Universität Basel

Publication

Are there risk factors in alpine skiing? : a controlled multicentre survey of 1278 skiers

OBJECTIVE: To analyse risk factors in alpine skiing. DESIGN: A controlled multicentre survey of injured and non-injured alpine skiers. SETTING: One tertiary and two secondary trauma centres in Bern, Switzerland. PATIENTS AND METHODS: All injured skiers admitted from November 2007 to April 2008 were analysed using a completed questionnaire incorporating 15 parameters. The same questionnaire was distributed to non-injured controls. Multiple logistic regression was performed. Patterns of combined risk factors were calculated by inference trees. A total of 782 patients and 496 controls were interviewed. RESULTS: Parameters that were significant for the patients were: high readiness for risk (p = 0.0365, OR 1.84, 95% CI 1.04 to 3.27); low readiness for speed (p = 0.0008, OR 0.29, 95% CI 0.14 to 0.60); no aggressive behaviour on slopes (p<0.0001, OR 0.19, 95% CI 0.09 to 0.37); new skiing equipment (p = 0.0228, OR 59, 95% CI 0.37 to 0.93); warm-up performed (p = 0.0015, OR 1.79, 95% CI 1.25 to 2.57); old snow compared with fresh snow (p = 0.0155, OR 0.31, 95% CI 0.12 to 0.80); old snow compared with artificial snow (p = 0.0037, OR 0.21, 95% CI 0.07 to 0.60); powder snow compared with slushy snow (p = 0.0035, OR 0.25, 95% CI 0.10 to 0.63); drug consumption (p = 0.0044, OR 5.92, 95% CI 1.74 to 20.11); and alcohol abstinence (p<0.0001, OR 0.14, 95% CI 0.05 to 0.34). Three groups at risk were detected: (1) warm-up 3-12 min, visual analogue scale (VAS)(speed) >4 and bad weather/visibility; (2) VAS(speed) 4-7, icy slopes and not wearing a helmet; (3) warm-up >12 min and new skiing equipment. CONCLUSIONS: Low speed, high readiness for risk, new skiing equipment, old and powder snow, and drug consumption are significant risk factors when skiing. Future work should aim to identify more precisely specific groups at risk and develop recommendations–for example, a snow weather index at valley stations.