**A screenshot of a cell phone

Description generated with very high confidenceA screenshot of a social media post

Description generated with very high confidence**

To begin my research, I did an in-depth lotus diagram see below, to help me to narrow down which area I wanted to research further into. I chose eight major topics, which were psychology, entertainment and sport, politics, education, environment, health research, medicine and social issues. After careful consideration, I decided to narrow my search down to medicine and or health research. I will consider each potential question and talk to my teacher about a suitable topic to research into.

A Gantt chart was also created to effectively use the time allotted (see below). This Gantt chart showed a rough outline and plan for how to complete my research project. This allowed me to keep on top of all the different sections.

**15/11/2018 How is it possible for a vegan to maintain a balanced diet and stay healthy?**

This a good question, many primary sources are easily accessible and will want to talk about maintaining a balanced diet. For this question, it would be very difficult to find information that is not biased because vegans are very defensive about their diet. This question doesn’t interest me and considering I will have to research in-depth into this subject, I will continue looking for another question.

**20/12/2018 Do fad diets work and if any, what are the negative side effects?**

An interesting question created enabling me to explore the world of fad diets, and quite possibly anorexia, bulimia and depression and anxiety. This topic, unfortunately, doesn’t have many primary sources available and most people don’t want to talk about the negative effects of dieting. A case study could be conducted but would end up being very expensive buying multiple different dieting pills. Also, there are many proven disadvantages to dieting pills including fatigue, insomnia, and increased heart rate that was found during some preliminary research.

**10/02/2019 How do fad diets affect recovery from surgery**

This was an interesting question that I thought of, but it could have quite a wide variety of answers, none of them would particularly be the correct answer. This question would be very interesting to research about, but as of now I have no primary sources, and secondary sources are looking difficult to find.

**14/01/2019 How to best recover from knee reconstruction**

This isn’t a question, but I further narrowed down my topic to knee reconstructions because I just underwent an operation on my knee.

This topic will allow me to talk to many different specialists to speed up my recovery. Having a surgeon, hospital staff and a physiotherapist to talk to as primary sources, this topic will allow me to easily get expert opinions.

**29/01/2019 What are the most effective therapies to recover quickly from a knee reconstruction?**

I think this will be my final question because it is narrowed down into two categories most effective therapies to recover from a knee reconstruction. This question will enable me to research into an interesting topic and talk to many different specialists and physiotherapists to see what treatments they recommend. This question also benefits me because I am curious to see what the most effective therapies are to recover from a knee reconstruction.

**5/02/2019 What are the most effective therapies to recover quickly from an anterior cruciate ligament rupture (ACLR)?**

This is another question, modified to make it more specific and less vague. Changing the question from recovering quickly from a knee reconstruction to recovering quickly from an ACLR will also open a whole new area of research, for surgery or no surgery.

**22/02/2019 What are the most effective therapies to recover quickly from an ACL Reconstruction?**

This is my final question, designed around the preliminary research and primary sources that I have found. This topic will personally be useful to me as I have just recently undergone knee replacement because I ruptured my anterior cruciate ligament (ACL). This question is very interesting, and I am looking forward to finding out in-depth information. I have decided to do a PMI to enable me to see the limitations of my final question.

Plus: This question enables me to talk to different professionals specialising in knee replacements and ACLR. I also know of many people who have undergone anterior cruciate ligament reconstructions, so there are many primary sources for me to use.

Minus: This topic is quite controversial because many surgeons and physiotherapists have different viewpoints on whether surgery is even necessary. Many surgeons also differ on the other minor recovery stages after the surgery, for example, crutches use vs. no crutches and elevation of the knee vs. no elevation.

Implications: this question will have minor implications because many surgeons will not want to talk to a Year 12 for their research project.

**RESEARCH PROCESS:**

To keep my research organised and neat in my folder I am using a colour coordinating highlighting system.

* Yellow: information related to recovery success
* Green: information related to the rehabilitation processes
* Blue: leads and links to further information and authors
* Pink: interesting facts for the start of my outcome

1. How long in your estimation does it take for someone to fully recover from the surgery?
2. What in your opinion is the best treatment to recover from knee surgery?
3. How long is it recommended between the injury and the surgery’s?
4. Are people’s recovery times different based on age, race, gender and fitness level?
5. What are different therapies that you would personally suggest to clients

Any extra information you might have that would be relevant to my research question “What are the most effective therapies to recover quickly from an anterior cruciate ligament rupture?” would be very appreciated.

**Videos:** I will be using video sources because they will be presented in an easier way to understand and they will show me how the surgery and recovery will look. They may not be many around that are relevant to my topic.

**Books, journals and data bases:** I will be using book sources to help me complete my research. This will have useful diagrams and pictures to further help my understanding. I have written a diary of my own experience, which will help me to compare to others. Finding relevant books will help to confirm some of the information gathered from the internet. I will find these books from the State library. I will choose to use books as a source because they will help me to decide what internet sources are reliable. There are some limitations to using books though, because they may have been published a long time ago, which means that the information may be out of date.

**Internet:** I will be using internet sources to help me complete my research. This has helped me to get my preliminary research on my topic. I will try to use this source early on in my research project because it will enable me to find other relevant topics to research. This will be a good source to use to find both primary and secondary sources because it will be easy to find people to interview. I would choose this type of source because it is easy and accessible. The information may not be 100% reliable but I can check it against other information. The limitations of this source may be that reliable information may be quite hard to find.

**CAPABILITIES OR ETHICAL CONSIDERATIONS:**

The capability I plan to work on throughout this research project is the critical and creative thinking and ethical understanding. These capabilities were both chosen because I need to talk to different people about this research question. I will also need to use the ethical understanding capability because my question is about health and surgery and some people may not be willing to talk about it. I will also need to make sure that all my information is sourced and referenced correctly as to avoid plagiarism or copy right issues.

As this topic is about health, any interviews will have to be conducted very carefully, to make sure that nobody gets offended or upset based on the questions. Some people may be reluctant to talk about their experience because it was a traumatic, personal time in their lives. I will also give people the opportunity to remain anonymous if they prefer. This means that their privacy will be protected, and nobody will able to talk to the interviewees about this .

I chose ethical understanding because throughout this research project I want to further develop empathy for those who have undergone knee surgery.

The colours were chosen to make the information stand out, to see at a glance what information was relevant to what section of the outcome. The colour pink will be used to start off my outcome, with interesting facts about the ACL. Green is the second section of information related to the rehabilitation processes, different therapies related to ACL recovery. Finally, yellow is the information relating to recovery success for each individual. This is where I will give my suggestions and insert diagrams.

I also used sticky notes to help me organise my folio, by writing the key parts of the article and which part of the question the article helped me to answer. This enabled me to see at a glance what sources were useful for what.

When annotating my sources, the following headings will be considered about each source:

* Usefulness and limitations
* Key findings and new leads
* Reliability and relevance
* Capabilities and skills developed

These headings were chosen to help me to decide whether each source was reliable, relevant and useful to my topic. They will also allow me to see where this source falls short, in order for me to continue researching and filing in gaps.

**PLANNING SOURCES:**

To successfully get a wide range of sources both primary and secondary sources I need to plan what I am going to use:

* Books and journals
* Internet
* Videos
* Interviews

**Interviews:** I plan to get some primary research by conducting interviews. I can speak to multiple people who have undergone a knee reconstruction, which can provide me with useful statistics. I am also able to speak to multiple professionals including a surgeon, physiotherapist and hospital nurses. Conducting interviews will allow me to get firsthand information. I may use previous internet sources to find more people to send emails to, to get a variety of opinions and experiences. Having both face-to-face and email interviews will allow for me to time manage more effectively. The limits of my sources may be the fact that they don’t reply to my emails, or they don’t have time to answer my face to face questions. The questions in my interview were all chosen to improve my understanding further, confirm the information found from my secondary sources and find reliable primary sources to add to my outcome.

**Email:** I plan to send out this email to any people I want to interview. I will modify this draft to suit different purposes, for example phone  
Here is a draft:

To whom it may concern,

My name is Ellanie Stone and I am a Year 12 Student at Heritage College. I am currently completing my Year 12 Research Project. I am emailing to ask for information regarding your experiences with full knee reconstructions and anterior cruciate ligament injuries.

The questions that I have in relation to my Research Project are the following:

A picture containing text, newspaper

Description generated with very high confidence

**LINKS GAINED FROM THIS SOURCE/ LEADS:**

I found five reliable links relating to my topic, because they were referenced in this journal article. They will be used to further my understanding and gather more information regarding my subject. Journal articles are very useful because they reference the links they used at the bottom of the article, meaning I can check where certain statements come from.

**USEFULNESS AND LIMITATIONS:**

The information may be slightly out of date, or opinions may have changed. This source was written by Paris, M., Wilcox, R. and Millett, P. Reg Wilcox III is an associate professor in the Department of Physical Therapy, School of Health and Rehabilitation Sciences, at MGH Institute of Health Professions. Peter Millett is an internationally recognised orthopaedic surgeon who specialises in disorders of the shoulder, knee, elbow and all sports-related injuries (The Steadman clinic, 2019). Marie-Josée Paris is a Senior Physical Therapist of Outpatient Services, Department of Rehabilitation Services at Brigham and Women’s Hospital in Boston, MA. This article is fairly reliable because it is written by health professionals, specialising in sports related injuries. This article is very relevant to my topic because it gives valuable information to further my understanding of my topic.

**IMPACT ON RESEARCH:**

This source has actually provided me with many different links that I can use to further intensify my research. Unfortunately, this also means that all the sources that I will use from here will be written earlier than this article meaning that I will also have issues with the reliability potentially.

This article has allowed me to further narrow my question down to focus my research process down more. This article has also helped me to see the gaps in my research project and I can now research more into and even interview specialists in this subject.

**CONCLUSION ON THIS SOURCE:**

I conclude that this source is fairly reliable and while it was written a while ago can still be used to deepen my knowledge and to help shape my interview questions for my surgeon, physiotherapist and other primary sources.

**COMMENTS FROM SOURCE:**

* **DEFINITION:** proprioception exercises is the perception or awareness of the position and movement of the body. Therefore, this means that there will be designed exercises to help you be aware of your body.
* **NOTES:** Braces aren’t always recommended, up to each surgeon’s preference!
* There isn’t just one factor leading to the success of an ACR
* You must gain ROM and homeostasis in the knee before starting strength training
* The surgeon and his techniques are very important to a patient’s fast recovery

SOURCE TYPE – JOURNAL ARTICLE

**CAPABILITIES AND SKILLS DEVELOPED:**

While reading and researching this source, I improved my literacy skill. Because this source is written by medical experts especially in the field of ACLR they used a lot of medical terms which I couldn’t understand and had to look up definitions to fully understand it. I wanted to look up these terms because I was able to absorb the information from the journal article better now that I understood what it was saying.

I also improved my critical and capable thinking capability because this article was quite long, and most pages weren’t relevant to my topic, so I had to decide whether this source was actually useful to my topic. This helped me to quickly skim read through each page and find key words that were relevant to my topic.

**WHAT I’VE LEARNT:**

There isn’t just one factor leading to the success of an ACLR, but multiple factors including the surgeon, the patient’s determination and the rehabilitation they undertake. Also, whether you use a brace or not is completely up to the surgeon and the physiotherapist.

**WHAT TO RESEARCH NOW:**

From this source it has enabled to me see the gaps in my research. These gaps can be filled with more secondary internet and journal sources, but will also help me to design my interview questions

* Does the use of a brace have any impact on the rate of recovery or is there no advantage to recovery time?
* What happens if a patient begins strength training before gaining ROM? Will this impact their rate of recovery?

**KEY FINDINGS:**

* The success of a patient’s recovery is based on several factors including surgical technique, graft section, prevention of postoperative complications, patient compliance and postoperative rehabilitation.
* Postoperative rehabilitation regimen must be guided by principles such as the early return of knee range of motion (ROM), especially while maintaining homeostasis in the knee joint
* Patients who opt for surgical reconstruction of the ACL can expect restored stability of the knee and return to pre-injury levels of activity
* The rehabilitation process for patients undergoing ACL reconstruction is multifaceted and it includes patient education, pain control, edema management, ROM, strengthening exercises, gait training, agility drills, sport-specific drills, proprioception, and endurance exercises.
* 0 – 2 weeks: the emphasis is placed on patient education, edema and pain control, early protected weight bearing, and ROM. To decrease the risk of arthrofibrosis and extensor mechanism dysfunction, full extension (equal to that of the uninvolved knee) and 90° of flexion should be achieved by 7 to 10 days following surgery
* The use of a brace is recommended to assist in achieving full extension
* Once motion has been restored and knee homeostasis has been controlled, strength training can be progressed as tolerated
* It is crucial to initiate exercises once pain and swelling is controlled

This was one of two types of interviews that I conducted, designed specifically for surgeons and physiotherapists, for when I needed deeper information on my topic or when I needed new leads. I started off my email saying who I was, and why I was contacting them. This interview was emailed to many different surgeons, but I also gave them the option for a face to face interview if that was preferred. I actually received a lot of answers from many different surgeons, all of them happy to talk to me about this subject!

**CAPABILITY DEVELOPED:**

When writing and conducting my interviews I further developed the ethical understanding capability because I needed to be careful in what questions that I asked because some may be too personal or bring up bad feelings from the surgery. One question that I did ask was how long did you take to fully recover from your ACLR physically and mentally, and that was a very challenging question for the people I asked to answer. It was hard for them to admit to me that they still struggled getting out there and playing sport for fear of reinjury.

Hi (INSERT NAME)

My name is Ellanie Stone and I am a year 12 student at Heritage College. I am currently completing my Year 12 Research Project. I am emailing you for information in regard to your experiences with full knee reconstructions and in particular ACL injuries. If you have time, I would love if you could answer the following questions.

The questions that I have in relation to my Research Project are the following:

* How long did you take to fully recover from your ACLR (in your opinion)?
* What treatments did you undertake after surgery, for example physio, hydrotherapy, brace, icing ect.?
* How long did you wait between tearing/rupturing your ACL before you got surgery?
* What level of fitness did you have before injuring your ACL? Did this impact your recovery rate (in your opinion)?

Any extra information you might have that would be relevant to my research question “What are the most effective therapies to recover quickly from an anterior cruciate ligament rupture?” would be very appreciated.

Thank you so much, Ellanie Stone

This was one of the second interview that I conducted, designed for people who have previously done their ACL, and what techniques that they used to fully recover. I also asked them how long they thought it took to get fully recovered to compare their answers to the surgeon. I talked to a lot of people about my research project which I enjoyed because I could connect with a lot of different people of all ages, genders and races. This also helped me to further the depth of my research and narrow down the topics that I need to further explore.

SOURCE TYPE - INTERVIEW PLANNING

**The following questions that are in my interview and why those specific questions were chosen.**

How long did you take to fully recover from your ACLR (in your opinion)?

* This question shows me how quickly individuals who have undergone an ACLR think they recovered compared to the professional’s answers.

What treatments did you undertake after surgery, for example physio, hydrotherapy, brace, icing ect.?

* This will also give me more potential areas to research more into, hopefully leading me to more reliable therapies that actually work

How long did you wait between tearing/rupturing your ACL before you got surgery?

* This helps me to answer the second part of my question because if there is an inverse relationship between the length of time between injury and surgery and surgery and recovery rate, this will explain.

What level of fitness did you have before injuring your ACL? Did this impact your recovery rate (in your opinion)?

* This also shows whether fitness level impacts your rate of recovery as opposed to an unfit person trying to recover.

Hi (INSERT NAME)

My name is Ellanie Stone and I am a year 12 student at Heritage College. I am currently completing my Year 12 Research Project. I am emailing you for information in regard to your experiences with full knee reconstructions and in particular ACL injuries. If you have time, I would love your expert knowledge in this subject.

The questions that I have in relation to my Research Project are the following:

* How long in your estimation does it take for someone to fully recover from the surgery?
* What in your opinion is the best treatment to recover from knee surgery?
* How long is it recommended between the injury and the surgery?
* Are people’s recovery times different based on age, gender, fitness level and race?
* What are different therapies that you would personally suggest to clients

Any extra information you might have that would be relevant to my research question “What are the most effective therapies to recover quickly from an anterior cruciate ligament rupture?” would be very appreciated.

Thank you so much,

Ellanie Stone

**The following questions that are in my interview and why those specific questions were chosen.**

How long in your estimation does it take for someone to fully recover from the surgery?

* This question was specifically asked to see what time it was possible to fully recover from an ACLR. This gave me a rough timeline, that also helped me to tailor my next interview questions for people who have had an ACLR and their recovery time.

What in your opinion is the best treatment to recover from knee surgery?

* This questions effectively answered the other half of my question, seeing what a qualified and recommended surgeon would recommend. These questions would also allow me to research into new techniques if necessary.

How long is it recommended between the injury and the surgery?

* Although not directly related to my question, timing on when you get surgery may have a massive impact on a fast recovery from an ACLR. There also may be issues relating to timing that will also affect an individual

Are people’s recovery times different based on age, gender, fitness level and race?

* This question was also designed to see whether age, gender, fitness level and race would affect your rate of recovery. This question was also designed to see whether different races have a faster speed of recovery.

What are different therapies that you would personally suggest to clients

* This question was the final question that I asked, designed to completely answer my question and hopefully lead me in another direction for different therapies that I had not previously researched into.

**How long in your estimation does it take for someone to fully recover from surgery?**

Ability to do activities such as driving, usually about six weeks. If a person has a job that requires a lot of standing such as a nurse or teacher, they are usually off work for about three months. Lesser office work people may be able to get back to work earlier. As you already understand, I think return to sport usually takes of the order of 12 months.

**What in your opinion is the best treatment to recover from knee surgery?**

A graduated physiotherapy program as outlined in the brochures is the best way to recover. This would mainly focus initially on gentle range of motion exercises and strengthening exercises followed by physiotherapy guided return to activities in a graduated fashion

**How long is it recommended between the injury and the surgery?**

This depends on the amount of instability being suffered. Usually it takes a few months to figure out how much instability is present and can take longer before surgery is considered. Surgery is usually only considered in younger people and those who have sport as a major investment. Above the age of 50, ACL reconstruction is rarely done.

**Are people’s recovery times different based on age, gender, fitness level and race?**

People’s recovery times can depend on motivation and compliance with physiotherapy exercises ect. Those people who have generalised ligamentous laxity also have more difficulty in that their repair may stretch out with time. In general, most females have more ligamentous laxity than males. A good fitness level will enable a quicker and better recovery but smoking retards recovery and healing in general. Race probably has not much effect on recovery time.

**What are different therapies that you would personally suggest to clients?**

Many patients with ACL injury do not require surgical treatment especially if the injury has been less severe and the instability on examination is not so great. With appropriate conservative treatment with physiotherapy and strengthening exercise these people can manage their daily lives well but they may be at risk with running, lunging and jumping sports. Of course, even with an ACL reconstruction these patients are still at some risk with running and jumping sports as before and there is certainly a percentage of re-rupture that may occur both on the reconstructed side and also often on the other side.

**KEY FINDINGS:**

* Returning to sport, fully recovered will take around 12 months
* If someone has a job that requires a lot of standing (nurse or teacher) they are usually off work for around 3 months
* A physiotherapy program is the best way to recover, focusing on gentle range of motion exercises and strengthening exercises
* ACL reconstruction is rarely done for people over 50 years
* Patients with a minor ACL injury do not require surgical treatment and they can manage with physiotherapy
* There is a chance for a re-rupture of an ACL after they’ve had surgery

**COMMENTS FROM SOURCE**

These questions were specifically designed for my surgeon to answer because they each directly answer a different part of my research project question.

This source was extremely useful because it allowed me to further my knowledge and it answered all my questions

* **NOTES:** A person’s recovery time varies depending on motivation and compliance with physio exercises
* Race has no effect on recovery time
* Good fitness will enable quick recovery time.
* Does this mean that athletes can have ACL surgery straight away?
* **LEADS:** Look into ligamentous laxity and how it affects people – may affect speed of recovery

**CAPABILITIES AND SKILLS DEVELOPED:**

I developed my personal and social skill while sourcing this article because I had to reach out to my surgeon and ask him to fill in this survey. This also meant that I had to phrase my questions formally to show that I had a basic understanding and wanted more in-depth information about my topic.

It was difficult for me to organise a face to face interview with him but that is what I wanted because then if I didn’t fully understand something he said, I could ask him about it straight away rather than having to email him back.

I also developed my literacy skill because I wanted the surgeon to know that I had a deep knowledge on the subject through the way that I phrased my questions. This would also allow him to talk about the subject in-depth knowing that I would be able to understand what he was actually talking about. This meant that I had to research in-depth treatments, with the proper phraseology.

**IMPACT ON RESEARCH:**

This primary source has deepened my understanding of ACLR and the recovery process. The surgeon kindly provided more pamphlets on my topic, that will also help with the recovery understanding. The gaps in my research before have been mostly filled and I can now focus on contacting more primary sources, to get more relevant and reliable information. I will also be contacting my surgeon further, hopefully organising a one on one interview with him to ask him more questions nearer to the end of my research project.

SOURCE TYPE - INTERVIEW WITH SURGEON

**LINKS GAINED FROM THIS SOURCE/ LEADS:**

The surgeon included the following pamphlets in the letter I received:

* ACL Patient information
* ACL surgery information
* ACL reconstruction post operation exercises weeks 0-2
* ACL reconstruction post operation exercises weeks 2-6
* ACL hydrotherapy program

**WHAT I’VE LEARNT:**

People’s recovery times can depend on motivation and compliance with physiotherapy exercises. People with ligamentous laxity also have more difficulty with recovery because their repairs may stretch out with time. A good fitness level will also enable a quicker and better recovery. People who smoke will recover slower because it slows the healing.

**USEFULNESS AND LIMITATIONS:**

The information is all relevant because my questions were answered on the 13th of March 2019. This source was an interview sent to Dr Peter Viiret. Dr Peter Viiret is a founding doctor of Orthopaedics SA and has over 35 years’ experience specialising in knees, hips hand, wrist, feet and shoulders. With that much experience comes the ability to select the best treatment for whatever problem you may have. (Orthopaedics SA, 2019)

This primary source is very reliable because it is written by a surgeon answering my interview questions. Because of all of his experience his ideas may be outdated, but with experience comes reliability and knowledge. This source is very relevant to my topic because it gives valuable information to further my understanding of my topic and fills in many gaps from my preliminary information.

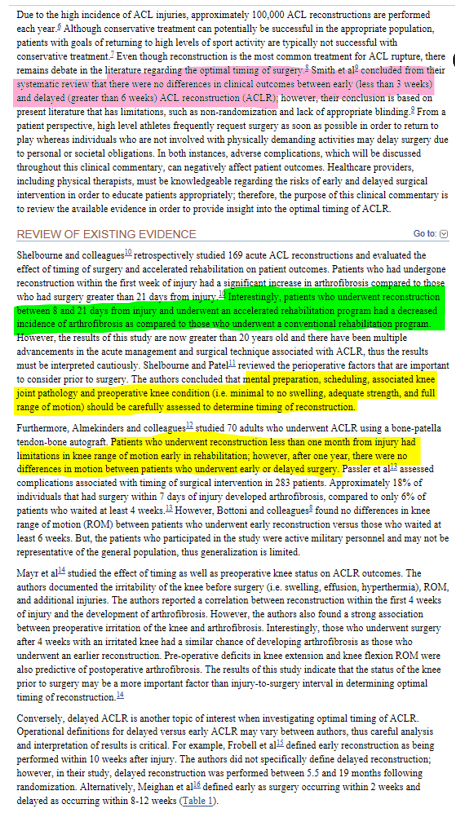
**WHAT TO RESEARCH NOW:**

From this source it has enabled to me see the benefits of primary sources. From this source I will be going to find some more reliable primary sources and design more interviews, potentially in different fields for example:

* Physiotherapist
* People recovering from an ACLR
* More surgeons

**CONCLUSION ON THIS SOURCE:**

I conclude that this source is very reliable and relevant to my topic. The surgeon that I contacted was very kind to take the time to answer my interview questions and send more pamphlets. This is definitely a turning point in my research project.



SOURCE TYPE – JOURNAL ARTICLE

**WHAT TO RESEARCH NOW:**

Because this article has answered my previous question, I am now curious to see whether the use of a brace before and after surgery is necessary and will impact the rate of your recovery.

This source did not answer my new question, but I now have a new lead into where I want to research into

**CAPABILITIES AND SKILLS DEVELOPED:**

When reading and analysing this source, I developed my critical and creative thinking capability because I had to read through around 30 pages of this journal article. There was a lot of unnecessary, irrelevant information that I had to discard before finding important information.

I also developed my literacy skill because I didn’t understand many of the words talked about in this article so I had to research into them and learn more about different problems affecting the rate of an ACLR and recovery.

**WHAT I’VE LEARNT:**

I have learnt that arthrofibrosis can affect range of motion, impacting an individual’s rate of recovery. I have also learnt that mental preparation is just as necessary as physical preparation before undergoing an ACLR.

**IMPACT ON RESEARCH:**

This source has fully answered one of the question of does waiting a long time before going in for an ACLR affect your recovery time. The answer is a solid no. This has allowed me to move into a different area of researching.

**LINKS GAINED FROM THIS SOURCE/LEADS**

This article has provided me with 25 links in the bibliography that they cited during the article. I can see where they got the relevant information from and this will allow me to get further useful information on my topic that will be reliable. This article is very useful as it has provided me with another article called rehabilitation of ACL injuries.

**KEY FINDINGS:**

* There are no differences with clinical outcomes between early (less than three weeks) and delayed (greater than 6 weeks) ACLR
* Patients who undergo reconstruction within the first week of injury had a significant increase in arthrofibrosis compared to people who had surgery greater than 21 days from injury
* Patients who underwent reconstructions between 8-21 days from injury and underwent an accelerated rehabilitation program had a decreased incidence of arthrofibrosis
* Mental preparation, scheduling, associated knee joint pathology and preoperative knee condition (minimal to no swelling, adequate strength and a full range of motion) should be assessed to determine the timing of reconstruction
* Patients who underwent the reconstruction less than one month from injury had limitations in knee range of motion early in rehabilitation but after a year there was no difference

**COMMENTS FROM SOURCE**

* DEFINITION: arthrofibrosis: complication of injury or trauma where excessive scar tissue response leads to a painful restriction of joint motion
* NOTES: this source was written in America, so the statistics will be a little different, but the facts should still be the same
* You need to consider the mental preparation not only the physical preparation
* No difference in clinical outcomes between those who waited between injury and surgery

**USEFULNESS AND LIMITATIONS:**

This article was extremely useful as it showed me a different perspective on timing of ACL surgery and that was an important This study was conducted over 20 years ago, so the results may have changed due to advancement in understanding and technology. The study also only used active military personnel’s, which may not represent the general public. This source was written by Stephanie Evans, Justin Shaginaw and Arthur Bartolozzi. Stephanie Evans is a physio therapist who has special interests in orthopaedic and sport physical therapy and specifically completes return to sport testing on individuals following ACLR (Ariahealth.org, 2019). Justin Shaginaw is a physical therapist and athletic trainer, working with athletes of all levels (Justin Shaginaw PT, DPT, LAT, ATC, 2019). Arthur Bartolozzi specialises in arthroscopy, ligament reconstruction, and total knee replacement for the treatment of ACL injuries. He is a leader in sports medicine and joint replacement (Findadoc.ariahealth.org, 2019). The information above proves that this article is fairly reliable because it is written by two physio therapists and a surgeon. This article is also very relevant to my topic because it adds another dimension to my question. This article is also fairly reliable and relevant to my topic, increasing my knowledge on this subject. This articles limitation includes that the date when it was written hasn’t been included meaning the information may not be up to date.

**CONCLUSION ON THIS SOURCE:**

I conclude that this source is fairly reliable because it is written by three people who are all experts on this subject. This means that I can add weight to this source and use it in my outcome.

**WHAT TO RESEARCH NOW:**

After talking two these two people about their experiences with ACL injury and reconstruction, I realised that everyone will recover at different speeds using different methods that work for them. This led me to think that maybe there isn’t one method that will help everyone recover quickly. I will research more and see if my hypothesis is correct.

**CAPABILITIES AND SKILLS DEVELOPED:**

When conducting these interviews, it allowed me to develop my critical and creative thinking capability because I had to come up with unique ways to ask the same question, in order to get as much detail as possible from each of the interviewees. This helped me to think outside of the box and really understand my audience before making up questions for them, because each person I interviewed had a different interpretation of the questions, so I had to ask further guiding questions.

I also developed my personal and social skills because I had to go and find and talk to people who had previously injured their ACL. This was very hard for me because I don’t really like talking to people who I don’t really know or aren’t very comfortable with them.

**WHAT I’VE LEARNT:**

I have learnt that while you may be physically ready to play sport, you need to mentally prepare yourself as well. I also learnt that while you may have injured your ACL a long time ago, you will always fear a reinjury, but this can be combatted by always doing the exercises that the physio set and strengthening the muscles around the knee, so chances of reinjury are low.

**SOURCE TYPE:**

INTERVIEW WITH TWO PEOPLE WHO HAVE PREVIOUSLY INJURED THEIR ACL AND UNDERGONE SURGERY

How long did you take to fully recover from your ACLR?

Physically I still haven’t fully recovered because I had the reconstruction in August last year. Mentally its still hard because I can’t play sport, but it got better after 3 or so months because I could walk normally then.

What treatments did you undertake after surgery for example physio, hydrotherapy, brace, icing ect.?

Used a brace for about 2 weeks after surgery and have been doing physio ever since. Did icing for a few months after as well.

How long did you wait between tearing/rupturing your ACL before you got surgery?

About three months because I didn’t want to miss out on holidays

What level of fitness did you have before injuring your ACL? Did this impact your recovery rate (in your opinion)?

I was pretty fit beforehand, I did rugby and cricket. I think it would have made the recovery easier expect because I waited three months for the surgery I lost a lot of that fitness, so it didn’t help as much as it could have. I was doing some prehab exercises during that time which helped a bit

**CONCLUSION ON THIS SOURCE:**

I conclude that this source is mainly reliable, and I can use it to compare to all my other primary sources. I may check this information against my other interviews to see how they match up. This was two interviews that I conducted with two people who had previously done their ACL and undergone an ACLR. This was a very useful source because it confirmed most of my preliminary information and allowed me to ask any questions that I wanted to further fill in the gaps in my research project.

**USEFULNESS AND LIMITATIONS:**

These sources are very useful as they provide firsthand information to a specific period in their life. It is also very easy for me to get information out of people who aren’t specialists in this area because they can talk freely about their experience and not have to worry about patient privacy or getting sued for the information that they gave me. The surgeons I interviewed were hesitant because they didn’t want me to publish the information anywhere. There are limitations however to using primary sources is that they may have deliberately withheld some information because they didn’t want to say because it was too personal, or they may have lied to give me the answer they thought that I wanted.

These questions were specifically designed for people that have had an ACLR. This means that they can answer these questions from their experience. They also each directly answer a different part of my research project question.

This source was extremely useful because it allowed me to further my knowledge and it answered all my questions

* NOTES: A person may be physically recovered but may still be mentally concerned about reinjury
* Fitness didn’t really impact his recovery period because he lost his fitness level due to sitting around for 6 months
* Intense physio, hydrotherapy and sitting down and resting whenever possible.
* The amount of time between the surgery and the operation doesn’t really matter
* The hardest thing about the operation is not being able to play sport, whether competitively or for social reasons.

**KEY FINDINGS:**

* Someone may not return to sport when they are physically able because they are mentally scared of a reinjury
* This may also slow down rate of recovery because the patient may not be willing to recover quickly
* This individual underwent a solid physio program along with hydrotherapy to speed his recovery time
* This interviewee made an excellent point stating that your muscles will shrink due to inactivity.

How long did you take to fully recover from your ACLR?

At 8 months I was fully recovered and was running normally and could play sport fine. It wasn’t until about 11-12 months before I was mentally prepared to play sports again though because I was scared of reinjuring my knee.

What treatments did you undertake after surgery for example physio, hydrotherapy, brace, icing ect.?

I underwent physio 2-3 times a week for 8 months, had hydrotherapy once a week for 4 weeks, generally resting and sitting down whenever I could and had occasional check ups with the surgeons every 3 months.

How long did you wait between tearing/rupturing your ACL before you got surgery?

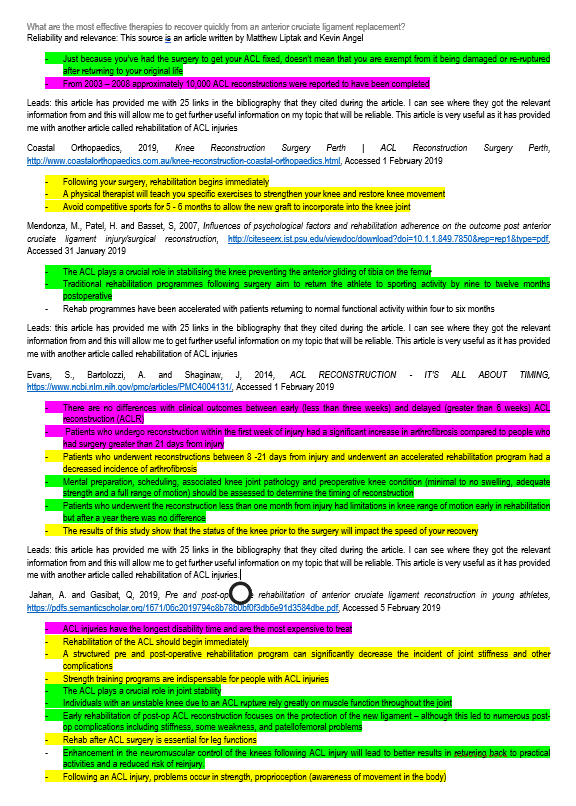
I had three weeks between the injury of my ACL and the surgery. When it first happened, I wasn’t aware, and the emergency room couldn’t tell and couldn’t be bothered to scan it. Two weeks later my knee collapsed, and we went and had scans done and had it operated on a week later!

What level of fitness did you have before injuring your ACL? Did this impact your recovery rate (in your opinion)?

I say my fitness before was pretty good I was playing basketball once a week and going on 4-5km runs most nights. I was pretty fit. I would say that it didn’t help me that much as 6 months not doing much, you lose fitness pretty fast. It helped me in the way that I wanted to get better quicker as I wanted to play sports with everyone again.

A screenshot of a cell phone

Description generated with very high confidenceA screenshot of a cell phone

Description generated with very high confidenceA screenshot of a cell phone

Description generated with high confidence

A major positive I found when compiling my key finding was that I could compare my primary sources, both surgeons and physiotherapists with the less reliable internet sources. This helped to confirm all the facts collected and making sure they were true and reliable. This will also help me with my outcome because I will be able to present reliable information, and correctly answer the question of ‘What are the most effective therapies to recover quickly from an ACLR?’

When cross referencing all my sources I was also able to answer the question I had asked in my ‘where to from here’ textbox. This also gave me further understanding and depth of knowledge on my topic. When cross referencing my sources, I also answered the following questions.

Which sources will you give the most weight to because they are the most reliable?

I will give the interviews the most weight, because they were all conducted at different times during my research project timeline, and this allowed me to confirm information from other secondary sources. Also, all of my interviews were conducted with surgeons with varying levels of experience, which meant they were more reliable than just a random person on the street.

What conclusion or conclusions can be drawn from several or all of the sources?

I conclude that all my sources included in this folio, and in my cross-referencing, document are all reliable and they all present the same information. This was checked by specifically looking up different facts that seemed untrue and confirming all the secondary information with the surgeons and physiotherapists that I talked to, to make sure that my folio and outcome were made up of correct information.

What information is common to several or all sources and what conclusion can be drawn from this evidence?

The information that is common is that all my primary sources agree that while the use of a brace may help an individual patient, it is not a 100% reliable therapy to recover quickly from a knee reconstruction. This also proved to me that all surgeons prescribe different therapies for their patients, for example brace or no brace, crutches or no crutches, weightbearing or not weightbearing. This showed me that they are not crucial therapies to help you recover quickly, but to make the patient more comfortable.

To what extent do all the sources resolve the various aspects of the question

The following sources have all helped me to resolve the two parts to my question, and they allowed me to get a deeper knowledge on my topic.

Interviews:

* Effectiveness: when conducting my interviews, it really increased my knowledge and understanding of my research project because I was able to ask personal, in-depth questions that I had tailored to each individual that completed my survey. Overall, I conducted about 15-20 interviews with a variety of people including surgeons like Dr. Peter Viiret, physios and members of the general public who have injured their ACL and had undergone a reconstruction for it.
* Capabilities: when conducting my interviews, I developed my critical and creative thinking capability because I needed to be able to ask relevant, useful questions that would help to direct my research project and answer and questions I had after reading preliminary information on my topic. I also needed to find different methods of interviewing people, from

**SYSTEMATIC REVIEW:**

Cross referencing and Organising Key Findings:

When compiling all of my key findings into a word document I noticed many similarities between what each internet and journal article were saying. This helped to confirm that the sources used were mainly reliable and had reliable and relevant information to my topic. The sources were organised in alphabetical order, with key findings and reliability and relevance under each source. This also showed me what sections I needed to further research into. By referencing at the top of each article with the key information underneath this will make it easier when writing my outcome to reference and give credit to the authors of the information.

When organising my key findings, I used a unique highlighting system which enabled me to tell at a glance what information was useful to which part of the question (see screenshots below). This will help me when writing my outcome because I will be able to easily access relevant information.

* Yellow: was used to find information related to recovery success
* Green: was used to find information related to the rehabilitation processes
* Pink: was used to find interesting facts for the start of my outcome
* Blue: was used to find leads and links to further information and authors

I also included pictures portraying different exercises because it enabled me to see and try out a range of different exercises. This also allowed me to save space because they explained different techniques and exercises without using lots of words (see left). When writing my outcome I will also sketch some potential exercises for patients who have undergone ACLR, to demonstrate how to properly do the exercises, and show them what it should look like.

reading preliminary information on my topic. I also needed to find different methods of interviewing people, from face to face, to email, to setting up a meeting. This was quite a challenge for me because I wanted to have all face to face interviews because that would allow me to ask any extra questions that I had straight away as opposed to emailing back and hoping for a response. I also developed my ethical understanding capability because I had to very careful of what questions I asked individuals who had done their ACL because as discovered in my folio above, some people still may not play sport although they are in peak physical condition because their mental condition isn’t as strong. I discovered than many people are very scared of reinjuring themselves, which means they hold back from playing certain sports or just avoid all sports.

Videos:

* Effectiveness: when watching different videos, I needed to be careful of who the video was created and published by. It was very easy for people to make a video on ACL reconstructions, but the information contained in the video may not have been reliable. I used videos near the start of my research, which refining my question because I was then able to check the facts with more reputable sources and see if they matched up. Videos were very useful to my research project because they presented mainly reliable facts in an easy to remember format. It also helped because I got most of my physio tips and exercises from videos explaining how to do them properly.
* Capabilities: I used the critical and creative thinking capability when watching videos because it allowed to me see the same information just presented in a different way. This gave me further understanding of my topic and allowed me to enjoy part of my researching! I also had to be very critical with the information presented and not take everything as 100% reliable fact, meaning I had to write down any facts presented that I wasn’t sure about and double check with my interviews and further internet research. The use of videos allowed me to think about my outcome and how I would present my facts in a creative and interesting way, as opposed to another essay or journal article.

Books and Journals:

* Effectiveness: books and journals were the main sources that I used when completing my research project folio. They provided me with reliable, relevant information that I could use and trust. All the journal articles that I looked at had more than one author, which meant they were more reliable because with all these specialists and surgeons writing, the facts were going to be mainly very reliable. A negative to using books and journals was that most were published around 2005, which means their information was slightly out of date, but didn’t really impact my research because the information has not drastically changed between then and now.
* Knowledge and skills developed: I had to develop my IT skills because to find my journal articles I had to use the state website, and that is very difficult to navigate and is always crashing. I learnt how to use google effectively, by using certain key words, punctuation marks and just using google scholar. I also had to develop my literacy skill all throughout my research project, because my subject is medically related, this means there were a lot of complicated medical procedures and ligaments/body parts that I had no idea what they were. This really increased my knowledge in the area surrounding the knee, the ligaments inside the knee and potential issues surrounding ACL reconstructions (for example arthrofibrosis).

potential issues surrounding ACL reconstructions (for example arthrofibrosis).

Internet articles:

* Effectiveness: I used internet articles to complete my preliminary research and I didn’t give much weight to the information given. The internet was also very useful to check up on information, confirm minor basic information and help to shape my research project. The internet was also useful because it helped me to source different journal articles and videos, enabling me to find more secondary sources. I was also able to contact many surgeons and physiotherapists that I found on the internet.
* Knowledge and skills developed: when using internet articles, I developed my ethical understanding skill because most of these internet articles were personal stories of people snapping or severely injuring their ACL and it was actually really hard for me to read about how this injury affected their life not only physically but mentally. This helped me to empathise with them because i understood what it felt like and I knew what they were going through to a certain degree.

**Primary sources:**

Primary sources were very useful when conducting my research project because they allowed me to confirm other less reliable secondary sources. They also gave me access to more information as I spoke to many different surgeons, of varying experience. This also allowed me to see how they conducted the operation, and how their results varied through use of a brace and crutches.

Using primary sources was like conducting a case study because I was able to interview many people who had undergone ACLR about their recovery times, what they did, and treatments that they underwent to get back to full recovery. This helped me to refine my question and allowed me to fill any gaps that I had in my research project folio.

I had to be very careful when using primary sources, because they may be bias because they might omit information on purpose, and because it is only one person answering the interview it is only from their point of view and experience.

**Secondary Sources:**

Secondary sources were useful in my research project because they gave me the basic information I needed to write my interview questions for my specialists and gave me a variety of information that I could use. Secondary sources would also reflect the author’s point of view and may include bias. Secondary sources are an interpretation of primary sources, so each source is only as reliable as the author.

**CONCLUSION ON SOURCES:**

I conclude on the sources below that they are fairly reliable and relevant to my topic. While some of the sites included my not be very reliable, the information that displayed was checked against more reliable secondary and primary sources, and their information was the same. Reliability was judged by taking into consideration the author, their credentials and cross referencing my information.

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