

Rehabilitation

Common Problems and Solutions



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KEYWORDS

• Prevention • Physical therapy • Surgery • Musculoskeletal • Sports medicine

KEY POINTS

- There are numerous complications that can occur following a musculoskeletal injury or surgery in the sporting population.
- Many of these complications include stiffness, pain, and/or movement dysfunction.
- Prevention of the most frequent complications is the key in any successful rehabilitation program, but occasionally problems do occur.
- A thorough well-designed postoperative or postinjury rehabilitation program may prevent most of these problems.
- However, if complications do arise, a team approach among all of the parties involved in the process (physician, physical therapist, athletic trainer, strength and conditioning specialist, coach, and athlete) working to develop an evidenced-based treatment program designed specifically for the underlying complication can successfully treat these issues.

Rehabilitation plays a significant role in the successful results and positive outcomes following any orthopedic and sports medicine injury or surgical procedure. Complications following even what are generally regarded as the most successfully managed conditions are common and far more prevalent than desired. For example, following anterior cruciate ligament (ACL) surgery it has been reported that 7% to 15% of patients will exhibit a loss of normal motion.^{1,2} The authors of this article think the incidence of motion loss in these instances is much higher when range of motion (ROM) is carefully and accurately measured. The same complication is evident following rotator cuff (RTC) repair surgery. Koo and colleagues³ have reported that 5% to 16% of patients will exhibit a loss of motion

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or shoulder stiffness following RTC repair. Likewise, other surgeries may also exhibit similar incidences of motion loss. Motion loss is not the only common postoperative complication. Reinjury following ACL reconstruction occurs in up to 25% of patients.⁴⁻⁶ Surgical failure after RTC repair is evident in 29% to 94% of patients.^{7,8} Shoulder instability following shoulder stabilization surgery has been shown to be present in approximately 15% of all patients. The purpose of this article is to discuss rehabilitation strategies specifically designed to avoid and successfully treat postoperative and postinjury complications that frequently occur in sports medicine.

There are several rehabilitation principles and strategies effective in minimizing complications. These principles should be routinely used to successfully reduce and prevent the incidence of postoperative or postinjury complications. The essential key to treating complications is not allowing them to occur at all. The first strategy is to use early motion and mobility in the rehabilitation process. Early motion has been shown to reduce postoperative stiffness and motion loss at the knee joint.⁹ The second principle is beginning rehabilitation immediately following injury or surgery. This practice ensures patients are doing the proper exercises and receiving accurate education regarding their condition and the activities that they both must perform and avoid. Next, it is important for the rehabilitation team to establish proper milestones and goals, ensuring patients are not falling behind, becoming stiff, or in some cases moving too fast. A team approach to treatment and rehabilitation is the critical key, with the orthopedic surgeon, physical therapist, athletic trainer, and strength and conditioning specialist all being included in treatment planning. Communication among these team members is vital and invaluable to ensure everyone remains on the same page throughout the process. Lastly, developing a proper treatment plan (protocol) is vital to a successful outcome. This plan serves as the treatment guideline for patients so that all members of the team are aware of what is or should be happening and when it is expected to occur. The authors now discuss several areas of the body, their specific types of complications, and treatment.

KNEE JOINT

The knee joint is frequently injured. Common injuries include patellofemoral pain, medial collateral ligament injuries, ACL injuries, and meniscus lesions. The ACL is one of the most frequently reconstructed ligaments in the orthopedic and sports medicine population. Wilk¹⁰ reported that approximately 148,000 ACL reconstructions are performed annually. The most common complication following ACL reconstruction is a loss of motion or stiffness.^{1,9} There are several strategies to prevent postoperative knee stiffness and motion loss following ACL reconstruction, including (1) delaying surgery until the knee has returned to homeostasis, (2) immediate motion following ACL surgery, (3) proper rehabilitation, and (4) patient compliance.

As mentioned, loss of knee motion and stiffness occurs in approximately 7% to 15% of all ACL reconstructions.¹ For the most part, this postoperative complication is preventable. Delaying surgery until the knee joint calms down and returns to a normal state assists in minimizing the development of arthrofibrosis and motion loss.¹ Shelbourne and colleagues,¹ in a classic article, reported that by delaying surgery until after the knee joint calms down following ACL injury the development of arthrofibrosis was reduced from 17% in the immediate surgery group to 0% in the delayed surgery group. In the authors' opinion, returning the knee to a normal homeostatic state means

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