Health Innovation East

Circle Health Group

AposHealth®

APOS Health for Knee Osteoarthritis: patient and public involvement and engagement

COMMISSIONED BY HEALTH INNOVATION EAST AS PART OF THE NHS ENGLAND (NHSE(+) INNOVATION, RESEARCH AND LIFE SCIENCES STRATEGY (IRLSS) PORTFOLIO

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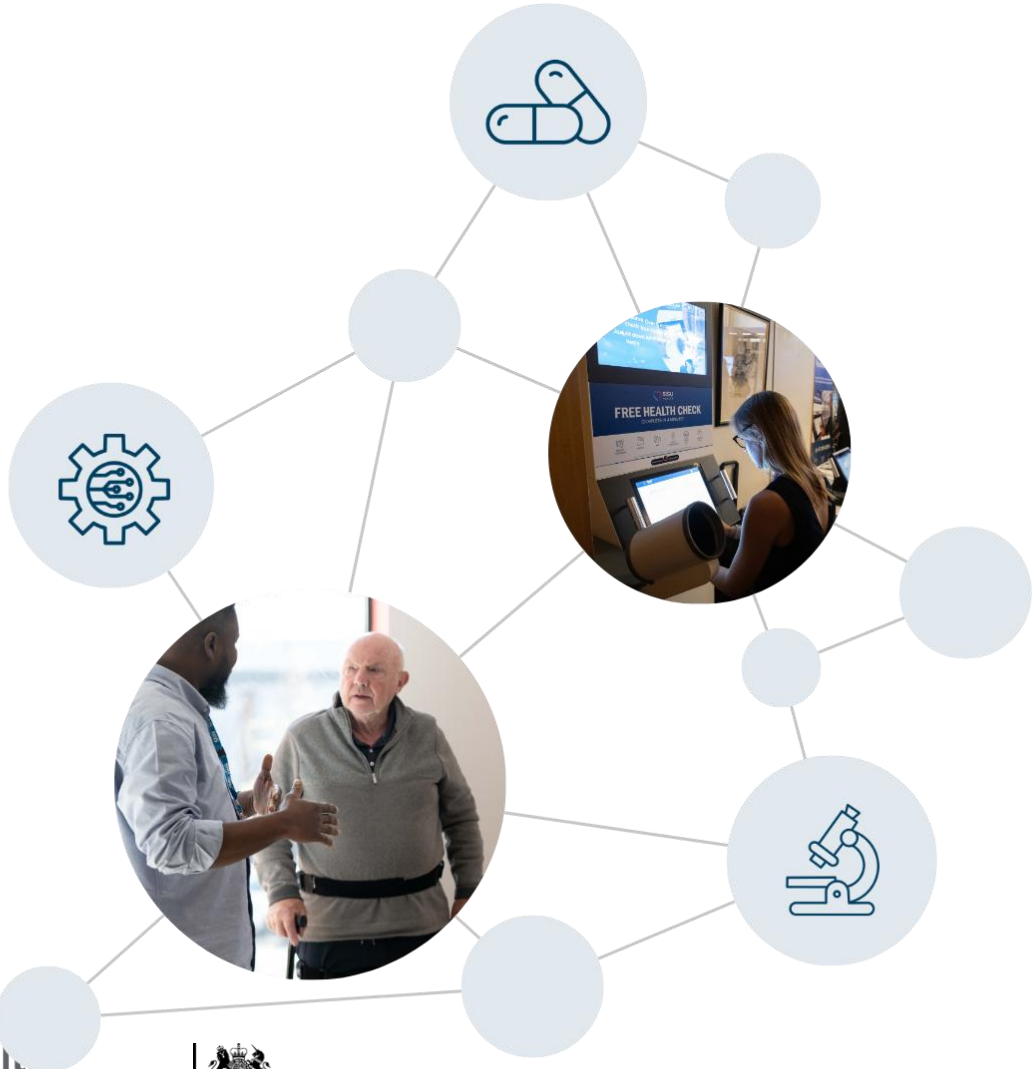

Part of the Health Innovation Network
Local change, national impact

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Executive summary

Osteoarthritis (OA) of the knee affects approximately 20% of adults aged over 45 years in England. Total knee replacement is the most common effective treatment for end stage knee OA, but poses some risks, including post-operative complications, persistent pain and potentially the need for further surgery. Pharmacological treatments for pain and inflammation only provide short-term relief and may become less effective as the severity of the knee OA progresses.

Apos footwear is recommended by NICE as a cost-saving, non-surgical option to manage osteoarthritis of the knee in adults, if their condition meets the criteria for total knee replacement, but the patient does not want or cannot have surgery and if standard non-surgical standard care has not been successful. It was added to the MedTech Funding Mandate (MTFM) in April 2024. Health Innovation Networks are responsible for supporting delivery of the MTFM by working with NHS providers and ICSs to support equitable provision of selected NICE approved technologies and help overcome barriers to adoption.

Health Innovation East sought to gather lived-experiences from patients using Apos, to better understand the experience of East of England patients using Apos footwear as an alternative to surgical knee replacement, for knee osteoarthritis.

Using a semi-structured approach with key lines of inquiry, the project team conducted in-depth interviews with patients who were currently using, or have used Apos footwear. Patients were identified and recruited by Circle Healthcare Group, based in Bedfordshire, on behalf of Health Innovation East. Two patients consented to meeting virtually with us in January 2026. Interviews were audio recorded and transcribed.

Two patients shared their lived experience of knee OA, and how Apos had helped them, with the research team. The patients described how Apos had improved their quality of life and mobility in a way that other treatments hadn't. They also described dramatic improvements in their pain levels with little to no side effects. Overall, both patients reported highly positive experiences from using APOS footwear and were disappointed and confused by the withdrawal of the service.

Key themes are as follows:

- Local commissioners and/or providers should consider and aim to mitigate the impact of withdrawal of APOS on patients already receiving treatment.
- Local commissioners and/or providers should give further consideration as to how the news of decommissioning is delivered to existing patients and the impact of this delivery.
- Commissioners and/or providers should (re)consider published evidence about the resource saving that APOS delivers, as well as the success rates and impact of alternative treatments for patients on quality of life and activities of daily living.

Further work is being carried out by Health Innovation East Real World Evaluation team, in collaboration with local commissioners and service providers in the East of England, to understand better the decision making process and barriers to commissioning/adoption of APOS footwear.

List of Abbreviations

BLMK	Bedford, Luton and Milton Keynes
DPIA	Data protection impact assessment
HIN	Health Innovation Network
ICB	Integrated Care Board
KOA	Knee Osteoarthritis
MOU	Memorandum of Understanding
MRI	Magnetic Resonance Imaging
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
OA	Osteoarthritis
GP	General Practitioner
MTFM	Med Tech Funding Mandate

Background

Osteoarthritis is the most common type of arthritis in the UK and a condition that causes the of thinning cartilage between joints, causing them to become painful and stiff on movement (1). It is estimated that one in five people aged over 45 have knee osteoarthritis in England (1, 2). Treatment options for knee osteoarthritis include movement and strengthening exercises, life-style changes, pain relief medication, steroid injections, and complementary therapies (1). Surgery is often considered a last resort once all other treatment options have been exhausted (1, 3). In 2025, 78,564 knee procedures took place in NHS hospitals in England (4), an increase of almost 50% since 2021 (5). The East of England accounts for 8.3% (6256) of these procedures, surpassed only by hip replacements (6). The majority of these are due to osteoarthritis of the knee (7).

Apos from AposHealth is an approved medical device available on the NHS supply chain for use in England and Wales in the UK (Figure 1). It is an innovative system to relieve chronic knee pain caused by osteoarthritis and provides an alternative solution to surgical intervention (8, 9). Specifically, a pair of shoes resembling trainers with integrated pods which are configured to the individual patient needs in order to reduce pain and retrain muscles. It has been recommended by National Institute for Health and Care Excellence (NICE) and supported by NHS England to treat patients with knee osteoarthritis who meet the criteria for total knee replacement surgery, but who cannot have or do not want total knee replacement surgery (9).

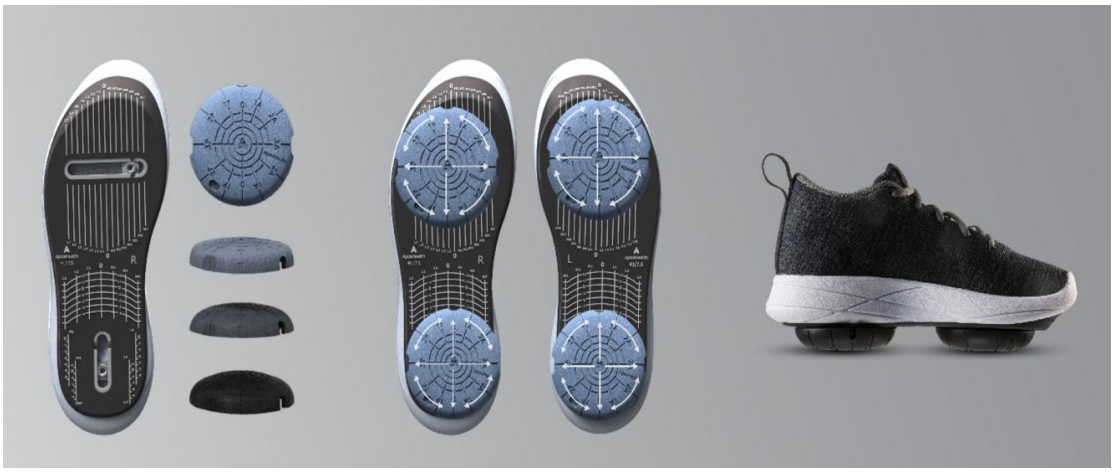

FIGURE 1. IMAGES OF APOS FOOTWEAR

Further research has been conducted related to quality of life, and long-term surgical outcomes for people with knee osteoarthritis since the recommendation was made by NICE.

Evidence has demonstrated that Apos has a number of benefits for both patients and the system (9). Clinical evidence has shown that Apos shoes improves pain scores, stiffness and function (5). A study conducted by Benn, Rawson and Phillips showed that Apos demonstrated a statistically significant improvement across all clinical outcomes measured, including pain, function and gait patterns

as early as three months after beginning treatment, and lasting up to three years. In addition, the study also found evidence of lasting and significant positive impact on the elective waiting list, with almost 90% of patients not proceeding to secondary care during treatment and for up to six years after treatment, thus releasing resource and reducing cost through management and demand increase of surgical waiting lists in secondary care (3).

Apos is also aligned with government's vision for the NHS, as published in the NHS Long term plan: Fit for the Future (10). Taking such a tailored and personalised approach to care is in line with the long-spoken narrative of patient-centred care delivery and of moving from hospital care to community care and from sickness to prevention.

Cost analysis submitted to NICE showed that the combined cost of footwear and treatment by the relevant trained professional(s) is estimated at £875 per person, saving the NHS almost £2000 per patient over five years compared with standard care (5).

Despite initial interest and appetite, commissioners have been reluctant to agree to commission the product at a local level. Anecdotally, this appears to be due to funding issues and upfront costs required for delivering APOS. To better understand this, HIE is undertaking a qualitative review of the barriers and enablers to adoption of APOS in the East of England, due to publish in summer 2026.

Public and patient engagement has been conducted by Yorkshire and Humber Health Innovation Network (HIN) and East Midlands HIN and involved interviewing a range of patients with knee osteoarthritis to better understand the potential benefits and acceptability of Apos (11), however, these patients were not necessarily users of Apos.

This project aims to build on the work already completed by Yorkshire and Humber and East Midlands HINs, by gathering patient lived-experience stories (12)) of using Apos, thus adding to the body of evidence and supporting informed decision-making in commissioning activities.

Aims

To better understand the experience of East of England patients using Apos footwear, as an alternative to surgical knee replacement, for knee osteoarthritis.

Specifically, we aim to answer the following question:

1. What are the experiences of patients using Apos footwear as an alternative to surgical knee replacement, for knee osteoarthritis?

Method

Participants

Patients were identified and recruited by Circle Healthcare Group, based in Bedfordshire, on behalf of Health Innovation East. The original target population were patients who were based in the Bedfordshire area, where Apos had been made available but was subsequently decommissioned at the beginning of 2025 by Bedfordshire, Luton and Milton Keynes (BLMK) Integrated Care Board (ICB). However, as these patients were no longer receiving follow-up appointments, they were no longer contactable. Patients based in the Greenwich area of South East London had also been referred to Circle Healthcare Group for Apos and whilst it had also been decommissioned in that area, were the only cohort left available to approach for interview. The project team felt it was important to understand the lived experiences of people who had used Apos footwear and therefore continued with recruitment with this cohort of patients.

Data collection

Using a semi-structured approach with key lines of inquiry, the project team conducted in-depth interviews with patients who were currently using, or have used, Apos footwear as an alternative to surgical knee replacement to understand their lived experiences of using Apos footwear, and their journey through the treatment pathway. As the storytelling method (12) was a more in-depth interview style, we aimed to recruit a maximum of five patients. An email was sent from the Circle Healthcare Group physiotherapist in December 2025 to all eligible patients, with two further follow up emails being sent the following month.

Patient interviews were conducted during January 2026, virtually over Microsoft Teams, with one interviewer and one observer present throughout. Conversations with patients lasted approximately one hour and were audio-recorded and transcribed verbatim with permission. Once the transcript was checked and finalised, the recording was deleted. Written informed consent was sought prior to each interview taking place.

Data analysis

Patient stories were de-identified and summarised, incorporating verbatim extracts from the transcripts but no analyses were conducted. Summaries were shared with patients before publication of the final report to ensure accuracy and understanding.

Findings

Patient case study 1

The patient had experienced knee osteoarthritis for more than three years. The problem started due to overcompensation of using the right knee, as a previous accident affected the left knee. They could only walk a few metres before feeling pain which resulted in having to use ice bags or a freezing spray to try and make the pain more bearable. The patient did not go anywhere without the freezing spray in their bag.

> *"I mean just walking a few metres….I was using a lot of that biofreeze…I couldn't go anywhere….Because that when the pain was shooting, you know it was unbearable. So that was walking with me everywhere in my handbag."*

Before learning about Apos, the patient had tried various treatments on the knee such as self-funded massage therapy 2-3 times a week which was around £40-50 per session, injections into the knee which only lasted three months and were incredibly painful to get and physiotherapy. The patient also had a previous surgery on the left knee (although not a total knee replacement).

> *"I said look you need to do something … I can't fund it forever."*

In terms of how knee osteoarthritis affected the patient, they found going shopping hard due to the unbearable pain they felt in the knee and had to lean on the trolley for support and to relieve the pain. They could not walk for long periods of time which meant they could not walk their dog very far. They felt they could not do the things they wanted to do and always had to consider their knee before making plans. They also had to think about the continued expense of massage therapy which they could not continue to fund indefinitely.

The patient's physiotherapist introduced them to Apos. The patient attended regular appointments in which the physio assessed their gait and adjusted the pods on the bottom of the shoe. They started wearing them for a few minutes at a time to get used to before gradually increasing the length of wear and incorporating them more into their everyday life at home. The patient felt re-assured by the regular appointments and the opportunity to talk about their pain.

> *"But when I walk on them, I feel different. I feel like my weight is light on my feet".*

They first noticed a difference in pain levels after about three weeks which increased along with the length of wear. By around two months, the difference was more noticeable because they could walk a longer distance without having pain or resorting to the freezing spray. They were able to stop going to massage therapy. They were able to start walking up and down hills and do longer walks with the dog.

> *"This really, really makes a difference. It's, you know, not a small difference. You know, I can walk 10 minutes, I could walk 20 minutes… even you think it's not much, but it was for me because just to walk the dog, 20 minutes was great".*

The patient found out the service was stopping over a telephone call by someone they hadn't spoken to before. This made them sad as they did not have the opportunity to say goodbye and thank you to the physiotherapist who had been helping them. They told the patient they could keep the shoes, but they would no longer be adjusted. The patient was given no further advice or follow up, and was discharged back to their GP which was frustrating because the GP was unaware of Apos.

> *"I was hoping that they will give us a call later on if it is anything, you know, but now so they I suppose if the only thing if I want something is I have to go back to the GP, get the referral and go through the same cycle again."*

The patient had tried to read up online to see if there was anything they could do about the shoe adjustments, but understood this needed to be done by a trained professional.

They have continued to wear the shoes as they are afraid the benefits they have felt so far will disappear, although they are still left with the uncertainty of if their gait has changed and the shoes need adjusting.

> *"…because it's nobody's there to change them. I don't know if how is it going? How is my gait? If they're still going to work in the right way or not? That's why it's a bit upsetting because thinking if now they need to be changed because you used to change them every time I went to the appointment".*

The patient felt a sense of abandonment and loss at the unexpected withdrawal of the APOS service. They described confusion as to why the service had been stopped, if it helps people.

> *"You don't know what you're doing, but you know, I use them because I know the one thing I know they will help me if I keep using them. And I keep doing it, but I feel a bit lost."*
>
> *"It does cost, but ...they do bring results. I mean I had them like I think it's two or three years I had them....I don't understand why they stop this."*

Patient case study 2

The patient first noticed knee pain about five years ago during walking. The pain gradually got worse to the point where they started limping, sometimes having to use a walking stick or sitting down on walks to relieve the pain whilst stretching out the knee. The only pain relief they could take was paracetamol and they used topical anti-inflammatory gel on the knee but found it did not help at all.

The patient thought it was best to get seen and checked out and was referred to a physiotherapist where they started a programme of exercises. After several months the exercises became less effective at helping to reduce their knee pain so were referred to a more specialist physiotherapist at Circle Integrated Care UK.

Following a scan it was found there was a lot of tissue damage and degeneration and was told they qualified for a knee replacement which the patient went to read up on. It was at this point the physiotherapist also introduced the patient to Apos.

> *"The success rate [of knee replacement] is not fantastic. I read somewhere that 50% of people who had knee replacements were actually experiencing more pain than before they started. And the procedure as well involves quite a lot of time in hospital, time in rehabilitation, not the most convenient thing, especially in a house with stairs. So I thought to myself, really anything to avoid a knee replacement, why not give it a try?".*

The physiotherapist explained in detail what it would involve and how it works, but that it could take up to three years for a transformation to happen.

> *"no pain, no operation, no anything. I can carry on walking, which I like doing. So, you know, it seemed a no-brainer to me".*

The patient started wearing Apos shoes initially for one hour a day and overtime went up to four hours a day, to eventually all the time at home. They went for regular follow-up appointments with the physio, where each time their gait was re-assessed and they were asked various questions so they could monitor changes over time alongside quality of life.

> *"And so while it [pain rating] started off at a fairly high level, yes, I wanted a knee replacement, over time, I was gradually rating it lower and lower and lower until, because I was making progress, the pain levels were reducing. I was able to say towards the end of my, I think I did two years. So at the end of the second year, I was able to say I would definitely not want a knee replacement because the pain levels had improved so much".*

Progress was not linear; in the first year they started getting more pain at rest and at night but still persevered with the shoe. They started thinking it was the shoe that was making the knee pain worse and considered stopping using it, but following a discussion and reassurance from their physio at Circle Integrated Care UK they continued to persevere.

> *"It even got to the stage where, from feeling very positive about Apos, I started feeling very negative about it. I even at one stage thought, this is doing me more harm than good. It's worse than the pain I had before I started wearing Apos…*
>
> *…Yeah, I persevered; my attitude became more positive, and come the spring, things did improve. I did start walking better. The pain levels were going away".*

The patient was informed during their last session in December 2025 that the service was no longer able to offer Apos as part of their service. The patient was told they could keep the shoes and to continue wearing them and was discharged from the service and back to their GP. Luckily at this point in time, the patient felt that Apos had done its job.

> *"I would say I'm 90% pain-free now. So I feel that Apos has done its job. I know you said it would take up to three years, but it's taken two years. And had we carried on monitoring, I'm sure that by the end of three years, I'd be 100% pain free".*
>
> *"So, I'm really quite a happy bunny, given that I've been struck down with osteoarthritis, but I'm managing this pain".*

They were keen to take part in this conversation as they want other patients to benefit in the same way.

> *"I want other people to be able to benefit. I said, you know, I can't believe my luck. I'm not usually lucky in life, but I'm lucky that there was this window, this two year window when Apos was available, that I was able to take it. And I'm now pain-free when I walk. Whereas had Apos not existed, I would have had to have had, I couldn't have carried on without anything. I would have had to have gone for the hip replacement, sorry, knee replacement. And then who knows what would have happened".*
>
> *"It's not about numbers. It's about how people feel. It's about how things work. And it doesn't matter that only 12 people said, this is how they felt. Because if 12 people felt that Apos gave them complete success, then that's quite a good incentive".*

Summary and conclusions

Building on patient engagement work conducted by Yorkshire and Humber HIN, Health Innovation East sought the views and experiences of patients with lived experience of wearing APOS footwear, using in-depth interviews.

Two patients who had been referred into Circle Health for physiotherapy and had been offered and accepted APOS footwear for their knee osteoarthritis were interviewed for this project.

While both patients had different experiences, and their knee osteoarthritis was caused by different factors, there were a number of similarities between them. Both patients reported highly positive experiences using APOS footwear. Both patients were referred to the specialist physiotherapy service and were offered APOS.

Patients' descriptions of the impact of APOS footwear on their quality of life and activities of daily living were powerful and emotive.

Their descriptions were not of quick fixes, and treatment required repeated and regular adjustments, with 45-60 minute appointments over two or three years before APOS was withdrawn. The improvement was not immediate and treatment did not always deliver linear results but patients did report positive results.

Published evidence demonstrates that APOS footwear is clinically and cost effective and actually delivers cost savings compared to treatment as usual. However, the patients we spoke to believed that the decommissioning of APOS was due to lack of, or a reduction in funding. Engagement with commissioners and providers as part of the national Medtech Funding Mandate programme highlighted that local commissioners perceive APOS as unaffordable.

Further work is being carried out by Health Innovation East Real World Evaluation team, to better understand the barriers and enablers to commissioning/adoption of APOS footwear in the East of England.

An unintended outcome of this patient engagement project was gaining more insight about how patients experience service decommissioning and the impact of this at an individual patient level. One patient felt they had reached the end of their journey anyway, while the other felt abandoned and unclear about their treatment plan.

Whilst this was a small piece of work, the findings further build on the evidence base for APOS, with a greater focus on the views and lived experience of patients, not just clinical data. Whilst only two patients were interviewed as part of this work, these interviews were in-depth and used a story-telling technique in order to elicit the patient's journey through APOS treatment thus far.

We hope that the combined findings from these pieces of work will further add further weight to the case for the adoption of APOS footwear locally.

Recommendations

Based on the views and lived experiences of the patients interviewed in this work, Health Innovation East makes the following recommendations:

- Local commissioners and/or providers should consider and aim to mitigate the impact of withdrawal of APOS on patients already receiving treatment.
- Local commissioners and/or providers should give further consideration as to how the news of decommissioning is delivered to patients and the impact of this delivery.
- Commissioners and/or providers should (re)consider published evidence about the cost saving that APOS delivers, as well as its effectiveness for patients with knee OA and the positive impact APOS has been shown to have on quality of life and activities of daily living.

Acknowledgements

No conflict of interest declared.

Health Innovation East would firstly likely to thank the patients who kindly agreed to be interviewed and share their APOS story with us; this project would not have been possible without them. We would also like to thank Amanda Phillips, Executive Director, and Kristi Mihalji, Lead MSK physiotherapist at Circle Health Group, for their support in relation to Apos footwear and the project, and efforts in recruiting APOS patients on our behalf.

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Appendices

Appendix 1. Key Lines of inquiry for patient stories

Health Innovation *East*

Thank you for agreeing to share your story with us.

*[**Check consent for recording**]*

This is your opportunity to share your experience in your words. We have a few questions to help you reflect on your journey with APOS footwear but there are no right or wrong answers and you are free to pause or stop the interview at any time. We anticipate the interview will last up to one hour. With your consent we will audio-record the conversation.

To help you get started, can you start by telling us….

1. How long have you experienced knee osteoarthritis for?

2. How did you come to learn about APOS as a treatment option?
   a. Prompt: What were your first impressions/thoughts about the concept?

3. What treatments have you tried prior to using APOS footwear?
   a. Prompt: Why is surgery not a suitable treatment for you?

4. How has using APOS impacted your life?
   a. Prompt: How/what did you feel when you first started using APOS?
   b. Prompt: Quality of life, pain?

5. How has your experience of continued treatment and follow up care with APOS footwear been?
   a. Have you experienced any access issues/difficulties getting treatment?
   b. What has the impact of this been/how has this felt?

Thank you so much for kindly sharing your story. [**stop recording**]

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Appendix 2. Patient consent form

APOS Patient Story Consent Form

APOS Patient Story Consent Form

By completing this form, I am giving my consent to share my experience of using APOS for the treatment of my knee osteoarthritis, as described in the Participant Information Sheet.

PLEASE TICK EACH BOX IF YOU ARE HAPPY WITH THE STATEMENT.

* ☐ I confirm that I have read the information sheet (Version 2.0 | 05/11/2025) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

* ☐ I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.

* ☐ I understand that my interview will be conducted and a transcript created using Microsoft Teams. I understand that this information may be used to support future developments of APOS and decision-making related to local NHS commissioning.

* ☐ I understand that some of the words that I say may be used in reports or publications as quotes. My story will be de-identified and direct quotes will not be attributable to me.

* ☐ I understand that my data will be stored according the General Data Protection Requirements (GDPR) 2018 and according to Health Innovation East data management policies.

* I agree to share my patient story as part of the APOS project.

Signed by