Supplementary File 13. Reasons for not implementing feedback for each section of the decision aid.

Themes	Sub-themes	Reason for not implementing feedback
WHO SHOULD READ THIS DECISION AID?		
Improve clarity on the target population	**Health professionals**	
	Make the information more specific to a diagnosis [OS/PT]	Identifying a structural nociceptive cause of subacromial impingement syndrome is not possible, so we decided to keep the diagnosis broad (i.e. subacromial impingement syndrome)
	Patients	
	Make it clear the decision aid is for people with subacromial impingement syndrome (e.g. include the diagnosis in the title)	Opposing feedback to remove the term 'subacromial impingement syndrome'
Revise the causes and symptoms of shoulder pain	**Health professionals**	
	Clarify that shoulder pain can be caused by overuse and work (e.g. heavy lifting) [GP/PT]	Potential causes of shoulder pain were removed as they were too speculative
	Patients	
	Describe what causes the structural issues associated with shoulder pain (e.g. explain why a tendon tears or a bursa gets inflamed)	This information would have been too speculative due to a lack of evidence on this issue
Use positive messaging	**Health professionals**	
	Language will cause fear among patients [CP/PT]	Opposing positive feedback from patients on our explanation of shoulder pain
	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]	Beyond the scope of this decision aid
Make this section more concise and relevant	**Health professionals**	
	Explanation of shoulder symptoms might be irrelevant for patients [GP/OS/PT]	Opposing positive feedback on our explanation of shoulder symptoms
	Graphic of pain distribution might be more useful than a graphic of the shoulder anatomy [OS/PT]	Opposing positive feedback on our graphic of shoulder anatomy

WHAT ARE THE TREATMENT OPTIONS COVERED IN THIS DECISION AID?

Include more detail on non-surgical options and how to progress management	**Health professionals**	
	Need a flowchart of non-surgical options [PT]	Opposing positive feedback on the layout of non-surgical options
	Highlight how long patients should try different non-surgical options before surgery [GP/PT]	There is no evidence to guide timeframes on trying various non-surgical options. This could depend on treatment success and patient preferences
	More detail is needed on muscle strengthening programs [PT]	Beyond the scope of this decision aid
	Include evidence for non-surgical options [PT/OS]	This decision aid was developed for people considering surgery. We only included one treatment decision (i.e. surgery vs. non-surgical options) and hence, the evidence for surgery compared to non-surgical options
	Patients	
	Provide more non-surgical options	Opposing positive feedback that our decision aid covers all potentially valuable options
	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)	This decision aid was developed for people considering surgery. We only included one treatment decision (i.e. surgery vs. non-surgical options) and hence, the evidence for surgery compared to non-surgical options
	Highlight whether delaying surgery or non-surgical treatment is harmful or not	There is not enough evidence to address this issue. We suggested patients ask a health professional the following question: “Can I have surgery later? If so, how long should I wait before considering surgery?”
	Provide more information on 'wait and see' (e.g. highlight that you can trial non-surgical options while you ‘wait and see’)	Opposing positive feedback on the description of non-surgical options
Change the non-surgical options presented	**Health professionals**	
	Inappropriate to mention medication and injections as options [PT/CP]	Cochrane reviews on treatments for subacromial pain syndrome show glucocorticoid injections are superior

		to placebo and provide similar effects to non-steroidal anti-inflammatory drugs (22) and physiotherapy-delivered treatments (e.g. exercise, manual therapy, electrotherapy) (23, 24)
	Mention the benefits of ultrasound for diagnosis and guiding injections [GP]	Beyond the scope of this decision aid
	Waiting 6 months might be too long for patients to do nothing [PT/OP]	Opposing positive feedback on the description of non-surgical options
	Order of non-surgical options might be inappropriate [CP/PT]	Opposing positive feedback on the order of non-surgical options
Include indications for surgery	**Health professionals**	
	Highlight that imaging findings in isolation aren't indications for surgery [PT/OS]	Peripheral to the main purpose of this decision aid
	Important for patients to know which procedure they are most likely to receive as this could influence recovery and rehabilitation needs [OS]	Too dependent on an individual's symptoms
	Highlight that surgery may improve symptoms or anatomy but not address the cause [PT/OS]	Adding this information might be considered biased against surgery as non-surgical options might also not address the cause of symptoms
Present evidence of benefits or harms in this section	**Health professionals**	
	Mention the success rate of surgery and non-surgical options [GP/PT/OS]	We only included data on pain and function from the two Cochrane reviews of shoulder surgery. Including findings from responder analyses would have conflicted with feedback to avoid repetition of statistics
	Emphasise the harms of surgery [PT/CP/GP]	Adding this information would be biased against surgery. The presentation of benefits and harms in decision aids need to be balanced
Change information on surgery	**Patients**	
	Provide less information on surgery	Opposing positive feedback on the level of detail about surgery

	Provide more information on surgery and rehabilitation	Opposing positive feedback on the level of detail about surgery and rehabilitation
WHAT ARE THE LIKELY BENEFITS OF SURGERY COMPARED TO NON-SURGICAL OPTIONS?		
Revise description for the certainty of evidence	**Health professionals**	
	Remove the description of the certainty of evidence [PT/OS]	Opposing positive feedback for acknowledging the certainty of evidence
Evidence doesn't match experience, more clarification needed	**Health professionals**	
	Evidence doesn't match experience (e.g. careful patient selection will yield better outcomes) [OS/GP]	We did not change the evidence presented because it is vital numeric estimates of benefits and harms in decision aids are based on the highest quality available evidence (15, 27)
	Evidence from Cochrane reviews may not be generalizable to patients [OS]	
	Highlight that surgery may increase the speed of recovery or yield better long-term outcomes [OS]	
	Add outcomes or provide further explanation for existing outcomes (e.g. include quality of life, define treatment success, emphasise pain results) [GP/PT/OP]	We limited outcomes to pain and function from the two Cochrane reviews of shoulder surgery to avoid repetition
	Highlight that surgery may be useful for preventing tears progressing even if there was no improvement in symptoms [OS]	We limited the potential benefits of surgery to data presented in the two Cochrane reviews of shoulder surgery
Simplify the statistics	**Health professionals**	
	Avoid numeric estimates (e.g. 3% could be framed as 'small') [PT]	Opposing positive feedback on the presentation of numeric estimates
Provide more detail and clarify the evidence	**Patients**	
	Adding the age range of research participants is not necessary unless being outside this range would influence the benefits of surgery	Opposing feedback to mention the population of the evidence
Contextualise the evidence to reflect uncertainty on an individual level	**Patients**	
	Statistics shouldn't influence treatment decisions as they are averages and patients should trust their health professional's advice	We did not change the evidence presented because it is vital numeric estimates of benefits and harms in

		decision aids are based on the highest quality available evidence (15, 27)
Modify the formatting or language used	**Health professionals**	
	Make the bar graphs vertical [PT/CP]	We removed the bar graphs due to negative feedback
WHAT ARE THE LIKELY HARMS OF SURGERY?		
Present minor and serious harms	**Health professionals**	
	Mention revision surgery as a possible adverse event [OS]	Not a direct harm of surgery
	Patients	
	Definition of minor and serious adverse event is problematic because severity is subjective	Opposing feedback to separate minor and serious harms
Provide more context for harms	**Health professionals**	
	Compare the harms of surgery and non-surgical options [PT/CP]	Data on the potential harms of non-surgical options was not available
Evidence doesn't match experience, more clarification needed	**Health professionals**	
	Harms might be overestimated [OS]	We did not change the evidence presented because it is vital numeric estimates of benefits and harms in decision aids are based on the highest quality available evidence (15, 27)
	Harms might be underestimated [PT]	
Modify the formatting or language used	**Health professionals**	
	Move harms to practical issues section [CP]	Opposing feedback to use the same format when presenting benefits and harm
	Replace ‘harm' with a less emotive word (e.g. 'risk’, ‘complication’) [OS]	‘Harm’ is a more accurate term than ‘risk’ and is used more frequently in the decision aid literature
	Patients	
	Change the terminology used (e.g. 'harms' too negative, change 'harms' to 'risk', change 'person' to 'people', define 'frozen shoulder')	‘Harm’ is a more accurate term than ‘risk’ and is used more frequently in the decision aid literature
SUMMARY OF BENEFITS, HARMS, AND OTHER PRACTICAL ISSUES		
	Health professionals	

Revise information on costs	Include the cost of non-surgical options (e.g. time, effort, cost without insurance coverage) [CP]	Costs vary too much to include an accurate figure
	Be specific about costs to emphasis the true cost of surgery [PT/GP]	
	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)	Costs vary too much to include an accurate figure
	Highlight that waiting times are long and costs are higher without private insurance	This might not apply to all health systems
Revise information on activity restrictions and post-surgical management	**Health professionals**	
	Add a row for ‘social support’ (e.g. getting dressed, dishes, transport to appointments) [PT]	Information mostly covered already
	Include activity restriction timeframes for non-surgical options [PT]	Activity restriction timeframes varied by health professional too much
	Highlight that recovery is influenced by the severity of a patients’ pre-intervention symptoms [OS]	Suggestion was not relevant to this section
	Patients	
	Emphasise driving restrictions	Driving restriction timeframes varied by health professionals too much
	Add a column for ‘no treatment’	‘No treatment’ is covered in the ‘non-surgical options’ column
Modify the formatting or language used	**Health professionals**	
	Separating practical issues by type of surgery resulted in too much information [PT]	Opposing feedback to separate practical issues by type of surgery
	Split the practical issues section by type of surgery [GP]	
	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]	Opposing positive feedback on the layout of this section

	Change title of this section to "What will my recovery look like after surgery and non-surgical options" to reduce bias against surgery [PT]	We removed the headings to save space
	Remove this page entirely as patients will be losing interest by this point [OS]	Opposing positive feedback on this section
	Patients	
	Acknowledge that timeframes are averages so patients don't get disheartened when they don't reach a milestone on time	We included timeframe ranges to address this comment
QUESTIONS TO CONSIDER WHEN TALKING WITH A HEALTH PROFESSIONAL		
Adding and removing questions	**Health professionals**	
	Remove questions (e.g. "Do I know enough about my condition"; "Have I considered my individual circumstances") [OS]	Opposing positive feedback on these questions
Modify the formatting	**Health professionals**	
	Could replace "Questions to consider when talking with your doctor" section with "Any further questions, ask your doctor" to save space [GP]	Opposing positive feedback on this section
	Change the heading of this section so it applies to GPs [PT]	Opposing feedback to change the heading of this section so it applies to any health professional
	Patients	
	Remove this whole section to create space	Opposing positive feedback on this section
	Categorise questions based on which health professional should answer them	Too much overlap between health professionals who could answer each question
ARE THERE OTHER THINGS I CAN DO?*		
Modify information to help people choose non-surgical options first	**Health professionals**	
	Move this section to the first page and make it clear surgery is a last resort [PT/CP]	We thought it was important to present the options (and evidence) before patients reflect on questions they could ask a health professional
	Be specific about what exercises can be done [PT/CP]	Beyond the scope of this decision aid

	Emphasise that there is often no need for early surgery and no harms in delaying surgery [OS/PT]	We suggested patients ask a health professional the following question: "Can I have surgery later? If so, how long should I wait before considering surgery?"
OVERALL FEEDBACK		
Reduce amount of information	**Health professionals**	
	A 2-page decision aid is ideal [PT/CP/GP]	Opposing feedback that all information in the decision aid is important
	The decision aid includes too much information [GP/OS/PT]	
	Create a simplified version of the decision aid for patients [PT]	Positive feedback from patients that this decision aid is easy to understand
	Remove some sections (e.g. questions to ask a health professional, references, rotator cuff repair surgery) [PT/OS]	Opposing positive feedback on these sections
More detail needed	**Health professionals**	
	Include a section on diagnostic imaging (X-Ray, MRI, Ultrasound) and the importance of not missing a serious disease [GP]	Beyond the scope of this decision aid
	More detail is needed if the decision aid will be used without input from a health professional [PT]	Positive feedback from patients that this decision aid is easy to understand
	Patients	
	Last page lacks a solution if a patient has tried everything else	There is no evidence to address this complex issue
	Encourage people to seek a second opinion or further information	Positive feedback that the decision aid covers all important information
Formatting or distribution suggestions	**Health professionals**	
	Create separate decision aids for each procedure [CP/OS/GP]	This would prevent patients using the decision aid before consulting with a surgeon as they would not know which surgery they are most likely to receive
	Create separate decision aids for surgical and non-surgical options [GP]	The evidence compares surgery to non-surgical options, so it is important these options are listed in the same decision aid
	Create a video summary of the decision aid [PT/CP]	This is a consideration for a future project

	Acknowledge that treatment decisions might be influenced by the health professional the decision aid is discussed with [PT/OS]	We felt that this information would not add value to this decision aid
	Patients	
	Include page numbers	
	Create several decision aids (e.g. one for each surgery, one for patients and one for health professionals)	This would prevent patients using the decision aid before consulting with a surgeon as they would not know which surgery they are most likely to receive
	Remove 'disclosure' section	Opposing positive feedback on the this section
	Emphasise the question asking section and de-emphasise others (e.g. harms, causes of shoulder pain, references)	Opposing positive feedback on these sections
Suspects bias or questions relevance of the decision aid	**Health professionals**	
	Thought the decision aid's underlying goal is to reduce the use of surgery and thought it should be more balanced [OS]	Opposing positive feedback suggesting the presentation of options was balanced
	Believes evidence is changing and the decision aid may become irrelevant overtime [OS]	We plan to update the decision aid as new evidence emerges

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.