Relationships between training workload parameters with variations in anaerobic power and change of direction status in elite youth soccer players

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Abstract
The purpose of this study was to test the relationships between training workload (WL) parameters with variations in anaerobic power and change of direction (COD) in under-16 soccer players. Twenty-three elite players under 16 years were daily monitored for their WL across 20 weeks during the competition soccer season. Additionally, players were assessed three times for anthropometric, body composition, COD, and anaerobic power. A correlational analysis between the mean differences between assessments and accumulated WL parameters were conducted. Moreover, a regression analysis was executed to explain the variations in the percentage of change in fitness levels considering the accumulated WL parameters and peak height velocity. The accumulated daily loads during one week showed a large and a moderate correlation with peak power and COD at different periods of the season. Regression analysis showed no significant predictions for COD ($F_{(12, 10)} = 1.2$, $p = 0.41$) prediction, acute load ($F_{(12, 10)} = 0.63$, $p = 0.78$), or chronic load ($F_{(12, 10)} = 0.59$, $p = 0.81$). In conclusion, it may be assumed that the values of the chronic workload and the accumulated training monotony can be used to better explain the physical capacities of young soccer players, suggesting the importance of psychophysiological instruments to identify the effects of the training process in this population.

Author keywords
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