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Wearing snowsports helmets: their effect on accidents

Due to the high figure of 70,000 people injured every year, the prevention of snowsports accidents is one of the focal points for the work done by the Swiss Council for Accident Prevention bfu in the sports sector. A comparison of the benefit with the cost of preventive measures designed to reduce head injuries shows that there is an economic benefit of at least two francs for every Swiss franc invested.



Problem and Objective

The majority of head injuries resulting from a snowsports accident could be prevented if helmets were worn. For this reason, the bfu has been promoting the wearing of snowsports helmets since autumn 2003 in its prevention campaign "Enjoy sport – protect yourself" as an important step towards preventing head injuries.

The aim of the study was to determine the economic benefit that results from the reduction in head injuries thanks to wearing snowsports helmets and to contrast this benefit against the outlay on preventive measures.

Procedure

Accident studies and a comprehensive study of the relevant literature formed the basis for calculating the protective potential of a snowsports helmet. The cost of head injuries in snowsports was obtained from accident insurance data as well as studies on the economic cost of sports accidents. The development of snowsports helmet-wearing rates was obtained from bfu observation surveys. The author based his estimate of the cost of preventive measures on experience gained so far and on the current market prices charged for helmets.

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Out of a total number of 2.2m skiers, 45,000 are injured every year. 15% of those not wearing helmets suffer head or neck injuries. It is estimated that three quarters of these injuries are in the area protected by a snowsports helmet. A snowsports helmet can prevent approximately 75% of the head injuries of relevance for helmets.

Since around 600,000 skiers (28%) were protected by a helmet in the 2004/2005 season, it can be deduced that approximately 1,060 head injuries were prevented. In the 2002/2003 season, in other words before the start of the "Enjoy sport – protect yourself" campaign, only 280,000 skiers (13%) wore helmets, thus preventing around 490 head injuries. The rise in the helmet-wearing rate thus led to an additional reduction of about 570 head injuries a year.

In a skiing accident with head injuries, insurance costs of approx. CHF 10,000 per case must be assumed. These are accompanied by indirect costs, which are 2.25 times higher and are not covered by insurance companies. It can thus be deduced that avoiding 570 skull, brain and other head injuries reduces the cost to the economy of ski accidents by CHF 18m.

In 2005, there were 323,000 more people wearing helmets than in 2003. This results in annual costs for buying helmets and the bfu's outlay on its prevention campaign of CHF 9m. Every Swiss franc invested in the prevention of head injuries while skiing thus represents an economic benefit of two francs.

In snowboarding, the helmet-wearing rate increased from 20% to 38% between the 2002/2003 season and the 2004/2005 season. The efforts to prevent snowboard accidents are even reducing the cost to the economy by around CHF 2.50 for every franc invested.

	2002/03 season	2004/05 season	Reduction due to the increase in helmet-wearing rate (rounded)
Skiing			
Helmet-wearing rate	13%	28%	
Head injuries prevented	490	1060	570
Savings in direct and indirect accident costs	CHF 16m	CHF 35m	CHF 18m
Snowboarding			
Helmet-wearing rate	20%	38%	
Head injuries prevented	440	830	400
Savings in direct and indirect accident costs	CHF 11m	CHF 22m	CHF 10m

Conclusions

The 2003 and 2005 surveys on helmet-wearing rates reveal that an increasing number of snowsports enthusiasts are wearing helmets thanks to targeted promotional measures. The calculation shows that the rise in helmet-wearing rates has a markedly positive effect on the number of people injured, which in turn markedly reduces the cost to the economy of snowsports accidents.

The aim is to achieve a further increase in helmet-wearing rates among skiers and snowboarders. This has the dual benefit of promoting public health and reducing the cost to the economy.

Source

Brügger, O. (2006). Auswirkungen des Tragens des Schneesporthelms auf das Unfallgeschehen: Helmtragquote 2003–2005, Kopfverletzungen und Unfallkosten (bfu pilot study R 0606, with summary in English). Berne: Swiss Council for Accident Prevention bfu.

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