Career Longevity and Performance After Shoulder Instability in National Football League Athletes

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Purpose: To investigate the career longevity, game utilization, and performance of National Football League (NFL) athletes after glenohumeral instability events treated operatively versus nonoperatively. Methods: Using public resources, we identified NFL players who sustained a shoulder instability event from September 2000 to February 2019. Players with prior shoulder instability, without NFL experience before injury, or who did not return to play (RTP) after injury were excluded. Demographic information, utilization (games and seasons), and season approximate value (SAV) statistics were recorded 1 year prior to injury and 3 years after RTP. Statistical analysis compared utilization and the SAV after RTP for athletes managed operatively versus nonoperatively. Results: We identified 97 NFL players who sustained their first instability event while playing in the NFL, 91 of whom returned to play (93.8%). Quarterbacks were significantly more likely to undergo immediate surgical management compared with players in other positions (P = .023). The final analysis included 58 players managed operatively and 33 managed nonoperatively by the end of the index season. Players treated operatively played in significantly more seasons after RTP during their remaining careers (4.1 ± 2.7 seasons vs 2.8 ± 2.5 seasons, P = .015). There were no differences in games played or started, offensive or defensive snap count percentage, or performance (SAV) before and after injury when compared between cohorts (P > .05). After surgical stabilization, time to RTP (36.62 ± 10.32 weeks vs 5.43 ± 12.33 weeks, P < .005) and time interval before recurrent instability (105.7 ± 100.1 weeks vs 24.7 ± 40.6 weeks, P < .001) were significantly longer than with nonoperative treatment. Additionally, the operative cohort experienced less recurrent instability (27% vs 50%, P = .035). Conclusions: Athletes who RTP in the NFL after a shoulder instability injury do so with a similar workload and performance irrespective of surgical or nonsurgical management. Whereas nonoperative treatment is associated with faster RTP, operative management is associated with fewer recurrent instability events, greater time between recurrent instability events, and greater career longevity. Level of Evidence: Level III, retrospective case-control study.

In the United States, glenohumeral joint instability has a reported incidence of 23.9 cases per 100,000 person-years. High school and collegiate athletes show an increased incidence of these injuries so it is no surprise that the prevalence of shoulder instability is reported to be as high as 10% to 14% among National Football League (NFL) athletes. In an investigation of shoulder injuries in elite football players invited to the NFL Combine, 24% of all shoulder injuries in this population were shown to be due to instability events, with defensive players making up the greatest proportion, requiring surgical management 76% of the time. In a retrospective cohort study of 328 NFL players who started their careers on a single NFL team from 1980 to 2008, 9.5% of players had a history of shoulder instability and 13.1% of players experienced their first...
shoulder instability injury at a mean of 18.4 ± 22.2 months after joining the team. With only 2.3% of NFL games reported as being injury free, the physical demands of the sport and risk of these injuries remain important considerations for NFL athletes.

A number of studies have evaluated the impact of shoulder instability in elite football players. Okoroha et al.9 reported high levels of return to play (RTP) after shoulder instability injuries among NFL athletes, with no difference in career longevity between operatively and nonoperatively treated groups, whereas Brophy et al.10 found that offensive and defensive linemen had significantly shorter careers. Prior studies have also shown that players managed nonoperatively experience earlier and more frequent reinjuries compared with players managed surgically.6,9 Surgical stabilization in the elite athletic population has been shown to reduce the rate of recurrent instability and improve player satisfaction.6,11-15 Nevertheless, the effect of these injuries on player performance, as measured by the season approximate value (SAV), after RTP is not known.

Although prior investigations have examined the effects of operative and nonoperative management of glenohumeral instability on RTP and the incidence of recurrent instability events in NFL players, there is currently a paucity of literature examining game utilization and performance under these conditions. Additionally, subsequent management after recurrent instability events is not well described after initial treatment in NFL athletes. The purpose of this study was to investigate the career longevity, game utilization, and performance of NFL athletes after glenohumeral instability events treated operatively versus nonoperatively. We hypothesized that on RTP, NFL athletes who underwent surgical stabilization would have increased career longevity, game utilization, and performance when compared with athletes managed nonoperatively.

**Methods**

All incidences of shoulder instability among NFL players during the period from September 2000 to February 2019 were collected. We found these players using public internet searches, similarly to previous studies.16-24 The internet searches used sources such as team websites, team injury reports, and sports news websites to determine a comprehensive list of players who sustained a shoulder instability event during their NFL careers. The reports were cross-referenced with multiple sources to ensure their accuracy and correlated to when athletes missed games. The terms “shoulder dislocation,” “shoulder subluxation,” “shoulder instability,” “glenohumeral joint instability,” and “labrum injury” were accepted terms in the references as documentation of a shoulder instability event, which allowed for inclusion in this study. These searches were conducted by a research team in the sports medicine division of the orthopaedic surgery department, consisting of M.D. candidates and orthopaedic surgery residents, and further verified by faculty. All identified players underwent further internet searches to determine whether they would be included or excluded based on the following criteria: The inclusion criteria consisted of all NFL players who had a shoulder dislocation or subluxation during their NFL careers reported over the prior 2 decades. Players were excluded from the study if they did not play in the NFL 1 season prior to the index (injury) season, if they did not RTP after their injury, if they had a history of ipsilateral upper-extremity surgery, or if their RTP data were not complete for an entire season for analysis.

Publicly available sources were used to record demographic information including age, body mass index, and position at the time of injury—the index season. The index season was defined as the NFL season (and subsequent off-season) during which a player sustained the first instability event. Therefore, the season prior to the index season was defined as season −1, and the first season after injury in which a player returned to play was defined as season +1. On the basis of the index season designation, game utilization parameters and performance metrics (SAV) from 3 seasons prior to (years −1, −2, and −3) and after (years +1, +2, and +3) the index year were analyzed. If a player sustained a recurrent injury after season +1, data collection on the player was ceased after the recurrent injury to limit bias in this player’s performance metrics not attributable to the index injury. Game utilization parameters documented included seasons played, games played (GP) and games started (GS) per season, offensive snap count percentage (OSCP), and defensive snap count percentage (DSCP). Performance measurements were documented as the SAV calculation, which takes into account several different correlates to quantify the relative contribution a player made to his team’s success. The calculation of the SAV is dependent on the position an athlete plays, so there is no single formula for all players. However, the SAV has been reported in the literature as a normalized metric that is comparable across positions and standardized to correlate to each player’s contribution to the team’s success.7 Additionally, injury-specific data points were recorded for individual instability events. These included quarter of season of injury, RTP time (in weeks), subluxation or dislocation, treatment, presence of recurrent instability after the injury, and time interval from the previous injury until recurrent instability.

Players were categorized into an operative or nonoperative cohort based on the final treatment status at the end of the index season (Fig 1). If a player was treated operatively after the initial instability event, as determined by news reports and cross-referenced with an absence of in-game data during the recovery period, he was placed in the operative cohort. Additionally, if players were treated nonoperatively after their initial
instability event and did RTP during the index season but subsequently either sustained a recurrent injury requiring surgery or elected to undergo surgical stabilization during the off-season after the index year, they were crossed over into the operative cohort. Those who underwent delayed surgery after the index season are designated as the “crossed groups” in Figure 1. All other players who were initially treated nonoperatively and did not undergo surgery at the conclusion of the index season remained in the nonoperative cohort. This designation of operative and nonoperative cohorts allowed comparisons of cohorts in subsequent seasons to account for whether a player ultimately underwent surgery. Statistical analysis compared career statistics, such as game utilization and performance, before and after the index season between the operative and nonoperative cohorts.

Statistical Analysis
All continuous data are reported as mean ± standard deviation, whereas categorical data are reported as count (column percentage). For continuous variables, univariate 2-group comparisons were performed using the independent 2-sample t test if the variable was normally distributed and using the Wilcoxon rank sum test if the variable was non-normally distributed. For categorical variables, univariate 2-group comparisons were performed using the χ² test when expected cell counts were more than 5 and using the Fisher exact test when expected cell counts were less than 5. Repeated measures were performed to see if the performance variables changed differently over time between groups, by comparing seasons +1, +2, and +3 relative to season −1. For repeated-measures analyses, data are reported as adjusted means (standard errors). Additionally, relative percentages of each post-RTP season were calculated using season −1 as the baseline and were compared between cohorts. Pearson partial correlations and 1-way analysis of variance were used to assess whether demographic factors were associated with workload and performance variables. Statistical significance was set at P < .05. All analyses were performed using SAS software (version 9.4; SAS Institute, Cary, NC).
Results

Demographic Characteristics
We identified 97 players who experienced a first-time shoulder instability event. After the index instability event, 37 players (38.1%) were initially managed operatively whereas 60 (61.9%) elected to undergo a trial of conservative management. When we compared initial treatment choice by player position, a significantly greater proportion of quarterbacks (22% vs 7%) were treated operatively whereas a significantly lower proportion of position players (cornerbacks, 11% vs 22%; safeties, 11% vs 20%; and running backs, 5% vs 15%) were treated conservatively (P = .023).

Figure 1 illustrates the composition of the final cohorts after the index season. Four players from the operative cohort did not RTP and were excluded from analysis. Additionally, of the 60 players who initially chose nonoperative treatment, 2 did not RTP and 25 elected to undergo surgery in the off-season; they were therefore crossed over from the nonoperative cohort to the operative cohort. Thus, the final analysis for game utilization and performance after RTP included 58 players treated operatively and 33 players treated nonoperatively by the end of the index season.

Table 1 outlines the comparison of demographic characteristics between the final operative and nonoperative cohorts.

Table 1. Demographic Characteristics of NFL Players With Shoulder Instability Event

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operative (n = 58)</th>
<th>Nonoperative (n = 33)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, yr</td>
<td>25.71 ± 2.55</td>
<td>27.03 ± 3.87</td>
<td>.085</td>
</tr>
<tr>
<td>BMI</td>
<td>29.38 ± 3.58</td>
<td>29.19 ± 3.27</td>
<td>.804</td>
</tr>
<tr>
<td>Position</td>
<td></td>
<td></td>
<td>.255</td>
</tr>
<tr>
<td>QB</td>
<td>8 (14)</td>
<td>3 (9)</td>
<td></td>
</tr>
<tr>
<td>WR</td>
<td>8 (14)</td>
<td>3 (9)</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>3 (5)</td>
<td>2 (6)</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>8 (14)</td>
<td>8 (24)</td>
<td></td>
</tr>
<tr>
<td>LB</td>
<td>6 (10)</td>
<td>3 (9)</td>
<td></td>
</tr>
<tr>
<td>OT</td>
<td>2 (3)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>CB</td>
<td>14 (24)</td>
<td>3 (9)</td>
<td></td>
</tr>
<tr>
<td>TE</td>
<td>1 (2)</td>
<td>3 (9)</td>
<td></td>
</tr>
<tr>
<td>RB</td>
<td>4 (7)</td>
<td>6 (18)</td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>1 (2)</td>
<td>2 (6)</td>
<td></td>
</tr>
<tr>
<td>DT</td>
<td>1 (2)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td>2 (3)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Time of injury, wk</td>
<td></td>
<td></td>
<td>.122</td>
</tr>
<tr>
<td>Preseason to week 4</td>
<td>19 (33)</td>
<td>19 (58)</td>
<td></td>
</tr>
<tr>
<td>Week 5-8</td>
<td>9 (16)</td>
<td>5 (15)</td>
<td></td>
</tr>
<tr>
<td>Week 9-12</td>
<td>10 (17)</td>
<td>5 (15)</td>
<td></td>
</tr>
<tr>
<td>Week 13 to postseason</td>
<td>19 (33)</td>
<td>4 (12)</td>
<td></td>
</tr>
<tr>
<td>Off-season</td>
<td>1 (2)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Subluxation or dislocation</td>
<td></td>
<td></td>
<td>.487</td>
</tr>
<tr>
<td>Dislocation</td>
<td>53 (91)</td>
<td>28 (85)</td>
<td></td>
</tr>
<tr>
<td>Subluxation</td>
<td>5 (9)</td>
<td>5 (15)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE. Continuous variables are presented as mean ± SD. Categorical variables are presented as frequency (percentage).
BMI, body mass index; CB, cornerback; DE, defensive end; DT, defensive tackle; G, guard; LB, linebacker; LS, long snapper; NFL, National Football League; OT, offensive tackle; QB, quarterback; RB, running back; S, safety; SD, standard deviation; TE, tight end; WR, wide receiver.

No statistically significant difference in age was found between the operative and nonoperative cohorts (25.7 ± 2.6 years and 27 ± 3.9 years, respectively; P = .09). No other demographic differences existed between the 2 cohorts, including position played or time of injury (Table 1).

All players who were treated operatively by the end of their index season were compared with the nonoperative cohort to evaluate player workload (GP, GS, OSCP, and DSCP) and performance (SAV) during the first 3 seasons after the index season (+1, +2, and +3) and remaining career (Table 2). There were no workload or performance differences between the operative and nonoperative cohorts in the season prior to injury (season −1) or the season after RTP (season +1). Additionally, no workload or performance differences existed between the 2 cohorts during the first 3 seasons after RTP relative to the 3 seasons prior to injury (P > .05). Athletes treated operatively played significantly more seasons after RTP than athletes treated nonoperatively (4.1 ± 2.7 seasons vs 2.8 ± 2.5 seasons, P = .02); however, they played a similar number of total games (30.21 ± 13.47 vs 28.57 ± 14.92, P > .05) and averaged a similar number of games per season (11.05 ± 4.13 vs 12.70 ± 3.58, P > .05) during their remaining careers. Athletes treated operatively and nonoperatively performed at similar proficiency as
### Table 2. Workload and Performance After Shoulder Instability Injury

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operative</th>
<th>Nonoperative</th>
<th>P Value</th>
<th>Operative</th>
<th>Nonoperative</th>
<th>P Value</th>
<th>Operative</th>
<th>Nonoperative</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workload variable</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GP</td>
<td>14.31 ± 0.65</td>
<td>14.63 ± 0.69</td>
<td>.999</td>
<td>14.31 ± 0.65</td>
<td>14.63 ± 0.69</td>
<td>.999</td>
<td>14.31 ± 0.65</td>
<td>14.63 ± 0.69</td>
<td>.999</td>
</tr>
<tr>
<td>GS</td>
<td>10.98 ± 0.89</td>
<td>11.12 ± 1.24</td>
<td>.871</td>
<td>10.98 ± 0.89</td>
<td>11.12 ± 1.24</td>
<td>.871</td>
<td>10.98 ± 0.89</td>
<td>11.12 ± 1.24</td>
<td>.871</td>
</tr>
<tr>
<td>OSCP</td>
<td>0.39 ± 0.01</td>
<td>0.40 ± 0.102</td>
<td>.999</td>
<td>0.39 ± 0.01</td>
<td>0.40 ± 0.102</td>
<td>.999</td>
<td>0.39 ± 0.01</td>
<td>0.40 ± 0.102</td>
<td>.999</td>
</tr>
<tr>
<td>DSCP</td>
<td>0.1888 ± 0.084</td>
<td>0.259 ± 0.107</td>
<td>.996</td>
<td>0.1888 ± 0.084</td>
<td>0.259 ± 0.107</td>
<td>.996</td>
<td>0.1888 ± 0.084</td>
<td>0.259 ± 0.107</td>
<td>.996</td>
</tr>
<tr>
<td>Performance variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAV</td>
<td>5.69 ± 0.61</td>
<td>6.28 ± 0.64</td>
<td>.562</td>
<td>5.69 ± 0.61</td>
<td>6.28 ± 0.64</td>
<td>.562</td>
<td>5.69 ± 0.61</td>
<td>6.28 ± 0.64</td>
<td>.562</td>
</tr>
</tbody>
</table>

NOTE. Continuous variables are presented as mean ± standard deviation. DSCP, defensive snap count percentage; GP, games played; GS, games started; OSCP, offensive snap count percentage; SAV, season approximate value.

measured by SAV after RTP at all time points (P > .05). Furthermore, athletes in both cohorts averaged a similar number of Pro Bowl selections before and after injury (P = .15 and P = .92, respectively), indicating similar performance and value to their teams (Table 3).

There were no differences in change of production of GP, GS, OSCP, DSCP, or SAV during any seasons relative to preinjury baseline when compared between the operative and nonoperative cohorts (P > .05). Additionally, relative percentages were calculated using the season prior to injury as the 100% benchmark. Workload and performance relative percentages during each of the first 3 seasons after RTP were similar between the 2 cohorts (P > .05), as illustrated in Table 4.

We identified a total of 40 recurrent instability events sustained by 38 different players. Of the 38 players with recurrent instability events, 36 had only 1 recurrent episode, whereas 2 players had 2 recurrent episodes. Recurrent instability events were more prevalent in athletes who opted for initial conservative management (50% vs 27%, P = .035) immediately after the initial injury. Additionally, operatively managed players had a significantly longer time interval prior to recurrent instability than those treated nonoperatively (105.7 ± 100.1 weeks vs 24.7 ± 40.6 weeks, P < .001). After an instability event, athletes treated nonsurgically averaged an RTP time of 5.43 weeks (95% confidence interval, 2.72–8.13 weeks) whereas those treated surgically averaged an RTP time of 36.62 weeks (95% confidence interval, 33.44–39.79 weeks).

### Discussion

This investigation determined that there is no difference in performance between operative and nonoperative cohorts after a shoulder instability injury in NFL athletes. Additionally, game utilization after RTP was similar between the operative and nonoperative cohorts. Players treated nonoperatively were able to RTP quicker; however, those treated operatively had reduced recurrence rates, longer intervals between recurrent injuries, and longer careers. Glenohumeral instability events are common injuries among football players,4,5 with evidence of high RTP rates and reduced recurrence rates after surgical stabilization.9 Our study evaluated the effects of operative versus nonoperative management of these injuries on player game utilization, performance, and career longevity after RTP, finding similar outcomes between the 2 treatment cohorts.

Several studies have examined the performance of athletes after RTP from shoulder instability. In a retrospective cohort study, Lu et al.25 evaluated the athletic performance of 50 National Basketball Association (NBA) athletes after RTP from shoulder subluxation or dislocation injuries. They found that after RTP, NBA athletes saw a significant reduction in their Player...
Efficiency Rating (PER) from 14.8 before injury to 13.6 after injury regardless of treatment type. Li et al. similarly investigated the PER in 60 NBA players after RTP from glenohumeral instability events and found that players undergoing nonoperative management had significantly decreased PER values compared with players managed surgically. Our study evaluated performance after RTP from shoulder instability in NFL players. There was no difference in performance (SAV) between players managed operatively and nonoperatively after RTP, which is in contradiction to observations made in NBA players. This is most likely because of the unique physical demands of basketball players being heavily reliant on overhead activities, such as rebounding and shooting, which are metrics weighed into the PER calculation. Conversely, the largest portion of our cohort comprised cornerbacks and safeties, who sustain injuries primarily from tackling and are less reliant on overhead activities. These findings suggest that football players do not experience a decline in performance after a shoulder instability event.

Player utilization after RTP has been previously evaluated in football players at the collegiate level. In a case series by Robins et al. evaluating National Collegiate Athletic Association Division I football players, the number of GP after RTP was found to increase by 20% when compared with that before injury in operatively treated players. Their study illustrated that college players undergoing surgical stabilization may RTP at the same level or a higher level of utilization. In a cohort study by Li et al. investigating shoulder instability among NBA athletes, players who underwent shoulder surgical stabilization were shown to maintain the number of GP whereas those treated nonoperatively saw significant reductions in GP. Conversely, our findings suggest that there is no significant difference in game utilization after RTP between surgically and nonsurgically managed players after shoulder instability. Additionally, a large portion of players were initially treated nonoperatively and were able to RTP during the same season but later crossed over to the operative group by the off-season, without a detriment to their utilization and performance the following seasons.

The value of operative management of shoulder instability has been shown in NFL players with consideration of RTP rates, reinjury rates, and career longevity. In a retrospective cohort study of 31 NFL players from 1980 to 2008 who sustained shoulder instability events before their professional careers,
LeClere et al.\(^6\) found that players treated surgically had a significantly lower rate of recurrence compared with the nonoperative group (13.1% vs 41.7%, \(P = .02\)). Players in the surgical group were also found to have longer intervals between recurrent injuries (18.4 months vs 4.4 months, \(P = .04\)). Okoroha et al.\(^9\) compared the rate of recurrent injury in NFL players managed surgically and nonsurgically and reproduced these findings, with operatively managed players displaying a significantly lower rate of recurrence (26% vs 55%, \(P = .021\)) and longer interval between recurrent injuries (14.7 weeks vs 2.5 weeks, \(P = .05\)). The results of our cohort, investigating players who sustained their first shoulder instability event during their NFL careers, echoed those of the prior studies, with a reduced recurrence rate in the operative cohort (27% vs 50%) and longer interval between recurrent instability events (105.7 ± 100.1 weeks vs 24.7 ± 40.6 weeks). Additionally, players who RTP successfully after operative management had significantly longer careers. An interesting finding, however, was that they did not play in a greater number of games, as would be expected. This may be the result of unquantifiable factors, such as coaching decisions and team dynamics, as well as player factors including minor injuries or trades, for which our study is unable to account. Nevertheless, these results suggest the potential career prolongation in NFL athletes who seek surgical stabilization of shoulder instability.

When one is managing the care of professional football players, it is paramount to recognize that successful RTP does not necessarily equate to satisfactory outcomes. Glenohumeral dislocation and subluxation injuries can be extremely detrimental for NFL athletes because the routine performance of football-specific tasks, such as overhead throwing, blocking and/or pushing opposing players, or bracing during a fall to the ground\(^7,30\) can increase the risk of recurrent instability.\(^31\) Additionally, these injuries result in a significant amount of missed game time because of the need for extended rehabilitation.\(^32\) Given the low retention rates and short career lengths in the NFL, with the average career length reported to have decreased dramatically to as low as approximately 2.66 seasons,\(^33\) NFL players remain dependent on a high level of in-game performance and consistency. Therefore, career longevity is an important factor for an athlete when considering future contract negotiations and estimated earning potential.\(^34\)

There are many other factors to be considered when determining a treatment algorithm. These must take into account injury factors, such as bone loss, engaging lesions, recurrent subluxation, and athlete symptoms. Additionally, career factors may drive an athlete’s preference regarding wanting to RTP the same season versus undergoing surgery, such as the team pursuing the playoffs or the player negotiating a new contract. Our investigation elucidates that operatively treated players have reduced recurrent instability injuries and nonoperatively treated players RTP quicker; however, neither treatment shows superiority in terms of player performance and game utilization. As such, treatment after a shoulder instability event should be individualized to the athlete’s injury characteristics, symptoms, and personal or career preferences.

**Limitations**

Owing to the nature of the retrospective design of this study, there are several limitations. First, no a priori power analysis was conducted. Second, using publicly available data is a limitation because it is possible that some players were not identified. Moreover, all data were pooled from independent third-party sources, which lack availability of official medical records. This leads to possible inaccuracies, such as recording official RTP clearance, because this study could only identify when players returned to actual game play. Additionally, this limits the identification of concomitant injuries or sequelae in the athletes, such as recurrent shoulder subluxation, bone loss, and on- and off-track lesions. Subsequently, the use of third-party sources has limited access to information regarding the type of instability experienced by the players, including hand dominance and mechanism of injury, as well as the ability to differentiate between anterior, posterior, and superior labral tears. The public resources may not effectively distinguish between first-time and recurrent shoulder instability because press documentation may lack diagnostic precision. This study could not collect or adjust for operative information such as surgical experience of the surgeon, type of surgery performed, approaches used, and implants placed. In addition, injuries involved 2 decades of NFL play, treatments, and rehabilitation protocols, allowing for variation in management among players. Furthermore, it is not possible to account for changes in coaching and roster composition over the past 2 decades that can impact player utilization and performance. Finally, it should be noted that players who sustained injuries prior to their professional careers may not have had available internet records and, as such, may not have been identified appropriately by the exclusion criteria.

**Conclusions**

Athletes who RTP in the NFL after a shoulder instability injury do so with a similar workload and performance irrespective of surgical or nonsurgical management. Whereas nonoperative treatment is associated with faster RTP, operative management is associated with fewer recurrent instability events, greater time between recurrent instability events, and greater career longevity.
References


