

ASX ANNOUNCEMENT / MEDIA RELEASE
ASX: (NXS)

Knee Study Finds Potential Anti-Inflammatory Benefit For XPERIENCE™

Highlights:

- Dr Andrew B. Wickline, MD, FAAOS has released the findings of a pilot study which demonstrated 54% lower inflammation within 14 days compared to the common reference standard.
- The study was a 60-patient double-arm study incorporating Dr. Wickline's current strategies to reduce inflammation, with the first group of patients receiving a 3-minute sterile dilute iodine lavage (current industry standard), and, the second group of patients receiving Next Science's advanced surgical irrigation solution, XPERIENCE™.
- The study concluded that the lower inflammation outcome, even compared to Dr Wickline's low baseline inflammation rate, resulted in:
 - 5-degree increase in range of motion throughout the study period
 - 10%-20% improvement in pain score throughout the study period
 - 18% lower opioid usage for pain relief at day 7 improving to 70% less usage at day 42, with XPERIENCE™ patients eliminating opiate use in half the time of control patients
- The significant swelling reduction at several time points is statistically significant. The findings are encouraging and warrant a further multicentre study with a larger patient cohort and additional surgeons.

Sydney Australia Wednesday, 9 August 2023: Next Science Limited (ASX: NXS) (**Next Science or Company**), a medical technology company focused on commercialising its proprietary XBIO™ suite of products to reduce the impact of biofilm-based infections in human health, is pleased to announce the presentation of a study into mitigating inflammation post Total Knee Arthroplasty (TKA).

The presentation can be accessed via this link¹: <https://www.vumedi.com/video/mitigating-the-post-total-knee-tsunami/>

Leading American orthopaedic surgeon, Dr. Andrew B. Wickline, MD, FAAOS has released the findings of an important independent study into post operative inflammation in joints. Dr Wickline is a board certified reconstructive orthopaedic surgery specialist, with over 25 years' experience. Dr Wickline practices at Genesee Orthopaedics and Plastic Surgery Associates in New York. He gained his orthopaedic surgery qualifications from Albany Medical Centre Hospital and adult reconstructive surgery qualifications from Cleveland Clinic Health System. Dr. Wickline also teaches anterior hip replacement and outpatient joint replacement techniques to surgeons in the USA and India. Dr Wickline holds the following affiliations:

- Fellow, American Academy of Orthopaedic Surgeons
- Fellow, American Association of Hip and Knee Surgeons
- Member, FOCOS – Foundation of Orthopaedics and Complex Spine

¹ Viewers may be required to create an account (free) to view the video.

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This investigator sponsored prospective randomised study assessed Next Science's XPERIENCE™ against current industry standard solution to determine whether XPERIENCE™ reduced the level of inflammation in joints post operatively.

The 60-patient double-arm study was conducted by a single surgeon, in which the first group of 30 patients received a 3-minute sterile dilute iodine lavage (current industry standard), with the second group of 30 patients receiving Next Science's advanced surgical irrigation solution, XPERIENCE™. All patients were measured 48-72 hours post-operation and then at 7-day intervals through to 42 days post-operation.

This pilot study demonstrated a reduction in inflammation within 14 days of 54% lower than the common reference standard, as determined by Loyd standardised curves². The study observed that the XPERIENCE™ patient group dropped below the Loyd 90% percentile by day 14, which the investigator concluded may be the lowest inflammation rate among US surgeons.

The study concluded that the lower inflammation outcome resulted in:

- A consistent 5-degree improvement in range of motion throughout the study period.
- A consistent 10%-20% improvement in pain score throughout the study period.
- 18% lower opioid usage for pain relief at day 7 improving to 70% less usage at day 42, with XPERIENCE™ patients eliminating opiate use in half the time of control patients.
- 14% fewer patients required assistance by a device for mobility at day 7, improving to 57% fewer patients needing assistance by day 21.

It is well established that improved range of motion, reduced pain, and accelerated return to mobility correlate to a reduced risk of adverse post-surgical events. These events include potentially fatal complications such as deep vein thrombosis (DVT) and pulmonary embolism (PE) as well as depression, a decline in overall health, and lack of satisfaction with the surgery. Therefore, these results suggest that use of XPERIENCE™ in total knee arthroplasty may have an important impact on health outcomes.

Dr. Wickline typically uses a combination of surgical and post-surgical practices to achieve a very low baseline inflammation rate in-line with the lowest expected inflammation from the baseline curve. These techniques include kinematic alignment, no use of tourniquet, specific icing protocol, focused physiotherapy, post-op course of prednisone and decreased step count. Therefore, for this pilot study to improve upon these baseline results may be impactful within the orthopaedic community.

Despite the small sample size, the investigator found a statistically significant ($P = 0.01$ at day 14) swelling reduction at several time points. The findings are encouraging and warrant a further multicentre study with a larger patient cohort.

Dr Wickline commented "The results of the study are extremely pleasing as it appears we have found another tool for reducing inflammation and improving a patient's post operative experience and accelerating their return to normal function – I look forward to broadening the research to a wider group of surgeons and patients."

²Development of a reference chart to monitor post operative swelling following total knee arthroplasty
<https://doi.org/10.1080/09638288.2018.1534005>

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A 2021 article in The Journal of Arthroplasty noted that 58% of patients were fearful of the pain that could be experienced after surgery and during post-operative physiotherapy.³ The article noted that 18% of patients listed whether they will be able to walk and perform activities of daily living after surgery as the most important fear.

Dr. Wickline will be presenting the findings of the pilot study at the following conferences:

- AVLS: American Vein & Lymphatic Society, 16-17 September 2023
- OSET: Orthopaedics & Emerging Technologies, 20-23 September 2023
- ISTA: International Society for Technologies in Arthroplasty 27-30 September 2023
- EOA: Eastern Orthopaedic Society 25-28 October 2023

Further conference presentations are expected in due course.

Dr Wickline has informed the Company that he intends to submit the study data for publication in a peer reviewed journal.

Potential for Opportunity Set Grows

While further study into the relationship between XPERIENCE™ and reducing inflammation is required, these findings suggest potential for an expanded application beyond reducing biofilm-based infection rates.

This presents as a commercially significant opportunity where surgeons / hospitals see the necessity of using XPERIENCE™ to improve patient outcomes, reduce healthcare cost and subsequently health system financial performance.

Next Science expects the findings from the pilot study will assist with the Value Assessment Committee process in larger hospital groups to approve the use and adoption of XPERIENCE™.

Commentary:

Next Science Managing Director and CEO I.V. Hall said:

“This study shows the impact of our XBIO™ technology on inflammation and the positive way it can impact a patient’s post-operative outcome and accelerate return to normal function. I look forward to evaluating further clinical challenges where we can have a similar impact on patient outcomes.”

Next Science Investor Hub

Next Science welcomes direct engagement from investors and encourages interested parties to visit the Next Science Investor Hub (which provides additional background information, videos and a forum to communicate with each other and with the Company) via this link:

<https://investorhub.nextscience.com>

³ Londhe, S.B., Shah, R.V., Patwardhan, M et al. Understanding the apprehension and concern haunting patients before a total knee arthroplasty. Arthroplasty 3, 14 (2021). <https://doi.org/10.1186/s42836-021-00069-5>

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Approved and authorised for release by the Board of Directors.

About Next Science

Next Science is a medical technology company headquartered in Sydney, Australia, with a research and development centre in Florida, USA. Established in 2012, the company's primary focus is on the development and continued commercialisation of its proprietary XBIO™ technology to reduce the impact of biofilm-based infections in human health. XBIO™ is a unique, non-toxic technology with proven efficacy in eradicating both biofilm-based and free-floating bacteria. Next Science owns 100% of the patent protected intellectual property relating to its XBIO™ technology. For further information visit: www.nextscience.com

Forward looking statements

This announcement may contain forward looking statements which may be identified by words such as "believes", "considers", "could", "estimates", "expects", "intends", "may" and other similar words that involve risks and uncertainties. Such statements are not guarantees of future performance and involved known and unknown risks uncertainties, assumptions and other important factors, many of which are beyond the control of Next Science or its Directors and management and could cause Next Science's actual results and circumstances to differ materially from the results and circumstances expressed or anticipated in these statements. The Directors cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements.