



RELIEVE^{4*,9,10,11}
IMPROVE^{1,5,12,13}
PRESERVE^{2*,3*,6*,7,8**}

nSTRIDE[®] APS is an autologous, single injection to treat osteoarthritis (OA) of the knee.¹ Can help to provide pain relief and improve knee function while targeting OA inflammation at the source by preserving cartilage.^{1-8*}

References

1. J Hix, M.K., R Foreman, E Cullen, K Toler, W King, J Woodell-May, An Autologous Anti-Inflammatory Protein Solution Yielded a Favorable Safety Profile and Significant Pain Relief in an Open-Label Pilot Study of Patients with Osteoarthritis. *BioResearch Open Access*, 2017. 6(1): p. 151-158.†
2. KM O'Shaughnessey, A. P., JE Woodell-May, Blood-derived anti-inflammatory protein solution blocks the effect of IL-1beta on human macrophages in vitro. *Inflamm Res* 2011. 60(11): p. 929-936.*†
3. J Woodell-May, A.M., M Oyster, Autologous protein solution inhibits MMP-13 production by IL-1beta and TNF alpha-stimulated human articular chondrocytes. *J Orthop Res* 2011. 29(9): p. 1320-6.*†
4. E Kon, L.E., P Verdonk, S Nehrer, G Filardo. Two-year Clinical Outcomes of An Autologous Protein Solution Injection For Knee Osteoarthritis. in *ICRS 14th World Congress*. 2018. Macau, China.†
5. E Kon, L.E., P Verdonk, S Nehrer, G Filardo, Clinical Outcomes of Knee Osteoarthritis Treated with an Autologous Protein Solution. A 1-year Pilot Double-Blinded Randomized Control Trial. *Am J Sports Med*, 2018. 46(1): p. 171-180. †
6. A Matuska, K.O.S., W King, J Woodell-May, Autologous solution protects bovine cartilage explants from IL-1 and TNF -induced cartilage degradation. *Journal of Orthopaedic Research*, 2013. 31(12): p. 1929-35.*†
7. K O'Shaughnessey, A.M., J Hoepfner, J Farr, M Klaassen, C Kaeding, C Lattermann, W King, J Woodell-May, An Autologous Protein Solution prepared from the blood of osteoarthritic patients contains an enhanced profile of anti-inflammatory cytokines and anabolic growth factors. *Journal of Orthopaedic Research*, 2014. 32(10): p. 1349-55. †
8. King W., Bendele A., Marohl T., Woodell-May J., " Human blood-based anti-inflammatory solution inhibits osteoarthritis progression in a meniscal-tear rat study., " *Journal of Orthopaedic Research*, 35(10):2260-2268; 2017.**†
9. E Kon, G.F., P Verdonk, L Engebretsen, H Bliddal, A Amin, P De La Cuadra Virgili, N Atwal, S Sastre Solsona. A Two-Phase RCT Comparing Autologous Protein Solution with Hyaluronic Acid Intra Articular Injections in Patients with Knee OA (PROGRESS V). in *ICRS 16th World Congress*. 2022. Berlin, Germany. †
10. W King, W.v.d.W., R Van Drumpt, H Soons, K Toler, J Woodell-May, White blood cell concentration correlates with increased concentrations of IL-1ra and improvement in WOMAC Pain Scores in an open-label safety study of Autologous Protein Solution. *Journal of Experimental Orthopaedics*, 2016. 3(9): p. 1-7. †
11. K Zaslav, F.A., S Martinez, M Chmell, N Skrepnik, N Segal, B Grawe, T Shybut, T Seyler, J Woodell-May. A RCT of a Single, Intra-Articular Injection of Autologous Protein Solution (APS) in Patients with Knee Osteoarthritis (PROGRESS IV) in *ICRS 16th World Congress*. 2022. Berlin, Germany. †
12. Kotaro, K.A.a.N., Short term outcomes of autologous protein solution therapy for knee osteoarthritis *Bone Joint Nerve* 2020. 10(2): p. 197-205.
13. E Kon, L.E., P Verdonk, S Nehrer, G Filardo. Five Year Follow-up of a Single, Intra-Articular Injection of Autologous Protein Solution in Patients with Knee OA (Progress II) in *ICRS 16th World Congress*. 2022. Berlin, Germany. †

*Lab testing is not necessarily indicative of clinical outcomes

**Animal studies are not necessarily indicative of clinical performance

† Study funded by Zimmer Biomet

All content herein is protected by copyright, trademarks and other intellectual property rights, as applicable, owned by or licensed to Zimmer Biomet or its affiliates unless otherwise indicated, and must not be redistributed, duplicated or disclosed, in whole or in part, without the express written consent of Zimmer Biomet.

This material is intended for health care professionals. Distribution to any other recipient is prohibited.

For indications, contraindications, warnings, precautions, potential adverse effects and patient counseling information, see the instructions for use or contact your local representative; visit www.zimmerbiomet.com for additional product information.

Not for distribution in France. Check for country product clearances and reference product specific instructions for use.

© 2026 Zimmer Biomet



5039.1-EMEA-en-Issue Date 2026-02

 Legal Manufacturer
Biomet Orthopedics
56 E. Bell Drive
Warsaw, Indiana 46581
USA
www.zimmerbiomet.com



 Autologous
Anti-Inflammatory
Treatment

nSTRIDE[®]

Autologous Protein Solution

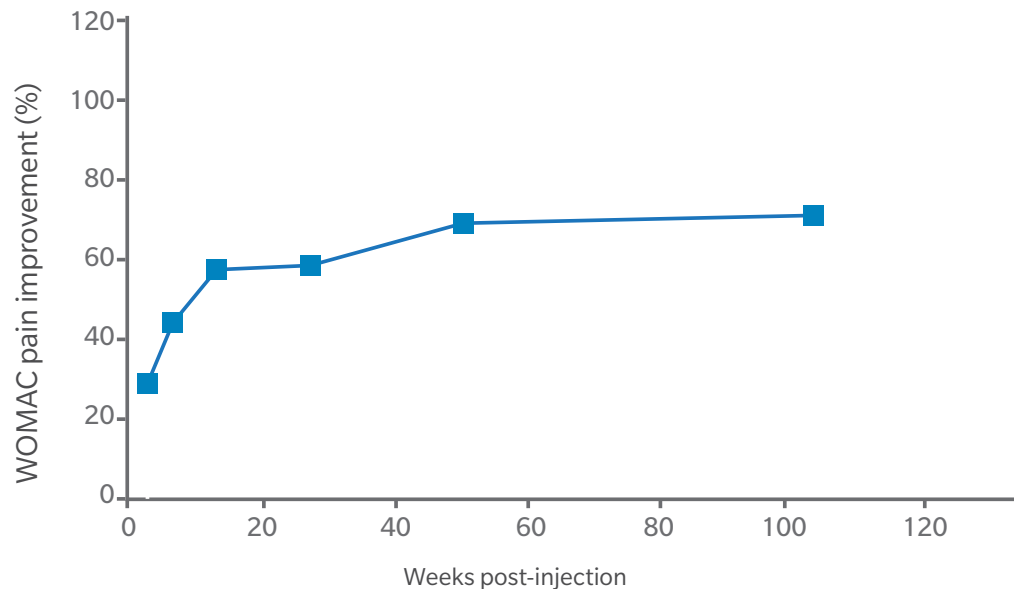


RELIEVE

Demonstrated pain relief for up to two years with a single injection.⁴

- A single injection has shown a 70% improvement in pain associated with OA for two years (Figure 1).⁴
- Patients that crossed-over from Hyaluronic Acid (HA) to nSTRIDE APS replace with autologous protein solution experienced a significant pain reduction at one year compared to patients that switched from nSTRIDE APS to HA.⁹
- nSTRIDE APS is a white blood cell (WBC) concentrate. A clinical study showed a positive correlation between APS-WBC concentration and early pain relief, with improved WOMAC pain scores at six months post-injection.¹⁰
- nSTRIDE APS demonstrated significant pain improvement compared to saline at one year using a novel responder criteria that considered rescue medication usage, restricted medication usage and study exit rate.¹¹

Figure 1.

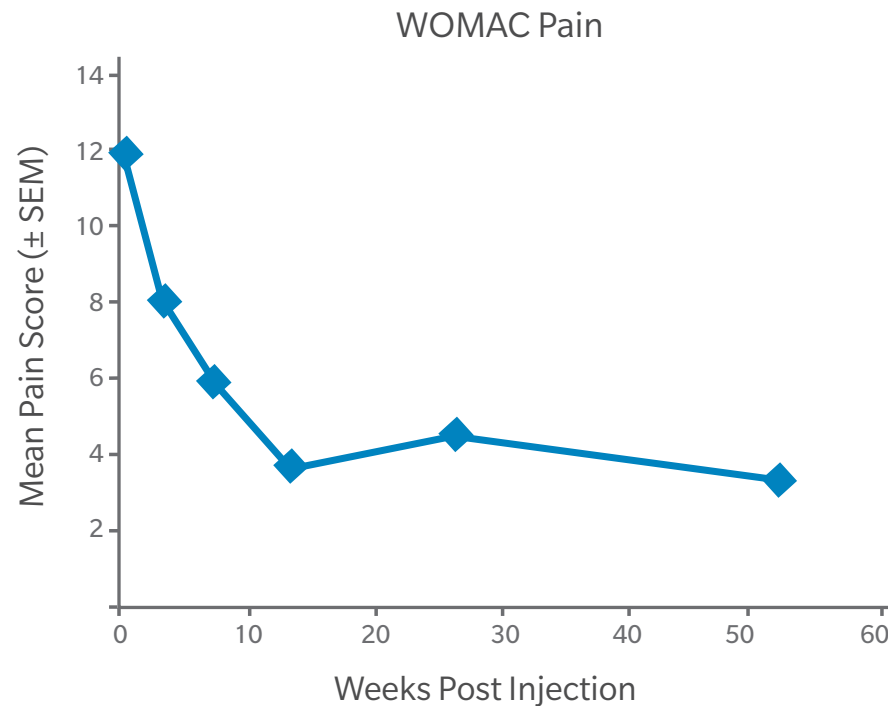


IMPROVE

Significantly improved knee pain, function and stiffness.^{1,12}

- Significant decrease in effusions (≥ 5 mL) nine months after a single injection.¹²
- nSTRIDE APS is a durable treatment” and start the statement with “A long-term pilot study demonstrated that 64% of patients remained in the study five years after a single injection without seeking additional knee treatments.¹³
- WOMAC pain, function, stiffness and total subscales were significantly improved from baseline at one year after a single injection of nSTRIDE APS (Figure 2).¹
- After one year following a single injection of autologous protein solution, patients had a significantly improved self-assessment of their overall health relating to OA via global impression scores.^{1,5}

Figure 2.



PRESERVE

nStride APS is designed to support joint health and osteoarthritis by slowing disease progression and may help preserve native cartilage as laboratory tests have indicated. ^{2*,3*}

- nSTRIDE APS can reduce cartilage degeneration by introducing high levels of anti-inflammatory cytokines such as IL-1ra, sIL-1RII, sTNF-RI, sTNF-RII that:
 - a. May Block the production of the cartilage degrading enzyme MMP-13
 - b. May Reduce the amount of cartilage breakdown debris released into the joint space.
 - c. May Decrease the concentration of pro-inflammatory cytokines released from the macrophage-like cells in the synovium. ^{2*,3*,6*,8**}
- The high concentration of anti-inflammatory cytokines, combined with the high concentration of chondroprotective anabolic growth factors, ^{5,7} can break the inflammatory-driven progression of OA to restore balance and aid in

Figure 3.

