Differences in Single Leg Vertical Jump Performance Depending on Single or Double Legged Landing

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ABSTRACT

The vertical jump is crucial in sports and indicates lower body explosiveness. Additionally, vertical jumping requires landing bilaterally or unilaterally. **PURPOSE**: To determine any differences in unilateral vertical jump performance when landing unilaterally or bilaterally. **METHODS**: Thirty recreationally trained individuals (age = 23.5 ± 2.2 years) performed three trials of vertical jumps under four different conditions in random order (unilateral-left vertical jump with bilateral landing, unilateral-right vertical jump with bilateral landing, unilateral-left vertical jump with ipsilateral landing, and unilateral-right vertical jump with ipsilateral landing). Kinetic data (peak force, relative peak force, peak power, and relative peak power) was obtained from all jumps at 1000 Hz sampling rate. The average score between trials for the vertical jump were used for statistical analysis in SPSS 25. Independent T-tests were used to find differences in vertical jump measures depending on landing condition with p-value at 0.05. **RESULTS**: No significant differences between limbs in jump height (Right = 0.08 cm ± 0.04; Left cm = 0.11 ± 0.05), peak force (Right = 473.3 N ± 135.6; Left = 600.1 N ± 182.6), relative peak force (Right = 6.8 N*kg ± 2.6; Left = 7.8 N*kg ± 1.9), peak power (Right = 1505.4 W ± 524.5; Left = 1934.9 W ± 771.9), and relative peak power (Right = 21.3 W*kg ± 7.2; Left = 25.5 W*kg ± 5.8) during unilateral vertical jumps between the landing conditions (p > 0.05). **CONCLUSION**: It appears that landing conditions do not affect unilateral jump performance in recreationally trained athletes.