

Hiking accidents—take care when descending mountains

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Falls account for about half of all hiking accidents. With the support of the Austrian Science Fund FWF, a team led by Martin Faulhaber from the University of Innsbruck is currently investigating what makes hikers slip, trip or stumble.

Walking in the mountains is one of the most popular Alpine summer sports. In Austria alone, it is estimated that several million hikers pursue this activity each summer. – Consequently, most hiking accidents occur in the mountains. Every year, about 1,600 people have accidents while hiking in the Austrian Alps, 100 of which are fatal. Slipping followed by twisting one's ankle and stumbling are the most frequent causes of injuries in the mountains when people fall. Falls currently account for about half (46%) of all hiking accidents, while other causes include cardiovascular problems, losing one's way or exhaustion.

Evaluating alpine police data

Whereas studies do exist on the subject of cardiovascular incidents during hiking, which may also – principally for men – result in [sudden cardiac arrest](#), little is known about what can cause hikers to fall. In order to identify the related [risk factors](#), the sports scientist Martin Faulhaber from the University of Innsbruck started the project "Falls in Mountain Hikers" with the support of the Austrian Science Fund FWF in 2016. As a first step in the ongoing investigations, Faulhaber and his team evaluated non-fatal and fatal accidents caused by falls when hiking

as recorded by the Austrian Alpine Police over the past nine years. Their analysis covered a total of 5,368 accidents with 5,665 victims.

Evaluation of the data shows that the gender distribution is relatively balanced with 53 percent for women and 47 percent for men. Most of the hikers involved were between 40 and 70 years of age.

Fewer fatal accidents, falling during the descent

According to principal investigator Faulhaber, it is remarkable that the number of fatal accidents remained constant at about 35 individuals per year, while non-[fatal accidents](#) increased continuously. In 2006 the number of people injured was 474, whereas it had risen to over 700 by 2014. "Presumably, this may partly be attributable to the fact that more and more people go hiking in the mountains and more emergency calls are being made. On the other hand, it might also be an indication that mountain hiking has become a little safer", explains Faulhaber. Making precise statements is difficult since, unlike winter sports, where ski-lift and cable-car operators record the precise number of people going up, the number of mountain hikers in summer can only be estimated.

Nonetheless, the data from the Alpine Police provide the researchers with a valuable basis for their research. Data analyses also showed that most falls occur on marked paths with loose gravel or on stony ground, and only six percent on snowy surfaces. – And the evaluation of the police records supplied another interesting result: 75 percent of falls occur when hikers descend from the mountain. While this implies exhaustion and the physical exertion of walking downhill, to which many people are not accustomed, might play a role, these are only hypotheses for the time being.

Identifying risk factors in the field

In order to learn more about the factors that cause hikers to fall and develop appropriate preventive measures, further investigations are necessary. In the coming two years, the researchers from Innsbruck plan to identify risk factors and gain an understanding of the mechanisms involved in [accidents](#). Elena Pocecco, a member of the team, carried out a pilot study in 2016 by questioning hikers who were injured in a fall. In a questionnaire she asked for data such as risk behaviour, equipment, a description of the hike in question, earlier injuries and previous experience with hiking. The data are now being compared to those of people who took the same hiking trails without falls. This will mean a great deal of "field research" for Faulhaber and his team, because they not only record the data and evaluate them statistically, but they also go out and check the terrain and the conditions on the trails at the accident sites. In addition they talk to [hikers](#) on the mountains – always on the lookout for potential risk factors leading to falls during [mountain](#) hikes.

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