

Supplementary File 12. Themes, sub-themes and example quotes for each section of the decision aid.

Themes	Sub-themes	Example quotes (abbreviation for type of health professional comes first, where applicable)
WHO SHOULD READ THIS DECISION AID?		
Positive feedback	Health professionals	
	Causes of shoulder pain and graphics were appropriate [PT/OS/OP]	OP, Female 40-49 yrs old – "I think the description is really quite good and that's the sort of language that I would usually use to describe what's happening as well."
	Patients	
	Clear explanation of the target population	Female 40-49 yrs old – "I like the way it breaks down the different types of shoulder pain within the broader subsection of subacromial shoulder pain."
	Helpful graphic of shoulder joint anatomy image	Male 30-39 yrs old – "I can understand it clearly, it helps having the picture there to be able to visualise it."
Improve clarity on the target population	Health professionals	
	Make the information more specific to a diagnosis [OS/PT]	OS, Male 40-49 yrs old – "We haven't even reached the stage where a diagnosis is made...shoulder pain is not a diagnosis."
	Differentiate between degeneration and traumatic rotator cuff tears [OS/OP]	OS, Male 40-49 yrs old – "Sometimes someone may develop inflammation...from an acute pinching of that bursa or the tendon. Or someone can have a traumatic event and actually tear their rotator cuff and it may resemble an impingement problem or they may be older patients and have chronic impingement pain, developing degenerative changes in the tendons in that region."
	Make the section more concise [GP]	GP, Female 30-39 yrs old – "There's a lot to look at and sometimes that can be overwhelming for some"

		patients, I think they'll receive it but then maybe put it aside."
	Provide more detail on alternative diagnoses for shoulder pain [PT/OP/OS]	OS, Male 50-59 yrs old – "You certainly have covered some of the key things it can cause shoulder pain, but the other thing that's missing is that shoulder pain may come from elsewhere, for example cervicogenic pain."
	Patients	
	Make it clear the decision aid is for people with subacromial impingement syndrome (e.g. include the diagnosis in the title)	Male 30-39 yrs old – "Rotator cuff tears or impingement or bursitis should be the title, because that's really the patient demographic that you're looking at...Just 'shoulder pain' in general is a little bit vague at this point."
	Simplify 'subacromial shoulder pain' (e.g. 'shoulder pain')	Male 20-29 yrs old – "How necessary is it that you have subacromial in there? ... My first reaction was "oh wow, these are words that I don't understand, maybe this isn't for me.""
	Soften the exclusion criteria to avoid people with overlapping symptoms disregarding the decision aid	Female 40-49 yrs old – "One of the problems that I had is that frozen shoulder is not a very clear diagnosis and there could be overlap with subacromial shoulder pain. It [decision aid] might be still relevant to some people who have a potential diagnosis of frozen shoulder."
	Re-word or re-format this information	Female 40-49 yrs old – "'Do not read this form' is very clear but possibly, being in red, sounds quite alarmist."
	Health professionals	
Highlight that patients need to discuss this decision aid with a health professional	Emphasise that patients should discuss the decision aid with a health professional [OS/PT/GP]	OS, Female 50-59 yrs old – "The more information a patient has the better, I would love it if a patient came with something like this and said what do you reckon and then we could talk about their individual issue."
	Title needs to be revised [PT]	PT, Male 40-49 yrs old – "When you say at the top 'Shoulder pain should I have arthroscopic surgery?'

		Why is that even a question? Why can't it be 'Shoulder pain, should I have a professional consultation?'"
Revise the causes and symptoms of shoulder pain	Health professionals	
	Information has a pathoanatomical focus that is inaccurate [PT/OS/CP]	CP, Male 20-29 yrs old – "It does make it sound very pathoanatomical which it can definitely be in a lot of cases but in that first description it almost seems like it's a couple of options that it could be, either rotator cuff tear or bursitis and there's definitely some other things to consider there."
	Information could drive patients towards surgery [CP/PT/OS]	PT, Male 20-29 yrs old – "So this first page if I were to be a patient looking at this I'd be like ok well this is clearly pointing me towards having surgery."
	Clarify that shoulder pain can be caused by overuse and work (e.g. heavy lifting) [GP/PT]	GP, Female 30-39 yrs old – "I find that most of the patients that I see that have it tend to be a middle aged group having used a lot of overhead repetitive activities."
	Re-format or re-word this information [PT/OS]	OS, Male 60-69 yrs old – "I know it's a lay term, the 'inflamed tendons' but 'degenerative rotator cuff tears' is often what we're dealing with."
	Patients	
	Describe what causes the structural issues associated with shoulder pain (e.g. explain why a tendon tears or a bursa gets inflamed)	Female 60-69 yrs old – "I suppose when somebody gets a sore shoulder you want to know, whether it's a swollen bursa, whether it's a tear, what's actually causing it?"
	Provide more information about potential aggravating activates (e.g. lifting overhead)	Male 20-29 yrs old – "Or even just 'your hands above your head' or something like that."
Avoid jargon	Male 20-29 yrs old – "Non-medical folks are the people who haven't been seeing a doctor or YouTubing or Googling shoulder pain, are not going to be familiar with this."	
Use positive messaging	Health professionals	

	Language will cause fear among patients [CP/PT]	CP, Male 20-29 yrs old – "There's a lot of very scary language in here too which is very nocebic; inflamed tendons, impingement, tears, swelling, fluid filled. Which for someone...see those things and think there's something very seriously wrong with me when there really very well might not be."
	Include positive messaging about prognosis and what pain means (e.g. pain doesn't equal damage, pain may get better with time, imaging findings are common in people without symptoms) [CP/PT/OP]	CP, Male 20-29 yrs old – "Having a line like that in there that most people with shoulder pain get better on their own with time - stay positive."
Make this section more concise and relevant	Health professionals	
	Too much information [PT/CP/OS]	CP, Male 20-29 yrs old – "For the sake of just having a printout to give to somebody definitely the more visual and less wordy is probably good. I'm just thinking of it from a patient perspective where they want simplicity with direct answers."
	Explanation of shoulder symptoms might be irrelevant for patients [GP/OS/PT]	PT, Female 30-39 yrs old – "I'm just wondering if the line of 'shoulder pain often makes it difficult to do simple everyday tasks' really needs to be there, these people will know that."
	Graphic of pain distribution might be more useful than a graphic of the shoulder anatomy [OS/PT]	OS, Male 40-49 yrs old – "I think a surface-based picture showing a highlighted area of pain going down the lateral part of their arm may be more useful than an anatomical picture."
	Remove the word 'arthroscopic' from decision aid [OS]	OS, Male 40-49 yrs old – "There's still debate on what's the best surgery for certain things, like open or arthroscopic."
WHAT ARE THE TREATMENT OPTIONS COVERED IN THIS DECISION AID?		
Positive feedback	Health professionals	

	Graphic of surgery, details about surgery, non-surgical options are appropriate [PT/CP/OS]	PT, Male 40-49 yrs old – "The thing is with arthroscopic repair you'd never do it justice with any type of picture anyway, so any general picture there would be fine. It doesn't scare me away, it looks gentle, plus I've been in the OR anyway."
	Important that rehabilitation following surgery is highlighted [PT/OP/OS]	OP, Female 40-49 yrs old – "To talk about rehabilitation I think it is really responsible and important."
	Patients	
	Order of options, description of options, formatting of information on surgery, including 'wait and see' as an option are appropriate	Male 20-29 yrs old – "I do think those non-surgical options are important, that first one 'wait to see if your pain goes away'. I read that and go yeah, every single time my pain has eventually gone away."
	Important to emphasise the downsides of surgery (e.g. long rehabilitation, anaesthetic)	Male 20-29 yrs old – "That's definitely also pretty clear. I think the 3 to 12 months rehabilitation bracket, that would kind of freak me out a bit to see that upper band there."
	Graphic of surgery was helpful to understand it is an invasive procedure	Male 30-39 yrs old – "I think that does a good job of showing what they're planning on doing and that it's not something simple."
	Health professionals	
Include more detail on non-surgical options and how to progress management	Balance the amount of information between non-surgical and surgical options [CP/PT/OS/GP/OP]	PT, Female 30-39 yrs old – "I would look at those two options and go there's all this information about surgery and under no surgery there's just a few words, surgery must be the more involved better option for me because it looks bigger."
	More detail needed on rehabilitation after surgery [PT]	PT, Male 40-49 yrs old – "It may be the same commitment or greater than conservative rehab, so you just have to be aware that it's not just fixed...now you have to follow this rehabilitation protocol."

Need a flowchart of non-surgical options [PT]	PT, Female 30-39 yrs old – "Yeah maybe even a flow chart of some kind...Is it a new event? Yes. Was it a full rupture? Yes, so you have surgery."
Highlight how long patients should try different non-surgical options before surgery [GP/PT]	GP, Male 50-59 yrs old – "If they are younger, I won't let them wait for six months, if they're not better within 4 to 6 weeks I'm probably sending them off to a surgeon if they have a torn tendon."
More detail is needed on muscle strengthening programs [PT]	PT, Male 20-29 yrs old – "Maybe a greater emphasis on what the current evidence shows...that strengthening can make a difference and even time with doing the right things could improve it."
Include evidence for non-surgical options [PT/OS]	OS, Female 50-59 yrs old – "I think it's important for them to know that if they wait long enough it will probably settle on its own, and we know the studies support that."
Emphasise the need for shared decision making [CP]	CP, Male 20-29 yrs old – "It's always going to be a shared decision making process, it's always going to take into account the patients values and what their lifestyle is like, how much this is impairing them."
Patients	
Provide more non-surgical options	Female 50-59 yrs old – "There's not a lot of options...I think it's telling me in my particular case that it's inevitable that I would have to have surgery eventually."
Provide evidence for various non-surgical options (e.g. options listed in the decision aid, lifestyle change, TENS, ultrasound, hydrotherapy, massage, diet, acupuncture, Chinese herbs)	Female 60-69 yrs old – "This has taught me a lot about surgery, whether to get surgery or not, but it hasn't told me a lot about whether cortisone injections are better than not having cortisone injections or whether physio is better than having no physio. "
Provide more information on activity restrictions and how to modify activities while in pain	Female 60-69 yrs old – "I would like to know if I need to do anything or if it's just going to take time regardless of what you do...Or whether you should

		just continue doing everyday things like vacuuming and things like that even though it's a little bit painful."
	Highlight whether delaying surgery or non-surgical treatment is harmful or not	Female 60-69 yrs old – "I'd read a lot about that, where they said if you wait too long its irreparable sort of thing, Dr Google again."
	Provide more information on 'wait and see' (e.g. highlight that you can trial non-surgical options while you 'wait and see')	Male 30-39 yrs old – "I think 6 months is a long time to wait and deal with an issue without seeking advice."
	Present information in a way that helps patients understand the importance of non-surgical options	Male 30-39 yrs old – "Is there a recommendation from the health board or something where it says 'non-surgical option is recommended?'"
	Health professionals	
	Inappropriate to mention medication and injections as options [PT/CP]	PT, Male 40-49 yrs old – "Personally I balk at the steroid injection option because the evidence for that is so poor. There's reasonably strong emerging evidence that its adverse effects are pretty high."
	Re-format or re-word information on non-surgical options [OS/PT]	PT, Female 30-39 yrs old – "Rather than saying 'see a doctor for a corticosteroid injection' I would say 'discuss the options of a corticosteroid injection with the doctor.'"
Change the non-surgical options presented	Label 'no surgery' as something more positive (e.g. conservative, exercise-based) [PT]	PT, Male 40-49 yrs old – "I wouldn't call it 'no surgery', I would call it either 'conservative', 'exercise'... 'physio exercise therapy', 'strengthening therapy'..."
	Do not mention specific exercises in the decision aid [GP]	GP, Female 30-39 yrs old – "Generally [patients] won't do [exercise] if they didn't pay money [to see a physiotherapist], if they didn't invest time into it they're not going to take on board the advice as much."
	Mention the benefits of ultrasound for diagnosis and guiding injections [GP]	GP, Female 60-69 yrs old – "The other thing would be usefulness of ultrasound for the diagnosis... especially if you do ultrasound guided steroid injections."

	Waiting 6 months might be too long for patients to do nothing [PT/OP]	OP, Female 40-49 yrs old – "I think to wait six months, which is really the implication of that first one, would be a long time for people in pain."
	Order of non-surgical options might be inappropriate [CP/PT]	CP, Male 20-29 yrs old – "The order of the bullet points, I mean hopefully they're not in any sort of order of priority, to go straight to anti-inflammatories, I'm biased towards non-pharmacological first."
	Health professionals	
	Include indications for each surgery (e.g. failed conservative management, severe pain, age, rotator cuff tear, impingement, elite sports participation, massive cuff tears) [GP/OS/CP/PT]	GP, Female 30-39 yrs old – "Maybe in the decision making tool just clearly outlining the reasons for why you'd then become a surgical candidate."
	Highlight that imaging findings in isolation aren't indications for surgery [PT/OS]	OS, Female 50-59 yrs old – "It's not relevant to me what the imaging says, it's relevant what the patient's symptoms and signs are."
	Important for patients to know which procedure they are most likely to receive as this could influence recovery and rehabilitation needs [OS]	OS, Male 40-49 yrs old – "That's what I say to a lot of my patients, obviously it's very much dependent on the diagnosis and the anatomy of what's going on."
Include indications for surgery	Re-format or re-word indications for surgery [PT]	PT, Male 30-39 yrs old – "I guess putting option one and two there kind of implies that they have to have surgery afterwards."
	Highlight that surgery may improve symptoms or anatomy but not address the cause [PT/OS]	OS, Female 50-59 yrs old – "I say to them their rotator cuff has got a headache, the surgery can take the hammer away but you will still have the headache and that headache will take time to improve. Unless you do the anti-inflammatories and the rehabilitation therapy that headache won't go away even if you have surgery."
	Patients	
	Provide more detail on the indications for surgery (e.g. worsening pain)	Male 20-29 yrs old – "I wonder about in that first underlined sentence...if the above options don't work, if you can't live with the pain, or something like the

		above options are not feasible, you can't rest because you have to work."
Present evidence of benefits or harms in this section	Health professionals	
	Make the uncertainty of options clear [PT/OS]	OS, Female 50-59 yrs old – "By 6 months 75% are much better than they were before surgery. But would they have been there without surgery as well? Don't know. I think it's a hard question and we all think as surgeons that our surgery does wonderful things, that's one of the downsides of talking to surgeons we'll say we're fantastic and everything works really well."
	Mention the success rate of surgery and non-surgical options [GP/PT/OS]	OS, Male 60-69 yrs old – "When I'm talking about the things that will help them and then get onto surgery, but also talk to them about things a lot of people spend a lot of money on, there's no evidence that they work as well."
	Emphasise the harms of surgery [PT/CP/GP]	CP, Male 20-29 yrs old – "A 1% chance of you potentially dying from the surgery when it's no better than anything else that's a big risk but it doesn't sound like a lot."
Change information on surgery	Health professionals	
	Provide more detail on rehabilitation (e.g. time frames, will determine success, can be performed at home) [PT/OS/GP]	GP, Female 30-39 yrs old – "Surgery by itself is useless, if you're going to go through surgery expect a lot of rehab and if you can't commit to the rehab you're better off not going through surgery."
	Include more details about the procedures [PT/OP/OS]	PT, Male 40-49 yrs old – "You could even explain a little more about the surgery, I think it's even ok to say a little more."
	Re-format or re-word information on surgery [PT/OS]	OS, Male 40-49 yrs old – "I think again there's too much writing, having lines like 'pain you can't deal with' is pushing the patient...again it's too wordy, so you would just say 'surgery is an option.'"

	Include details on recovery, comparing surgery to non-surgical options [PT/CP/OS]	PT, Male 20-29 yrs old – "One example recently I had a shoulder patient and they got surgery and regretted it. They were saying they didn't know how much they would go backwards and how long it would take and the restrictions."
	Patients	
	Provide less information on surgery	Male 20-29 yrs old – "The two different procedures, I haven't been to a doctor or physio about this, these are big words. Am I one? Am I the other? I don't really know. Do I care? Is it important?"
	Provide more information on surgery and rehabilitation	Female 40-49 yrs old – "Perhaps an explanation of what rehabilitation means, I'm not sure I would really know what that means."
	Health professionals	
	Modify the presentation of the two surgical options [GP]	GP, Female 30-39 yrs old – "I wonder in the surgery part, the box that has subacromial decompression and rotator cuff repair, if it would be easier to just have it listed as two dot points instead of two separate columns."
	List non-surgical options first [PT/CP/OS]	OS, Male 40-49 yrs old – "Usually when we're talking about treatment...we're mentioning no surgery first. I think therefore that should be put first instead of having surgery first because it doesn't make sense to talk about surgery first when I'm seeing a patient."
Modify the formatting or graphics	Patients	
	Improve the graphics (e.g. current image makes it appear surgery is less invasive than it is, current image of surgery too graphic, remove clock image, put image of person doing exercise on the left so it stands out more)	Female 50-59 yrs old – "You might want to fine tune that one picture...is there another one you can put that's not so harsh?"
	Improve the formatting of surgical options (e.g. list procedures side by side, highlight procedures in a different colour, put a clear dividing line or increase space between the	Male 20-29 yrs old – "Potentially on the first page you could have subacromial on the left and rotator cuff on the right to have continuity in that sense."

procedures, list surgical options before non-surgical options due to previous positive experience with surgery, replace '12 weeks' rehabilitation with '3 months' rehabilitation)

Re-word or re-format this section

Female 40-49 yrs old – "Again a small thing, the underlining probably needs to finish next to the full stop."

WHAT ARE THE LIKELY BENEFITS OF SURGERY COMPARED TO NON-SURGICAL OPTIONS?

Positive feedback

Health professionals

Icon array, statistics, footnotes and colour scheme are clear and appropriate [PT/CP/GP/OP]

OP, Female 40-49 yrs old – "I think the description is really quite good and that's the sort of language that I would usually use to describe what's happening as well."

Patients

Key messages box, bar graphs, icon array, description for certainty of evidence, explanation of placebo and formatting is appropriate

Female 60-69 yrs old – "I think the layout is good, when I read this it seemed simpler too."

Revise description for the certainty of evidence

Health professionals

Remove the description of the certainty of evidence [PT/OS]

OS, Male 40-49 yrs old – "So we're trying to teach patients how to interpret correct evidence and that is a hard thing to do."

Using green font for high-certainty evidence will drive patients towards surgery [PT/CP]

CP, Male 20-29 yrs old – "Some people might interpret the high certainty evidence as a better thing, but when you actually read it, subacromial decompression is little to no better than placebo."

Describe certainty of evidence as 'strong' instead of 'high-certainty' [PT]

PT, Male 40-49 yrs old – "I would drop the certainty and figure out another adjective or just 'strong' evidence, something like that, maybe a stronger word that's one word or two words. Low moderate is confusing."

Health professionals

Evidence doesn't match experience, more clarification needed	Evidence doesn't match experience (e.g. careful patient selection will yield better outcomes) [OS/GP]	GP, Male 50-59 yrs old – "If you select the patient well enough often the result is not as bad as 3 percent, probably significantly higher."
	Evidence from Cochrane reviews may not be generalizable to patients [OS]	OS, Male 40-49 yrs old – "We don't really want to generalise the patient's condition because some patients may have pain that's caused by a specific problem that doesn't fit in with what these studies were looking at."
	Highlight that surgery may increase the speed of recovery or yield better long-term outcomes [OS]	OS, Female 50-59 yrs old – "I agree that at 12 months you're probably the same as if you didn't have surgery, but what's the patient journey in that 12 months between the two groups? That doesn't come out in this. So if the surgical group are sleeping and are back at work and are comfortable sooner then that's relevant."
	Acknowledge that statistics represent averages and individual results may vary [GP/OP]	OP, Female 40-49 yrs old – "[Suggested to write] 'Some patients report a better result than these statistics would show but plenty don't' ...or something like that."
	Add outcomes or provide further explanation for existing outcomes (e.g. include quality of life, define treatment success, emphasise pain results) [GP/PT/OP]	PT, Female 30-39 yrs old – "They fix what's inside and they might get range, but their pain is still ongoing and that was the reason they wanted the surgery in the first place."
	Mention the population and time points of the evidence [PT/CP/OS]	PT, Male 30-39 yrs old – "I know a lot of people would, especially in layman's terms, read this and say 'well that doesn't apply to me, I could heal better than that or it wouldn't affect me.' It might be nice to put the patient population in these two studies just so people can say oh cool, it was mostly older people or mostly younger people. "
	Appears negative towards surgery but agrees the statistics are supported by evidence [PT/OS]	OS, Female 50-59 yrs old – "If they're cut and paste from a Cochrane review then that's the best evidence

		that we've got so we can't dispute it, I just don't like it."
	Highlight that surgery may be useful for preventing tears progressing even if there was no improvement in symptoms [OS]	OS, Male 40-49 yrs old – "In that group, a single tendon tear has become a one and a half to a two tendon tear, so the acute component which is just a tear has extended to involve the next adjacent tendons. I don't think that's covered well by any study."
	Emphasise the uncertainty of the statistics [OS]	OS, Male 50-59 yrs old – "I think using 'somewhat confident' is an overstretch...the literature presents many unknowns...that's why there's a strong need for better studies."
	Health professionals	
Simplify the statistics	Avoid numeric estimates (e.g. 3% could be framed as 'small') [PT]	PT, Female 30-39 yrs old – "I'd even take out the numbers and just have "on average surgery has less pain and better function but not by much" or something."
	Replace bar graphs with a 'key messages' box [PT/CP]	CP, Male 20-29 yrs old – "I do like those boxes, I think that's probably even a little bit more helpful than the bar graphs themselves."
	Choose one way to summarise the data (e.g. bar graph or key messages box but not both) [PT/OS]	PT, Male 40-49 yrs old – "I think as a patient you might lose somebody...a lot of numbers and words together and graphs, that's a lot, it's a busy slide or it's a busy section, and they're both together so it's a lot of information on both sides."
	Repetition of evidence is biased against surgery [OS]	OS, Female 50-59 yrs old – "I think you need either the chart or the box or one of them, but all three to me is just repetition saying "don't have surgery", "don't have surgery", "don't have surgery.""
	Statistics might be hard for patients to understand [PT/GP/OS]	GP, Female 30-39 yrs old – "I think they would expect that it's a yes or no answer, we know it or we don't."

	Difference between surgeries might be hard for patients to understand [PT/CP]	PT, Male 20-29 yrs old – "Again it's like do they really know the difference between rotator cuff repair, subacromial decompression?"
	Include the same comparison group when describing the evidence for both surgeries (e.g. remove placebo comparison) [PT/CP/OS]	CP, Male 20-29 yrs old – "I don't think people really understand the concept of placebo surgeries, that seems super weird to some people when I've told them about that...maybe just [say] "subacromial decompression doesn't seem to be better than some of the other options in terms of changes in pain and function.""
	Re-word the certainty of evidence statement [PT]	PT, Male 30-39 yrs old – "I'm wondering if there's a different way to phrase that, we are very certain, that almost seems like it's an ad on a TV or something. I think that maybe "we are confident in these results as these were high quality studies" or something like that."
	Patients	
	Provide information on the source of the evidence	Female 50-59 yrs old – "Then you get this percentage, I don't know how you got this percentage."
	Provide more explanation about the certainty of evidence	Female 60-69 yrs old – "When you say this research on surgery is high quality, I wouldn't know what low quality is."
Provide more detail or revise the description of the evidence	Including both the 'key messages' box and icon array is confusing	Interviewer – "What about the percentage of people reporting treatment success in the four with the green and grey people?" [icon array for benefits that was removed]
	Adding the age range of research participants is not necessary unless being outside this range would influence the benefits of surgery	Male 20-29 yrs old – "So is that coming out of a different set of research?" Male 20-29 yrs old – "I'm 20. I'm not sure if there would be anything different on younger people. Even

		the ages of the participants, I'm not sure if that really changes it."
	Provide more detail on the non-surgical comparison groups	Female 40-49 yrs old – "I guess under subacromial decompression surgery you haven't given any alternatives to surgery, whereas under the rotator cuff repair you've given alternatives to surgery, so the injections, physiotherapy etc. Would those alternatives apply to both?"
	Clarify whether the evidence applies to those with severe pain	Male 20-29 yrs old – "I know it's very difficult to do, but if there was some table about scales of pain and severity of injuries, as to whether you should be going for surgery or non-surgery therapies."
Contextualise the evidence to reflect uncertainty on an individual level	Patients	
	Clarify that numeric estimates are averages and that some people will experience better or worse outcomes	Male 30-39 yrs old – "I think that's important because I need to know what the average outcome is and then I can then speak to my GP or surgeon or someone to find out if my particular case is likely to be better than average or worse than average."
	Emphasise that surgery may help but it will not be a cure	Male 40-49 yrs old – "It will help but it's not perfect. I guess that would probably be more relevant than stats about success."
	Statistics shouldn't influence treatment decisions as they are averages and patients should trust their health professional's advice	Male 40-49 yrs old – "The stats would not come into it for me at all. The stats are obviously for a large selection of the population, that's an average, it doesn't necessarily apply to my specific situation. So if it was determined by a health professional or medical professional that I needed surgery I'd just take it, the stats would not be a consideration whatsoever."
Modify the formatting or language used	Health professionals	
	Mention the findings before the certainty of evidence [CP]	CP, Male 20-29 yrs old – "So starting off with 'subacromial decompression is little to no better than

	placebo' and then following it up with there's high certainty evidence for this."
Shorten the 'key messages' box and include other information as footnotes [GP]	GP, Female 30-39 yrs old – "I like the version two where it's a smaller box there and it's cut out some of the text and put it below as well."
Make the bar graphs vertical [PT/CP]	CP, Male 20-29 yrs old – "I think that would make sense to a lot of people. Maybe even just going in a vertical sense might also help some folks but I don't think there's too much trouble with that."
Modify the colour scheme and presentation [PT]	PT, Female 40-49 yrs old – "I was just wondering if you could change the colour of different procedures so that they can see more difference."
Reduce the amount of text [PT/OS]	OS) Male 40-49 yrs old – "I think the second page, the likely benefits, is just a bit wordy. I think a patient will get to that and just think, ugh, they will probably just be captured by the green men [icon array which was later remove]."
Patients	
Shorten 'key messages' box and include other information as footnotes	Male 30-39 yrs old – "I think having a smaller box and just having those couple of points...makes it quicker to read to get the basic information and the important information."
Limit footnotes as they slow the reading pace	Male 30-39 yrs old – "Almost every single line you're going back down and then you're going back up. It's really not easy, it doesn't flow well and it's not easy to read that."
Suggested strategies to reduce text (e.g. not repeating information in each column, move some information to a 'further reading' section, replace words with graphics)	Male 20-29 yrs old – "A lot of text, I'm wondering if you could make it more infographic...I mean the boxes are good if you read it, but again I'm wondering if you can make it more easily digestible from a picture?"

Icon array is not useful (e.g. confusing, prefers bar graph, icon array takes focus off key messages)	Male 30-39 yrs old – "I'd probably just neg all this and go straight to a bar thing...condense it all down, crack on, it's just too much words and too much extra stuff."
Address inconsistency between headings, figures and text	Male 20-29 yrs old – "Are those first two really benefits?" [highlighting that there are actually no benefits of surgery]
Mention benefits before harms as benefits are the crux of the decision aid	Female 40-49 yrs old Williams – "I was just thinking about the order starting with complications and then going to benefits, you normally would see it the other way around."
Numeric estimates, surgical options and footnotes are confusing	Male 60-69 yrs old – "Subacromial decompression surgery, what does that mean?"

WHAT ARE THE LIKELY HARMS OF SURGERY?

Health professionals

Presentation of harms is appropriate [PT/OS/OP]

PT, Male 30-39 yrs old – "Again, they're simple, graphic and visual, easy to read and certainly makes you reconsider surgery, so yeah that looks good."

Patients

Clear figures and text which would make patients think hard before having surgery

Female 40-49 yrs old – "I think the image is useful there actually."

Positive feedback

Statement about the risk of harms being higher in people with other health conditions is valuable

Male 30-39 yrs old – "The serious problem one, it's possible it might deter me, but not that much. It would depend obviously on my personal condition and my personal scenario...then I can tell if I'm one of those average people, or if I'm better or worse than the average person...I think that's nice and clear, I can get a lot of information out of that quite quickly."

Health professionals

Present minor and serious harms	Distinguish between surgical complications, complications specific to the procedure (e.g. frozen shoulder) and poor outcomes [GP/OS/PT/OP]	OP, Female 40-49 yrs old – "Harm is different to unsuccessful outcomes so again, they have to be separated out."
	Mention revision surgery as a possible adverse event [OS]	OS, Male 40-49 yrs old – "So discussion about the need for re-do surgery is usually about poor healing...What I'm talking about there is failure of repair. There are other needs to do revision surgery when the repair has healed well but, for example, the patient may have a recalcitrant adhesive capsulitis or frozen shoulder."
	Patients	
	Important to know both minor (e.g. loss of movement and strength) and serious harms	Male 30-39 yrs old – "Recovery time would be very important to me in a trade. Probably if there's other side effects as possible loss of range of motion or strength because that would severely impact my work and day to day life."
	Definition of minor and serious adverse event is problematic because severity is subjective	Male 30-39 yrs old – "Saying a serious problem versus a non-serious problem, I think that's very relative to the patient because that becomes a material assessment."
	Health professionals	
Provide more context for harms	Presenting harms in a different section to 'benefits' doesn't give an understanding of harm vs. benefit [GP]	GP, Female 60-69 yrs old – "When you compare them [harms] to the benefits being very minimal, then the harms outweigh the benefits...the graphics don't really show that aspect."
	Compare the harms of surgery and non-surgical options [PT/CP]	CP, Male 20-29 yrs old – "One in one hundred people who are going through something like this, that's big. We look at rates of adverse reactions in manual therapies, you're looking at like 1 in 3 million."
	Patients	

	Presenting harms in a different section to ‘benefits’ doesn’t give an understanding of harm vs. benefit	Interviewer: If it did get to a point where you needed to consider that [surgery], what would you most want to know while you’re weighing up that choice. Male 30-39 yrs old – Probably the risks involved and the chance of success in comparison to that risk.
	Emphasise surgery involves a general anaesthetic	Female 60-69 yrs old – "Again you’ve got to count into that anaesthetic, do I really want to go under anaesthetic for it as well?"
Evidence doesn't match experience, more clarification needed	Health professionals	
	Harms might be overestimated [OS]	OS, Male 40-49 yrs old – "I would say deep infection in my practice, and having done arthroscopic surgery for more than 10 years, it might be 1 in 10,000. That doesn’t relate to me in my practice, so I wouldn’t give my patients those statistics."
	Harms might be underestimated [PT]	PT, Female 30-39 yrs old – “My only other feedback is about the harms of arthroscopic surgery. I would look at that and think ...it’s not likely I’m going to be having any problems... 1 in 100 makes it look like it’s not that likely but actually 1 in 100 is quite high.”
	Highlight populations who are at the greatest risk of harms (e.g. diabetes, other co-morbidities) [CP]	CP, Male 20-29 yrs old – "I know it takes up more space to add more information always, but letting them know or saying predisposing risk factors for serious problems or for frozen shoulder, comorbidity conditions, if any."
Modify the formatting or language used	Health professionals	
	Format the harms section so it is consistent with the benefits section [PT]	OS, Male 40-49 yrs old – "Yeah, and present them in the same way. Whatever format you choose."
	Move harms to practical issues section [CP]	CP, Male 20-29 yrs old – "So going back to what you were saying, what do we use for visuals, tables are probably really good. This [presenting harms in practical issues section] is just another way of showing

Include in-text citations or state 'figures are from the most up to date medical research' [PT/CP]	the differences, this might even be another way when we're comparing the harms of arthroscopic surgery versus conservative care that might even be another way to compare the two so people can see." CP, Male 20-29 yrs old – "To say that it's based on the most up to date medical evidence is probably really important."
Replace 'harm' with a less emotive word (e.g. 'risk', 'complication') [OS]	OS, Female 50-59 yrs old – "So this one I found even more emotive, harm is in red and underlined...I wonder if there might be a different word, I know you're avoiding risks, you're using the word harms rather than risks, I don't know what other word might be better. "
Re-format to emphasise the harms (e.g. place minor harms on the left side of the page as they are most important, icon array downplays the true risk of harms)[PT]	PT, Male 20-29 yrs old – "Maybe with this graphic because the percentage is so small, it takes up a lot of space to do that. I guess it can be a good graphic to show how if you look at this you'd think I'd be pretty unlikely to get a problem is what you take away from that. The graphic does its job but if you think there's only half a person getting a serious problem that's probably not going to be me."
Patients	
Change the terminology used (e.g. 'harms' too negative, change 'harms' to 'risk', change 'person' to 'people', define 'frozen shoulder')	Male 40-49 yrs old – "'Harms' seems dangerous. I suppose I think risk is inferred with those kinds of procedures. I'm just thinking there's maybe a better word than harm."
Change the formatting of numeric estimates (e.g. keep the same denominator for minor and serious adverse events, use 6 in 1000 rather than <1 in 100, use 4% instead of 4 in 100, remove icon array to save space, avoid text touching the boxes, seek help from a graphic designer)	Male 20-29 yrs old – "I don't know how much the picture does for me, if you just had a big 4% there that might get the same message across."

SUMMARY OF BENEFITS, HARMS, AND OTHER PRACTICAL ISSUES

Health professionals			
Positive feedback	The whole section is appropriate [GP/PT/OS/OP]	PT, Female 30-39 yrs old – "I like the idea of the table at the end about the practical issues that they should consider."	
	Being vague about costs is appropriate because as patients in the public system may not have any out-of-pocket costs [PT]	PT, Female 30-39 yrs old – "I feel like that's why so many people go surgically as opposed to going along a conservative physiotherapy driven pathway, because they've got to pay privately for physiotherapy and injections but they get their surgery done for free at the hospital and then will often go into the public system for their rehab as well."	
	Patients		
	Content, layout, and discussion about costs and recuperation after surgery is appropriate	Male 40-49 yrs old – "I'm looking at them through a different lens this time and I think they're pretty much spot on."	
	Global summary would be helpful for people without time to read the entire decision aid	Female 70-79 yrs old – "I think that it's very good. Some people who won't read through things. This is so neat and tidy and it takes you a minute or so to read."	
Health professionals			
Revise information on costs	Include the cost of non-surgical options (e.g. time, effort, cost without insurance coverage) [CP]	CP, Male 20-29 yrs old – "If this is just somebody paying out of pocket because they have shoulder pain it might actually be more expensive for them to seek care from a physio or a chiro than it would be to just go get a surgery because that's going to be covered through their insurance."	
	Be specific about costs to emphasis the true cost of surgery [PT/GP]	GP, Female 30-39 yrs old – "I think [include] the actual cost itself, which is very hard for you to put in a decision aid. I know depending on which area, which	

	surgeon, it could be very different, but just giving an idea of how much these costs are."
Include costs related to time off work [OS/PT]	OS, Male 40-49 yrs old – "Out of pocket costs, correct, there's the other costs are not working, so if someone has used up their sick leave, whether it's surgery or no surgery, then they're on leave without pay so that's another cost to consider as well."
Soften the language emphasising the costs of surgery [OS]	OS, Male 50-59 yrs old – "When you say the out of pocket costs for surgery are generally high, I think that's a value statement. I would say they are generally higher than non-operative treatment. Some surgeons don't charge anything, there's no out of pocket paying cost for some patients."
Patients	
Be more specific about costs (e.g. time off work, add "speak to your GP and insurance provider to understand exact costs", costs of non-surgical options, non-surgical options might equally expensive in some countries)	Male 70-79 yrs old – "How much is going to cost in the hospital? Am I covered by medical benefits? How much am I covered for my medical benefits? How long am I going to be in hospital? What are the charges?"
Highlight that waiting times are long and costs are higher without private insurance	Male 30-39 yrs old – "What I want to do and other factors, financial factors as well and how long I have to wait for this sort of stuff, all these things."
Health professionals	
Revise information on activity restrictions and post-surgical management	Revise timeframes for post-surgical activity restrictions [OS/PT]
	OS, Male 50-59 yrs old – "Practical issues after decompression, I would suggest avoiding heavy lifting usually for six, for twice that long, that's a bit short. They may elevate above their head at 1-3 weeks but we would not let them heavy lift for 6-8 weeks."
Include timeframes for returning to normal function (e.g. sports, activities of daily living, pre-injury function) but also acknowledge the possibility patients won't return to normal [PT/CP]	PT, Male 30-39 yrs old – "I guess that's what people want to know, will I be able to play, pick up ball again."

Highlight that symptoms may improve, with or without surgery [GP]	GP, Female 30-39 yrs old – "No recuperation time frame, it makes it sound like with surgery you will just always have symptoms whereas without surgery you won't have symptoms. I understand that is correct, I'm trying to say, symptoms may come and go until rehabilitation is completed? I don't know how to word that."
Mention that people who do not have surgery will still have their usual symptoms and their improvement will depend on the success of the non-surgical options they try [OS]	OS, Female 50-59 yrs old – "If you don't have surgery there's no surgery to recuperate from, but you still have your primary symptoms, so you're not pain free."
Emphasise that symptoms will get worse following surgery due to the procedure [PT/OS]	PT, Male 30-39 yrs old – "It seems a lot of people don't fully conceptualise that, you can't even use the muscles in your shoulder for 6 weeks. That's a pretty big consideration."
Add a row for 'social support' (e.g. getting dressed, dishes, transport to appointments) [PT]	PT, Female 30-39 yrs old – "The other thing I would put in there is people getting to rehab if they don't have someone, social support. Who's going to help them get dressed or do their dishes, take them to appointments."
Highlight that people must do exercises following surgery [PT/OS/CP]	OS, Male 40-49 yrs old – "I tell them that their shoulders will be stiff and will have deconditioned because they've been waiting for their tendons to heal and the structures to heal. It usually takes that extra 3 months of work to rehabilitate them enough that they can get back into manual labour type activities."
Define 'heavy lifting' [PT]	PT, Female 30-39 yrs old – "I think I'd try to be a little more specific with that, because heavy lifting is so specific to different people."
Include activity restriction timeframes for non-surgical options [PT]	PT, Male 30-39 yrs old – "Do you have anything in there for 'no surgery' as well, like most people do well in 6 weeks or expect 12 weeks?"

	Highlight that recovery is influenced by the severity of a patients' pre-intervention symptoms [OS]	OS, Male 50-59 yrs old – "I think just recognising that there is a spectrum of severity of symptoms, that they're not all the same. Therefore, people with lower symptoms are generally more likely to improve."
	Patients	
	Emphasise driving restrictions	Male 70-79 yrs old – "I would rather see 'you can't drive for 6 weeks' rather than 'you can.'"
	Emphasise that patients may need treatment after surgery (e.g. physiotherapy, injections, exercise, etc.)	Male 40-49 yrs old – "I guess my experience is even after surgery there's still lots of injections, lots of medication..."
	Highlight the need for patients to consider their individual circumstances before making any decisions (e.g. pain levels, social aspects, insurance, job demands, caring responsibilities, age, activity levels, sports participation, etc)	Male 40-49 yrs old – "I think that's probably a lot more important to consider with stats; where would you be without this if you can't go back to doing the things you want to do again? In another non-sporty point, if it affects a tradesman ability to earn income it affects their entire family's quality of life. So I think that's probably the more responsible point to make in it, rather than you'll get 9 or 6% less pain and that sort of stuff."
	Add a column for 'no treatment'	Female 60-69 yrs old – "Are you allowed to have a column that says 'no treatment?'"
	Health professionals	
Modify the formatting or language used	Separating practical issues by type of surgery results in too much information [PT]	PT, Male 20-29 yrs old – "Do they really know the difference between rotator cuff repair, subacromial decompression? I guess it's really only if they've been told that's what appropriate for them that they then go, which one am I?"
	Split the practical issues section by type of surgery [GP]	GP, Female 30-39 yrs old – "Then the third page I guess the text looks like instead of lines we split something into two columns."
	Discuss 'Follow-up with surgeon' in 'Recuperation' section [GP]	GP, Female 30-39 yrs old – "Maybe talk about the follow up in recuperation. I think that suits"

	recuperation more than it does procedure, in my train of thought anyway."
Could use a checkbox to reduce the number of words in the 'Activity restrictions' section (e.g. sling (tick); 3-4 weeks off work (tick), etc.) [CP]	CP, Male 20-29 yrs old – "If we were to reduce how many words are present, the row with all the activity restrictions and time off, it seems like that could be either a checkbox yes or no 'do you require a sling?'"
Include a summary of whole decision aid in the practical issues table in case people don't want to read the whole decision aid [CP]	CP, Male 20-29 yrs old – "That might be helpful if someone doesn't want to read three pages and they've just got one thing to glance at, we could direct them to just the one table."
Change title of this section to "What will my recovery look like after surgery and non-surgical options" to reduce bias against surgery [PT]	PT, Male 30-39 yrs old – "It's very heavily biased towards don't have surgery... Maybe instead of 'what practical issues should I consider' it might be better to have something along the lines of 'what would my recovery look like' or something like that, or 'what do these processes look like?'"
Remove this page entirely as patients will be losing interest by this point [OS]	OS, Male 40-49 yrs old – "I thought there shouldn't be a third page at all to be honest, by then the average punter is losing interest."
Patients	
Present practical considerations for the two types of surgery in separate columns to match the second page	Female 20-29 yrs old – [Shown two surgeries in separate columns as option #2] "I feel like I'm being super biased but I'm going to say the second one as well because that breaks down each surgery... [and] seems a little bit clearer."
Make the headings and sub-headings clearer	Male 20-29 yrs old – "So just in terms of the layout... I thought that was the subheading and the next chart or table was related to the what are the likely harms. So maybe a thicker bit in between might separate those ideas, just a bigger space or something like that."
Do not mention insurance as this is not relevant for people treated in the public system	Male 30-39 yrs old – "Just the first part where you say 'and insurance provider' I get a little bit offended there"

	anyway because it automatically presumes that I have private health insurance or that this is a work cover thing. It makes an assumption of the reader."
Acknowledge that timeframes are averages so patients don't get disheartened when they don't reach a milestone on time	Female 50-59 yrs old – "If you just say an average and you don't hit that 21-day average- unfortunately whatever affects your body affects your mind."
Change the colour of table to match other sections of the decision aid	Female 40-49 yrs old – "This table is quite clearly laid out...good use of shading and colour, although the blue is a different shade to what's used in the whole rest of the leaflet."

QUESTIONS TO CONSIDER WHEN TALKING WITH A HEALTH PROFESSIONAL

	Health professionals	
	All questions are important [GP/PT/OS/OP]	OP, Female 40-49 yrs old – "I think that's really good because you can tick through that and make sure that they've understood the really important points."
	Patients	
Positive feedback	All questions are important	Male 20-29 yrs old – "Especially the last one [about] information and support. I think that's often one that I've seen some of my friends sometimes don't [ask]. So I think that's an amazing one to have in there."
	Agrees that patients should be directed to ask questions	Female 20-29 yrs old – "I think they're good because when you're in an appointment setting for me I get really nervous and I don't always think."
Adding and removing questions	Health professionals	
	Add questions (e.g. "Do I understand what's wrong with my shoulder?"; "What level of activity can I get to if I have surgery versus not?"; "How much non-surgical management should I try before considering surgery?") [OP/PT/OS]	PT, Male 20-29 yrs old – "If I wait with my tear, is that going to mean it keeps tearing and then I need surgery later on and it gets worse?" that sort of thing."

	Remove questions (e.g. "Do I know enough about my condition"; "Have I considered my individual circumstances") [OS]	OS, Male 40-49 yrs old – "I don't think that's a good question to ask because you're asking the health practitioner to read the patient's mind. 'Have I considered my specific situation?' Again, that's not something a health professional can answer in that format."
	Patients	
	Add questions (e.g. "Can I have surgery later?"; "What is my diagnosis? Are there any other surgeries performed for this type of shoulder pain?"; "What other treatment options do I have/who else can I see?"; "How will my individual circumstances impact me?"; "What happens if I don't do anything?")	Male 20-29 yrs old – "Maybe add in there 'what is my diagnosis.'"
	Health professionals	
	Increase the size of this section [PT/CP]	PT, Female 30-39 yrs old – "Can we make the 'other things that I can do 17 times bigger?' I almost think that box 'other things I can do' needs to be up there on that first page under no surgery."
	Could replace "Questions to consider when talking with your doctor" section with "Any further questions, ask your doctor" to save space [GP]	GP, Female 30-39 yrs old – "If you needed to cut that out, I would cut out and say any 'further questions talk to your doctor.'"
Modify the formatting	Change the heading of this section so it applies to any health professional [PT]	PT, Male 20-29 yrs old – "Then the 'questions when talking to your doctor' are what we were saying before for your doctor or physio."
	Change the heading of this section so it applies to GPs [PT]	Interviewer – "In which case do you think we need to direct people who to ask these questions to, rather than keeping it open like that? We've just said health professional, knowing that could be a whole number of people. Do you think we should say 'ask your GP', ask your physio or even just subcategories the questions depending on who they're asking."

		PT, Male 40-49 yrs old – "Put great faith in GPs, they really care for their patients."
	Patients	
	Remove this whole section to create space	Male 20-29 yrs old – "I don't think it adds a lot for me just because I think they're kind of obvious in a sense. I think questions would naturally arise from this."
	Modify the formatting for the bullet points (e.g. words don't line up with the bullet points, too cramped, put questions in speech bubbles)	Female 40-49 yrs old – "In the third one, the spacing of the lettering is quite different to the spacing in the fourth one."
	Change to "Questions to consider when talking with a health professional..." (instead of "your health professional")	Male 40-49 yrs old – "So when I just see the way that heading looks...I'm wondering if that's pointing them too specifically just to one person."
	Combine the first two questions	Male 40-49 yrs old – "Am I clear about the benefits and the harms? That's the same as "Do I know enough about the benefits and harms?"
	Categorise questions based on which health professional should answer them	Male 40-49 yrs old – "I'm wondering if there should just be more specifics around health professionals. I mean they're all health professionals, but some I've found to be more valuable than others."
ARE THERE OTHER THINGS I CAN DO?*		
	Patients	
Positive feedback	"Other things I can do" box is great (1) [PT/CP]	PT, Male 40-49 yrs old – "So you make up for it by highlighting that which is cool, for saying the ongoing commitments, I like that you're putting that there."
	Health professionals	
Modify information to help people choose non-surgical options first	Move this section to the first page and make it clear surgery is a last resort [PT/CP]	CP, Male 20-29 yrs old – "Obviously really good advice, I think that should almost be at the forefront. These are pretty good options that they're probably going to have to try even before considering surgery because ...surgery is often a last resort."

	Be specific about what exercises can be done [PT/CP]	PT, Male 20-29 yrs old – "I think in general you hit the broad spectrum of things, from a physical therapy standpoint obviously I might include beyond just strength and endurance exercises, strength, flexibility, endurance exercises."
	Emphasise that there is often no need for early surgery and no harms in delaying surgery [OS/PT]	PT, Male 20-29 yrs old – "It was more a fear of 'if I don't do it now then what happens in the future?'"
OVERALL FEEDBACK		
Health professionals		
	The graphics will assist non-English speaking people [PT/OS]	PT, Female 30-39 yrs old – "A lot of my clients don't speak English, so I'll always go with pictures and graphics and really easy to understand things."
	The decision aid will be an important tool for busy clinicians [PT/OS]	OS, Male 40-49 yrs old – "Assuming that the GPs have some musculoskeletal background and know a little bit about this problem...then having that information sheet [decision aid] certainly is helpful and I can assess the patient, they already know some of that information and I don't have to rehash everything."
Positive feedback	There is no information that is not important in this decision aid [PT/OS/GP]	PT, Male 30-39 yrs old – "Maybe you could take-that's the problem it's all pretty useful."
	Patients	
	Language, flow. explanations, content, length, and disclosure statement are appropriate	Male 30-39 yrs old – "That seems fairly straight forward as well, there doesn't seem to be anything in there that I don't either understand or isn't visually represented."
	References are important but should be provided on request	Male 30-39 yrs old – "You could maybe just say 'references can be provided via emailing this address.' I don't know if you need to put all those references in there."

	The decision aid will be an important tool for patients who do not receive enough information in a consultation	Male 40-49 yrs old – "My surgeon, wonderful guy, really nice guy and he's done a great job, he never really explained a lot to me."
	Health professionals	
	A 2-page decision aid is ideal [PT/CP/GP]	GP, Female 30-39 yrs old – "I don't know if this is possible, but I think two pages. So being able to... print it double sided and have just one piece of paper given to the patient it feels in my head less overwhelming than a bunch of paper being stapled together and saying here, read it all."
Reduce amount of information	The decision aid includes too much information [GP/OS/PT]	OS, Male 40-49 yrs old – "I thought it was a bit too busy...there's so much writing now I can't tell. If you're going to give that to the general public you've got to be like it's pretty straight forward."
	Create a simplified version of the decision aid for patients [PT]	PT, Male 20-29 yrs old – "Maybe you give this one to the health practitioner and you do a separate for patients to take with them."
	Remove some sections (e.g. questions to ask a health professional, references, rotator cuff repair surgery) [PT/OS]	PT, Male 30-39 yrs old – "Do the patients care specifically about references?"
	Health professionals	
	Include a section on diagnostic imaging (X-Ray, MRI, Ultrasound) and the importance of not missing a serious disease [GP]	GP, Female 60-69 yrs old – "You don't want to miss arthritis or tumours or things like that. I think that would be useful to...understand the roles of each, of the x-ray ultrasound and MRI."
More detail needed	More detail is needed if the decision aid will be used without input from a health professional [PT]	PT, Male 20-29 yrs old – "I think the one that would be sent home you would want a little bit more detailed versus one that you are with a patient going over it."
	Acknowledge who made this decision aid so patients can evaluate the quality of the information [OS]	OS, Male 50-59 yrs old – "Acknowledge what the background of the people constructing it is..."
	Patients	
	Last page lacks a solution if a patient has tried everything	Male 20-29 yrs old – "I don't know if that exists or not but to give people a new solution."

Encourage people to seek a second opinion or further information

Male 70-80 yrs old – "Do I have enough information and if not what do I do? I guess, if I answer that as no, I don't have enough information, then what do I do next, I've already spoken to the doctor."

Interviewer: That's a good point, maybe some links to further resources might be helpful.

Participant: Yeah."

Health professionals

Improve the colour scheme or layout (e.g. improve consistency, space out information) [GP/PT/OS]

PT, Male 40-49 yrs old – "I feel so critical, it's a bit gloomy."

Create separate decision aids for each procedure [CP/OS/GP]

OS, Female 50-59 yrs old – "It's too much covering decompression and rotator cuff repair on the one handout because they are two separate conditions and they're offered for different reasons and they should be separated."

Create separate decision aids for surgical and non-surgical options [GP]

GP, Female 60-69 yrs old – "Having surgery as a separate one [decision aid], because you wouldn't tell them about [surgery] straight away...I think it's too much information at the beginning, most people would get a bit alarmed if you talked about surgery at the beginning."

Create a video summary of the decision aid [PT/CP]

CP, Male 20-29 yrs old – "I feel like people nowadays don't have a great attention span...I almost wonder if somehow like a video, they could access it on Youtube or something free like that."

Include citations in the decision aid [CP]

CP, Male 20-29 yrs old – "I don't see a citation."

Acknowledge that treatment decisions might be influenced by the health professional the decision aid is discussed with [PT/OS]

OS, Female 50-59 yrs old – "In my experience, those who fail non-surgical do really well with surgery and so most of my patients do better, but I haven't got a

Formatting or distribution suggestions

	group to compare them to so I've got a very biased view of surgery because that's all I see."
Distribution suggestions for the decision aid (e.g. in a clinic, early in treatment, when a patient is considering surgery, after a diagnosis is made) [PT/OS]	OS, Male 40-49 yrs old – "The most useful thing that we're talking about surgery vs. no surgery, is at the junction where surgery is being considered and that is in the specialist's office, to me that would make the most sense."
Improve readability of the decision aid [PT/OS]	PT, Male 40-49 yrs old – "I think the challenge with language is, let's say your aim is to get the FKMG score of a reading literacy score down to year 8 or year 6. A message that details enough to be satisfactory for a consumer, but without getting there's a lot of words on this page."
Patients	
Include page numbers	Male 70-79 yrs old – "I kept looking for more pages, only because I thought it would have been a longer thing for no reason other than why won't it go page down anymore. So maybe 'page 1 of 3' or something like that on the top."
Create several decision aids (e.g. one for each surgery, one for patients and one for health professionals)	Male 30-39 yrs old – "It's like half of that is not relevant to me if I have subacromial decompression surgery and the other half is not relevant to me if I have a rotator cuff injury. It's like well give me the one that's relevant for me."
Improve readability (e.g. increase the font size, space out the text even if it means the decision aid is 3 pages, use a consistent design across pages, use a darker grey background)	Male 30-39 yrs old – "I think a lot of the text is too small...I know it's a draft, I just think it's a bit- it doesn't easily flow well."
Patients should read the decision aid before or after a consultation with a health professional so they don't waste a health professional's time and can ask questions	Male 30-39 yrs old – "You have to be able to ask questions to somebody, so a health professional it could be an OT, a physio, a nurse or a doctor...but probably not as a one-on-one, face-toface thing. It

		would be sit in the waiting room, “read this, if you have any questions jot a little note, then when you come in ask the questions to clarify””
	Remove 'disclosure' section	Male 30-39 yrs old – "That would then take out the whole funding thing as well... You declare that there's no conflict of interest or say nothing to disclose or nothing to declare."
	Emphasise the question asking section and de-emphasise others (e.g. harms, causes of shoulder pain, references)	Male 40-49 yrs old – "Yeah, and maybe the very beginning one... “who should read this decision aid”, I think maybe that's too much. I think it's very doctor-y wordy... The very last one [questions section] I think is probably too little... [we need] a little bit of balance with the very last one and the very first one."
	Move 'Important information' to above the references so patients are more likely to read it	Male 30-39 yrs old – "It blends in. As I'm coming down the page, if I saw it I would read that. Whereas it gets lost in references straight away."
	Health professionals	
Suspects bias or questions relevance of the decision aid	Thought the decision aid's underlying goal is to reduce the use of surgery and thought it should be more balanced [OS]	OS, Male 40-49 yrs old – "Really what you're trying to do is get them to not have the surgery."
	Believes evidence is changing and the decision aid may become irrelevant overtime [OS]	OS, Male 40-49 yrs old – "I mean that's the current view, and in a year's time that might change."
	Unsure of the applicability of the decision aid when patients don't have a diagnosis or when they have tried all the non-surgical options listed [OS]	OS, Male 40-49 yrs old – "The most useful thing that we're talking about, surgery vs no surgery, is at the junction where surgery is being considered and that is in the specialist's office. To me, that would make the most sense. Before that no one knows what's going on, no one's really talking about surgery, there might be hearsay and things like that, there might be guesses, but at that time you may not even have a diagnosis or imaging etc. Often when I see the patients they've already done a few of those conservative measures which have not worked, which is why they're in my

office...I guess if the decision aid is hitting them at the point where surgery vs no surgery, because there's not so much difference in the short to medium term, then it has to be done after the diagnosis is made I think, or surgery is being considered."

	Patients	
Decision aid swayed patients away from surgery	Swayed towards surgery because it might be beneficial (e.g. pain might get worse, small improvements in pain and function might be important for work, the risk of complications gets higher as you age, subacromial decompression might work if someone has tried all other options)	Female 50-59 yrs old – "It's not too bad for me to consider a shoulder surgery yet, but it's also making me think, maybe it's something I should have before it gets too bad."
	Swayed away from surgery (e.g. would only have surgery if it was a guaranteed solution as time off work and cost is a major inconvenience)	Female 40-49 yrs old – "To me you read that and think, I'm probably not going to go down that route."

CP: chiropractor; GP: general practitioner; PT: physiotherapist; OP: osteopath; OS: orthopaedic surgeon.

*: this section was removed from the decision aid to save space so we could provide more detail about non-surgical options on the first page.