

Cigna Medical Coverage Policies – Musculoskeletal Vertebral Body Tethering for Adolescent Idiopathic Scoliosis

Effective July 1, 2025



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.

CPT® (Current Procedural Terminology) is a registered trademark of the American Medical Association (AMA). CPT® five digit codes, nomenclature and other data are copyright 2025 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.

©Copyright 2025 eviCore healthcare

CMM-616: Vertebral Body Tethering for Adolescent Idiopathic Scoliosis

CMM-616.1: General Guidelines**CMM-616.2: Indications****CMM-616.3: Non-Indications****Codes (CMM-616)****Evidence Discussion (CMM-616)****References (CMM-616)**

CMM-616.1: General Guidelines

Application of Guideline

- The determination of medical necessity for the replacement, revision, or removal of vertebral body tethering (VBT) is always made on a case-by-case basis.
- For additional timing and documentation requirements, see **CMM-600.1: Prior Authorization Requirements**.

Definitions

- **Adolescent Idiopathic Scoliosis (AIS):** a form of scoliosis (deviation of the lateral curvature of the spine beyond 10°). This form occurs among pediatric population between 10 and 18 years of age and is a three-dimensional deformity that includes a lateral deviation of the spine, reduced thoracic kyphosis, and a rotation of the vertebral bodies. As the name implies, adolescent idiopathic scoliosis (AIS) is of unknown etiology and is not related to a congenital, syndromic, or neuromuscular condition.
- **Vertebral Body Tethering (VBT):** a compression-based surgical treatment for adolescent idiopathic scoliosis (AIS) and is based on the concept of 'growth modulation'.
 - ◆ During vertebral body tethering, a surgeon places screws in the vertebrae on the convexity of the curve. A surgeon then connects the screws with a tether (flexible cord) that is placed under tension. The tether slows the growth on the curved side of the spine allowing for straighter spine growth as the other side of the spine catches up in growth and lengthens during the adolescence period.

CMM-616.2: Indications

Replacement, Revision, or Removal of an existing thoracic/thoracolumbar vertebral body tethering system is considered **medically necessary** when performed for **ANY** of the following clinical scenarios:

- ◆ Hardware failure (e.g., tether breakage, screw pullout/loosening, etc.)
- ◆ Progression of curvature with/without hardware failure
- ◆ Undercorrection/overcorrection of curvature
- ◆ Infection
- ◆ Pulmonary complications (e.g., atelectasis, pleural effusion, pulmonary edema, pneumothorax, etc.)
- ◆ Neurological injury
- ◆ Vascular complications

CMM-616.3: Non-Indications

Not Medically Necessary

- **Replacement, Revision, or Removal** of an existing thoracic/thoracolumbar vertebral body tethering system performed without meeting the criteria listed in the **General Guidelines** and in the **Indications** section is considered **not medically necessary**.

Experimental, Investigational, or Unproven (EIU)

- Primary vertebral body tethering is considered **experimental, investigational, or unproven (EIU)**.

Codes (CMM-616)

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
22836	Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; up to 7 vertebral segments
22837	Anterior thoracic vertebral body tethering, including thoracoscopy, when performed; 8 or more vertebral segments
22838	Revision (e.g., augmentation, division of tether), replacement, or removal of thoracic vertebral body tethering, including thoracoscopy, when performed
0656T	Anterior lumbar or thoracolumbar vertebral body tethering; up to 7 vertebral segments
0657T	Anterior lumbar or thoracolumbar vertebral body tethering; 8 or more vertebral segments
0790T	Revision (e.g., augmentation, division of tether), replacement, or removal of thoracolumbar or lumbar vertebral body tethering, including thoracoscopy, when performed

Evidence Discussion (CMM-616)

Vertebral Body Tethering for Adolescent Idiopathic Scoliosis

Vertebral body tethering is a relatively new surgical technique for the treatment of adolescent idiopathic scoliosis. There have been no prospective, randomized or nonrandomized controlled trials comparing vertebral body tethering (VBT) to fusion. Although studies have demonstrated effective deformity correction, complication rates have ranged as high as 23–52% and reoperation rates have ranged from 11–16%.

Reasons for re-operation have included the following: hardware failure (e.g., tether breakage, screw pullout/loosening, etc.); progression of curvature with/without hardware failure; undercorrection/overcorrection of curvature; infection; pulmonary complications; neurological injury; and, vascular complications.

At this point in time, there is insufficient high-level evidence to support the long term safety and effectiveness of vertebral body tethering and further studies are required. For this reason, spinal fusion surgery is still considered the gold standard for the surgical treatment of scoliosis.

References (CMM-616)

1. Hammad AM, Balsano M, Ahmad AA. Vertebral body tethering: An alternative to posterior spinal fusion in idiopathic scoliosis? *Front Pediatr*. 2023;11:1133049. doi:10.3389/fped.2023.1133049.
2. Hoernschemeyer DG, Hawkins SD, Tweedy NM, Boeyer ME. Anterior Vertebral Body Tethering: A Single-Center Cohort with 4.3 to 7.4 Years of Follow-up. *J Bone Joint Surg Am*. 2024;106(20):1857-1865. doi:10.2106/JBJS.23.01229.
3. Miyanji F, Pawelek J, Nasto LA, Rushton P, Simmonds A, Parent S. Safety and efficacy of anterior vertebral body tethering in the treatment of idiopathic scoliosis. *Bone Joint J*. 2020;102-B(12):1703-1708. doi:10.1302/0301-620X.102B12.BJJ-2020-0426.R1.
4. Newton PO. Spinal growth tethering: indications and limits. *Ann Transl Med*. 2020;8(2):27. doi:10.21037/atm.2019.12.159.
5. Newton PO, Parent S, Miyanji F, et al. Anterior Vertebral Body Tethering Compared with Posterior Spinal Fusion for Major Thoracic Curves: A Retrospective Comparison by the Harms Study Group. *J Bone Joint Surg Am*. 2022;104(24):2170-2177. doi:10.2106/JBJS.22.00127.
6. Newton PO, Takahashi Y, Yang Y, et al. Anterior vertebral body tethering for thoracic idiopathic scoliosis leads to asymmetric growth of the periapical vertebrae. *Spine Deform*. 2022;10(3):553-561. doi:10.1007/s43390-021-00464-7.
7. Raitio A, Syvänen J, Helenius I. Vertebral Body Tethering: Indications, Surgical Technique, and a Systematic Review of Published Results. *J Clin Med*. 2022;11(9):2576. doi:10.3390/jcm11092576.
8. Roser MJ, Askin GN, Labrom RD, Zahir SF, Izatt M, Little JP. Vertebral body tethering for idiopathic scoliosis: a systematic review and meta-analysis. *Spine Deform*. 2023;11(6):1297-1307. doi:10.1007/s43390-023-00723-9.
9. Shah SA, Kraft DB, Miyanji F. Anterior Vertebral Body Tethering: A Review of the Available Evidence. *J Am Acad Orthop Surg*. 2024;32(6):247-256. doi:10.5435/JAAOS-D-23-00312.
10. Shin M, Arguelles GR, Cahill PJ, Flynn JM, Baldwin KD, Anari JB. Complications, Reoperations, and Mid-Term Outcomes Following Anterior Vertebral Body Tethering Versus Posterior Spinal Fusion: A Meta-Analysis. *JBJS Open Access*. 2021;6(2):e21.00002. Published 2021 Jun 23. doi:10.2106/JBJS.OA.21.00002.
11. Yang MJ, Samdani AF, Pahys JM, et al. What Happens After a Vertebral Body Tether Break? Incidence, Location, and Progression with Five-year Follow-up. *Spine (Phila Pa 1976)*. 2023;48(11):742-747. doi:10.1097/BRS.000000000000466.
12. Zhang H, Fan Y, Ni S, Pi G. The preliminary outcomes of vertebral body tethering in treating adolescent idiopathic scoliosis: a systematic review. *Spine Deform*. 2022;10(6):1233-1243. doi:10.1007/s43390-022-00546-0.
13. Zhu F, Qiu X, Liu S, Man-Chee Cheung K. Minimum 3-year experience with vertebral body tethering for treating scoliosis: A systematic review and single-arm meta-analysis. *J Orthop Surg (Hong Kong)*. 2022;30(3):10225536221137753. doi:10.1177/10225536221137753.