

EVOLUTION OF RULE CHANGES AND COACHING TACTICS IN AFL: IMPACT ON GAME SPEED, STRUCTURE AND INJURY PATTERNS

Norton, K 1)

1) School of Health Sciences, University of South Australia

Keywords: sport evolution, game structure

Introduction

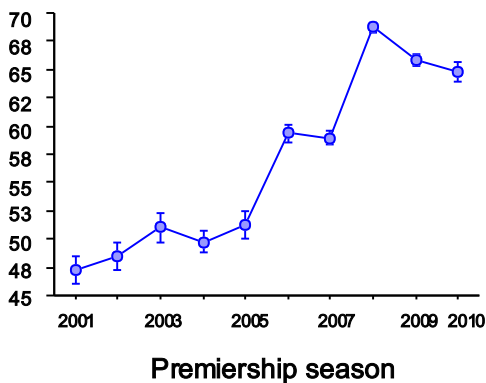
This research covers over 100 years of changes in rules, injury patterns and strategies used by coaches in Australian Football that have led [particularly in the last decade] to a circular 'race' between coaching tactics to drive speed and rule changes by the administrators to try to slow speed. The battle has resulted to some interesting evolutionary changes at the expense of injury rates and player welfare.

Methods

Game analysis was used to collect data on game speed [ball speed], player density, play and stop periods and the fraction of the game in play [versus stoppages]. Two other independent datasets were also used to review: (1) AFL injury patterns over the past 15 years, and (2) GPS-based player movement files.

Results & Discussion

% play time



Data collected across all three datasets support the theory that player speed is a critical element in the aetiology of injury development. On this basis rules have been modified to make the game more continuous. Allowing players to rest during the game increases their ability to compete at high speeds. The more continuous game with shorter rest periods suppresses top-end speeds, reducing the potential for, and severity of, high-speed collisions and reducing injury rates.

Other major changes include the increased player density in the modern game which is a result of the very high rate of interchange and the associated 'freshness' of players, increased intensity of player movement indicated by a higher mean speed and a greater proportion of time spent sprinting.

Conclusion

In collision sports such as AFL efforts must be continually made to control the rate and severity of collisions and game speed in order to mitigate injury potential. A natural evolution towards speed, together with greater fitness and player size, demand these controls measures for player wellbeing and safety