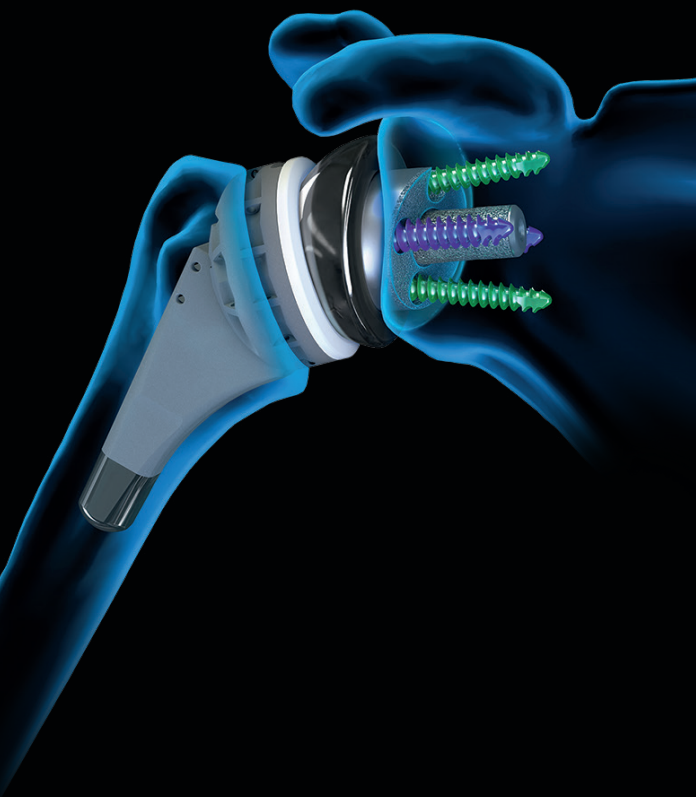


Arthroplasty and Biologics: Advancing Outcomes

Scientific Insights



Arthrex®



Arthrex is one of the world's leading companies in orthobiologics, sports medicine, and minimally invasive surgery.

For four decades, Arthrex has been known for superior innovation and uncompromising quality. We have developed more than 18,000 products and surgical procedures, and we distribute medical devices in over 100 countries worldwide. As a company with a strong culture of innovation, Arthrex is committed to improving and maximizing the quality of life for patients across the globe.

We are now making surgical care Better with BIO™ through the integration of biologic techniques. For more than 15 years, Arthrex has been at the forefront of PRP systems, building on a legacy of innovation to provide biologic solutions that support healing and help advance patient care.

If you have any questions, your local Arthrex representative will be happy to provide further information.

Clinical Relevance

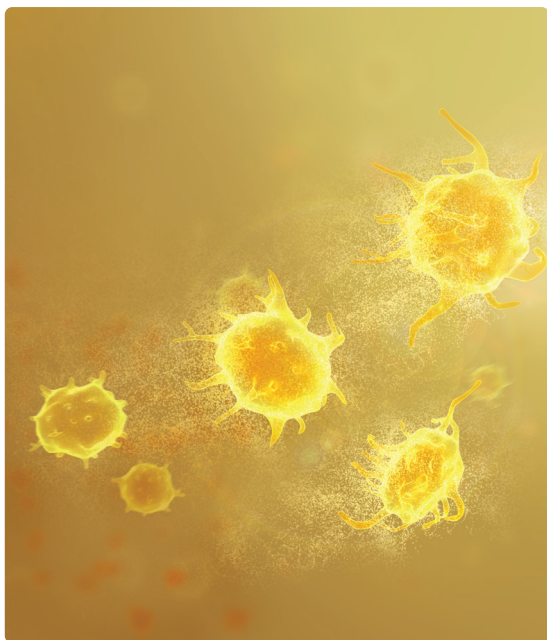
Total joint arthroplasty (TJA), including knee, hip, and shoulder arthroplasty, is highly effective for end-stage joint disease but often involves significant blood loss, transfusions, pain, and delayed healing, leading to longer recovery and hospitalization.

While mechanical and pharmacologic measures help, biologic adjuncts such as platelet-rich plasma (PRP), fibrin sealants, and thrombin-based agents are gaining interest. These utilize autologous blood components that may support the body's natural processes involved in hemostasis, inflammation, and tissue repair.

Biologic Adjuncts

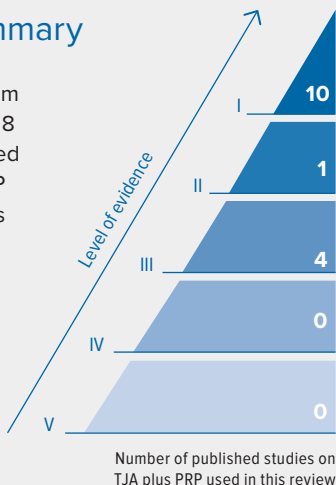
Platelet-Rich Plasma (PRP)

Concentrated autologous growth factors



Evidence Summary

Current evidence from 15 studies, including 8 randomized controlled trials, associates PRP with positive findings across several clinical end points reported in the literature.



Pain Reduction¹⁻⁵

Statistically significant short-term pain reduction in total knee arthroplasty (TKA) and total shoulder arthroplasty (TSA)



Narcotic Requirements^{1,4,5}

28%-53% reduction in opioid consumption in TKA



Functionality^{1,3,4}

Faster functional recovery in TKA and TSA



Blood Loss^{1,5-13}

TKA: up to 22% Hb drop reduction
THA: up to 32% Hb drop reduction



Wound Healing^{14,15}

Faster functional recovery in TKA and THA

Key Takeaways

- › PRP may support improvements in early pain scores and range of motion following TKA, as reported in the literature.
- › Fibrin sealants and thrombin-based agents have been shown in studies to lower transfusion rates.
- › PRP and autologous fibrin sealants demonstrated a favorable safety profile in the studies reviewed.

Study Limitations

- › **Product heterogeneity:** variability in PRP preparation methods across studies
- › **Outcome heterogeneity:** diverse endpoints and variable follow-up intervals
- › **Limited long-term data:** most benefits observed are short-term perioperative outcomes

References

1. Aggarwal AK, et al. *Int Orthop*. 2014;38(2):387-395.
2. Muchedzi TA, et al. *Surgeon*. 2018;16(4):250-258.
3. Li FX, et al. *Int J Surg*. 2017;38:109-116.
4. Zavadil DP, et al. *J Extra Corpor Technol*. 2007;39(3):177-182.
5. Gardner MJ, et al. *Int Orthop*. 2007;31(3):309-313.
6. Romanò CL, et al. *Knee Surg Sports Traumatol Arthrosc*. 2015;23(11):3337-3342.
7. Li ZJ, et al. *Knee Surg Sports Traumatol Arthrosc*. 2015;23(7):2019-2025.
8. Bloomfield MR, et al. *J Arthroplasty*. 2012;27(5):695-702.
9. Qu Z, et al. *Int J Surg*. 2016;34:58-63.
10. Everts PA, et al. *Acta Anaesthesiol Scand*. 2006;50(5):593-599.
11. Mochizuki T, et al. *Eur J Orthop Surg Traumatol*. 2016;26(8):901-905.
12. Ma J, et al. *Medicine (Baltimore)*. 2017;96(26):e7262.
13. Wang X, et al. *Medicine (Baltimore)*. 2018;97(40):e12451.
14. Capion SC, et al. *Wound Repair Regen*. 2021;29(6):988-995.
15. Shu H, et al. *Front Surg*. 2022;9:922637.

Literature Search: PubMed, Google Scholar Publication Center (October 2025); Search Terms: "PRP" OR "platelet-rich plasma" OR "autologous platelet gel") AND "Arthroplasty; Study Selection: Only studies reporting positive outcomes associated with PRP were included to highlight its potential therapeutic value based on currently available clinical evidence.

| **Note:** Various PRP devices from several manufacturers were used in the studies.

Explore more ways to make your
procedures Better with BIO™



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