National Institute for Health and Care Excellence

Medical technologies evaluation programme

GID-MT570 AposHealth for osteoarthritis of the knee
Consultation comments table

There are 31 consultation comments from 7 consultees:

- 3 healthcare professionals (private)
- 1 academic
- 1 company
- 1 patient
- NHS England

The comments are reproduced in full, arranged in the following groups (**some comments contain multiple issues and have been split**):

- Recommendations
- Evidence
- Cost
- Equality considerations
- General

Three further comments were received from patients after consultation had closed and have been included at the end of the comments table.

#	Consultee ID	Role	Section	Comments	Response
Recommendations					
1	1	Healthcare professional (private)	Are the recommendations sound and a suitable basis for guidance to the NHS?	In my opinion as a Physiotherapist trained in Apos Health for 7 years, yes they are.	Thank you for your comment. The committee values comments from clinicians about their experience using the technology.
2	2	Academic	Are the recommendations sound and a	No. The evidence is poor, the outcomes unimpressive, the costs seriously underestimated, and compliance never really addressed in real world situation.	Thank you for your comment.

			suitable basis for guidance to the NHS?		The committee's considerations of the clinical evidence and cost savings can be found in sections 4.1, 4.2, 4.9 and 4.10 of the medical technologies guidance. The committee's considerations of patient adherence to the treatment can be found in section 4.6 of the medical technologies guidance. The committee acknowledged that current users of AposHealth are selectively sampled and there is no data on adherence in a wider NHS setting but accepted that it is unlikely that people may not use AposHealth as recommended if symptoms are quickly relieved.
3	3	NHS England	Are the recommendations sound and a suitable basis for guidance to the NHS?	No, please see comments below. We think at best, NICE may wish to consider recommending APOSHealth for use only in research. See comments below.	Thank you for your comment. Please see NICE's response to comment 4.
4	3	NHS England	1.1	We have engaged with clinicians across England in primary, community and secondary, expert advisors and the National Clinical Director for musculoskeletal conditions in preparing this response. There is insufficient clinical evidence in the group of patients that NICE is proposing APOSHealth be used (i.e. surgical candidates). We do not agree with the committee's extrapolation of the evidence from people outside the groups recommended in 1.1. We note that this technology was reviewed as part of NICE NG226 (Osteoarthritis in over 16s). We note from the detailed guideline committee discussion that "When considering the evidence for shoes for people with osteoarthritis, the committee acknowledged the evidence used in the review, which providing extra information, had limitations to examination in this guideline due to the difficulties in conducting trials comparing specialist shoes to usual care. Given this, the committee recommended further research to investigate the clinical and cost effectiveness of footwear for people with lower limb osteoarthritis" We are therefore puzzled why the technology appraisal committee could make a binding recommendation for	Thank you for your comment. The committee carefully considered the evidence and your comments and concluded that, despite uncertainties, AposHealth should be recommended for people if their condition meets the referral criteria for total knee replacement surgery, but they do not want surgery alongside further data collection. The committee agreed that further research is needed for people who cannot have surgery (for example people who are frail) as well as the wider population of people with knee osteoarthritis. Recommendations 1.1, 1.2 and 1.3 have been amended to reflect this decision.

				funding this technology when the clinical and cost-effectiveness are so uncertain. With regards the clinical case, we note the following conclusion from the Reichenbach 2020 RCT: "…Sixth, the trial was conducted at a single center, potentially limiting generalizability. Seventh, the between-group differences occurred only late during follow-up and were smaller than the observed within-group change from baseline in the control group. Therefore, the clinical importance of these findings remains uncertain. Eighth, the findings from this trial are not generalizable to people at high risk for falls because these individuals were not eligible to participate. Ninth, the findings are not generalizable to people with severe knee pain because these individuals were underrepresented in the trial." We would like to draw attention that the group most likely to be unfit for surgery will be frail people at risk of falls (see point eight above) Similarly people with severe knee pain were under-represented in the RCT, yet this is the group NICE is considering making a recommendation. However, we do not agree with the EAG that this might benefit waiting list reduction because the number of people that could be removed temporarily from the waiting list is small in comparison the large numbers waiting. In addition, we believe that advocating the use of APOSHealth may impair the recovery of elective orthopaedic and community services. We would like to suggest that NICE consider recommending APOSHealth for use 'only in research' (e.g. in a large, well-conducted robust clinical trial in the relevant population, with cost utility and cost impact analysis).	Please note that NICE's guideline for the diagnosis and management of osteoarthritis (NG226) included the Reichenbach (2020) RCT. However, the guideline did not include other studies assessed in the medical technologies guidance. The guideline also looked at multiple technologies for lower limb osteoarthritis and recommendations are based on the category of specialist shoes rather than one specific technology. The committee's consideration of the limitations of Reichenbach (2020) is in the rationale (why the committee made these recommendations) section and section 4.1 of the medical technologies guidance. A full critical appraisal of the study is also in section 5.2 and Appendix B of the EAG assessment report. Please also note that although the EAG's assessment report is part of the information the committee will consider to reach a decision, the committee's final decision is independent. The committee discussed patient eligibility for AposHealth and noted that it may be contraindicated for people with balance issues and people with especially severe osteoporosis. Clinical expert advisers explained that eligibility for AposHealth is reviewed on an individual basis to ensure patients are not put at risk of falls and can control the instability of the shoes. The committee acknowledged that the technology may not be suitable for certain people but accepted that healthcare professionals will use clinical judgement when referring and assessing people for AposHealth. Section 4.4 and 4.5 in the medical technologies guidance have been amended to reflect this discussion.

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<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>5</td><td>3</td><td>NHS England</td><td>1.1</td><td>We do not feel that the appraisal committee have given due weight to the EAG's advice that this may not be cost-saving: "Potential cost savings in the economic model are from avoiding TKR surgery, however there is only limited evidence for delaying surgery available. There is no clear case for AposHealth being cost saving when compared to standard care in the long term, although there may be other system benefits in waiting list reduction. The EAG base case was cost incurring by £2,032.

We do not agree with the proposal to recommend APOSHealth on the grounds that is cost-saving. When NICE recommends a treatment 'as an option', the NHS must make sure it is available within 3 months. In this case, the expenditure on APOSHealth would be displacing other health service expenditure from a finite budget. We therefore feel that a cost-utility analysis is required to show that the opportunity cost should be born by the NHS at the expense of other activities e.g. for reducing surgical waiting lists or providing walking aids, physiotherapy or supervised exercise/physical activity.

We are not convinced that APOSHealth would provide a permanent alternative to total knee replacement. In turn, this could lead to paying twice - both for APOSHealth and for subsequent surgery. This has not been modelled. We are concerned that NICE have not provided a cost impact assessment. There are 8 million people in UK with moderate or severe OA, although clearly only a small subset of these are in scope of the NICE rec. In 2019, 90,000 knee replacements were performed by the NHS. The group in scope are those who might be considered for knee surgery who are either unfit for surgery or choose not to have surgery. So potentially, a lot of people could be offered APOSHealth. If 5,700 were offered APOSHealth, this would cost the NHS more than £5mil before any potential savings. Using the EAG's base case above, offering APOSHealth to 2,460 people would cost the NHS more than £5mil.

We feel that without a robust cost-utility analysis and cost-impact assessment, APOSHealth has not been demonstrated to be of value.</td><td>Thank you for your comment.

The committee’s considerations about the EAG’s model are reported in section 4.9 of the medical technologies guidance. Medical technologies guidance does not come with a funding mandate; therefore, the 3-month time scale does not apply as it does for technology appraisal guidance. Local commissioners will be able to decide whether or not to fund AposHealth at their centres.

The EAG stated that the model includes a proportion of people moving to total knee replacement. Over a short time horizon this is a relatively small proportion, but accumulates as the time horizon is extended, as shown in the table below taken from the EAG base case.

<table>
<tr><td></td><td colspan="2">% receiving TKR</td></tr>
<tr><td></td><td>Std Care</td><td>Apos Health</td></tr>
<tr><td>2 years</td><td>56%</td><td>18%</td></tr>
<tr><td>5 years</td><td>88%</td><td>40%</td></tr>
<tr><td>10 years</td><td>99%</td><td>65%</td></tr>
<tr><td>20 years</td><td>100%</td><td>92%</td></tr>
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The EAG agree that the initial cost of delivering AposHealth in the first year is just over £1,000, meaning that treatment of 5,700 people would be more than £5 million, and that the costs stated from the EAG base case are correct at 20 years, as modelled.

The model shows cost savings at shorter time horizons due to avoidance of total knee</td></tr>
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					replacements, however over the longer term the model becomes cost incurring as additional people move to surgery. There are increased uncertainties and possible costs that are not captured in the longer-term modelling, and both patients and clinicians felt that some patients would avoid knee replacement surgery altogether.
6	4	Company	1.2	In addition to the evidence already submitted to support our submission, AposHealth is now able to provide additional supporting data, which may be of interest to the Committee. This data comprises a complete 3-year follow-up on the Greene et al publication. In addition, results from real-life experience on NHS population with similar patient characteristics as described in the draft recommendation. 1. The company has used Greene et al as the main reference for surgery avoidance amongst NHS patients. This research project has completed a 3-years follow up on the same cohort. Results will be published in the next few months. Attached is a summarising deck that captures the main findings. Enclosed is a deck summarising the main results. ACADEMIC IN CONFIDENCE 2. A new Audit of 571 patients with knee OA who meet surgical criteria and were treated with AposHealth. The study looked at clinical outcomes and the referral rates for secondary care consultation in commercial setting that provide AposHealth for patients with knee \ OA. Results show up to 7 years of follow-up.. 11.4% of the patients received a referral for secondary care consultation with an average FU of 3.5 year. Significant reduction in pain and improvement in function, Oxford Knee Score and spatio-temporal gait metrics were reported. The results of this audit are about to be submitted to peer-review publication. The final version of the manuscript is attached. AposHealth believes that this provides helpful additional evidence that utilising the AposHealth product, in patients with knee OA who have failed standard care and are surgical candidates, will have a significant clinical effect that will ultimately lead patients to postpone	Thank you for your comment. The document submitted reports [redacted] The final EAG base case models 74% avoidance of knee surgery in the intervention arm. Therefore, no changes are needed in the model or results, but there is a small decrease in the uncertainty due to additional follow up length. The EAG accepts that this new evidence shows improvement in reducing pain and increase in function with AposHealth, which is in line with the assessment report's findings. The EAG have used the information provided in the draft manuscript to create a Kaplan Meier estimate of the probability of avoiding referral to secondary care at 5 years. If secondary referral is assumed to equate to a TKR in the economic model, then the estimated probabilities at 5 years are very close. 6-year data was not used due to the very small number of patients remaining at risk (n=15). Therefore, we consider no changes are required to the economic modelling to reflect this new study, however it does reduce the uncertainty for the 2 to 5 year period.

				or avoid surgery altogether. Some of this evidence relating to longer term outcomes (of 4-7 years) is in a large NHS population.	
7	4	Company	1.3	We agree with this recommendation	Thank you for your comment.
8	4	Company	4.10	The company accept this recommendation and will implement a standard process to collect EQ-5D across all NHS patients treated with AposHealth.	Thank you for your comment.
9	4	Company	4.10	The company has submitted new evidence presenting real-life evidence on >500 patients with knee OA treated with Apos since 2015. This provides further validation of the effectiveness of AposHealth in reducing pain and improving function amongst patients who are surgical candidates, resulting in low rates of referrals for secondary care consultation. We hope this new evidence provide the committee additional confidence about commercialisation.	Thank you for your comment. Please see the response to comment 6.
10	5	Healthcare professional (private)	Are the recommendations sound and a suitable basis for guidance to the NHS?	Yes. In addition, Circle Integrated Care (part of Circle Health Group) has been utilising Apos for patients with Hip OA as well. A recent audit suggests that 20% of the patients receive a referral to secondary care consultation at an average follow-up of 3.5 years. Moreover, the clinical outcomes of these patients suggest a significant reduction in pain and improvement in function. Based on our experience, this intervention is effective for patients with severe knee OA and hip OA. That said, in our services, we often hear patients' concerns about the surgery which are for many reasons. I believe evidence suggests that Surgery is not always successful with c.38% of hip patients and c.34% of Knee patients remaining in pain post surgery. Apos is another tool that we use to recommend to patients who do not wish to have surgery. In most cases, patients will improve clinically, and the idea of surgery can be put on-hold or even abandoned. This however does not mean that the patient cannot progress to surgery if treatment is not successful.	Thank you for your comment. The committee values comments from clinicians about their experience using the technology.
Evidence					
11	1	Healthcare professional (private)	Has all of the relevant evidence been taken into account?	I think all the relevant evidence has been taken into account as far as treatment of more severe OA knee and hip. I am a Physio who uses Apos Health within private practice and many of our patients have less severe degenerative changes and so are also using the device in a more prophylactic way. We have also very successfully treated patients with OA ankle and degenerative or stenotic lumbar spine. I also feel that real time data collected during every Apos Health	Thank you for your comment. The committee values comments from clinicians about their experience using the technology.

				appointment across the world could also be taken into account as many of these patients have been using the device for many years.	
12	1	Healthcare professional (private)	Are the summaries of clinical and cost effectiveness reasonable interpretations of the evidence?	Yes I believe so although again the potential to use the device when people start to get symptoms rather than when they are ready for surgery may provide further savings in terms of less GP visits and reduced pain medications. There will surely also be savings in terms of keeping patients active and therefore healthier but obviously this is harder to evaluate.	Thank you for your comment. The committee values comments from clinicians about their experience using the technology.
13	2	Academic	Has all of the relevant evidence been taken into account?	Probably but what evidence there is in poor quality and unconvincing.	Thank you for your comment. Please see NICE's response to comment 4.
14	2	Academic	Are the summaries of clinical and cost effectiveness reasonable interpretations of the evidence?	The evidence is largely from small studies of poor quality performed outside the Uk and the NHS and in private clinics. When applied to the NHS in these settings the efficacy is likely to be much smaller and therefore statistically and certainly clinically meaningful changes very unlikely. These are poor quality studies and the authors are trying to pass off evidence of abstracts as proper papers. They are not	Thank you for your comment. Please see NICE's response to comment 4.
15	2	Academic	General	This company have been trying to access the NHS market for years. They claim a large and strong evidence base, but its actually poor quality, all done under cloistered research settings, little real world data. When allied to clinical NHS settings compliance will be poor, the costs much much higher, outcomes much poorer and so meaningless and time and resources will be wasted. As I understand it, 2 CCGs have used AposHealth through Circle Health for some years but when we asked them for their experiences with the intervention and data they would not supply any. Please look very carefully at this intervention. I would suggest not sanctioning it, but at the very least ask for much more robust data, from larger studies performed in the "real world" of the NHS.	Thank you for your comment. Please see NICE's response to comment 4. Circle Health has provided audit data to NICE as a part of this consultation, please see comments 10 and 18.
16	3	NHS England	Has all of the relevant evidence been taken into account?	The relevant evidence has been taken account but we do not believe that there is sufficient evidence in the population targeted by the recommendations, and are seriously concerned by the lack of a cost-utility and cost-impact study to support the recommendations. See comments below.	Thank you for your comment. The Medical Technologies Evaluation Programme uses a cost-comparison analysis for technologies that are likely to provide similar or greater health benefits at similar or lower cost than the relevant comparators. Cost savings are now

					reported in the rationale (why the committee made these recommendations) section of medical technologies guidance. Further information is available in the programme's process and methods manual. NICE's resource impact assessment team will produce a statement or resource impact tool alongside the final guidance.
17	3	NHS England	Are the summaries of clinical and cost effectiveness reasonable interpretations of the evidence?	No, we think the technology appraisal committee has not given sufficient weighting to the concerns in the only Riechenbach RCT (see comments below), and the clinical and cost comparison comments by the ERG.	Thank you for your comment. Please see NICE's response to comments 4 and 5.
18	5	Healthcare professional (private)	Has all of the relevant evidence been taken into account?	To the best of my knowledge, yes they have. Circle Integrated Care (part of Circle Health Group) has just completed an audit on 571 patients with knee OA who meet surgical criteria and were treated with Apos. Our data suggest that 11% of the patients received a referral for secondary care consultation at an average follow-up of 3.5 years. Most of the patients are engaged with the treatment and are no longer interested in progressing to secondary care consultation. Circle has been providing Apos since 2015 and has treated over 1000 patients. Our services offer a single point of access for MSK referrals where a clinician triages patients who meets surgical criteria to receive a shared decision making call. Apos is selected by the patient as an alternative to surgery. Apos is administered by our clinicians who were trained to deliver it.	Thank you for your comment. The committee values comments from clinicians about their experience using the technology.
19	5	Healthcare professional (private)	Are the summaries of clinical and cost effectiveness reasonable interpretations of the evidence?	Yes. The results mirror our experience over the past 7 years.	Thank you for your comment. The committee values comments from clinicians about their experience using the technology.
20	6	Healthcare professional (private)	Has all of the relevant evidence been taken into account?	There is limited evidence for this intervention however, no seminal papers have been missed.	Thank you for your comment.

21	6	Healthcare professional (private)	Are the summaries of clinical and cost effectiveness reasonable interpretations of the evidence?	When looking at NG226 the conclusion of the committee was sound: "When considering the evidence for shoes for people with osteoarthritis, the committee acknowledged the evidence used in the review, which providing extra information, had limitations to examination in this guideline due to the difficulties in conducting trials comparing specialist shoes to usual care. Given this, the committee recommended further research to investigate the clinical and cost effectiveness of footwear for people with lower limb osteoarthritis". It is clear that any benefit demonstrated thus far is of questionable clinical importance. There is insufficient clinical evidence in the group of patients that NICE is proposing APOS be used (i.e. surgical candidates) There is no trial comparing APOS with standard physiotherapy (which has a much stronger evidence base and is proven to be cost effective – NG226) or with walking aids (recommended in NG226).	Thank you for your comment. Please see NICE's response to comment 4. The committee carefully considered the evidence and acknowledged that there is a lack of evidence comparing AposHealth with standard care. However, the committee noted that this comparison is difficult because standard care is difficult to define for this condition. The committee's consideration of the place of AposHealth in the care pathway is in section 4.4 of the medical technologies guidance document. The committee concluded that people must have tried other non-surgical standard care treatments, such as physiotherapy and walking aids, and meet the referral criteria for a total knee replacement consultation before being referred for AposHealth.
Costs					
22	6	Healthcare professional (private)	Are the summaries of clinical and cost effectiveness reasonable interpretations of the evidence?	There is no cost-utility analysis. There is no cost impact assessment. This may divert resources to something which is not known to be cost effective (cost-utility) and reduces funds available from limited NHS budget (opportunity cost) e.g. for reducing surgical waiting lists or providing walking aids, physiotherapy or supervised exercise/physical activity (with an existing stronger evidence base).	Thank you for your comment. Please see NICE's response to comment 16.
23	6	Healthcare professional (private)	Are the recommendations sound and a suitable basis for guidance to the NHS?	The uptake and use of APOS in the manner current suggested is concerning. As per the rationale in the above box, the clinical evidence is lacking and the cost-effectiveness evidence incomplete. The potential to divert resources and subsequent opportunity cost being the major factors. Other aspects not considered include training costs and equipment costs to providers on scale, and where the funding for these would sit. The APOS website suggests that specific training is required and that as part of this, computerised gait analysis. This equipment would not be fully available across most NHS providers so how will this be considered in implementation? The majority of the workforce will not be trained in APOS, how will this be considered in implementation?	Thank you for your comment. The cost of training is provided by the company and is included in the cost of the device as described in section 2.9 of the draft guidance. The costs of staff time for training are included in both the EAG and company models. Training costs can be found in section 9 (page 71 and 72) of the EAG assessment report. The company stated that formal gait analysis is not a requirement to use

				Will a commercial agreement follow between the NHS and APOS? Where in the pathway would this sit given the recommendation for surgical candidates, at secondary-care referral stage? Following secondary-care assessment? The above needs ironing out so that this doesn't become an intervention provided whilst people wait and in turn the NHS pays twice, not in keeping with the proposed recommendation.	AposHealth, which is supported by clinical expert advisers. The EAG also conducted a sensitivity analysis to investigate the impact of gait analysis equipment which made a very small change to the EAG's base case. Further information can be found in section 9.2.3 and 9.3.3 of the EAG assessment report.
Equality considerations					
24	1	Healthcare professional (private)	Are there any equality issues that need special consideration and are not covered in the medical technology consultation document?	Just the postcode lottery. If this is being recommended, then it should be available across the UK for NHS patients deemed suitable.	Thank you for your comment. Medical technologies guidance does not come with a funding mandate and local commissioners will be able to decide whether or not to fund AposHealth at their centres.
25	2	Academic	Are there any equality issues that need special consideration and are not covered in the medical technology consultation document?	How will older, frail people (the usual patient population suffering severe OA) cope and comply with these shoes. Compliance will be extremely poor and resources will be wasted.	Thank you for your comment. The committee discussed patient eligibility for AposHealth and noted that it may be contraindicated for people with balance issues and people with especially severe osteoporosis. Clinical expert advisers explained that eligibility for AposHealth is reviewed on an individual basis to ensure patients are not put at risk of falls and can control the instability of the shoes. The committee acknowledged that the technology may not be suitable for certain people but accepted that healthcare professionals will use clinical judgement when referring and assessing people for AposHealth. Section 4.4 and 4.5 in the medical technologies guidance have been amended to reflect this discussion. The committee's considerations of patient adherence to the treatment can be found in section 4.6 of the medical technologies

					guidance. The committee acknowledged that current users of AposHealth are selectively sampled and there is no data on adherence in a wider NHS setting but accepted that it is unlikely that people may not use AposHealth as recommended if symptoms are quickly relieved.
26	3	NHS England	Are there any equality issues that need special consideration and are not covered in the medical technology consultation document?	Yes. The RCT excluded people at high risk of falls, yet this is a group who might also not be suitable for surgery due to co-morbidities and frailty - a group which NICE is proposing to recommend APOSHealth. Therefore, we think special consideration is needed for this group.	Thank you for your comment. Please see NICE's response to comment 4.
27	5	Healthcare professional (private)	Are there any equality issues that need special consideration and are not covered in the medical technology consultation document?	No thank you	Thank you for your comment.
28	6	Healthcare professional (private)	Are there any equality issues that need special consideration and are not covered in the medical technology consultation document?	Consideration of training requirements and access to the computerised gait analysis outlined in APOS delivery which may impact on access - especially for rural areas or where existing deprivation exists.	Thank you for your comment. The cost of training is provided by the company and is included in the cost of the device as described in section 2.9 of the medical technologies guidance. The costs of staff time for training are included in both the EAG and company models. Training costs can be found in section 9 (page 71 and 72) of the EAG assessment report. The committee discussed training requirement for healthcare professionals and the clinical expert advisers explained that no particular is experience is required for healthcare professionals, such a physiotherapists or

					podiatrists, as training is provided by the company. The company stated that formal gait analysis is not a requirement to use AposHealth, which is supported by clinical expert advisers. Clinical expert advisers explained that observational gait analysis is routinely performed at each patient visit but that this doesn't require additional equipment of software. The EAG also conducted a sensitivity analysis to investigate the impact of gait analysis equipment which made a very small change to the EAG's base case. Further information can be found in section 9.2.3 and 9.3.3 of the EAG assessment report.
General					
29	4	Company	General	The company would like to thank NICE for its thorough evaluation of AposHealth. We were impressed by the deep understanding of the problem and the need for non-surgical interventions. We believe that NICE has correctly identified the scope and consequently evaluated Apos in an objective manner. We were very pleased to see NICE's recommendation and hope it will help the relevant group of patients severely affected by knee OA and who can benefit from the technology.	Thank you for your comment.
30	7	Patient	2.2	I had a three year not a one year treatment plan for my boots.	Thank you for your comment. NICE welcomes the input of patient representatives.
31	7	Patient	4.4	I would like to point out that my negative experience comes from my Mother who was in her late 70's and had greatly reduced mobility before surgery, therefore her recovery was not that successful. I hope my use of Apos will prepare me better if I or when I need surgery ,hopefully many years down the line.	Thank you for your comment. NICE welcomes the input of patient representatives.
Comments received after consultation had closed					
32	8	Patient	General	I read in the daily mail today that you are considering offering these boots on the NHS.	Thank you for your comment.

				In my early 60s I started having problems with my left knee. This got steadily worse and It was becoming difficult to walk any distance at all. I read an article about APOS Boots teaching one to walk without limping. I was in BUPA at the time and asked would they cover APOS . They declined, but shortly after BUPA phoned and said they wished to evaluate the APOS boots and covered the cost. It entailed several visits, each time further adjustments were made. The boots made a huge difference and I was again walking normally. This was 2010/11. We did a world cruise in 2011 where I was dancing every night. I walked round the deck for 10 minutes every hour in the boots when at sea. Other passengers were quite interested in them. They gave me another 6 years of reasonable walking before I had to have a 1/2 knee replacement. The initial problem had been caused in a crash whilst in a cycle race in my 20s.My experience of the boots was favourable as a relatively short term solution, but not long term.BUPA may be able to supply more information as I only met one other person who had paid for the course herself. She wasn't happy but she didn't follow the program. I hope these comments are of interest.	NICE welcomes the input of patient representatives and values comments from patients about their experience using the technology.
33	9	Patient	General	I only became aware of the above initiative today when I read about it in a National Newspaper, and although the official consultation finished just before XMAS, I felt I should write you regardless, because I feel so strongly about the topic and wanted to bring to your attention the significant potential downside of Apos. Brief Background: I had a meniscal tear at the age of [redacted] in [redacted] (I am now [redacted]) and was one of the first [redacted] arthroscopic procedures in the UK. The surgeon [redacted] removed one of the entire cartilages in my left leg and proudly showed me the cartilage which he had saved for me to see after the operation. There was an oblique warning that I may suffer a little from arthritis when I reached the age of 50. His prediction turned out to be true and not only did I suffer a painful left knee but the problem 'migrated' to my right knee without surgery. I have arthritis in all three compartments of both knees and have been left with severe mobility problems and pain. I have a lift at home.	Thank you for your comment. NICE welcomes the input of patient representatives and values comments from patients about their experience using the technology. The committee discussed your comment and concluded that consideration of treatment options for knee osteoarthritis should be a shared decision that should take into account the preferences and medical history of the patient.

				APOS therapy I have been offered Total Knee Replacement surgery on a number of occasions but have turned it down on account of my relatively young age, the fact that I still work hard, doubts about the success of surgery and, finally, despite enormous pain, I can still walk a bit. I was introduced to APOS in July 2013 [redacted] and stopped in 2016. Initially, the APOS therapy provided enormous relief and I considered it a huge success. I was relatively pain free for the first time in many years, but after a couple of years' treatment I noticed my posture deteriorating and, in particular, my knees were becoming more bent and deformed. It appeared to me that redistributing pressure away from the affected areas to reduce knee pain was taking on an unexpected permanency, from which it was almost impossible to regain my posture. This in turn had adverse consequences for my back. Soon afterwards the central Apos unit [redacted] was discontinued and therapy was farmed out to local physiotherapy practices around the country. I was not sure where to turn to for advice given my deteriorating position and decided to call Dr Avi Elbaz, the founder of APOS, who referred me to a leading Professor and Consultant Orthopaedic Surgeon[redacted], whom I saw in April 2016. In 2016 the records show that both knees had 10-15 degrees of fixed flexion and I had an inefficient gait because of this. Both knees were in valgus which was only partially correctible. There was considerable patellofemoral and lateral crepitus on both sides. Flexion was limited to just over 90 degrees. I had intensive physio to reduce the fixed flexion but to no avail. Any improvement gained was temporary and the knees just sprung back to the post-Apos position. By 2020 I had 15 degrees of extension on the right but lacked 25-30 degrees on the left. I had 110 degrees of flexion on the right and only 90 degrees on the left and was unable to get the left heel to the ground without considerable shifting of my weight.	

				Concerns My principal concern with the NHS Apos therapy initiative is that I have not seen any long-term studies of the impact of Apos on posture and gait. There is plenty said about pain reduction but not deformity and the challenges this presents. There is no doubt in my mind that the re-training of soft tissue helps with pain management, but I consider that after three years of treatment I paid a heavy price in terms of aggravated deformity and a worsening (un-correctable) posture. I readily acknowledge that I am not a medic, and I am of course just one case. Additionally, there may be other reasons for the worsening deformity. However, in my view the basic biomechanical re-alignment of tissues caused more damage than is publicised and you need to be aware of this. I don't know how widespread the problem is but, in my view, this needs quantification and further study before NICE embarks on offering this treatment more widely.	
34	10	Patient	General	Just read article in the Daily Mail today , I've recently had scans on my right knee , and said my cartilage has worn away so is now bone to bone , Option is a new knee but as a little Hesitant as my Over the last 6 years I've Managed it quite well still walking and playing walk in football that I have done all my life , so if there is a Alternative just to control Slight pain I get when walking, be interested in these new Trainers to try the Biomechanics way first , thinking more and more new Technology is coming along that may given time Avoid a total knee Replacement .	Thank you for your comment. NICE welcomes the input of patient representatives.

"Comments received in the course of consultations carried out by NICE are published in the interests of openness and transparency, and to promote understanding of how recommendations are developed. The comments are published as a record of the submissions that NICE has received, and are not endorsed by NICE, its officers or advisory committees."