Inside The Science:

A MAJOR STEP FORWARD FOR KNEE OSTEOARTHRITIS

ARTHROSAMID by contura ORTHOPAEDICS

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A Message from Rakesh Tailor,

CEO Of Contura Orthopaedics Ltd



In the UK over the last few years, Arthrosamid® has been widely recognised as a new tool to treat people with knee osteoarthritis (OA). More people are hearing about it, patients are now asking for it, and it has become well established in the treatment "armamentarium" available to clinicians.

And, because it's safe, effective and long-lasting – as our most recent studies and ongoing clinical trials have shown – we genuinely think it's a game-changer.

With a multi-year commitment to research and ongoing clinical studies, the evidence base for Arthrosamid® continues to become more compelling for patients looking to avoid or delay surgery. This single injection is minimally invasive but importantly not yet another short-term fix.

At the moment, patients in need of Arthrosamid® are having to pay for it privately. But ultimately, that's not our goal. In the UK, we are fortunate to be part of a socialised healthcare system and we're working hard to show that Arthrosamid® can ultimately save the NHS money. In simple terms, people with knee OA may now be able to avoid invasive surgery, not needing months off work recovering. They could instead benefit from Arthrosamid® with no enforced downtime.

Within two or so years, I can see a world where Arthrosamid® is an option on the NHS pathway. When we lay out the health economic argument, consider the evidence and factor in the very many it's already helped (more than 30,000 to date and rising rapidly), the key decision makers will be able to clearly see the rationale for offering patients Arthrosamid® on the NHS.

In science and when I was studying for my biochemistry degree, we were taught that a result is only "true" if it's reproducible. In other words, if you do something multiple times and you get the same result, that's science. Our various studies have been independently showing the same results, and this gives us the conviction to believe in the impact Arthrosamid® will have for patients with knee OA... and moreover, we are seeing that play out within the growing Arthrosamid® community.

Rakesh Tailor
CEO of Contura Orthopaedics Ltd

Today's Landscape

An estimated 5.4 million people in the UK are living with knee OA.[1] As that works out at roughly eight people in every 100, there's a strong chance you either know someone with it or have it yourself.

If so, you're likely to be familiar with the standard treatment pathway which begins with conservative measures including maintaining a healthy weight and being more active. Next, you're likely to be offered anti-inflammatory medications and physiotherapy, and, if things don't improve, steroid injections which can give short-term respite. Hyaluronic acid which 'lubricates' the joint, or Platelet-Rich Plasma (PRP) might also be suggested, although these are mostly available privately, rather than on the NHS pathway.

Often these treatments for knee OA do not provide long-lasting relief to pain, swelling, stiffness and discomfort, meaning that surgery appears the inevitable next step. But having a total or partial knee replacement operation is far from a simple solution, meaning many people hold off having it.

The latest figures show that around 850,000 patients are currently on the NHS waiting list for planned joint treatment, which includes knee replacement surgery.[2] Although in the past year there has been a slight fall in those waiting for knee or hip operations, charities such as Arthritis UK say tens of thousands of people are still spending every day in pain.[3]

Recent research from The King's Fund adds to this bleak picture.[4] Its findings published in December 2025 looked at how the NHS was doing with its aim that 92 per cent of patients should not have to wait more than 18 weeks from elective referral to their first treatment such as knee replacement surgery. Hopes of reaching this goal have been slipping since 2012 and the pandemic six years ago only worsened this situation. The latest data shows that only 62 per cent of patients hit this NHS goal.

Meanwhile, in the private sector, both the cost (on average £14,000) and the recovery time can put people off. It can take months to fully recover from knee replacement surgery. Even afterwards, depending on your age and how active you are, there's the prospect of going through it all again (when older) in the future if the joint wears out.[5]

But now there is fresh hope on the horizon in the form of Arthrosamid®, a pioneering injectable hydrogel commercially launched in the UK in 2022.

Its rise has been rapid. Around 900 patients received it that first year, but it's hoped that this year alone some 20,000 patients – half of them in the UK – will receive a single injection of Arthrosamid®.

This could offer some more lasting relief from chronic pain and allow them to return to the life they once enjoyed.

What is Arthrosamid®?

Arthrosamid® has been developed over more than 20 years by medical device company Contura at its base in Denmark. It's an innovative non-biodegradable intra-articular polyacrylamide hydrogel (iPAAG) which consists of 2.5 per cent cross-linked polyacrylamide, a carbon-based molecule, within 97.5 per cent of sterile water.[6,7]

It's injected directly into the knee's articular cavity in patients suffering from OA in this joint. This degenerative disease is brought on by multiple factors including genes, age and gender. It can also occur if the knee cartilage – which acts as a shock absorber – has been damaged, possibly due to a previous injury.

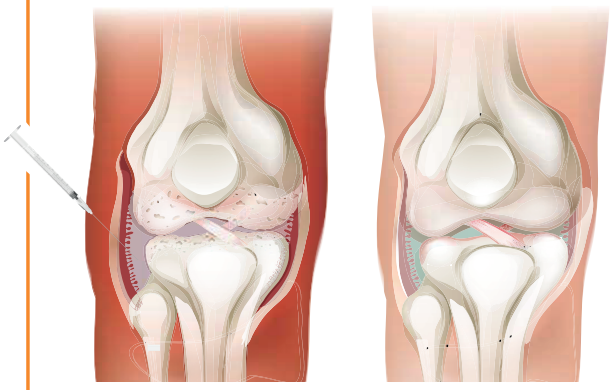
A little more than a teaspoon of Arthrosamid® – 6ml – is injected into the knee under local anaesthetic and sometimes using ultrasound visualisation to ensure it is placed correctly. The one-step procedure[6,7] takes about 15 minutes in an outpatient setting, ensuring you are in and out of the clinic the same day.

Arthrosamid®, which is a soft and elastic material, moves into the synovium[8] (also known as the synovial lining) which is the membrane that surrounds the knee. Once it is integrated and remains in place, patients see improved knee function and a reduction in pain over a long period of time.[9, 10]

'In the case of osteoarthritis, the joint contains two major irritating components which negatively impact on the synovium,' explains Mr Andrew Pearse, a consultant orthopaedic surgeon specialising in knee issues at Worcestershire Acute Hospitals NHS Trust.

He says small pieces of damaged cartilage which sheer off cause an excess of synovium fluid to be produced in the knee as the joint tries to clear this debris. In addition, Mr Pearse says that 'the internal toxic chemical make-up of the knee joint fluid', irritates the synovium tissue which produces yet more fluid, which he says, 'becomes a vicious circle'.

But it's thought that when Arthrosamid® is introduced into the knee joint and is implanted into the synovium, it has a 'mechanical' effect on the synovium tissue.[11] This has been shown to ease some of the common symptoms associated with knee OA.

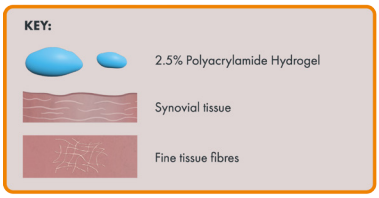


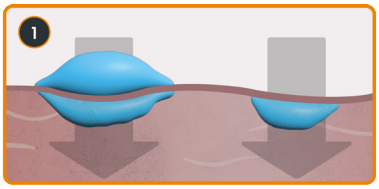
An unhealthy knee with Synovitis

A knee treated with Arthrosamid®

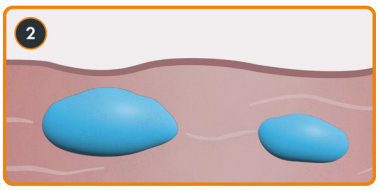
'With Arthrosamid®, we feel that the primary mechanism of action is probably to make the synovium tissue joint lining more elastic,' says Mr Andrew Miller, a consultant orthopaedic surgeon working in South Wales who researches injectable treatments for arthritis. 'It makes the synovium more supple and less stiff, so less inflammatory molecules are released because the tissue isn't being stretched so much. It is this reduced stiffness in the knee which patients who have had Arthrosamid® are now telling me about after treatment.'

Unique biomechanical mechanism – a stable synovial implant[7] with no surgery

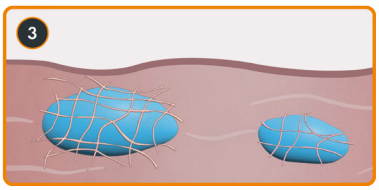




Arthrosamid® is a soft, elastic, non-biodegradable material that, once implanted, disperses within the synovial cavity and combines with the subintimal layer of the synovium[12], becoming integrated — a process that is largely complete within 4–6 weeks after injection.[8, 9, 13]



By modulating the mechanical stimuli that contributes to OA progression, Arthrosamid® biomechanically increases the elasticity of the synovium, restoring it toward the properties of healthy tissue in patients with knee OA.[9, 11, 14, 15]



A synovial hydrogel implant delivered in a single intra-articular injection, clinically proven to provide long-lasting improvements in pain, stiffness, and function for at least 5 years.[9, 10]

Latest Research Results

Several milestone pieces of research regarding the safety and efficacy of Arthrosamid® have been presented during the past year or so.

At the 2025 World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases in Rome, a study showing the five year results of a prospective study on Arthrosamid® being used for OA was presented by leading researcher Professor Henning Bliddal.[9]

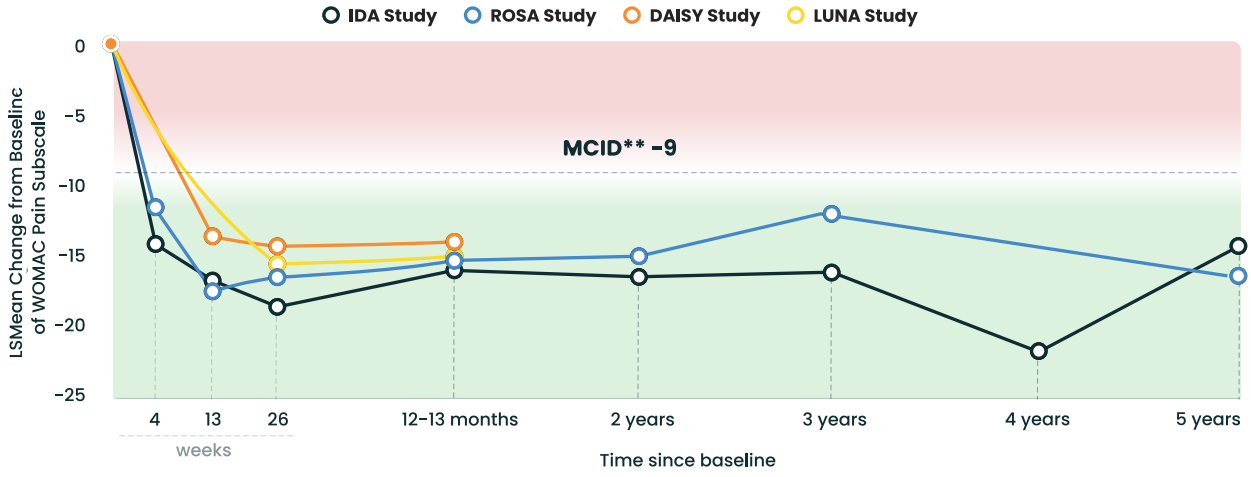
It showed that a single injection of Arthrosamid® is both tolerated and effective five years following treatment. The study involved 49 patients, all with moderate to severe knee OA, carried out at three centres in Denmark. The results have shown that five years post-treatment, patients still reported pain relief and improved mobility.

In addition at the same congress, Professor Bliddal presented data which showed that after ten years, very few adverse instances (such as pain issues or problems post-injection) were reported by patients.[16] He said that surgical records also showed there were no adverse reactions in patients who had had an injection of Arthrosamid® and later went on to have knee replacement surgery. The study demonstrated a very favourable risk profile.

Further significant research known as the LUNA trial was presented at the International Symposium Intra Articular Treatment in Bucharest, again late last year. Involving 199 patients at clinics across Europe, it was the largest multicentre study of its type looking at Arthrosamid® so far.[17]

Reproducible Pain Reduction Results

WOMAC† pain subscale change from baseline across studies. [9,10,13,15,17,18-22]
In all our studies, Arthrosamid® exceeds the MCID of 9 points 16 and improvement is maintained up to 5 years after a single injection.**



† 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. [11,15,17, 21, 22, 23, 24,25,26, 27, 28]

** The minimum clinically important difference (MCID) represents the smallest improvement considered worthwhile by a patient

In addition to showing Arthrosamid® being well tolerated, participants reported experiencing symptom relief 12 months after having a single injection. Using the WOMAC pain scores (a widely used osteoarthritis measurement tool), on average they improved by 17 points. Patients already on the LUNA study will be followed by researchers during the next five years.

Meanwhile, US researchers from Colorado State University and Chicago's Rush University Medical Centre found that a veterinary version of Contura's injectable polyacrylamide hydrogel (2.5% iPAAG) can make the synovium membrane around the carpal joint – the horse's knee joint – much less stiff.[11] As the benefits of this hydrogel were originally discovered to be effective for lame horses before later being used in human knees, the findings are hugely relevant.

The study involved 16 horses where OA was induced in one of their carpal joints while one of their other joints acted as a 'control'. The diseased joint was then either injected with saline – a placebo which would have no effect – or the 2.5% iPAAG before synovium tissue samples were collected ten weeks later. When the samples underwent rheology testing – a scientific way of measuring how flexible a material is – those treated with saline were stiffer than normal compared to those treated with 2.5% iPAAG, which were closer to how healthy tissue should be.

The study's co-author Professor Markus Wimmer said that although the research was looking at various endpoints, 'stiffness as a mechanical outcome turned out to be the most striking,' adding the researchers were 'delighted to see OA symptoms can be suppressed with 2.5% iPAAG treatment'.

Professor Wimmer said because the equine joint is such a good model for our own joint, we 'could expect similar findings for humans, but this has to be shown and requires additional studies.'

Current and Future Research

Ongoing research led by Professor Martyn Snow, a consultant orthopaedic surgeon at The Robert Jones and Agnes Hunt Orthopaedic Hospital in Oswestry, Shropshire, has been looking at how Arthrosamid® could benefit patients within the NHS.

After recruiting 65 knee OA patients, each was given an Arthrosamid® injection so Professor Snow's team could better understand its mechanism of action. A sample of their synovial fluid was also taken for analysis by researchers at Keele University.[23]

The 12-month trial results using an outcome score, showed a 70 per cent clinically meaningful improvement in patients whose knees were injected with Arthrosamid®. The 24-month results are due later this year and Professor Snow says that although he expects the response rate to be slightly lower, 'There's going to be a reasonably high number of people who would say it's still working after two years.'

Professor Snow says: 'What we now recognise is that OA probably isn't a single condition, but five or six different subtypes we call phenotypes. Essentially these phenotypes all work in a slightly different way from a biological perspective. It could mean in the future we will have a test (hopefully a blood test) so you know which subtype the patient is and then potentially know what treatment or if an injection of Arthrosamid® will work best with their biology. I would then expect their response rates to go into the high 90 per cent.'

Meanwhile, an evaluation study is planned at six NHS sites each involving 100 patients which it is hoped will provide valuable new clinical data from 600 patients receiving Arthrosamid®. One part of this study is comparing the cost of the standard NHS pathway for knee OA against those receiving a single Arthrosamid® injection.

In a unique separate study, Mr Andrew Miller is hoping to start recruiting 100 patients next year in South Wales who are all waiting for knee replacements. The study involves those on the trial first being given an Arthrosamid® injection and, once they reach the front of the queue for having surgery, being asked if they still want to go ahead with the operation.

'It's the most pragmatic injectable trial I've ever seen,' says Mr Andrew Miller. 'Once the patient is at the top of the waiting list, they're asked if they still want surgery or not. It's a simple 'yes' or 'no' answer. Some might be happy to now not have surgery because of what the Arthrosamid® has done. The results will be very interesting.'

Tissue and fluid samples from patients' knees will also be collected for analysis to help further understand why some patients respond to Arthrosamid® better than others.

Could it be offered on the NHS?

The various completed, ongoing and planned research trials are doing more than just furthering Contura's deeper understanding of Arthrosamid®. These studies are also helping in its bid to have its unique hydrogel routinely offered by the NHS.

For example, Contura is working towards gaining what was known as an 'NHS Tariff' but is now called the NHS Payment Scheme, because currently Arthrosamid® is not on the treatment pathway. If successful, it will mean Contura will receive a 'code' so NHS patients can then receive Arthrosamid®. In addition, because Arthrosamid® is already being used in state health services in some regions of Italy and Spain for example, any new data can be used to bolster Contura's hopes that in the future it will also be used within our own NHS.

In 2021, Arthrosamid® gained a CE marking to allow it to be used in Europe for adult patients with the symptoms of knee OA. Contura is currently in discussions with FDA regarding its use in the US as a medical device.

Authored by national health journalist Adrian Monti and commissioned by Contura Orthopaedics Ltd.

References:

1. Osteoarthritis: How common is it? NICE Clinical Knowledge Summaries, December 2023.
2. NHS secures bone cement rescue package so joint surgery can resume, BBC News.
3. Dip in NHS waiting lists welcome but long road ahead, warns Arthritis UK, 13 November 2025.
4. The King's Fund, Waiting times for elective (non-urgent) treatment: referral to treatment (RTT), 15 December 2025.
5. National Joint Registry, Patient Information.
6. Arthrosamid®, Instructions For Use. Release Date March 2022. 10082-003.
7. Arthrosamid®, Instructions For Use. Release Date October 2025. 10117-001.
8. Christensen, L., et al. (2016). Osteoarthritis and Cartilage. Vol 24(11):1999-2002
9. IDA 5 - Bliddal, H., et al. (2026). 5 year extension study. J Orthop Surg Res, 21:43.
10. ROSA 5 - Bliddal, H., et al., (2026). Clin Exp Rheumatol.
11. Wimmer, M. A., et al. 18th ICRS World Congress, Boston, 11-14 October (2025).
12. Smith, D.M., (2011). The Open Rheumatology Journal. Vol 5(1):100–106.
13. ROSA 3 - Bliddal, H., et al. (2024). Osteoarthritis and Cartilage. Vol 32(6):770-771.
14. Data on file.
15. ROSA 1 - Bliddal, H., et al. (2024). Clin Exp Rheumatol. Vol 42(9):1729-1735.
16. Bliddal, H., et al. (2025) 10-Year Follow-Up After Intra-Articular Injections of 2.5% Polyacrylamide Hydrogel for Knee Osteoarthritis. Presented at WCO-IOF-ESCEO 2025.
17. LUNA 1 Bliddal, H., et al. (2025). Abstract presented at ISIAT 2025.
18. Daisy efficacy - Henriksen, M., et al. (2018). Clin Exp Rheumatol. Vol 36(6):1082-85. PMID: 30148430.
19. IDA 1 - Bliddal, H., et al. (2024). J Orthop Surg Res. Vol 19:274.
20. IDA 2 - Bliddal, H., et al. (2022). Osteoarthritis and Cartilage. Vol 30(1):S371-S372.
21. IDA 3 - Bliddal, H., et al. (2023). Osteoarthritis and Cartilage. Vol 31(5):682-683.
22. DA 4 - Bliddal, H., et al. (2024). Orthop Procs. 2024;106-B(SUPP_18):106.
23. Snow, M., et al. (2025) Intra-articular Arthrosamid® injection for knee osteoarthritis: A synovial fluid biomarker study. Poster presented at 2025 OARSI Congress. Osteoarthritis and Cartilage, Volume 33, S154 - S155.

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