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Effects of Varied Rest Intervals on Vertical Countermovement Jump Performance and Fatigue Index

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Finding an optimal rest period that results in a high level of performance can be difficult. It is important to match the rest interval (RI) with the intended activity in order to minimize fatigue and maximize functionality. **PURPOSE:** To investigate the effects of varied rest intervals on vertical countermovement jump performance, power/velocity, fatigue, and rate of perceived exertion (RPE). **METHODS:** Sixteen (8 male, 8 female) subjects (21.2 ± 0.9 yrs) came in on three separate occasions and completed three sets of 10 vertical jumps (VJ). On each occasion, a different RI (30, 60 or 90 seconds) was administered between tests. Jump height, average and peak power and velocity, fatigue index (%), and RPE were measured and/or calculated for each set and condition. A 3 x 3 factorial analysis of variance was used to compare differences in RIs with jump height, average and peak velocity/power, fatigue index and RPE. **RESULTS:** Sixty second RI showed the most improvement in average jump height from the previous set (Set 1: 19.1 ± 3.6 to 19.4 ± 3.3 in (+1.5%), Set 2 to 3: 19.4 ± 3.3 to 19.8 ± 3.4 in (+2.1%), when compared to 30-sec (Set 1 to 2: -0.5%, Set 2 to 3: +2.0%) or 90-sec RI (Set 1 to 2: +2.1%, Set 2 to 3: 0%). However, these improvements were not statistically significant ($p > 0.05$). While no significant difference was observed in average ($p = 0.518$) or peak ($p = 0.261$) power between sets, significant difference was observed in peak velocity between 1st and 3rd set with 3rd set showing the highest velocity (1.28 ± 0.01 vs. 1.39 ± 0.03 m·sec⁻¹, $p < 0.05$). However, no significant difference in peak velocity was observed between RI conditions. 60-s RI showed the least amount of fatigue, but there was no statistical difference between 30, 60 and 90 RI conditions (4.43 ± 0.58 vs. 3.26 ± 0.07 vs. $4.50 \pm 0.75\%$ respectively, $p > 0.05$). RPE from set 3 was significantly higher than set 1 but not set 2 (12.3 ± 1.6 vs. 10.2 ± 1.6 vs. 11.4 ± 1.6 , $p < 0.05$), however no statistically significant differences were found between RI conditions. **CONCLUSION:** Based on the results, varied RIs did not significantly alter vertical jump performance or fatigue. Although not significant, modest improvement on performance was shown during 60 RI condition, which may impact an athlete's performance.