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SPECIALIST ORTHOPAEDIC SURGEON

EVIDENCE SUMMARY

Platelet-Rich Plasma (PRP) and Injection Therapies

Overview

- At least two PRP injections are recommended for treating knee osteoarthritis, with effects lasting for at least 24 weeks [1].
- Conclusions regarding the clinical utility of PRP should be interpreted with caution due to major methodological concerns, including lack of PRP characterization and short-term follow-up [2].
- Future studies should prioritize long-term outcomes to guide clinical decision-making more effectively [2].
- Both leukocyte-rich (L-PRP) and leukocyte-poor (LP-PRP) platelet-rich plasma are effective treatment options with comparable efficacy based on current evidence [3].
- Findings refute claims of PRP equivalence to placebo and support its efficacy over placebo in chronic tenosynovitis [4].
- PRP therapy should be systematically offered for competition sports practitioners [5].
- The authors argue that they fulfilled the reporting requirements for the injected PRP product as defined by MIBO [6].
- Findings do not support PRP as a recommended treatment for lateral epicondylitis [7].
- PRP is no more effective than placebo for treating Achilles tendinopathy and should not be used for this indication until new, large, high-quality RCTs upend current knowledge [8].
- Rigorous basic, translational, and clinical research remains fundamental to realize the promise of PRP treatment for musculoskeletal disease [9].
- Current evidence supports the selective use of PRP in sports settings, though standardization in protocols and outcomes is needed [11].
- Routine use of PRP for the treatment of greater trochanteric pain syndrome is not supported [13].
- Studies evaluating the outcomes and procedures of the use of PRP in the setting of lateral epicondylitis have poor adherence to MIBO guidelines [14].

CQ HAND + UPPER LIMB
Dr Kieran Hirpara — Specialist Orthopaedic Surgeon
Suite 2, Level 1, Mater Private Hospital Rockhampton, 31 Ward Street, The Range, QLD 4700
Phone 07 4863 6556 · office@cqupperlimb.com.au · cqupperlimb.com.au

How It Works

- At least two PRP injections are recommended for treating knee osteoarthritis, with effects lasting for at least 24 weeks [1].
- The clinical utility of PRP should be interpreted with caution due to major methodological concerns in some studies, including lack of PRP characterization and short-term follow-up [2].
- Both leukocyte-rich PRP (L-PRP) and leukocyte-poor PRP (LP-PRP) are effective treatment options with comparable efficacy based on current evidence [3].
- Findings refute claims of PRP equivalence to placebo and support its efficacy over placebo in chronic tenosynovitis [4].
- PRP therapy is recommended for competition sports practitioners [5].
- Authors argue that they fulfilled the reporting requirements for the injected PRP product as defined by MIBO [6].
- Findings do not support PRP as a recommended treatment for lateral epicondylitis [7].
- PRP is no more effective than placebo for treating Achilles tendinopathy and should not be used for this indication until new, large, high-quality RCTs upend current knowledge [8].
- Rigorous basic, translational, and clinical research remains fundamental to realize the promise of PRP treatment for musculoskeletal disease [9].
- A direct, linear relationship was observed between the concentration factor of PRP used and the magnitude of patient-reported symptom relief after PRP injection, with high-dose PRP showing significant efficacy over alternative treatment strategies [10].
- Corticosteroids resulted in greater short-term improvement, while PRP demonstrated superior longer-term outcomes at 6 and 12 months for lateral elbow tendinopathy [12].
- Routine use of PRP for the treatment of greater trochanteric pain syndrome is not supported [13].
- The application of PRP following small-diameter core decompression results in significant pain relief, improved short-term functional outcomes, and enhanced quality of life compared to core decompression alone in early osteonecrosis of the femoral head [15].
- The goal of characterization studies is to discern key molecular mediators between leukocyte-rich PRP (LR-PRP) and leukocyte-poor PRP (LP-PRP) derived from the same patient with equivalent platelet concentrations [16].
- Optimizing osteoarthritis treatment involves tailoring PRP protocols to disease stage, with low platelet, high leukocyte PRP recommended for early OA due to its anti-inflammatory effects and high platelet, low leukocyte PRP preferred for advanced OA to promote tissue repair and regeneration [17].

What the Evidence Shows

EFFICACY BY CONDITION

- At least two PRP injections are recommended for knee osteoarthritis, with effects lasting for at least 24 weeks [1].
- PRP is no more effective than placebo for treating Achilles tendinopathy and should not be used for this indication until new, large, high-quality RCTs upend current knowledge [8].
- Findings do not support PRP as a recommended treatment for lateral epicondylitis [7].
- Routine use of PRP for the treatment of greater trochanteric pain syndrome is not supported [13].
- Intra-articular PRP injection is an effective treatment for improving overall function in patients with primary osteoarthritis, particularly in younger individuals [23].
- PRP injections are a safe and effective conservative treatment method for reducing pain symptoms and increasing functionality in patients with lateral epicondylitis [22].
- The application of PRP following small-diameter core decompression results in significant pain relief, improved short-term functional outcomes, and enhanced quality of life compared to core decompression alone in early osteonecrosis of the femoral head [15].
- Current evidence supports the selective use of PRP in sports settings for acute muscle injuries, though standardization in protocols and outcomes is needed [11].
- PRP can effectively improve pain and functional impairment in patients with tendinopathy, and its midterm efficacy is superior to that of corticosteroids [20].
- Corticosteroids resulted in greater short-term improvement than PRP, while PRP demonstrated superior longer-term outcomes at 6 and 12 months for lateral elbow tendinopathy [12].
- Current evidence is of insufficient quality to determine if anterior cruciate ligament reconstruction (ACLR) augmented with PRP provides a clinically meaningful improvement in postoperative outcomes over ACLR without PRP [26].

PRODUCT COMPOSITION AND PREPARATION

- Both leukocyte-rich (L-PRP) and leukocyte-poor (LP-PRP) are effective treatment options with comparable efficacy for knee osteoarthritis based on current evidence [3].
- Leukocytes did not affect the safety and efficacy of intra-articular PRP injections for the treatment of patients with knee osteoarthritis in a double-blind randomized controlled trial [19].
- A direct, linear relationship was observed between the concentration factor of PRP used and the magnitude of patient-reported symptom relief after PRP injection for lateral epicondylitis, with high-dose PRP showing significant efficacy over alternative treatment strategies [10].
- The findings refute claims of PRP equivalence to placebo and support its efficacy over placebo for chronic tenosynovitis [4].

COMBINATION THERAPIES

- For patients with knee osteoarthritis, PRP combined with hyaluronic acid (PRP + HA) therapy is safe and yields better outcomes in pain relief and functional improvement compared to PRP monotherapy [21].
- The combination of PRP with non-crosslinked hyaluronic acid in mono-injection was found to be non-inferior to crosslinked hyaluronic acid regarding the percentage of responders over 6 months for knee osteoarthritis [25].

REPORTING QUALITY AND METHODOLOGICAL CONCERNS

- The authors' conclusions regarding the clinical utility of PRP should be interpreted with caution due to major methodological concerns, including lack of PRP characterization and short-term follow-up; future studies should prioritize long-term outcomes to guide clinical decision-making more effectively [2].
- Spin bias is highly prevalent in the abstracts of systematic reviews and meta-analyses of intra-articular PRP to treat knee osteoarthritis, with identified spin tending to favor the use of PRP [24].
- Studies evaluating the outcomes and procedures of the use of PRP in the setting of lateral epicondylitis have poor adherence to Minimum Information for Studies Evaluating Biologics in Orthopedics (MIBO) guidelines [14].
- The authors argue that they fulfilled the reporting requirements for the injected PRP product as defined by MIBO [6].

SPECIFIC RECOMMENDATIONS

- The authors recommend systematically offering PRP therapy for competition sports practitioners [5].

Practical Considerations

- At least two PRP injections are recommended for treating knee osteoarthritis, with effects lasting for at least 24 weeks [1].
- Conclusions regarding the clinical utility of PRP should be interpreted with caution due to major methodological concerns, including lack of PRP characterization and short-term follow-up [2].
- Future studies should prioritize long-term outcomes to guide clinical decision-making more effectively [2].
- Both leukocyte-rich (L-PRP) and leukocyte-poor (LP-PRP) are effective treatment options with comparable efficacy based on current evidence [3].
- Findings refute claims of PRP equivalence to placebo and support its efficacy over placebo in chronic tenosynovitis [4].
- PRP therapy should be systematically offered for competition sports practitioners [5].
- The authors argue that they fulfilled the reporting requirements for the injected PRP product as defined by MIBO [6].
- Findings do not support PRP as a recommended treatment for lateral epicondylitis [7].

- PRP is no more effective than placebo for treating Achilles tendinopathy and should not be used for this indication until new, large, high-quality RCTs upend current knowledge [8].
- Rigorous basic, translational, and clinical research remains fundamental to realize the promise of PRP treatment for musculoskeletal disease [9].
- A direct, linear relationship was observed between the concentration factor of PRP used and the magnitude of patient-reported symptom relief after PRP injection [10].
- High-dose PRP shows significant efficacy over alternative treatment strategies [10].
- Current evidence supports the selective use of PRP in sports settings, though standardization in protocols and outcomes is needed [11].
- Corticosteroids resulted in greater short-term improvement compared to PRP for lateral elbow tendinopathy [12].
- PRP demonstrated superior longer-term outcomes at 6 and 12 months compared to corticosteroids for lateral elbow tendinopathy [12].
- Studies evaluating the outcomes and procedures of the use of PRP in the setting of lateral epicondylitis have poor adherence to MIBO guidelines [14].
- Leukocyte-poor platelet-rich plasma reduces retear risk after arthroscopic rotator cuff repair [18].
- The economic value of LP-PRP is conditional rather than uniform and depends on revision probability and preparation cost [18].

Key Evidence

- [L3] At least two PRP injections are recommended, with effects lasting for at least 24 weeks. [1] (10.1186/s13018-025-05756-6)
- [L5] The authors' conclusions regarding the clinical utility of PRP should be interpreted with caution due to major methodological concerns, including lack of PRP characterization and short-term follow-up; future studies should prioritize long-term outcomes to guide clinical decision-making more effectively. [2] (10.1016/j.arth.2025.05.007)
- [L1] Both L-PRP and LP-PRP are effective treatment options with comparable efficacy based on current evidence. [3] (10.1186/s13018-026-06689-4)
- [L1] These findings refute claims of PRP equivalence to placebo and support its efficacy over placebo. [4] (10.1186/s12891-025-09339-8)
- [L4] The authors recommend systematically offering PRP therapy for competition sports practitioners. [5] (10.1186/s12891-025-08663-3)
- [Paper] The authors argue that they fulfilled the reporting requirements for the injected PRP product as defined by MIBO. [6] (10.1177/03635465231203202)
- [L1] These findings do not support PRP as a recommended treatment for this condition. [7] (10.1177/03635465251383039)

- [L1] PRP is no more effective than placebo for treating Achilles tendinopathy and should not be used for this indication until new, large, high-quality RCTs upend current knowledge. [8] (10.1097/corr.0000000000003478)
- [Paper] Rigorous basic, translational, and clinical research remains fundamental to realize the promise of PRP treatment for musculoskeletal disease. [9] (10.1177/03635465251395284)
- [L1] A direct, linear relationship was observed between the concentration factor of PRP used and the magnitude of patient-reported symptom relief after PRP injection, with high-dose PRP showing significant efficacy over alternative treatment strategies. [10] (10.1016/j.jisako.2025.100442)
- [L2] Current evidence supports the selective use of PRP in sports settings, though standardization in protocols and outcomes is needed. [11] (10.1177/23259671251399907)
- [L1] Corticosteroids resulted in greater short-term improvement, while PRP demonstrated superior longer-term outcomes at 6 and 12 months. [12] (10.1177/23259671251386862)
- [L1] As a result, we do not support the routine use of PRP for the treatment of this condition. [13] (10.2106/jbjs.24.00763)
- [L2] This review demonstrated that studies evaluating the outcomes and procedures of the use of PRP in the setting of LE have poor adherence to MIBO guidelines. [14] (10.5397/cise.2024.01060)
- [L3] The application of PRP following CD results in significant pain relief, improved short-term functional outcomes, and enhanced quality of life compared to CD alone. [15] (10.1186/s12891-024-08243-x)
- [L5] The goal of the study was to discern key molecular mediators between leukocyte-rich PRP (LR-PRP) and leukocyte-poor PRP (LP-PRP) derived from the same patient with equivalent platelet concentrations. [16] (10.1177/03635465231206930)
- [L1] Optimizing OA treatment involves tailoring PRP protocols to disease stage, with low platelet, high leukocyte PRP recommended for early OA due to its anti-inflammatory effects and high platelet, low leukocyte PRP preferred for advanced OA to promote tissue repair and regeneration. [17] (10.1186/s13018-025-06026-1)
- [L1] The economic value of LP-PRP is conditional rather than uniform and depends on revision probability and preparation cost. [18] (10.1016/j.jse.2026.02.018)
- [L1] This double-blind randomized controlled trial demonstrated that leukocytes did not affect the safety and efficacy of intra-articular PRP injections for the treatment of patients with knee OA. [19] (10.1177/03635465241283500)
- [L1] PRP can effectively improve pain and functional impairment in patients with tendinopathy, and its midterm efficacy is superior to that of corticosteroids. [20] (10.1186/s12891-025-08566-3)
- [L1] This meta-analysis reveals that, for patients with KOA, PRP + HA therapy is safe and yields better outcomes in pain relief and functional improvement compared to PRP monotherapy. [21] (10.1186/s13018-024-05429-w)
- [L4] PRP injections are a safe and effective conservative treatment method for reducing pain symptoms and increasing functionality in patients with lateral epicondylitis. [22] (10.1177/2325967125s00169)
- [L1] Intra-articular PRP injection is an effective treatment for improving overall function in patients with primary OA, particularly in younger individuals. [23] (10.1186/s12891-026-09486-6)

- [L1] Spin bias is highly prevalent in the abstracts of systematic reviews and meta-analyses of intra-articular PRP to treat knee osteoarthritis, with identified spin tending to favor the use of PRP. [24] (10.1002/arj.70027)
- [L1] The combination of PRP with non-crosslinked HA in mono-injection was found to be non-inferior to crosslinked HA, with regards to the percentage of responders over 6 months (WOMAC pain). [25] (10.1186/s12891-026-09625-z)
- [L1] Current evidence is of insufficient quality to determine if ACLR augmented with PRP application provides a clinically meaningful improvement in postoperative outcomes over ACLR without PRP. [26] (10.1186/s13018-026-06714-6)

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