

***“Working together  
to make Europe  
a safer Place”***

## u Safety in Sports

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But certainly sporting also holds a risk of injury due to accidents and overexertion. About one in five medically treated injuries are related to sporting activities. Fortunately, there are many possibilities to prevent sports injuries such as through making sports infrastructures and (protective) equipment safer, adapting rules of the game, and injury prevention focused training methods and coaching.

<http://webcast.clickwerk.ch/bfu/magqlingen09/>



## u The burden of sport injuries and their prevention

It is evident that sport activities are a major contributor to injuries. Unfortunately, detailed information on the risk factors related to sports injuries is lacking. In a few countries, accident insurance companies are obliged by law to keep a detailed record of all accidents and injuries that occur to people in the work force. This in turn allows prevention organisations to publish comprehensive statistics on sports accidents and injuries throughout Switzerland. In other countries the data related to sports accidents and injuries are taken from accident and emergency rooms in a sample of hospitals. At EU-level, these data are being made available through the European Injury Data Base (IDB), which reports on hospital based data collected from 13 countries in the EU. In comparison to insurance statistics, hospital records usually are a little bit more detailed, however do not take into account injuries treated by family doctor's or paramedics. Also on fatal injuries and disabilities resulting from sport injuries, hospital statistics are incomplete.

### **Evidence on cost-efficiency needed**

We all need regular physical activity in order to function optimally and to prevent illnesses. But certainly sporting also holds a risk of injury due to accidents and overexertion. In Switzerland for instance, football (soccer) is the most popular type of sport activities, but it also bears one of the highest injury rates (number of injuries per minutes of playing time) of any sport, only to be matched that of in-line skating and ice hockey. The direct costs of sport injuries are estimated to amount € 8.63 billion annually (see box 1). However, analysis of the injury risk ratio (time

spent performing a specific sports activity and likelihood of an injury) regarding specific types of sports activities, reveals that in the course of the last 10 years the total injury risk potential for the entire population actively doing sports is slightly decreasing. This due to the increasing trend to prefer low injury risk sports above high risk sports.

These calculations of the burden of sport injuries should be complemented with indicators as to the impact of accident and injury prevention programmes and their cost-effectiveness. Enhancing physical activity among populations and preventing sports injuries and accidents should be seen as two sides of the same coin (see box 2).

### **Challenges**

The collection and exchange of injury data should be extended to all European countries in order to help to better understand the main risk factors causing sport injuries. Even if there is conclusive evidence confirming the cost effectiveness of the ongoing accident and injury prevention programmes, it remains a challenge to convince policy makers and responsible authorities to increase investments in sports injury prevention. For this reason, there is great need for a strong lobby in this field of work to get financial funding for injury prevention programmes that would otherwise flow into care and medical treatment. It is recommended to establish a group of internationally recognised experts in sports injury prevention in view of raising awareness of the issue and intensifying prevention measures at national and EU-level.

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### **Box 1 Economic costs of sport accidents in Switzerland**

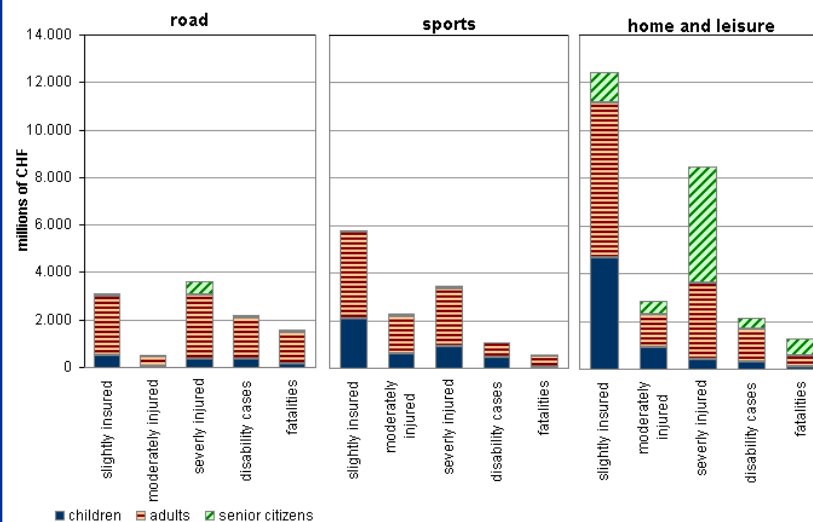
A study conducted by Ecoplan (commissioned by the bfu - Swiss Council for Accident Prevention) has for the first time calculated the costs of road, sports, home and leisure accidents in Switzerland using a single methodology. The number of accidents and the respective accident severity are based on the Swiss fatality statistics, the statistics of accident insurances (for adults) and projections for children and senior citizens by the bfu. The data are of high quality and very differentiated such that they allow distinguishing between three age groups, gender, five categories of accident severity and eight different types of sports. To calculate the costs caused by these accidents we consider medical costs, production losses, administrative costs for insurance companies, and intangible costs (costs of distress, pain shock and loss of joie de vivre). The intangible costs are based on a willingness to pay approach while all other (material) costs are based on effective costs provided by insurance statistics.

The results for 2003 [[http://www.bfu.ch/PDFLib/1042\\_74.pdf](http://www.bfu.ch/PDFLib/1042_74.pdf)] show that economic costs of sports accidents are estimated at CHF 13,131m a year, the material costs amounting to CHF 2,071m. Slight injuries (i.e. out patient treatments) are responsible for 44% of the costs. Severely injured patients (i.e. patients needing more than 6 days in-hospital treatment) cause

**(Box 1 continued)**

26% of the costs. Adults are responsible for two thirds of the costs, senior citizens are only responsible for 2%.

**Figure: Accident costs in Switzerland in the year 2003 (100 € = 155.8 CHF)**



The figure also shows that road traffic accidents account for costs of CHF 10,927m. If we include material damages the costs rise to CHF 14,078m, almost equal to the total costs of sport injuries. Here severely / slightly injured are responsible for 33% / 28% of the costs. Adults cause 80% of the costs. The accident costs in home and leisure (CHF 27,159m) are more than double the costs of sports accidents. Slight / severe injuries account for 46% / 31% of the costs. Senior citizens cause much higher costs (29%) than in road and sports accidents (adults only 49%).

The comparison of different accident categories allows setting priorities in accident prevention. Moreover, the study also assists in calculating the benefits of specific prevention policies.

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## **Box 2 Promotion of physical activity and sports injury prevention**

The public health burden and economical significance of non-communicable diseases (NCCD) is rising rapidly worldwide, and also in Europe. Non-communicable diseases are strongly linked to modern lifestyles, in particular the lack of sufficient physical activity. One important marker of the NCCD-problem is the prevalence rate of obesity. In Europe the prevalence of obesity has strongly increased in the last decade, ranging from 10%-27% for men and 10%-38% for women (2005-data). If we take the public health recommendation as a bench mark, i.e moderate physical activity is required for everyone for more than 30 minutes per day for at least 5 days a week, more than half of all Europeans is not physically active enough.

Consequently, we should promote a physically active lifestyle as much as possible. However, there can always be a threat of getting injured when engaging in physical activity and sports. Thus physical activity and sports injury prevention should both be advocated at the same time. And one should also acknowledge that at low levels of exertion, the risk for injury is generally low.

In order to make the Europeans more physically active draconic actions are needed. We are faced with an enormous Public Health problem and we should truly question ourselves if this problem can be solved by voluntary changes of behaviour. Perhaps we should put our stakes much more on a systems approach, including legislative action.

**(Box 2 continued)**

I feel that a comparison with policies promoting seatbelt use or smoking cessation is relevant. In tackling these issues, laws have been shown to be effective in promoting healthier lifestyles and safety measures. Building codes and urban planning codes can help to facilitate and promote a more active lifestyle and safer environment for physical activities. However, system changes will require unpopular actions, such as making parking on the street more difficult. This requires political courage.

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## u The psychology of injury prevention

Our knowledge on physical and biomedical approaches to prevent sport injuries is increasing day by day. Despite this growing insight into physiological processes and mechanisms related to injuries and their prevention, much less is understood as to the psychology of prevention behaviour in individuals and in groups of sportsmen and women.

### ***Learning from incidents***

First there is a dilemma that too often prevention measures are taken only after the occurrence of a very serious injury or after a sequence of a number of minor to severe injuries. Research reveals that teams can significantly improve the collective as well as the individual motivation to actively engage in preventative behaviour, by collective analysis and discussion of incidents or injuries over the last few months. Also minor incidents can be utilised for initiating such a group process. In this way, accidents and injuries in sport clubs can be prevented at an early stage by promoting a positive group attitudes towards prevention and creating a kind of prevention culture based on experienced incidents and minor injuries.

### ***Risk perception and risk taking***

Another question that should be raised is whether the perception of risks is perhaps as

much correlated to willingness to engage in preventative behaviour as the actual experience of injuries is. This correlation can be examined in both directions, which means that prevention behaviour could lead to lower risk perception and herewith to higher risk behaviour. Research on helmets wearing in alpine skiing did not confirm the assumption that skiers and snowboarders wearing safety helmets might be more willing to take risks than peers without helmets. Gender, age and peer group influences still seem to play a more predominant role in neglecting preventative behaviour and increased likelihood of risk taking.

### ***Safety practices and social context***

Structure analyses of such risk profiles show that risk perception and herewith connected behaviour is not only a question of individuals attitudes and intentions but is strongly connected to group processes. Evidence from research and practice learns that it is definitely not enough to communicate knowledge or to change attitudes in individual sportsmen and women. Changing prevention behaviour is a process strongly affected by emotional and social processes and mechanisms. The individual has not only to be considered as rational, but especially as an emotional and social subject (see also box 3).

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### Box 3 Safety coaching in sport

The traditional approach in injury prevention is to give athletes information on accidents and injury risks. The expectation is that information will enhance attitudes and herewith intentions to change behaviour in the direction of safety and protection. Many theories of the late 70s and 80s were developed on the basis of this approach, such as the 'protection motivation theory' and the 'health belief model'. The more emotional and social oriented concepts of behaviour change have been largely ignored in the field of injury prevention so far.

One of the most frequently considered theories in terms of human motivation is the self determination theory (SDT). SDT offers great challenges and new view points on interventions. Compared with other theories of motivation psychology, SDT involves especially the social interaction and communication processes as fundamental processes of behaviour change. Information is only effective if it touches not only attitudes but also basic needs of a person and herewith connected social relations. In this case, information gets an emotional cover that enables an individual to connect it with and integrate it into his or her self concept (internalization). This internalization enhances intention and herewith the likelihood of a change in behaviour.

The 'Safety coaching' approach is built on these SDT principles. Instead of defining athletes as a rather passive audience, the individual athlete is considered as an initiator, expert and partner in developing the right level of sport performance. By this, basic needs of autonomy, competence and relatedness should be satisfied. Therefore, the role of the coach in safety coaching is to a lesser extent that of a teacher but more that of a facilitator promoting self reliance, expertise exchange and partnership.

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### u Preventing snow sports injuries



Snow sports accidents and injuries occur frequently and the nature of the problem is rather well documented. As to the prevention of snow sport injuries a wide range of measures have been developed over the years with clear success. These measures relate to informing sportsmen and women, improve conditions on slopes and snow tracks and improve the quality of protective gear and equipment.

#### **Information campaigns**

In information campaigns the main focus is often on communicating the essential rules of conduct on the slopes (FIS rules) and raising awareness of the dangers of not abiding by these rules. This is done by education in schools and by providing information at the so-called "points of danger", i.e. on the ski slopes. These rules and regulations should then be brought to the attention of a vaster public by means of so-called intermediary

actors, such as ski instructors, slope operators, local businesses and authorities, or by word-of-mouth among the sportsmen and women.

As to the use of protective equipment by sportsmen and women, the "opinion leaders" in the snow sports branch helped to make helmet wearing socially acceptable amongst adults, both young and old (see box 4). Also several information campaigns contributed to the popularity of wearing a helmet. But finally it was the journalistic coverage of several grave and even fatal snow sport accidents, some involving national political persons, that helped in a few countries to promote legislative measures for helmet wearing on slopes.

#### **Safety slopes and equipment**

Preventive measures related to slope and trails often focus on actions to ensure that slopes and trails are well signaled and easily identifiable. Especially the snowshoe trails are in need of improvement. These should be better marked and better routed in order to reduce the chance of collision between snowshoe walkers and downhill alpine skiers.

Studies into the ergonomics of snow sport injuries reveal a great many specific risk factors in skiing, among others those related



to anatomic and neuromuscular differences in the human body. It is for instance discovered that a substantial proportion of sportsmen and sportswomen who wear prescription glasses or contact lenses their everyday lives, did not wear their glasses or contact lenses while performing their sport. Also the effectiveness of polarization in sports gear is being questioned, as 'some polarized ski goggles and glasses could be used more suitably as a bad weather simulation tool than anything else'. Sportswomen and sportsmen in need of prescription lenses should be advised to wear either specially made sports goggles with corrected lenses or normal goggles in combination with contact lenses.

Simulated fall reaction experiments carried out on snowboarders under laboratorial constraints, has helped to develop biomechanical specification requirements for *hand and wrist protectors* in snowboarding gloves thanks to their. Still more work is to be done on testing the actual protective potential that wrist protecting gloves that are currently on the market, offer.

Other studies have been looking into the effectiveness *back-protectors* in snow sports. Much like the wrist protectors, at the moment there are still no international agreed standards that guarantee the functionality and effectiveness of this protective piece of equipment.

### **Challenges**

In countries with ample snow sport facilities, a significant proportion of resources is being invested in measures geared towards influencing conduct and behaviour of skiers and snowboarders on slopes and trails, which isn't always the most effective nor sustainable approach. It is very difficult to verify what direct benefits are derived through education and information campaigns on the rules of conduct in skiing and snowboarding.

Investing resources in measures geared towards changing prevailing conditions and features of ski slopes for instance would be a lot more efficient. The signalling and marking of slopes are currently regulated by local authorities, but keeping them up to date often

requires lengthy discussions and negotiations with a great many partners and institutions. This is a very time and resource consuming business, as mountain transportation companies, snow sports schools and other institutions affiliated with winter tourism don't often share the same opinion on safety and prevention. It is therefore important that from an early stage stakeholders are being involved in programme development and action planning (see box 5).

### **European context**

It is important that all evidence concerning snow sports accidents and injuries be made available large scale and exchanged at European level. Based on these findings, appropriate safety prevention measures can be drawn up in European collaboration and taking into account the specificity of local conditions. It is of equal importance that both educational and infrastructural measures are being implemented and communicated in a uniform manner so that all sportsmen and sportswomen can rely on consistent advice and snow sport infrastructures regardless of which ski region they are in. Both the International Society for Skiing Safety (ISSS) and EuroSafe should be more actively engaged in this process.

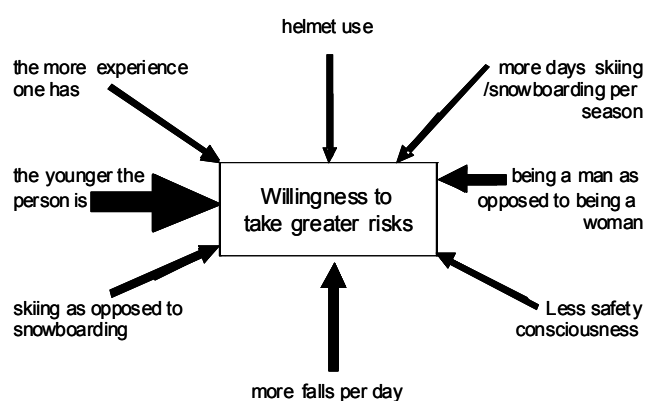
As long as there are no compulsory standards agreed upon as to which products definitively offer adequate protection against or help prevent specific injuries, nearly any manufacturing company of safety gear and equipment can market their products without any annoying constraints and are therefore free to claim their products' functionality and effectiveness as they wish. Businesses in Europe need to assume responsibility for the functionality of their products, in particular for those products that serve a protective purpose. This pertains to all functional sports gear such as protective sports glasses and goggles, wrist protecting gloves and back protectors.

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#### Box 4 Helmet use and risk taking in snow sports

In Switzerland, 15 % of the 70 000 ski and snowboard related injuries are head injuries. Since 2003, the helmet-wearing rate in Switzerland has increased considerably and reached the 65 % range in 2009. The purpose of wearing a helmet in skiing and snowboarding is to reduce injuries. However, it has been suggested that protective equipment such as a helmet can also prompt skiers and snowboarders to take more risks by giving them a false sense of safety, a phenomenon known as "risk compensation". To examine the correlation between helmet use and on-slope ski conduct, 961 skiers and 589 snowboarders were recruited at 20 ski resorts for a face-to-face interview.

The results indicate little evidence to support the claim that skiers and snowboarders wearing safety helmets are more inclined to take greater risks than without helmets. Risk compensation cannot be excluded, but it was found that other factors such as age, gender, number of falls per day, kind of activity, safety awareness, number of skiing/snowboarding days per season and years of experience skiing or snowboarding make a far greater contribution to help understand people's willingness to take risks while skiing or snowboarding (see Figure).



It was found that younger people as well as skiers and men in general reported to be willing to take more risks while skiing or snowboarding than either older people or women and snowboarders in general. There are several other factors that influence ski conduct on the slope. The more experience the skiers and snowboarders have, the more days per season they are used to spend on slopes, the more often they fall and the less safety conscious they are, the more likely all of these skiers and snowboarders are willing to take greater risks.

Human risk behavior results from a complicated mix of different motives, various decision making processes and subjective sensations experienced while taking certain risks. It is therefore impossible to suggest a simple relationship between risk taking and helmet use. Contrary to what most of us would like to believe, people wearing a helmet appear to ski and snowboard more slowly and challenge themselves less than skiers and snowboarders not wearing a helmet. Research suggests that injured skiers are not characterized by those who take more risks or who are more motivated by risky behavior but by those who possess less skills and experience in snow sports.

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### Box 5 National programme for snow sport safety: bringing evidence into practice

Around 70,000 skiing and snowboarding accidents occur on Switzerland's snow-sport pistes every year. The number of people seriously injured whilst practising snow sports totals about 3,800 and there are 8 fatal accidents. Many stakeholders on the Swiss snow-sport scene have been involved in accident prevention in snow sport for some time. Depending on their own specific interests, they focus on various topics of prevention, unfortunately not always the most effective ones.

The bfu has recognized the need to underpin interventions with evidence and good practices and for some two years has been striving for coordinated cooperation between stakeholders. At a meeting in April 2007, all stakeholders endorsed the initiative to organize a national coordination process and to strive for a joint prevention strategy. Following the meeting, a structured course of consultations among experts has been started in order to lay the foundations for a coordinated long-term strategy and programme of work. Though this process:

- risk factors were analysed and evaluated (epidemiological evidence);
- the reduction potential in eliminating risk factors was identified (theoretical reduction potential); and
- measures that can count on broad support of the partners and other relevant stakeholders were listed and submitted for endorsement by the partners (ensuring stakeholders support and commitment).

Within the framework of this process, various partners are now taking up their responsibility for the implementation of several actions and intervention measures. Thanks to the discussions between experts, a fruitful dynamism has been rapidly developed among the various actors in the field of snow sports. Stakeholders are increasingly exchanging information and making better use of available information and of possible synergies in actions. Motivated and inspired by the exchange with experts, several of the organizations have optimized their prevention efforts. As a result, from winter 2009/2010 onwards, there will be concerted actions in place.

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## u Safety in mountaineering



Mountaineering is the sport, hobby or profession of walking, hiking, backpacking and climbing mountains, also referred to as alpinism. Mountaineering is one of the most popular sports in alpine countries. In Switzerland for instance hiking ranks second in popularity, only behind cycling. Mountaineering and hiking also attract many tourists to Switzerland. Taking into consideration the popularity of this kind of alpine sports, the accident and injury rate is not particularly high, although should be noted that the few accidents that do occur are often quite serious and involve multiple victims. In Switzerland, there

are on average 80 fatalities a year in mountaineering alone.

### Challenges

With respect to mountaineering, information about the cause of accident or injury is relatively limited. There are only few conclusive studies at hand. The known risk factors are often intertwined and therefore only lead to an injury or accident when more than one risk factor is prevalent. In addition to that, the causes of accidents or injuries vary widely for the respective types of activity, such as walking, hiking, backpacking and climbing mountains. prevention measures have to be geared towards the specific types of activities and respective target groups.

Human error is often the decisive factor and cause of an mountaineering accident.



Although most mountaineers know the rudimentary basics, in practice knowledge may have become obsolete or lack complementary experience and skills. Mountaineers sometimes underestimate risks and not always recognize their mistakes until it's too late. Many sportsmen and women organise their activities autonomously and therefore can not easily be controlled and guided. Preventive measures geared towards changing conduct and behaviour are far more complex than the preventive measures applicable to improving conditions and protective equipment used in mountaineering.

#### **European context**

Mountaineers visit various destinations in Europe for performing their sport. For this rea-

son it is important that countries join forces and establish harmonised safety rules and regulations and harmonised enforcement of those rules. The uniform classification system for the level of difficulty of hiking trails, will present a big step forward in this process. Furthermore, European accident and injury statistics concerning mountaineering sports need to be improved significantly in order to provide information for the development of proper prevention measures and strategies, as national statistics often encompass too few accident and injury cases to be able to draw any substantial conclusions.

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## **u Safety in promoting football**



Football is one of the most popular sports in Europe. Because of this, football produces a relatively high injury rate in the statistics. Two prevention approaches may serve as illustration as to how challenging it is to develop interventions that work in practice and are acceptable for those actively engaged in sports.

#### **The 'Scheme 11'**

The World Federation of Football FIFA and the Swiss Accident and Injury Insurance Association SUVA have worked together in developing a training programme for football players. It consists of 10 exercises which can be easily integrated into any daily sports training schedule. Through incorporating these training exercises it should be possible to help decrease or even eliminate mistakes or faults typically related to football and that increase the risk to injuries. For example, they highlight injuries that occur due to an imbalance of strength between the opposing muscle groups in the upper thigh (the relationship between these opposing muscles is known as the "agonist/antagonist" relationship). The 11<sup>th</sup> element in the programme is focused on the principle of 'fair play'.

The programme also provides evaluation methods which enable researchers to deter-

mine how effectively the preventive measures stipulated in 'Scheme 11' are put into practice.

These evaluation methods are of significant importance to be able to determine how well these prevention methods are accepted in sports practices and whether they indeed bring about a reduction in sports injuries. Currently, many certified trainers in football are now familiar with this programme and at least half of the exercises recommended in 'Scheme 11' are now being put into practice.

#### **The 'Soccer Balance'**

A second training programme for football focuses on having footballers practice their training on a specially designed 'soft padded' surface that would help footballers improve their coordination on the field. Trial sessions have demonstrated that footballers' sense of equilibrium can be improved, although it is difficult to verify these findings since no control group was used in the trial practice sessions.

#### **Challenges**

The main challenge will be in the teaching of trainers and training instructors themselves as to how to carry out such training sessions. In that perspective, the preventive nature of the exercises needs to be stronger highlighted in current curricula for trainers as well as in their refresher courses.

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## u School sports



In some countries school children are participating in a mandatory accident and injury insurance system. Thanks to such a legally binding system, quite extensive data can be

gathered on injuries in school children that also provide excellent insight into the cause of accidents and injuries in school sports. In Germany for instance, 40% of all of the reported injuries and accidents in school are related to sports (see box 6). The frequency and severity of the injuries and accidents depend highly on the type of school, the type of sport played and the way in which the sports instruction is conveyed. Out of these findings it is possible to derive the main spearheads and targets for interventions.

### Challenges

School pupils' awareness of risks involved in playing specific sports can be increased by education programmes and for instance by explaining the advantages and disadvantages of competitiveness in sports and by training to anticipate relevant risks. But first of all, the education and qualifications of physical education teachers and sports instructors should be made comprehensive enough and sufficiently practice oriented, in order to make sure that theory can be easily put into practice in their classes and in the sports activities they organ-

ise. Teachers and instructors should be trained in evaluation of accidents and injuries incurred in their classes with a view to assist them in identifying the most suitable prevention measures in a given context.

However, the institutional framework of schools is always decisive as it is up to the individual schools themselves to decide which measures of prevention and safety their physical education teachers and sports instructors should follow and put into action. Empirical evidence is in that respect essential for decision making. It is also of great importance that the school management team carries out pragmatic interventions on the basis on annual work plans and reports. However, injury data and trends in school sports injuries and accidents seldom leads to conclusive statements about the effectiveness of the safety and prevention measures. Therefore, more short term indicators of success need also to be monitored, such as increased awareness and improved qualifications of teachers and instructors.

### European context

There are significant differences between countries as to the organisation of sports activities in schools and to the recording of children's sports accidents and injuries at school. This may lead to different strategic directions regarding prevention approaches and methods. Nevertheless, there are ample opportunities to exchange knowledge and experiences and to test the transferability of existing programmes and promising interventions.

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### Box 6 Safety in school sport - coordinated approach in Germany

In Germany, around 17,4 million children in schools, nursery schools, after-school care centers and students in higher education are insured by law. In case of a school accident the insurance system covers the acute medical care and if necessary, rehabilitation and compensation or a pension. In 2008 about 1,3 million school accidents were registered. Most of the accidents happened during sport lessons in public schools (43%). Especially games played with a ball carry a high risk for schoolchildren to get hurt. Receiving the ball (basketball, volleyball, handball), collisions with teammates and falls (football) are main causes of injuries at school during sports.

Taking into account available scientific evidence, the DGUV recommends to promote physical activities as an effective and appropriate way of accident prevention for children. For this, regular and professional physical education in schools is essential. In matters of education policy the Conference of the Ministers of Education and Cultural Affairs (KMK) is the most important partner to assure safety and health in German schools.

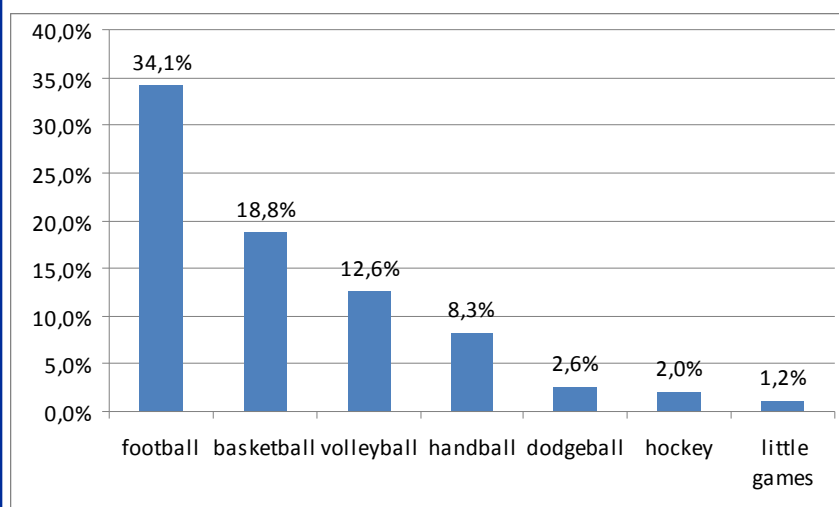
With the objective to improve safety and health at work and in schools, the German federal government, state governments and accident insurers developed the Joint

**(Box 6 continued)**

German Occupational Safety and Health Strategy (GDA). For implementation in schools the model „Good and healthy schools” will provide the framework for actions to be developed. The concept follows the principle that by making schools safe and healthy places, the learning, living and working environment within schools will be enhanced, and thus also the quality of teaching and the health prospects of all parties involved. Research findings as to health and safety promotion will lead the implementation actions in schools.

DGUV is also initiating exchanges with representatives of the KMK to find out how the promotion of safety and health can be made an even more integral part of day-to-day school curriculum. The objective of a safe and healthy school is to shape school life in partnership with all stakeholders in such a way that a culture conducive to health and optimum school performance is created in schools.

**Figure: Ball games injuries in German schools (2007)**



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## **u Water safety**

Drowning is the second most common cause of death for children in the EU, over 70% of whom are involving young boys. The most common courses of events leading to drowning are: victim is suddenly sinking below the surface while swimming or bathing, victim falls unexpectedly into the water or victim is falling off a boat or vessel. Children drown most often by falling unexpectedly into natural bodies of water. The main risk factor here relates to flaws in supervision by parents and guardians. Statistically speaking, for every drowning fatality that occurs, there are 5 other near-drowning incidents in which the victims suffer severe injuries that require hospital treatment for 7 days or longer.

### **Prevention measures**

It is evident that parents need to be continuously made aware of the fact that children, especially infants, require constant supervision

when playing in or around water. The motto is *"supervision within reach of your child is a must"*. Also children's swimming skills should be improved in order to protect them from the consequences of an unexpected fall into the water. It is recommended to have them passing a self-life-saving test in order to assure a minimum standard of competencies in this respect. Children should be made familiar with the wearing of a life vest and shown how a life vest has an effect on the swimmer.

Swimming pool operators should constantly improve their facilities and maximize overall safety (see box 7). Technical deficiencies and flaws in equipment should be immediately repaired and regular audits should ensure early identification of potential risks. Major deficiencies that are being detected in public swimming pools are: insufficient separation of learners' pool from main pool, warnings signs missing and poor maintenance of pool side.

### Challenges

There is serious concern as to resources available for the implementation of the preventive measures. Pool operators and local authorities are all under pressure to economise on budgets. It's essential that the various user groups (parents, children, teenagers, clubs and organisations, schools etc.) continue to raise their voices and their concerns as to the safety of pools and natural bodies of water and that the working relationship between the swim-

ming facility operators and coordinating institutions be optimized.

Both the exchange of experience at an international level and the development of joint safety and prevention programmes will certainly lead to more efficient prevention programmes, by which it would be possible to minimize the number of victims involved in water related accidents and injuries.

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### Box 7 Safety at public indoor and outdoor pools



Swimming is one of the three most popular sports practiced and pursued in Switzerland. Throughout the year, hundreds of thousands of swimmers frequently visit the in numerous variety of swimming facilities such as indoor and outdoor pools as well as public lakefront and riverfront supervised swimming areas.

Approximately 350 people have drowned in natural outdoor swimming areas (lakes, rivers, creeks) within the last 9 years. Although a certain part of these swimming casualties can be attributed to either carelessness or even recklessness,

accidents are also due to flaws and deficiencies in a swimming facility's construction, maintenance, organisation or supervision.

Through careful planning and construction of a swimming facilities, many severe injuries and serious accidents can be avoided. Measures to be taken into consideration are:

- Safety specifications, to be comprehensively profiled in documents and construction plans;
- Adequate assessment of the construction plans and the facility actually delivered;
- Safety management organisation in operation on site;
- Updating of technical reports and log-books; and
- Weekly safety evaluation reports.

The bfu offers also on-site consultation to the swimming facility operators and supervisors in order to help recognize and eliminate any kind of technical or organisational deficiencies concerning the safety and security of the swimmers. In the course of the last years around 130 consultations have been carried out in the various kinds of swimming facilities. Technical reports have demonstrated how the safety standards of swimming facilities can be substantially improved by careful precautionary planning regarding the construction of the swimming facility. The most important precautionary constructional measures to be taken relate to measures:

- Ensuring adequate distance between the different kinds of areas within the swimming facility;
- Appropriate placement of pictograms on the sides of the pool;
- Ensuring the minimal water depth requirement in diving areas in accordance with the Fédération Internationale de Natation regulations (FINA);
- Installation of appropriate safety railings in the diving area; and
- Adequate and secure barriers at the entrance gate of a waterslides.

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## u Sports injury prevention in Europe

Currently there is no conclusive overview on the health burden caused by sports accidents and injuries in the EU (27 member states) on hand. Sports related accidents and injuries are not explicitly accounted for in the routine public health statistics, i.e. the mortality statistics and the hospital discharge statistics both based on ICD-classification of the WHO. The European Injury Database (IDB) is one example of a survey system that provides more detailed information about the external circumstances of an accident or injury. For example, it indicates which sport the person was injured in. However, only 13 of all of the EU member states keep record of such information and these don't account for any fatal accidents.

Based on statistical projection, in the 27 EU member states each year between 5 and 6 millions sports related injuries occur that need hospital treatment. Approximately 28% of the nonfatal incidents are related to football, another 12% are related to other types of team sports. Most of the fatal accidents and injuries occurred in drowning incidents, while biking and while mountain hiking. However, not all bike riding or even mountain hiking activities can be categorically understood as sports activities.

### Challenges

The statistical record keeping policies concerning injuries, including sports injuries, need to be standardized according to norms stipulated for the European public health database and improved in such a way that they help promote appropriate accident and injury prevention.

In the European member states the current available knowledge and know-how regarding injury risk and injury risk groups as well as favourable and successful injury prevention measures is not at all unified nor easy to find. Within the framework of the EU project "Safety in Sports" (see box 8) a list of relevant literature is to be compiled in order to promote better injury prevention methods for team sports such as football, handball, basketball etc. Based on the research findings compiled, sports clubs and associations should be able to work out practicable injury prevention schemes and programmes which they can easily put into action.

There should be an intensified effort to establish better working relationships in the fields of health and sport, especially at the political policy-making level, in order to be able to implement prevention strategies in the most effective manner possible. The alleged contradiction between encouraging more sports and physical activity as a public health measure while at

the same time wanting to promote more safety and injury prevention in sports, needs to be solved. Efforts of both groups of protagonists should be pooled together and directed to the common objective of promoting both sporting and safety in sporting.

### European context

The EU politics directed towards sports promotion and public health should provide opportunities to enhance the exchange of information on the magnitude and nature of the challenges and the sharing evidence based good practices.

A standardized method of compiling and assessing health statistics can provide comparable facts and figures about sports accidents and injuries in order to help set standards in the world of accident and injury prevention. The IDB programme is core to these developments and should be provided the necessary resources for ensuring its data collection and exchange process to become embedded in the EU programme for exchange of routine statistics, i.e. part of the EU-statistical programme

Research and development in sport injury prevention should be promoted and supported by funding within the framework of EU research. Better networking and intercommunication amongst the specialists in the field of prevention will lead to a better division of work as to research and development and thus a better use of scarce resources.

A solid network of specialists in the field of sports accident and injury prevention needs to be established and in addition to that, the exchange of ideas and experience, particularly between those working in research, those functioning as facilitators and those involved in politics, needs to be fostered. More cooperation and better working relationships between the safety experts, professionals working in the field of sports and civil society organisations (i.e. consumer groups, health promotion activists, youth groups) would in the end attract substantially more interest and attention to the needs and significance of prevention at the political level.

The Sport Safety Task Force of the European Association for Injury Prevention (EuroSafe) is aiming to coordinate such a network within the framework of the EU project entitled "Safety in Sports".

More information: [rupert.kisser@kfv.at](mailto:rupert.kisser@kfv.at)



## Box 8 EU project: Safety in Sports



The aim of the European project 'Safety in Sports', which is co-financed by the European Commission, is to increase knowledge on the prevention of acute and overexertion injuries.

The ultimate goal is to reduce the magnitude and severity of sports related injuries in Europe.

### ***Less injuries, better performance***

Sports injury prevention programmes are often quite general in nature, e.g. by advising some general warm-up and stretching exercises. However, given the specific character of each sports activity and related injury risks, there is a need for offering training methods which are tailored to the specific type of sport and to integrate these measures within currently accepted training practices. In addition, experience shows that compliance can be enhanced if sports participants recognise that these measures will also assist them in improving their own sports performance.

In promoting safety in sports, the project also wants to capitalise on the interests of sports clubs in marketing their services and in increasing sports participation, as the promotion of sports and injury prevention are two sides of the same coin.

### ***Project activities***

The project 'Safety in Sports' will establish a sustainable European network of experts from science, sports clubs and sports associations as well as from other institutions that have a keen interest in preventing sports injuries.

With the help of this network the project team will identify, evaluate and widely disseminate good practices in implementing safety promotion strategies for individual- and team sports. Furthermore, this network will be instrumental to gain knowledge on how to sustainably implement sports-specific prevention measures in countries.

For the mid-term, the project 'Safety in Sports' will focus on two categories of sports, i.e. on handball and basketball, activities which enjoy great, European-wide popularity. Also knowledge and experience gained in other ball sports, such as soccer, hockey, rugby and volleyball, will be included.

In close collaboration with the EHF (European Handball Federation) and FIBA Europe (Fédération Internationale de Basketball), National Sports Associations and a network of experts, the project team works on:

- An up-to-date inventory of the burden of sports injuries with a view to highlight the importance of the issue and to convince stakeholders.
- Analyses of existing injury prevention measures in sports, especially in handball and basketball, as well as safety promotion strategies in Europe.
- Consensus building on good practices in sports injury prevention and implementation strategies for handball and basketball with the help of selected experts.
- Elaboration of toolkits consisting of media, such as templates for presentations and leaflets, for communicating with stakeholders and target groups in handball and basketball sports.
- Testing of these toolkits in collaboration with EHF and FIBA Europe for handball and basketball as pilots in two national associations, respectively.
- Elaboration of general guidelines on how to develop, implement and sustain safety management schemes in basketball and handball as well as in other team sports.

For more information: <http://www.safetyinsports.eu>

## u AGENDA

### 2010

1-3 February, Bangalore Karnataka, India  
**5th International conference on children's health and the environment**  
 Website: [www.inchesnetwork.net](http://www.inchesnetwork.net)

22-24 February, Stratford-upon-Avon, UK  
**Call for papers—RoSPA's 75<sup>th</sup> Road Safety Congress**  
 Website: [www.rospace.com/road/](http://www.rospace.com/road/)

19-20 May, Reykjavik, Iceland  
**2<sup>nd</sup> European Regional Safe Community Conference Incorporating the 7<sup>th</sup> Nordic Conference on Safe Communities**  
 Website: [www.congress.is?SC-Iceland2010/](http://www.congress.is?SC-Iceland2010/)

1-4 September, Rome, Italy  
**Integrating knowledge for an interdisciplinary approach to suicidology and suicide prevention**  
 Website: [www.esssb13.org/](http://www.esssb13.org/)

21-24 September, London, England  
**Safety 2010, the 10<sup>th</sup> World Conference on Injury Prevention and Safety Promotion**  
 Website: [www.safety2010.org](http://www.safety2010.org)

26-29 September, Honolulu, Hawaii, USA  
**XVIII ISPCAN International Congress on Child Abuse and Neglect**  
 Website: <http://www.ispcan.org/congress2010>



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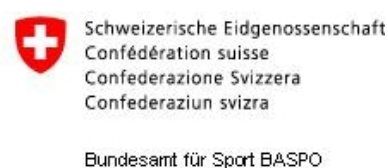
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### Partners



Photo's provided by bfu; ARAG; and EuroSafe

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## SIGN UP FOR WHO IS WHO

The Who is Who expert directory is a networking tool for all involved in injury prevention and safety promotion. It is also an important tool for EuroSafe to be able to identify and invite experts in specific areas to participate in expert consultations around various EuroSafe activities and products.

If you are an expert in a particular field please go to the Contact Directories section of the EuroSafe website:

<http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwVwContent/12whoiswhoexpertdirectory-.htm>

