arthrodesis, posterior or posterolateral technique, single level; cervical below C2 segment
22614	Arthrodesis, posterior or posterolateral technique, single level; each additional vertebral segment (List separately in addition to code for primary procedure)
22856	Total disc arthroplasty (artificial disc), anterior approach, including discectomy with end plate preparation (includes osteophytectomy for nerve root or spinal cord decompression and microdissection); single interspace, cervical
22858	Total disc arthroplasty (artificial disc), anterior approach, including discectomy with end plate preparation (includes osteophytectomy for nerve root or spinal cord decompression and microdissection); second level, cervical (List separately in addition to code for primary procedure)
22861	Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, single interspace; cervical
22864	Removal of total disc arthroplasty (artificial disc), anterior approach, single interspace; cervical
63001	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), 1 or 2 vertebral segments; cervical
63015	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), more than 2 vertebral segments; cervical
63020	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; 1 interspace, cervical
63035	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc; each additional interspace, cervical or lumbar (List separately in addition to code for primary procedure)
63040	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial

	facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; cervical
63043	Laminotomy (hemilaminectomy), with decompression of nerve root(s), including partial facetectomy, foraminotomy and/or excision of herniated intervertebral disc, reexploration, single interspace; each additional cervical interspace (List separately in addition to code for primary procedure)
63045	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [eg, spinal or lateral recess stenosis]), single vertebral segment; cervical
63048	Laminectomy, facetectomy and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equina and/or nerve root[s], [eg, spinal or lateral recess stenosis]), single vertebral segment; each additional segment, cervical, thoracic, or lumbar (List separately in addition to code for primary procedure)
63050	Laminoplasty, cervical, with decompression of the spinal cord, 2 or more vertebral segments;
63051	Laminoplasty, cervical, with decompression of the spinal cord, 2 or more vertebral segments; with reconstruction of the posterior bony elements (including the application of bridging bone graft and non-segmental fixation devices [eg, wire, suture, mini-plates], when performed)
63075	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; cervical, single interspace
63076	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophytectomy; cervical, each additional interspace (List separately in addition to code for primary procedure)

REIMBURSEMENT INFORMATION:

Refer to section entitled **POSITION STATEMENT**.

PROGRAM EXCEPTIONS:

Federal Employee Program (FEP): Follow FEP guidelines.

State Account Organization (SAO): Follow SAO guidelines.

Medicare Advantage products: The following Local Coverage Determination (LCD) was reviewed on the last guideline reviewed date: Noncovered Services (L33777), located at fcso.com.

DEFINITIONS:

No guideline specific definitions apply.

RELATED GUIDELINES:

02-20000-48, Lumbar Spine Surgery

OTHER:

None applicable.

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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy & Coverage Committee on 06/27/19.

GUIDELINE UPDATE INFORMATION:

07/01/15	New Medical Coverage Guideline.
07/15/16	Unscheduled review. Maintained Position Statement section. Revised Program Exceptions section. Updated references.
12/15/16	Revision: added coverage criteria for artificial cervical disc replacement at two levels. Updated references.
04/15/17	Revision: clarified requirements for conservative treatment; added “and/or clonus” at each reference to “positive Babinski sign” in the guideline; deleted smoking cessation requirement for cervical artificial disc replacement. Updated references.
07/15/18	Scheduled review. Separated ACDF single level and multiple level criteria; separated PCDF single level and multiple level criteria; deleted “kyphosis or at risk for development of postoperative kyphosis” as not medically necessary for PCDF; added “kyphosis or at risk for development of postoperative kyphosis” as not medically necessary for posterior cervical decompression; revised definition of conservative therapy; deleted contraindications to spine surgery. Updated references.
07/15/19	Scheduled review. Revised description. Added nicotine cessation criteria for fusion procedures. Revised PCDF criteria at a single level and multiple levels; artificial cervical disc replacement criteria; and home exercise program requirements. Updated references.