Visual Tracking Strategy during Baseball Hitting

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Abstract

Baseball hitting is considered as one of difficult technique in sport. Excellent hitting needs a good visual ability, powerful swing, and accurate bat-ball contact. The purpose of this study was to investigate difference of visual tracking strategy during baseball hitting between elite and normal baseball players. 10 elite and 10 normal baseball players participated in this study. The iView head-mounted eye tracking device was used for measuring visual tracking strategy during hitting. Each subject wore head-mounted eye tracking device and observed a standard pitching video which was projected to the screen. The location of visual tracking was defined as six areas such as pitcher's forearm, upper arm, head, trunk, lower extremity and outside-of-pitcher. The same measurement procedures were conducted for both elite and normal baseball players. After analysis of independent sample t-test, elite players were focus on pitcher's head at the wind-up phase, were focus on upper extremity at the leg-lift-top phase, and were focus on upper arm at the stride phase ($p<.05$). However, normal players almost put his attention on pitcher's trunk area than elite players at the ball release phase ($p<.05$). It conclude that the visual tracking strategy of elite player keeps on smell area and stable during hitting. The normal players might misjudge a pitch and have poor ball-bat contact due to the huge area of visual tracking. The results also suggested that pitcher should be keeping the consistence of arm movement during pitching. It's allowed that batters hard to recognize correct pitching pattern.

Keyword：Visual cues, Swing, Softball.