



# UPDATE

## CIRCADIAN RHYTHMS AND THE NFL

The sleep-wake cycle is one of many physiological/behavioral processes subject to circadian regulation. For example, studies indicate that athletic performance peaks in the afternoon because of circadian fluctuation. If so, this suggests that a circadian advantage should be measurable when competing athletically at certain times of day. This is supported by a 25-year retrospective study of National Football League (NFL) players based on Monday Night Football games[1]. The authors hypothesized that if there is an afternoon circadian advantage in performance, then West Coast teams should have an advantage over East Coast teams during Monday Night Football games, regardless of game location or direction of team travel, simply because the games start at 9 p.m. From the perspective of West Coast teams, the games start at 6 p.m., 3 hours closer to their afternoon performance peak.

Over the 25 years, 12 different East Coast teams played five West Coast teams for a total of 63 games. Win-loss records (relative to point spreads and to home-field advantage) were analyzed using logistic regression. West Coast teams won more often, won by more points and performed significantly better ( $P < .01$ ) than predicted by the Las Vegas point spread. Simply selecting a West Coast team without considering any other variable successfully predicted the winner against the point spread 67.9 percent of the time.

You can bet on circadian rhythms to exert powerful influences over all our lives.

If you would like a copy of this article, contact the Sleep Disorders Center (714) 771-8950.

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[1] Smith, et al. Circadian rhythms and enhanced athletic performance in the National Football League. *Sleep* 1997; 5: 362-365.