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IDENTIFICATION OF CRASH AND FALL RISKS DURING THE CYCLING MOUNT AND DISMOUNT ACTIONS IN TRIATHLON COMPETITIONS: A VIDEO ANALYSIS

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Background Injury risk factors have rarely been explored in the context of triathlon competition. The mount/dismount of a bicycle are complex skills, often conducted in crowded race environments. To date no study has reviewed potential factors that contribute to crashing/falling during the performance of these skills.

Aim To identify contributing or protective factors for crashes/falls during the cycle mount and dismount during triathlon competition.

Methods All crashes/falls were identified from available mount and dismount video recordings for the 2010–2011 Super Sprint triathlon competition series. A case-control design was employed where each crash/fall event was matched by gender and race type to 10 control subjects. Rate ratios or ORs were calculated to identify fixed variables or skills which may contribute to a crash/fall. Data are presented as ratios with 95% CI.

Results 66 and 46 crash/fall incidents occurred for mounting and dismounting respectively. Crash/fall rates during dismount were 2.3 (1.1, 5.0) times higher for race site four. There were no other differences for mount/dismount between gender, race type, category or sites. A moving jump mount (OR 3.9; 2.1 to 7.2) onto clipped-in cycling shoes (OR 5.0; 2.5 to 10.2) were indicative of crash/fall while mounting. During the dismount, a front leg swing (OR 3.3; 1.2 to 9.2) and moving dismounts while wearing cycling shoes clipped out from the pedals (OR 6.0; 2.8 to 13.0) were contributors to a fall/crash.

Significance Risk taking behaviours to limit time loss during competition contribute to crash/falls during cycle mounting, while inexperience and lower skill level tend to contribute to a crash during dismounting in triathlon.