

Motivation

Most football players develop Chronic Traumatic Encephalopathy (CTE), a severe neurodegenerative disease, after their playing careers. Concussions greatly increase the likelihood of CTE development.

- **Study Aim:** Evaluate players to predict their risk for future concussions and suggest potential withdrawal from play, consequently reducing CTE rates.

Methods

- Studied dataset from PBS Frontline listing concussed players from 2012-2015
- Used whether or not a player was re-concussed in next two years as the outcome variable
- Trained various models on the data

Machine learning can non-invasively **predict future concussions** in NFL players with **75% accuracy**.



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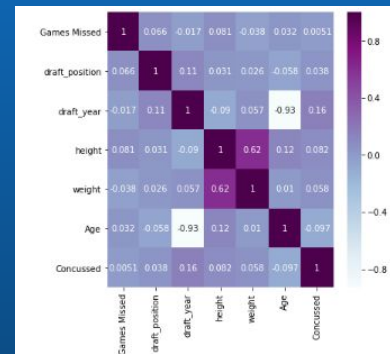


References

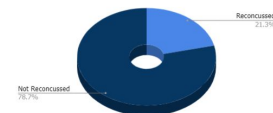
"Study Details CTE in Football Players." *MDedge Neurology*, 25 Sept. 2017, www.mdedge.com/neurology/article/145375/alzheimers-cognition/study-details-cte-football-players.

"Concussion Watch." *PBS*, Public Broadcasting Service, 2015, www.pbs.org/wgbh/frontline/article/concussion-watch/.

Results



Concussion Rates in 2015 for Players Who Have Been Concussed in the Past 2 Years



Concussion Rates in 2015 for Players Who Haven't Been Concussed in the Past 2 Years

