Methods

Sample: 10–18-year-olds (n=49; 15.01±1.6 years old, 55% female) diagnosed with concussion and enrolled within 14-days of injury (7.63±3.7 days).

MVPA & Insomnia: Acquired via wrist-worn actigraphy for 14 days and nights after study enrollment. Quantified as minutes/day spent performing moderate-to-vigorous intensity exercise and minutes/night spent awake while in bed.

Data Processing: Daily MVPA and nightly time in bed awake (in minutes) were averaged for days 1-7 and 8-14 of the monitoring period.

Statistical Approach: Cross-lagged panel modeling of associations between early MVPA (days 1-7) and later insomnia (days 8-14), compared to the inverse relationship – early insomnia (days 1-7) and later MVPA (days 8-14).

Results

MVPA (min/day): Days 1 – 7

MVPA (min/day): Days 8 – 14

Time awake (min/night): Days 1 – 7

Time awake (min/night): Days 8 – 14

Greater insomnia during 1-7 post-concussion is associated with lower volumes of MVPA during days 8-14 (β=-0.44; p<0.001).

Early MVPA is not associated with insomnia later in recovery (β=-0.09; p=0.58).