

A 94% return to elite level football after ACL surgery: a proof of possibilities with optimal caretaking or a sign of knee abuse?

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In this issue of the ESSKA journal, Waldén et al. present a prospective study of elite level football players with ACL injuries [9]. Almost all players with a total ACL rupture ($71/73 = 97\%$) were treated surgically, which reflects the general opinion among football medical doctors that footballers with an ACL injury need an ACL reconstruction in order to continue playing. The rationale for surgical intervention after ACL injury is to restore the pre-injury activity level [5].

A striking finding in the study by Waldén et al. is the high return-to-play number. As many as 94% of the ACL-reconstructed players returned to full elite level training within 10 months after surgery and 89% participated in elite match play within 12 months. These findings are in contrast with numbers presented earlier in terms of return to football after an ACL injury [1, 5, 7]. In a mixed group of football players from different levels, who sustained ACL injuries in 1986, Roos et al. [5] found that only 30% were still active in football after 3 years compared with 80% of the uninjured control population of football players and none of the ACL-injured elite players were active after 7 years [5]. Other studies have reported return-to-play numbers of approximately 50%; however, none of them reported separate numbers for the elite players [1, 7].

Which factors can explain the differences in the return-to-play numbers between the studies of Waldén et al. and Roos et al.? Obviously, there is a time difference of 20 years and one might speculate that surgical technique has improved markedly during these years. However, the

majority of players in the study by Waldén et al. underwent ACL reconstruction using a patellar tendon graft, which was also the most commonly used method in 1986. Furthermore, there are, so far, no studies showing a long-term difference in functional outcome between different surgical techniques such as the use of hamstring—or patellar tendon as grafts, or any major clinical advantages in terms of using the double-bundle surgical technique [3, 6].

An obvious difference between the two cohorts is the playing level. The players included in the study by Waldén et al. comprise a homogenous cohort of elite level football players in contrast to the cohort in the study by Roos et al., which is a mixture of players from different levels, the majority playing amateur football. There might be significant differences between the caretaking of ACL-injured football players at elite level compared to amateur level considering diagnostic evaluation, time to surgery and postoperative rehabilitation. The caretaking at elite level represents, in many ways, the optimal situation. The players at elite level clubs are supported by a highly qualified medical team (it is in fact mandatory to provide a qualified team doctor and team physiotherapist in an elite level football team in Europe according to the UEFA Club license rules), while teams at amateur level normally lack medical support. In the elite level cohort, as presented by Waldén et al., the time to diagnosis was as a mean 8 days.

An important factor behind an early diagnosis at elite level is the frequent use of and easy access to MRI.

The ACL reconstructions in football players in the study by Waldén et al. were typically performed in the subacute phase, i.e. approximately 3–5 weeks after injury. Early reconstruction when compared to delayed reconstruction might lead to less elongation of secondary restraints as well as fewer secondary intra-articular (menisci and cartilage) injuries due to less giving-way episodes [2]. Early surgery

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can thus be another factor behind the high success rates at elite level.

It has been suggested that the results of surgery could be dependent on the experience and number of surgeries performed by the surgeon (<http://www.acregister.nu>). Elite level clubs normally have a wide contact net of highly skilled specialists in ACL surgery who perform a significant number of ACL operations—which could be one important factor behind the high success rates in elite level cohorts.

Another important factor is the postoperative rehabilitation. Most certainly, the rehabilitation after ACL surgery has improved markedly during the last 20 years, but the possibility of being helped by a physiotherapist also differs between elite and amateur level. In Scandinavia, an amateur football player is normally helped by a physiotherapist for about 1 h 2–3 times a week following ACL surgery. A player at elite level normally receives help from a team physiotherapist several hours every day. Whether the more intensive rehabilitation in professional football players improves the return-to-play remains to be scientifically studied.

The importance of the study by Waldén et al. is that they have shown that under ideal circumstances it is in fact possible to achieve an outcome in excess of 90% in terms of return to football at the same high level as before the injury—a success rate that represents the ultimate goal, not only for professionals but also for the majority of amateur players. The caretaking of elite level players may represent an optimal situation where the factors mentioned earlier might be of great importance. Whether some of these factors are more important than others remains to be evaluated in further studies.

However, the fact that it was possible for almost all players to return to football after ACL surgery does not necessarily mean that return-to-play is always ideal from a medical point of view. It could also be a sign of knee abuse. Waldén et al. [8] have previously reported that many elite football players suffer from synovitis and other overuse injuries shortly after their comeback to football, possibly indicating premature return. At professional level, economy has to be considered as an additional factor, with monetary implications increasing the desire to return to play. The high numbers of return-to-play after ACL surgery might reflect a satisfactory outcome, but could also be regarded as knee abuse with a risk of further joint injury and subsequent development of osteoarthritis [4, 10].

Another important finding in the study by Waldén et al. is that the mean absence from full team training was

between 6 and 7 months after surgery. This means that, even with optimal caretaking and resources, this is the time it takes. As pointed out by Waldén et al. [8], there might be examples of shorter rehabilitation which could create an additional problem if such cases are frequently quoted in media, to induce the reader to believe that such quick return-to-play is the standard. Statistical values, like the ones presented by Waldén et al., are therefore of major importance for knee surgeons to enlighten patients/football players (but also coaches and club managers) about the real facts.

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