



Position Statement On Insurance Coverage for Interbody Biomechanical Devices (CPT 22853) in Cervical Spine Arthrodesis

Background

Cervical spinal arthrodesis is a well-established surgical procedure used to treat degenerative cervical spondylotic myelopathy, radiculopathy, spinal instability, deformity, trauma, infection, and neoplastic conditions affecting the cervical spine. The goal is to achieve solid fusion between vertebral bodies following neural decompression and restoration of appropriate sagittal alignment.

For more than two decades, spine surgeons have successfully utilized interbody biomechanical devices — including polymer and metallic (e.g., titanium) cages to restore disc height, maintain alignment, and facilitate fusion.¹⁻⁵ CPT® code 22853 appropriately captures the work involved with the insertion of these devices during spinal arthrodesis procedures.

Despite their widespread use and acceptance, payer policies continue to deny coverage for interbody spacers in routine anterior cervical discectomy and fusion (ACDF), characterizing them as experimental or not medically necessary relative to structural allograft alone.

This position is inconsistent with contemporary clinical practice and the consensus of leading spine societies, which recognize interbody devices as standard, evidence-based implants that enhance surgical outcomes and expand patient-specific treatment options.

Position Statement

Interbody biomechanical devices should be recognized as medically necessary and reimbursable for use in anterior cervical spinal fusion procedures.

Optimal patient care and patient safety are best achieved when surgeons and patients can jointly select from all clinically appropriate options — including structural autograft, allograft, and biomechanical devices — based on individual patient needs and preferences, and the recommendation of the treating surgeon.

Coverage policies that deny reimbursement for CPT 22853 in cervical fusion procedures are inconsistent with current standards of care, the peer-reviewed literature, and broad professional consensus. Intervertebral biomechanical devices are a safe, effective, and standard option in cervical spinal fusion and should be an option for all patients and reimbursed accordingly.

Rationale

- **Standard of Care.** Intervertebral biomechanical devices are a well-established and routine component of modern cervical spinal fusion procedures for over a quarter of a century. Both allograft and synthetic biomechanical devices are reasonable options for intervertebral fusion procedures in the cervical spine; both options should be available to practicing surgeons for their patients.
- **Preservation of the Surgeon–Patient Relationship.** Coverage policies should not interfere with the clinical decision-making or require surgeons to justify the absence of widely accepted standard of care implants.
- **Equitable Patient Access.** Restrictive policies create disparities in access to care, as most insurers recognize these devices as appropriate and medically necessary.
- **Broad Professional Consensus.** Every leading spine organization has urged payers to align coverage policies with current clinical standards and allow use of intervertebral devices in cervical fusion.
- **Clinical and Biomechanical Evidence.** Modern intervertebral devices — including Polyether ether ketone (PEEK) and porous titanium cages — demonstrate outcomes that are comparable to or, in some cases, superior to structural bone grafts.^{2,6-8} Benefits include:
 - Improved implant stability
 - Enhanced osseointegration
 - Reduced subsidence rates
 - Better maintenance of cervical lordosis
- **Technological Advancements.** Innovations such as 3D-printed porous titanium cages promote osteogenesis and enable structural designs not achievable with cadaveric allograft.^{7,9,10}
- **Risk Profile of Structural Grafts.** Structural allografts can carry inherent risks, including potential disease transmission and mechanical failure due to variability in graft integrity.¹¹
- **Patient-Centered Considerations.** Some patients may decline allograft use due to cultural or religious beliefs; coverage policies should not limit clinically appropriate alternatives.
- **Health System Impact.** Restricting access to biomechanical implants may increase rates of graft failure, pseudarthrosis, and revision surgery — ultimately increasing health care costs and patient morbidity.

References

1. Hacker RJ. A randomized prospective study of an anterior cervical intervertebral fusion device with a minimum of 2 years of follow-up results. *J Neurosurg.* Oct 2000;93(2 Suppl):222-6. doi:10.3171/spi.2000.93.2.0222
2. Chong E, Mobbs RJ, Pelletier MH, Walsh WR. Titanium/Polyetheretherketone Cages for Cervical Arthrodesis with Degenerative and Traumatic Pathologies: Early Clinical Outcomes and Fusion Rates. *Orthop Surg.* Feb 2016;8(1):19-26. doi:10.1111/os.12221

3. Yson SC, Sembrano JN, Santos ER. Comparison of allograft and polyetheretherketone (PEEK) cage subsidence rates in anterior cervical discectomy and fusion (ACDF). *J Clin Neurosci*. Apr 2017;38:118-121. doi:10.1016/j.jocn.2016.12.037
4. Wang M, Chou D, Chang CC, et al. Anterior cervical discectomy and fusion performed using structural allograft or polyetheretherketone: pseudarthrosis and revision surgery rates with minimum 2-year follow-up. *J Neurosurg Spine*. Apr 1 2020;32(4):562-569. doi:10.3171/2019.9.SPINE19879
5. Muthiah N, Yolcu YU, Alan N, Agarwal N, Hamilton DK, Ozpinar A. Evolution of polyetheretherketone (PEEK) and titanium interbody devices for spinal procedures: a comprehensive review of the literature. *Eur Spine J*. Oct 2022;31(10):2547-2556. doi:10.1007/s00586-022-07272-1
6. Torstrick FB, Safranski DL, Burkus JK, et al. Getting PEEK to Stick to Bone: The Development of Porous PEEK for Interbody Fusion Devices. *Tech Orthop*. Sep 2017;32(3):158-166. doi:10.1097/BTO.0000000000000242
7. van den Brink W, Lamerigts N. Complete Osseointegration of a Retrieved 3-D Printed Porous Titanium Cervical Cage. *Front Surg*. 2020;7:526020. doi:10.3389/fsurg.2020.526020
8. Goldberg JL, Meaden RM, Hussain I, et al. Titanium versus polyetheretherketone versus structural allograft in anterior cervical discectomy and fusion: A systematic review. *Brain Spine*. 2022;2:100923. doi:10.1016/j.bas.2022.100923
9. Singh H, Kukowski NR, Lunati MP, et al. Porous 3D Printed Titanium Cages in Anterior Cervical Discectomy and Fusion are Associated With Less Subsidence, Improved Maintenance of Segmental Lordotic Correction, and Similar Clinical Outcomes as Allograft. *Global Spine J*. Apr 2024;14(3):878-888. doi:10.1177/21925682221124527
10. Zhai WJ, Liu L, Gao YH, Qin SL, Han PF, Xu YF. Application of 3D-printed porous titanium interbody fusion cage vs. polyether ether ketone interbody fusion cage in anterior cervical discectomy and fusion: A systematic review and meta-analysis update. *Exp Ther Med*. Jul 2024;28(1):290. doi:10.3892/etm.2024.12579
11. Ruan T, Naveed M, Vien H. Case report: Tuberculosis recall on bone graft patient. *N Am Spine Soc J*. Sep 2023;15:100241. doi:10.1016/j.xnsj.2023.100241

Endorsed by:

American Association of Neurological Surgeons
Congress of Neurological Surgeons
AANS/CNS Section on Disorders of the Spine and Peripheral Nerves
American Association of Orthopaedic Surgeons
Cervical Spine Research Society
International Society for the Advancement of Spine Surgery
North American Spine Society
Scoliosis Research Society
Society for Minimally Invasive Spine Surgery