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Laterality of the lower limbs and carving turns

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The aim of this study is to discover whether the lateral preference of the lower limbs influences the execution of successive carving turns or not. Six skilled skiers (men, right lower limb preference, age 26.5 ± 1.61 years old, height 1.80 ± 0.04 m, body weight 78.83 ± 5.46 kg) executed 30 (18 left, 12 right) symmetrical carving turns. Kinetic analysis of the final vertical component of reaction force $FZ(t)$ measured dynamometrically provided the information about the time of initiation and steering phases of the turn and the maximum force, average force and force impulse. Differences between right and left turns are not statistically significant. Factual analyses of the magnitude of measured variables confirmed that left turns were found to have a longer duration, a shorter initiation and longer steering phase, and higher level of produced force and force impulse in comparison with right turns. Based on the results it can be concluded that the turns where the outer leg is the preferred limb are preferentially used to regulate the speed of the ride. The study of laterality in symmetrical carving turns has proven that lateral preference of lower extremities influences the execution of the turn also by expert skiers.

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