

7.01.166 Allograft Injection for Degenerative Disc Disease			
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Section:	7.0 Surgery	Page:	Page 1 of 14

Policy Statement

- I. Injection of allograft into the intervertebral disc for the treatment of degenerative disc disease is considered **investigational**.

NOTE: Refer to [Appendix A](#) to see the policy statement changes (if any) from the previous version.

Policy Guidelines

Coding

See the [Codes table](#) for details.

Description

Degeneration of the intervertebral discs is commonly observed in imaging and has been proposed to be a source of back pain. In order to treat the observed changes in the discs, cellular therapies such as mesenchymal stem cells are being studied. One of these cellular therapies involves the intradiscal injection of a mixture of nucleus pulposus allograft and viable cells into the degenerated disc.

Summary of Evidence

For individuals with degenerative disc disease who receive a viable allograft injection, the evidence includes 12-month results from an RCT. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Results from the first 12 months of the planned 36 months of follow-up did not find statistically significant differences between the active allograft, placebo allograft, and conservative management groups on the co-primary pain and disability endpoints. However, the proportion of treatment responders was significantly greater in the active allograft group on some, but not all pain and disability response outcomes. Given the various important comparator and outcome relevance, data completeness, and power limitations, evidence from well-conducted trials demonstrating consistent improvements in health outcomes is still needed. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Related Policies

- Orthopedic Applications of Stem Cell Therapy (Including Allografts and Bone Substitutes Used With Autologous Bone Marrow)

Benefit Application

Benefit determinations should be based in all cases on the applicable member health services contract language. To the extent there are conflicts between this Medical Policy and the member health services contract language, the contract language will control. Please refer to the member's

contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal law may prohibit health plans from denying FDA-approved Healthcare Services as investigational or experimental. In these instances, Blue Shield of California may be obligated to determine if these FDA-approved Healthcare Services are Medically Necessary.

Regulatory Status

VIA Disc Matrix (Vivex Biomedical) is composed of human disc tissue donated from cadavers with viable cells. It consists of a nucleus pulposus allograft suspension that is mixed with a minimum of 6×10^6 cryopreserved cells. The cell source and method of processing has not been disclosed, and it is not clear if VIA Disc Matrix meets the U.S. Food and Drug Administration (FDA) criteria for what is considered minimal manipulation and homologous use for human cells, tissues, and cellular and tissue-based products (HCT/Ps).

The FDA regulates human cells and tissues intended for implantation, transplantation, or infusion through the Center for Biologics Evaluation and Research, under Code of Federal Regulation, Title 21, parts 1270 and 1271. In 2017, the FDA published clarification of HCT/Ps, which was then updated in 2020.²

HCT/Ps are defined as human cells or tissues that are intended for implantation, transplantation, infusion, or transfer into a human recipient. If an HCT/P does not meet the criteria below and does not qualify for any of the stated exceptions, the HCT/P will be regulated as a drug, device, and/or biological product and applicable regulations and premarket review will be required.

An HCT/P is regulated solely under section 361 of the Public Health Service (PHS) Act and Title 21 Code of Federal Regulations (CFR) Part 1271 if it meets all of the following criteria:

1. "The HCT/P is minimally manipulated;
2. The HCT/P is intended for homologous use only, as reflected by the labeling, advertising, or other indications of the manufacturer's objective intent;
3. The manufacture of the HCT/P does not involve the combination of the cells or tissues with another article, except for water, crystalloids, or a sterilizing, preserving, or storage agent, provided that the addition of water, crystalloids, or the sterilizing, preserving, or storage agent does not raise new clinical safety concerns with respect to the HCT/P; and
4. Either:
 1. The HCT/P does not have a systemic effect and is not dependent upon the metabolic activity of living cells for its primary function; or
 2. The HCT/P has a systemic effect or is dependent upon the metabolic activity of living cells for its primary function, and:
 1. Is for autologous user
 2. Is for allogeneic use in a first-degree or second-degree blood relative; or
 3. Is for reproductive use"

Rexlemestrocel-L (MPC-06-ID, Mesoblast) is an allogeneic mesenchymal precursor cell (MPC) therapy under investigation for the treatment of chronic low back pain caused by disc degeneration in individuals "who have exhausted conservative treatment options, may have failed epidural steroid injections and have no further treatment option other than invasive and costly surgical intervention."³ Amirdelfan et al (2021) published results of a multicenter, randomized, controlled study of rexlemestrocel-L in 100 individuals with degenerative disc disease (NCT01290367).⁴ Additionally, in March of 2025, Mesoblast published a larger Phase 3 randomized, double-blind, placebo-controlled trial of rexlemestrocel-L in 404 individuals with degenerative disc disease with 36 months of follow-up (NCT02412735).⁵ This trial has been reviewed by FDA's Office of Tissues and Advanced Therapies (OTAT). Based on FDA OTAT feedback, as part of their market approval application, Mesoblast plans to conduct an additional US Phase 3 trial with pain reduction at 12 months as the primary endpoint.⁶

Rationale

Background

Degenerative Disc Disease

Back pain is a common condition in adults. Most episodes of back pain are self-limited and will resolve within one month, but a small percentage will persist and become chronic. Chronic back pain can arise from a variety of etiologies including musculoskeletal pain, vertebral compression fractures, spinal stenosis, disc herniation, or other degenerative changes to the disc that compress the nerve roots and lead to radiculopathy. Age-related degeneration of the intervertebral discs is common and includes numerous biochemical and morphologic changes; the most common of which is loss of glycosaminoglycan and associated loss in water content. Pro-inflammatory molecules increase, while endplate calcification impairs nutrient flow. Together, these lead to an increase in cell death in the nucleus pulposus. Although degenerative changes to the disc are frequently observed on imaging, their contribution to back pain in the absence of radiculopathy is uncertain. Spine imaging, such as magnetic resonance imaging, computed tomography, or plain radiography, shows that lumbar disc degeneration is widespread, but for most people does not cause symptoms. Because many degenerative changes of the disc that are seen on imaging are asymptomatic, identifying the source of the back pain is challenging.

Treatment

Conservative management of back pain is the first-line treatment for most patients. Nonsteroidal anti-inflammatory drugs or other analgesics are used for symptom relief. Duloxetine or tramadol are recommended second-line pharmacologic therapies by the American College of Physicians.¹ Additionally, modification of activity in conjunction with some form of exercise therapy is frequently prescribed early in the course of symptoms. For patients with persistent nonradicular back pain, guidelines recommend interdisciplinary rehabilitation, which is defined as an integrated approach using physical rehabilitation in conjunction with a psychological or psychosocial intervention.¹ Opioids may also be prescribed. Although spinal fusion surgery is frequently performed for non-specific back pain with degenerative changes to the disc, surgery has not been shown to be more effective than comprehensive conservative treatment. Cell therapy is being explored as a method to regenerate the intervertebral disc by rehydration, height restoration, and repopulating native cells.

Literature Review

Evidence reviews assess the clinical evidence to determine whether the use of a technology improves the net health outcome. Broadly defined, health outcomes are length of life, quality of life, and ability to function, including benefits and harms. Every clinical condition has specific outcomes that are important to patients and to managing the course of that condition. Validated outcome measures are necessary to ascertain whether a condition improves or worsens; and whether the magnitude of that change is clinically significant. The net health outcome is a balance of benefits and harms.

To assess whether the evidence is sufficient to draw conclusions about the net health outcome of a technology, 2 domains are examined: the relevance and the quality and credibility. To be relevant, studies must represent 1 or more intended clinical use of the technology in the intended population and compare an effective and appropriate alternative at a comparable intensity. For some conditions, the alternative will be supportive care or surveillance. The quality and credibility of the evidence depend on study design and conduct, minimizing bias and confounding that can generate incorrect findings. The randomized controlled trial (RCT) is preferred to assess efficacy; however, in some circumstances, nonrandomized studies may be adequate. Randomized controlled trials are rarely large enough or long enough to capture less common adverse events and long-term effects. Other types of studies can be used for these purposes and to assess generalizability to broader clinical populations and settings of clinical practice.

Allograft Injection for Degenerative Disc Disease

Clinical Context and Therapy Purpose

The purpose of a viable allograft injection for degenerative disc disease is to provide a treatment option that improves outcomes in individuals who have failed conservative therapy.

Conservative treatment of degenerative disc disease includes rest, analgesics, physical therapy, bracing, and if lower back pain persists, repeated corticosteroid injections. Opioids may be prescribed, but alternative treatments for chronic back pain are needed due to the potential for addiction. Despite high utilization, many individuals with chronic back pain do not improve with available treatments. When combined with large increases in the number of individuals who present with low back pain, there is a high unmet need for alternative treatments and a need to determine which populations may benefit from specific interventions. A variety of autologous and allogenic cellular therapies, including disc cells, chondrocytes, notochordal cells and mesenchymal stem cells, have been evaluated. One technology that is being investigated is injection of a viable disc allograft into the degenerated disc in an attempt to reverse the morphological changes and slow further degeneration.

The following PICO was used to select literature to inform this review.

Populations

The relevant population of interest is individuals with chronic back pain attributed to 1 or 2 level degenerative disc disease and lack of improvement with conservative treatment. There is no gold standard for the diagnosis of symptomatic degenerative discs, and identification of symptom-causing degeneration is controversial. Contraindications for the procedure include other sources of chronic back pain, including radicular pain, symptomatic spinal stenosis, disc protrusion >5 mm, or spondylolisthesis >5 mm.

Interventions

The therapy being considered is an injection of allograft taken from the intervertebral disc of donor cadavers. The manufacturer states that the nucleus pulposus allograft suspension is mixed with a minimum of 6×10^6 viable cryopreserved cells. The method of processing has not been disclosed. Nucleus pulposus allograft tissue and a vial of cells (VIA Disc Matrix) are mixed and injected into 1 or 2 degenerated intervertebral discs under imaging guidance. The injections are done under moderate conscious sedation.

Comparators

Conservative treatment may include oral pain medication, physical therapy, and epidural steroid injections. The terms "nonsurgical" and "nonoperative" have also been used to describe conservative treatment.

Outcomes

The general outcomes of interest are symptoms, functional outcomes, quality of life, and treatment-related morbidity.

Outcome measures for back surgery are relatively well-established (Table 1). Visual analog scores (VAS) can be used to assess pain and the Oswestry Disability Index (ODI) assesses functional limitations related to back pain. Studies may also use a broader functional status index such as the Short Form (SF)-12 or SF-36, particularly the physical function subscale of SF-36. Determining the minimal clinically important difference (MCID) for these measures is complex. The MCID for a given measure can depend on the baseline score or severity of illness, the method used to calculate MCID, and the times at which the scores are measured.⁷ For these reasons, some investigators prefer to calculate a minimum detectable difference (MDD).⁸

Both short-term and long-term outcomes are important in evaluating back treatments. For intradiscal allograft injection, net benefit should take into account immediate (perioperative) adverse events; improvements in pain, neurological status, and function at 12 to 24 months as measured by the ODI, SF-36, or VAS measures; and 5-year surgery or re-intervention rates, which reflect longer-term complications, recurrences, and treatment failures.

Group means are commonly designated as primary outcome measures in spine studies. Variation in the calculation and definition of MCIDs makes it difficult to compare response rates across studies. Nevertheless, clinical trials should prespecify an MCID for ODI and, when used, the other measures in the table, and report response rates in addition to group means.

Objective measures such as the Pfirrmann grade with magnetic resonance imaging (MRI) and disc height might provide supportive evidence, but are not the clinical outcomes of interest.

Table 1. Patient-reported Outcome Measures for Back Pain

Measure	Outcome Evaluated	Description	MDD and MCID
Oswestry Disability Score (ODI)	Functional disability and pain related to back conditions.	Ten 5-point items; scores 0 (no disability) to 50 (totally disabled) or 0 to 100% of maximum score	MDD: 8 to 10 points MCID varies; often 15 points (30 percentage points)
RMDQ	Disability from back problems.	Twenty-four items; scored 0 to 24 (higher scores are worse).	MCID: 30% reduction
Visual analog scale for back pain	Degree of back pain.	Patients indicate the degree of pain on a 0 to 100 scale.	MDD: 2 points

MCID: minimal clinically important difference; MDD: minimal detectable difference; RMDQ: Roland and Morris Disability Questionnaire.

Study Selection Criteria

Methodologically credible studies were selected using the following principles:

- To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for RCTs;
- In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
- To assess long-term outcomes and adverse events, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
- Studies with duplicative or overlapping populations were excluded.

Review of Evidence

Randomized Controlled Trials

Study characteristics and results are shown in Tables 2 and 3. Limitations of the studies are described in Tables 4 and 5.

The Viable Allograft Supplemented Disc Degeneration in the Treatment of Patients with Low Back Pain (VAST) trial (NCT03709901) is a multicenter, single-blind (participant), RCT that enrolled 218 patients. Patients who failed conservative management for 6 months were treated with the VIA Disc Matrix, placebo injection, or continued non-surgical management in a 3.5:1:1 ratio and followed for up to 36 months. Inclusion criteria are clinical disc degeneration at 1 or 2 levels from L1 to S1 with moderate to severe disability (low back pain ≥ 6 mos, ODI ≥ 40 , VAS ≥ 40 mm), and moderate Pfirrmann grading (levels 3 to 6) on MRI. Exclusion criteria are disc protrusion >5 mm, spondylolisthesis >5 mm at any level, and body mass index >35 kg/m². The 2 co-primary endpoints were mean change in ODI and Visual Analogue Scale of Pain Intensity (VASPI) at 6 and 12 months. Results for the first 24 patients were evaluated for safety at 1 month, with 12 month VAS and ODI of these first participants reported by Beall et al (2020).⁹ The report included 16 patients treated with

the VIA Disc Matrix, 4 patients who received a placebo injection into the intervertebral disc, and 4 individuals who continued with non-surgical management. Cross-over of the non-surgical management group to allograft injection was allowed at 3 months. Beall et al (2021) subsequently published one-year results from all 218 enrolled individuals.¹⁰ The one-year results from the full study population are prioritized herein.

No major safety concerns were identified. There were no statistically significant differences between the active allograft and conservative management groups on the co-primary outcomes at 12 months. Primary outcome results were not reported for the placebo allograft group. Various planned responder analyses were performed. Compared to the saline allograft group, the proportion of participants in the active allograft group who achieved a ≥ 15 -point ODI reduction was significantly greater (76.5% vs. 56.7% ; $p=.03$), but was not for the proportion who achieved a $\geq 50\%$ VAS improvement (62.5% vs. 53.3%; $p=.467$). The interpretation of these findings is limited by the exclusion of 21% of study participants.

Table 2. Summary of Key Randomized Controlled Trial Characteristics

Study	Countries	Sites	Dates	Participants	Interventions		
					Active	Comparator	Comparator
Beall et al (2021) ¹⁰	US	15	2017-2020	218 patients with disc degeneration at 1 or 2 levels from L1 to S1 with ODI ≥ 40 , VAS ≥ 40 mm, and Pfirrmann level 3 to 6 on MRI Hispanic ethnicity: Active allograft=3.6%, placebo=7.7%, conservative care=7.7% Non-Hispanic ethnicity: Active allograft=80.7%, placebo=76.9%, conservative care=76.9% Male gender: Active allograft=56.4%, placebo=61.5%, conservative care=53.8% Mean age (years): Active allograft=42.8, placebo=43.2, conservative care=42.2	VIA Disc Matrix injection (1.25 to 1.75 cm ³ allograft and 6 x 10 ⁶ cells) under fluoroscopic guidance, n=140	Intradiscal saline placebo injection (1.75 cm ³ per level), n=39	Conservative management, n=39

MRI: magnetic resonance imaging; ODI: Oswestry Disability Index; US: United States; VAS: visual analog scale.

Table 3. Summary of Key Randomized Controlled Trial Results

Study	Oswestry Disability Index, 12-month mean reduction	Visual Analog Score, 12-month mean reduction	Serious Adverse Events, 12 months
Beall et al (2021) ¹⁰			

Study	Oswestry Disability Index, 12-month mean reduction	Visual Analog Score, 12-month mean reduction	Serious Adverse Events, 12 months
N	Active allograft=122, placebo=NR, conservative care=26	Active allograft=120, placebo=NR, conservative care=27	218
VIA Disc Matrix	27.1	34.8	2/141 (1.4%)
Placebo injection	NR	NR	0/39 (0.0%)
Conservative management	36.1	45.0	0/35 (0.0%)

NR: not reported.

Table 4. Study Relevance Limitations

Study	Population ^a	Intervention ^b	Comparator ^c	Outcomes ^d	Duration of Follow-up ^e
Beall et al (2021) ¹⁰			1. The conservative management protocol was not described. 2. The saline allograph comparator described as more representative of an active comparator than a placebo.	1. Quality of life outcomes not addressed.	1. 12 month follow-up is reported in this preliminary publication. Follow-up to 36 months is planned.

The study limitations stated in this table are those notable in the current review; this is not a comprehensive gaps assessment.

^a Population key: 1. Intended use population unclear; 2. Clinical context is unclear; 3. Study population is unclear; 4. Study population not representative of intended use.

^b Intervention key: 1. Not clearly defined; 2. Version used unclear; 3. Delivery not similar intensity as comparator; 4. Not the intervention of interest.

^c Comparator key: 1. Not clearly defined; 2. Not standard or optimal; 3. Delivery not similar intensity as intervention; 4. Not delivered effectively.

^d Outcomes key: 1. Key health outcomes not addressed; 2. Physiologic measures, not validated surrogates; 3. No CONSORT reporting of harms; 4. Not establish and validated measurements; 5. Clinical significant difference not prespecified; 6. Clinical significant difference not supported.

^e Follow-Up key: 1. Not sufficient duration for benefit; 2. Not sufficient duration for harms.

Table 5. Study Design and Conduct Limitations

Study	Allocation ^a	Blinding ^b	Selective Reporting ^c	Data Completeness ^d	Power ^e	Statistical ^f
Beall et al (2021) ¹⁰	3. The randomization process was not described.	1, 2, 3. The placebo-controlled group was blinded but the conservative control group was not. Study personnel were unblinded.	2. Comparative treatment effects not reported for comparison of active allograft vs. placebo allograft for primary outcomes.	3. All of the patients in the conservative management and 1 of 4 in the placebo group crossed over before the 12 month follow-up. 6. Responder analyses excluded 21% of individuals.	Loss to follow-up of 36 individuals (16.5%) resulted in inadequately powered analysis.	

The study limitations stated in this table are those notable in the current review; this is not a comprehensive gaps assessment.

^a Allocation key: 1. Participants not randomly allocated; 2. Allocation not concealed; 3. Allocation concealment unclear; 4. Inadequate control for selection bias.

^b Blinding key: 1. Not blinded to treatment assignment; 2. Not blinded outcome assessment; 3. Outcome assessed by treating physician.

^c Selective Reporting key: 1. Not registered; 2. Evidence of selective reporting; 3. Evidence of selective publication.

^d Data Completeness key: 1. High loss to follow-up or missing data; 2. Inadequate handling of missing data; 3. High number of crossovers; 4. Inadequate handling of crossovers; 5. Inappropriate exclusions; 6. Not intent to treat analysis (per protocol for noninferiority trials).

^e Power key: 1. Power calculations not reported; 2. Power not calculated for primary outcome; 3. Power not based on clinically important difference.

^f Statistical key: 1. Analysis is not appropriate for outcome type: (a) continuous; (b) binary; (c) time to event; 2. Analysis is not appropriate for multiple observations per patient; 3. Confidence intervals and/or p values not reported; 4. Comparative treatment effects not calculated.

Observational Study

Beall et al (2024) conducted a prospective clinical study with VIA Disc NP (also known as VIA Disc Matrix) in patients with pain due to lumbar disc degeneration that was refractory to conservative treatment.¹¹ The single-arm study (N=29) involved a single intradiscal injection of VIA Disc NP in up to 2 vertebral levels. After 6 months, improvements in ODI were 54.8% and improvements in pain on a numeric rating scale were 52.9% (both compared to baseline; $p < .001$). Minimally clinically important differences in ODI ($\geq 30\%$ improvement from baseline) and numeric pain rating scale ($\geq 30\%$ improvement from baseline) were observed in 79% and 68% of patients, respectively. Interpretation of these results is limited by lack of a control group.

Section Summary

One single-blind, active-controlled (saline or conservative management), randomized trial evaluated allograft injection for degenerative disc disease. Results from the first 12 months of the planned 36 months of follow-up did not find statistically significant differences between the active allograft, placebo allograft, and conservative management groups on the co-primary endpoints of mean change on the ODI and VASPI. However, a loss of follow-up of 16.5% of individuals resulted in the trial being underpowered to detect these outcomes. The proportion of treatment responders was significantly greater in the active allograft group on some, but not all pain and disability response outcomes. However, interpretation of these findings is limited by the exclusion of 21% of individuals. Important relevance limitations include that the comparators were nonstandard or unclear and that the follow-up is limited to 12 of the planned 36 months. Additional adequately powered trials with relevant comparators and quality of life analyses are needed to determine the impact of allograft injections on health outcomes.

Supplemental Information

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the evidence review conclusions.

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or the National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American College of Physicians

In 2017, the American College of Physicians recommended that "For patients with chronic low back pain, clinicians and patients should initially select nonpharmacologic treatment with exercise, multidisciplinary rehabilitation, acupuncture, mindfulness-based stress reduction (moderate-quality evidence), tai chi, yoga, motor control exercise, progressive relaxation, electromyography

biofeedback, low-level laser therapy, operant therapy, cognitive behavioral therapy, or spinal manipulation (Grade: strong recommendation, low-quality evidence).

In patients with chronic low back pain who have had an inadequate response to nonpharmacologic therapy, clinicians and patients should consider pharmacologic treatment with nonsteroidal anti-inflammatory drugs as first-line therapy, or tramadol or duloxetine as second-line therapy. Clinicians should only consider opioids as an option in patients who have failed the aforementioned treatments and only if the potential benefits outweigh the risks for individual patients and after a discussion of known risks and realistic benefits with patients (Grade: weak recommendation, moderate-quality evidence).^m

American Society of Pain and Neuroscience

In 2022, the American Society of Pain and Neuroscience published a guideline of interventional treatments for low back pain.¹² Allogenic mesenchymal stem cells for discogenic low back pain are addressed in the consensus recommendations for regenerative therapies. This treatment received an I recommendation (current evidence is insufficient to assess the balance of benefits and harms due to lacking, conflicting, or poor quality evidence) with a conclusion of low certainty regarding its net benefit.

North American Spine Society et al

In 2020, the North American Spine Society, along with 9 other societies, published multidisciplinary evidence-based guidelines on the diagnosis and treatment of low back pain.¹³ There were 82 clinical questions that were addressed in the comprehensive evidence review. Regarding degenerative disc disease, the guideline gave a grade A recommendation that provocative discography without manometric measurements correlates with both pain reproduction in the presence of moderate to severe disc degeneration on MRI/CT (magnetic resonance imaging/computed tomography) discography and with the presence of endplate abnormalities on MRI imaging. There was insufficient evidence to make a recommendation for or against the use of intradiscal bone marrow concentrate in patients with discogenic low back pain, and no review of intradiscal allograft injection.

U.S. Preventive Services Task Force Recommendations

Not applicable.

Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

Ongoing and Unpublished Clinical Trials

Some currently ongoing and unpublished trials that might influence this review are listed in Table 6.

Table 6. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
<i>Ongoing</i>			
NCT06325566 ^a	A Prospective, Multicenter, Randomized, Double-blind, Controlled Study to Evaluate the Efficacy and Safety of a Single Injection of Rexlemestrol-L Combined with HA in Subjects with Moderate to Severe Chronic Low Back Pain	300	Oct 2027

NCT: national clinical trial.

^a Denotes industry-sponsored or cosponsored trial.

References

1. Qaseem A, Wilt TJ, McLean RM, et al. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med.* Apr 04 2017; 166(7): 514-530. PMID 28192789
2. U.S. Food and Drug Administration. Regulatory Considerations for Human Cells, Tissues, and Cellular and Tissue-Based Products: Minimal Manipulation and Homologous Use Guidance for Industry and Food and Drug Administration Staff. 2020. <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/regulatory-considerations-human-cells-tissues-and-cellular-and-tissue-based-products-minimal>. Accessed April 7, 2025.
3. Mesoblast. Chronic Low Back Pain Due to Disc Degeneration. 2022. <https://www.mesoblast.com/product-candidates/spine-orthopedic-disorders/chronic-discogenic-low-back-pain>. Accessed April 7, 2025.
4. Amirdelfan K, Bae H, McJunkin T, et al. Allogeneic mesenchymal precursor cells treatment for chronic low back pain associated with degenerative disc disease: a prospective randomized, placebo-controlled 36-month study of safety and efficacy. *Spine J.* Feb 2021; 21(2): 212-230. PMID 33045417
5. Beall DP, Bae HW, DePalma MJ, et al. Efficacy and Safety of Allogeneic Mesenchymal Precursor Cells With and Without Hyaluronic Acid for Treatment of Chronic Low Back Pain: A Prospective, Randomized, Double Blind, Concurrent-Controlled 36-Month Study. *Spine J.* Mar 31 2025. PMID 40174800
6. Mesoblast. Single Dose of Mesoblast's Allogeneic Cell Therapy Provides Durable Pain Reduction for At Least Three Years in Patients with Degenerative Disc Disease: Global Newswire. January 11, 2022. <https://www.globenewswire.com/news-release/2022/01/12/2365313/0/en/Single-Dose-of-Mesoblast-s-Allogeneic-Cell-Therapy-Provides-Durable-Pain-Reduction-for-at-Least-Three-Years-in-Patients-With-Degenerative-Disc-Disease.html>. Accessed April 7, 2025.
7. Katz NP, Paillard FC, Ekman E. Determining the clinical importance of treatment benefits for interventions for painful orthopedic conditions. *J Orthop Surg Res.* Feb 03 2015; 10: 24. PMID 25645576
8. Parker SL, Mendenhall SK, Shau DN, et al. Minimum clinically important difference in pain, disability, and quality of life after neural decompression and fusion for same-level recurrent lumbar stenosis: understanding clinical versus statistical significance. *J Neurosurg Spine.* May 2012; 16(5): 471-8. PMID 22324801
9. Beall DP, Wilson GL, Bishop R, et al. VAST Clinical Trial: Safely Supplementing Tissue Lost to Degenerative Disc Disease. *Int J Spine Surg.* Apr 2020; 14(2): 239-253. PMID 32355632
10. Beall DP, Davis T, DePalma MJ, et al. Viable Disc Tissue Allograft Supplementation; One- and Two-level Treatment of Degenerated Intervertebral Discs in Patients with Chronic Discogenic Low Back Pain: One Year Results of the VAST Randomized Controlled Trial. *Pain Physician.* Sep 2021; 24(6): 465-477. PMID 34554689
11. Beall DP, Davis TT, Amirdelfan K, et al. Nucleus Pulposus Allograft Supplementation in Patients with Lumbar Discogenic Pain: Initial 6-month Outcomes from a Prospective Clinical Pilot Study. *Pain Physician.* Nov 2024; 27(8): E865-E871. PMID 39621986
12. Sayed D, Grider J, Strand N, et al. The American Society of Pain and Neuroscience (ASPN) Evidence-Based Clinical Guideline of Interventional Treatments for Low Back Pain. *J Pain Res.* 2022; 15: 3729-3832. PMID 36510616
13. North American Spine Society. Evidence-based clinical guidelines for multidisciplinary spine care: Diagnosis and treatment of low back pain. 2020. <https://www.spine.org/Portals/0/assets/downloads/ResearchClinicalCare/Guidelines/LowBackPain.pdf>. Accessed April 7, 2025.

Documentation for Clinical Review

- No records required

Coding

The list of codes in this Medical Policy is intended as a general reference and may not cover all codes. Inclusion or exclusion of a code(s) does not constitute or imply member coverage or provider reimbursement policy.

Type	Code	Description
CPT®	0627T	Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; first level
	0628T	Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with fluoroscopic guidance, lumbar; each additional level (List separately in addition to code for primary procedure)
	0629T	Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; first level)
	0630T	Percutaneous injection of allogeneic cellular and/or tissue-based product, intervertebral disc, unilateral or bilateral injection, with CT guidance, lumbar; each additional level (List separately in addition to code for primary procedure)
HCPCS	None	

Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

Effective Date	Action
07/01/2021	New policy.
07/01/2022	Annual review. No change to policy statement. Literature review updated.
07/01/2023	Annual review. No change to policy statement. Literature review updated.
07/01/2024	Annual review. No change to policy statement. Policy guidelines and literature review updated.
07/01/2025	Annual review. No change to policy statement and policy guidelines. Literature review updated.

Definitions of Decision Determinations

Healthcare Services: For the purpose of this Medical Policy, Healthcare Services means procedures, treatments, supplies, devices, and equipment.

Medically Necessary: Healthcare Services that are Medically Necessary include only those which have been established as safe and effective, are furnished under generally accepted professional standards to treat illness, injury or medical condition, and which, as determined by Blue Shield of California, are: (a) consistent with Blue Shield of California medical policy; (b) consistent with the symptoms or diagnosis; (c) not furnished primarily for the convenience of the patient, the attending Physician or other provider; (d) furnished at the most appropriate level which can be provided safely

and effectively to the member; and (e) not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of the member's illness, injury, or disease.

Investigational or Experimental: Healthcare Services which do not meet ALL of the following five (5) elements are considered investigational or experimental:

- A. The technology must have final approval from the appropriate government regulatory bodies.
 - This criterion applies to drugs, biological products, devices and any other product or procedure that must have final approval to market from the U.S. Food and Drug Administration ("FDA") or any other federal governmental body with authority to regulate the use of the technology.
 - Any approval that is granted as an interim step in the FDA's or any other federal governmental body's regulatory process is not sufficient.
 - The indications for which the technology is approved need not be the same as those which Blue Shield of California is evaluating.
- B. The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes.
 - The evidence should consist of well-designed and well-conducted investigations published in peer-reviewed journals. The quality of the body of studies and the consistency of the results are considered in evaluating the evidence.
 - The evidence should demonstrate that the technology can measure or alter the physiological changes related to a disease, injury, illness, or condition. In addition, there should be evidence, or a convincing argument based on established medical facts that such measurement or alteration affects health outcomes.
- C. The technology must improve the net health outcome.
 - The technology's beneficial effects on health outcomes should outweigh any harmful effects on health outcomes.
- D. The technology must be as beneficial as any established alternatives.
 - The technology should improve the net health outcome as much as, or more than, established alternatives.
- E. The improvement must be attainable outside the investigational setting.
 - When used under the usual conditions of medical practice, the technology should be reasonably expected to satisfy Criteria C and D.

Feedback

Blue Shield of California is interested in receiving feedback relative to developing, adopting, and reviewing criteria for medical policy. Any licensed practitioner who is contracted with Blue Shield of California or Blue Shield of California Promise Health Plan is welcome to provide comments, suggestions, or concerns. Our internal policy committees will receive and take your comments into consideration. Our medical policies are available to view or download at www.blueshieldca.com/provider.

For medical policy feedback, please send comments to: MedPolicy@blueshieldca.com

Questions regarding the applicability of this policy should be directed to the Prior Authorization Department at (800) 541-6652, or the Transplant Case Management Department at (800) 637-2066 ext. 3507708 or visit the provider portal at www.blueshieldca.com/provider.

Disclaimer: Blue Shield of California may consider published peer-reviewed scientific literature, national guidelines, and local standards of practice in developing its medical policy. Federal and state law, as well as member health services contract language, including definitions and specific contract provisions/exclusions, take

precedence over medical policy and must be considered first in determining covered services. Member health services contracts may differ in their benefits. Blue Shield reserves the right to review and update policies as appropriate.

Appendix A

POLICY STATEMENT (No changes)	
BEFORE	AFTER
<p>Allograft Injection for Degenerative Disc Disease 7.01.166</p> <p>Policy Statement:</p> <p>1. Injection of allograft into the intervertebral disc for the treatment of degenerative disc disease is considered investigational.</p>	<p>Allograft Injection for Degenerative Disc Disease 7.01.166</p> <p>Policy Statement:</p> <p>1. Injection of allograft into the intervertebral disc for the treatment of degenerative disc disease is considered investigational.</p>