



MASSACHUSETTS

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Medical Policy

Orthopedic Applications of Platelet-Rich Plasma

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NCD/LCD: Local Coverage Determination (LCD): Category III CPT® Codes (L33392) (A56195)

Related Policies

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Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity

Use of platelet-rich plasma is considered **INVESTIGATIONAL** for all orthopedic indications. This includes, but is not limited to, use in the following situations:

- Primary use (injection) for the following conditions:
 - Achilles tendinopathy
 - Lateral epicondylitis
 - Osteochondral lesions
 - Osteoarthritis
 - Plantar fasciitis.
- Adjunctive use in the following surgical procedures:
 - ACL reconstruction
 - Hip fracture
 - Long-bone nonunion
 - Patellar tendon repair
 - Rotator cuff repair
 - Spinal fusion
 - Subacromial decompression surgery
 - Total knee arthroplasty.

Medicare HMO BlueSM and Medicare PPO BlueSM Members

This is not a covered service.

Medical necessity criteria and coding guidance for **Medicare Advantage members living in Massachusetts** can be found through the link below.

[Local Coverage Determinations \(LCDs\) for National Government Services, Inc.](#)

Local Coverage Determination (LCD): Category III CPT® Codes (L33392) (A56195)

Note: To review the specific LCD, please remember to click “accept” on the CMS licensing agreement at the bottom of the CMS webpage.

For medical necessity criteria and coding guidance for **Medicare Advantage members living outside of Massachusetts**, please see the Centers for Medicare and Medicaid Services website at <https://www.cms.gov> for information regarding your specific jurisdiction.

Prior Authorization Information

Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

	Outpatient
Commercial Managed Care (HMO and POS)	This is not a covered service.
Commercial PPO and Indemnity	This is not a covered service.
Medicare HMO BlueSM	This is not a covered service.
Medicare PPO BlueSM	This is not a covered service.

CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

The following CPT code is considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

CPT Codes

CPT codes:	Code Description
0232T	Injection(s), platelet rich plasma, any site, including image guidance, harvesting and preparation when performed

Description

A variety of growth factors have been found to play a role in wound healing, including platelet-derived growth factors (PDGFs), epidermal growth factor, fibroblast growth factors, transforming growth factors, and insulin-like growth factors. Autologous platelets are a rich source of PDGF, transforming growth factors that function as a mitogen for fibroblasts, smooth muscle cells, osteoblasts, and vascular

endothelial growth factors. Recombinant PDGF has also been extensively investigated for clinical use in wound healing.

Autologous platelet concentrate suspended in plasma, also known as PRP, can be prepared from samples of centrifuged autologous blood. Exposure to a solution of thrombin and calcium chloride degranulates platelets, releasing the various growth factors. The polymerization of fibrin from fibrinogen creates a platelet gel, which can then be used as an adjunct to surgery with the intent of promoting hemostasis and accelerating healing. In the operating room setting, PRP has been investigated as an adjunct to a variety of periodontal, reconstructive, and orthopedic procedures. For example, bone morphogenetic proteins are a type of transforming growth factors, and thus PRP has been used in conjunction with bone-replacement grafting (using either autologous grafts or bovine-derived xenograft) in periodontal and maxillofacial surgeries. Alternatively, PRP may be injected directly into various tissues. PRP injections have been proposed as a primary treatment of miscellaneous conditions, such as epicondylitis, plantar fasciitis, and Dupuytren contracture. Injection of PRP for tendon and ligament pain is theoretically related to prolotherapy. However, prolotherapy differs in that it involves injection of chemical irritants that are intended to stimulate inflammatory responses and induce release of endogenous growth factors.

PRP is distinguished from fibrin glues or sealants, which have been used for many years as a surgical adjunct to promote local hemostasis at incision sites. Fibrin glue is created from platelet-poor plasma and consists primarily of fibrinogen. Commercial fibrin glues are created from pooled homologous human donors; Tisseel® (Baxter) and Hemaseel® are examples of commercially available fibrin sealants. Autologous fibrin sealants can be created from platelet-poor plasma. This policy does not address the use of fibrin sealants.

Summary

The evidence base on the efficacy of platelet-rich plasma (PRP) treatment consists of numerous small controlled trials for a wide variety of orthopedic conditions. Recent literature indicates an increasing number of randomized controlled trials (RCTs), and a search of the clinical trials database (available at ClinicalTrials.gov) reveals that many more RCTs are in progress. Current results of PRP trials are mixed, with some trials reporting improvement with PRP and other trials reporting no improvement. It is uncertain whether the mixed results are due to variability in the conditions studied and outcomes measured; to differences in platelet separation technique, concentration or activation; or to differences in the timing and frequency of administration. Additional studies are needed to resolve these issues.

Policy History

Date	Action
5/2017	New references added from BCBSA National medical policy.
5/2016	New references added from BCBSA National medical policy.
10/2015	New medical policy describing investigational indications. Orthopedic applications of platelet-rich plasma transferred from policy #186. Effective 10/1/2015.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

[Clinical Exception Process](#)

[Medical Technology Assessment Guidelines](#)

References

1. Crovetti G, Martinelli G, Issi M, et al. Platelet gel for healing cutaneous chronic wounds. *Transfus Apher Sci.* Apr 2004;30(2):145-151. PMID 15062754

2. Eppley BL, Woodell JE, Higgins J. Platelet quantification and growth factor analysis from platelet-rich plasma: implications for wound healing. *Plast Reconstr Surg.* Nov 2004;114(6):1502-1508. PMID 15509939
3. Kevy SV, Jacobson MS. Comparison of methods for point of care preparation of autologous platelet gel. *J Extra Corpor Technol.* Mar 2004;36(1):28-35. PMID 15095838
4. Castillo TN, Pouliot MA, Kim HJ, et al. Comparison of growth factor and platelet concentration from commercial platelet-rich plasma separation systems. *Am J Sports Med.* Feb 2011;39(2):266-271. PMID 21051428
5. Mazzucco L, Balbo V, Cattana E, et al. Not every PRP-gel is born equal. Evaluation of growth factor availability for tissues through four PRP-gel preparations: Fibrinet, RegenPRP-Kit, Plateltex and one manual procedure. *Vox Sang.* Aug 2009;97(2):110-118. PMID 19392780
6. Hsu WK, Mishra A, Rodeo SR, et al. Platelet-rich plasma in orthopaedic applications: evidence-based recommendations for treatment. *J Am Acad Orthop Surg.* Dec 2013;21(12):739-748. PMID 24292930
7. Tsikopoulos K, Tsikopoulos I, Simeonidis E, et al. The clinical impact of platelet-rich plasma on tendinopathy compared to placebo or dry needling injections: A meta-analysis. *Phys Ther Sport.* Jan 2016;17:87-94. PMID 26621224
8. Balasubramaniam U, Dissanayake R, Annabell L. Efficacy of platelet-rich plasma injections in pain associated with chronic tendinopathy: A systematic review. *Phys Sportsmed.* Jul 2015;43(3):253-261. PMID 25599747
9. Andia I, Latorre PM, Gomez MC, et al. Platelet-rich plasma in the conservative treatment of painful tendinopathy: a systematic review and meta-analysis of controlled studies. *Br Med Bull.* Jun 2014;110(1):99-115. PMID 24795364
10. Franceschi F, Papalia R, Franceschetti E, et al. Platelet-rich plasma injections for chronic plantar fasciopathy: a systematic review. *Br Med Bull.* Dec 2014;112(1):83-95. PMID 25239050
11. Monto RR. Platelet-rich plasma efficacy versus corticosteroid injection treatment for chronic severe plantar fasciitis. *Foot Ankle Int.* Apr 2014;35(4):313-318. PMID 24419823
12. Mei-Dan O, Carmont MR, Laver L, et al. Platelet-rich plasma or hyaluronate in the management of osteochondral lesions of the talus. *Am J Sports Med.* Mar 2012;40(3):534-541. PMID 22253252
13. Laudy AB, Bakker EW, Rekers M, et al. Efficacy of platelet-rich plasma injections in osteoarthritis of the knee: a systematic review and meta-analysis. *Br J Sports Med.* May 2015;49(10):657-672. PMID 25416198
14. Chang KV, Hung CY, Aliwarga F, et al. Comparative effectiveness of platelet-rich plasma injections for treating knee joint cartilage degenerative pathology: a systematic review and meta-analysis. *Arch Phys Med Rehabil.* Mar 2014;95(3):562-575. PMID 24291594
15. Meheux CJ, McCulloch PC, Lintner DM, et al. Efficacy of intra-articular platelet-rich plasma injections in knee osteoarthritis: a systematic review. *Arthroscopy.* Mar 2016;32(3):495-505. PMID 26432430
16. Lai LP, Stitik TP, Foye PM, et al. Use of platelet-rich plasma in intra-articular knee injections for osteoarthritis: a systematic review. *PM R.* Jun 2015;7(6):637-648. PMID 25687110
17. Cole BJ, Karas V, Hussey K, et al. Hyaluronic acid versus platelet-rich plasma. *Am J Sports Med.* Feb 2017;45(2):339-346. PMID 28146403
18. Duymus TM, Mutlu S, Dernek B, et al. Choice of intra-articular injection in treatment of knee osteoarthritis: platelet-rich plasma, hyaluronic acid or ozone options. *Knee Surg Sports Traumatol Arthrosc.* Feb 2017;25(2):485-492. PMID 27056686
19. Kanchanatawan W, Arirachakaran A, Chaijenkij K, et al. Short-term outcomes of platelet-rich plasma injection for treatment of osteoarthritis of the knee. *Knee Surg Sports Traumatol Arthrosc.* May 2016;24(5):1665-1677. PMID 26387122
20. Patel S, Dhillon MS, Aggarwal S, et al. Treatment with platelet-rich plasma is more effective than placebo for knee osteoarthritis: a prospective, double-blind, randomized trial. *Am J Sports Med.* Feb 2013;41(2):356-364. PMID 23299850
21. Tubach F, Ravaud P, Baron G, et al. Evaluation of clinically relevant changes in patient reported outcomes in knee and hip osteoarthritis: the minimal clinically important improvement. *Ann Rheum Dis.* Jan 2005;64(1):29-33. PMID 15208174
22. Smith PA. Intra-articular Autologous Conditioned Plasma Injections Provide Safe and Efficacious Treatment for Knee Osteoarthritis: An FDA-Sanctioned, Randomized, Double-blind, Placebo-controlled Clinical Trial. *Am J Sports Med.* Apr 2016;44(4):884-891. PMID 26831629

23. Dallari D, Stagni C, Rani N, et al. Ultrasound-guided injection of platelet-rich plasma and hyaluronic acid, separately and in combination, for hip osteoarthritis: a randomized controlled study. *Am J Sports Med.* Mar 2016;44(3):664-671. PMID 26797697
24. Moraes VY, Lenza M, Tamaoki MJ, et al. Platelet-rich therapies for musculoskeletal soft tissue injuries. *Cochrane Database Syst Rev.* 2013;12:CD010071. PMID 24363098
25. Figueroa D, Figueroa F, Calvo R, et al. Platelet-rich plasma use in anterior cruciate ligament surgery: systematic review of the literature. *Arthroscopy.* May 2015;31(5):981-988. PMID 25595696
26. Nin JR, Gasque GM, Azcarate AV, et al. Has platelet-rich plasma any role in anterior cruciate ligament allograft healing? *Arthroscopy.* Nov 2009;25(11):1206-1213. PMID 19896041
27. Griffin XL, Achten J, Parsons N, et al. Platelet-rich therapy in the treatment of patients with hip fractures: a single centre, parallel group, participant-blinded, randomised controlled trial. *BMJ Open.* 2013;3(6). PMID 23801709
28. Griffin XL, Wallace D, Parsons N, et al. Platelet rich therapies for long bone healing in adults. *Cochrane Database Syst Rev.* 2012;7:CD009496. PMID 22786528
29. Calori GM, Tagliabue L, Gala L, et al. Application of rhBMP-7 and platelet-rich plasma in the treatment of long bone non-unions: a prospective randomised clinical study on 120 patients. *Injury.* Dec 2008;39(12):1391-1402. PMID 19027898
30. Zhao JG, Zhao L, Jiang YX, et al. Platelet-rich plasma in arthroscopic rotator cuff repair: a meta-analysis of randomized controlled trials. *Arthroscopy.* Jan 2015;31(1):125-135. PMID 25278352
31. Yang J, Sun Y, Xu P, et al. Can patients get better clinical outcomes by using PRP in rotator cuff repair: a meta-analysis of randomized controlled trials. *J Sports Med Phys Fitness.* Nov 2016;56(11):1359-1367. PMID 26473444
32. Cai YZ, Zhang C, Lin XJ. Efficacy of platelet-rich plasma in arthroscopic repair of full-thickness rotator cuff tears: a meta-analysis. *J Shoulder Elbow Surg.* Dec 2015;24(12):1852-1859. PMID 26456434
33. Fu CJ, Sun JB, Bi ZG, et al. Evaluation of platelet-rich plasma and fibrin matrix to assist in healing and repair of rotator cuff injuries: a systematic review and meta-analysis. *Clin Rehabil.* Feb 2017;31(2):158-172. PMID 26928856
34. Saltzman BM, Jain A, Campbell KA, et al. Does the use of platelet-rich plasma at the time of surgery improve clinical outcomes in arthroscopic rotator cuff repair when compared with control cohorts? A systematic review of meta-analyses. *Arthroscopy.* May 2016;32(5):906-918. PMID 26725454
35. Carreon LY, Glassman SD, Anekstein Y, et al. Platelet gel (AGF) fails to increase fusion rates in instrumented posterolateral fusions. *Spine (Phila Pa 1976).* May 1 2005;30(9):E243-246; discussion E247. PMID 15864142
36. Tsai CH, Hsu HC, Chen YJ, et al. Using the growth factors-enriched platelet glue in spinal fusion and its efficiency. *J Spinal Disord Tech.* Jun 2009;22(4):246-250. PMID 19494743
37. Everts PA, Devilee RJ, Brown Mahoney C, et al. Exogenous application of platelet-leukocyte gel during open subacromial decompression contributes to improved patient outcome. A prospective randomized double-blind study. *Eur Surg Res.* 2008;40(2):203-210. PMID 17998780
38. Morishita M, Ishida K, Matsumoto T, et al. Intraoperative platelet-rich plasma does not improve outcomes of total knee arthroplasty. *J Arthroplasty.* Dec 2014;29(12):2337-2341. PMID 24851794
39. American Academy of Orthopaedic Surgeons. Treatment of osteoarthritis of the knee. 2013; <http://www.aaos.org/research/guidelines/TreatmentofOsteoarthritisoftheKneeGuideline.pdf>. Accessed March, 2015.
40. National Institute for Health and Care Excellence (NICE). Autologous blood injection for tendinopathy [IPG438]. 2013; <https://www.nice.org.uk/guidance/ipg438>. Accessed March 18, 2016.
41. National Institute for Health and Care Excellence. Autologous blood injection for plantar fasciitis [IPG437]. 2013; <https://www.nice.org.uk/guidance/ipg437>. Accessed March 18, 2016.
42. National Institute for Health and Care Excellence (NICE). Platelet-rich plasma injections for osteoarthritis of the knee: Interventional procedure guidance [IPG491]. 2014; [nice.org.uk/guidance/ipg491](https://www.nice.org.uk/guidance/ipg491). Accessed March 14, 2017.