

## Return to play and risk of repeat concussion in collegiate football players: comparative analysis from the NCAA Concussion Study (1999-2001) and CARE Consortium (2014-2017)



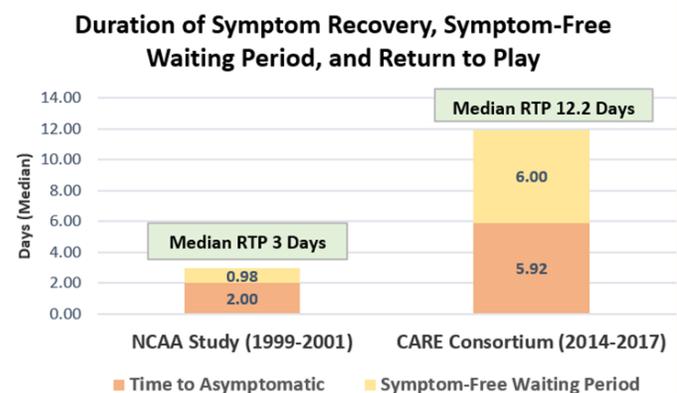
# Publication Brief

**Purpose** In this study, researchers compared data from the National Collegiate Athletic Association (NCAA) Concussion Study and the NCAA-Department of Defense Concussion Assessment, Research, and Education (CARE) Consortium, to analyze how clinical management, return to play (RTP), and risk of same-season repeat concussion in collegiate football players has changed over the past 15 years.

**Background** Prior to the 1990s, athletes returned to participation within a day after sports-related concussion (SRC), and systematic protocols for RTP were seldom used. Findings from the NCAA Concussion Study showed that the initial 7-10 days after SRC was the period of greatest brain vulnerability and heightened risk of repeat concussion. Considering the cultural change over the past decade in collegiate football, and the promotion of best clinical practices around RTP in concussion management, the authors examined whether common practice has changed and its effect on the risk of repeat concussion within the same season.

**Methods** The authors analyzed data from American collegiate football players, on reported duration of symptoms, the symptom-free waiting period (SFWP), RTP and occurrence of within-season repeat concussion, from the NCAA Concussion study (1999-2001; n=184) and the more recent CARE Consortium study (2014-2017; n=701).

**Findings** Return to play in CARE athletes was nearly 10 days longer than for those in the NCAA Study, allowing additional time for recovery. CARE athletes were at significantly lower risk of repeat concussion within the first 10 days after initial injury, and the rate of same-season repeat concussion was 41% lower than in the NCAA Study.



**Discussion** International consensus guidelines now recommend that athletes observe a lengthier period of recovery and rehabilitation prior to return to play after a sports-related concussion. Comparison of data from 15 years' prior shows this recommendation is being followed in modern practice with American football athletes. Athletes now report a longer recovery time after a sports-related concussion, as clinicians are more conservative in concussion management, thus lowering the risk of repetitive concussions during the period of maximum brain vulnerability.