

# Psychological Rehabilitation Techniques and Sports Injury Returning to Normal Daily Function

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University of Welfare and rehabilitation Sciences Psychological rehabilitation is the application of psychological knowledge and understanding on behalf of individuals with disabilities and society through such activities as research, clinical practice, teaching, public education, development of social policy and advocacy. Although the process of rehabilitation has traditionally been viewed as 'physical' in nature, it is now considered a multi-faceted process involving not only the services of surgeons, occupational therapists,

physiotherapists, and speech therapists but also exercise scientists, dieticians, and psychologists.

In sport, injury is common among athletes. Almost one in two collegiate football players suffers an injury severe enough to lose playing time, joggers sustain a musculoskeletal injury each year, nearly half of habitual runners experience lower extremity injury every year, and each year,

many spinal cord injuries occur when divers dive into pools and other bodies of water. Therefore it is

imperative that the athlete recovers quickly and fully from an injury. Arguably the most important factor in injury recovery is also the most overlooked. It is the purpose of this article to investigate the importance of sport psychological rehabilitation techniques in relation to sport injury and effective applications of psychology to injury recovery.

Over the last decade, researchers have become increasingly interested in the psychological impact of injury and how athletes react to being hurt.

This has spawned an advancement of knowledge about the psychological adjustments made by athletes during the period of injury, and the subsequent impact of these on mental state and adherence to rehabilitation programmes. Although ideally the psychological support of injured athletes should be provided by psychology professionals, in practice it is very often administered informally by physiotherapists (Kolt, 2000). Although physiotherapists generally consider psychological components of injury as important, recent research suggests that most feel

limited in their abilities to deal with these concepts and consider additional training as necessary (Gordon, 1991). Furthermore, a related study of patient perspectives indicated that injured athletes felt that physiotherapists and other members of the healthcare team had not consciously considered the emotional impact of their injuries (Pearson, 1992).

An overview of findings in sports today, encourages us to use psychology to increase performance, but we also must learn to use psychology to maintain a balance between performance and health.

There are a multitude of physical and psychological factors that influence the risk of injury and the effectiveness of rehabilitation and recovery. The loss of playing time and its potential impact on success as well as physical pain and the rigors of rehabilitation are major sources of psychological distress. This distress can also sensitize the athlete to pain, especially when the recovery from an injury is prolonged due to the severity or re-injury.

Psychological stressors, such as the fear of injury during competition, may illicit a cycle of both physical and psychological effects that result in a decrease in physical performance (Nideffer, 1983). Fear can decrease concentration and self-confidence and can even produce physiological responses such

As increased muscle tension and arousal levels. The athlete also tends to become preoccupied with physical sensations arising from the sight of injury. These sensations may be intensified by the psycho-physiolog-

ical dynamics of the fear response, and the athlete may perceive them as signs of injury or re-injury (Seyle, 1956). These perceptions negatively affect performance through decreased efficiency in the biomechanics of skill execution, poor utilization of energy resources, and decreased attention to performance-related factors. There also appears to be an effect among physiological mechanisms as well as among psychological mechanisms. For example, muscle tension and autonomic changes may perpetuate one another as may the skill-based and interpretive psychological mechanisms. Figure (1) shows the mind-body connection: a psycho physiological model of risk.

#### **Figure 1:**

Psycho physiological model of risk in injury. This phenomenon is usually manifested acutely, but can also be manifested in a more chronic form where the same psychological and physiological changes take place but in a more subtle and prolonged form.

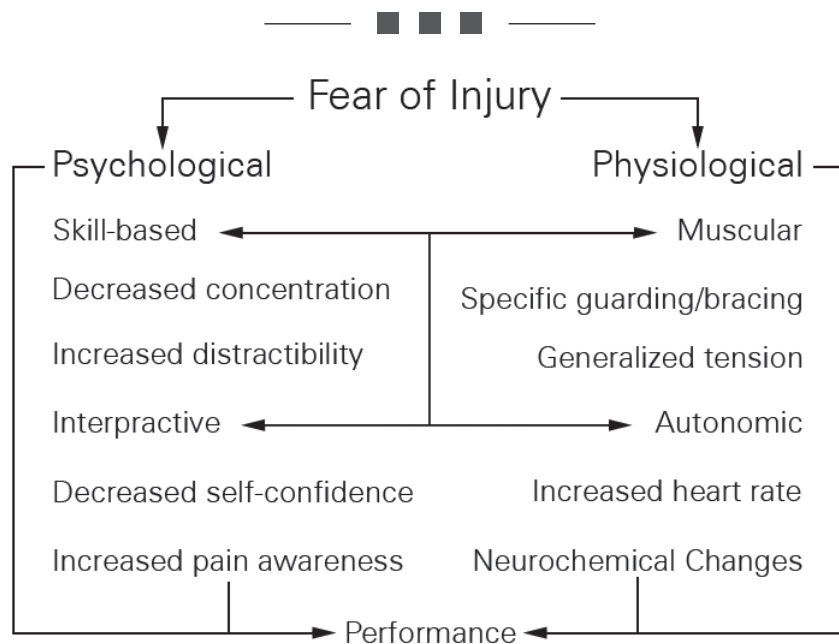
Overview of findings of the psychological impact of injuries in rehabilitation process This article aims to present an overview of research findings from studies of the psychological impact of injuries. These might be useful for those working with injured athletes and potentially draw attention to issues of service delivery.

As hardcore athletes, the avoidance of injuries is of utmost importance.

An injury can make or break an ath-

lete, but more importantly, the athlete's ability to recover from an injury, both physically and psychologically, will dictate the athlete's future success. After an injury has occurred, the athlete must fight to recover from the injury as safely and effectively as possible, return to normal daily function is simply not good enough for the athlete, who obviously

needs a longer recovery in order to meet the performance demands of sport. Due to a great investment of time, energy, and emotion in sport, the athlete experiences a greater loss with injury and a potentially greater threat to self-esteem than does the non-athlete. The relative balance of the positive and negative factors (as shown in fig.2)



- Disruption of biomechanics of skill execution
- Poor use of energy resources
- Decreased attention to performance-related cues
- Increase in injury risk

Figure 1: Psycho physiological model of risk in injury

associated with injury will determine the speed and effectiveness of rehabilitation.

**Figure 2:**

Psychological factors in rehabilitation of athletes. Personal attitudes

and behaviors as well as events in the recent and remote past reflect on an athlete's ability to cope and his or her readiness to face the challenge of injury rehabilitation. Factors such as medical and psychological history and evidence of somatization

provide insight to the strength of the foundation on which the coping ability is based.

Factors that can either be helpful or harmful to the psyche of the athlete during the rehabilitation process include (Heil,1993):

- Compliance with treatment - How well the athlete complies with the treatment modalities
- Perceived effectiveness - How well the athlete perceives the rehabilitation process is progressing
- Treatment complications - The amount of treatment complications, or the way in which the athlete deals with complications dictates the athletes' emotional recovery

support can enhance both the physical and mental rehabilitation process while negative social support can hinder it

- Personality conflicts - The power driven athlete may feel helpless following injury, which may hinder recovery
- Factors that may interfere with effective rehabilitation include the following (Danish, 1986):
- A lack of knowledge about the rehabilitation process
  - A lack of skill at a particular rehabilitation task
  - A perception that the risks of treatment outweigh the benefits
  - Lack of social support
- The athletes' initial psychological reaction to injury The grief reaction.



Positive	Negative
Motivation	Sense of Loss
Pain Tolerance	Threat to Self-image
Goal Orientation	Sport Performance Demands
Physical Training Habits	Expectations of Quick Recovery

Figure 2: Psychological factors in rehabilitation of athletes



- Pain - How well the athlete deals with the physical pain of rehabilitation
- Medication use - The amount of medication, the type of medication, and the potential misuse of medication can have either positive or negative effects on the athletes psychological state
- Social support - Positive social

With serious injuries that are likely to result in a significant period of time out of the sport, athletes will often experience emotional disturbances. Researchers (Hardy,1990) suggest that athletes often follow a five-stage process following injury:

- o Denial;
- o Anger;
- o Bargaining;

- o Depression;
- o Acceptance and reorganization.

After the initial shock is over, many athletes tend to play down the significance of the injury. However, as the injury becomes more apparent, shock is often replaced by anger directed internally toward themselves or externally towards other people. The responses can vary in intensity depending on situational and personal factors but can be especially strong in individuals whose self-concept and personal identity are based on being 'an athlete'. The loss of identity due to an inability to perform can cause much distress.

Following anger, the injured athlete might try bargaining/ rationalising to avoid the reality of the situation. A runner may promise herself to train extra hard or to be especially pleasant to those around her if she can recover quickly (Weinberg, 1995). By confronting reality, and cognitively realizing the consequences of the injury, an athlete can become depressed at the uncertainty of the future. It must be noted, however, that depression is not inevitable and has not always been observed during the grief reaction in research studies.

These included regaining full range of motion at the joint, walking without a leg-

brace, swimming, cycling, running on a trampette, running on grass and returning to competitive action (the dream goal). These markers are good examples of what psychologists call intermediate goals - the stepping stones that pave the way

to achieving the dream goal. This approach can help combat any feelings of self-doubt that can arise from only focusing on the long journey towards a dream goal.

Intermediate goals provide direction for the day-to-day efforts of the injured athlete.

Physiotherapists can also help to provide short-term goals in the form of daily exercises that should be performed by the athlete. Goal achievement is especially good for increasing an athlete's self-confidence.

Picture a staircase you can get a clearer idea of how this process works by picturing a staircase where each step reflects an important marker for rehabilitation and the top of the stairs is the dream goal. In order to engage patients in this process it can be helpful to ask them to record and chart their progress. Their self-confidence can be enhanced by knowing how far they have already moved towards the dream goal. Thus, monitoring and evaluation of goals are important, as is re-setting goals that are too easy or too difficult to achieve in a given timescale. The importance of the psychological appraisals that athletes undertake regarding progress should not be underestimated. A recent study showed that therapist support and progression of exercises were identified as being important determinants of attendance at physiotherapy sessions (Pizzari, 2002). Furthermore, a study of athletic trainers involved in the rehabilitation of athletes (Wiese, 1991) identified differences between athletes who coped either more or

less successfully with their injuries. Results revealed that a willingness to listen, maintaining a positive attitude and intrinsic motivation distinguished those who coped more successfully from their less successful counterparts. Identifying poor adjustment Being able to detect those athletes who are not adjusting to their injuries at an early stage can help to establish the necessary support.

Poor adjustment can manifest itself in non-compliance or adherence to rehabilitation programmes, with some athletes doing too little while others may push too hard.

Physiotherapists have identified non-compliance as a significant problem preventing effective and efficient recovery from injury. One study (Petitpas, 1995) identified a number of key characteristics in athletes who experienced difficulties in adjusting to their injuries. These included:

- o Feelings of anger and confusion;
- o Obsession with the question of when one can return to sport;
- o Denial (considering the injury to be no big deal);
- o Exaggerated bragging about accomplishments;
- o Rapid mood swings;
- o Withdrawal from significant others;
- o Fatalistic thinking (whatever I do, things are not going to improve);
- o Dwelling on minor physical complaints.

It is necessary to be particularly aware of athletes who almost obsessively ask about returning to their sport. Having a desire to recover is healthy but some athletes over-

estimate their capabilities and risk re-injury by over-stretching themselves. If the athletes skip the steady progressions, it will cause damages such as increased swelling and a loss of range of motion at the joint, and rehabilitation will be inevitably prolonged.

Optimists and pessimists the process of adjustment can be helped or hindered by the injured athlete's own personality. Some people perceive uncontrollable negative events as internal ('it's all my fault'), stable ('it's never going to get better') and global ('it's going to affect everything I do'). Such thinking has been called a pessimistic explanatory style and some people are more prone to it than others. Contrast these feelings with a more optimistic approach ('I couldn't have done anything about it, but my injury will mend and it's not going to affect the other good things in my life') and you can clearly see the barriers to progress and the psychological damage that is being self-inflicted.

Research evidence has shown that pessimism is linked to continued distress following devastating losses (Carver, 1993). Investigators following a sample of people who had suffered terrible losses and trauma as a result of Hurricane Andrew suggested that it's not how much you lose that predicts your state of mind but how you think about the loss.

This is where social support is particularly necessary and challenges to irrational beliefs or maladaptive thought processes are particularly needed (Carver, 1993).

### Discussions:

Forms of pessimistic thinking can be dismantled by rational analysis through helping injured athletes to explore their own feelings and the meanings they attach to their current situation. Verbal encouragement can help and reframing negative statements made by the athlete into more optimistic positive ones that are rehearsed and spoken by the athlete as part of his or her own internal dialogue (self-talk) can lead to more positive approaches to rehabilitation. Helpless and hopeless phrases such as 'I am getting nowhere fast' and 'I'll never regain full range of movement' can be reframed into more positive alternatives such as 'I've made some progress and if I keep working hard full range of motion will eventually return'. For the athlete to rehearse regularly this can be shortened to: 'keeping to the programme will lead to full range of motion'. This self-talk is instructional and motivational instead of being negative. Rehearsal is the key to success and over time the injured athlete will start to harbour more positive beliefs and expectations.

Both self-setting and self-talk are the most important established techniques in the rehabilitation process. These techniques have been shown to be positively associated with adherence to rehabilitation programmes (Scherzer, 2001) and with faster healing times (Levleva, 1991).

The psychological impact of injury can affect an athlete long after the body has successfully healed. For this reason the role of a trainer or

coach is particularly important in the progression from the rehabilitation clinic to full competition. Both the performance and self-confidence of the athlete will likely be lower than pre-injury and this can be tackled by implementing a steady process of goal-setting and achievements to build both factors. On occasions, the circumstances surrounding the initial injury might cause negative memories and expectations that need to be worked through with a sport psychologist.

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