Priority Health

MEDICAL POLICY
No. 91553-R8

PLATELET RICH PLASMA/PLATELET RICH FIBRIN MATRIX/ AUTOLOGOUS BLOOD-DERIVED PRODUCTS/BMAC

Effective Date: December 1, 2025	**Review Dates: 6/08, 6/09, 6/10, 6/11, 6/12, 6/13, 8/14, 8/15, 2/16, 2/17, 2/18, 2/19, 2/20, 2/21, 11/21, 11/22, 11/23, 11/24, 11/25**
Date Of Origin: June 2008	**Status: Current**

Related policies:

- 91443 - Autologous Chondrocyte Implant/ Meniscal Allograft/ Osteochondral Replacement
- 91571 - Osteoarthritis of the Knee

Summary of Changes

- Clarification:TurningPoint reviews platelet rich plasma (PRP), autologous blood-derived growth factors, bone marrow aspirate concentrate (BMAC) only when submitted as an adjunct to a primary orthopedic/MSK procedure.
- Formatting changes

I. POLICY/CRITERIA

A. Platelet rich plasma (PRP), autologous blood-derived growth factors, bone marrow aspirate concentrate (BMAC), and mesenchymal stem cells are considered investigational and experimental for all indications, including, but not limited to:

1. Avascular necrosis of the hip
2. Bone healing and fusion, including as an adjunct to spinal fusion
3. Chronic non-healing wounds
4. Dupuytren's contracture
5. Epicondylitis (e.g., tennis elbow, elbow epicondylar tendinosis)
6. Osteoarthritis
    1. For the treatment of the knee see the Osteoarthritis of the Knee # 91571 medical policy.
7. Plantar fasciitis
8. Sinus surgery

II. BACKGROUND/DESCRIPTION

Platelet rich plasma (PRP) is defined as a platelet-rich concentrate with platelet levels greater than the baseline count in whole blood. It is manufactured using centrifugation of blood, which separates the denser red cells from the plasma. PRP and fibrin matrix (PRFM), or autologous platelet-derived growth factors, are

proposed as an adjunct to standard treatment for several indications including wound care for the treatment of diabetic ulcers and venous stasis ulcers, bone augmentation and fusion, tendonitis, and plantar fasciitis. PRP is a general term describing a therapy with no standardized preparation or administration technique. PRP can be produced in an autologous or homologous manner. Autologous PRP is made of the patient's own blood while homologous PRP is derived from blood from multiple donors. The PRP contains whole cells including white cells, red cells, plasma, platelets, fibrin, stem cells, and fibrocyte precursors. Blood is centrifuged to produce an autologous gel and then used by physicians in clinical settings. PRFM is a second-generation platelet concentrate in does not require any gelifying agent. PRFM attempts to accumulate platelets and released cytokines in a fibrin clot using platelet cytokines, growth factors, and cells to serve as a resorbable membrane. (Naik, 2013).

Administration of PRP is a procedure and is, therefore, not subject to regulation by the Food and Drug Administration (FDA). However, the devices used to prepare PRP are regulated by the FDA premarket approval process. Several centrifuge devices have been approved by the FDA for preparation of PRP. One example of a commercially available device, the Cascade® Autologous Platelet System produces a completely autologous platelet biologic with a high concentration of viable platelets, extracted from a small amount of the patient's own blood, spun through a centrifugation process and resulting in a dense suturable platelet rich fibrin matrix (PRFM) that can be delivered directly to the tear site and sutured in place to potentially stimulate a reparative healing response for soft tissue and bone repair.

The heterogeneity and the small number of controlled trials make it difficult to assess the efficacy of PRP for tendon and muscle injuries and disorders. A systematic review and meta-analysis of 40 randomized and quasi-randomized controlled trials, including 3035 patients with knee osteoarthritis did not show that PRP improved pain or function compared with hyaluronic acid, intra-articular steroid, or saline (Costa, 2023). PRP has been used in conjunction with different grafting materials in bone augmentation procedures since the day of its introduction; the results from these studies are controversial and no conclusions can be drawn regarding the bone regenerative effect of PRP till date. There is insufficient evidence to support the use of autologous platelet-derived growth factors for any indication at this time.

Bone marrow aspirate concentrate (BMAC) is an injectable product derived from a patient's bone marrow. Bone marrow is harvested from the iliac crest using commercial aspiration kits. The bone marrow aspirate is then processed and injected back into the patient (Chala, 2017). BMAC has been proposed for anti-inflammatory and regenerative treatment for joints and tendons (Ryu, 2020). Several studies have examined outcomes after BMAC injection, but there remains

a lack of consensus in terms of the frequency of injection, the amount of BMAC that is injected, and the timing of BMAC injections. Mesenchymal stem or stromal cell (MSC) is a rare, undifferentiated multipotent stem cell. MSCs are multipotent progenitor cells that can be obtained from bone marrow, adipose tissue, synovium, articular cartilage, and skeletal muscles (Koga, 2008; Orozco, 2013). MSCs differentiate into fat, bone, and cartilage. Practice guidelines and position statements, guidance appears to confer weak support against treatment of knee osteoarthritis (KOA) with bone marrow-derived stem cells (BMSC). American College of Rheumatology/Arthritis Foundation guidelines state, "Stem cell injections are strongly recommended against in patients with knee and/or hip [OA]. There is concern regarding the heterogeneity and lack of standardization in available preparations of stem cell injections, as well as techniques used" (Kolasinski et al., 2020). Osteoarthritis Research Society International states, "[Intraarticular] stem cell therapy and [intraarticular platelet rich plasma], in particular, were strongly recommended against because the evidence in support of these [tx] is of extremely low quality, and the formulations themselves have not yet been standardized. Future investigation is needed to fully evaluate the appropriateness of these [tx] in [knee] OA" (Bannuru,2019).

III. CENTERS FOR MEDICARE & MEDICAID SERVICES (CMS) COVERAGE DETERMINATION

National Coverage Determinations (NCDs)	
National Coverage Determinations (NCDs)	Blood-Derived Products for Chronic Non-Healing Wounds (NCD 270.3)
Local Coverage Determinations (LCDs)	
Local Coverage Determinations (LCDs)	N/A

IV. GUIDELINES / POSITION STATEMENTS

Medical/Professional Society	Guideline
American Academy of Family Physicians, Family Practice Inquiries Network	Platelet-Rich Plasma vs. Corticosteroids for Refractory Plantar Fasciitis (2021)
American Academy of Orthopedic Surgeons (AAOS)	Management of Osteoarthritis of the Knee (Non-Arthroplasty) (2021)
American College of Foot and Ankle Surgeons	Clinical Consensus Statement: Diagnosis and Treatment of Adult Acquired Infracalcaneal Heel Pain (2018)

American College of Rheumatology/Arthritis Foundation	American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee (2019)
International Working Group on the Diabetic Foot (IWGDF)	Guidelines on interventions to enhance healing of foot ulcers in people with diabetes (2023)
Osteoarthritis Research Society International (OARSI)	OARSI Guidelines for the Non-surgical Management of Knee, Hip, and Polyarticular Osteoarthritis (2019)

V. REGULATORY (US FOOD AND DRUG ADMINISTRATION)

Preparation and implantation of bone marrow-derived stem cells (BMSC) is a procedure and, therefore, not subject to FDA regulation. However, any medical devices, drugs, biologics, or tests used as a part of this procedure may be subject to FDA regulation. BMSC treatment meets the FDA's definition under the Code of Federal Regulations (CFR) for human cells, tissues, and cellular and tissue-based products (HCT/Ps) (21 CFR 1271.3[d]) and does not require FDA premarket approval or 510(k) clearance. However, the manufacturer must meet specific FDA regulations for the collection, processing, and selling of HCT/Ps.

VI. MEDICAL NECESSITY REVIEW

Prior authorization for certain drugs, services, and procedures may or may not be required. In cases where prior authorization is required, providers will submit a request demonstrating that a drug, service, or procedure is medically necessary. For more information, please refer to the Priority Health Provider Manual.

Applications of platelet rich plasma (PRP), autologous blood-derived growth factors, bone marrow aspirate concentrate (BMAC), and/or mesenchymal stem may be reviewed for medical necessity according to TurningPoint criteria when done in conjunction with an orthopedic procedure.

To access TurningPoint guidelines: Log into Priority Health Prism → Authorizations → Authorization Criteria Lookup.

VII. APPLICATION TO PRODUCTS

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

- **HMO/EPO:** ***This policy applies to insured HMO/EPO plans.***
- **POS:** ***This policy applies to insured POS plans.***

- **PPO:** ***This policy applies to insured PPO plans. Consult individual plan documents as state mandated benefits may apply. If there is a conflict between this policy and a plan document, the provisions of the plan document will govern.***
- **ASO:** ***For self-funded plans, consult individual plan documents. If there is a conflict between this policy and a self-funded plan document, the provisions of the plan document will govern.***
- **INDIVIDUAL:** ***For individual policies, consult the individual insurance policy. If there is a conflict between this medical policy and the individual insurance policy document, the provisions of the individual insurance policy will govern.***
- **MEDICARE:** ***Coverage is determined by the Centers for Medicare and Medicaid Services (CMS) and/or the Evidence of Coverage (EOC); if a coverage determination has not been adopted by CMS, this policy applies.***
- **MEDICAID/HEALTHY MICHIGAN PLAN:** ***For Medicaid/Healthy Michigan Plan members, this policy will apply. Coverage is based on medical necessity criteria being met and the appropriate code(s) from the coding section of this policy being included on the Michigan Medicaid Fee Schedule located at: http://www.michigan.gov/mdch/0,1607,7-132-2945_42542_42543_42546_42551-159815--,00.html. If there is a discrepancy between this policy and the Michigan Medicaid Provider Manual located at: http://www.michigan.gov/mdch/0,1607,7-132-2945_5100-87572--,00.html, the Michigan Medicaid Provider Manual will govern. For Medical Supplies/DME/Prosthetics and Orthotics, please refer to the Michigan Medicaid Fee Schedule to verify coverage.***

VIII. CODING INFORMATION

ICD-10 Codes: *Not specified*

CPT/HCPCS Codes:

Not Covered for the indications listed in this policy

0232T	Injection(s), platelet rich plasma, any tissue, including image guidance, harvesting and preparation when performed
0481T	Injection(s), autologous white blood cell concentrate (autologous protein solution), any site, including image guidance, harvesting and preparation, when performed
20939	Bone marrow aspiration for bone grafting, spine surgery only, through separate skin or fascial incision (List separately in addition to code for primary procedure) *(Subject to Prior Authorization)*
20999	Unlisted procedure, musculoskeletal system, general (*Explanatory notes must accompany claims)*
38206	Blood-derived hematopoietic progenitor cell harvesting for transplantation, per collection; autologous
38232	Bone marrow harvesting for transplantation; autologous
38241	Hematopoietic progenitor cell (HPC); autologous transplantation
G0460	Autologous platelet rich plasma (PRP) or other blood-derived product for nondiabetic chronic wounds/ulcers (includes, as applicable: administration, dressings, phlebotomy, centrifugation or mixing, and all other preparatory procedures, per treatment)
G0465	Autologous platelet rich plasma (PRP) for diabetic chronic wounds/ulcers, using an FDA-cleared device (includes administration, dressings,

phlebotomy, centrifugation, and all other preparatory procedures, per treatment) *(Covered for Medicare only)*
P9020 Platelet rich plasma, each unit *(facility only)*
P9073 Platelets, pheresis, pathogen-reduced, each unit

Revenue Codes:
0383 Blood and Blood Components-Plasma
0384 Blood and Blood Components-Platelets
0390 Administration, Processing and Storage for Blood and Blood Components, General
0399 Administration, Processing and Storage for Blood and Blood Components-Other Processing and Storage

IX. REFERENCES

1. American Academy of Orthopedic Surgeons (AAOS). Management of osteoarthritis of the knee (nonarthroplasty): Evidence-based clinical practice guideline. Aug 30, 2021

Bone Marrow Aspirate

1. Bannuru RR, Osani MC, Vaysbrot EE, Arden NK, Bennell K, Bierma-Zeinstra SMA, Kraus VB, Lohmander LS, Abbott JH, Bhandari M, Blanco FJ, Espinosa R, Haugen IK, Lin J, Mandl LA, Moilanen E, Nakamura N, Snyder-Mackler L, Trojian T, Underwood M, McAlindon TE. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. Osteoarthritis Cartilage. 2019 Nov;27(11):1578-1589. doi: 10.1016/j.joca.2019.06.011. Epub 2019 Jul 3. PMID: 31278997.
2. Kolasinski SL, Neogi T, Hochberg MC, Oatis C, Guyatt G, Block J, Callahan L, Copenhaver C, Dodge C, Felson D, Gellar K, Harvey WF, Hawker G, Herzig E, Kwoh CK, Nelson AE, Samuels J, Scanzello C, White D, Wise B, Altman RD, DiRenzo D, Fontanarosa J, Giradi G, Ishimori M, Misra D, Shah AA, Shmagel AK, Thoma LM, Turgunbaev M, Turner AS, Reston J. 2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee. Arthritis Care Res (Hoboken). 2020 Feb;72(2):149-162. doi: 10.1002/acr.24131. Epub 2020 Jan 6. Erratum in: Arthritis Care Res (Hoboken). 2021 May;73(5):764. doi: 10.1002/acr.24615. PMID: 31908149; PMCID: PMC11488261.
3. Chahla J, Mannava S, Cinque ME, Geeslin AG, Codina D, LaPrade RF. Bone Marrow Aspirate Concentrate Harvesting and Processing Technique. Arthrosc Tech. 2017 Apr 10;6(2):e441-e445. doi: 10.1016/j.eats.2016.10.024. PMID: 28580265; PMCID: PMC5443590.
4. Eder C, Schmidt-Bleek K, Geissler S, Sass FA, Maleitzke T, Pumberger M, Perka C, Duda GN, Winkler T. Mesenchymal stromal cell and bone marrow

concentrate therapies for musculoskeletal indications: a concise review of current literature. Mol Biol Rep. 2020 Jun;47(6):4789-4814. doi: 10.1007/s11033-020-05428-0. Epub 2020 May 25. PMID: 32451926; PMCID: PMC7295724.

5. Orozco L, Munar A, Soler R, Alberca M, Soler F, Huguet M, Sentís J, Sánchez A, García-Sancho J. Treatment of knee osteoarthritis with autologous mesenchymal stem cells: a pilot study. Transplantation. 2013 Jun 27;95(12):1535-41.
6. Ryu DJ, Jeon YS, Park JS, Bae GC, Kim JS, Kim MK. Comparison of Bone Marrow Aspirate Concentrate and Allogenic Human Umbilical Cord Blood Derived Mesenchymal Stem Cell Implantation on Chondral Defect of Knee: Assessment of Clinical and Magnetic Resonance Imaging Outcomes at 2-Year Follow-Up. Cell Transplant. 2020 Jan-Dec;29:963689720943581. doi: 10.1177/0963689720943581. PMID: 32713192; PMCID: PMC7563925.

PRP

1. Atkinson B, Holland Walker K, Stigleman S, Vaughan A, Hulkower S. Platelet-Rich Plasma vs. Corticosteroids for Refractory Plantar Fasciitis. Am Fam Physician. 2021 Mar 1;103(5):307-308. PMID: 33630557.
2. Chen P, Vilorio NC, Dhatariya K, Jeffcoate W, Lobmann R, McIntosh C, Piaggesi A, Steinberg J, Vas P, Viswanathan V, Wu S, Game F. Guidelines on interventions to enhance healing of foot ulcers in people with diabetes (IWGDF 2023 update). Diabetes Metab Res Rev. 2024 Mar;40(3):e3644. doi: 10.1002/dmrr.3644. Epub 2023 May 25. PMID: 37232034.
3. Cohn CS, Lockhart E, McCullough JJ. The use of autologous platelet-rich plasma in the orthopedic setting. Transfusion. 2015 Jul;55(7):1812-20.
4. Costa LAV, Lenza M, Irrgang JJ, Fu FH, Ferretti M. How Does Platelet-Rich Plasma Compare Clinically to Other Therapies in the Treatment of Knee Osteoarthritis? A Systematic Review and Meta-analysis. Am J Sports Med. 2023 Mar;51(4):1074-1086. doi: 10.1177/03635465211062243. Epub 2022 Mar 22. PMID: 35316112.
5. Dai WL, Zhou AG, Zhang H, Zhang J. Efficacy of Platelet-Rich Plasma in the Treatment of Knee Osteoarthritis: A Meta-analysis of Randomized Controlled Trials. Arthroscopy. 2017 Mar;33(3):659- 670.e1.
6. Del Pino-Sedeño T, Trujillo-Martín MM, Andia I, Aragón-Sánchez J, Herrera-Ramos E, Iruzubieta Barragán FJ, Serrano-Aguilar P. Platelet-rich plasma for the treatment of diabetic foot ulcers: A metaanalysis. Wound Repair Regen. 2019 Mar;27(2):170-182. doi: 10.1111/wrr.12690. Epub 2018 Dec 21.
7. Dong Y, Zhang B, Yang Q, Zhu J, Sun X. The effects of platelet-rich plasma injection in knee and hip osteoarthritis: a meta-analysis of randomized controlled trials. Clin Rheumatol. 2020 Jun 12. doi: 10.1007/s10067-020-05185-2. Epub ahead of print. PMID: 32533337.

8. Feiz-Erfan I, Harrigan M, Sonntag VKH, Harrington TR. Effect of autologous platelet gel on early and late graft fusion in anterior cervical spine surgery. J Neurosurg Spine. 2007 Nov;7(5):496-502.
9. Hohmann E, Tetsworth K, Glatt V. Platelet-Rich Plasma Versus Corticosteroids for the Treatment of Plantar Fasciitis: A Systematic Review and Meta-analysis. Am J Sports Med. 2021 Apr;49(5):1381-1393. doi: 10.1177/0363546520937293. Epub 2020 Aug 21. PMID: 32822236.
10. Inchingolo F, Tatullo M, Marrelli M, Inchingolo AM, Scacco S, Inchingolo AD, Dipalma G, Vermesan D, Abbinante A, Cagiano R. Trial with Platelet-Rich Fibrin and Bio-Oss used as grafting materials in the treatment of the severe maxillar bone atrophy: clinical and radiological evaluations. Eur Rev Med Pharmacol Sci. 2010 Dec;14(12):1075-84. PMID: 21375140.
11. Keceli HG, Sengun D, Berberoğlu A, Karabulut E. Use of platelet gel with connective tissue grafts for root coverage: a randomized-controlled trial. J Clin Periodontol. 2008 Mar;35(3):255-62.
12. Koga H, Shimaya M, Muneta T, Nimura A, Morito T, Hayashi M, Suzuki S, Ju YJ, Mochizuki T, Sekiya I. Local adherent technique for transplanting mesenchymal stem cells as a potential treatment of cartilage defect. Arthritis Res Ther. 2008;10(4):R84. doi: 10.1186/ar2460. Epub 2008 Jul 29. PMID: 18664254; PMCID: PMC2575632.
13. Martínez-Zapata MJ, Martí-Carvajal A, Solà I, Bolibar I, Angel Expósito J, Rodriguez L, García J. Efficacy and safety of the use of autologous plasma rich in platelets for tissue regeneration: a systematic review. Transfusion. 2009 Jan;49(1):44-56.
14. Naik B, Karunakar P, Jayadev M, Marshal VR. Role of Platelet rich fibrin in wound healing: A critical review. J Conserv Dent. 2013 Jul;16(4):284-93. doi: 10.4103/0972-0707.114344. PMID: 23956527; PMCID: PMC3740636.
15. Peerbooms JC, Sluimer J, Bruijn DJ, Gosens T. Positive effect of an autologous platelet concentrate in lateral epicondylitis in a double-blind randomized controlled trial: platelet-rich plasma versus corticosteroid injection with a 1-year follow-up. Am J Sports Med. 2010 Feb;38(2):255-62.
16. Schneider HP, Baca JM, Carpenter BB, Dayton PD, Fleischer AE, Sachs BD. American College of Foot and Ankle Surgeons Clinical Consensus Statement: Diagnosis and Treatment of Adult Acquired Infracalcaneal Heel Pain. J Foot Ankle Surg. 2018 Mar-Apr;57(2):370-381. doi: 10.1053/j.jfas.2017.10.018. Epub 2017 Dec 25. PMID: 29284574.
17. Shams A, El-Sayed M, Gamal O, Ewes W. Subacromial injection of autologous platelet-rich plasma versus corticosteroid for the treatment of symptomatic partial rotator cuff tears. Eur J Orthop Surg Traumatol. 2016 Dec;26(8):837-842.
18. Sharma R, Chaudhary NK, Karki M, Sunuwar DR, Singh DR, Pradhan PMS, Gyawali P, Duwal Shrestha SK, Bhandari KK. Effect of platelet-rich plasma versus steroid injection in plantar fasciitis: a randomized clinical trial. BMC

Musculoskelet Disord. 2023 Mar 7;24(1):172. doi: 10.1186/s12891-023-06277-1. PMID: 36882804; PMCID: PMC9989576.
19. Shetty SH, Dhond A, Arora M, Deore S. Platelet-Rich Plasma Has Better Long-Term Results Than Corticosteroids or Placebo for Chronic Plantar Fasciitis: Randomized Control Trial. J Foot Ankle Surg. 2019 Jan;58(1):42-46. doi: 10.1053/j.jfas.2018.07.006. Epub 2018 Nov 15. PMID: 30448183.
20. Singh P, Madanipour S, Bhamra JS, Gill I. A systematic review and meta-analysis of platelet-rich plasma versus corticosteroid injections for plantar fasciopathy. Int Orthop. 2017 Jun;41(6):1169-1181.
21. Torres J, Tamimi F, Martinez PP, Alkhraisat MH, Linares R, Hernández G, Torres-Macho J, LópezCabarcos E. Effect of platelet-rich plasma on sinus lifting: a randomized-controlled clinical trial. J Clin Periodontol. 2009 Aug;36(8):677-87.
22. Vannini F, Di Matteo B, Filardo G, Kon E, Marcacci M, Giannini S. Platelet-rich plasma for foot and ankle pathologies: a systematic review. Foot Ankle Surg. 2014 Mar;20(1):2-9.
23. Vellingiri K, S NJ, P V M, Lourdu JP, Andra Suryanarayana MS. A Prospective Study Comparing the Efficacy of Local Injection of Platelet-Rich Plasma (PRP) vs Methylprednisolone in Plantar Fasciitis. Cureus. 2022 May 31;14(5):e25523. doi: 10.7759/cureus.25523. PMID: 35800843; PMCID: PMC9246436.
24. Ye Y, Zhou X, Mao S, Zhang J, Lin . Platelet rich plasma versus hyaluronic acid in patients with hip osteoarthritis: A meta-analysis of randomized controlled trials. Int J Surg. 2018 May;53:279-287. doi: 10.1016/j.ijsu.2018.03.078. Epub 2018 Apr 5.
25. Zhao JG, Zhao L, Jiang YX, Wang ZL, Wang J, Zhang P. Platelet-rich plasma in arthroscopic rotator cuff repair: a meta-analysis of randomized controlled trials. Arthroscopy. 2015 Jan;31(1):125-35.
