contura ORTHOPAEDICS

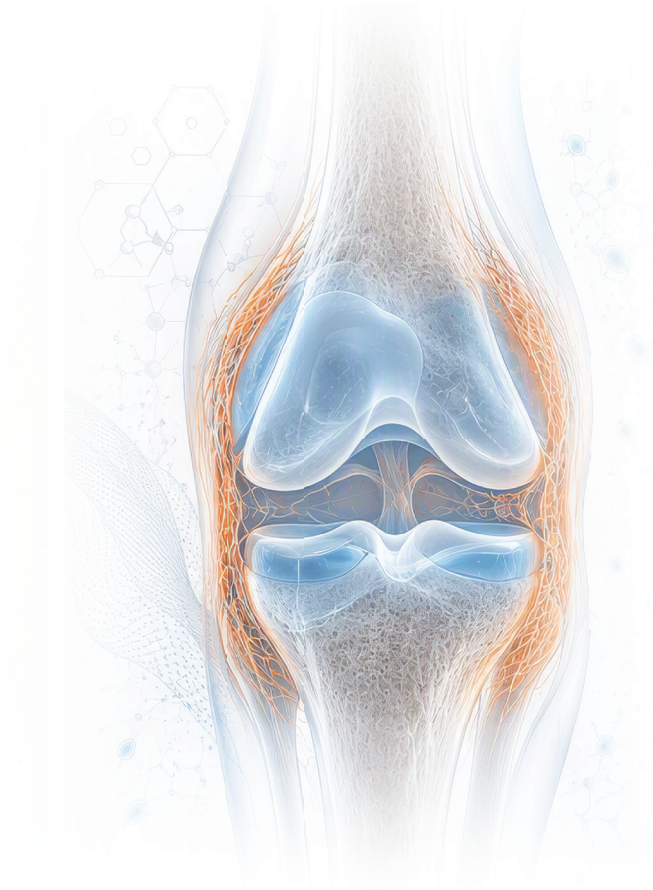
ARTHROSAMID®

LASTING RELIEF FOR KNEE OSTEOARTHRITIS[1,2]

SYNOVIAL MECHANO-MODULATION FOR KNEE OA

Arthrosamid® is an injectable mechano-modulating synovial implant for knee osteoarthritis.[3]

By restoring synovial elasticity and dampening mechanosensitive signalling,[4,5] **it offers a surgery-free treatment option that bridges the gap between injectable therapies and joint replacement.[1,2]**



WHAT IS ARTHROSAMID®?

A non-biodegradable, injectable mechano-modulating synovial implant composed of:

2.5% cross linked polyacrylamide + **97.5%** non-pyrogenic water =

2.5% iPAAG[3]

Unmatched clinical outcomes
lasting longer than those reported for HA, PRP, and steroids[2,6-9]

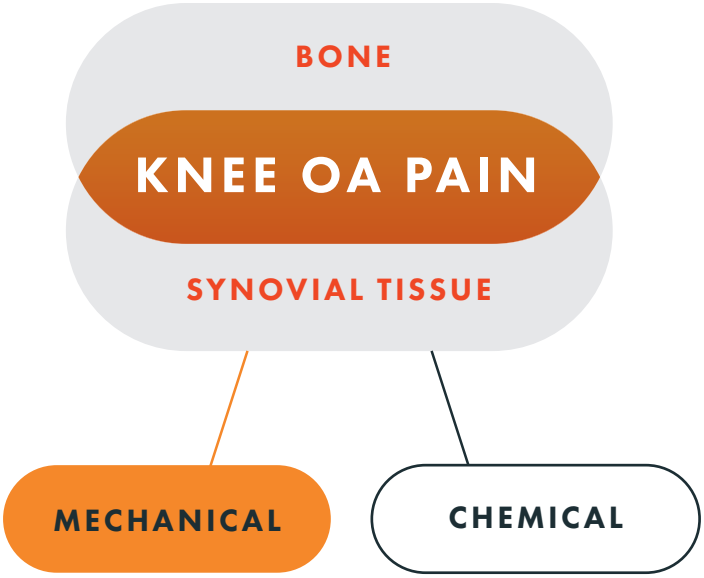
A single intra-articular injection
a simple one-step outpatient procedure[3]

Up to 5 years
of statistically significant reductions in pain[1,2]

MECHANOSENSORY AND CHEMOSENSORY PATHWAYS

Knee OA pain is driven by both mechanical and inflammatory processes, with the synovium playing a key role in pain and disease progression.[10] As a result, the synovium represents an important therapeutic target.

Arthrosamid® takes a different approach to conventional intra-articular therapies, targeting the synovium with a single injectable mechano-modulating implant designed to restore tissue properties and provide long-lasting pain relief of up to 5 years.[1,2,4]



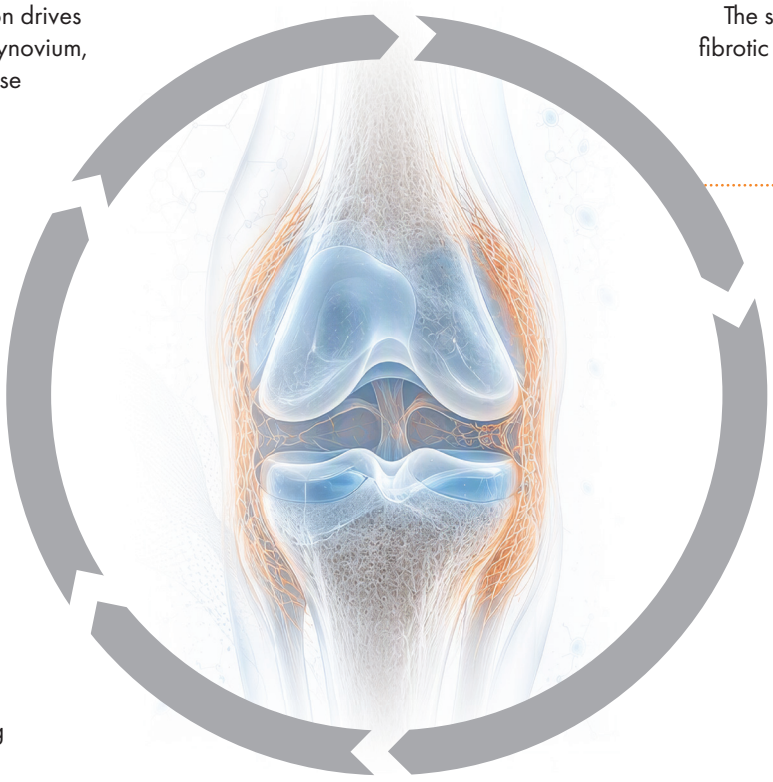
THE MECHANICAL SYNOVIAL PAIN CYCLE

SYNOVITIS

Persistent synovial inflammation drives structural changes within the synovium, contributing to pain and disease progression.[10-12]

SYNOVIAL FIBROSIS

The synovium becomes progressively fibrotic and inelastic, losing its capacity to buffer mechanical stress.[10,13]



Arthrosamid® interrupts the cycle here. See page 3 & 4 for more details

PAIN AND INFLAMMATION

Enhanced mechanosensitive signalling promotes pain and inflammation, perpetuating synovial dysfunction and restarting the cycle.[10,12,14]

LOSS OF SYNOVIAL ELASTICITY

Reduced tissue elasticity alters the mechanical environment of the joint, increasing stress within the synovium during movement.[12,13,15,16]

MECHANOSENSING

Abnormal mechanical loading activates mechanosensitive pathways within the synovium, triggering cellular responses associated with OA progression.[14,17]

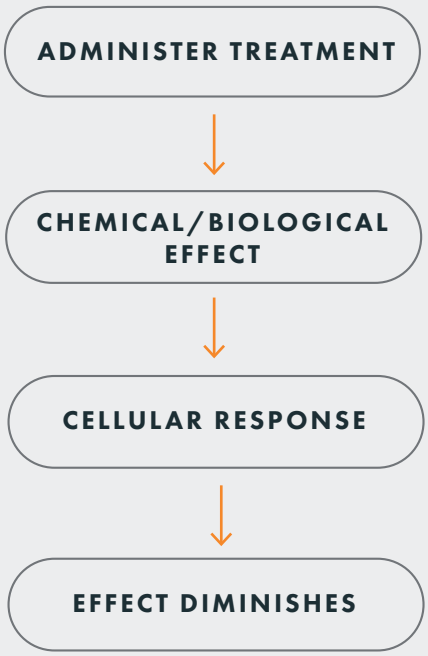
Arthrosamid® acts at the point of reduced synovial elasticity, integrating within the synovium to modify the mechanical environment before downstream mechanosensitive signalling, pain and inflammation are amplified.[12,15,18]

ARTHROSAMID® CHANGES THE PHYSICAL ENVIRONMENT

Conventional intra-articular approaches act primarily through biological and chemical mechanisms, whereas **Arthrosamid® acts through mechano-modulation, altering the physical environment of the synovium to support long-lasting symptom relief.**[1,2,6-8]

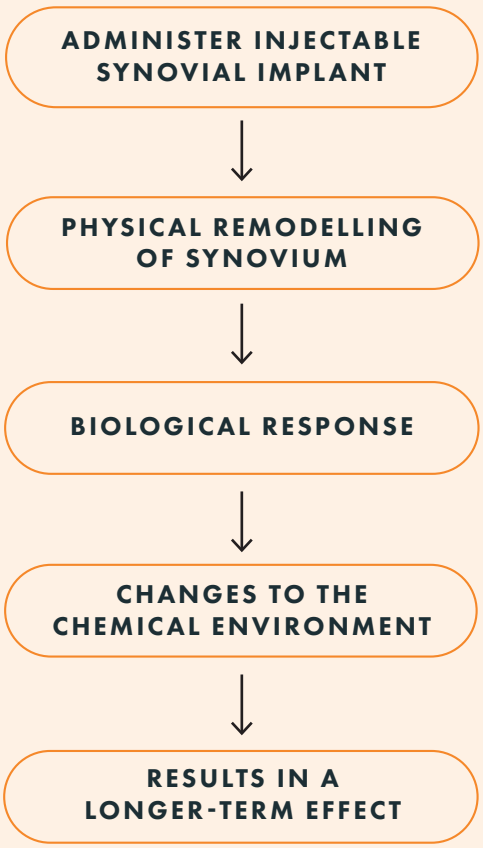
CONVENTIONAL INTRA-ARTICULAR APPROACHES

Primarily act through chemical or biological pathways, influencing cellular signalling before their effects diminish as the agent is cleared from the joint, resulting in short-term effects.



ARTHROSAMID®

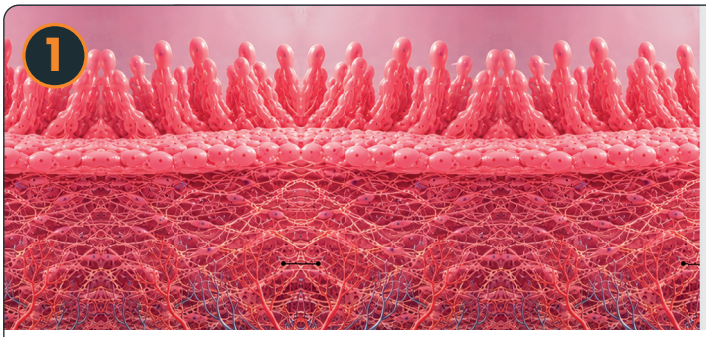
Remodels the physical environment, influencing cellular behaviour and inflammatory signalling to support a more homeostatic tissue environment and address contributors to synovial pain over the longer term.



COMPARATIVE TABLE OF CLINICAL OUTCOMES

	DURATION	RECOVERY	RISK
Arthrosamid®	5+ years[1,2]	2 weeks[3]	No significant adverse events reported in clinical studies[19]
Hyaluronic Acid (HA)	Up to 13 weeks[6,7]	1— 3 days[6,7]	<2% risk of mild adverse reactions[6,7]
Platelet-Rich Plasma (PRP)	6 —12 months[8,9]	2—3 days[8,9]	~6% (soreness/swelling)[9]
Corticosteroid	2 —10 weeks[6]	1— 3 days[20,21]	Greater than 1-2 injections can accelerate the knee degeneration[9]
Knee replacement	10 — 20 years[22]	6 — 12 months[23]	1-2% infection; 20% dissatisfaction[24,25]

A UNIQUE MECHANO-MODULATING MECHANISM



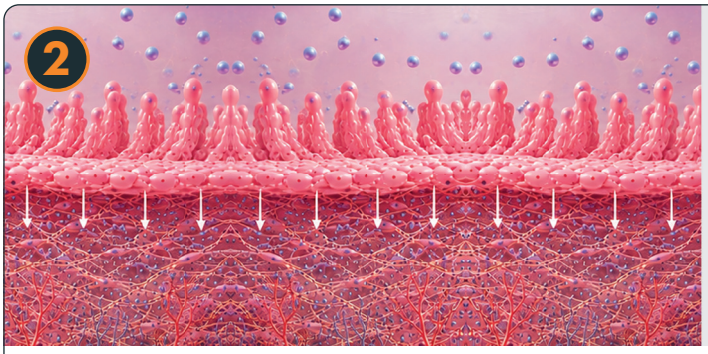
OA stiffens the synovium
The osteoarthritic synovium becomes progressively fibrotic and inelastic, losing its capacity to buffer mechanical stress. Increased stiffness heightens mechanosensing and nociceptive and inflammatory signalling.

FIBROSIS
Increased collagen deposition and ECM disorganisation within the synovial subintimal layer.

ELASTICITY
Reduced viscoelasticity and ability to accommodate mechanical strain.

MECHANICAL SIGNALS
Enhanced mechanosensitive signalling contributes to inflammation and pain.

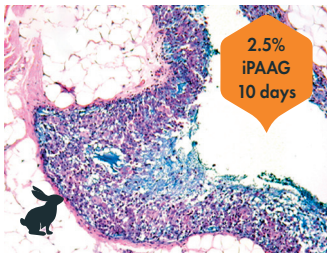




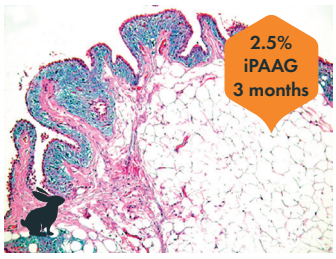
Synovial integration
Normal intimal transport mechanisms move Arthrosamid® from the synovial cavity into the subintimal synovium, where it becomes incorporated within the synovial tissue.[16,26,27]

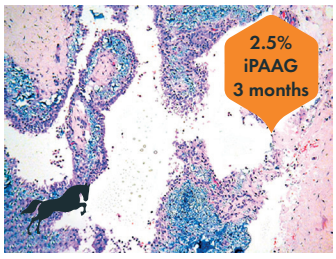
EVIDENCE OF ARTHROSAMID®'S STABLE SYNOVIAL TISSUE INTEGRATION[15]

Histological evidence demonstrating the progressive incorporation of 2.5% iPAAG into the synovium following intra-articular administration.

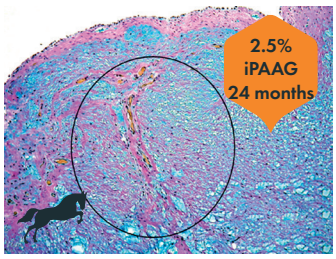


At 10 days post treatment
2.5% iPAAG is distributed throughout the synovial cavity, following dispersion within the synovial fluid.



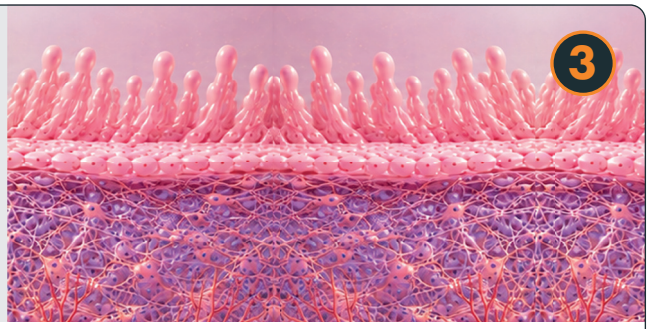


At 3 months post treatment
2.5% iPAAG is incorporated within the subintimal synovium, where a fine network of collagen fibres can be observed surrounding the injected mechano-modulating implant indicating progressive tissue integration.



At 24 months post treatment
2.5% iPAAG remains stably integrated within the synovium, demonstrating a mature collagen network and minimal inflammatory cell infiltration.

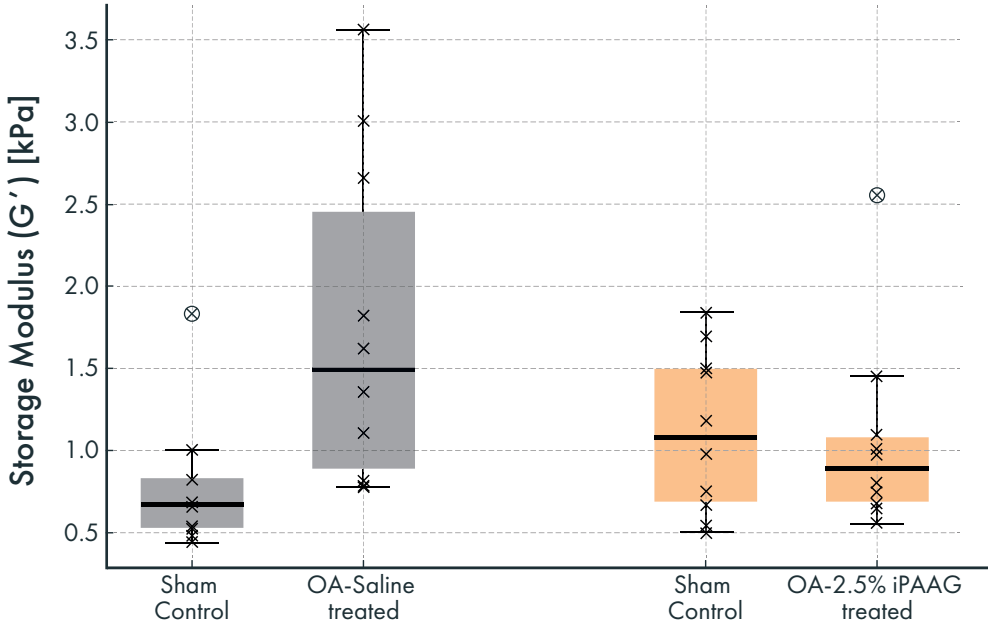
Mechano-modulation of the synovium
The integrated 2.5% iPAAG implant alters the mechanical environment of the synovium, restoring elasticity towards healthy tissue properties and reducing fibrosis. This dampens mechanosensitive signalling associated with OA progression.[4,28]



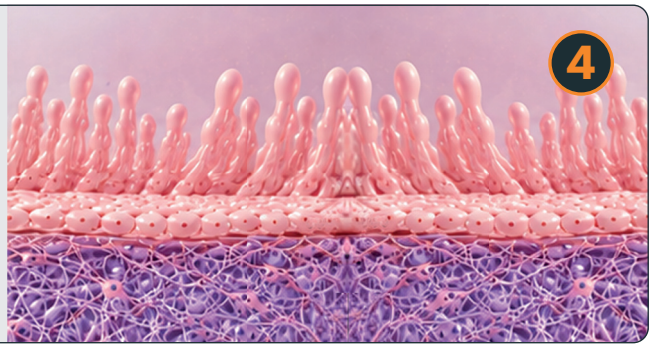
SYNOVIAL TISSUE MECHANICS IN AN EQUINE OA MODEL (N=8 PER GROUP)[29]

A comparison of synovial storage modulus (G'), a measure of tissue elasticity, in an equine OA model.

The shift in G' following iPAAG treatment indicates a change in the mechanical properties of OA synovial tissue.



Stable synovial implant
Within 4-6 weeks, Arthrosamid® completes its integration within the subintimal synovium, forming a stable, non-biodegradable synovial implant.[15,30] This stable integration helps support long-lasting pain reduction and improved joint function.[1,2,28]



DOWNSTREAM EFFECTS SEEN IN EQUINE AND HUMAN BIOMARKERS

MECHANICAL CHANGE FIRST. BIOLOGICAL RESPONSE FOLLOWS

Mechano-modulation may drive a downstream anti-inflammatory response. By altering the mechanical environment of the synovium, Arthrosamid® is associated with increased IL-1RA expression[18], suggesting that biological effects may occur downstream of the implant's primary mechanical mechanism of action.

EQUINE OSTEOCHONDRAL-FRAGMENT OA MODEL[5]

In an equine OA model, 2.5% iPAAG integrated into the synovium and preserved joint capsule elasticity, while also reducing selected inflammatory markers and improving cartilage outcomes at Day 70.

- ↓ IL-1
- ↓ IL-6
- ↓ TNF-a
- ↓ INTERFERON
- ↑ INNATE-IMMUNE

CLINICAL RESULTS

Significant reduction in subjective **lameness** at Day 49	iPAAG **integrated in 8 out of 8** treated horses	Preserved elasticity **comparable to healthy joints**

16 horses
8 received intra-articular 2.5% iPAAG and 8 received saline. Followed for 70 days

Synovial integration
iPAAG integrated into the synovial membrane in 8/8 treated joints

Mechanical response
Joint capsule elasticity was preserved at levels comparable to healthy control joints, while saline-treated OA joints became significantly stiffer

Associated biological effects
Lower synovial fluid IL-8 and PGE_2 and improved cartilage scores at Day 70

ARTHROSAMID® TREATMENT IS ASSOCIATED WITH CHANGES IN SYNOVIAL FLUID BIOMARKERS[18]

At **3 months**, synovial fluid analysis demonstrated a **consistent increase in IL-1RA**, providing preliminary evidence of a potential IL-1RA-mediated mechanism following Arthrosamid® treatment.

CLINICAL RESULTS

WOMAC improved from 45.7 to 21.9 at 12 months	**64% achieved MCID** by 3 months	**76% were responders** at 6 months

61 patients recruited
Synovial fluid collected before Arthrosamid® and at 3 months

3 month synovial response
↑ IL-1RA
in both responders and non-responders

94% of samples
showed an increase in IL-1RA from baseline

Potential mechanistic signal
Findings provide preliminary evidence of a potential IL-1RA-mediated mechanism following Arthrosamid® treatment

SAFETY OF INTRA-ARTICULAR 2.5% iPAAG FOR THE TREATMENT OF KNEE OA SYMPTOMS

Backed by more than two decades of research,[33] Arthrosamid® is safe and effective[28,31] — with no serious treatment-related adverse events reported in clinical trials.[19]

	LUNA STUDY (UP TO 1 YEAR)[33,34]	RETROSPECTIVE CASE SERIES* (MEAN FU: 2 YEARS)[35]	IDA STUDY (UP TO 5 YEARS)[2,33]	ROSA STUDY (UP TO 5 YEARS)[1,33]
No. of participants	199	91	49	119
Related AEs, subjects, n(%)	18 (9%)	25 (27%)	14 (28.5%)	35 (28.9%)
Related AEs, events, n	28	41	14	41
Most frequent				
Pain from target knee	6	7	6	21
Joint Swelling	1	-	4	13
Sensation of distension	-	15	-	-
Reduced range of motion	10	4	-	-
Synovial Cyst	-	-	3	-
Other	11	15	1	7

*Of note, retrospective case series uses adverse events, not adverse device effects

Predictable tissue response with proven biocompatibility[36]

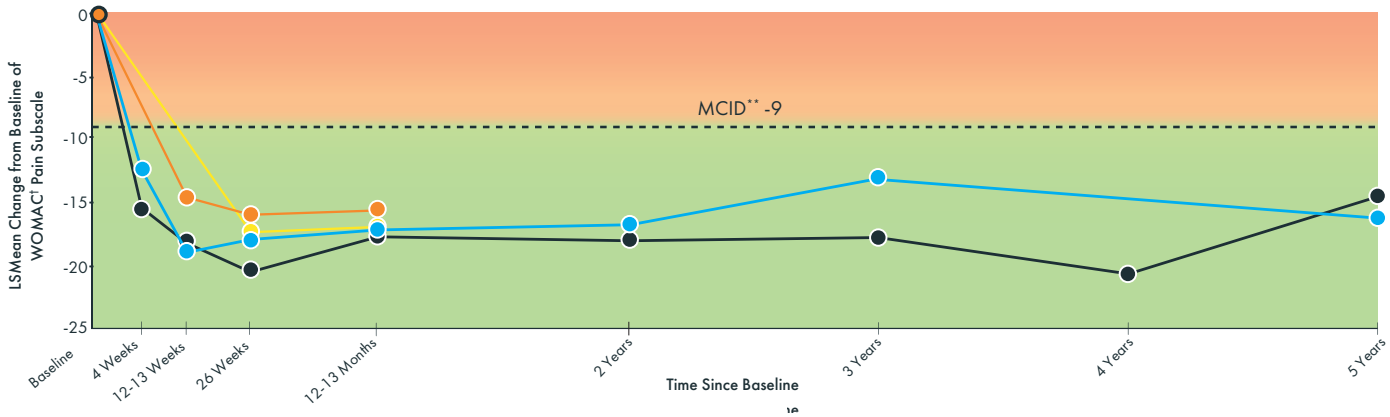
25+ years of clinical use across multiple indications[33]

5 years of safety and efficacy data[1,2]

DEMONSTRATED CLINICAL EFFICACY

REPRODUCIBLE PAIN REDUCTION RESULTS

In all our studies[1,2,34,36], Arthrosamid® exceeds the MCID**of 9 points[36], and improvement is maintained up to 5 years after a single injection.[1,2]



† WOMAC or The Western Ontario and McMaster Universities Osteoarthritis Index is a measure of symptoms and physical function. LSMeans are modelled/estimated means. The estimated means are using data from the other visits and also the covariates. **The minimum clinically important difference (MCID) represents the smallest improvement considered worthwhile by a patient.

Key
- IDA Study
- ROSA Study
- DAISY Study
- LUNA Study

contura ORTHOPAEDICS

ARTHROSAMID®

EXTENSIVE REAL WORLD USE

A PROVEN, ONE-STEP TREATMENT THAT'S SAFE, SIMPLE, AND WITHOUT SURGERY[3,28,31]

MILLIONS

of doses of 2.5% iPAAG have been used in joints over the last 10 years[33]

68%

Customer satisfaction rate with improvements in **function and daily activities**[33]

Close to

80%

responder rate in patients under 70 years of age.[33]

SCAN TO SEE OUR LATEST DATA

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For full details about warnings and precautions read the IFU. For more information and the IFU please visit **hcp.arthrosamid.com** or contact us at **enquiries@arthrosamid.com**.

References:

1. Bliddal, H., *et al.*, (2026). *Clin Exp Rheumatol.*
2. Bliddal, H., *et al.*, (2026). 5-year extension study. *J Orthop Surg Res*, 21:43.
3. Arthrosamid®, Instructions For Use. Release Date October 2025. 10117-001.
4. Wimmer, M. A., *et al.*, 18th ICRS World Congress, Boston, 11-14 October (2025).
5. Chow, L., *et al.*, (2026). AJVR.
6. NICE (2022) Osteoarthritis: care & management (NG226).
7. Bellamy. *et al.*, (2006). Viscosupplementation for knee OA.
8. Filardo. *et al.*, (2021). PRP for knee OA meta-analysis.
9. NICE (2019) PRP for knee OA. (HTG497).
10. Sanchez-Lopez, E., *et al.*, (2022). *Nat Rev Rheumatol.* Vol 18(5):258-275.
11. Wenham, C., *et al.*, (2010). The role of synovitis in osteoarthritis. *Ther Adv Musculoskelet Dis.* Vol 2(6):349-59.
12. Baker, K., *et al.*, (2010). *Annals of rheumatic diseases.* Vol 69(10):1779-83.
13. Rim Y.A., Ju J.H. (2020). *Life.* Vol 11(1):3.
14. O'Neill, T. W., *et al.*, (2018). Mechanisms of Osteoarthritis (OA) Pain. *Current osteoporosis reports.* Vol16(5), 611–616.
15. Christensen, L., *et al.*, (2016). *Osteoarthritis and Cartilage.* Vol 24(11):1999-2002.
16. Smith, D.M., (2011). *The Open Rheumatology Journal.* Vol 5(1):100-106.
17. Emmi, A., *et al.*, (2022). *Nat Rev Rheumatol.* Vol 18(5):258-275.
18. Snow, M., *et al.*, Abstract presented at ISAKOS Congress 2025.
19. Bliddal, H., *et al.*, (2021). *J Orthop Res Ther.* Vol 6(2). 1188. ISSN 2575-8241.
20. NHS (2024) Steroid injections Available at: https://www.nhs.uk/medicines/steroids/.
21. NHS (2024) Hydrocortisone injections. Available at: https://www.nhs.uk/medicines/hydrocortisone-injections/about-hydrocortisone-injections/.
22. Wijn, S. R. W., *et al.*, (2020). *The Bone & Joint Journal.* Vol 102-B(5):586–592.
23. NHS Choices (2023). Recovery - Knee replacement. NHS. Available at: https://www.nhs.uk/conditions/knee-replacement/recovery/.
24. AAOS/AAHKS (2021) Infection prevention guidelines.
25. Price, AJ., *et al.*, (2018) *Lancet.* 392(10159): 1672-1682.
26. Meachim, G., Brooke G. (1983). *Biomaterials.* Vol 4(3):153-9.
27. Meachim, G., Brooke G. (1984). *Biomaterials.* Vol 5(2):69-74.
28. Bliddal, H., *et al.*, (2024). *Clin Exp Rheumatol.* Vol 42(9):1729-1735.
29. Contino, E., *et al.*, (2026) *Authorea.*
30. Bliddal, H., *et al.*, *Clinical and Experimental Rheumatology* 2026; 44:C 996-1003.
31. Bliddal, H., *et al.*, (2024). *J Orthop Surg Res.* Vol 19:274.
32. Bliddal, H., *et al.*, (2025). 10-Year Follow-up. Abstract OC11 presented at WCO-IOF-ESCEO 2025.
33. Data on file.
34. Bliddal, H., *et al.*, (2025). Abstract presented at ISIAT 2025.
35. Overgaard, A., *et al.*, (2019). *Clin Ortho Adv Res. Osteoarthritis and Cartilage.* Vol 30(1):S370-71.
36. Henriksen, M., *et al.*, (2018). *Clin Exp Rheumatol.* Vol 36(6):1082-85. PMID:30148430.