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

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**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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