

## 研究業績 英文表記

| 和文          |  |
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| 表題          | バスケットボール競技における高強度動作の加速度分析  |
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| 英文          |  |
| Title       | Acceleration Profile of High-Intensity Movements in Basketball Games.  |
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| Abstract    | <p>This study aimed to elucidate movements that require greater acceleration during basketball games, their occurrence frequency, and compare acceleration components. Eighteen male collegiate basketball players (age: 19.5 ± 0.8 years) were enrolled. Triaxial accelerometer was used to measure acceleration and a synchronized video was recorded. Moments that generated resultant accelerations &gt;4, 6, and 8 G, and their coincided movements were identified. Ratios and frequencies of the extracted movements were calculated and Jonckheere-Terpstra trend test was used to examine which movement rate increased when acceleration threshold increased. In addition, the top 7 movements that generated a resultant acceleration &gt;6 G among the combination of basketball-specific movements were extracted. Their resultant, mediolateral, vertical, and anteroposterior accelerations were identified and compared using one-way analysis of variance. Cohen's d was used to calculate effect sizes. All p &lt; 0.05 were considered statistically significant. The extracted frequencies were 33.6, 9.1, and 2.3 cases per minute for &gt;4 G, &gt;6 G, and &gt;8 G, respectively. As the threshold increased, the rate of deceleration, landing, and physical contact increased. The mediolateral acceleration of physical contact was significantly greater than other movements, whereas the vertical acceleration of landing and deceleration was significantly greater than other movements. Thus, acceleration component analysis was performed to classify movement types. Greater acceleration appeared frequently in movement during defense. It is suggested that many defense movements involve a reaction to the ball and opponent. There are many passive movements during defense and speed changes rapidly. If many passive movements occur when defending, larger physical load is applied, and may lead to fatigue.</p> |
| keyword     | accelerometry, biomechanics, deceleration, fatigue, wearable sensor, physical load   |

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