

two consecutive summers. Surveys were administered near the end (Time 1) and beginning (Time 2) of the program nearly 11.5 months apart. Controlling for age, youth perceptions of staff at Time 1 positively predicted their perceptions of global self-worth ( $\beta = .26, p = .03$ ) and negatively predicted self-reported risk behaviors ( $\beta = -.42, p < .01$ ), but did not predict hope ( $\beta = .16, p = .20$ ) at Time 2. These findings provide support for the relatively long-term positive effects of participation in youth development programs for youth from low-income households. For these young people, the development of positive, social bonds with program staff, even in a relatively short time-frame, can have a lasting effect on their well-being by building developmental assets and reducing risk behaviors.

### **Evidence for Differential Effects of Sports-Related Concussion on Subtypes of Cognitive Flexibility**

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A growing body of evidence has demonstrated impairments in cognitive flexibility following a concussive injury, however a critical barrier to our understanding of this relationship is the utilization of assessments of cognitive flexibility that conflate switching between contextual rules and the shifting of visuospatial attention. As these different aspects of cognitive flexibility are subserved by distinct neural networks, the utility of a cognitive flexibility assessment following injury may be reduced depending upon the extent to which the task requires shifts in visuospatial attention relative to contextual rules. Accordingly, the current investigation examined the extent to which these aspects of cognitive flexibility may be differentially influenced following a concussive injury.

Athletes with sports-related concussions ( $N = 32$ ) were assessed within 72 hours of injury, 5 days following injury, after returning to play, and 45 days following returning to play. Match-control athletes ( $N = 33$ ) were tested at the same intervals. Findings revealed that concussed athletes demonstrated impairments in task performance on a visuospatial attention-based cognitive flexibility task that persisted following the athlete returning to play, relative to non-concussed match-control athletes. No difference between groups was observed for performance on a contextual rule-based cognitive flexibility task. These findings suggest that concussive impacts differentially influence distinct aspects of cognitive flexibility, such that the utility of a cognitive flexibility task in detecting concussion-related impairments may be reduced depending upon the extent to which it relies upon contextual rule-based decisions. Test batteries focusing on visuospatial attention-based cognitive flexibility may aid in the evaluation and follow-up of athletes after a concussive injury.

### **The Effects of Acute Exercise Timing and Duration on Long-Term Memory**

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Acute exercise is beneficial for memory in children and adults (Etnier et al., 2014; Labban & Etnier, 2011). Although exercise prior to exposure appears to be most beneficial for long-term memory (LTM), this condition has not been compared to exercise before and after a memory task. Our purpose was to investigate how exercise timing, in regards to a memory task, affects LTM. Twenty-two active adults ( $M=22.05, SD=3.1$ ) were randomly assigned to 4 groups: 20-