IMPACT OF CONCUSSIONS ON THE PERFORMANCE OF RUNNING BACKS AND WIDE RECEIVERS IN THE NATIONAL FOOTBALL LEAGUE

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DISCLOSURES

• I (and my co-authors) have no disclosures as it pertains to this research.
WHAT WE KNOW

• Attempt to decrease concussion incidence in NFL
• Incidence of concussions has increased.
• Studies done evaluating Return-to-play (RTP) rates and performance after various musculoskeletal injuries
• What about concussions?
  • Details are not fully understood despite their relatively common occurrence
Purpose

- Investigate the effect of concussion on the performance of running backs and wide receivers in the NFL with respect to RTP and player productivity.
METHODS

• Retrospective review
• All concussions by athletes in the NFL during a 4-year period (2012-2015)
• Player demographics, performance, and RTP
• A control group consisting of all running backs and wide receivers
  • Age-, body mass index-, and NFL experience-matched
RESULTS – DEMOGRAPHICS

- **138** NFL running backs or wide receivers sustained a concussion
  - **38** with a total power rating > 200 points
- Control population: **139** running backs and wide receivers with total power ratings of > 200 points.
- There were **no statistical differences** in age, position, NFL experience, or total number of games played during the 3 seasons prior to injury ($P > .05$)
Results – Return to Play

• For concussed players, **average time to RTP** was **18.9 ± 7.6 days (1.5 ± 0.9 games)**.
• 89% players were able to return to competition in the same season.
• Concussed players played in significantly **fewer games within the index year** of injury (13.7 ± 3.6 vs. 12.7 ± 3.0, respectively; *P* = .0002).
• All concussed players **successfully returned to competition** in either the index or next season.
RESULTS – PERFORMANCE

• Mean power ratings for concussed players were similar to controls throughout the 7-season study period.
• Mean power rating per game played did not differ significantly between concussed players and controls:
  • 1-year setting (-1.2 ± 4.8 vs. -1.1 ± 3.9, respectively, $P = .199$)
  • 3-year setting (-3.6 ± 8.0 vs. -3.0 ± 4.5, respectively, $P = .219$)
  • Within the index season (8.1 ± 4.3 vs. 7.8 ± 3.7, $P = .41$)
DISCUSSION – RTP

• Present study: RTP at approximately **19 days** (range 6-35 days) while missing an average of **1.5 games**
• Historically, 92% of concussed players had **6 or fewer days** away from play.
• Why?
  • Change of data, knowledge, and more **stringent RTP protocol** compared to the earlier time period.
**Discussion – Performance**

- Despite previous literature showing long-term neurological effects, concussions appear to have:
- No significant decline in **athlete performance**
  - **acute or long-term**
CONCLUSION

• A high rate of RTP in NFL running backs and wide receivers following a concussion injury.
• Although there may be long-term neurological effects, **concussions appear to have no effect on immediate player performance.**
• Players were able to perform at a similar level in both the acute and long term post-injury.
THANK YOU

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