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# The Effect of Psychological Response on Recovery of Sport Injury: A Review of the Literature

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The effect of psychological response on recovery of sport injuries:

A review of the literature

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A Synthesis Project

Presented to the

Department of Kinesiology, Sport Studies, and Physical Education

The College at Brockport

State University of New York

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Education

(Athletic Administration with Certification)

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by

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May 10, 2018

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The effect of psychological response on recovery of sport injuries:

A review of the literature

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*Abstract*

This synthesis highlights the effect that psychological response can have on an injured athlete's recovery process. More specifically, the literature review examined evidence-based, peer-reviewed research that looked at social support and psychological skills, emotional and psychological evaluation and stressors, and unique issues involving concussions and anterior cruciate ligament injuries. The results showed that social support is a very important part of the process in helping athletes return to play and psychological skills can be used effectively to help the recovery process and prevent future injury. Athletes can suffer any one of a number of negative psychological stressors at any point during the recovery process, and athletes can help speed up their recovery process by maintaining positive thinking and adhering to their specific rehabilitation program.

*Keywords: Athletes, injury, athletic injury, psychological recovery, concussion, anterior cruciate ligament, return to play, psychology, athletic trainer.*

## Chapter 1

### Introduction

“Experiencing an injury is one of the most traumatic things to happen to an athlete, yet no athlete is immune to injury despite experience or ability” (Lattimore, 2017, p.17). Few people play a sport for any length of time without experiencing an injury. With injury as prevalent as it is in sports, there is still not a lot of research on the emotional side of the injury and recovery process (Mainwaring, Bisschop, Green, Antoniazzi, Compel, Kristman', Provvidenza, and Richards, 2004), although there is a great deal of research on the physical recovery process. Many of the injuries suffered by athletes can be comparable when it comes to the physical recovery side of things, yet some athletes never make it back onto the field even after they've physically healed. What makes things so different for each athlete?

When an athlete goes through an injury they not only have to physically recover but they have to go through a psychological recovery process as well that can be very stressful. “Athletes' reactions to sport related injuries extend beyond the obvious physical responses” (Mainwaring et al, 2004, p.119). Athletes can experience depression, anxiety, stress, etc. These stressors have been known to be common when an athlete suffers a concussion but can become a problem with musculoskeletal injuries as well.

There are a lot of different injuries that an athlete can experience. It can be something as small as a sprain that isn't healing properly or something as serious as a concussion or an anterior cruciate ligament (ACL) tear which would require surgery to correct. As many as two-thirds of athletes who suffer an ACL tear are not back at their pre-injury level at the twelve

month point of the rehab process (Ardern, Taylor, Feller, Whitehead, Webster 2013). There are also injuries that may not require surgery but are still very serious. One of the most important non-surgical injuries to understand is suffering a concussion, yet most of the research has been limited to musculoskeletal injuries (Mainwaring et al., 2004). Over the past decade or so, concussions have become a significant health concern to the public because even though the awareness is up, research is still suggesting that there is an underreporting of symptoms still going on (Asken, McCrea, Clugston, Snyder, Houck, Bauer 2016).

A big part of the psychological recovery process is the social support that an athlete can get from a number of different people and places around them. Athletes going through an injury can receive social support from their coaches, teammates, athletic trainers, physical therapists, friends, and family. Previous studies have indicated that social support is a huge resource for athletes that are recovering from an injury (Yang, Schaefer, Zhang, Covassin, Ding, Heiden 2014). “However, no previous authors have prospectively assessed the change in social support patterns before and after injury” (Yang, Peek-Asa, Lowe, Heiden, Foster, 2010, p.310). Social support can be a major factor as to whether or not an athlete makes a successful return to play in the proper amount of time for the physical injury to heal.

This paper will focus on the different types of injuries many athletes experience with particular emphasis on musculoskeletal and mild traumatic brain injury (MTBI)/Concussion. In addition the paper will explore the psychological skills most important to help athletes recover from either type of injury. The impact of social support will be considered as part of the psychological skills. The review will look at the different injuries and explore the emotional impact of injury and the psychological process that an athlete goes through after a sport related injury. The review will look at the emotional symptoms associated with an injury and ways to

help get through the post injury emotional recovery. The paper will also explore social support from athletic trainers, physical therapists, etc, and even look at some psychological skills that may help an athlete stay on their recovery path.

### **Statement of the Problem**

Two athletes can suffer the same sport related injury but have completely different time tables and responses when it comes to returning to their pre-injury status. So if the injuries are the same, what causes the two athletes to have such a different recovery time and result? Athletes can suffer from depression, anxiety, lack of self-esteem, etc, after suffering an injury in addition to everything physical that they have to go through. Understanding the mechanisms at play in the all-important emotional response and recovery to injury may be helpful to injured athletes and their coaches.

### **Purpose of the Study**

This paper will focus on the different types of injuries many athletes experience with particular emphasis on musculoskeletal and mild traumatic brain injury (MTBI)/concussion. In addition the paper will explore the psychological skills most important to help athletes recover from either type of injury. The impact of social support will be considered as part of the psychological skills. These research questions were used as focal points for this review:

1. What are the psychological effects of injury in sport?
2. How do the psychological characteristics of individuals contribute to an athletes' response to an injury?
3. What types of interventions are available to injured athletes?
4. What factors contribute to successful/unsuccessful return to play?

5. When and how should psychological issues be addressed when an athlete is injured?

### **Operational Definitions**

ACL- Anterior Cruciate Ligament

MTBI- Mild Traumatic Brain Injury

AT- Athletic Trainer

PT- Physical Therapist

### **Assumptions**

For the purposes of this review, the following assumptions were made:

1. Literature was exhaustive and comprehensive.
2. The researchers used valid and reliable tests and instruments.
3. Athletes were truthful in their answers to any interview questions.
4. Athletes were receiving appropriate physical post-injury care.

### **Delimitations**

For the purposes of this review, the following delimitations were applied:

1. All studies have been published in a scholarly journal after the year 2000.
2. All studies in the critical mass were peer-reviewed.
3. All studies if done in another country are available in English.
4. All participants in the study had suffered either an MTBI or a musculoskeletal injury.

5. Athletes ranged from high school students to recreational and competitive athletes. Professional leagues were excluded while college athletes were included.

### **Limitations**

For the purposes of this review, the following limitations were applied:

1. Majority of sample sizes were small, but still deemed helpful.
2. In some studies, football players were overrepresented causing the results to possibly not generalize well with other sports.
3. Some gains during recovery may be less if they are suffering from a less extensive injury.
4. Examining changes in emotions for coaches and health care professionals involved in the process should be done as well to help facilitate the process.

## Chapter 2 – Methods

This purpose of this chapter is to review the process that was used to investigate the psychological process that an athlete goes through after they suffer a sport related injury. The State University of New York The College at Brockport's Drake Memorial Library was the main source that was used to do my search. The EBSCO Host database provided for the Kinesiology, Sports Studies, and Physical Education Department by the library was utilized for this review. Within the EBSCO Host, SPORTDiscus, Academic Search Complete, Education Source, and Psychology and Behavioral Sciences Collection were searched. From these databases, ten articles were found to support to support the purpose of this study.

The criteria for the search included articles that were peer reviewed, data-based, published between 2000-2018, and had to be published in an academic journal. To find the research studies and articles relevant to the research questions, I chose certain keywords and phrases were chosen. The following were the identified keywords: *Athletes, injury, athletic injury, psychological recovery, concussion, anterior cruciate ligament, return to play, psychology, athletic trainer*. Once the keywords were identified, they were used as a different number of phrases and in different combinations. They were used as two, three, and four word phrases. The combinations included: 1. "*Athletes AND Injury AND Psychological Recovery*," 2. "*Athletes AND Concussion*," 3. "*Athletes AND Concussion AND Return to Play*." 4. "*Athletes AND Anterior Cruciate Ligament AND, Return to Play*," 5. "*Athletic Trainer AND Injured Athletes AND Psychological Recovery AND Social Support*." This process was repeated until the research had been exhausted. In some cases, there were articles and studies that had appeared with more than one combination of keywords, indicating repetition of the same articles appearing the search, a sign of a thorough review.

For all of the searches, the same four databases that had discussed with Jennifer Kiegler when at the beginning of the initial search. From these four databases, ten articles were found to use for this synthesis that fit the criteria that had been set. These four databases were SPORTDiscus, Academic Search Complete, Education Source, and Psychology and Behavioral Sciences Collection. Each of the phrases used turned up a number of different articles and some of them came up more than once for each of the different searches.

The phrase used for the initial search was *Athletes AND Injury AND Psychological Review*. This search turned up 141 articles, once the criteria were added so that any articles found would fit this review there was a total of 40 articles still left. Of these articles, 22 of them were from Academic Search Complete, ten of them were from SPORTDiscus, six were from Education Source, and two were from Psychology and Behavioral Sciences Collection. After looking through these, four articles were chosen to be a part of this review. Two of these articles were chosen from SPROTSDiscus and the other two were chosen from Academic Search Complete.

Another search that turned up a number of articles was *Athletes AND Concussions*. This initial search brought up over 1,000 articles which is too much to look through so I added to the search which made it *Athletes AND Concussions AND Return to Play*. Once this was added and all the criteria were put in 85 articles were found that would fit this review. Of these articles, 42 were from Academic Search Complete, 25 were from SPORTDiscus, and 18 were from Education Source. For this particular search none came up from Psychology and Behavioral Sciences Collection. After reviewing the 25 from Academic Search Complete, two of them were chosen to be a part of this review. For the criteria any injury that took a player out of their sport for a length of time was acceptable. The articles also had to discuss what happens to an athletes'

mood and/or mental state during the recovery process

The last two searches still included articles from all four of the databases that I had chosen to search from in the beginning of finding articles. The keywords used were *Athletes AND Anterior Cruciate Ligament AND Return to Play* were used and generated 117 articles, of these articles 1 of them from SPORTDiscus was chosen and used in the critical mass for this review. The final search that I did was *Athletic Trainer AND Injured Athletes AND Psychological Recovery AND Social Support*. From this search 54 articles were generated and 3 of them were chosen to be in the critical mass. Of these articles, one of them came from SPORTSDiscus and the other two came from Academic Search Complete. To narrow down these articles, they needed to discuss. To narrow down these articles they had to discuss the different types of social support that an athlete could receive and if it helped an athlete with their return to play. The articles also needed to show if an athletes' return to play is affected by the psychological process.

From all of the different searches that had been conducted a total of 10 articles had been chosen to be in the critical mass for this review. These articles were posted in a variety of journals such as the Journal of Athletic Training, Sport and Exercise Psychology Review, The American Journal of Sports Medicine, Women in Sport and Physical Activity, Research in Sports Medicine, and Journal of Sport Sciences.

The articles included in this synthesis were all qualitative and gathered their data using questionnaires, surveys, one on one in person semi-structured interviews. For the questionnaires and the surveys the athletes would answer questions to see if they would be eligible for the study. Once they were deemed eligible, they would complete at least one more asking them about how they felt mentally and emotionally about the recovery process. For the semi-structured

interviews, athletes would begin an interview and the direction of the interview would be steered in a direction based on the answers given by the athlete. Different software were used to decode and group participants based on their questionnaires as well as the different groups decided upon by the researchers at the beginning of the study. Some the surveys were done in person and some of them had been emailed or mailed to the participants. The sample sizes of all of these studies ranged from the smallest being 1 participant that was an athlete and the largest sample size being 665 participants that were AT's and PT's. The timeline of the studies ranged from being a couple of weeks long to as long as over a year.

### **Chapter 3 Review of the Literature**

The purpose of this chapter is to review the literature that looks at the psychological process of what happens to an athlete after they suffer a sport related injury. More specifically, this chapter will review and explain how an athlete feels emotionally after suffering an injury and ways that they can help themselves cope with what happened, different injuries that an athlete can suffer from and the impact various injuries can have on an athlete. This review will break down the studies into three different sub-categories. They are: social support and psychological skills; emotional and psychological evaluation and stressors; and concussions and anterior cruciate ligament injuries.

In all of these studies the athletes all suffered from a sport related injury whether it was a musculoskeletal injury or a mild traumatic brain injury (MTBI). Each study looks at what the athletes think of the injury and how they feel about what has happened to them. They look at how an athlete feels about their ability to return to play. The studies will also look at where athletes get their social supports from and how professionals in the field, such as athletic trainers and physical therapists, feel about psychological support in the recovery process. In some specific incidents from these studies, there is discussion about the emotional toll that can be taken on an athlete when they suffer a concussion. Or they may look at some psychological skills that athletes can practice and work on to help with the psychological process if they are unfortunate enough to suffer a sport related injury.

#### **Social Support and Psychological Skills**

Having the right social support is an immensely important piece of the puzzle when it comes to recovering from a sport related injury (Yang, Peek-Asa, Lowe, Heiden, Foster 2010).

This can come from a number of different people. People such as friends, family, teammates, coaches, etc. But one of the biggest providers of social support for an athlete is the athletic trainer. Although there have been several articles that have looked at social support networks, few have looked at the role of the athletic trainer in providing social support to an injured athlete (Yang et al, 2010).

The objective of this study was to investigate the social support patterns of male and female injured athletes. They examined these in both the pre-injury and post-injury state. For this study, a total of 260 collegiate athletes, all from the same BIG 10 conference school, were chosen. To become a part of this study all of the athletes completed a survey which ended up excluding four of them, so for the study there were a total of 256 participants. Of the participants, 92 of them sustained an injury during their season.

To collect data, the team administered a baseline survey during a team meeting. The data collected included demographic characteristics such as, sports experience, history of injury, and satisfaction with social support. The athletes also completed a follow up survey once the season was completed, if an injury had occurred. Of the injured athletes, 42 of the results were used.

The results of the study indicated that the 42 injured athletes (23 men, 19 women), relied more on coaches, athletic trainers, and physicians for social support (Yang et al, 2010). This is compared to 96% of the athletes reporting on the baseline survey that they rely family for social support prior to an injury. The athletes also reported more satisfaction during post-injury from friends, coaches, athletic trainers, and physicians (Yang et al, 2010). Male athletes reported less satisfaction from their families while female athletes reported higher satisfaction from their friends in terms of social support.

This study shows that an athlete's pattern of social support changes after they sustain a sport related injury. Male and female athletes also reported different patterns in their pre-injury and post-injury surveys. The results of this study also show that it is important for the right type of social support to be available at different times during the process. An athlete's perspective changes during the process and so does where they expect to be receiving social support (Yang et al, 2010).

A similar study was done by Yang, Schaefer, Zhang, Covassin, Ding, and Heiden (2014) which examined social support received from athletic trainers during the injury recovery process. More specifically, researchers were looking at the symptoms of anxiety and depression at return to play. This study was also looking to see whether the athletes were satisfied or dissatisfied with the social support received from their athletic trainers and whether or not that satisfaction correlated with symptoms of depression and anxiety.

For this study, data was collected over a four year period. Three hundred eighty-seven athletes were chosen from a number of teams from two universities at the beginning of each sports season. Each athlete had sustained at least one injury during the period of the study. To collect their data, a baseline survey was given to approved and participating athletes. They were then given follow up surveys at the intervals of 1 week, 1 month, 3 months, 6 months, and 12 months depending on the length of the injury. The athletes were also given a survey 1 week after they returned to play regardless of the length of time away from their sport.

During these surveys, athletes were asked about where they received any of their social support and more specifically about the type of support they were receiving from their athletic trainers. Once these questions were answered, they were coded into four categories about

whether or not athletes were satisfied with the social support they were receiving. To look at depression and anxiety, the athletes were asked to assess the frequency of experiencing the 20 symptoms of depression as defined by the Center for Epidemiological Studies Depression Scale.

The results of this study showed that 80% of the athletes felt that their athletic trainer was someone that they could really count on when they needed social support during their recovery (Yang et al, 2014). In more than half of the injuries it was reported that the athletic trainers helped the athletes feel relaxed, that the trainers accepted them, and that they cared about them during the recovery process. Upon the athletes being able to return to play, 22% of the events resulted in the athletes feeling depressed and 28% of the events the athletes reported anxiety. There were no statistically significant differences in these reported symptoms and the athletes return to play whether they received support from their athletic trainer or not. However, athletes who reported being very satisfied or satisfied with the support from their athletic trainer were less likely to report these symptoms at return to play than an athlete who was dissatisfied with the support from their athletic trainer (Yang et al, 2014).

These results support the growing body of research that believes the social support from an athletic trainer is critical in the recovery of an athletic injury. The results of this study showed that support from the athletic trainer can be a very positive factor in an athlete's return to play, and also showed that an athlete is less likely to be depressed or feel anxious throughout the process when receiving positive social support from their athletic trainer.

From these studies it is clear that the support from professionals in the field, like athletic trainers and physical therapists is important to recovery, so Hamson-Utley, Martin, and Walters

(2008), conducted a study to see how the professionals in this field felt about psychological skills in injury rehabilitation.

The objective of this study was to examine how athletic trainers and physical therapists feel about mental imagery, goal setting, and positive self-talk to help improve the recovery process from a sport related injury. One thousand athletic trainers and 1,000 physical therapists were given a survey that contained 15 items measuring their attitudes about the above mentioned psychological skills. Once these surveys were taken they were broken down and recoded using a Likert Scale.

Three hundred nine athletic trainers and 356 physical therapists responded to the survey that was sent to them. The results of these surveys showed that both athletic trainers and physical therapists both felt positive about mental imagery helping the recovery process of an injured athlete (Hamson-Utley et al, 2008). Goal setting, positive self-talk, and pain tolerance. Physical therapists didn't feel negative about goal setting, positive self-talk, and pain tolerance, but athletic trainers felt much more positive about their help in the recovery process than physical therapists did.

While both physical therapists and athletic trainers had positive attitudes about psychological skills helping the recovery process of an injured athlete, athletic trainers held a much more positive attitude than the physical therapists did. It was also reported that AT's and PT's who already had formal training held a more positive attitude than those who hadn't received formal training on injured athletes using mental imagery but were intending on receiving the formal training.

The previously reviewed study showed that the professionals in the field such as athletic trainers and physical therapists hold positive feelings about psychological skills helping the recovery process of an injured athlete. But do these skills actually help with the process? Madrigal (2015) performed a study to try and help answer this question. She looked into skills such as goal setting, imagery, relaxation, and self-talk to see if they had any effect on the recovery process of injured athletes.

Skills were divided into goal setting, imagery, relaxation, and attention/focus. The author looked at previously done studies on all of these different psychological skills to assess whether or not they would be helpful for athletes to practice to help speed up their recovery process and whether these skills might help with injury prevention in the future.

The study found goal setting to be a positive technique in terms of helping with the recovery process. If the athletes selected both long and short-term goals that were clear, specific, and challenging, it was very helpful in an athlete's recovery process. "In research on imagery used with injured athletes, positive effects have been found for preventing future injuries, shortening recovery times, coping with pain, and enhancing self-efficacy" (Madrigal, 2015, p. 80). Positive imagery can help not only with the recovery process but it can be helpful with injury prevention in the future.

Another technique that this study examined was relaxation. One way to help with relaxation is to meditate, which will help clear the athletes' mind. Another method examined was deep breathing to help slow down the blood flow, relax the muscles. The assumption is that similar to some of the skills mentioned before it helps clear the mind. Another method or relaxation examined in this study was progressive muscles relaxation where the athletes relax

every part of their body in order to feel complete physical and mental relaxation. All three of these methods have been found to hold positive benefits in terms of injury recovery and injury prevention. The last skill focused more on skills for injury prevention. This skill was attention/focus. One of the aspects of attention was an athlete's mindfulness or their awareness of their inner states. Athletes should understand that they can't do everything and that they need to prepare for a game or a practice. When athletes were aware of these facts they were less likely to become injured. They also looked at pre-performance routine. When an athlete had some type of warm up routine or a personal pre-game routine that they stuck to religiously they were less likely to be injured because mentally, they felt like they were more prepared and therefore less likely to suffer an injury.

The results showed that in terms of injury prevention these skills can be used to help them refocus their attention and better manage their stress which can help them reduce their risk of injury (Madrigal, 2015). The results also showed that these skills can be helpful for injured athletes in managing their emotions while they are going through the recovery process (Madrigal, 2015), and according to a study done by (Ardern et al, 2013) maintain positive emotions can help an athlete have a faster recovery time.

### **Emotional/Psychological Evaluation and Stressors**

When an athlete suffers a sport related injury they go through a lot physically and emotionally. Lattimore (2017) sought to look into what an athlete goes through when they are recovering from a sport related injury and how the athlete feels about the recovery process along the way.

For this study, one athlete was chosen after suffering a serious knee injury as a collegiate basketball player. The athlete was interviewed and then the interview was audio-taped and transcribed to later be used for analysis (Lattimore, 2017). The interview began with a semi-structured interview but additional questions were added during the interview based on the answers that the athlete was giving. After transcribing the interview, there were 12 categories that appeared from the answers provided.

The categories that evolved from the interview questions were: immediacy and severity of the injury, initial reactions to injury, changes in self-perception, coping with various aspects of the injury, injury results in changes in personal relationships, lifestyle changes associated with injury, moving beyond self, fear is a fundamental aspect of injury, and injury results in personal growth and understanding. As shown from the interview, the injury was a process. At first the athlete didn't want to believe that he was injured and thought that he might be okay and not get any bad results from tests. When he first started his rehabilitation it was clear that he had lost a lot of self-esteem because he was a very active person. As a result of his injury, for the time being, his entire life had been changed.

The athlete also had to deal with the fear of re-injury when he was able to begin practicing and playing games again, which in turn could result in another injury. Throughout the

study the researcher found that the process was filled with a lot of emotional highs and lows. At first the athlete didn't want to accept that he was injured and that things were changing. Eventually, the athlete accepted that he was injured and once he had done this and kept his mind positive, he was able to go through the recovery process and return to his sport.

A similar study was done by Heredia and Ramirez Munoz (2004), looking at how the psychological responses of athletes can have an effect on the recovery process. Throughout the injury process an athlete's mood is going to significantly change a number of different times and in order to achieve optimum recovery from the injury. The athlete needs to adhere as much as possible to the rehabilitation process.

In this study, the sample group was comprised of 20 injured athletes who were treated and diagnosed at the Sporting Medicine Unit of the Clínica del Pilar, located in (San Sebastián, Spain). The athletes were amateur soccer players that ranged in age from 18-35 years old. Their injuries had to be recent and could not be relapses from a previous injury that had not been treated and healed properly.

The athletes had the chance to volunteer for this study when they went to the clinic for the first time. If they agreed, they completed two questionnaires and during this visit their estimated optimum recovery time would be established. There would also be a psychological assessment every time an athlete came in for a checkup. Once all the data was collected they were grouped into initial, intermediate, and final assessments, with the final assessments occurring when the athlete was deemed medically fit to return to play.

The results of the study were broken down into three different categories. The first was psychological response of athletes during the recovery period. The results showed that once the

recovery process began the athletes felt more and more negative but once they began to reach the end of this category they began to feel much more positive about being able to return to play. The second category of results was relationship between psychological response and recovery. The longer the period of recovery needed for the athlete, the greater the fear of possible re-injury. Once the athletes began reaching the end of their recovery they began to feel more positive again. The last category was differences in the injured person's psychological response in accordance with recovery. They found that those athletes who did not think that the injury was as serious as it was took longer to recover from their injury.

When an athlete goes through an injury, obviously there is a lot that they have to go through mentally and physically to get back onto the field. But one thing that doesn't get much attention is whether there is a difference in response to injury based on whether an athlete plays a team sport or an individual sport.

A study done by Evans, Wadey, Hanton, and Mitchell (2012) had two main purposes. The first was to look at the stressors that an athlete may experience while recovering from a sport related injury. The other was to see the difference in stressors experienced by a team sport athlete as compared to individual sport athletes.

To collect data, they had 10 participants, 5 were from a rugby team and 5 were golfers. These participants had to have sustained an injury in competition or during training and had to be removed from their sport for at least one day as a result of their injury. The athletes participated in a semi-structured interview. Ten interviews were done in total throughout the study and at different points during the recovery process.

The results of the interviews after being transcribed and coded showed that when an athlete is injured they experience different stressors at different points throughout the recovery process. At the onset of the injury they would often experience sadness about things like missed opportunities, a loss of independence, loss of routine, injury severity, etc. During the rehabilitation stage they experienced feelings like loss of fitness, concern with physical appearance, medical treatment, isolation, etc. Upon the return to sport stage they experienced fear of risk of re-injury, internal and external pressure, etc.

The second purpose of this study was to see the different kinds of stressors were experienced by team athletes and individual athletes. The results showed that during the injury onset phase individual sport athletes don't experience sadness related to missed opportunities, social comparison, and loss of independence. During the rehabilitation phase individual athletes don't really experience social comparison, loss of fitness, and performing at pre-injury level at the rate that team sport athletes do. And during the return to competitive sport phase individual sport athletes don't experience fears of risk of re-injury or loss of fitness like team athletes do (Evans et al, 2012).

It is clear that athletes experience different types of problems at different points in the recovery process. This information could be very useful because it could help outside people that help with the recovery process. If health professionals know specifically what an athlete could be dealing with at a given time then they may be better prepared for how to help along the way. Thereby, health professionals might be poised to help athletes even more during their recovery process which could also help them return to their sport faster.

## **Concussions and Anterior Cruciate Ligament Injuries**

Anyone that is a fan of professional sports nowadays knows that the word concussion is a very hot topic in the sporting world it is a serious injury. Another one of the most serious physically and emotionally problematic injuries is suffering an anterior cruciate ligament (ACL) tear. This section will describe some of the emotional/psychological factors impacting athletes with these types of injuries.

A study done by Mainwaring, Bisschop, Green, Antoniazzi, Compel, Kristman, Provvidenza, and Richards (2004) compares athletes who have suffered from a mild traumatic brain injury (MTBI) to athletes and undergraduate students who have not. The participants for this study included 16 athletes that had suffered a concussion, 325 non-concussed athletes that were teammates of an athlete who had suffered a concussion, and 28 undergraduate students who did not participate in any competitive school sports.

The data was collected by having every participant go through a baseline mood test that included medical and neuropsychological assessment. The concussed athletes were required to complete multiple assessments throughout their recovery process as well as the athletes who had not. The regular undergraduate students only did the pre and post-assessment tests.

The results of this study showed that the athletes that suffered a concussion showed a significant spike in depression, confusion, and total mood disturbance, but the elevated moods of all of the athletes had subsided within three weeks of the injury. Along with that, the athletes who reported their mood disturbances subsiding earlier throughout the process, they were able to return to the field on average a few days before other participants (Mainwaring et al, 2004).

A similar study done by Asken, McCrea, Clugston, Snyder, Houck, and Bauer (2016) looked what can happen to an athlete when there is a delay in the reporting of the concussion. Could this cause a longer recovery time for an athlete than it would be if it was reported immediately when it happens. For this study, the concussion had to happen during a practice or game and had to be supervised and diagnosed by a sports medicine clinician. There were a total of 97 athletes that were participants in this study.

The results of the study showed that 50 of the 97 athletes did not immediately report that they were suffering from symptoms of a concussion. So they were in the delayed reporting group. This group of athletes on average missed an extra 5 days of their sport than those athletes who immediately reported symptoms of a concussion (Asken et al, 2016).

The researchers felt that this is a result of the association between an athlete being removed from sport and the negative impact on psychosocial functioning. When an athlete continues to play after a concussion they can have increased inflammation and causing them to need a longer recovery time. If they have a longer recovery time it has an even higher negative impact on their psychosocial functioning (Asken et al, 2016).

The study showed that when an athlete doesn't immediately report that they are suffering from a concussion it can result in more time lost for their respective sport. One important thing that has resulted in this study is it shows that athletes should report their symptoms immediately. Athletes will sometimes try and hide their symptoms because of the pressure on them to play. (Asken et al, 2016). If they report their symptoms immediately instead of trying to play through it, it is likely that they will miss less time on the field.

The final study looked at one of the more common injuries that results in one of the lengthiest recovery times in terms of returning to play. The study done by Ardern Taylor, Feller, Whitehead, and Webster (2013) was to determine whether psychological factors could help predict an athlete's successful return to play within 12 months of ACL reconstruction surgery.

This study consisted of 187 athletes who suffered a torn ACL and had to undergo reconstructive surgery. The athletes after agreeing to participate completed a pre-operation questionnaire, a questionnaire at the four month mark, and an in-person clinical examination at the 12 month mark post-surgery.

The results of the study showed that 31% of the athletes had returned to their pre-injury level of participation at the 12 month mark. The other 69% were not at their pre-injury level when the 12 month post-surgery mark came about. Once they had this information they went back to the pre-surgery and four month mark questionnaires. Once these questionnaires had been broken down and recoded, the researchers found that a majority of the athletes who had a more positive psychological response during the pre-injury and 4 month mark of the process were the ones that had returned to their pre-injury level of participation at the 12 month mark. The athletes had a higher belief in themselves that they would be able to get through their rehabilitation and be able to get to return to their sport (Ardern et al, 2013). The results of the study showed that having a more positive psychological response can have a great impact on returning to play after suffering a torn ACL and going through reconstructive surgery. This information can be helpful because it could lead to other injuries being added to research to show that it is not just this one injury that positive psychological response has this effect on.

## Chapter 4-Discussion

The purpose of this chapter is to synthesize the results of the articles discussed in chapter 3 and answer the research questions that were posed in the first chapter. This section of the research will use the findings from the critical mass of articles in chapter 3 to answer the specific research questions asked that helped shape this research review.

### **Research Question #1: What are the psychological effects of injury in sport?**

The literature resulted in six articles that provided information on what the psychological effects of injury in sport are. One of the studies, *Stressors Experienced by Injured Athletes*, grouped the time period of injury into three different categories, onset of injury, rehabilitation, and return to play. Each of these different categories brings some similar stressors and some that are different. For example it was common in the onset of injury phase for an athlete to experience loss of independence and social isolation (Evans et al, 2012). In the rehabilitation phase athlete experienced more external pressure, internal pressure, and missed opportunities (Evans et al, 2012). Finally during the return to play stage, athletes felt more fear of re-injury and any rehabilitation setbacks (Evans et al, 2012).

Athletes can suffer from depression, anxiety, fear of re-injury, social problems, etc. Athletes having a negative psychological response to an injury often have a prolonged recovery time (Hamson-Utley et al, 2008). “The immediate consequence of a sporting injury is a period of inactivity, which gives rise to numerous adverse situations for both the sportsman or –woman” (Heredia and Munoz, 2004, p. 16). Both of these studies found that if athletes demonstrated positive emotional reactions throughout the recovery process that they would have a faster recovery time and an easier time in their return to play.

This is also true for when athletes go through injuries that can be as devastating as a concussion or a torn ACL. “Athletes' reactions to sport related injuries extend beyond the obvious physical responses” (Mainwaring et al, 2004, p. 119). Immediately after suffering from a concussion some athletes suffer from a big spike in depression but after three weeks or so this spike would dissipate and their belief in themselves would return (Mainwaring et al, 2004). Recovering from an ACL tear has one of the longest timelines when it comes to return to play. With a recovery time that takes a year, The American Journal of Sports Medicine (2013) found that if athletes have a positive outlook from the beginning they will reach their pre-injury level faster than those with a negative outlook and will have less fear when it comes re-injuring themselves.

Even when an athlete immediately knows that they are injured there is still a period of time where denial and depression can sink in. (Lattimore, 2017) conducted a study with one participant who suffered a knee injury. The participant immediately knew that something was horribly wrong when he fell to the ground. “I created distance between myself and everyone, without meaning to, because nobody could understand me” (Lattimore, 2017, p. 15). Once he had his diagnosis, depression set in. Once an athlete accepts the injury, they have to go through changes in their self-perception, coping with the injury, maybe have to change their lifestyle, and fear of re-injury when they return to play. When an athlete is recovering from an injury they will be filled with multiple emotional highs and lows (Lattimore, 2017).

During the recovery process these high and lows will be the result of a number of different stressors that an athlete will feel. These stressors can be felt across three phases of injury or just one of them (Evans et al, 2012). A stressor like depression can be felt at any point during the recovery process and can be at different levels for any given athlete. “Specifically,

creating a supportive environment could help reduce the likelihood of injured athletes experiencing a number of the stressors associated with injury onset, particularly if the support matches athletes' needs" (Evans et al, 2012, p. 926). This is something that many of the studies all agree upon.

**Research Question #2: How do the psychological characteristics of individuals contribute to an athletes' response to an injury?**

The literature resulted in a number of articles that answered this question. The research has shown that if an athlete holds a positive attitude then they will have a better experience as they go through the recovery process.

Athletes will experience a period of depression after suffering from an injury. When athletes returned to play almost 30% of them reported symptoms of anxiety and depression, (Yang et al, 2014) also found that, when athletes received support from their athletic trainers they were less likely to report these symptoms. They had a better understanding of their injury and the recovery process so they had a stronger belief that they could get through the process successfully.

"Emotional support is crucial to an injured athlete's recovery" (Yang et al, 2010, p. 376). Not all athletes have the same self-esteem, suffer the same emotions when going through an injury, or have the same process of recovery from an injury. As a result of the pressure to play, competitive level, and a lack of knowledge, athletes may not report their injury in order not to miss time (Asken, 2016). When athletes have better social support, resulting in more self-esteem, they have a better understanding of the process of their recovery, and understand not to play

through something because it can result in more missed time. Thus, they will have a faster recovery and are less likely to re-injure themselves.

### **Research Question #3: What type of interventions are available to injured athletes?**

One of the biggest interventions available for injured athletes is social support. This support can come from athletic trainers, physical therapists, friends, families, teammates, and coaches. “Social support can “buffer” the effect of stress on injured athletes and thus indirectly influence their emotional wellbeing” (Yang et al, 2014, p. 773). Some studies have reported that there is a positive association between social support and an athletes’ recovery process. (Yang 2010; Yang 2014)

Some researchers believe that there are psychological skills that an athlete can use to help with injury prevention and injury recovery. Goal setting, imagery, self-talk, attention/focus, and stress management techniques are skills that can help with injuries. (Madriral, 2015). When going through the recovery process these are things that can help an athlete take their mind off of the negative and refocus on the positive. An athlete can set short and long term challenging goals, imagine themselves when they have returned to play, talk positively to themselves, and use relaxation techniques to manage their stress.

### **Research Question #4: What factors contribute to successful/unsuccessful return to play?**

As research has grown, social support has been identified as a largely important factor in an athletes’ recovery from injury (Yang, 2010). Athletes that reported having been satisfied with the social support from their athletic trainer had shorter recovery times and a better overall

experience (Yang, 2014). When an athlete has a great amount of social support, regardless of where it is coming from, it has been shown to help with their recovery process.

When an athlete goes through an ACL injury it has a very long timeline that can take up to a year for an athlete to get back to their pre-injury level of play (Ardern et al, 2013). The majority of athletes that reported having a more positive reaction after their injury were the athletes that returned to their pre-injury level of play at the 12 month state of their rehabilitation (Ardern et al, 2013).

All of the athletes were able to return to play eventually. It was the athletes that had great social support and the athletes that held more positive thinking at the onset of the injury and throughout the rehabilitation process that were able to return to play at an optimum time.

**Research Question #5: When and how should psychological issues be addressed when an athlete is injured?**

Athletes can experience a number of different stressors at different points throughout the injury process (Evans et al, 2012). One of the first stressors that an athlete can face is depression which can have a very harmful impact if not dealt with from the start. Any time a new stressor is felt by an athlete it should be addressed immediately. Paying attention to psychological stressors early in recovery has been known to be associated with faster return to play (Ardern et al, 2013). When athletes haven't reported their symptoms immediately, it has been known to result in a longer recovery time (Mainwaring et al, 2004).

A big factor in helping these issues and helping to make sure that they are dealt with appropriately is the type of social support around the athlete. Even when athletes felt depressed or anxious after their injury, if they had the right social support they were still able to recover from their injury in the optimum time table (Yang et al, 2010). Another problem that can occur from an athlete not dealing with their issues immediately is a longer recovery time. If an athlete delays reporting a concussion they can suffer from more depression as a result of not being able to play through something they thought they could (Asken et al, 2016). As a result, their recovery process could take even longer than if they had just reported their symptoms and begun the proper recovery process immediately.

## **Chapter 5 - Conclusion and Future Research Needs**

The purpose of this chapter is to present conclusions regarding the effect that the psychological response can have on an athlete going through an injury. This chapter will also present some possible recommendations for future research.

### **Conclusion**

The psychological response that an athlete has after suffering an injury can play a significant role in their recovery time and level of play when they are able to return to play. When an athlete has a positive psychological response soon after an injury they are more likely to return to their pre-injury level of participation (Arderm, 2013). A universal agreement is that when an athlete has a positive state of mind when recovering from an injury and when they have a solid social support system around them, they will have a better chance of returning to play within an optimum recovery time.

Every athlete is different and will have different emotions and will feel different stressors at different times during the injury process. Some of these stressors may include depression, anxiety, fear of re-injury, etc. Professionals in the field, such as athletic trainers and physical therapists, agree that these are all things that can be overcome with positive psychological reaction and good social support.

To go along with great social support and helping overcome a number of stressors that can occur, there are also some psychological skills that athletes can work on to not only help them get through the injury/recovery process, but can also help them prevent future injury. Athletes practice techniques such as setting short and long term goals that are challenging, utilize positive imagery, and practicing some deep breathing and muscle relaxation exercises. By doing

these things, athletes can remain emotionally positive and have stronger psychological reactions if they are unfortunate enough to suffer a sport related injury.

### **Future Research Needs**

Based on the literature studied here, one of the biggest research needs in the future is to have bigger sample sizes for studies. One of the articles chosen for this review had a sample size of 665 people but that was a group of athletic trainers and physical therapists, not a group of athletes recovering from an injury. Many of the other studies had small sample sizes including one study that had one participant.

Although there is some research on the psychological reaction to injury there still needs to be more research on athletes' mood-changes during recovery and how detrimental they can be (Lattimore, 2017). All athletes go through the process differently. They will experience any number of stressors at any given point during their recovery. If there is more research done on this topic, then professionals and others involved in an athletes' social support system can be better prepared to help them get through the process in the most optimum time possible.

Another need for future research is to broaden the type of injuries that are looked at in these studies. The most frequently studied injuries are concussions and anterior cruciate ligament injuries. These are two completely separate injuries that have incredibly different time tables for recovery. This is important information but clearly, more information on other types of injuries from a variety of sports, with varying recovery times will help our understanding of the psychological process even better.

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Author	Title	Source	Purpose	Methods & Procedures	Analysis	Findings	Discussion/ Recommendations Research Notes –  Commonalities/Differences
<p>J. Jordan Hamson-Utley, PhD, ATC; Scott Martin, PhD, AASP Certified Consultant; Jason Walters, MHS, PT,</p>	<p>Athletic Trainers' and Physical Therapists' Perceptions of the Effectiveness of Psychological Skills Within Sport Injury Rehabilitation Programs</p>	<p>Journal of Athletic Training</p>	<p>The aim of this study examine the attitudes of AT's and PT's on the effectiveness of mental imagery, goal setting, and positive self-talk to improve rehabilitation.</p>	<p>The ATs and PTs were contacted via electronic or physical mailings to complete a single administration survey that measured their beliefs about the effectiveness of psychological skills for increasing adherence and recovery speed of injured athletes undergoing rehabilitation.</p>	<p>A survey taken by the professionals measures attitudes about psychological skills for enhancing adherence and recovery speed of injured athletes. The AAI includes demographic questions and 15 items on a 7point Likert scale measuring attitudes about the effectiveness of mental imagery, self-talk, goal setting, and pain control on rehabilitation adherence and recovery speed of injured athletes.</p>	<p>The results showed that although neither of the groups of professionals had negative thoughts about psychological skills, the athletic trainers held a more positive attitude about these social skills</p>	<p>Once the results were found they compared the two sets of professionals and found that AT's had more of a positive attitude on most of the items but both AT's and PT's held positive attitudes overall.</p> <p>Skills like goal setting, positive imagery, mental awareness, and attention/focus have been thought to be helpful in the recovery process and preventing injuries in the future.</p>

					<p>Test-retest reliability ranged from .60 to .84 and Cronbach as ranged from .65 to .90. They calculated 1-way analyses of variance to determine whether differences existed in attitudes as a result of the professionals' education, training experience, and interest.</p>		
<p>Lynda M. Mainwaring', Sean M. Bisschop^, Robin E.A. Green^, *Mark Antoniazzi^, Paul Compel^, Vicki Kristman'^, Christine Provvidenza^, and Doug W.</p>	<p>Emotional Reaction of Varsity Athletes to Sport-Related Concussion</p>	<p>University of Toronto; Toronto Rehabilitation Institute</p>	<p>The study adds to research into the emotional responses to sports injuries by examining MTBI. It also looks in the field of emotion and mild traumatic brain injury by examining emotional response and by examining the</p>	<p>Baseline mood state for each athlete was measured during a 60-minute preseason medical and neuropsychological assessment. Subsequent athletes who suffered a concussion were recruited to complete a series</p>	<p>In order to examine subscale reliabilities with the sample under study, we calculated Cronbach's alpha coefficients (Cronbach, 1951) for each POMS shortform mood subscale at each of four assessment sessions. Reliabilities exceeded the</p>	<p>It was determined that when athlete goes through a concussion there is an immediate spike in depression and in overall mood states. However with support</p>	<p>This study was limited to emotional reactions to mild traumatic brain injury. Previous studies assessed emotional reactions of athletes having different injuries across a range of severity. Those results were nonspecific and leave us unable to discern differential reactions</p>

Richards			recovery of emotional functioning through prospective, serial measurements.	of repeated assessments.	recommended .70 (Nunnally, 1978), with a few exceptions. Session 3 Anger ratings yielded a reliability of .66 for Cone and .34 for Control; Confusion reliabilities were .66 and .61 at Sessions 1 and 3, respectively. Self-esteem ratings were consistently below .70, except for Session 4.	and positive thought these stressors dissipated within three weeks and the athletes were able to return to play.	across injury type or severity. The unstated result is that emotional response is similar under all conditions. This may not be the case, as our results suggest.
Diana Lattimore	On the sidelines: An athlete's perspective of injury recovery	Sport & Exercise Psychology Review	The purpose of this study was to comprehensively examine the facets of injury and its toll on the athlete to gain an understanding of the psychological recovery process and overall athlete	Qualitative inquiry with purposeful sampling was used for analysis. Results provide a detailed perspective of the athlete's experience with 12 categories emerging as part of the recovery process	The researcher would begin by reading through each of the interviews which had been transcribed. Excerpts were then coded and compared to see where they fit in any of the 12 categories.	Some unexpected advantages surfaced towards the end of recovery including gaining a new perspective, increasing mental toughness,	Recovering from an injury is a process filled with multiple emotional highs and lows. Athletes do experience denial, frustration, anger, depression, loss of identity and fear, but this may be felt throughout the entire recovery process, and fear of re-injury is at the

			wellbeing while undergoing physiotherapy for an injury.			self-efficacy, and personal motivation	core of moving forward. The researcher also felt that having a negative attitude could also cause the athlete to be more susceptible to another injury.
Breton M. Asken, MS, ATC; Michael A. McCrea, PhD, ABPP/CN; James R. Clugston, MD, MS, CAQSM; Aliyah R. Snyder, MS; Zachary M. Houck, BS; Russell M. Bauer, PhD	“Playing Through It”: Delayed Reporting and Removal From Athletic Activity After Concussion Predicts Prolonged Recovery	Journal of Athletic Training	To examine the effect of delayed reporting and removal from athletic activity after concussion on recovery time.	A cross-sectional study was done with ninety-seven athletes who sustained a sport-related concussion between 2008 and 2015 were analyzed. Athletes were grouped as immediate removal from activity or delayed removal from activity.	Days missed was defined as the number of days between the concussion-causing event and clearance for return to contact. Associations between RFA group and prolonged recovery were also analyzed.	Fifty (51.5%) of the 97 athletes did not immediately report concussion symptoms. As a result of this delay in reporting their symptoms, the athletes on average missed an extra 5 days of their sport than those athletes who reported their	Athletes who do not immediately report symptoms of a concussion and continue to participate in athletic activity are at risk for longer recoveries than athletes who immediately report symptoms and are immediately removed from activity. Continuing to participate in athletic activity during the immediate aftermath of a concussion potentially exposes the already injured brain to

						symptoms immediately.	compounded neuropath physiologic processes.
Clare L. Ardern, PT, Nicholas F. Taylor, PT, PhD, Julian A. Feller, MD, FRACS, Timothy S. Whitehead, MD, FRACS, and Kate E. Webster, PhD	Psychological Responses Matter in Returning to Preinjury Level of Sport After Anterior Cruciate Ligament Reconstruction Surgery	The American Journal of Sports Medicine.	To determine whether psychological factors predicted return to pre-injury level of sport by 12 months after ACL reconstruction surgery.	Recreational and competitive-level athletes seen at a private orthopedic clinic with an ACL injury were consecutively recruited. The primary outcome was return to the pre-injury level of sports participation. The psychological factors evaluated were psychological readiness to return to sport, fear of re-injury, mood, emotions, sport locus of control, and recovery expectations. Participants were followed up preoperatively and at 4 and 12	Preoperative and 4-month data were used to analyze between-group differences in psychological responses between those who did and did not return to sport; the analysis was conducted with independent-samples t tests or nonparametric tests as appropriate. Binary regression analysis was used to determine whether psychological responses predicted returning to the preinjury level of sports participation at 12 months after surgery	In total, 187 athletes participated. At 12 months, 56 athletes (31%) had returned to their preinjury level of sports participation. Significant independent contributions to returning to the preinjury level by 12 months after surgery were made by psychological readiness to return to sport, fear of	Psychological responses before surgery and in early recovery were associated with returning to preinjury level of sport at 12 months, suggesting that attention to psychological recovery in addition to physical recovery after ACL injury and reconstruction surgery may be warranted. Clinical screening for maladaptive psychological responses in athletes before and soon after surgery may help clinicians identify athletes at risk of not returning to their preinjury

				months postoperatively		reinjury, sport locus of control, and the athlete's estimate of the number of months it would take to return to sport	level of sport by 12 months.
Leilani Madrigal	Psychological Skills for Injury Prevention and Recovery	Women in Sport and Physical Activity					
Jingzhen Yang, PhD, MPH; Corinne Peek-Asa, PhD, MPH; John B. Lowe, DrPH; Erin Heiden, MPH*; Danny T. Foster, PhD	Social Support Patterns of Collegiate Athletes Before and After Injury	Journal of Athletic Training	To examine the preinjury and postinjury social support patterns among male and female collegiate athletes	A prospective observational study with a total of 256 National Collegiate Athletic Association Division I male and female collegiate athletes aged 18 or older from 13 sports teams. The data were from a prospective study with repeated measures to examine the	The characteristics of participating athletes and their injuries were described. Using the baseline survey administered to all participating athletes, the average number of social support sources (ie, family, friend, coach, athletic trainer, physician, counselor, or other)	Male athletes reported more sources of social support than female athletes, whereas female athletes had greater satisfaction with the support they	Our findings identify an urgent need to better define the psychosocial needs of injured athletes and also strongly suggest that athletic trainers have a critical role in meeting these needs. Identifying a psychological problem early and having a better understanding of what the problem is

				relationship between social support and injury recovery	and satisfaction (very satisfied to very dissatisfied) were calculated among male and female participating athletes. Sex differences in social support sources and satisfaction were compared using $\chi^2$ and t tests, respectively.	received. Athletes' social support patterns changed after they became injured.	can go a long way with emotionally helping the injured athlete to recover from their physical injury as soon as possible.
Jingzhen Yang, PhD, MPH; Julie T. Schaefer, MS, RD; Ni Zhang, PhD, MPH; Tracey Covassin, PhD, ATC; Kele Ding, PhD, MS; Erin Heiden, MPH	Social Support From the Athletic Trainer and Symptoms of Depression and Anxiety at Return to Play	Journal of Athletic Training	To examine the effect of social support received from ATs during injury recovery on reported symptoms of depression and anxiety at return to play among a cohort of collegiate athletes.	Data were collected during the 2007–2011 seasons. Social support was measured using the 6-item Social Support Questionnaire. Symptoms of depression were assessed using the Center for Epidemiological Studies Depression Scale. Anxiety was measured by the State-Trait Anxiety	Distributions of participants and injury characteristics were described. Chi-square tests were calculated to assess the relationships between social support from ATs during injury recovery and reported symptoms of depression and anxiety at return to play.	In 84.3% of injury events, injured athletes received social support from ATs during their recovery. Of these, 264 (53.1%) athletes reported being very satisfied with this social	Our findings support the buffering effect of social support from ATs and have important implications for successful recovery in both the physical and psychological aspects for injured athletes. More than 80% of injured athletes in this study relied on social support from their AT during the recovery process. Injured athletes who

				<p>Inventory. We used generalized estimation equation regression models to examine the effect of the social support from ATs on the odds of symptoms of depression and anxiety at return to play.</p>		<p>support. Whether or not athletes received social support from ATs during recovery did not affect the symptoms of depression or anxiety experienced at return to play. However, compared with athletes who were dissatisfied with the social support received from ATs, athletes who were very satisfied or satisfied with this social</p>	<p>had a higher level of satisfaction with the social support from their AT reported fewer depression and anxiety symptoms when they returned to play.</p>
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						support were 87%	
Lynne Evans, Ross Wadey, Sheldon Hanton, Ian Mitchell	Stressors Experienced by Injured Athletes	Journal of Sports Sciences	To examine the stressors experienced by an injured athlete during the three phases of recovery. The other purpose was to see if there was a difference in stressors experienced between team sport athletes and individual sport athletes.	The researchers used 5 rugby players and 5 golfers for their study. For each individual athlete they conducted a semi-structured interview to examine when during their recovery they felt certain negative stressors.	After the interview was conducted the researchers then went and transcribed all of the interviews. Afterwards they cross referenced all of the interviews to see the differences between team athletes and individual athletes.	The results showed that the team athletes and the individual athletes all experienced different stressors at different times during the process and some of them experienced the same stressors during the same time of the recovery process.	The results showed that different types of sports can have a different effect on an athlete when they are recovering from an injury. This study also showed that a team can feel some negative stressors as well when an athlete is going through an injury.
Ramon Alzate Saez de Heredia and Amaia Ramirez Munoz	The Effect of Psychological Response on Recovery of Sport Injury	Research in Sports Medicine	To examine the effect that psychological responses can have on an athlete after suffering an	The researchers used 20 amateur football players. The researchers used a 58 item POMS scale questionnaire and	The questionnaires and surveys were then transcribed and recoded to fit the profile used for the study. They used each of these	The results of the study showed that the athletes who held a more positive	The results showed that an athlete that has a more positive outlook during the recovery process were able to return to play faster than

			<p>injury. The psychological variables evaluated were mood states, subjective estimation of the injury and adherence, and the psychological response was assessed continuously.</p>	<p>an abbreviated ICEBERG profile to help determine the aspects of each of the athletes for the variable that they were looking for in this study.</p>	<p>questionnaires for the initial, intermediate, and final aspects of the recovery process.</p>	<p>outlook at the beginning of the process and maintained it throughout were able to return to play faster than those who had a negative outlook.</p>	<p>the athletes who didn't. With this type of relationship existing what is it specifically that makes an athlete stay so positive and help them recover from their injury faster?</p>
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