

**CIGNA MEDICAL COVERAGE
POLICIES - MUSCULOSKELETAL
CMM-614: Thoracic / Thoracolumbar
Fusion (Arthrodesis)**
Effective Date: August 04, 2026



Instructions for use

The following coverage policy applies to health benefit plans administered by Cigna. Coverage policies are intended to provide guidance in interpreting certain standard Cigna benefit plans and are used by medical directors and other health care professionals in making medical necessity and other coverage determinations. Please note the terms of a customer's particular benefit plan document may differ significantly from the standard benefit plans upon which these coverage policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a coverage policy.

In the event of a conflict, a customer's benefit plan document always supersedes the information in the coverage policy. In the absence of federal or state coverage mandates, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of:

1. The terms of the applicable benefit plan document in effect on the date of service
2. Any applicable laws and regulations
3. Any relevant collateral source materials including coverage policies
4. The specific facts of the particular situation

Coverage policies relate exclusively to the administration of health benefit plans. Coverage policies are not recommendations for treatment and should never be used as treatment guidelines.

This evidence-based medical coverage policy has been developed by EviCore, Inc. Some information in this coverage policy may not apply to all benefit plans administered by Cigna.

These guidelines include procedures EviCore does not review for Cigna. Please refer to the [Cigna CPT code list](#) for the current list of high-tech imaging procedures that EviCore reviews for Cigna.

CPT® (Current Procedural Terminology) is a registered trademark of the American Medical Association (AMA). CPT® five-digit codes, nomenclature and other data are copyright 2026 American Medical Association. All Rights Reserved. No fee schedules, basic units, relative values or related listings are included in the CPT book. AMA does not directly or indirectly practice medicine or dispense medical services. AMA assumes no liability for the data contained herein or not contained herein.

Table of Contents

Guideline	Page
CMM-614.1: General Guidelines.....	3
CMM-614.2: Osteotomy.....	6
CMM-614.3: Pediatric Spinal Deformity.....	9
CMM-614.4: Thoracic or Thoracolumbar Fusion (Arthrodesis) with Decompression.....	11
CMM-614.5: Thoracic or Thoracolumbar Fusion (Arthrodesis) without Decompression.....	15
CMM-614.6: Adjacent Segment Disease/Proximal Junctional Failure.....	19
CMM-614.7: Repeat Thoracic Fusion (Arthrodesis) at the Same Level.....	21
CMM-614.8: Non-Indications.....	24
Codes (CMM-614).....	26
Evidence Discussion (CMM-614).....	30
References (CMM-614).....	32

CMM-614.1: General Guidelines

Guideline	Page
CMM-614.1: General Guidelines.....	4

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

CMM-614.1: General Guidelines

CMM.SP.GG.614.1

v1.0.2026

Application of Guideline

- The determination of medical necessity for the performance of thoracic or thoracolumbar fusion (with or without osteotomy) is always made on a case-by-case basis.
- For additional timing and documentation requirements, see **CMM-600.1: Prior Authorization Requirements**.

Urgent/Emergent Indications/Conditions

- The presence of urgent/emergent indications/conditions warrants definitive surgical treatment. **Imaging findings noted in the applicable procedure section(s) are required.**
 - The following criteria are NOT required for confirmed urgent/emergent conditions:
 - provider-directed non-surgical management
 - proof of smoking cessation
 - absence of unmanaged significant mental and/or behavioral health disorders (e.g., major depressive disorder, chronic pain syndrome, secondary gain, opioid and alcohol use disorders)
 - time frame for repeat procedure
- Urgent/emergent conditions for thoracic/thoracolumbar fusion and/or osteotomy include ANY of the following:
 - traumatic spinal fractures or dislocations (with or without neural compression) when instability is present or decompression of the spinal canal is anticipated to result in iatrogenic instability
 - infection (e.g., discitis, epidural abscess, osteomyelitis) when instability is present or debridement and/or decompression is anticipated to result in iatrogenic instability
 - primary or metastatic neoplastic disease causing pathologic fracture, cord compression, when instability is present, or resection and/or decompression is anticipated to result in iatrogenic instability
 - a condition otherwise meeting criteria listed in the applicable procedure section(s) with documentation of severe debilitating pain and/or dysfunction to the point of being incapacitated

Health Equity Considerations

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

CMM-614.2: Osteotomy

Guideline	Page
CMM-614.2: Osteotomy.....	7

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

CMM-614.2: Osteotomy

CMM.SP.IN.614.2

v1.0.2026

Posterior Column Osteotomy (PCO)

Thoracic or thoracolumbar posterior column osteotomy (PCO) (i.e., Smith-Peterson osteotomy [SPO] or Ponte osteotomy) is considered **medically necessary** (in addition to fusion) when ALL of the following criteria have been met:

- Performed for non-fixed deformity requiring 5° to 10° of correction (SPO) per spinal segment with EITHER of the following:
 - thoracic or thoracolumbar sagittal plane deformities (i.e., <10° or >40°) when the deformity is non-fixed
 - larger coronal deformities where there is limited flexibility (i.e., >40° on dynamic imaging)
- Posterior column osteotomy is limited to a maximum of four (4) posterior column osteotomies performed in the apex of the deformity per correction surgery.
 - **Criteria exception:** There is no limit to posterior column osteotomies for correction of Scheuermann's kyphosis as this deformity is long, gradual, rounded, and amendable to more than four (4) posterior column osteotomies
- Thoracic or thoracolumbar fusion criteria have been met in the applicable procedure-specific section:
 - **CMM-614.3: Pediatric Spinal Deformity**
 - **CMM-614.4: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) with Decompression**
 - **CMM-614.5: Thoracic or Thoracolumbar Fusion (Arthrodesis) without Decompression**
 - **CMM-614.6: Adjacent Segment Disease/Proximal Junctional Failure**
 - **CMM-614.7: Repeat Thoracic or Thoracolumbar Fusion (Arthrodesis) at the Same Level**

Three-Column Osteotomy

Thoracic or thoracolumbar three-column osteotomy (i.e., pedicle subtraction osteotomy [PSO] or vertebral column resection [VCR]) is considered **medically necessary** (in addition to fusion) when ALL of the following criteria have been met:

- Performed for EITHER of the following:
 - fixed sagittal plane deformity requiring >30° of correction (PSO)
 - large, fixed coronal deformities >60° that are amenable to asymmetric osteotomy

- Thoracic or thoracolumbar fusion criteria have been met in the applicable procedure-specific section:
 - **CMM-614.3: Pediatric Spinal Deformity**
 - **CMM-614.4: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) with Decompression**
 - **CMM-614.5: Thoracic or Thoracolumbar Fusion (Arthrodesis) without Decompression**
 - **CMM-614.6: Adjacent Segment Disease/Proximal Junctional Failure**
 - **CMM-614.7: Repeat Thoracic or Thoracolumbar Fusion (Arthrodesis) at the Same Level**

CMM-614.3: Pediatric Spinal Deformity

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

Guideline	Page
CMM-614.3: Pediatric Spinal Deformity.....	10

CMM-614.3: Pediatric Spinal Deformity

CMM.SP.IN.614.3

v1.0.2026

Pediatric Thoracic or Thoracolumbar Fusion

Thoracic or thoracolumbar fusion (arthrodesis) is considered **medically necessary** when performed for ANY of the following conditions when the following criteria has been met:

- Imaging studies (advanced imaging or plain x-rays) show the presence of ANY of the following pediatric spinal deformities that warrant definitive surgical treatment:
 - adolescent idiopathic scoliosis with Cobb angle $>50^{\circ}$
 - congenital scoliosis
 - neuromuscular scoliosis
 - infantile/juvenile scoliosis

Pediatric Osteotomy

Thoracic or thoracolumbar osteotomy is considered **medically necessary** (in addition to fusion) when ALL of the criteria have been met in **CMM-614.2: Osteotomy**.

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

CMM-614.4: Thoracic or Thoracolumbar Fusion (Arthrodesis) with Decompression

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

Guideline	Page
CMM-614.4: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) with Decompression.....	12

CMM-614.4: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) with Decompression

CMM.SP.IN.614.4

v1.0.2026

Thoracic or thoracolumbar fusion (arthrodesis) with decompression is considered **medically necessary** when performed for ANY of the following conditions when ALL of the associated criteria have been met:

Actual Instability

- The individual is a candidate for thoracic decompression per **CMM-613: Thoracic Decompression-Discectomy**.
- Imaging findings include ANY of the following:
 - degenerative spondylolisthesis with EITHER of the following:
 - dynamic segmental instability on flexion-extension plain x-rays OR comparison of a supine and upright image, with a difference in translational alignment between vertebrae >3mm between views
 - Meyerding Grade II or higher spondylolisthesis
 - post-operative instability created by the disruption of the posterior elements due to facet joint excision that exceeding 50% bilaterally or 75% or more of a single facet
 - pars fracture
 - previous spinal decompression that resulted in iatrogenic spondylolisthesis
 - **Criteria exception:** When instability is created and/or identified intra-operatively, the above imaging criteria are NOT required.
 - See **Anticipated Iatrogenic Instability**.
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker
 - individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

Anticipated Iatrogenic Instability

- The individual is a candidate for thoracic decompression or thoracic corpectomy per **CMM-613: Thoracic Decompression-Discectomy**.

- Anticipated iatrogenic instability with ANY of the following:
 - created by disruption of the posterior elements due to facet joint excision exceeding 50% bilaterally or 75% or more of a single facet during spinal decompression
 - created by excessive disc removal that could result in anterior instability
 - created by removal of the pars interarticularis that requires fusion to stabilize
 - created by decompression for Meyerding Grade I or higher spondylolisthesis with foraminal stenosis
 - created by complete or partial corpectomy (i.e., removal of at least one-third of the vertebral body [not for resection of osteophytes alone])
 - For thoracic or thoracolumbar corpectomy, see **CMM-613: Thoracic Decompression-Discectomy**.
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker
 - individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

Adult Symptomatic Degenerative Spinal Deformity

- The individual is a candidate for thoracic decompression per **CMM-613: Thoracic Decompression-Discectomy**.
- Imaging findings include EITHER of the following:
 - coronal plane deformity which includes ANY of the following:
 - Cobb angle >30°
 - asymmetric disk collapse causing symptomatic foraminal narrowing
 - global coronal imbalance causing head and trunk shift off the midline
 - sagittal imbalance which includes ANY of the following:
 - sagittal vertebral axis measurement >8cm
 - pelvic incidence-lumbar lordosis >15°
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker
 - individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

Adult Residual Idiopathic Scoliotic Deformity

- The individual is a candidate for thoracic decompression or thoracic corpectomy per **CMM-613: Thoracic Decompression-Discectomy**.
- Imaging findings include ANY of the following:
 - Cobb angle $>50^{\circ}$
 - asymmetric disk collapse causing symptomatic foraminal narrowing
 - global coronal imbalance causing head and trunk shift off the midline
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker
 - individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

Adult Symptomatic Residual Scheuermann's Kyphosis

- The individual is a candidate for thoracic decompression or thoracic corpectomy per **CMM-613: Thoracic Decompression-Discectomy**.
- Imaging findings include ANY of the following:
 - sagittal vertebral axis measurement $>8\text{cm}$
 - pelvic incidence-lumbar lordosis $>15^{\circ}$
 - sagittal Cobb angle $>75^{\circ}$
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker
 - individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

CMM-614.5: Thoracic or Thoracolumbar Fusion (Arthrodesis) without Decompression

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

Guideline	Page
CMM-614.5: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) without Decompression.....	16

CMM-614.5: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) without Decompression

CMM.SP.IN.615.5
v1.0.2026

Thoracic or thoracolumbar fusion without decompression is considered **medically necessary** when performed for ANY of the following conditions when ALL of the associated criteria have been met:

Adult Symptomatic Degenerative Spinal Deformity

- Imaging findings include EITHER of the following:
 - coronal plane deformity which includes ANY of the following:
 - Cobb angle $>30^{\circ}$
 - asymmetric disk collapse causing symptomatic foraminal narrowing
 - global coronal imbalance causing head and trunk shift off the midline
 - sagittal imbalance which includes ANY of the following:
 - sagittal vertebral axis measurement $>8\text{cm}$
 - pelvic incidence-lumbar lordosis $>15^{\circ}$
- Less than clinically meaningful improvement with EITHER of the following (unless contraindicated) for at least three (3) consecutive months:
 - prescription strength analgesics, steroids, gabapentinoids, and/or nonsteroidal anti-inflammatory drugs (NSAIDs)
 - provider-directed exercise program (prescribed by a physical therapist, chiropractic provider, osteopathic or allopathic physician)
- Absence of unmanaged significant mental and/or behavioral health disorders (e.g., major depressive disorder, chronic pain syndrome, secondary gain, opioid and alcohol use disorders)
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker
 - individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

Adult Residual Idiopathic Scoliotic Deformity

- Imaging findings include ANY of the following:
 - Cobb angle $>50^{\circ}$
 - asymmetric disk collapse causing symptomatic foraminal narrowing
 - global coronal imbalance causing head and trunk shift off the midline
- For those cases with a Cobb angle $<50^{\circ}$ or global coronal imbalance, less than clinically meaningful improvement with EITHER of the following (unless contraindicated) for at least three (3) consecutive months:
 - prescription strength analgesics, steroids, gabapentinoids, and/or nonsteroidal anti-inflammatory drugs (NSAIDs)
 - provider-directed exercise program (prescribed by a physical therapist, chiropractic provider, osteopathic or allopathic physician)
- Absence of unmanaged significant mental and/or behavioral health disorders (e.g., major depressive disorder, chronic pain syndrome, secondary gain, opioid and alcohol use disorders)
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker
 - individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

Adult Symptomatic Residual Scheuermann's Kyphosis

- Imaging findings include ANY of the following:
 - sagittal vertebral axis measurement $>8\text{cm}$
 - pelvic incidence-lumbar lordosis $>15^{\circ}$
 - sagittal Cobb angle $>75^{\circ}$
- Less than clinically meaningful improvement with EITHER of the following (unless contraindicated) for at least three (3) consecutive months:
 - prescription strength analgesics, steroids, gabapentinoids, and/or nonsteroidal anti-inflammatory drugs (NSAIDs)
 - provider-directed exercise program (prescribed by a physical therapist, chiropractic provider, osteopathic or allopathic physician)
- Absence of unmanaged significant mental and/or behavioral health disorders (e.g., major depressive disorder, chronic pain syndrome, secondary gain, opioid and alcohol use disorders)
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker

- individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

CMM-614.6: Adjacent Segment Disease/Proximal Junctional Failure

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

Guideline	Page
CMM-614.6: Adjacent Segment Disease/Proximal Junctional Failure.....	20

CMM-614.6: Adjacent Segment Disease/ Proximal Junctional Failure

CMM.SP.IN.614.6

v1.0.2026

Thoracic or thoracolumbar fusion for adjacent segment disease is considered **medically necessary** when ALL of the following criteria have been met:

- Thoracic or thoracolumbar fusion criteria have been met in the applicable procedure-specific section:
 - **CMM-614.4: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) with Decompression**
 - **CMM-614.5: Initial Thoracic or Thoracolumbar Fusion (Arthrodesis) without Decompression**
- Greater than six (6) months since the prior thoracic or thoracolumbar fusion at an adjacent level
- Plain x-rays show EITHER of the following:
 - evidence of anterolisthesis resulting in ANY of the following:
 - dynamic segmental instability on flexion-extension plain x-rays OR comparison of a supine and upright image, with a difference in translational alignment between vertebrae >3mm between views
 - Meyerding Grade II or higher spondylolisthesis
 - evidence of kyphosis at any spinal level showing 15° change of the sagittal Cobb angle (proximal junctional angle) caused by either bony or posterior ligamentous complex failure and that results in progressive pain or neurologic symptoms

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

CMM-614.7: Repeat Thoracic Fusion (Arthrodesis) at the Same Level

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

Guideline

Page

CMM-614.7: Repeat Thoracic or Thoracolumbar Fusion (Arthrodesis) at the Same Level.....	22
---	----

CMM-614.7: Repeat Thoracic or Thoracolumbar Fusion (Arthrodesis) at the Same Level

CMM.SP.IN.614.7

v1.0.2026

Repeat thoracic or thoracolumbar fusion (with or without thoracic or thoracolumbar decompression at the same level) is considered **medically necessary** when performed for EITHER of the following conditions when ALL of the associated criteria have been met:

Malposition or Failure of Implant/Instrumentation or Structural Bone Graft

- Post-operative imaging shows evidence of malposition or failure of the implant/instrumentation or structural bone graft (e.g., migration, pedicle screw breakage, pedicle screw loosening, dislodged hooks, rod breakage, rod bending, rod loosening, loss of curve correction, decompensation, etc.)

Symptomatic Pseudoarthrosis

- Greater than six (6) months since the prior thoracic or thoracolumbar fusion
- Symptoms include significant level of pain on a daily basis defined as clinically significant functional impairment (e.g., inability to perform household chores, prolonged standing, etc.)
- Post-operative physical exam findings are concordant with the individual's symptoms
- Less than clinically meaningful improvement with BOTH of the following (unless contraindicated):
 - prescription strength analgesics, steroids, gabapentinoids, and/or nonsteroidal anti-inflammatory drugs (NSAIDs) for six (6) weeks
 - provider-directed exercise program (prescribed by a physical therapist, chiropractic provider, osteopathic or allopathic physician) for six (6) weeks
- Post-operative imaging (performed at no less than six (6) months after the prior thoracic or thoracolumbar fusion) shows pseudoarthrosis at the requested level(s)
- Post-operative MRI/CT findings are concordant with the individual's symptoms
- Absence of unmanaged significant mental and/or behavioral health disorders (e.g., major depressive disorder, chronic pain syndrome, secondary gain, opioid and alcohol use disorders)
- Documentation of nicotine-free status with EITHER of the following:
 - individual is a never-smoker

- individual has refrained from smoking, use of smokeless tobacco products, and/or nicotine replacement therapy for at least six (6) weeks prior to planned surgery validated by objective cotinine testing methods (serum, urinary, or saliva) verified as within the normal range for the testing method and lab at which the test was performed

CMM-614.8: Non-Indications

Guideline	Page
CMM-614.8: Non-Indications.....	25

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

CMM-614.8: Non-Indications

CMM.SP.NI.614.8

v1.0.2026

Not Medically Necessary

- Thoracic or thoracolumbar fusion performed without meeting the criteria in the **General Guidelines** (when applicable for urgent/emergent conditions) and the criteria in the applicable procedure-specific section(s) (**pediatric spinal deformity; fusion with decompression; fusion without decompression; adjacent segment disease; or, repeat fusion**) is considered **not medically necessary**.
- Thoracic or thoracolumbar osteotomy performed without meeting the criteria in in the **General Guidelines** (when applicable for urgent/emergent conditions) and the criteria in the applicable procedure-specific section(s) (**pediatric spinal deformity; fusion with decompression; fusion without decompression; adjacent segment disease; or, repeat fusion**) is considered **not medically necessary**.
- Thoracic or thoracolumbar fusion and/or osteotomy is considered **not medically necessary** when performed for ANY of the following sole indications:
 - multi-level degenerative disc disease without instability or significant adult deformity
 - facet joint disorders without instability
 - initial discectomy/laminectomy without instability
 - an adjunct to primary decompression of central and/or lateral recess stenosis in the absence of instability, spondylolisthesis, adult deformity, or an actual or anticipated bony resection that will result in iatrogenic instability

Experimental, Investigational, or Unproven (EIU)

- Thoracic or thoracolumbar fusion is considered **experimental, investigational, or unproven** for ALL of the following devices/procedures (not an all-inclusive list):
 - percutaneous thoracic or thoracolumbar fusion (i.e., fusion performed with indirect visualization)
 - endoscopic thoracic or thoracolumbar fusion
 - endoscopic thoracic decompression with interbody fusion
 - isolated facet fusion (with or without instrumentation) including allograft bone graft substitutes used exclusively as stand-alone stabilization devices (e.g., TruFuse® [any level], NuFix® [any level])
 - total facet arthroplasty
 - device/implant not FDA approved (in thoracic spine)

Codes (CMM-614)

Guideline	Page
Codes (CMM-614).....	27

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

Codes (CMM-614)

CMM.SP.PC.614

v1.0.2026

The inclusion of any code in this table does not imply that the code is under management or requires prior authorization. Refer to the applicable health plan for management details. Prior authorization of a code listed in this table is not a guarantee of payment. The Certificate of Coverage or Evidence of Coverage policy outlines the terms and conditions of the member's health insurance policy.

Code	Code Description/Definition
22206	Osteotomy of spine, posterior or posterolateral approach, 3 columns, 1 vertebral segment (e.g., Pedicle/vertebral body subtraction); thoracic
+22208	Osteotomy of spine, posterior or posterolateral approach, 3 columns, 1 vertebral segment (e.g., Pedicle/vertebral body subtraction); each additional vertebral segment (List separately in addition to code for primary procedure)
22212	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; thoracic
+22216	Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; each additional vertebral segment (List separately in addition to code for primary procedure)
22222	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment; thoracic
+22226	Osteotomy of spine, including discectomy, anterior approach, single vertebral segment, each additional vertebral segment (List separately in addition to code for primary procedure)
22532	Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
+22534	Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic or lumbar, each additional vertebral segment (List separately in addition to code for primary procedure)

Code	Code Description/Definition
22556	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
+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)
22610	Arthrodesis, posterior or posterolateral technique, single level; thoracic (with lateral transverse technique, when performed)
+22614	Arthrodesis, posterior or posterolateral technique, single level; each additional vertebral segment (List separately in addition to code for primary procedure)
22800	Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments
22802	Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments
22804	Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments
22808	Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments
22810	Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments
22812	Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments
63003	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; thoracic
63016	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; thoracic

Code	Code Description/Definition
63046	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; thoracic
+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)
63055	Transpedicular approach with decompression of spinal cord, equina and /or nerve root(s) (e.g., herniated intervertebral disc), single segment; thoracic
+63057	Transpedicular approach with decompression of spinal cord, equina and/or nerve(s) (e.g., herniated intervertebral disc), single segment; each additional segment, thoracic or lumbar (List separately in addition to code for primary procedure)
63077	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophyctomy; thoracic, single interspace
+63078	Discectomy, anterior, with decompression of spinal cord and/or nerve root(s), including osteophyctomy; thoracic, each additional interspace (List separately in addition to code for primary procedure)
63266	Laminectomy for excision or evacuation of intraspinal lesion other than neoplasm, extradural; thoracic
0220T	Placement of a posterior intrafacet implant(s), unilateral or bilateral, including imaging and placement of bone graft(s) or synthetic device(s), single level; thoracic

Evidence Discussion (CMM-614)

Guideline	Page
Evidence Discussion (CMM-614).....	31

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

Evidence Discussion (CMM-614)

CMM.SP.ED.614

v1.0.2026

Thoracic/Thoracolumbar Fusion

Risks for thoracic fusion include, but are not limited to, the following: infection; neurovascular injury; persistent or incomplete relief of symptoms; possible need for more surgery; dural tear; pulmonary complications; neurologic injury; and death. Complication rates range from 20-42% with variations depending upon the surgical approach.^{10,17,43} In addition, there are fusion related complications including pseudoarthrosis, junctional kyphosis, hardware failure, and iatrogenic spinal deformity.³⁹

The indications for thoracic/thoracolumbar fusion include the following: degenerative spinal deformity; residual adult idiopathic scoliotic deformity/Scheuermann's deformity; and instability or anticipated instability associated with decompression/discectomy surgery with neural compression and symptoms. It is also indicated for traumatic disorders, infection, and tumors.¹

In properly selected individuals, there are high success rates in thoracic fusions with rates as high as 98-100%. Fusion rates are impacted by age of patient and level of fusion.³⁸ Several studies report thoracic disc herniations can be treated safely with posterior decompression and pedicle sparing fusion.^{7,55}

It has been shown in the literature that individuals with psychosocial disorders or with a history of smoking undergoing fusion have poorer outcomes and higher complication rates.^{6,25} Proper identification and treatment of these conditions prior to surgery may significantly improve many outcome measures. Evidence supports that the various methods of cotinine testing (serum, saliva, urinary) are sufficiently equivalent in accuracy to confirm nicotine abstinence. Serum testing cutoff values ranged from 3.0ng/mL to 20ng/mL. Salivary testing cutoff values ranged from 10ng/mL to 44ng/mL. Urinary testing cutoff is 10ng/mL.^{2,5,16,28}

As risk for major complications exists for thoracic/thoracolumbar fusion surgery, it is critical to optimally ensure that individuals receive treatment that is appropriate, safe, and effective.

References (CMM-614)

Guideline	Page
References (CMM-614).....	33

CMM-614: Thoracic / Thoracolumbar Fusion (Arthrodesis)

References (CMM-614)

CMM.SP.RF.614

v1.0.2026

1. Abraham DJ, Herkowitz HN, Katz JN. Indications for thoracic and lumbar spine fusion and trends in use. *Orthop Clin North Am.* 1998;29(4):803. doi:10.1016/s0030-5898(05)70049-3.
2. Achilihu H, Feng J, Wang L, Bernert JT. Tobacco use classification by inexpensive urinary cotinine immunoassay test strips. *J Anal Toxicol.* 2019;43(2):149-153. doi:10.1093/jat/bky075.
3. American Academy of Orthopedic Surgeons (AAOS®). *OrthoInfo: Orthopaedic Surgery and Smoking.* May 2024. © American Academy of Orthopaedic Surgeons (AAOS®). Available at: <https://orthoinfo.aaos.org/en/treatment/surgery-and-smoking>.
4. American Medical Association. Code 20660 as an independent or unrelated procedure-coding tip. *CPT® Assistant Newsletter.* April 2012:11. Accessed October 5, 2023. Available at: <https://ocm.ama-assn.org/OCM/CPTAA/Newsletters.do?articleType=IssueArticle&filename=20120411&hitTerms=corpectomy>.
5. Benowitz NL, Bernert JT, Foulds J, et al. Biochemical verification of tobacco use and abstinence: 2019 update. *Nicotine Tob Res.* 2020;22(7):1086-1097. doi:10.1093/ntr/ntz132.
6. Berman D, Oren JH, Bendo J, Spivak J. The effect of smoking on spinal fusion. *Int J Spine Surg.* 2017;11(4):29. doi:10.14444/4029.
7. Bransford R, Zhang F, Bellabarba C, Konodi M, Chapman JR. Early experience treating thoracic disc herniations using a modified transfacet pedicle-sparing decompression and fusion. *J Neurosurg Spine.* 2010;12(2):221-231. doi:10.3171/2009.9.SPINE09476.
8. Bridwell KH, Lewis SJ, Lenke LG, Baldus C, Blanke K. Pedicle subtraction osteotomy for the treatment of fixed sagittal imbalance. *JBJS.* 2003;85(3):454-463. doi:10.2106/00004623-200303000-00009.
9. Bridwell KH, Lewis SJ, Rinella A, Lenke LG, Baldus C, Blanke K. Pedicle subtraction osteotomy for the treatment of fixed sagittal imbalance. Surgical technique. *JBJS.* 2004;86(suppl_1):44-50. doi:10.2106/00004623-200403001-00007.
10. Brotis AG, Tasiou A, Paterakis K, Tzerefos C, Fountas KN. Complications associated with surgery for thoracic disc herniation: a systematic review and network meta-analysis. *World Neurosurg.* 2019;132:334-342. doi:10.1016/j.wneu.2019.08.202.
11. Chatley A, Kumar R, Jain V, Behari S, Sahu R. Effect of spinal cord signal intensity changes on clinical outcome after surgery for cervical spondylotic myelopathy. *J Neurosurg Spine.* 2009;11(5):562-567. doi:10.3171/2009.6.spine091.
12. Cheung JPY. The importance of sagittal balance in adult scoliosis surgery. *Ann Transl Med.* 2020;8(2):35. doi:10.21037/atm.2019.10.19.
13. Ciesla N, Dinglas V, Fan E, Kho M, Kuramoto J, Needham D. Manual muscle testing: a method of measuring extremity muscle strength applied to critically ill patients. *J Vis Exp.* 2011;(50):2632. doi:10.3791/2632.
14. Conable KM, Rosner AL. A narrative review of manual muscle testing and implications for muscle testing research. *J Chiropr Med.* 2011;10(3):157-165. doi:10.1016/j.jcm.2011.04.001.
15. Cohen SP, Hanling S, Bicket MC, et al. Epidural steroid injections compared with gabapentin for lumbosacral radicular pain: multicenter randomized double blind comparative efficacy study. *BMJ.* 2015;350:h1748. doi:10.1136/bmj.h1748.
16. Cooke F, Bullen C, Whittaker R, McRobbie H, Chen MH, Walker N. Diagnostic accuracy of NicAlert cotinine test strips in saliva for verifying smoking status. *Nicotine Tob Res.* 2008;10(4):607-612. doi:10.1080/14622200801978680.
17. Court C, Mansour E, Bouthors C. Thoracic disc herniation: surgical treatment. *Orthop Traumatol Surg Res.* 2018;104(1S):S31-S40. doi:10.1016/j.otsr.2017.04.022.
18. Danielsson, A. Natural history of adolescent idiopathic scoliosis: a tool for guidance in decision of surgery of curves above 50°. *J Child Orthop.* 2013;7:37-41. doi:10.1007/s11832-012-0462-7.
19. Diebo BG, Varghese JJ, Lafage R, Schwab FJ, Lafage V. Sagittal alignment of the spine: What do you need to know? *Clin Neurol Neurosurg.* 2015;139:295-301. doi:10.1016/j.clineuro.2015.10.024.

20. Dorward IG, Lenke LG. Osteotomies in the posterior-only treatment of complex adult spinal deformity: a comparative review. *Neurosurg Focus*. 2010;28(3):E4. doi:10.3171/2009.12.focus09259.
21. Fiani B, Siddiqi I, Reardon T, et al. Thoracic endoscopic spine surgery: a comprehensive review. *Int J Spine Surg*. 2020;14(5):762-771. doi:10.14444/7109.
22. Glassman SD, Anagnost SC, Parker A, et al. The effect of cigarette smoking and smoking cessation on spinal fusion. *Spine (Phila Pa 1976)*. 2000;25(20):2608-2615.
23. Graham RB, Sugrue PA, Koski TR. Adult degenerative scoliosis. *Clin Spine Surg*. 2016;29(3):95-107. doi:10.1097/BSD.0000000000000367.
24. Halanski MA, Cassidy JA. Do multilevel Ponte osteotomies in thoracic idiopathic scoliosis surgery improve curve correction and restore thoracic kyphosis?. *J Spinal Disord Tech*. 2013;26(5):252-255. doi:10.1097/BSD.0b013e318241e3cf.
25. Jackson KL, Devine JG. The effects of smoking and smoking cessation on spine surgery: a systemic review of the literature. *Global Spine J*. 2016; 6(7):695-701. doi:10.1055/s-0036-1571285.
26. Jackson KL, Rumley J, Griffith M, Agochukwu U, DeVine J. Correlating psychological comorbidities and outcomes after spine surgery. *Global Spine J*. 2020;10(7):929-939. doi:10.1177/2192568219886595.
27. Kelly DM, McCarthy RE, McCullough FL, Kelly HR. Long-term outcomes of anterior spinal fusion with instrumentation for thoracolumbar and lumbar curves in adolescent idiopathic scoliosis. *Spine*. 2010;35(2):194-198. doi:10.1097/BRS.0b013e3181bc948e.
28. Kim S. Overview of cotinine cutoff values for smoking status classification. *Int J Environ Res Public Health*. 2016;13(12):1236. Published 2016 Dec 14. doi:10.3390/ijerph13121236.
29. La Marca F, Brumblay H. Smith–Petersen osteotomy in thoracolumbar deformity surgery. *Neurosurgery*. 2008;63(3):A163-A170. doi:10.1227/01.neu.0000320428.67620.4f.
30. Lee BS, Nault R, Grabowski M, et al. Utility of repeat magnetic resonance imaging in surgical patients with lumbar stenosis without disc herniation. *Spine J*. 2019;19(2):191-198. doi:10.1016/j.spinee.2018.06.357.
31. Lindström D, Sadr Azodi O, Wladis A, et al. Effects of a perioperative smoking cessation intervention on postoperative complications: a randomized trial. *Ann Surg*. 2008; 248:739-745.
32. McCullen G, Vaccaro AR, Garfin SR. Thoracic and lumbar trauma: rationale for selecting the appropriate fusion technique. *Orthop Clin North Am*. 1998;29(4):813-828.
33. Miller DJ, Cahill PJ, Vitale MG, Shah SA. Posterior correction techniques for adolescent idiopathic scoliosis. *JAAOS*. 2020;28(9):e363-e373. doi:10.5435/jaaos-d-18-00399.
34. Mills E, Eyawo O, Lockhart I, et al. Smoking cessation reduces postoperative complications: a systematic review and meta-analysis. *Am J Med*. 2011;124(2):144-154.
35. Moller AM, Villebro N, Pedersen T, et al. Effect of preoperative smoking intervention on postoperative complications: a randomized clinical trial. *Lancet*. 2002;359:114-117.
36. Myers K, Hajek P, Hinds C, et al. Stopping smoking shortly before surgery and postoperative complications: a systematic review and meta-analysis. *Arch Intern Med*. 2011;171:983-989.
37. Osman NS, Cheung ZB, Hussain AK, et al. Outcomes and complications following laminectomy alone for thoracic myelopathy due to ossified ligamentum flavum: A systematic review and meta-analysis. *Spine (Phila Pa 1976)*. 2018;43(14):E842-E848.
38. Panagopoulos J, Hush J, Steffens D, Hancock MJ. Do MRI findings change over a period of up to 1 year in patients with low back pain and/or sciatica? *Spine*. 2017;42(7):504-512. doi:10.1097/brs.0000000000001790.
39. Patil ND, El Ghait HA, Boehm C, Boehm H. Evaluation of spinal fusion in thoracic and thoracolumbar spine on standard x-rays: a new grading system for spinal interbody fusion. *Global Spine J*. 2022;12(7):1481-1494. doi:10.1177/2192568220983796.
40. Prablek M, McGinnis J, Winocour SJ, et al. Failures in thoracic spinal fusions and their management. *Semin Plast Surg*. 2021;35(1):20-24. doi:10.1055/s-0041-1723832.
41. Raizman NM, O'Brien JR, Poehling-Monaghan KL, Yu WD. Pseudarthrosis of the spine. *JAAOS*. 2009;17(8):494-503. doi:10.5435/00124635-200908000-00003.
42. Ries ZG, Glassman SD, Vasilyev I, Metcalfe L, Carreon LY. Updated imaging does not affect revision rates in adults undergoing spine surgery for lumbar degenerative disease. *J Neurosurg Spine*. Published online Nov 2018. 2019;30(2):228-223. doi:10.3171/2018.8.spine18586.

43. Russo A, Balamurali G, Nowicki R, Boszczyk BM. Anterior thoracic foraminotomy through mini-thoracotomy for the treatment of giant thoracic disc herniations. *Eur Spine J*. 2012;21 Suppl 2(Suppl 2):S212-S220. doi:10.1007/s00586-012-2263-6.
44. Saifi C, Laratta JL, Petridis P, Shillingford JN, Lehman RA, Lenke LG. Vertebral column resection for rigid spinal deformity. *Global Spine J*. 2017;7(3):280-290. doi:10.1177/2192568217699203.
45. Sardar ZM, Ames RJ, Lenke L. Scheuermann's kyphosis: diagnosis, management, and selecting fusion levels. *J Am Acad Orthop Surg*. 2019;27(10):e462-e472
46. Siecean A, Seicean S, Alan N, et al. Effect of smoking on the perioperative outcomes of patients who undergo elective spine surgery. *Spine*. 2013;38:1294-1302. doi:10.1097/BRS.0b013e31828e2747.
47. Sivaganesan A, Kim HJ. A Review of indications, surgical technique, and outcomes for the cervical pedicle subtraction osteotomy. *JAAOS*. 2022;30(3):e295-e300. doi:10.5435/jaaos-d-21-00177.
48. Smith JS, Shaffrey CI, Glassman SD, et al. Risk-benefits assessment of surgery for adult scoliosis: An analysis based on patient age. *Spine*. 2011;36(10):817-824. doi:10.1097/BRS.0b013e3181e21783.
49. Smith JS, Shaffrey CI, Lafage V, et al. Comparison of best versus worst clinical outcomes for adult spinal deformity surgery: A retrospective review of a prospectively collected, multicenter database with 2-year follow-up. *J Neurosurg Spine*. 2015;23(3):349-359. doi:10.3171/2014.12.SPINE14777.
50. Sorensen LT. Wound healing and infection in surgery: the pathophysiological impact of smoking, smoking cessation, and nicotine replacement therapy: a systematic review. *Ann Surg*. 2012;255(6):1069-1079. doi:10.1097/SLA.0b013e31824f632d.
51. Theadom A, Cropley M. Effects of preoperative smoking cessation on the incidence and risk of intraoperative and postoperative complications in adult smokers: a systematic review. *Tobacco Control*. 2006;15:352-358.
52. Tsuji H. Laminoplasty for patients with compressive myelopathy due to so-called spinal canal stenosis in cervical and thoracic regions. *Spine*. 1982;7(1):28-34.
53. Wan SH, Wong DL, To SC, Meng N, Zhang T, Cheung JP. Patient and surgical predictors of 3D correction in posterior spinal fusion: a systematic review. *Eur Spine J*. 2023;32(6):1927-1946. doi:10.1007/s00586-023-07708-2.
54. Wong J, Lam DP, Abrishami A, et al. Short-term preoperative smoking cessation and postoperative complications: a systematic review and meta-analysis. *Can J Anaesth*. 2012;59(3):268-279.
55. Yamasaki R, Okuda S, Maeno T, Haku T, Iwasaki M, Oda T. Surgical outcomes of posterior thoracic interbody fusion for thoracic disc herniations. *Eur Spine J*. 2013;22(11):2496-2503. doi:10.1007/s00586-013-2877-3.
56. Yaksi A, Özgönenel L, Özgönenel B. The efficiency of gabapentin therapy in patients with lumbar spinal stenosis. *Spine*. 2007;32(9):939-942. doi:10.1097/01.brs.0000261029.29170.e6.
57. Yin L, Zhang J, Wu Y, Li J, Yang Q. Increased signal intensity of spinal cord on T2W magnetic resonance imaging for cervical spondylotic myelopathy patients. *Medicine (Baltimore)*. 2020;99(49):e23098. doi:10.1097/md.00000000000023098.
58. York PJ, Kim HJ. Degenerative scoliosis. *Curr Rev Musculoskelet Med*. 2017;10(4):547-558. doi:10.1007/s12178-017-9445-0.