G-Force Exposure and Functional Recovery in High School Ice Hockey Players

Susan Y. Kwiecien, Luigi Olinto, Andrew H. Kim, Stephen J. Nicholas, Malachy P. McHugh, FACSM
Nicholas Institute of Sports Medicine and Athletic Trauma, Lenox Hill Hospital, New York, NY.

ABSTRACT

The purpose of this study was to use triaxial accelerometers to record G-force exposure in high school ice hockey players during all games and practices over the course of a season. The primary measure of interest was duration of high G-force exposure results in impaired functional recovery. Force exposure was not related to indices of recovery.

INTRODUCTION

There has been limited research using accelerometers to quantify whole body physical stress imposed on athletes in contact sports and with sudden directional changes. This technology and method of quantifying G-force exposure may prove useful in monitoring the physical stresses imposed on ice hockey players.

METHODS

Accelerometry analysis was effective in distinguishing game versus practice differences only at high G-force exposure. This lack of differences at low G-force exposure may reflect similarities in physiological stress in games and practices. Interestingly, high G-force exposure was greater for practices vs. games in both Australian rules football and American football.

DISCUSSION

- Force exposure was not related to indices of recovery.
- This technology and method of quantifying G-force exposure may prove useful in monitoring the physical stresses imposed on ice hockey players.

RESULTS

- Resultant G-force was ≥2G (98% of the time in games and practices, with little activity ≥4G. Based on these distributions analyses were subsequently made on time spent at greater than 2G (Low), or greater than 4G (High).

- Force exposure at >3G was only apparent at high G-force thresholds (P<0.01). Weakly functional recovery score was consistent across the season (22±8.3). Impaired recovery (>2G) was evident in 8 of 60 (13%) recovery questionnaires. G-force exposure was not related to indices of recovery.

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