Spinal Procedures: Code It Right!

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Presented By

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Agenda

- Introduction
  - Spinal Anatomy – Overview
  - Sections
  - Posterior Elements of Spine
  - Spinal Fusion and Refusion
  - Conditions Where Spinal Fusion May Be Considered
- Spinal Fusion Guidelines
- Spinal Fusion Techniques
  - Different Methods of Fusion
  - Devices Used
  - Approach and Column Value
  - Qualifier
- Case Studies of Spinal Fusion
- *Coding Clinics* Related to Spinal Fusion
- Tips to Code Fusion

Learning Outcomes

- At the completion of this educational activity, the learner will be able to:
  - Identify anatomy of the spine related to spinal fusions
  - List coding clinics related to spinal fusions
  - Distinguish between different methods of fusion

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Introduction

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Introduction

- **Spinal Anatomy – Overview**
  - The spinal column is one of the most important parts of the body, as it makes many different functions possible, including movement and balance. The spinal column also allows for upright posture, protection of the spinal cord and shock absorption.
  - The spinal column and vertebrae are made of different elements, all of which protect the spinal cord while communicating with the brain. These elements also provide sensations through the body via a complex interaction of the bones, ligaments and muscle structures of the back and the nerves that surround it.

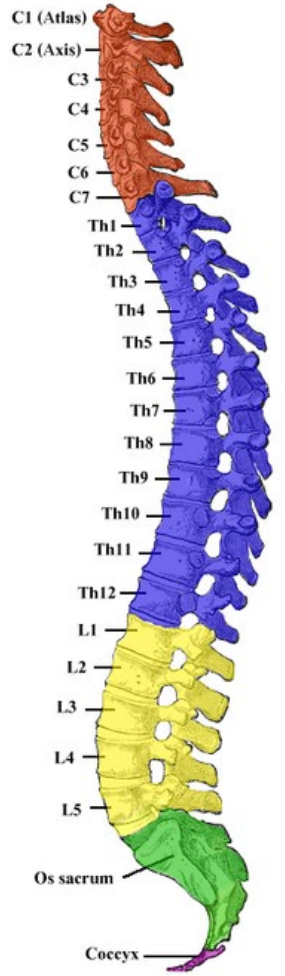

Image Source: https://en.wikipedia.org/wiki/Vertebral_column

Introduction

- **Sections**
  - The spine is composed of 33 bones, called vertebrae, divided into five sections: the cervical, thoracic, and lumbar spine sections, and the sacrum and coccyx bones.

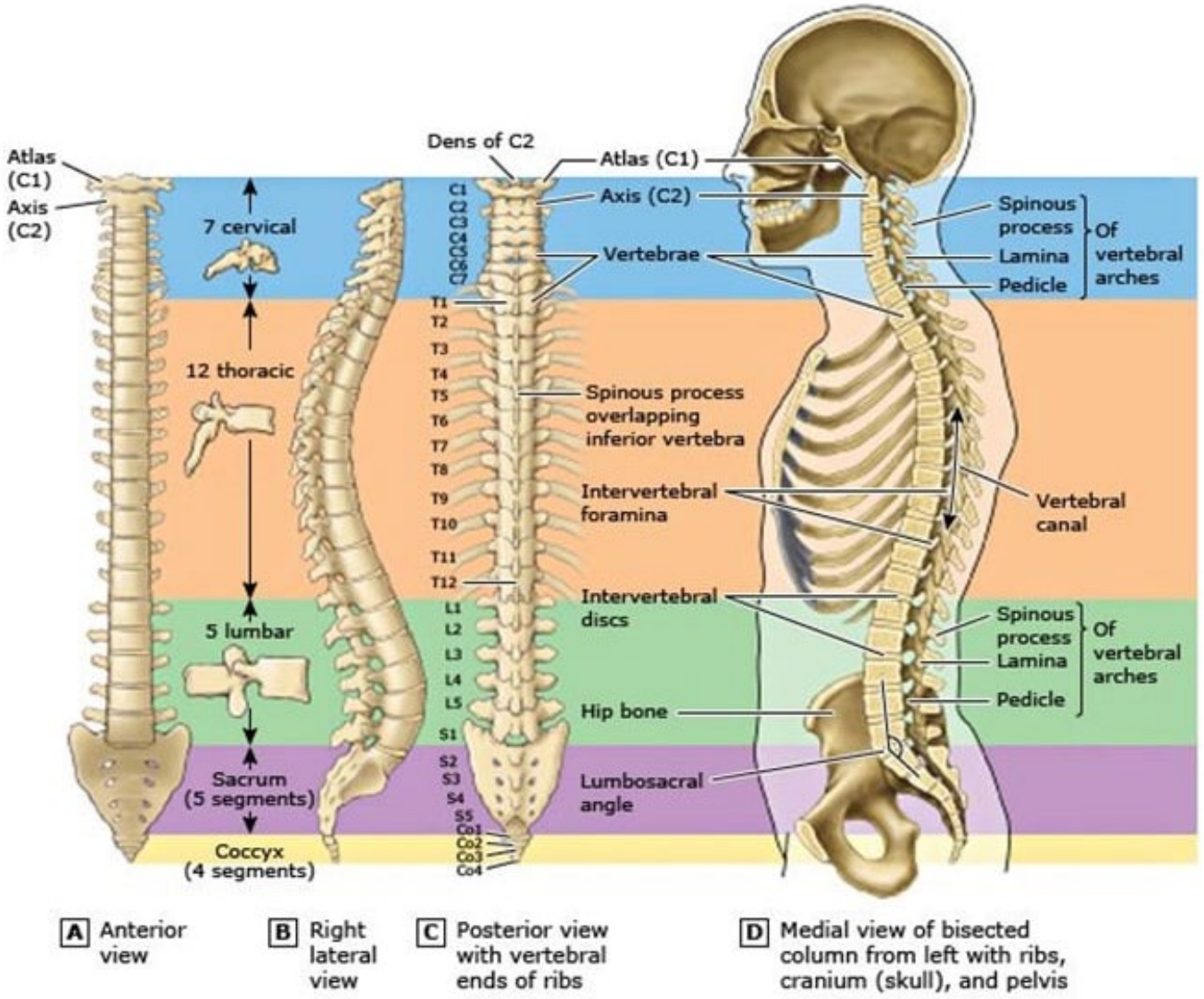

Image Source: https://www.drjunkim.com/patient-resources/spinal-anatomy/

Introduction

- **Sections**
  - The cervical section of the spine is made up of the top seven vertebrae in the spine, C1 to C7, and is connected to the base of the skull. The top two vertebrae are also known as the atlas and axis, which form the joint for connecting the skull to the spine. The cervical section is responsible for mobility and normal functioning of the neck, as well as protection of the spinal cord, arteries and nerves that travel from the brain to the body.
  - The thoracic section of the spine is located at chest level, between the cervical and lumbar vertebrae. The vertebrae in this section are labeled T1 to T12 and serve as attachments for the rib cage.
  - The lumbar section is located between the thoracic vertebrae and the sacrum. The five lumbar vertebrae, labeled L1 to L5, are the main weight-bearing section of the spinal column.
  - The sacrum is the section located at the base of the spine. It does not have discs separating the vertebrae, because its five levels, S1 to S5, are fused together. The pelvis is connected to the spinal column at the sacrum section.
  - The coccyx is at the very base of the spinal column and is made of four vertebrae that are fused together.

Posterior Elements of Spine

- **Lamina:** connect spinous process to transverse process and forms attachment site for muscles and ligaments.
- **Pedicles:** connect posterior elements to vertebral body
- **Transverse Process:** side projections of vertebra
- **Spinous Process:** posterior projections of vertebra
- **Foramen:** hole in the middle of vertebral segment for spinal cord and nerve roots
- **Facets (articular process):** projections that articulate with vertebrae above and below
- **Pars:** bony structure in between superior and inferior articular processes of facets

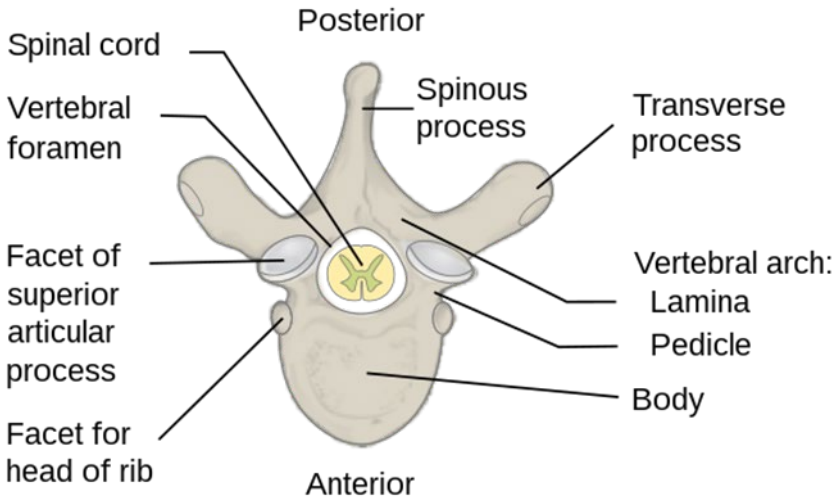

Image Source: https://en.wikipedia.org/wiki/Vertebra

Spinal Fusion and Refusion

- Spinal fusion is a surgical procedure whereby two or more vertebrae are fused to correct problems with the vertebrae.
- The vertebrae can be fused using bone grafting, genetically engineered bone substitute and interbody fusion devices containing bone graft material.
- The goal of spinal fusion surgery is pain relief conservative treatment have failed. The procedure is indicated for spinal vertebrae injuries such as protrusion and degeneration of the cushion between vertebrae, curvature of the spine, or weak spine caused by injections or tumors .
- Spinal fusion and refusion procedures are coded to the root operation “Fusion”—joining together portions of an articular body part rendering the articular body part immobile.

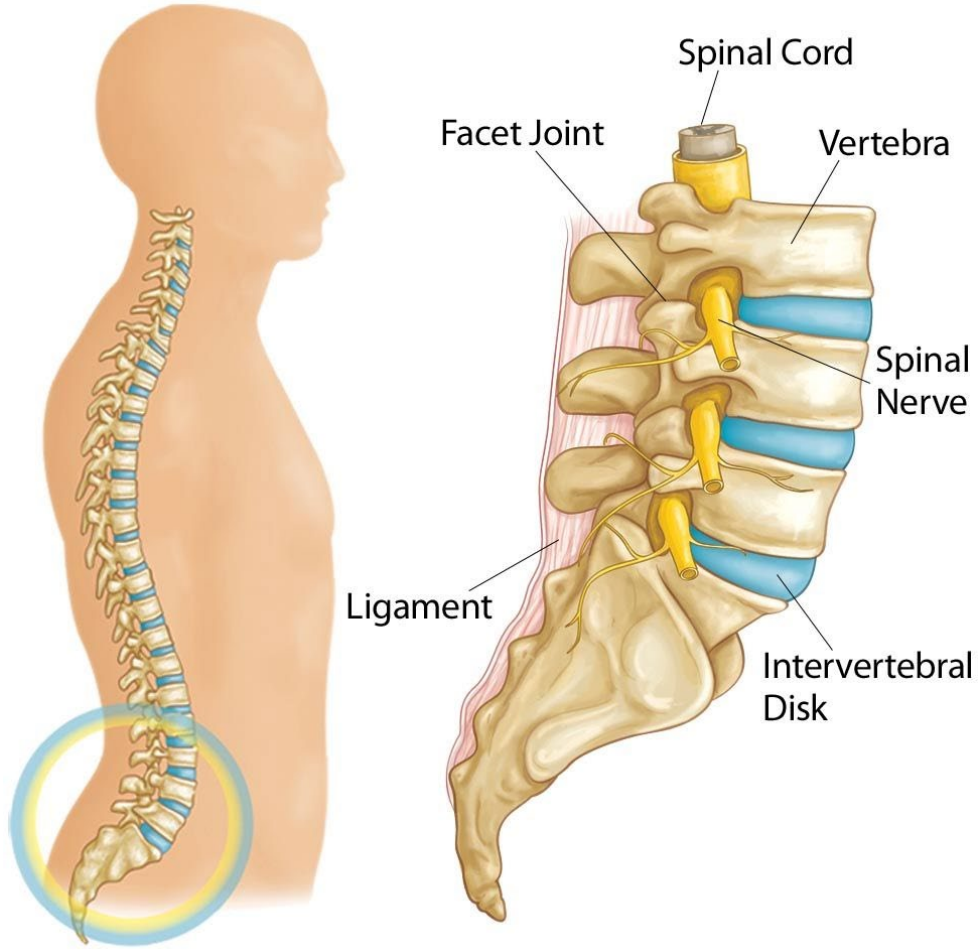

Image Source: https://orthoinfo.aaos.org/link/28b1822e811c4e27b32103950864148b.aspx

Building Blocks of the Spinal Fusion ICD-10-PCS

Section	Body System	Root Operation	Body Part	Approach	Device	Qualifier
0	S/R	G	X	X	X	X

- **Note:** When assigning the approach value, remember that the approach defines the technique used to reach the procedure site, not necessarily the instruments used.

- **Coding Note:** Devices – Only procedures that have a device that remains after the procedure is completed will have a specific device value assigned. Remember that all codes require seven characters. The default value to indicate that NO device was involved is Z.

Conditions Where Spinal Fusion May Be Considered

- Degenerative disc disease
- Spinal disc herniation
- Discogenic pain
- Spinal tumor
- Vertebral fracture
- Scoliosis
- Kyphosis (e.g., Scheuermann's disease)
- Lordosis
- Spondylolisthesis
- Spondylosis
- Posterior rami syndrome
- Other degenerative spinal conditions
- Any condition that causes instability of the spine

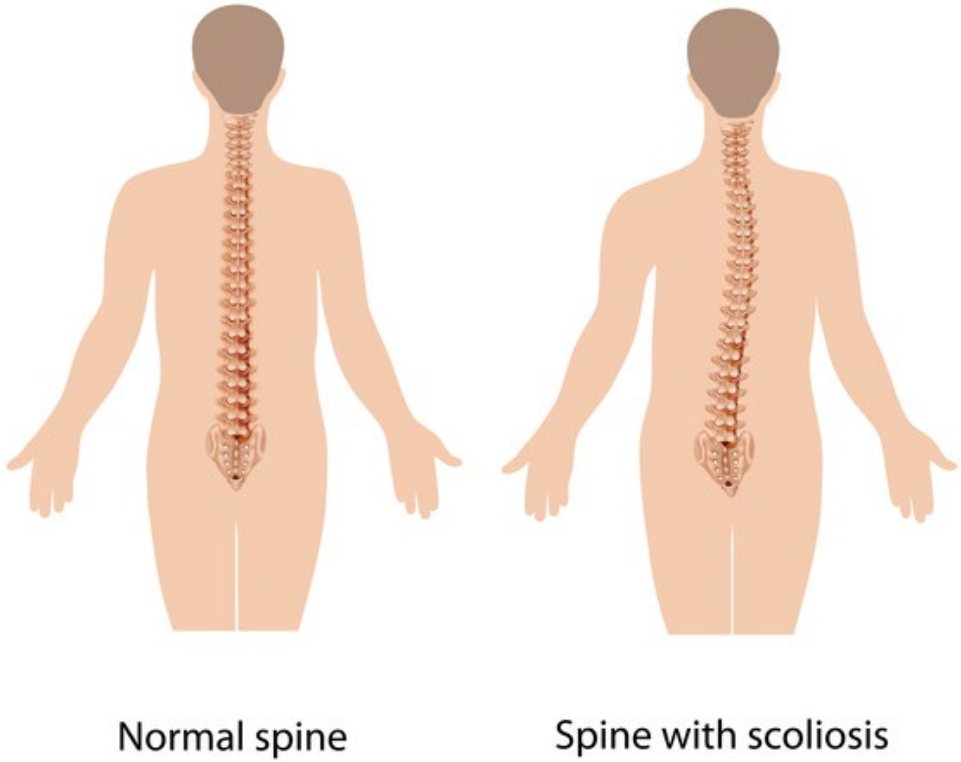

Image Source: https://medlineplus.gov/genetics/condition/adolescent-idiopathic-scoliosis/

Spinal Fusion – Guidelines

ICD-10-PCS Official Guidelines for Coding and Reporting 2023

Fusion procedures of the spine

B3.10a

- The body part coded for a spinal vertebral joint(s) rendered immobile by a spinal fusion procedure is classified by the level of the spine (e.g., thoracic). There are distinct body part values for a single vertebral joint and for multiple vertebral joints at each spinal level.
- **Example:** Body part values specify Lumbar Vertebral Joint, Lumbar Vertebral Joints, 2 or More and Lumbosacral Vertebral Joint.

B3.10b

- If multiple vertebral joints are fused, a separate procedure is coded for each vertebral joint that uses a different device and/or qualifier. Example: Fusion of lumbar vertebral joint, posterior approach, anterior column and fusion of lumbar vertebral joint, posterior approach, posterior column are coded separately.

ICD-10-PCS Official Guidelines for Coding and Reporting 2023

Fusion procedures of the spine

B3.10c

- **Combinations of devices and materials are often used on a vertebral joint to render the joint immobile. When combinations of devices are used on the same vertebral joint, the device value coded for the procedure is as follows:**
  - If an interbody fusion device is used to render the joint immobile (containing bone graft or bone graft substitute), the procedure is coded with the device value Interbody Fusion Device
  - If bone graft is the only device used to render the joint immobile, the procedure is coded with the device value Nonautologous Tissue Substitute or Autologous Tissue Substitute
  - If a mixture of autologous and nonautologous bone graft (with or without biological or synthetic extenders or binders) is used to render the joint immobile, code the procedure with the device value Autologous Tissue Substitute

- **Examples**: Fusion of a vertebral joint using a cage style interbody fusion device containing morselized bone graft is coded to the device Interbody Fusion Device. Fusion of a vertebral joint using a bone dowel interbody fusion device made of cadaver bone and packed with a mixture of local morselized bone and demineralized bone matrix is coded to the device Interbody Fusion Device. Fusion of a vertebral joint using both autologous bone graft and bone bank bone graft is coded to the device Autologous Tissue Substitute.

Spinal Fusion – Techniques

Spinal Fusion – Column & Techniques

- During an anterior column fusion, the body (corpus) of adjacent vertebrae are fused (interbody fusion).
- The anterior column can be fused using an **anterior, lateral, or posterior** technique.
- The posterior column fusion, posterior structures of adjacent vertebrae are fused (**pedicle, lamina, facet, transverse process, or "gutter" fusion**).
- A posterior column fusion can be performed using a **posterior, posterolateral**, or **lateral transverse** technique.
- Combined anterior/posterior fusions may only have one incision from the lateral and/or posterior approach
- **If interbody fusion device (cage) is inserted = Anterior Column Fusion**

Anterior approach to cervical spine

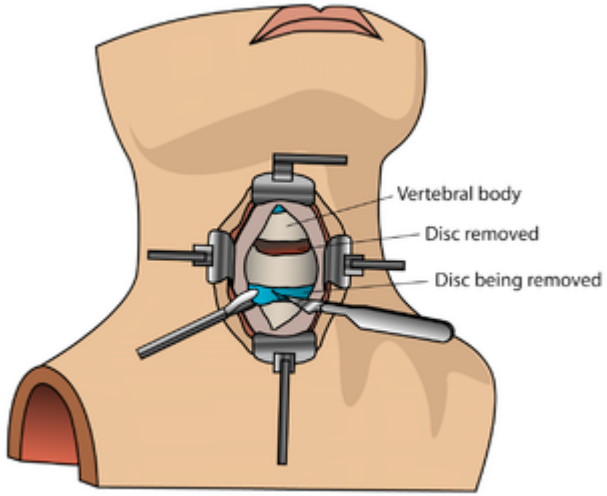

Image Source: https://en.wikipedia.org/wiki/Spinal_fusion

Spinal Fusion – Surgical Approach

- Traditionally, three basic approaches have been used for spinal fusion or spinal refusion: anterior, posterior, and lateral transverse.
  - Anterior approach (Supine position) requires an incision in the neck or the abdomen, and the fusion is carried out from the front of the vertebrae through the anterior annulus. It may be accessed from posterior or anterior approach.
  - Posterior approach (prone position): The incision is made in the patient's back directly over the vertebrae. It can be accessed only from posterior approach.
  - Lateral transverse approach: An incision is made on the patient's side and the vertebrae are approached through the lamina.

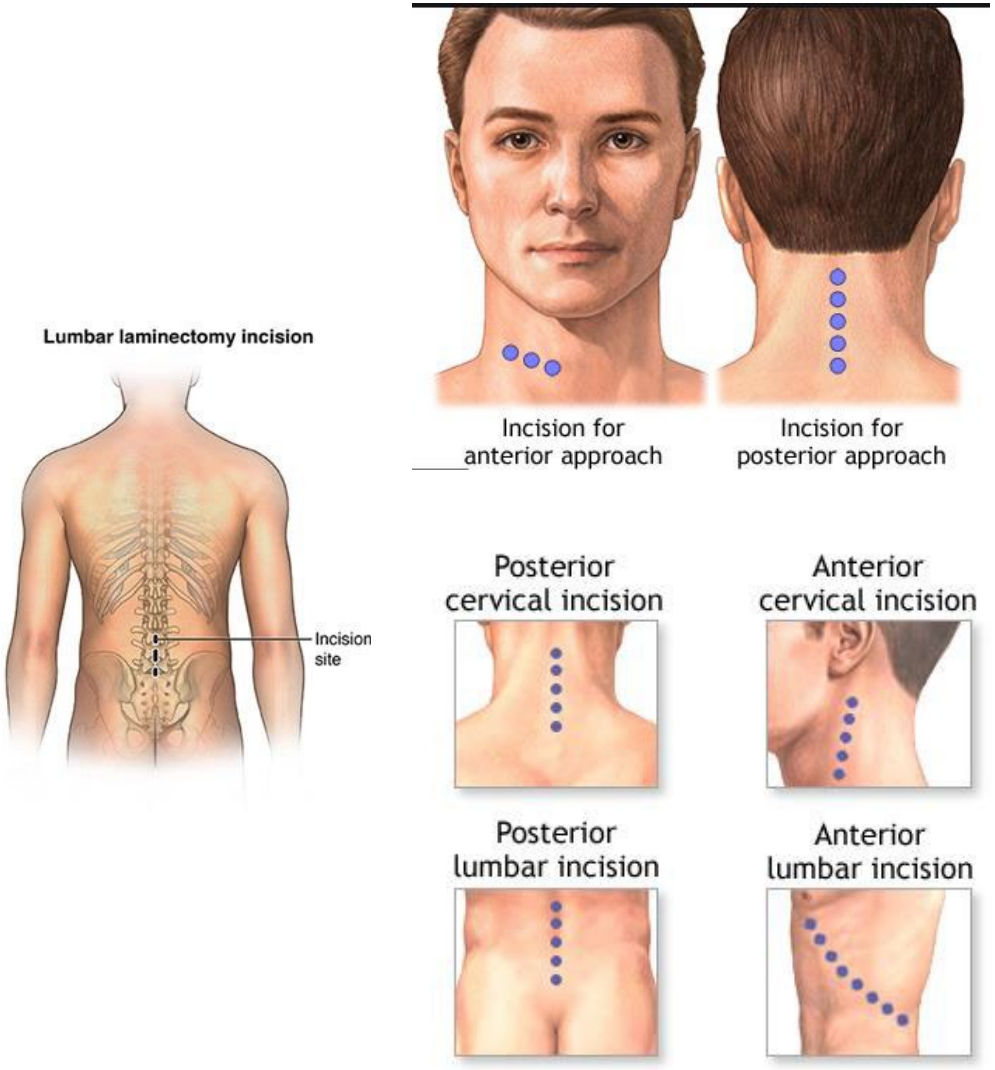

Image Source: https://medlineplus.gov/ency/presentations/100121_3.htm

Different Methods of Fusion

- **ALIF**
  - The anterior lumbar interbody fusion (ALIF) is an interbody fusion of the anterior and middle columns of the spine through an anterior incision, either transperitoneal or retroperitoneal. It can also be done laparoscopically

- **AxiaLIF**
  - The axial lumbar interbody fusion (AxiaLIF ®) is a percutaneous fusion of the anterior column at L 5 S 1. An AxiaLIF ® 360º refers to the combination of an AxiaLIF ® procedure of the anterior column performed along with a posterior column fusion, which may include the use of pedicle screws or facet screws. The AxiaLIF® 360º is as providing a percutaneous 360º fusion.

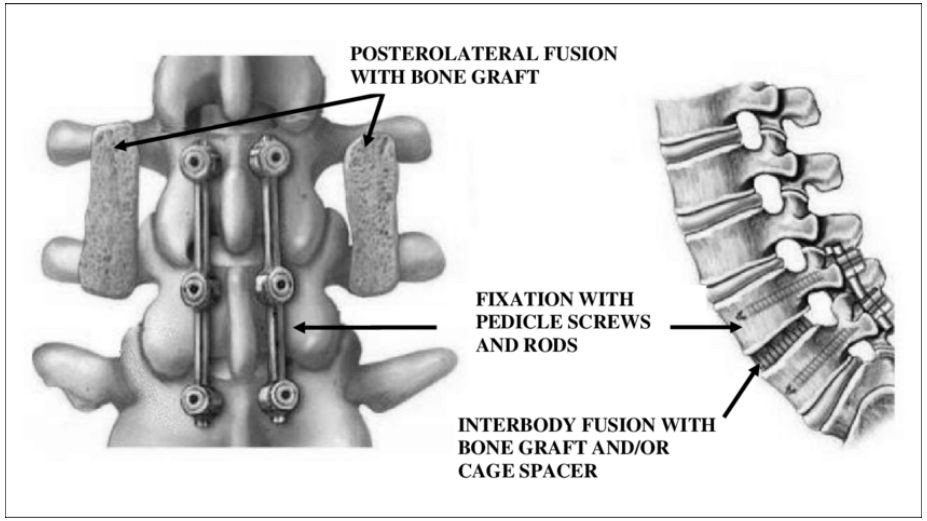

Image Source: https://www.researchgate.net/figure/Types-of-spinal-fusion_fig1_265059262

Different Methods of Fusion

- **DLIF**
  - The direct lateral lumbar interbody fusion (DLIF) is a minimally invasive alternative to conventional spinal fusion. The DLIF is performed through a lateral approach, which allows for limited soft tissue disruption. The procedure can only be performed at L 4 L 5 or at higher levels and requires dissection through the psoas muscle
- **PLIF**
  - The posterior lumbar interbody fusion (PLIF) involves an anterior and middle column fusion through a posterior approach.
- **TLIF**
  - The transforaminal lumbar interbody fusion (TLIF) involves a transverse lateral interbody fusion through a posterior approach.
- **XLIF**
  - The extreme lateral interbody fusion (XLIF®) is a less invasive spinal surgery of the anterior column. The fusion may be accomplished either percutaneously or via a circular tube retractor through a lateral approach

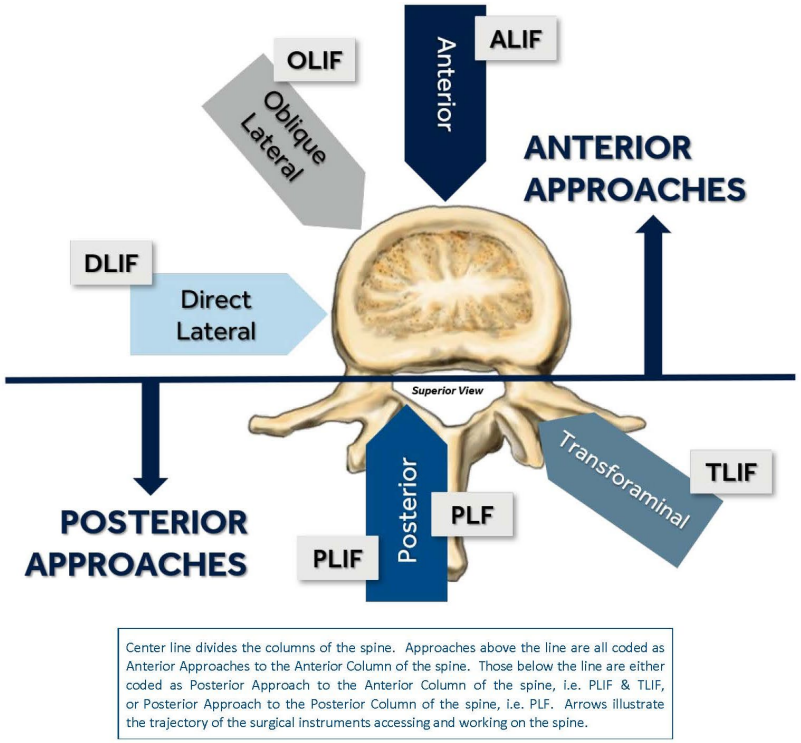

Image Source: https://www.aapc.com/blog/48628-bone-up-on-lumbar-spinal-fusion/

Spinal Fusion – Devices Used

- If bone graft is the only device used to render the joint immobile, the procedure is coded with the device value "nonautologous tissue substitute" or "autologous tissue substitute"
- If a mixture of autologous and nonautologous bone graft (with or without biological or synthetic extenders or binders) is used to render the joint immobile, code the procedure with the device value "autologous tissue substitute"
- If multiple vertebral joints are fused, a separate procedure is coded for each vertebral joint that uses a different device and/or qualifier
- **For example,**
  - Fusion of lumbar vertebral joint, posterior approach, anterior column
  - Fusion of lumbar vertebral joint, posterior approach, posterior column

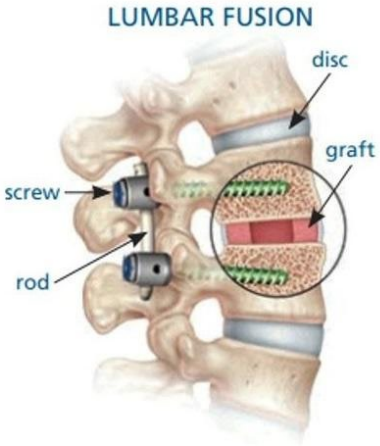

Image Source: https://www.jnjmedtech.com/en-US/treatment/spine/posterior-lumbar-fusion

Spinal Fusion – Interbody Fusion Cage

- If an interbody fusion device is used to render the joint immobile (alone or containing other material like bone graft), the procedure is coded with the device value “interbody fusion device.”
- Vertebral body and intervertebral disc are anterior column structures, so interbody fusion is always in the anterior column and generally requires interbody fusion device to restore disc height. Thus, interbody fusion device typically will be the device value for anterior column fusions.

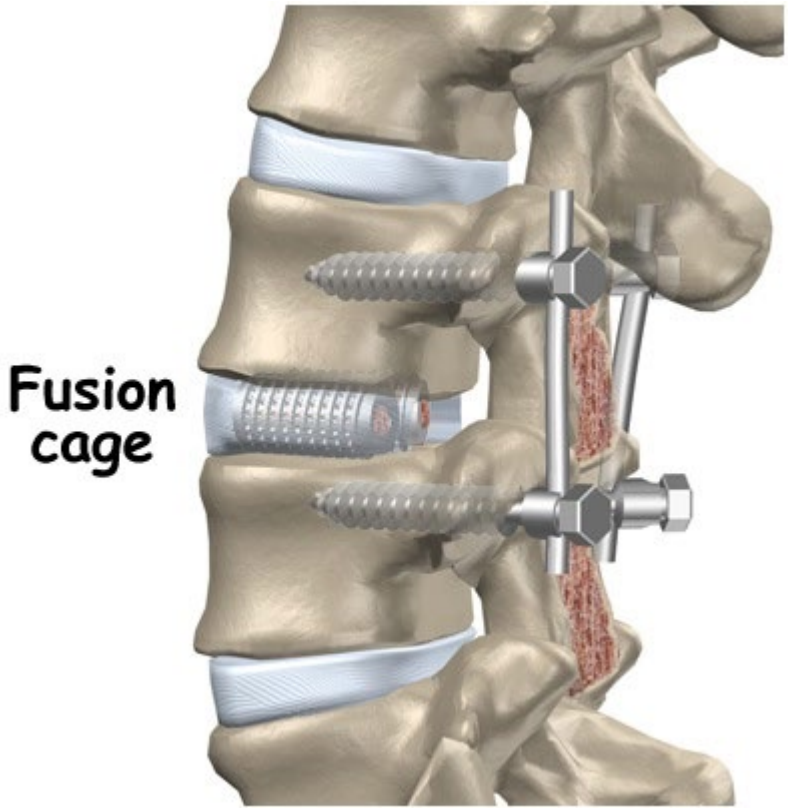

Image Source: https://pbrainmd.wordpress.com/2015/10/11/lumbar-interbody-fusion/

Spinal Fusion – Interbody Fusion Cage

DEVICE MATERIALS

- Carbon
- Ceramic
- Metal
- Plastic
- Titanium

ALTERNATE TERMS USED

- BAK (Bagby and Kuslich) cages
- Interbody Fusion Cage
- Ray-threaded Fusion Cage
- PEEK device
- Interbody Spacer

FIXATION INSTRUMENTATION

- Rods, plates, screws, etc. are included in the fusion root operation.
- No additional code should be assigned.

Spinal Fusion – Approach and Column Value

Common Fusion and Refusion ICD-10-PCS Qualifiers

Fusion Procedure	Approach and Column	ICD-10-PCS Qualifier (Seventh Character)
ALIF	Anterior approach, anterior column	0
AxiaLiF	Posterior approach, anterior column	J
DLIF	Anterior approach, anterior column	0
PLIF	Posterior approach, anterior column	J
TLIF	Posterior approach, anterior column	J
XLIF	Anterior approach, anterior column	0

Spinal Fusion – Anterior Approach, Anterior Column

- Anterior approach to the thoracolumbar interbody fusion (ALIF) requires incision made to the left of umbilicus.
- Spinal nerves and neurological structures do not require retraction. Cutting through the abdominal muscles may or may not be necessary. Mini-open approach preserves the muscles.
- This technique provides the best exposure for performing total discectomy in thoracolumbar region.
- Use of interbody fusion device filled with graft to restore disc height and stability following disc removal is similar ACDF.
- Interbody fusion device may be cage, spacer, or bone dowel.

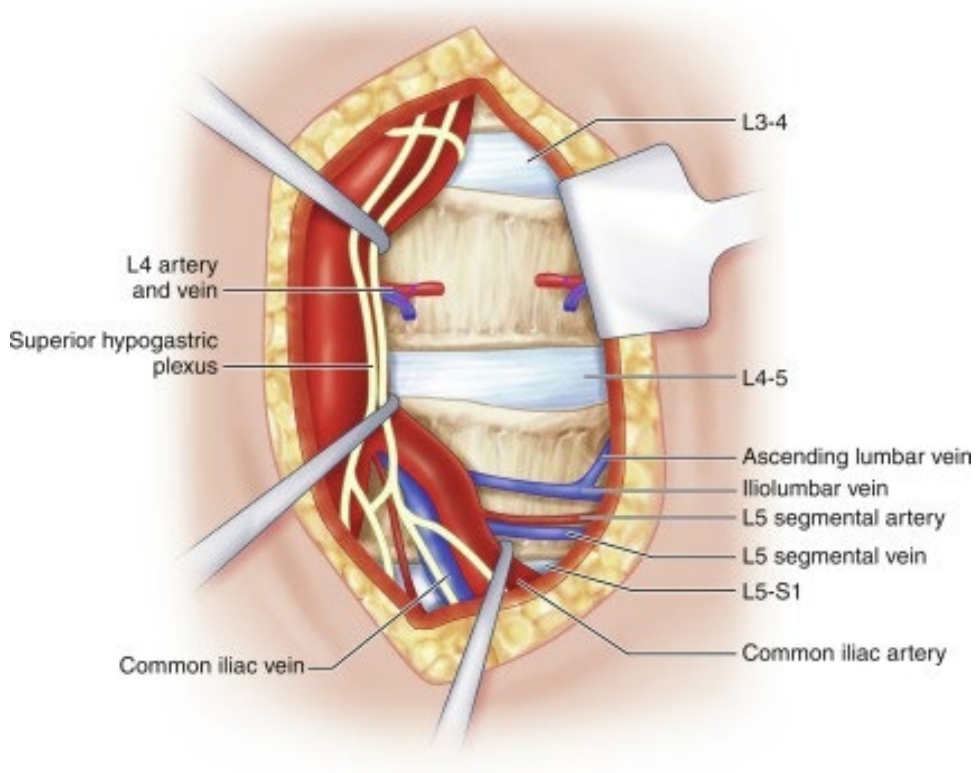

Image Source: https://pbrainmd.wordpress.com/2015/10/11/lumbar-interbody-fusion/

Spinal Fusion – Posterior Approach, Anterior Column

- Posterior lumbar interbody fusion (PLIF) and transforaminal lumbar interbody fusion (TLIF) both allow for concurrent fusion of anterior and posterior columns from a posterior approach.

Posterior lumbar interbody fusion (PLIF):

- Posterior incision that lines up more with the middle of lumbar vertebra.
- Gentle retraction of spinal nerves required.
- Wide laminectomy and bilateral partial facetectomy to remove disc.
- Bilateral interbody fusion devices filled with graft inserted on both sides of intervertebral disc space.

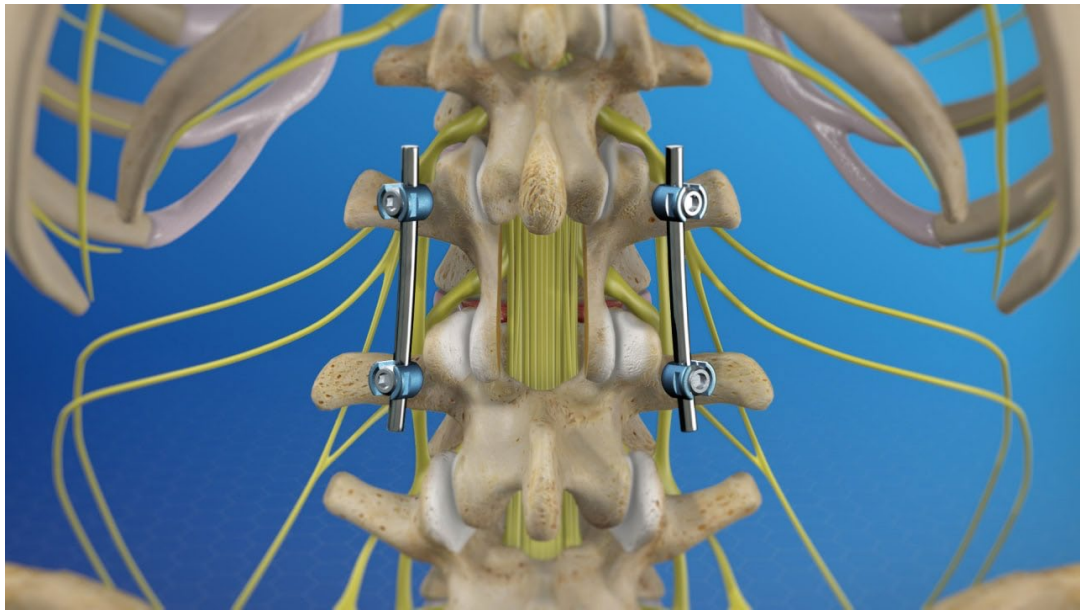

Image Source: https://www.doneurosurgery.com/plif-mis.html

Spinal Fusion – Posterior Approach, Anterior Column

- Posterior lumbar interbody fusion (PLIF) and transforaminal lumbar interbody fusion (TLIF) both allow for concurrent fusion of anterior and posterior columns from a posterior approach.

Transforaminal lumbar interbody fusion (TLIF):

- Posterior incision that lines up with lumbar neuroforamen more to the side.
- Little or no retraction of spinal nerves required.
- Complete unilateral facetectomy to remove disc.
- Single interbody fusion device filled with graft inserted in middle of intervertebral disc space.

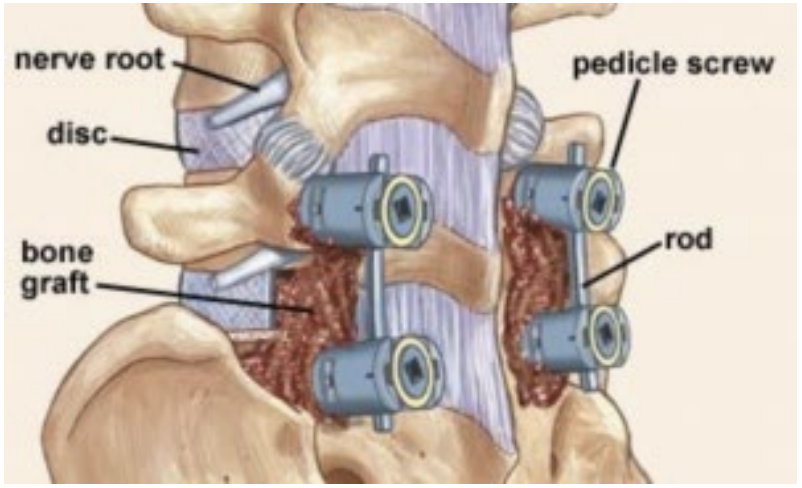

Image Source: https://fwbsi.com/tlif/

Spinal Fusion – Posterior Approach, Posterior Column

- Posterior (or posterolateral gutter) fusion of the lumbar spine requires incision in midline of back.
- Muscle and fascia division and nerve retraction required.
- Lamina, facet joints, and transverse processes are decorticated, and bone graft is placed along side of vertebra.
- Back muscles that attach to transverse processes are elevated up to create a bed for bone graft and then laid back over the graft to produce tension and hole it in place.
- Pedicle screws and rods are applied for stabilization.
- Sites for posterior lumbar fusion include the lamina, facets, Pedicles, spinous process, and transverse process (aka posterolateral gutter).

Types of Bone Graft Used

- **Autograft**
  - From patient own's bone
- **Allograft**
  - From a cadaver or bone graft substitute/tissue bank
- **A combination of autograft and allograft/bone graft substitute are often used at the same site to render the site immobile. There is a hierarchy to follow when combination of devices are used on the same vertebral joint.**

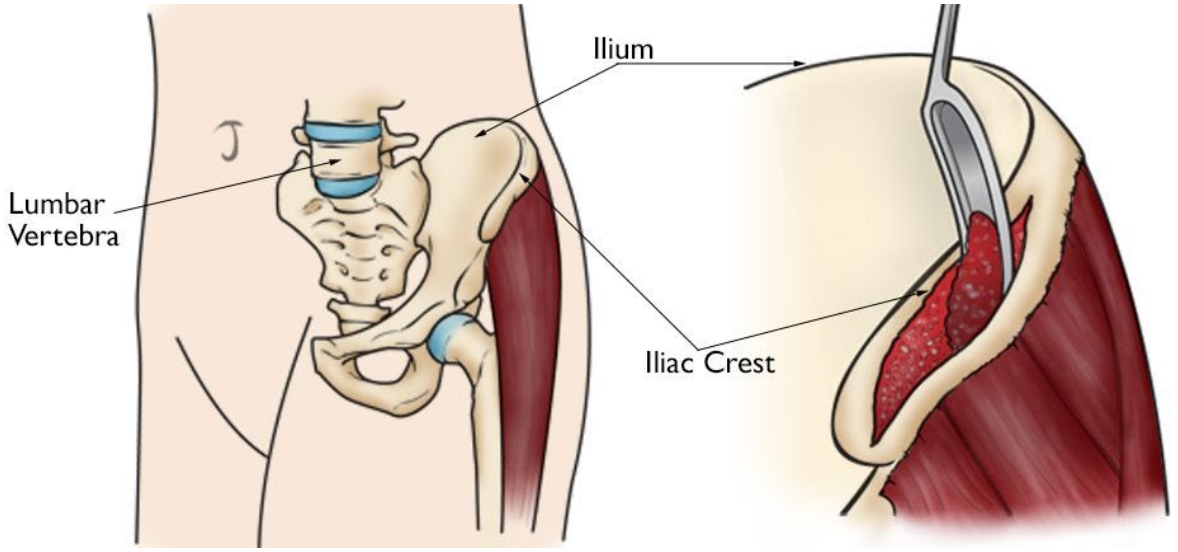

Image Source: https://orthoinfo.aaos.org/en/treatment/bone-grafts-in-spine-surgery/

Spinal Fusion – Qualifier

ANTERIOR APPROACH, ANTERIOR COLUMN (0)

- Look for supine positioning (face up)
- Incision made on anterior side of body
- Retroperitoneal, platysma muscle, lateral
- Vertebral body or disc space

POSTERIOR APPROACH, POSTERIOR COLUMN (1)

- Look for prone positioning (face down)
- Incision through the back of body
- Vertebral foramen, spinal procedures, facets and/or lamina

POSTERIOR APPROACH, ANTERIOR COLUMN (J)

- Look for prone positioning (face down)
- Incision through the back of body
- Vertebral body or disc space

Spinal Fusion – PCS Coding

QUALIFIER CHARACTERS		
Anterior Approach, Anterior Column (0)	Posterior Approach, Posterior Column (1)	Posterior Approach, Anterior Column (J)
Supine (face up) positioning	Prone (back up) positioning	Prone (back up) positioning
Incision made on the front or side of the body	Incision made on the back side of the body	Incision made on the back side of the body
Vertebral body is fused	Structures on the posterior spine are fused	Vertebral body is fused

Qualifier Examples for Anterior Column Fusions

Procedure	Approach	Qualifier
Anterior lumbar interbody fusion (ALIF)	Incision made in front of the spine through a mini laparotomy or laparoscopy	0 Anterior Approach, Anterior Column
Posterior lumbar interbody fusion (PLIF)	Incision made through a midline incision in the back	J Posterior Approach, Anterior Column
Extreme lateral interbody fusion (XLIF)	Incision made in the patient's side	0 Anterior Approach, Anterior Column
Direct lateral interbody fusion (DLIF)	Incision made in the patient's side	0 Anterior Approach, Anterior Column
Transforaminal lumbar interbody fusion (TLIF)	Incision made through a midline incision in the back	J Posterior Approach, Anterior Column

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Case Studies

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CASE STUDY – 1

OPERATIVE REPORT

PREOPERATIVE DIAGNOSES:
1. Grade 2/3 anterolisthesis.
2. Severe bilateral foraminal stenosis.
3. Chronic lumbar back pain.
4. Radiculopathy.

POSTOPERATIVE DIAGNOSES:
1. Grade 2/3 anterolisthesis.
2. Severe bilateral foraminal stenosis.
3. Chronic lumbar back pain.
4. Radiculopathy.

PROCEDURES PERFORMED:
1. Pedicle screw fixation at L5 bilaterally.
2. Pedicle screw fixation at S1 bilaterally.
3. Gill laminectomy at L5-S1.
4. PEEK interbody cage placement at L5-S1.
5. Interbody and posterolateral arthrodesis at L5-S1.
6. Allograft, autograft and demineralized bone matrix for long-term arthrodesis.

ESTIMATED BLOOD LOSS: Approximately 250 mL.

IMPLANTS: Medtronic.

COMPLICATIONS: None.

INDICATIONS FOR PROCEDURE: The patient is a patient well known to neurosurgery service, who presents with a grade 2/3 spondylolisthesis. He had failed conservative treatment options and now presents for surgical intervention. The risks and benefits of surgery were discussed with the patient previously.

DESCRIPTION OF PROCEDURE: The patient was brought to the operating room where his name and procedure to be performed were verified with him. Preoperative antibiotics were started and a time-out procedure was performed. After

CASE STUDY – 1

endotracheal intubation and the obtaining of all appropriate IV access, the patient was then turned prone on a Jackson table. All bony prominences were well padded. His back was copiously cleansed with alcohol and a sponge pad. A marking pen was used to prepare an incision centered over the L5-S1 interspace. The patient was then prepped and draped in the usual sterile fashion.

A 10-blade scalpel was used to make an incision. Monopolar cautery was used to continue down to the tips of spinous processes and then continued in a subperiosteal fashion to the tips of the transverse processes bilaterally. At this point, with all anatomic landmarks exposed, we began placing pedicle screws. We began a pilot hole in the pedicle of L4 and L5. We then began using the Lenke probe and advancing it down the pedicle. We used lateral fluoroscopic imaging to verify the placement as well as the depth and trajectory. At this point, we then removed the Lenke probe and inserted a ball probe to verify there was no breach pedicle or vertebral body. We then inserted the screw in the same trajectory. The pedicle screws at L5 and S1 were all placed in this manner. Afterwards, we did direct EMG stimulation as well as AP and lateral fluoroscopic imaging. Everything looked appropriate. At this point, we then removed the interspinous ligament and spinous process. The whole Gill lamina was fully removed, completing the Gill laminectomy. We opened up the foramen bilaterally. We were able to identify and visualized the nerve roots to ensure that they were well decompressed. At this point, we mobilized the thecal sac medially. We cauterized the epidural space and made sure there was no venous bleeding. We then used an osteotome and opened up the interspace. We advanced an osteotome from both sides to open the interspace. We then used sequential paddle shavers to further open it. Once this was completed and all soft tissue removed, we selected an interbody cage. We inserted this into the interspace. Once that was completed under direct fluoroscopic visualization, we then fixated the rods and applied some reduction maneuvers to reduce L5 on S1. Intraoperatively, it was seen that there was a slight anterior chip fracture of S1. It was also pulling the cage back in a way that precluded further reduction. We stabilized the construct and fixated all the screws and rods in place. We reassessed the exiting and traversing nerve roots to make sure these were well decompressed. We did apply gentle compression maneuver at L5-S1. At this point, we then placed bone in the posterolateral margins to accomplish a posterolateral arthrodesis at L5-S1. We copiously irrigated. We then closed with #0 Vicryl sutures throughout the full length of the fascia, subcutaneous tissue, subdermal tissue with Monocryl and Dermabond on the skin. A 10 flat JP
drain was left in the wound. Monocryl and then Dermabond were placed on the surface of the skin. The patient was then transferred to PACU for postoperative anesthesia recovery.

CASE STUDY – 1

CASE STUDY – 2

PREOPERATIVE DIAGNOSES:
1. Lumbar spinal stenosis.
2. Lumbar spondylolisthesis.
3. Lumbar radiculopathy.

POSTOPERATIVE DIAGNOSES:
1. Lumbar spinal stenosis.
2. Lumbar spondylolisthesis.
3. Lumbar radiculopathy.

PROCEDURE:
1. Anterior lumbar interbody fusion through a right-sided retroperitoneal approach, L4-5.
2. Anterior insertion of intervertebral PEEK spacer, L4-5.
3. Harvest of iliac crest autograft bone marrow through separate fascial incision.
4. Use of intraoperative C-arm fluoroscopy.
5. Use of intraoperative EMG monitoring NeuroVision.

OPERATIVE INDICATIONS:
[redacted] is a pleasant 76-year-old male with history of progressively worsening lumbar symptoms, failed to improve with all nonoperative management. I discussed the risks, benefits, and alternatives of the procedure in detail with the patient prior to proceeding. Those risks include bleeding, infection, nerve injury, persisting worsening pain, swelling, stiffness, hardware failure, failure to fuse, need for future procedures, adjacent level degeneration, spinal fluid leak, blood clot, heart attack, stroke, pulmonary embolism, paralysis, and death. No guarantee of a successful outcome was expressed or implied.

CASE STUDY – 2

OPERATIVE COURSE:
The patient was taken to the operative room, induced under general anesthesia, received IV antibiotics prior to incision, was carefully positioned in the lateral decubitus with the right side up. An axillary roll was placed. Hips and knees were flexed to access psoas, well secured to the table. Table was flexed to enhance exposure laterally. I obtained a true AP and then marked off lateral incision, prepped and draped the right flank in usual sterile fashion. We infiltrated the skin with 0.5% Marcaine and epinephrine containing solution, incised the skin transversely using a 10 blade, used Bovie cautery to deepen the incision through the subcutaneous tissues down to the fascia. The fascia was opened using blunt finger dissection down the retroperitoneal space. Through separate fascial incision, I dissected down the lateral iliac crest, inserted Jamshidi through the outer cortical margin of the cancellous center, aspirated 25 mL of cancellous bone marrow and then concentrated to the back table and added to our Osteocel. Through the lateral exposure, I inserted initial dilator via transosseous approach down the disk space laterally. Docked on the disk space using a K-wire, then dilated with size retractor, placed the retractor, removed the inner dilators, used a ball-tip EMG nerve probe to confirm there was no traversing nerve then placed a Shim in the disk space under direct visualization. I then opened the retractor further anteriorly in cephalad and caudal direction. Incised the anulus slightly using 11 blade, used pituitaries to remove the disk material, Cobb elevator to denude the endplates down the contralateral side. Used ring curettes to smooth out the endplate surface down to bleeding bone. Then used pituitary in a back angle fashion to remove the disk material centrally as well as the foraminal zones on both sides. Once we adequately prepared the endplates, we then began trialing. We trialed up to a press-fit size A10 spacer and carefully impacted the size PEEK spacer in the disk space filled centrally with our Osteocel and iliac crest autograft bone marrow. We had excellent press fit with good restoration of disk height, irrigated copiously with antibiotic containing solution, placed some FloSeal for hemostasis, used bipolar cautery, withdrew the retractor. Obtained a final AP and x-ray to confirm position of the implants to be anatomic. I closed the fascial layers with #1 Vicryl

CASE STUDY – 2

CASE STUDY – 3

PREOPERATIVE DIAGNOSES:
1. Lumbar spinal stenosis.
2. Lumbar spondylolisthesis.
3. Lumbar radiculopathy.

POSTOPERATIVE DIAGNOSES:
1. Lumbar spinal stenosis.
2. Lumbar spondylolisthesis.
3. Lumbar radiculopathy.

PROCEDURE:
1. Posterior midline approach lumbar spine, L3-S1.
2. Bilateral laminectomy, L3.
3. Bilateral laminectomy, L4.
4. Bilateral laminectomy, L5.
5. Bilateral laminectomy, S1.
6. Far-lateral microdecompression, left L5-S1.
7. Posterolateral fusion, L4-5, L5-S1.
8. Transforaminal lumbar interbody fusion, L5-S1.
9. Insertion of intervertebral PEEK spacer, L5-S1.
10. Posterior spinal fixation, L4, L5, S1 (Camber Spine).
11. Use of intraoperative microscope for microdissection.
12. Neurolysis of adhesions, bilateral L4-S1.
13. Use of intraoperative EMG monitoring NeuroVision.

CASE STUDY – 3

OPERATIVE COURSE:
The patient was taken to the operating room, induced under general anesthesia received IV antibiotics prior to incision, was carefully positioned prone onto the Jackson table. Abdomen was hanging freely. The back prepped and draped in the usual sterile fashion, marked off the level of the incision. We infiltrated the skin with 0.5% Marcaine and epinephrine containing solution, incised the skin in midline with 7 blade, used Bovie cautery to deepen the incision through the subcutaneous tissue down to the fascia. The fascia incised along the incision using the subperiosteal dissection of the spinous process of the lamina bone bilaterally, placed self-retaining McCulloch retractor, placed 4 mm curette interspace, obtained a lateral x-ray to confirm our level. We dissected out over the transverse processes of L4, L5, and sacral ala bilaterally, decorticated these structures, placed rolled Ray-Tecs into the gutters. We then began our instrumentation starting at the L4 level , initiated starting holes using a high-speed bur and the gearshift awl to cannulate the pedicles bilaterally. Used a ball-tip probe to confirm there was no breach wall of pedicle in all 4 quadrants. Firm endpoint was palpated. I then placed 6.5 x 45 mm screws bilaterally at L4. Had excellent fixation with good medialization. I then repeated these steps bilaterally at L5 placing 6.5 x 45 mm screws followed by S1 with 7.5 x 30 mm screws bilaterally. We tested all screws using the ball-tip EMG nerve probe to confirm there was no breach. Once the hardware was in position, we then began the decompression portion of procedure with interspinous ligament of L3-4, L4-5 and L5-S1, removed the spinous process of L3 and L4 partially using a high-speed bur to thin out the lamina bone bilaterally and partial medial facetectomy performed using 3 and 4 mm Kerrison on the right and left side at L3-4, decompressed the traversing L4 nerve roots widely. Moved down to the L4-5 region mark. I performed a

CASE STUDY – 3

far-lateral laminectomy of L4 and L5 and decompressed the traversing nerve roots bilaterally at L5 and the exiting L4 nerve roots bilaterally using 2 and 3 mm Kerrison. Continued in caudal direction down to L5-S1 region, performed a partial medial facetectomy bilaterally at L4-5 and L5-S1, a wide decompression was performed, noted there was severe lateral recess stenosis bilaterally. I then also decompressed the foramina in far lateral space and left side using 2 and 3 mm Kerrison in an up-biting fashion, decompressed the exiting L5 nerve root, which was being impinged on the left side. I carefully retracted the S1 nerve root medially, incised the anulus posteriorly using 11 blade, used pituitaries in straight up-biting fashion removed the disk material within the disk space and ring curettes in the endplate bone down to bleeding bone surface. I then began trialing, I trialed up to a press-fit size 8 x 30 and carefully impacted the size 8 x 30 PEEK spacer into the disk space. Filled centrally with our Osteocel and iliac crest autograft bone marrow. I had excellent press fit with good restoration of disk height. Placed some Floseal for hemostasis and then placed our rods bilaterally followed by our set screws, torqued the set screws with appropriate torque limiting screwdriver. We irrigated copiously with antibiotic-containing solution and dilute Betadine. We placed subfascial medium Hemovac drain. I removed the rolled Ray-Tecs bilaterally and packed bone graft posterolaterally spanning from L4 down to S1. Placed some tricalcium phosphate substrate for containment of bone graft posterolaterally. We closed the fascia over the drain using #1 Vicryl interrupted. Final AP and lateral x-rays were obtained to confirm position of the implants to be anatomic. Closed the subcu using 2-0 Vicryl interrupted and a running 3-0 Monocryl subcuticular. I then placed Xeroform gauze, 4 x 4s, Microfoam tape dressing. The patient then carefully supine, awakened, extubated taken to the recovery room in stable condition. All needle and sponge counts were correct. No intraoperative complications.

CASE STUDY – 3

ICD-10-PCS Procedures

- 0SG30A0 Fusion of Lumbosacral Joint with Interbody Fusion Device, Anterior Approach, Anterior Column, Open Approach
- 0SG3071 Fusion of Lumbosacral Joint with Autologous Tissue Substitute, Posterior Approach, Posterior Column, Open Approach
- 0SG0071 Fusion of Lumbar Vertebral Joint with Autologous Tissue Substitute, Posterior Approach, Posterior Column, Open Approach
- 0SB40ZZ Excision of Lumbosacral Disc, Open Approach
- 01NB0ZZ Release Lumbar Nerve, Open Approach
- 4A11X4G Monitoring of Peripheral Nervous Electrical Activity, Intraoperative, External Approach

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Coding Clinics Regarding Spinal Fusion

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Coding Clinic – Spinal Fusion

360-degree spinal fusion

ICD-10-CM/PCS Coding Clinic, Third Quarter 2013 Pages: 25-26 Effective with discharges: September 10, 2013

Question: A patient diagnosed with stenosis and degenerative spondylolisthesis underwent a 360-degree fusion. The provider documented Crescent PEEK interbody device, locally harvested autograft bone, some allograft bone, and bone morphogenic protein (BMP) were inserted into the disk space and maneuvered into the anterior third of the disk space. The space was packed primarily with autograft. Transfacet lumbar interbody fusion was completed. Pedicle screws were placed on the left using image guidance. Left transverse process fusion L4-L5 was performed with placement of harvested autograft bone and allograft morselized chips were supplemented posteriorly. Attention was directed to the anterior side using C-arm image intensifier to assist with confirming the position on the right. An incision was made to midline on the right and carried down to the fascia. PAK needle with image guidance penetrated the pedicle and body of L4. The same process was done at L5. Sextant rod was rotated in position, torqued, then released and removed. Sextant screws and Pedicle screws were in excellent position bilaterally. What is/are the correct code(s) for the fusion portion of the 360- degree fusion?

Answer:
Assign the following ICD-10-PCS codes:

- **0SG0071,** Fusion of lumbar vertebral joint with autologous tissue substitute, posterior approach, posterior column, open approach
- **0SG00AJ**, Fusion of lumbar vertebral joint with interbody fusion device, posterior approach, anterior column, open approach

In this case, two codes are required because the 360-degree fusion involves both a posterior column and an anterior column fusion and there are two different qualifiers to represent the procedure performed. Additionally, the fusion involved a bone graft, utilizing locally harvested autograft bone, some allogaft, and BMP. The *ICD-10-PCS Official Guidelines for Coding and Reporting* state, "If a mixture of autologous and nonautologous bone graft (with or without biological or synthetic extenders or binders) is used to render the joint immobile, code the procedure with the device value Autologous Tissue Substitute."

Coding Clinic – Spinal Fusion

Posterior lumbar fusion with discectomy

ICD-10-CM/PCS Coding Clinic, Second Quarter ICD-10 2014 Pages: 6-7 Effective with discharges: May 26, 2014

Question: The patient presented with severe lumbar spondylosis. The surgeon accomplished posterior lumbar interbody fusion L3-L4 and L4-L5 using autologous bone graft, discectomy of L3-L4 and L4- L5, packing of the disc space with autologous bone that was harvested from the right iliac crest, and pedicle screw instrumentation. What are the appropriate ICD-10-PCS procedure code assignments? Is the discectomy coded separately or is it considered inherent to the fusion?

Answer:
Discectomy is almost always performed at the same time as spinal fusion surgery. Typically, a fusion involves partial removal of the disc. If the provider performs a discectomy with spinal fusion, it should be coded as excision of disc. If, however, the provider documents "total discectomy," it should be coded as a disc resection. In this case, assign the following ICD-10-PCS codes:

- **0SG007J,** Fusion of lumbar vertebral joint with autologous tissue substitute, posterior approach, anterior column, open approach, for the posterior lumbar interbody fusion
- **0SB20ZZ,** Excision of lumbar vertebral disc, open approach, for the discectomy
- **0QB20ZZ,** Excision of right pelvic bone, open approach, for the harvesting of the autologous bone for grafting

Coding Clinic – Spinal Fusion

Anterior cervical thoracic fusion with total discectomy

ICD-10-CM/PCS Coding Clinic, Second Quarter ICD-10 2014 Pages: 7-8 Effective with discharges: May 26, 2014

Question: A patient is admitted for surgical treatment of herniated nucleus pulposus C7-T1 with impingement on the nerve root, and radiculopathy. She underwent anterior cervical-thoracic spinal fusion, anterior approach, using interbody cage packed with demineralized bone matrix and autograft, and placement of plate and screw instrumentation with total discectomy. What is the correct ICD-10-PCS code for the spinal fusion? Should the complete discectomy be coded separately?

Answer:

In this case, the provider documented "total discectomy." Therefore, it is coded as a resection. Assign ICD-10-PCS procedure codes as follows:

- **0RG40A0** Fusion of cervicothoracic vertebral joint with interbody fusion device, anterior approach, anterior column, open approach, for fusion of C7-T1
- **0RT50ZZ** Resection of cervicothoracic vertebral disc, open approach, for the total discectomy

Spinal fusion using an interbody cage containing demineralized bone matrix and autograft is coded to the device "Interbody Fusion Device." Additionally, the fixation instrumentation (i.e., rods, plates, screws, etc.) is included in the fusion root operation, and no additional code is assigned.

Coding Clinic – Spinal Fusion

Spinal fusion performed at same level as decompressive laminectomy

ICD-10-CM/PCS Coding Clinic, First Quarter ICD-10 2019 Page: 30 Effective with discharges: March 20, 2019

Question: The patient is a 72-year-old woman diagnosed with lumbar stenosis and spondylolisthesis with scoliosis. She underwent decompressive laminectomy at L2, L3, and L4. This was followed by lumbar spinal fusion with interbody cages at L3-L4 and L4-L5. Is decompressive laminectomy coded separately when it is performed at the same level as a spinal fusion?

Answer:

In this case, the decompressive laminectomy was performed to treat a separately documented diagnosis of lumbar spinal stenosis. Since there is a distinct objective, it is appropriate to code decompressive laminectomy even though it was performed at the same level as the lumbar spinal fusion. The root operation Release is coded separately when decompression is documented, and there is a distinct surgical objective, not just incidental removal of the lamina to reach the site of the procedure. If the laminectomy is done as an operative approach to prepare for the spinal fusion, it is not coded separately.

Coding Clinic – Spinal Fusion

Spinal fusion without use of bone graft

ICD-10-CM/PCS Coding Clinic, First Quarter ICD-10 2020
Pages: 33-34 Effective with discharges: March 5, 2020

Question: A patient with progressive idiopathic thoracolumbar scoliosis, spondylosis with foraminal stenosis and rib cage deformity was admitted for spinal fusion surgery. Through a right thoracotomy approach, a right anterior spinal fusion was performed with placement of screws into the vertebral body and seating of a rod cord at T5-T11. Significant correction of the scoliosis curve was obtained across the thoracic levels. The patient was repositioned for exposure of the left side to complete left anterior spinal fusion at T11-L4. Screws were placed into the vertebral body and a rod cord was secured across the levels with significant correction of the scoliosis and derotation of the lumbar segments. What are the code assignments for this procedure?

Answer:

In ICD-10-PCS, this procedure is not classified as a fusion, but rather as an anterior vertebral tethering procedure. Reposition is the appropriate root operation. Assign the following ICD-10-PCS codes:

- **0PS404Z,** Reposition thoracic vertebra with internal fixation device, open approach; and
- **0QS004Z,** Reposition lumbar vertebra with internal fixation device, open approach, for this case.

Coding Clinic – Spinal Fusion

Spinal fusion with NuVasive® VersaTie®

ICD-10-CM/PCS Coding Clinic, Second Quarter ICD-10 2020
Page: 27 Effective with discharges: May 29, 2020

Question: A patient with multiple spinal conditions, including previous fusion, severe kyphoscoliosis, and severe spinal and foraminal stenosis, presents for corrective surgery. Prior fusion instrumentation was removed, new instrumentation was placed, and a new fusion was performed in the lumbar spine.

In addition to the multiple spinal procedures performed, a NuVasive® VersaTie® polyethylene tether was woven through the interspinous ligaments via drill holes that were placed at the base of T8. The tether was returned in a weave fashion and after full tension was achieved, the tie was locked into place to the VersaTie® connectors that were placed at T11-T12. What is the appropriate root operation for placement of tether from T8-T12?

Answer:

Do not assign an additional code for the placement of the VersaTie® tether. Fixation instrumentation is integral to the fusion procedure and no additional code is assigned.

Coding Clinic – Spinal Fusion

Mid-foot fusion with bone graft

ICD-10-CM/PCS Coding Clinic, Third Quarter ICD-10 2021
Page: 24 Effective with discharges: September 20, 2021

Question: The patient had severe osteoarthritis of the midfoot, including the naviculocuneiform joint, and underwent left mid-foot fusion. During the procedure, an incision was made and the second and third tarsometatarsal joints were identified and prepared for fusion into the medial and lateral cuneiform navicular joints. Screws were placed from the first metatarsal into the medial cuneiform. Staples were inserted from the medial cuneiform into the second metatarsal and from the third metatarsal into the lateral cuneiform. A staple was placed from the lateral cuneiform into the navicular. Bone harvested throughout the procedure was mixed with cellular allograft and placed inside the joints. What are the appropriate procedure codes for the ankle arthrodesis of the midfoot?

Answer:

Assign the following procedure codes:
0SGJ04Z Fusion of left tarsal joint with internal fixation device, open approach;

- **0SGJ07Z,** Fusion of left tarsal joint with autologous tissue substitute, open approach;
- **0SGL04Z,** Fusion of left tarsometatarsal joint with internal fixation device, open approach; and
- **0SGL07Z,** Fusion of left tarsometatarsal joint with autologous tissue substitute, open approach, for the fusion of the mid-foot joints using internal fixation and bone graft.

Coding Clinic – Spinal Fusion

Sacroiliac joint fusion

ICD-10-CM/PCS Coding Clinic, Second Quarter ICD-10 2022
Pages: 23-24 Effective with discharges: June 3, 2022

Question: A patient with left-sided joint instability and degeneration underwent a left-sided percutaneous sacroiliac joint fixation and fusion using three triangular fixation bone ingrowth devices. During the procedure, through a small incision, a dissection was made down through the skin to the fascia. The initial K-wire was advanced into position and a soft tissue dilator and a broach were used to implant the first triangular bony ingrowth stabilization and fusion cage. The same steps were achieved in placing the second and third triangular bony ingrowth stabilization devices. All three implants were noted to be placed in the appropriate positions; none were near the S1 or the S2 foramen, and all were well within the body of the sacral ala. What is the appropriate ICD-10-PCS code(s) for a sacroiliac joint fixation and fusion procedure using triangular fixation bone ingrowth devices?

Answer:

Assign the following ICD-10-PCS code:

- **0SG834Z,** Fusion of left sacroiliac joint with internal fixation device, percutaneous approach, for insertion of the sacroiliac joint fixation and fusion cage using triangular fixation bone ingrowth devices.

Triangular fixation bone ingrowth devices are designed to stabilize and fuse the sacroiliac joint by minimizing joint movement and rotation while the porous coating provides a favorable environment for bony ingrowth resulting in fusion. This minimally invasive procedure differs from more traditional fusion surgeries that can involve grafting or active packing of bone into the joint.

The root operation of “fusion” does not require the use of bone graft, except in cases describing spinal fusion. The ICD-10-PCS guidelines for Fusion are specific to spinal fusion and do not apply to fusion of other body parts.

Coding Clinic – Spinal Fusion

Breakage of intervertebral cage during surgery

ICD-10-CM/PCS Coding Clinic, **Third Quarter ICD-10 2022** Page: 20-21 Effective with discharges: September 20, 2022

Question: A patient presented for posterior L4-L5 lumbar spinal fusion. During the procedure, the FlareHawk™ expandable intervertebral cage broke upon insertion and expansion of the shell. The device was removed and a second FlareHawk™ cage was placed, which also broke during insertion. It was removed, and a titanium interbody cage was placed without incident for the posterior lumbar intervertebral fusion. What are the appropriate procedure code assignments for insertion and removal of the broken interbody fusion devices?

Answer:

Assign the following procedure code:

- **0SG00AJ**, Fusion of lumbar vertebral joint with interbody fusion device, posterior approach, anterior column, open approach for the lumbar intervertebral fusion with titanium interbody cage.

In this case, the procedure being performed was a spinal fusion procedure, therefore, only the code to identify the device that remained at the completion of the procedure is reported. It would not be appropriate to report an insertion and removal code for a spinal fusion procedure. The *ICD-10-PCS Official Guidelines for Coding and Reporting* for devices (B6.1a.) would not apply in this case. The guideline states, “If a device that is intended to remain after the procedure is completed requires removal before the end of the operative episode in which it was inserted (for example, the device size is inadequate or a complication occurs), both the insertion and removal of the device should be coded.”

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Tips to Code Spinal Fusion

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Spinal Procedures – Key Elements to Look For

The four elements for spine procedure coding

WHY?

Primary Diagnosis

- The diagnosis; the reason for surgery

WHERE?

Main Location

- Where is the anatomical location?

HOW?

Main Approach

- How are you getting there?
- What approach ?

WHAT?

Main Procedure

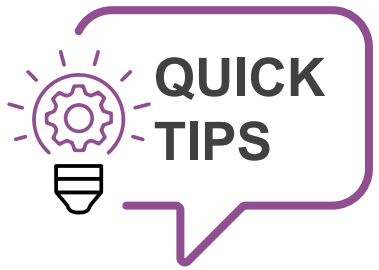
- What is it you are doing?

Determining the Level(s) Fused and Number of Vertebrae

- **There are five regions of the spine:**
  - Cervical (7)
  - Thoracic (12)
  - Lumbar (5)
  - Sacrum (5) and
  - Coccyx (4)

- Two adjacent vertebrae separated by an interspace is called a "vertebral joint."
- When multiple vertebral joints are involved in the spinal fusion, a separate procedure is coded for each vertebral joint that uses a different device and/or qualifier

Terms to Look for in Spinal Fusion



- **Approach** – Approach can be anterior or posterior.
- **Columns** – Fusion involves anterior and/or posterior vertebral columns.

Column	Approach
Anterior	Anterior
Anterior	Posterior
Posterior	Posterior

- During an anterior column fusion, the body (corpus) of adjacent vertebrae are fused (interbody fusion cage)
- The posterior column fusion, posterior structures of adjacent vertebrae are fused (pedicle, lamina, facet, transverse process, or “gutter” fusion).
- **Device** – Procedures involve the use of fixation devices (hardware), bone grafts, or structural devices to carry out the fusion.
- Interbody fusion cage, Autograft (person’s bone), allograft (donated bone), Synthetic (manmade).

Body Part – Level of the Spine

Body Part (level of the spine) – The ICD-10-PCS codes for spinal fusion are assigned based on the number of interspaces fused (i.e., 2-3, 4-5, or 6-7) rather site of the fusion.

Upper Joints (0RG)	Lower Joints (0SG)
0 Occipital-Cervical Joint	0 Lumbar-Vertebral Joint
1 Cervical-Vertebral Joint	1 Lumbar-Vertebral Joints, 2 or more
2 Cervical-Vertebral Joints, 2 or more	2 Lumbosacral Joint
4 Cervicothoracic Vertebral Joint	4 Sacrococcygeal Joint
6 Thoracic Vertebral Joint	6 Coccygeal Joint
7 Thoracic Vertebral Joints, 2 or more	7 Sacroiliac Joint, Right
8 Thoracic Vertebral Joints, 8 or more	8 Sacroiliac Joint, Left
A Thoracolumbar Vertebral Joint	

Combined 360-Degree Fusion

- Check for site of incision performed (**incision through the back of the body on vertebrae**). Look for prone positioning (face down).
- **PLIF or TLIF techniques** – commonly used when **both anterior and posterior columns** are being fused – **2 separate codes are needed**.
- **Anterior and posterior column fusions performed at the same level require separate codes with separate qualifiers**. They will often require different device values as well.
- Combined anterior/posterior fusions may only have one incision from the **lateral and/or posterior approach.**

Combined 360-Degree Fusion

- Check for the term **laminectomy and bilateral partial facetectomy to remove disc**- these procedures are referring to decompression and the approach, not to discectomy.
- Check for the term interbody fusion devices filled with bone graft/DMP inserted in the middle of intervertebral disc space **for anterior column fusion.**
- Check for the term **decortication of posterior spine elements** and bone graft is placed along side of vertebra **for posterior column fusion.**
- Sites for posterior lumbar fusion include the **lamina, facets/articular process, foremen, pars, pedicles, spinous process, and transverse process (aka posterolateral gutter)**
  - **Pedicle screws and rods** are applied for stabilization – fixation devices used only for stabilization are not coded separately. Watch for use of bone grafting around the screws and rods when they are inserted – this may indicate a posterior fusion.

Check Whether Decompression Is Performed During Spinal Fusion

- Check for terms such as release, laminectomy, or decompression in the operative note.
- Determine if the spinal nerve root was released or the spinal cord.
- If both spinal nerves and spinal code are released, both should be coded. (Report once per spinal column level/region.)
- Diagnoses that typically require decompression to be performed at the time of spinal fusion are spinal stenosis, claudication, radiculopathy and myelopathy.

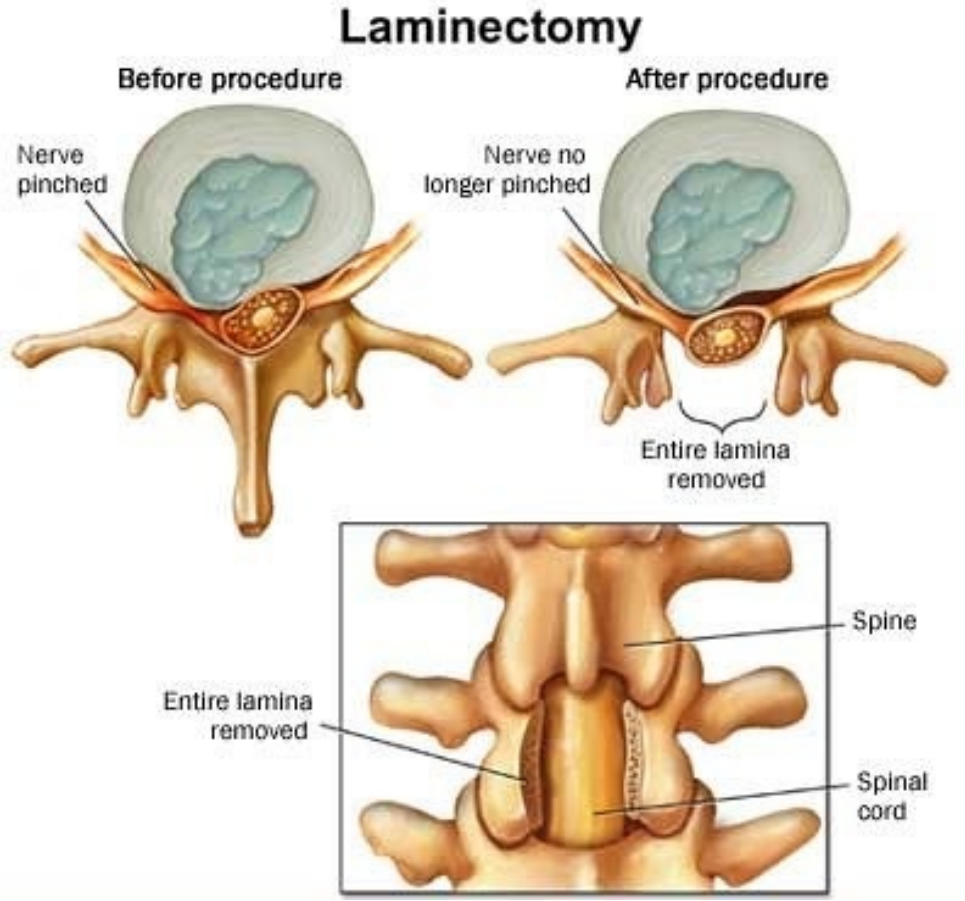


Image Source: https://www.gvhcol.com/laminectomy-disectomy

Check for Approach of the Fusion and Column Involvement

- **Anterior approach (supine position)** incision performed in the neck or abdomen and fusion carried out from the front of vertebrae.
- **Posterior approach (prone position)** incision performed in the patient's back directly over the vertebrae.
- **Lateral transverse approach**, an incision is made on the patient's side and the vertebrae are approached through the lamina.
- Check for the column which has been fused (anterior or posterior)
- **The anterior column** can be fused using an **anterior, lateral, or posterior technique.**
- **A posterior column** fusion can be performed using a **posterior, posterolateral, or lateral transverse technique**.
- The posterior column fusion, posterior structures of adjacent vertebrae are fused (**pedicle, lamina, facet, transverse process, or "gutter" fusion**).
- Combined anterior/posterior fusions may only have one incision from the lateral and/or posterior approach.

Check for Vertebral Joints Involvement

- The body part coded for a spinal vertebral joint(s) rendered immobile by a spinal fusion procedure is classified by the level of the spine.
- Remember to count intervertebral levels, not the individual vertebrae, when determining proper body part values.
- There are distinct body part values for a **single vertebral joint and for multiple vertebral joints at each spinal level**.
  - **Example**: Body part values specify Lumbar Vertebral Joint, Lumbar Vertebral Joints, 2 or More and Lumbosacral Vertebral Joint.
- If **multiple vertebral joints are fused**, a separate procedure is coded for each vertebral joint that uses a different device and/or qualifier.
  - **Example**: Fusion of lumbar vertebral joint, posterior approach, anterior column and fusion of lumbar vertebral joint, posterior approach, posterior column are coded separately.

Identification and Coding of Device in Fusion

Combinations of devices and materials are often used on a vertebral joint to render the joint immobile. When combinations of devices are used on the same vertebral joint, the device value coded for the procedure is as follows:

- If interbody fusion device (cage) is inserted = Anterior Column Fusion.
- Fusion of a vertebral joint using a cage style interbody fusion device containing morselized bone graft is coded to the device Interbody Fusion Device.
- Check for bone graft been used to render the joint immobile. If documentation does not specify the bone graft used, query the provider.
- If bone graft is the only device used, code with device value “Nonautologous tissue substitute” or “autologous tissue substitute.”
- If documentation does not specify the bone graft used, query the provider.
- Fusion of a vertebral joint using both autologous bone graft and bone bank bone graft is coded to the device Autologous Tissue Substitute.
- Fixation Instrumentation Rods, plates, screws, etc. are included in the fusion root operation. No additional code should be assigned.
- Synthetic graft is rarely placed in Fusion – Please double check before assigning synthetic graft.

Integral vs. Non-Integral Procedures

- **Some procedures are integral to the fusion and cannot be coded separately.**

Consider this example:

Via an open posterior approach:

- Exploration of previous fusion L3-S1
- Removal of segmental instrumentation L3-S1
- L2-L3 complete bilateral laminectomy for decompression
- Right L2-L3 transforaminal lumbar interbody fusion with BMP, locally harvested morselized autograft, morselized allograft and Medtronic PEEK cage
- L2-S1 segmental instrumentation with Medtronic Solera 5-5 system
- L2-L3 posterolateral/posterior arthrodesis with locally harvested morselized autograft and BMP

Integral vs. Non-Integral Procedures

What would we code in this example ?

- Anterior spinal fusion (right L2-L3 transforaminal lumbar interbody fusion
- Posterior spinal fusion (L2-L3 posterolateral/posterior arthrodesis
- Removal of the previously placed segmental instrumentation L3-S1 (need 2 codes)

In the example, even though 6 procedures were done, we will only use 4 PCS codes.

What is NOT separately coded?

- Exploration of the old fusion site;
- Laminectomy
- L2-S1 segmental instrumentation

Integral vs. Non-Integral Procedures

The codes are :

- **0SG00AJ,** Anterior fusion with cage
- **0SG0071,** Posterior fusion w/ autograft
- **0SP004Z,** Removal of instrumentation L3-L5
- **0SP304Z,** Removal of instrumentation L5-S1

Commonly Found CCs/MCCs in Spinal Fusion Procedure Scenarios

Few commonly found CCs/MCCs in Spinal Fusion procedure scenarios are :

- ABLA Query opportunity
- Dural tear/CSF leak
- Iliac vein tear or injury during anterior exposure (accidental laceration)
- Post-op ileus
- Loosening or breakdown of previously placed spinal devices
- Spondylosis/DDD with myelopathy
- Spinal cord edema and compression
- Pseudoarthrosis/non-union of joints
- History conditions from anesthesia or H&P S Obesity, persistent A-fib, opioid dependence

Additional Procedures Performed

The following procedures should be coded when performed in addition to spinal fusion:

- Bone Morphogenic Protein (Infuse)(BMP)(rhBMP)
- Harvesting of autologous bone graft through separate incision
- Harvesting bone marrow from different procedure site
- Intraoperative monitoring of peripheral nerves (e.g., Sentio MMG)
- Computer and/or robotic assisted surgery
- Discectomy
- Decompression laminectomy (when performed on different site of fusion)
  - "Decompression" procedure is done to approach the operative site and is not coded separately.
  - "Decompression" procedures that can be coded separately are done to "release" the spinal cord or spinal nerves/roots.

References

- https://neurosurgicalassociatespc.com/spinal-anatomy/
- AHA *Coding Clinic* for ICD-9-CM and ICD-10-CM/PCS
- *ICD-10-PCS Official Guidelines for Coding and Reporting* 2023

Thank you. Questions?

AskAGS@agshealth.com

In order to receive your continuing education certificate(s) for this program, you must complete the online evaluation. The link can be found in the continuing education section of the program guide.

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