Making prevention sustainable
Making prevention sustainable economically, ecologically and socially responsible.
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Foreword by the Chairs of the DGUV Governing Committee

The DGUV Governing Committee

Employers and insured individuals enjoy equal representation with the same number of votes on the autonomous administration committees of all of the German Social Accident Insurance Institutions. The organs of the DGUV are the Members’ Meeting and the Governing Committee. The Governing Committee elects its own chairs.
Preventive activity has met with unparalleled success in recent years. Throughout Germany, schemes and initiatives are being launched with the objective of preserving and promoting the resource of good health. Would anyone seriously now oppose preventive activity? We very much doubt it. And yet, when we take a closer look, a certain unease remains, despite the euphoria over the accidents and diseases that have been prevented.

In their exuberance, many of those involved overlook the fact that prevention frequently means one thing: conflict. The benefits to health and prosperity in the future stand in opposition to interests in the present that could reduce or destroy the successful results of preventive strategies. Smokers must forgo pleasure today if they want to have healthy lungs tomorrow. An employer must invest in lifting equipment today in order to avoid workers’ back problems in the future.

Prevention of health risks has much in common with areas of policy such as the environment and education: it requires investments today that will not yield tangible dividends until tomorrow. That the dividend actually exists has been shown by scientific analyses, such as that of the “Return on Prevention” project, which is presented in this yearbook. But is this observation alone sufficient to ensure that the long-term thinking will prevail against short-term interests?

No: conducting preventive activity sustainably requires perseverance. A culture of prevention, as for example the World Health Organization has called for, is not created overnight. It is not sufficient for a project to be launched here or there that is over almost as soon as it has begun. It requires people to address health issues systematically and reliably over long periods of time.

Sustainable prevention must also take effect at many points. It must take all the parties into account who have an influence upon working conditions: companies, manufacturers of work equipment, suppliers, standards developers, educational establishments. This is fully consistent with the comprehensive approach of the Vision Zero: the vision of a world without severe or fatal accidents at work or on the roads.

As representatives of the social partners in the autonomous administration, this is our view of prevention – one that is sustainable, and at international as well as national level. We are pleased that the XX World Congress for Safety and Health at Work 2014 is to be held in Germany, and for the first time as the “Global Forum Prevention”.

We are convinced that this event will make a crucial contribution to promoting and propagating the principles of sustainable prevention at global level. For us at the German Social Accident Insurance, one of the organizers of the event, it will be an outstanding opportunity to present our own activities in the area of occupational safety and health. A taste of this diversity can be found in this yearbook.

We trust that you will enjoy reading it.
economic responsibility

Sustainable prevention makes good business sense. Our children will be grateful for our responsible financial management.
Making prevention sustainable
Is prevention green? Of course!

The German Social Accident Insurance Institutions are conscious of their responsibility, and therefore make efforts to safeguard not only workers, but also the environment, because only when nature is in equilibrium is safe and healthy work possible. For this reason, the German Social Accident Insurance makes work not only safer, but also cleaner: our researchers are continually working on reducing substances at the workplace that are harmful not only to people, but also to the environment.
Making prevention sustainable
Being grateful: for the past, and for what is ahead of us.

The German Social Accident Insurance Institutions represent prevention by people, for people. In our preventive activity, we are conscious of what people have done and are still doing for society in the course of their lives. For this reason, we endeavour to make every phase of their lives more fulfilling. Our work is therefore also geared to improving working conditions in public institutions such as preschool childcare facilities, hospitals and nursing homes. Because behind every job, there is a human being.
Making prevention sustainable
Because people achieve great things every day.

Making prevention sustainable:

Behind every idea is a clever mind. Just one?

People have been having great ideas since time immemorial. Trend-setting innovations have changed the world. Some ideas, however, may need the support of a country’s entire labour force in order to become reality. The German Social Accident Insurance Institutions, responsible for the safety and health of around 42 million employees, have accompanied innovations from the outset. Because we know that every individual is part of the greater whole. For that reason, wherever great things are being created, we are there too, protecting people.
Companies benefit from investment in occupational safety and health. This has been shown by a study conducted by the International Social Security Association (ISSA), the German Social Accident Insurance (DGUV) and the German Social Accident Insurance Institution for the energy, textile, electrical and media products sectors (BG ETEM). The study concludes that the return on investment in occupational safety and health amounts on average to more than double the amount invested.

“OSH regulations and economic conditions differ in different parts of the world, in some cases considerably,” says Professor Dietmar Bräunig of the Justus Liebig University in Giessen, who supervised the project together with Dr Thomas Kohstall of the Institute for Work and Health of the German Social Accident Insurance (IAG). “Precisely for this reason, it was worth examining whether investments in occupational safety and health generally pay off for companies.”

For this purpose, the researchers consulted a total of 300 companies in 16 countries from 2010 to 2011, asking them to estimate the commercial benefits and drawbacks of expenditure on occupational safety and health in the company. “This enabled us to produce a prevention balance sheet,” says Professor Bräunig. The result: the companies consulted attained an overall return on prevention (ROP) of 2.2. In other words, every €1 that a company invests in internal company prevention work yields a potential economic return of €2.20. “This is an average value. The yield an individual company obtains is of course also dependent upon the economic situation and the market conditions.”

The study is based upon standardized interviews. The improvement in a company’s public image and corporate culture associated with occupational safety and health were also shown to be important, as were the increased motivation and satisfaction of the workforce, and the reduction in down time and lost economic activity.

“The prevention accounting method selected deliberately surveyed companies with sufficient experience of and with in-company prevention work,” says Dr Kohstall. “This permits the conclusion that investments in occupational safety and health would tend to be even more worthwhile economically for companies with little experience in this area.”

“Regardless of the country in which the companies surveyed were located: anyone wanting to become and remain successful should invest in prevention,” is how Professor Bräunig summarizes the study.

www.dguv.de (webcode: e143522)
Dr Eichendorf, the Members’ Meeting of the DGUV has adopted the “Prevention pays off” position paper. The preamble of the paper makes reference to the Vision Zero. The Vision Zero will also be a key topic at the next World Congress for Safety and Health at Work in 2014. What does Vision Zero stand for?

Safe and healthy work is a basic human right. At the same time, all companies need healthy and motivated employees in order to be competitive in today’s markets, which are generally global. Vision Zero is a strategy with a clear target: the vision of a world in which severe or fatal accidents no longer occur at work or on the roads.

A new aspect of the Vision Zero is the acknowledgement that people do make mistakes. Scientific research has shown that owing to the way in which human motor skills, sensory perception and information processing have evolved, human beings have only a limited capacity to absorb the necessary information from their environment, to process it, and to compare it with stored information. It is not therefore surprising that human error is therefore apparently the usual cause of accidents.

If people inevitably make mistakes, it must be ensured that the resulting accidents do not lead to severe injuries or death. Systems must consequently be designed to be forgiving of errors, i.e. to protect human beings against the serious consequences of mistakes. Of course, people still have a responsibility to obey the rules, for example those set out in accident prevention regulations. Those who draw up the rules still have a duty however to ensure that the system as a whole is safe.

So far, though, everything possible has already been done to ensure that workplaces are safe and healthy. So what’s new about the Vision Zero?

There is no disputing that we have already achieved a lot. In somewhat over the last ten years, for example, we have managed to halve the number of fatal accidents at the workplace to the current level of just under 500 per year. Fatal commuting accidents were also halved in this time, to just under 400. As gratifying as these figures are, it is proving increasingly difficult to reduce them further, particularly since the causes are more and more unique. The strategy of the Vision Zero is therefore based upon thorough prioritization of risk reduction: where are the accident blackspots, what are the main causes of disease? Where are hidden causes to be found, such as those of impairing mental stress, which are then indirect causes of accidents? When the results are known, specific prevention measures will then be defined. This also means that the German Social Accident Insurance Institutions will increasingly rarely be concerned with companies at which workplaces are safe and healthy, and will shift their inspection and consulting activities more towards the critical areas.

What action is the German Social Accident Insurance taking to implement the Vision Zero?

Our goal is clear. The Members’ Meeting of the DGUV has adopted the Vision Zero and it is the guiding concept of our activity. The numerous articles in this yearbook confirm the efforts of the DGUV, the individual German Social Accident Insurance Institutions and our many other partners to organize the world of work and education with the use of all suitable means to prevent occupational, school and commuting accidents, occupational diseases and work-related health hazards. This extends to using a risk observatory in order to identify risks and hazards at an early stage and ideally to develop
dedicated prevention measures before hazards actually reach workplaces. We discuss this strategy with the Prevention Managers of all the accident insurance institutions, and together with the latter, introduce them into companies and educational establishments.

This was precisely the question addressed at the A+A 2012 national specialist congress in Augsburg under the motto “Safe and healthy working – Vision Zero in practice”, namely: how can a culture of safety and health be created in day-to-day working practice which takes account of human error and reduces to a minimum the risk of harm caused by work-related accidents and stresses? The dominant topics here were those relating to safety on construction sites, the handling of hazardous substances, and the challenges presented by the use of alternative forms of energy, for example in photovoltaic installations or work on offshore wind farms. The congress paid close attention to the questions and solutions associated with the elimination of mental stress at the workplace.

**A+A was a German congress. Is Vision Zero an international topic?**

It is, and for that reason I would like to draw particular attention to the XX World Congress for Safety and Health at Work 2014. Vision Zero will be a key topic of the World Congress, which is to be held in Frankfurt at the end of August 2014. Over 4,000 experts in workplace prevention activity from all over the world will meet for discussion. This event offers a platform for the exchange of information and experience, concrete co-operation, and the presentation of best-practice examples to experts in safety and health, representatives of companies and employees, decision-makers from government and public authorities, the social partners, and anyone active in the area of occupational safety and health. The World Congress is made even more attractive by being closely linked to the A+A 2014, i.e. the national congress and trade fair event for professionals in the area of occupational safety and health. The combination of the international World Congress, the specialist congress with a national focus and the trade fair is unique.

**Are there other areas, besides that of the world of work, in which the Vision Zero ought to be implemented?**

Road traffic is another good example, although of course for many people, the roads are their workplace. A lot has already been achieved in this area. Even so, each and every fatality or serious injury is one too many. The roads must therefore be made so safe that a person who makes a minor error no longer pays for it with their life. The active and passive safety of vehicles must be improved such that they, too, are forgiving of human error. And we must ensure that human beings themselves behave such that errors are avoided as far as possible. Together, these three elements lead to full implementation of the Vision Zero in road traffic. At the workplace it is much the same. On the one hand, making conditions safe; on the other, assuring safe behaviour. There is no question that safety costs money. But prevention pays off, since the consequences of accidents are substantially more expensive.

[www.dvr.de/presse/informationen/3046.htm](http://www.dvr.de/presse/informationen/3046.htm)
Networking, yes – but how? At the beginning of the third International Strategy Conference on Health and Safety at Work, held in Dresden from 6 to 8 February 2013, some of the delegates may have asked themselves precisely this question. The motto of the conference was “Networking as a driving force for a culture of prevention”. The delegates’ willingness to become part of a dynamic networking process and to develop new strategies for a common culture of prevention was all the greater. Ultimately, a joint strategy was agreed upon with items for action, concrete plans for implementation, and designated contacts for the topics of prevention culture, health investment and Vision Zero.

The third International Strategy Conference was organized by the German Social Accident Insurance (DGUV) in conjunction with the World Health Organization (WHO), the International Labour Organization (ILO), the International Social Security Association (ISSA), the European Agency for Safety and Health at Work (EU-OSHA), the International Commission on Occupational Health (ICOH) and the International Association of Labour Inspection (IALI). A total of 135 experts from 29 countries took part, including numerous professionals from the areas of work, public health, information and education. For the first time, the organizers in Dresden also welcomed delegates from Israel, India, Malaysia, Hong Kong and Mauritania. The conference was opened by Dame Carol Black, who as the UK’s National Director for Health and Work had launched a notable debate in 2008 on health and the well-being of people of employable age in Europe.

Since the previous conference, held in 2011, had called for better integration of occupational safety and health into other areas of policy, such as that of health, and also into education and the media, the focus at the third Strategy Conference lay upon networking for this purpose. Accordingly, the experts had the opportunity to use the conference as a platform for discussion of the topics of accidents/Vision Zero, health and well-being at work, and diversity, across areas of policy. This process was illustrated and made tangible for all the delegates by means of an installation that recorded the results of the various work packages for all concerned.

The next stages in implementation of the Action Plans that have been developed for the topics of prevention culture, health investment and the Vision Zero strategy are the International Symposium on Culture of Prevention in Helsinki at the end of September 2013, and the XX World Congress for Safety and Health at Work, to be held in Frankfurt at the end of August 2014.
The “Fight the Risk” prevention campaign, dealing with safe driving and transport, came to a close at the end of 2011. A comprehensive review has documented the campaign’s success, showing that over the two years of its duration, the awareness of over two million workers was raised for the topic of safe driving and transport. The German Social Accident Insurance Institutions counted around 96,000 consultations and inspections and around 1,500 health and campaign days on site in companies. To these were added around 10,000 training courses, seminars or modules. “Fight the Risk” was also visible in the media: around 3,500 articles on the campaign topics appeared in print and online media, together with around 600 reports in the accident insurance institutions’ own media. The review also examined whether the campaign was able to bring about circumstantial and behavioural changes. One positive trend in particular was observed with regard to the measures relating to visibility and equipment: according to those surveyed, the provision of reflective clothing, the fitting of winter equipment to vehicles, and the wearing of helmets and protective clothing had increased substantially. The effects were particularly evident in the companies that had made active use of the opportunities offered by the campaign.

These results, together with consistently positive feedback from schools and companies, prompted the German Social Accident Insurance to take up another important, cross-sector prevention topic in the following prevention campaign. On 10 January 2013, the “Think of me. Love, your back” campaign was launched, with a focus on work-related back stresses. The relevance of this topic is clear: more than two-thirds of the German population suffer backache at least once in their lives. At the same time, workers and even schoolchildren are exposed on a daily basis to many forms of back stress: a lack of exercise and mental stress are factors, as are for example the moving of heavy loads, working in constrained postures, or caring for patients or relatives.

These are sufficient reason for a campaign addressing back stress and prevention approaches to it. With the campaign, the bodies responsible for it, i.e. the German Social Accident Insurance Institutions, the Social insurance for agriculture, forestry and landscaping (SVLFG) and the Knappschaft, aim to bring about changes both in the conditions in schools and companies, and in the behaviour of the insured individuals themselves. The aim is that of reducing back stress. Attention is focussed here upon physical stresses of all kinds (including lack of exercise) and in combination with mental stresses.

The campaign’s publicity uses humour to make the back the protagonist of the campaign. The back acquires its own voice and reminds its owner of its existence – by means of a Post-It note – before it begins to creak and pinch. With the slogan: “Think of me. Love, your back”, it reminds us that ideally we should do a little something every day for our backs.

In addition to poster and advertisement images, this campaign is also offering a range of media on the topic on its website, such as brochures and films. The website also contains very specific information on primary preventive activity at the workplace. At the heart of these resources are numerous events modules, which can be hired free of charge for the conducting of campaign days. The modules enable back stresses and opportunities for prevention to be demonstrated – a particularly sustainable means of establishing the messages of prevention in people’s minds. In addition, a (digital) campaign box motivates companies to conduct activities and supports them in doing so. The campaign box offers accessible ideas and concepts for example that can be implemented individually or in combination, and enables even small and medium-sized companies to take measures to reduce back stresses, without the need for a large budget.

The campaign’s success is guaranteed by the fact that as in previous campaigns, the bodies responsible for it have direct access to companies and educational institutions. At the same time however, its unique selling point, “Think of me. Love, your back” sets it apart from the numerous prevention campaigns and activities conducted by other institutions.

The detailed concluding report and the complete results of evaluation of the “Fight the Risk” campaign can be found at: www.dguv.de/risikoraus

All information and downloads on “Think of me. Love, your back” can be found at: www.deinruecken.de
With the adoption of DGUV Regulation 2 governing occupational physicians and OSH professionals, a harmonized and uniform regulation now exists for the first time in Germany governing the form of supervision provided for companies, public administrations and educational establishments by company physicians and OSH professionals.

At the heart of the regulation is the new concept of standard supervision for companies with over ten employees. The concept comprises basic supervision and a company-specific supervision component. Initial experience with implementation of the new provisions in practice has shown that the focus of the regulation’s content in particular is regarded very highly, since it lies upon OSH issues rather than merely providing quantitative information on the provision of resources. Owing to its approach and the requirement for co-operation within companies, the regulation generates new impetus for discussion within companies of the OSH measures required. The harmonized basic arrangement for all accident insurance institutions is also regarded positively, as is the new flexibility. The guides made available by the DGUV and the individual accident insurance institutions have also met with acceptance, and are being used. The effort required for implementation of the regulation was however initially regarded as high. The assignment of the company to a supervision group for basic supervision (economic sector code) initially proved difficult in some cases, as did the unfamiliar estimation of the personnel resources required for the company-specific supervision component.

The first comprehensive survey of implementation of DGUV Regulation 2 was conducted in October 2012 by labour inspectors of the German Social Accident Insurance Institutions. The results show that DGUV Regulation 2 has now met with wide acceptance in the majority of companies and administrations, but that many companies still require further support with its implementation. Around 70% of the companies surveyed for example have implemented DGUV Regulation 2 fully or in part. For the basic supervision component, assigning the companies to the three supervision groups and determining the duration of personnel assignment now no longer present problems for the great majority of the companies. It is also pleasing to note that within the company-specific supervision component, the majority of companies have fully identified the relevance of the areas of activity and have entered into suitable agreements.

In order to support the parties involved within companies in application of DGUV Regulation 2, the DGUV and the accident insurance institutions have developed comprehensive practical guides. The guides to implementation made available by the DGUV can be downloaded free of charge from the Internet.

www.dguv.de (webcode: d106697)

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www.dguv.de (webcode: d106697)
The GDA: the proven and the new

The Joint German OSH Strategy (GDA) entered 2013 with new targets and work programmes

To join forces in the interests of safety and health at work – that was the common purpose of the German federal and regional governments and the accident insurance institutions in 2008, when they launched a new form of co-operation, the Joint German OSH Strategy (GDA). The strategy has the aim of enhancing safety and health at work. Following successful conclusion of the first GDA period (2008-2012), a new period has now begun in 2013. In this period, which extends through to 2018, binding targets and OSH work programmes are laid down.

In the first five years of the GDA, the partners were able to make many observations, not least regarding the scope for optimization or modification of the work. The challenge lay in creating the structures required, and above all in establishing the GDA on the ground. Five years on, the GDA has ceased to be a novelty in day-to-day OSH practice; in particular, companies no longer regard it as a special scheme within their “normal” prevention work.

The results for the first GDA period show that the prevention measures of the topic-specific programmes have been successful and effective. The major success of the GDA however lies in the fact that the various parties to OSH in Germany are co-ordinating their activities and working more closely together.

With the GDA, occupational safety and health has been systematically restructured and workplace OSH activities made a planned and co-ordinated process.

The current GDA period will focus upon three targets:

- Improvement in organization of the health and safety of workers at work
- Reduction in work-related health hazards and musculoskeletal disorders
- Protection and enhancing of health under work-related mental stress

With the GDA, occupational safety and health has been systematically restructured and workplace OSH activities made a planned and co-ordinated process.

Following the transition from the first GDA period to the second and current period, the aim will be for proven prevention instruments, some of which were new and developed specifically for the work programmes of the first GDA period, to be retained for sustainable use. The sustainability attainable by this means has the function of assuring quality in prevention work, and thus serves as the link between the proven and the new. The professionals on the ground also regularly discuss the prevention work of the GDA, for example in the meetings conducted at regional level between the respective regional departments (GLS) of the accident insurance institutions and the corresponding regional OSH administrations. The overall impression gained from the events conducted to date is overwhelmingly positive. A conclusion particularly worth mentioning here is that many of the mechanisms for co-ordination are already working well or very well both at regional level and in joint activity at company level.

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MICHAEL JANSSEN
Head of Strategic Joint Activities in the Central Prevention Division of the DGUV

“What is now important is to make the successes already achieved with the GDA sustainable through structured co-operation between all parties to OSH.”
Arrangements for effective occupational safety and health

Restructuring of the body of OSH rules and regulations

A co-ordinated body of rules and regulations that avoids duplications in provisions, relieves the burden on companies and further enhances the standard of occupational safety and health: this is a core element of the Joint German OSH Strategy (GDA). At the end of 2011, the bodies responsible for the GDA therefore drew up a guideline paper for restructuring the body of OSH rules and regulations in Germany. The guiding principle is that state regulations and the body of rules produced by state committees are primary instruments for the promotion of workplace safety and health.

As a result, the accident prevention regulations of the German Social Accident Insurance Institutions (UVVs) may now be adopted – in accordance with Section 15 of the German Social Code Volume VII – only where appropriate and necessary for the purpose of prevention and where the areas that they are intended to govern are not covered by provisions in state OSH regulations. In addition, UVVs may be drawn up in areas to which the state OSH regulations do not directly apply (for example for individuals insured voluntarily) or in which state legislation leaves the task of substantiation to the accident insurance institutions, as in the case of DGUV Regulation 2 (governing occupational physicians and OSH professionals). Accident prevention regulations may also be formulated where state legislation sets out provisions only in general terms and a state committee does not exist for the necessary substantiation. Another case is that in which a tightly constrained, sector-specific hazard situation exists for which the definition of protective measures in the body of state rules and regulations would be too specific.

Within the terms of their binding charters, the accident insurance institutions are also at liberty to draw up specific guides for the state OSH regulations or accident prevention regulations (UVVs), which are often formulated in abstract terms. In the future, Sectoral Rules will constitute an essential instrument. These combine the state rules with sector-specific provisions and extend the former, for example with experience and knowledge gained by the accident insurance institutions, and with aspects of health promotion. Sectoral Rules may therefore form an overall compendium for the companies in a particular sector, covering the tasks, workplaces or working procedures.

www.gda-portal.de > Vorschriften- und Regelwerk

The “Prevention Competence Network”

Expert committees and sub-committees offer sound specialist support in all issues relating to safety and health

Following adoption at the Members’ Meeting of the DGUV of DGUV Principle 401 concerning expert committees and sub-committees, 15 expert committees were set up to support the statutory prevention mandate of the German Social Accident Insurance Institutions. They replace the 40 former specialist committees and groups, and cover all main sectors and types of company. Expert committees are strategic co-ordinating bodies dealing with policy in specific areas. Their tasks include the provision of expert advice and support to the DGUV and its member institutions, government departments and agencies, manufacturers and companies, entrepreneurs, insured individuals and operators of installations and institutions (in consultation with the respective responsible accident insurance institution), particularly in the area of prevention. They may also test and certify products, persons and management systems, and are closely involved in standardization work.

In order to fulfil their widely diverse tasks, the expert committees have formed a total of 99 sub-committees (in place of the previous 260). The sub-committees generally address project-specific topics within a specified period of time. They must do so with reference to the state of the art, the latest occupational medical and hygiene findings, and other validated findings of labour science. Virtually every expert committee is responsible for sub-committees addressing highly topical health issues.

With a small number of exceptions, the DGUV has entrusted complete responsibility for the expert committees and sub-committees to the German Social Accident Insurance Institutions, fully in line with the concept of the prevention network and by mutual agreement. In accordance with the principle of “one for all”, the expert committees and sub-committees address all aspects of safety and health within the scope of their own responsibility, and formulate a uniform and validated expert opinion that is binding for all accident insurance institutions. The new organizational structure offers all stakeholders the scope for participation on all levels: the social partners, autonomous administrations, accident insurance institutions, ministries, regional and local government authorities, manufacturers, operators, and many other parties. The German Social Accident Insurance thus has at its disposal a network of OSH experts that is without parallel.

www.dguv.de (webcode: d36139)
The world of work is changing at a growing pace. Increasingly, this is also having an impact upon standardization activity. The days are past in which standards committees were able to define generally acknowledged good practice by addressing the harmonization of dimensions or hard and measurable facts.

For some time now, ever shorter development cycles for new products, a veritable flood of new topics such as services or management systems, and for lack of time and money, the withdrawal of many standards users from working groups, have been gnawing at the foundations of the system. That standards are increasingly being developed not merely at European level but directly at international level only makes the issue more difficult still – particularly for those for whom the associated travel expenses and the necessary language skills had already made participation difficult. A consequence is that the resulting gaps in “traditional standards” are increasingly being filled by fora and consortia in which little importance is attached to a high level of consensus or to broad participation by the stakeholders. In addition, a public comments submission conference is very much the exception. This easy-going approach is simply faster. The question is: what should be the response of the existing system?

Since 1 January 2013, EU regulation No 1025/2012 governing standardization has been in force. It represents an attempt to respond to the present challenges without calling the essential foundations and proven structures of European standardization into question. In future, European standards are for example to be developed much more quickly, more service standards are to be developed, and the influence of European organizations representing social interests on the CEN and CENELEC committees is to be strengthened. At the same time, the principle has been retained that only the national delegations may vote on a standard at CEN and CENELEC.

The funding of standardization activity is in the future to be made conditional upon such things as timely completion of the work. This balancing act between the proven and new procedures is a cause for concern for OSH representatives, since standards committees are already under considerable time pressure. It is to be feared that standards will increasingly contain premature results, a development that could also have worrying consequences for safety. Equally a cause for concern is that the standards organizations in Europe are attempting to manage the rampant growth in fora and consortia by taking them under their wing and publishing the results for example in the form of CWAs or DIN SPEC (PAS). These specifications reflect a consensus among the stakeholders to only a limited degree. Inexperienced users are poorly placed to appreciate the difference between these documents and true standards.

www.kan.de
Occupational safety and health today: think globally, act locally.

Prevention knows no borders: in the age of globalization, occupational safety and health has become a task that we are pleased to address afresh every day together with partners from all over the world. Supporting others, learning from others: that is how modern preventive activity works. The German Social Accident Insurance has the task of ensuring that international OSH provisions are implemented in Germany such that they benefit all, since only when safety is global will work be pleasant globally.
Our vision: a world without severe or fatal occupational accidents. 
Our mission: to join forces in making visions reality.

Networked worldwide – for occupational safety and health

The DGUV is organizing the XX World Congress for Safety and Health at Work 2014: Global Forum for Prevention, in Frankfurt

In 2014, the international occupational safety and health community will be looking to Germany. From 24 to 27 August, the DGUV will be organizing the XX World Congress on Safety and Health at Work: Global Forum for Prevention. Together with the International Labour Organization (ILO) and the International Social Security Association (ISSA), it is issuing an invitation to cross-border dialogue and the pooling of experience.

Over 4,000 delegates are expected from all over the world: safety experts, entrepreneurs and employees, decision-makers from governments and public authorities, representatives of the social partners, and anyone involved in the area of safety and health at work. The World Congress 2014 not only offers opportunities to discuss the latest findings and experience, but also facilitates meeting new people, presents a range of opportunities for participation, and promotes encounters with people and best-practice examples.

Three main topics form the framework for the content of the congress:

- Prevention Culture – Prevention Strategies – Vision Zero
- Challenges in Occupational Health
- Diversity in the World of Work

The programme is geared to the concept of sustainability. Issues of global concern relating to safety and health at work are incorporated into the topics.

The World Congress 2014 is intended to be a congress that gets to the point. A congress from which each and every delegate can take something home with them, irrespective of the country they come from and the OSH situation prevailing there. The range of topics on offer in the symposia, of which 30 in total are planned, is correspondingly diverse. From the “Benefits of prevention – return on prevention” through “New forms of energy, materials and technologies including greening society and occupational health”, the “Prevention of psychosocial risks” and “How to establish prevention structures and institutions in developing and transition countries” to “Trade union strategies for tackling unhealthy workplaces”, everyone will find something of interest.

To these are added six technical sessions, of which two will be held by each of the three organizers. The topics of “Healthy workplaces – healthy workers” and “Diversity in the world of work” will be in the hands of the DGUV.

The congress languages are English, French, Spanish and German. The World Congress 2014 will be held in the Congress Center of the Frankfurt Messe trade fair complex.
Secretary of State, Singapore has set itself demanding, almost revolutionary targets for the safety and health of employees. How do you intend to achieve these targets? We have launched an OSH strategy that is to form the basis for our endeavours to make workplaces safe and healthy for everyone and that will serve as a guideline for a country that is well known for its high standard of occupational safety and health. With the target of the 2018 OSH strategy, which is to reduce the number of occupational accidents to fewer than 1.8 fatalities per 100,000 employees by 2018, Singapore has already taken up the basic principles of the Vision Zero on a number of platforms and in numerous initiatives, stressing that every severe occupational accident and every serious work-related disease is one too many. The concept as such is not therefore new for us.

In recent years, significant progress and improvements have been made in the area of safety and health at work. The OSH reform adopted in 2005 and the thorough extension of the OSH legislation to all workplaces in 2011 were decisively responsible for the halving of the number of fatal occupational accidents in our country, to 2.1 per 100,000 workers in 2012. However, our achievements in OSH are now stagnating, albeit at a high level. We have therefore examined OSH strategies that are being followed around the globe. This has enabled us to identify selected areas in which we must take action both collectively as a nation and as part of the general national OSH agenda. We are still at the early stages of gathering data, in the course of which we will also engage in dialogue with the parties involved in occupational safety and health. Our hope is that these contacts will enable us to make new observations and gather impetus for the next stage on our journey towards better occupational safety and health.

With its three partners – the National Trades Union Congress, the Singapore National Employers’ Federation and the Workplace Safety and Health Council – Singapore ratified the C187 Promotional Framework for Occupational Safety and Health Convention of the International Labour Organization (ILO) on 11 June 2012. Our country had already signed the Seoul Declaration at the first Singapore Workplace Safety and Health Conference on 15 September 2010. As a signatory, we have a duty to make an active contribution to a safe and healthy working environment in which the principle of prevention has utmost priority.

The better the occupational safety and health situation already is, the more difficult it is to improve it further. Strong commitment is required here by companies, experts, and the decision-makers in government and industry. How do you aim to achieve this? In order for occupational safety and health to develop effectively, each and every individual must play his or her part. It is important that different areas do not work in isolation, but that we co-ordinate our efforts. Singapore has developed the “CultureSAFE” programme. This programme reflects a progressive and comprehensive OSH culture that is integral to our activity, and our wish to adopt the paradigm of “because we want to” rather than “because we must”. CultureSAFE will be made available free of charge to companies that already have a sound OSH system, irrespective of their size. It will develop an index for the culture of safety at work that reveals both the areas in which the company is performing well and those in which further measures are still needed. We seek to create a national sector-specific index for the OSH culture that is to serve as a benchmark, enabling us to recognize progress made in the creation of our OSH culture.

In recent years, it has become important for us to be thorough in our efforts to raise awareness and our other activities, in order to satisfy our intention of reaching each and every social group. We will be unstinting in these efforts. In 2011, we founded the Workplace Safety & Health Institute. The institute is responsible for generating and disseminating OSH expertise in Singapore. Owing to its excellent opportunities for research and for further training and continual professional development, this new institute will make a contribution to raising OSH standards. Our aim is for evidence-based and applied research to benefit OSH policies and strategies and thus to bring about a paradigm shift.

What is the role of upper management in the creation of a strong culture of prevention? Upper management has a key role for OSH in every company. In the value-added chain, each and every individual can be a supporter or proponent of OSH. But if support from the highest level of management is lacking, it is much more difficult to bring about change. In Singapore, we have a number of ways of contacting entrepreneurs and managers and persuading...
them to attach greater importance to occupational safety and health. Numerous entrepreneurs are represented in our sectoral committees, which are led by the Workplace Safety and Health Council, and are actively involved in improving occupational safety and health. We will be persistent in our efforts and will make every effort to draw managers’ attention to their important role in OSH. Our brand-new national management instrument for OSH is to provide convincing and tangible examples of management that will in turn prepare the ground for a strong culture of occupational safety and health. This vision is supported by strategic results on three levels: personal, organizational and national. In the years ahead, we will work on the awareness for the importance of management role models in OSH, based upon the research relating to Singapore.

**Singapore is the first country in Asia that has made reference to the basic principles of the Vision Zero for safety and health at work in support of its own policies. What were the reasons for this decision?**

We have set ourselves a very challenging goal: we want to change patterns of thinking and opinions on the prevention of accidents, and to create a comprehensive culture of occupational safety and health. It is in precisely this area that we must change the mindset and be open to new opportunities. We must embrace the philosophy that every accident at work can be avoided and need not be accepted as a fact of life. Every site and every activity involves risks. The risks must be evaluated, reduced and eliminated as far as possible. We want to be able to guarantee that every worker can return home safe and healthy at the end of each working day.

**What do you hope to achieve by creating a new culture of prevention in Asia?**

The principle of prevention in OSH has existed for a long time, but is only now starting to meet with wider support and recognition in Asia. The close co-operation and partnership between the members of the ASEAN Occupational Safety and Health Network (ASEAN-OSHNET) – a platform for promoting co-operation between regional OSH centres and OSH authorities – have proved very helpful for the member countries in view of the improvements in occupational safety and health in recent years. Beyond this effort, we have launched the Singapore Workplace Safety and Health Conference as a regional platform for all parties to OSH. OSH experts, entrepreneurs and government officials use this conference to discuss the latest trends and developments in occupational safety and health. All these initiatives are supported by the Workplace Safety & Health Institute, which serves as an observatory for occupational safety and health, monitoring and analysing changes in employment, workplaces and working environments, and communicating them to researchers, policymakers and companies in Singapore and the wider region. I am convinced that these platforms are contributing to organic and dynamic OSH efforts and results in Asia. We have not yet reached our goal, but are doing all we can in the interests of continual progress.

**In 2017, Singapore will be an organizer of the XXI World Congress for Safety and Health at Work. Do you see the World Congress contributing to a global prevention culture?**

We are eagerly awaiting the XXI World Congress for Safety and Health at Work in Singapore in 2017. We are also honoured to be the host for our international partner organizations. The fact that the full spectrum of parties to occupational safety and health (decision-makers, experts, representatives of employers and employees) from all over the world meet on this platform to exchange information and opinions will certainly contribute to a global “WorkSafe” prevention culture.
Networking globally for prevention

The World Congress for Safety and Health at Work 2014: Global Forum for Prevention reflects the progress currently made in prevention worldwide. Cutting-edge trends and developments, the latest research results and examples of best practice will be presented. From 24 to 27 August 2014, the DGUV will be host to over 4,000 visitors at the Congress Centre of Messe Frankfurt trade fair.

Prevention Culture – Prevention Strategies – Vision Zero

Vision Zero – a world in which people work safely and healthily and in which they are protected against serious or fatal occupational accidents. This requires the development not only of a global prevention culture in the field of occupational safety and health (OSH), but also of sustainable strategies – both of which improve human well-being and benefit economies and social systems.
The World Congress for Safety and Health at Work, held for the first time in Rome in 1955 and every three years since then, is the outstanding international platform for discussion of the latest developments in the area of occupational safety and health. More and more people at increasing numbers of workplaces worldwide are exposed to hazards, in some cases serious, despite a safe and healthy workplace being considered a human right. The goal of effective occupational safety and health is to ensure that this right is enjoyed by all working people.

Occupational safety and health has a further important aspect and one that is often overlooked: It has commercial benefits for individual companies, since investment in prevention benefits a company's profits. This has been shown by the study into the return on prevention (“Calculating the international return on prevention for companies: Costs and benefits of investments in occupational safety and health”) conducted by the German Social Accident Insurance (DGUV), the International Social Security Association (ISSA) and the German Social Accident Insurance Institution for the energy, textile, electrical and media products sectors (BG ETEM). The result: expenditure on the safety and health of workers at work is an investment that pays off for the companies. On average, the return on prevention (ROP) in the countries studied was 2.2. In other words, every €1 invested generated a yield of €2.20.

The World Congress 2014 in Frankfurt has taken sustainable prevention as its overriding theme. The focus lies on three main topics. The first of these is “Prevention culture – prevention strategies – Vision Zero”. Effective occupational safety and health will be examined for its potential contribution to a world without fatal occupational accidents. Reducing occupational accidents and diseases continually and substantially remains the pre-eminent goal against which strategies must be measured. “Challenges in Occupational Health” is the second topic. In view of changes in the world of work, the retention of good health is becoming increasingly important, despite the rise in obstacles such as stress. The third topic, “Diversity in the World of Work”, will examine the effects of different forms of employment and work structures upon occupational safety and health.

Over 400 presenters from all over the world will hold the various events such as symposia, technical sessions and fora. Interactivity is high on the agenda. There will for example be a forum for prevention, resembling a large marketplace. At this forum, over 200 experts will present their projects, ideas and latest activities simultaneously, and encourage discussion and the pooling of information on occupational safety and health worldwide. Altogether LinkedIn is used by over 200 million members in around 200 countries. Professionals and managers worldwide in particular make use of it for networking. The discussion and the pooling of information on occupational safety and health worldwide are encouraged between the delegates to the World Congress 2014, both during the congress and beyond, in the LinkedIn group: “XX World Congress for Safety and Health at Work 2014”, and in topic-specific sub-groups. The LinkedIn groups were launched at the “3rd International Strategy Conference on Occupational Health and Safety: Networking as a driving force for a culture of prevention”, which was held in Dresden from 6 to 8 February 2013. The strategy conference served as an important milestone during preparation for the World Congress.

In order for professional discussion to be continued effectively beyond the World Congress, a comprehensive online network has already been set up on LinkedIn, the international business platform. Altogether, LinkedIn is used by over 200 million members in around 200 countries. Professionals and managers worldwide in particular make use of it for networking. The discussion and the pooling of information on occupational safety and health worldwide are encouraged between the delegates to the World Congress 2014, both during the congress and beyond, in the LinkedIn group: “XX World Congress for Safety and Health at Work 2014”, and in topic-specific sub-groups. The LinkedIn groups were launched at the “3rd International Strategy Conference on Occupational Health and Safety: Networking as a driving force for a culture of prevention”, which was held in Dresden from 6 to 8 February 2013. The strategy conference served as an important milestone during preparation for the World Congress.

Challenges in Occupational Health
Set against a backdrop of technological, economic and social developments and ever-increasing globalization, the protection of human health in the workplace represents a considerable challenge. The relocation of production facilities to other countries or continents is accompanied by the relocation of associated risks to human health.

“The particular challenge facing us, the members of the World Congress team, is to offer the delegates an interactive congress which they feel is right for them and at which they feel comfortable.”

DR SVEN TIMM
World Congress 2014 Project Manager, Central Prevention Division of the DGUV
Diversity in the World of Work

An increasing number of people from different ethnic, cultural, religious and linguistic backgrounds now work together. In addition, new forms of work characterized by heterogeneous working and employment conditions have developed around the world. Prevention strategies must be geared to these complex framework conditions and must ensure that social issues are not neglected in the course of economic globalization. Issues such as gender equality and demographic development are also relevant.

A highlight of the congress will be the International Media Festival for Prevention (IMFP), a worldwide competition for the best video clips and digital media on the subject of occupational safety and health. The best entries will be selected and awarded prizes at the congress by an international jury. Moving images are becoming increasingly important in the use of media, no less so in occupational safety and health. A brief look at the Internet shows how widespread videos have become in modern digital information. The World Congress 2014 will therefore attach the importance to the Media Festival that it deserves.

In addition, congress delegates will have the opportunity to experience prevention activity in practice during visits to companies in a range of sectors. Labour inspectors from the accident insurance institutions and representatives of the companies concerned will be on hand to explain the effective prevention measures.

The World Congress will be accompanied by a national congress that will be held in conjunction with the A+A 2014 trade fair. Visiting experts to the trade fair are expected from over 100 countries. The combination of the international World Congress 2014, the A+A 2014 trade fair and the accompanying specialist congress with a national focus is unique. The content of the three events will be closely co-ordinated. This represents the ideal opportunity for prevention experts to network with their counterparts from around the globe, to gain inspiration for practical prevention activity, and to test innovative products directly.
Further information and registration

The venue for the World Congress 2014 is the metropolis and trade-fair city of Frankfurt. Frankfurt is the ideal venue. It is readily accessible from throughout the world via its major airport; it has a rich cultural life; and the Congress Center is at the heart of the city.

First Announcement
The First Announcement provides information on the planned programme of the 2014 World Congress, the topics of the technical sessions and symposia, the venue and timing of the congress, and its organizers. It also provides practical information, for example on travel and accommodation, and contains the calls for papers for the symposia and for presentations for the Forum for Prevention.

Programme
The programme comprises an opening and closing event, sessions in the plenum with introductory lectures, technical sessions, symposia, the Forum for Prevention, and the German Evening. A range of industry visits, the International Media Festival for Prevention (IMFP) and an accompanying trade fair also form part of the congress programme.

Dates
Opening of online registration: 1 March 2013
Deadline for submission of abstracts: 30 November 2013
Deadline for submission for the IMFP: 31 January 2014
Closing of online early registration: 15 December 2013
Closing of online registration: 31 July 2014

The congress languages are English, Spanish, French and German.

Prevention on the Web
Further information and resources relating to the chapter “XX World Congress on Safety and Health at Work 2014” have been compiled here.

www.safety2014germany.com

Contacts
The DGUV is happy to provide assistance. Contact information relating to the chapter “XX World Congress on Safety and Health at Work 2014” can be found here.

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You can register online on the World Congress 2014 website. The First Announcement and the complete programme can be found here:
www.safety2014germany.com
Because the German Social Accident Insurance is active even in the most unexpected places.

Piano, not fortissimo: we love music, not noise

A particular aspect of the German Social Accident Insurance is that it is active even where not expected. For example, a perfect sense of hearing is an essential asset for a musician. Since employers have a duty to protect their workers against noise that could damage the latter’s hearing, the German Social Accident Insurance also helps opera houses, philharmonic orchestras and concert organizers to determine the exact level of noise to which their musicians are exposed. Music instead of noise. That sounds good to us.
The occupational environment of workers in the health services, the retail and catering trades and many other sectors is often one of work and service around the clock. Changes in the economy and society are leading to the working day being extended further and further into the evening and night hours and weekends.

Since shift work may have negative consequences for the health and well-being of workers, it is also an important topic for the German Social Accident Insurance. In order for the complex phenomenon to be addressed appropriately, all three research institutes of the DGUV – the Institute for Prevention and Occupational Medicine (IPA), the Institute for Occupational Safety and Health (IFA) and the Institute for Work and Health (IAG), together with the DGUV’s Central Prevention Division – conducted a project on the subject. The results of the project were summarized in DGUV Report 1/2012, “Shift work: the legal situation, risks to health, and scope for prevention”. The report examines the underlying legal situation for the subject, sets out the identified scientific findings, and formulates recommendations for the organization of shift work.

Statutory provisions in Germany require the working hours of night and shift workers to be laid down in accordance with validated scientific findings concerning the humane design of work. The quality of the statutory arrangements is therefore dependent upon the quality of labour science and its findings. With regard to the medical aspects, it can be stated that shift work undeniably has an impact upon physiological processes, such as sleep. The results of studies are not always unambiguous regarding the impacts upon obesity, gastrointestinal diseases, cardiovascular diseases or cancer. The studies show however that shift work has clear consequences for workers’ social and private lives. The duration, timing and distribution of the working hours can be regarded with sufficient reliability as having an impact upon the accident risk. In order to find answers to remaining questions, the DGUV has already launched further research projects.

In addition, it held a conference on the topic of “Shift work – risks and scope for prevention” in Dresden in October 2012. 100 delegates from the German Social Accident Insurance, government bodies and industry discussed problems and strategies for solutions relating to how healthy shift systems can be achieved which at the same time meet with the acceptance of all stakeholders. The suggestions formulated at the conference will be taken up in the future by the DGUV’s “Workplace health” expert committee. The wide range of current activities of the accident insurance institutions and support provided by them are presented and summarized on the website of the “Fitness for work” subcommittee. Creation of a guide for labour inspectors in their consulting activity is also planned.

www.dguv.de (webcode: d105787)
“Allergies: a highly topical subject, not just in the Northern hemisphere”

Substances triggering allergies in the health services, the fish-processing industry, bakeries and the textile industry are also a challenge to researchers and OSH experts in the Southern hemisphere.

Professor Lopata, you worked for many years in South Africa as a researcher and lecturer, and now live in Australia. What are the differences and similarities between occupational safety and health research in Germany, South Africa and Australia? Let me give you some examples. In South Africa and in Australia, employees working outdoors are exposed to much higher levels of ultraviolet radiation. In Australia in particular, the issue of protection against UV radiation at work has attracted great importance in recent years.

Whereas in Europe, allergy to latex in the health services has been substantially reduced by the successful combination of medical research and practical OSH work, it continues to be a serious issue in Australia and South Africa.

Beyond that, South Africa has a major problem in the low-wage sector and the informal economy. In agricultural businesses, in the traffic and transport system, in construction work, in the timber and woodworking sector and in the sale of food produce at roadside stalls, people are exposed to unchecked levels of chemical and biological substances that may seriously harm their health.

The high number of HIV infections and cases of AIDS has also taken many young adults partly or completely off the labour market.

Why is research into allergies so important, and what was the focus of your research into diseases caused by workplace allergens?

Allergic diseases caused by inhaled allergens and also those present in food are now reaching an epidemic scale. The World Allergy Organization (WAO) estimates that allergic diseases affect some 30% to 40% of the world’s population, and that the proportion of people affected at work is rising.

During my research in South Africa, we closely examined industrial areas in which many workers suffered severe allergic symptoms. Our aim was to identify the triggers for these conditions and to use intervention strategies in order to improve the quality of life and work.

Among other things, we examined the impact of beneficial insects used for biological pest control. These affect not only the agricultural workers, but also the breeders of the insects, and scientists.

The strongest international response was generated by our pioneering study into allergies in the fish-processing industry, in which over 45 million people work worldwide. Sensitization, extending to occupational asthma, was detected in up to 36% of workers in this sector. Research projects conducted in close co-operation with colleagues from Canada and Norway, countries with a similar industry, developed new methods and technologies and optimized diagnostics and the management of exposure at these workplaces.

In a study currently in progress in South Africa, we have been examining allergens in spices and in wheat and rye flour in supermarket bakeries. Based upon the data obtained and with the support of our colleagues at the IRAS in the Netherlands and the IPA in Bochum, we have developed models that enable us to estimate the risks. This joint research activity will be continued in the future.

What practical results for occupational safety and health were produced by your research work?

At present, no international standards exist for the measurement of seafood and fish allergens in the atmosphere. We were however able to identify areas and tasks in the fish-processing industry that involve very high exposure to allergens. By
A/Prof. Dr Andreas L. Lopata

Associate Professor Andreas Lopata, MSc, PhD is Co-director of the Center for Biodiscovery and Molecular Development of Therapeutics at the James Cook University (JCU) in Australia. Following study of biology and completion of his doctorate in South Africa at the Institute for Infectious Disease and Molecular Medicine of the University of Cape Town, he focussed his research activity on occupational allergens. In 2006, he moved to Australia, where he works as a researcher at the JCU.

VENTILATING AND ENCAPSULATING PRODUCTION FACILITIES WITH HIGH EMISSIONS OF ALLERGENS, WE WERE ABLE TO REDUCE THE EXPOSURE SUBSTANTIALLY. BASED UPON OUR STUDY, STANDARDS ARE CURRENTLY BEING ESTABLISHED IN CONJUNCTION WITH COLLEAGUES IN THE USA, CANADA AND NORWAY THAT CAN BE USED TO MEASURE ALLERGY EXPOSURE IN THE FISH-PROCESSING INDUSTRY MORE EFFECTIVELY.

IN ORDER FOR NATURAL LATEX ALLERGIES ALSO TO BE REDUCED IN SOUTH AFRICA, RECOMMENDATIONS ARE CURRENTLY BEING DRAWN UP IN CONJUNCTION WITH SABS, THE SOUTH AFRICAN BUREAU OF STANDARDS. THESE RECOMMENDATIONS CALL FOR A TEST REPORT ON THE LATEX ALLERGEN CONTENT TO BE AVAILABLE FOR GLOVES USED IN THE HEALTH SERVICES.

FOR SUPERMARKET BAKERIES, TOO, INTERVENTION STRATEGIES ARE CURRENTLY BEING DEVELOPED IN CO-OPERATION WITH THE INSTITUTE FOR RISK ASSESSMENT SCIENCES (IRAS) IN Utrecht and the IPA in Bochum. EVEN THOUGH IT IS KNOWN THAT WORKERS IN BAKERIES SHOULD BE EXPOSED TO AS LITTLE FLOUR DUST AS POSSIBLE, THE CURRENT PREVENTION STRATEGIES IN BAKERIES ARE NOT AS EFFECTIVE AS THEY NEED TO BE.

WE NOW KNOW THAT EARLY DIAGNOSIS AND MEDICAL MONITORING PROGRAMMES ALONE DO NOT PROVIDE SUFFICIENT PROTECTION AGAINST SENSITIZATION AND ALLERGIC DISORDERS. TESTING FOR ALLERGEN EXPOSURE APPEARS TO BE THE ONLY EFFECTIVE PREVENTION STRATEGY.

IN GERMANY, WE HAD A HUGE PROBLEM IN THE 1990s WITH THE ALLERGY TO NATURAL LATEX IN THE HEALTH SECTOR. THE COMPREHENSIVE PREVENTION CONCEPT OF THE ACCIDENT INSURANCE INSTITUTIONS, OSH EXPERTS, OCCUPATIONAL PHYSICIANS AND RESEARCHERS LARGELY ENABLED THE PROBLEM TO BE SOLVED. HOW HAS SOUTH AFRICA ADDRESSED THIS PROBLEM, AND IS CONTINUING TO ADDRESS IT, UNDER CONDITIONS THAT ARE SUBSTANTIALLY DIFFERENT FROM THOSE IN GERMANY?

THE INTRODUCTION OF THE GLOVE POLICY, I.E. THE USE OF UNPOWDERED GLOVES WITH LOW PROTEIN CONTENT, SUCCESSFULLY SOLVED THE PROBLEM IN EUROPE. BY CONTRAST, UP TO 20% OF WORKERS IN THE SOUTH AFRICAN HEALTH SERVICES STILL SUFFER LATEX SENSITIZATION, BECAUSE THEY CONTINUE TO USE THE GLOVES THAT TRIGGER THIS ALLERGY. ACCORDING TO A RECENT STUDY BY THE NATIONAL INSTITUTE OF OCCUPATIONAL HEALTH (NIOH) IN JOHANNESBURG, OVER 30% OF LATEX GLOVES USED IN THE HEALTH SECTOR ARE STILL POWDERED, AND OVER 80% HAVE A HIGH LATEX ALLERGEN CONTENT – AND MEDICAL GLOVES ARE INCREDIBLY USED FOR PROTECTION AGAINST INFECTION. THE HIGH COST OF LATEX-FREE GLOVES IS ALSO AN OBSTACLE TO RESOLVING THE PROBLEM.

SOUTH AFRICAN STUDIES HAVE ALSO REVEALED UNEXPECTEDLY HIGH LEVELS OF LATEX SENSITIZATION AT TRAINING ESTABLISHMENTS FOR DENTISTS AND ALSO IN THE TEXTILE INDUSTRY, WHICH IS A STRONG GROWTH SECTOR PARTICULARLY IN DEVELOPING AND EMERGING ECONOMIES.
Low-emission welding

“WELDOX” welding study produces exposure models for use in industry

Welding is a widely used method, and one largely without substitute, for the joining of metals in the industrial and trade sectors. The level of exposure to welding fumes and the metals that they contain, such as chromium, nickel, manganese and iron, is dependent upon the welding method, the materials being used, the room conditions and the measures employed for ventilation and respiratory protection. The WELDOX study conducted by the Institute for Prevention and Occupational Medicine of the DGUV (IPA) is one of the most comprehensive studies of welders ever performed, and has recorded a wealth of exposure and biomarker data. For the purpose of the study, 243 welders in 23 companies were recruited with the support of the German Social Accident Insurance Institutions for the woodworking and metalworking industries (BGHM) and the energy, textile, electrical and media products sectors (BG ETEM). The air measurements were conducted in conjunction with the German Social Accident Insurance Institutions and the Institute for Occupational Safety and Health of the DGUV (IFA). They were taken by personal samplers worn by the welders and directly in the atmosphere breathed by them, including inside powered respirator helmets, during a working shift.

This cross-sectional study was the first worldwide to study comprehensively biomarkers and exposure to metals in the respirable particle fraction in a large number of welders from a variety of sectors. The focus lay upon the external exposure, the internal exposure, and the health effects resulting from exposure to welding fumes in various particle fractions and to the metals contained within them. The detailed recording of workplace factors formed the basis for statistical models of factors influencing the level of exposure and for the association with biological effects. The study analysed not only the effectiveness of occupational safety and health measures for given welding methods, but also relations between the external and internal exposure to metals and the dose-effect relations between the exposure and potential effects upon health due to the use of common welding methods.

The results of the study reveal a range of options for prevention. The use of powered respirator helmets, the substitution of methods associated with high emissions (flux-cored wire welding) by methods exhibiting lower emissions, and integral fume exhaust within the torch can in particular reduce the exposure. The complex statistical models developed in the course of this study enable the average levels of exposure to welding fumes and to the metals contained within them to be estimated for specific exposure scenarios. This enables the influence of various workplace factors, such as efficient exhaust of the welding fumes, to be described, and targeted prevention measures to be taken. Based upon the findings of this study, the model for the characterization of welder exposure was successfully validated by means of comprehensive measured data from the MEGA exposure database.

www.ipa-dguv.de (webcode: 510464)
In addition to substance-specific analyses, the lung cancer risks in selected occupations with complex exposure scenarios are being studied.

Tracking down the causes of lung cancer

The international joint “SYNERGY” project studies the combination effects of hazardous substances at the workplace on the incidence of lung cancer

Lung cancer is the most common occupational cancer. Analysing the association between occupational exposures and lung-cancer risk must take into account that many occupational carcinogens occur in combination. The synergistic effects of carcinogens, i.e. the interaction of these substances, is still not well understood. The German Social Accident Insurance therefore initiated the international joint SYNERGY research project. SYNERGY was set up to establish scientific evidence for the interaction of hazardous substances, and to generate scientifically sound data for prevention and for the legislation governing formally recognised occupational diseases. The project’s focus lies upon the carcinogens asbestos, polycyclic aromatic hydrocarbons, fine quartz dust, nickel and chromium. The project is coordinated by the International Agency for Research on Cancer (IARC) and the Institute for Prevention and Occupational Medicine of the DGUV (IPA). Over 20 research groups worldwide are involved in the study.

Data on occupational work histories from 16 case-control studies were transferred into International Standard Classification of Occupations (ISCO) and International Standard Industrial Classification (ISIC) codes. With 19,370 cases of lung cancer and 23,674 control subjects from Europe, Canada, New Zealand and China, SYNERGY represents the largest dataset with detailed information on occupational and smoking behaviour to assess the synergistic effects of these five major lung carcinogens. SYNERGY has now developed into an internationally acclaimed platform for lung cancer studies. A job-exposure matrix (SYN-JEM) was created including workplace measurement data and expert assessments of historical exposures: for each substance and occupation, a mean exposure level was estimated by comprehensive statistical models, stratified by region and calendar year. By application of the SYN-JEM, lung-cancer risks were estimated for substance-specific occupational exposures. The related scientific publications are currently being prepared. After completion of the SYN-JEM-based analyses on individual carcinogens, the synergistic effect of the five substances will be studied.

In addition to the substance-specific analyses, lung-cancer risks in selected occupations involving complex exposure scenarios are studied. For example, the IPA analysed the lung-cancer risk for welders: it was shown that regular welders had a higher risk of lung cancer than workers who had only occasionally performed welding. For both groups, lung-cancer risks increased with longer job duration. The IPA also investigated the lung-cancer risks for bakers and miners. Further analyses regarding the risks for occupations such as cooks, painters and decorators, hairdressers and construction workers are being performed by the international project partners.

www.ipa-dguv.de (webcode: 515584)
An indispensable resource

In order to understand diseases such as cancer, researchers must often study thousands of patients. For this purpose, they need large collections of biological samples. Biobanks are also of considerable benefit for occupational medical research for the early detection of work-related diseases. They may contain material and samples relevant to exposure, such as tissue, blood, urine – and also isolated material such as DNA. Repeat prospective sampling from the same test subjects over a period of several years is ideal. It is also important that corresponding exposure data and further relevant information be recorded.

Quality-assured biobanks set up in accordance with defined standards assist in combining methods of traditional epidemiology with molecular biological and mechanistic findings relating to the incidence of diseases – “molecular epidemiology”. Complex molecular epidemiological issues concerning causal relationships can be studied more efficiently with the aid of biobanks, since the samples and data required for the purpose are available at all times. For research into the causes of occupational diseases, access to existing biobanks or the creation of new biobanks is increasingly becoming necessary.

The Institute for Prevention and Occupational Medicine of the DGUV (IPA) has many years’ experience in the setting up of biobanks. Within the UroScreen project for example, which studied the influence of aromatic amines upon the incidence of bladder carcinomas among chemical workers, over 7,000 urine samples were taken from over 1,600 employees over a period of seven years in order to validate a panel of biomarkers for the early detection of cancer.

The MoMar project validates new molecular markers for the early detection of tumours associated with asbestos, such as mesotheliomas and lung tumours, during follow-up examinations of insured individuals exposed in the past to asbestos. For this purpose, a logistics and biobank concept has been developed with 2,000 test subjects at present and annual examinations regularly collected in 26 study centres supported by the IPA. This biobank alone already contains 15,000 blood and plasma samples.

In the PURE (Protein Research Unit Ruhr within Europe) project sponsored by the state of North Rhine-Westphalia, which the IPA is conducting together with other bodies including the Institute of Biophysics and the Medical Proteom Center of the Ruhr University Bochum and the clinic of the University of Duisburg-Essen, the objective is that of developing biomarkers for the early detection of cancer and neurodegenerative diseases. The scientific epidemiological study centre at the IPA guarantees that samples are recovered, characterized and archived in accordance with QA procedures. With the availability of the biobank, suitable conditions are in place for the development of new diagnostic and therapeutic concepts with the aid of biomarkers and for transfer of the results from basic research directly into clinical research and the field.

www.ipa-dguv.de (webcodes: 393216, 315392, 509952)
Standards for better health protection

The EU’s “COPHES” project promotes high quality standards for the use of human biomonitoring throughout Europe

The hazardous substances to which workers are exposed at their workplaces have conventionally been determined by ambient monitoring (e.g. measurements in air). The quantity of a hazardous substance actually absorbed by a human being, however, can be determined specifically by human biomonitoring (biological monitoring). In human biomonitoring, the hazardous substances or their metabolites are generally measured in the blood or urine. Human biomonitoring thus covers not only substances that are inhaled, but also those absorbed through the skin or ingestion. The European Union launched the COPHES project in order for human biomonitoring to be placed on a consistently high quality level. The objective of COPHES — Consortium to Perform Human biomonitoring on a European Scale — is for human biomonitoring to be established in all EU Member States as a supplementary instrument for preventive health care, with application of identical criteria, comparable methods and central quality assurance.

All 27 Member States of the EU are represented in COPHES. Two German bodies, the Institute for Prevention and Occupational Medicine of the DGUV (IPA) and the German Federal Environmental Agency (UBA), are responsible for supervising crucial work packages. The package supervised by the IPA in conjunction with Spain’s Instituto de Salud Carlos III (ISCIII) encompasses both harmonization of the analytical methods and quality assurance. In order to define the terminology and to harmonize the language in the area of analysis and quality assurance, the IPA first produced a glossary, which served as the basis for all further work. Then, standard working procedures for the pre-analytical and analytical phase were developed. With the instructions provided by the IPA for the analysis of cadmium, cotinine, creatinine, bisphenol A and phthalates in urine, human biomonitoring can be established even in countries with little experience in this area.

Between 2011 and 2012, COPHES performed four cross-EU round-robin tests under the overall control of the IPA and the ISCIII in order to review, improve and standardize the reliability and sensitivity of all analytical methods used. 37 laboratories from all parts of Europe took part in these tests. Additionally, the IPA served as the COPHES reference laboratory for the parameters of cotinine, phthalate metabolites and bisphenol A. The results of each round-robin test were discussed with all participating laboratories for the purpose of quality assurance and exchange of experiences, and adjusted accordingly. With the additional involvement of highly renowned reference laboratories (for example in the USA, Canada and Japan), it was further assured that the results of COPHES would be comparable not only within Europe, but also worldwide. The requirements for the COPHES round-robin tests exceeded those usual up to now for round-robin tests, since exposure in the low-dose environmental range also had to be reliably recorded. Cotinine for example was to be used to determine with a high degree of sensitivity not only the general smoker status, but also the scale of environmental tobacco smoke (ETS) exposure of children.

www.ipa-dguv.de
www.eu-hbm.info

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Studies have shown that about 9 to 15% of asthma cases in adults are caused at least partly occupationally. One possible trigger of asthma are working substances that are assumed to have a sensitizing effect upon the respiratory tract. These substances are primarily high-molecular-weight substances, generally (glyco) proteins, which are found in flour and cereal dusts, dusts produced by laboratory animals and livestock, mites, enzymes, fungi, natural rubber latex, and wood dust. Low-molecular-weight substances may however also act as respiratory sensitizers. These substances include isocyanates, acid anhydrides, metals, ammonium persulphates and vapours given off by washing, bleaching and fixing products used by hairdressers, disinfecting agents, and pharmaceuticals.

Over 250 working substances are now recognized as having sensitizing activity upon the respiratory tract, and the number continues to rise: with changes in work processes, new technology and the introduction of new working substances, exposure to new allergens and further sensitization may occur. Only a small number of occupational allergens, such as those in natural rubber latex and wheat flour, have however been studied systematically. For numerous other working substances, the sensitizing activity has frequently been documented only by case reports. The problem is based on the fact that occupational exposure limits for hazardous substances generally consider only the toxic properties, and not those of sensitization. Exposure limits are not currently formulated for biological agents. At this stage, threshold concentrations of working substances with a sensitizing activity upon the respiratory tract below which no sensitizing reaction can be detected have not been clearly validated.

In order for the relationship between exposure and the occupational allergies to be clearly identified and for suitable prevention measures to be introduced, the allergen exposure must be measured. Since measurement of the dust alone can lead to false estimates of allergen exposure, the allergens themselves must be measured. Measurement of allergen exposure involves multiple stages, comprising dust sampling at the workplace, extraction of the allergens, and their analysis. The sampling of inhalable dust by means of pumps worn on the person is regarded as the “gold standard”, since it enables the individual’s own particular exposure to allergens to be recorded.

For the allergen analysis proper, sensitive and specific immunological detection methods (ELISA, enzyme linked immunosorbent assay) are used. These have been developed at the Institute for Prevention and Occupational Medicine of the DGUV (IPA) for a number of different occupational and environmental allergens. Standard dust sampling and extraction protocols and the subsequent analysis methods have been developed and trialled in multi-centre projects in which the IPA was also involved. These may be used to harmonize measurements and assure comparability of the measured values. Under the overall control of the IPA, a task force of the European Academy of Allergy and Clinical Immunology (EAACI) is currently drawing up a position paper summarizing and evaluating important key aspects of exposure assessment in the environment and at the workplace. This paper will serve as a basis for further discussion of reference values and occupational exposure limits for sensitizing substances.

www.ipa-dguv.de
Inhalative exposures to gases, dusts and aerosols continue to be one of the most significant workplace health hazards. In the new “ExpoLab” exposure laboratory at the Institute for Prevention and Occupational Medicine of the DGUV (IPA), exposures to hazardous substances at the workplace can now be simulated under standardized conditions, and the health effects of these substances recorded. This enables quality-assured studies of short-time human exposures to be conducted which can be performed in only a small number of centres worldwide, many of which do not conduct these studies from an OSH perspective.

Experimental short-time human exposures to discrete defined hazardous substances are an essential tool for risk assessment and the definition of exposure limits. By means of the dedicated studies conducted in the ExpoLab, interference factors frequently occurring in studies performed directly at workplaces can largely be excluded. This also applies to hazardous substances with local effects on the mucous membranes of the respiratory tract and the eyes, for which epidemiological data are rarely available. Further possible uses include the study of percutaneous absorption of hazardous substances, the determination of adaptation effects under exposure to hazardous substances with significant chemosensory properties, the effect of particles on the respiratory tract, or the effects of combined exposures.

Healthy test subjects are studied, and in some cases also particularly sensitive subjects from the general population, such as asthmatics. The level of exposure is geared to the applicable occupational exposure limits, the problem, and the literature data currently available. The objective is the clear identification without risk to the test subjects, any effects which necessitate or justify a possible adjustment of the exposure limit. All studies are commenced only following approval by the ethics commission.

Since its creation, studies involving carbon dioxide, ozone, aniline and ethyl acetate have already been performed in the ExpoLab. Firm plans already exist for studies into the action of particles in the nano range. Special measurement methods will be used for monitoring of the exposure, in consideration of the particular problem. Differentiated tools have been developed for the recording of effects in the various tasks. For example, effects in the respiratory tract are studied by means of non-invasive methods, which assure the lowest possible stress for the study participants. The task in this area is to continue to identify and use sensitive and at the same time specific effect parameters. In these studies, the IPA is working in close co-operation with the Leibniz Research Centre for Working Environment and Human Factors at the Technical University Dortmund (IfADo) and the Fraunhofer Institute for Toxicology and Experimental Medicine (ITEM) in Hannover.

www.ipa-dguv.de (webcode: 563712)
Microorganisms are part of everyday life and are natural constituents of bioaerosols. Besides having numerous properties which are highly beneficial to human beings, they may however also be harmful to organisms and materials. Should they for example enter the breathing air in high concentrations, they may constitute a health hazard. One possible source of bioaerosols is the humidifier water in heating, ventilation and air-conditioning (HVAC) systems.

The use of humidifier systems is absolutely essential for working processes in many areas, including those of paper processing, printing and textiles. In order to protect the health of workers it is necessary to avoid microbially contaminated bioaerosols and therefore the quality of the humidifier water must be tested at regular intervals. Until now, the total viable count of colonies (colony forming units, CFU) was the standard parameter. The associated method is relatively time and cost-intensive, requiring the samples to be smeared on culture medium and cultivated for at least 24 hours. In co-operation with the German Social Accident Insurance Institution for the energy, textile, electrical and media products sectors (BG ETEM), the Institute for Prevention and Occupational Medicine of the DGUV (IPA) tested faster, alternative methods within a research project with a practical focus. The test parameters were the endotoxin activity and the detection of adenosine triphosphate (ATP), the universal energy carrier of living cells. For evaluation of the rapid methods, 120 humidifier water samples were analysed both with the two rapid test systems and with established, more time-consuming standard laboratory methods.

Both of the rapid tests delivered valid measured values. Comparison between the ATP measurement and the endotoxin activity detection test showed the former however to be superior in terms of practical usability, accuracy of measurement and robustness. The ATP content was determined reproducibly with a high degree of reliability in all water samples, without dilution or further treatment. The ATP is metabolized in the test tube by means of an enzyme, in a process very similar to that used in nature by glow-worms. The light that is emitted in the process can be used as an indicator of the level of microbial activity in the sample, since only living cells metabolize ATP.

For the samples studied, the ATP measurement correlated significantly with the results of the established, more time-consuming methods. Now that the ATP test has been established under laboratory conditions similar to those in the field, further studies are planned involving the use of ATP measurement on site in companies, in order for the validity also to be reviewed by the measurement service under real-case conditions in practice. The studies are also conducted to show to what extent measurement of ATP alone, which is less costly, is adequate for the assessment of microbial contamination.

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www.ipa-dguv.de (webcode: 556544)
Reducing work-related knee loading

Laboratory and field research into knee-straining activities yields new findings for prevention

Occupational loads during work performed whilst kneeling, squatting or crawling are among the factors associated with a risk of disease of the knee joints, such as knee osteoarthritis or meniscal disorders. In order for suitable measures to be taken to prevent these conditions, comprehensive knowledge is required of the specific stress situations at workplaces.

At the Institute for Occupational Safety and Health of the DGUV (IFA), a number of research projects have been launched for study of the incidence of occupational knee loading in practice, and of their specific stress parameters. In conjunction with a number of individual accident insurance institutions, knee-straining postures have for example been recorded in detail in a field study in 16 occupations and approximately 80 different tasks. The studies were conducted with the aid of the CUELA measuring system (computer-assisted measurement and long-term analysis of musculoskeletal workloads). This yielded data on the form, duration and frequency of the knee-straining situations during the tasks studied, and results for the symmetry of the knee loading and the knee-joint angle.

The analyses conducted in the field were supplemented by laboratory biomechanical studies of knee-straining body postures. The development of a biomechanical knee model enabled the joint forces in the knee in different postures such as kneeling, squatting and sitting on heels to be determined and placed in a loading context, both in sustained static tests and during practical tasks (such as tiling work).

The field studies enabled the tasks to be identified for which prevention measures for reduction of the load upon the knee appear advantageous. The objective in the first instance is the avoidance by suitable means of squatting or kneeling postures, or a reduction in their scale, whether by means of aids, adjustment of the working height, or organizational measures. As the laboratory analyses revealed, kneeling down and standing up from the ground and standing with the knees slightly bent are situations associated with the greatest load upon the knee. The objective of effective prevention measures must therefore be the reduction of this form of loading in particular. In addition, professional knee protection (such as knee protectors or pads) should be mandatory for all tasks performed in a kneeling posture.

“Scientific studies into work-related knee loading are important for sustainable prevention, since we still know very little about the mechanisms which harm the knee joint during kneeling or squatting.”

DR DIRK DITCHEN
Member of the scientific staff in the Unit Ergonomics of the IFA
In today’s world, information on hazardous substances must be accessible as simply and quickly as possible. Mobile Internet access on smartphones and tablet PCs has substantially extended the options for obtaining information. It is therefore imperative that the hazardous substance databases of the Institute for Occupational Safety and Health of the DGUV (IFA) be made available on mobile devices. Since 2012, two databases have been available for searches in this way: the GESTIS substance database and the GESTIS International Limit Values database, which are available as apps for Apple iOS (iPhone, iPad) and for Android devices. The apps can be downloaded and installed free of charge from the Apple App Store and the Google Play Store. They can be found in the stores with the search term “GESTIS”. The applications are intended primarily for persons who deal with safety and health at the workplace.

The app versions of the GESTIS substance database offer both their English and German user interfaces. The language of the user interface is selected automatically. If German is configured as the language of the device, the German version is opened. If the language configured is not German, the English version is opened. Internet access is required for use of the app, since only the search system of the database is installed on the smartphone or tablet PC; the actual substance data sheets are retrieved directly from the Internet. This ensures that the current version of each substance data sheet is always called up. The IFA currently provides information free of charge on over 8,500 substances in the database. The information includes current guidance on the safe handling of hazardous substances, their effects upon human beings, protective and first-aid measures, and much more.

Users who load the smaller “GESTIS – International Limit Values” database onto their smartphones or tablet PCs receive a complete database in English. Once the app has been installed, Internet access is therefore no longer required. This database is updated twice a year. Limit values are currently available for over 1,500 substances and preparations from 23 countries in Europe and elsewhere.
Skin cancer caused by UV radiation

Basic research projects and guides to risk assessment serve to protect workers against ultraviolet radiation

Ultraviolet (UV) radiation has been known for many years to be a potential trigger of skin cancer. It is not primarily relevant whether the radiation stems from natural sources, such as the sun, or artificial sources such as welding arcs, gas flames or sterilization lamps. The level of harm is decisively dependent upon the biological action of the radiation upon the skin, which in turn depends upon the radiation’s wavelength.

Scientific principles by which the harm caused by the radiation and the underlying exposure to it could be quantified have however been lacking to date. For this reason, the DGUV has launched a number of research projects. The DGUV’s Institute for Occupational Safety and Health (IFA) and Institute for Prevention and Occupational Medicine (IPA) are involved in these projects. In addition, both institutes are involved in research into and consulting on the application of suitable protective measures.

The issue is that all human beings are exposed to UV radiation continually, and not only outdoors. They therefore all receive a certain dose of UV radiation, even outside the occupational environment. Should a component be added from their occupational activity, the risk of UV radiation causing skin cancer increases. Workers may be exposed not only to natural radiation during tasks performed outdoors, but also to artificial optical radiation during a range of tasks.

In 2010, the German Ordinance on artificial optical radiation (OStrV) was published, which transposes EU Directive 2006/25/EC into German law. The ordinance sets out exposure limits for the protection of workers against harm caused by artificial optical radiation. With the aid of the IFA, the German Federal Ministry of Labour and Social Affairs (BMAS) is currently drawing up technical rules supporting the OStrV. These rules will provide employers with guidance in conducting risk assessments and selecting protective measures. The OStrV does not however cover natural optical radiation.

Natural optical radiation is however increasingly the subject of attention. The BMAS is for example currently preparing to recognize formally an occupational disease of skin cancer caused by natural radiation. With the involvement of the IPA and IFA, guides covering both the medical and the technical aspects are currently being developed and made available which are intended to support the accident insurance institutions in the handling of suspected cases of occupational disease.

www.ipa-dguv.de (webcode: 576000)
www.dguv.de (webcode: e23601)
Agricultural machinery possesses a range of heavy parts, hatch- es and ladders which must regularly be opened and closed or moved in other ways. To prevent these operations from being too onerous, the standards governing agricultural machinery state certain values as upper limits for the operating forces. Is the level of these values justified, however, or do they require adjustment? This question was addressed by the experts in the responsible standards committee. It transpired that there is in fact no (known) scientific basis for the values stated in the standards. Since the OSH representatives also consider the upper limits to be too high, the Commission for Occupational Health and Safety and Standardization (KAN) commissioned the ASER institute in Wuppertal in 2012 with the conducting of a study. The objective was to find a way of measuring operating forces simply, cheaply, but nevertheless reproducibly. The study was also to provide recommendations for force values in certain operating scenarios. The researchers studied a number of different applications on agricultural machinery, such as the operation of levers for the movement of components. Measurements were performed involving a number of instruments, test persons and winches.

The study confirmed the subjective estimation of the occupational safety and health lobby, showing that the values stated in the standards are much too high if the principle of “design for all” is followed. With respect to agricultural machinery, this means that female trainees or older workers on farms should also be considered. The study was too limited in scale to permit definition of definitive values for certain applications that could be included in the relevant standards; owing to the limited body of data, the values determined can serve only as recommendations. In order for robust values to be obtained, the body of data must be considerably expanded. It is as yet unclear however who could assume this task. The study nevertheless yields sound recommendations for measurement instruments and methods. Hand-held instruments that can be connected to a computer deliver robust values. Owing in addition to their low cost, their mobile use is conceivable for users working in market surveillance, for the accident insurance institutions and for the manufacturers. The results of the study can also be applied to mobile machinery in other sectors.

With this study, KAN has shown that the force values currently stated in standards are too high. The recommendations will now be submitted to the standardization process. The responsible standards committee is to discuss how the moving of parts on agricultural machinery can be achieved ergonomically. KAN supports the representatives of the OSH lobby on this committee in this task.
Test finger found to be too short

Test fingers offer protection against injury of the fingers on machinery. A study has however now found that they no longer correspond to the anthropometric reality.

Enclosures of machinery and plant must be designed such that persons are not able to touch any dangerous electrical or mechanical parts. In order to test this, a jointed test finger modelled on a human finger is employed. The design of the test finger is set out in EN 60529:2000, “Degrees of protection provided by enclosures (IP code)”, which specifies a length of 80 mm and a diameter of 12 mm.

In the course of a study of anthropometric data in standards, conducted by the Commission for Occupational Health and Safety and Standardization (KAN), it was found that the length of the test finger, which was defined over 30 years ago, no longer corresponds to the anthropometric situation within the population. For this reason, the Institute of Occupational Health, Safety and Ergonomics (ASER) in Wuppertal was commissioned in June 2011 by KAN with the task of reviewing whether the underlying data were still up to date. In the first step, ASER compared up-to-date distributions of index finger length and width with the dimensions of the test finger.

The assessment found that the diameter of the test finger presented a high level of safety: the finger width of almost all adults is substantially greater than the test finger diameter of 12 mm. Consequently, enclosure openings which the test finger is unable to penetrate are also inaccessible to human fingers.

The situation is however different with regard to the length of the test finger. At the current length of 80 mm, protection is not fully assured for a not inconsiderable percentage of the population in Germany. The length of the test finger should therefore be extended for wider apertures in enclosures. The assessment concludes that a test finger length of 120 mm is required in order to provide adequate protection.

For the results of the assessment to be implemented swiftly, the ASER institute proposes that a plug-on sleeve be used for testing larger enclosure openings. KAN will discuss the results further with experts and endeavour to introduce them into European standardization activity through the national mirror committee.
Rehabilitation: handicaps are there to be overcome

Rehabilitation is one of the core tasks of the German Social Accident Insurance. Through rehabilitation, we help people who have suffered impairment through injury or illness to return to society and the world of work. We are supported in this activity by role models such as paraplegic swimmer Kirsten Bruhn, who proved once again at the 2012 Paralympics that people with disabilities are also capable of great achievements. Even gold medals.

Making prevention sustainable:

Because everyone can be a champion.
Tilers, roofers, nursing personnel, teachers and investment consultants all have one thing in common: the stress in their occupations leads statistically particularly frequently to earlier retirement, or to long periods of unfitness for work. This risk is shared by many other workers who carry out a stressful occupation over many years and who have no opportunity to compensate for the stress. In such cases, prevention activity is of limited effectiveness: it is not always possible to design the job and the working environment in such a way that no health impairments arise. Those affected frequently risk having to give up their occupation, with an associated decline in their prosperity and social status.

One solution is a sideways career move, i.e. adoption of a new occupation that in contrast to conventional vertical career changes involves a switch to an equivalent level in terms of qualifications and hierarchy. Some companies already have institutionalized sideways career moves. An example of good practice is Efkmann, a small manufacturer of sanitation products that is listed in the INQA “good practice” database. At Efkmann, workers with long vocational experience in production switch from physically demanding work to customer service, which requires high problem-solving and communication skills. The sideways career move is however also a solution for companies at which jobs are associated with other forms of stress, and for individuals in occupations associated with mental stress.

On behalf of the German Federal Ministry of Labour and Social Affairs (BMAS), the Institute for Work and Health of the DGUV (IAG) is developing an information platform for sideways career moves, the “Digital Guide”. The heart of the Digital Guide is an ICT tool supporting searches for a new occupation. A test version is currently under development that can be tried out by individuals and by small and medium-sized enterprises (SMEs). The users enter their qualifications, occupational preferences, stresses and health resources on an online form. The ICT tool then compares these personal data with a database of occupations, and suggests appropriate occupations for a career change. Compared to the previous occupation, the new occupations are intended to be less stressful or stressful in different ways, in order for the workers to be able to remain healthy, motivated and active through to the statutory retirement age. The sideways career move considers not only formal qualifications, but also skills that have been acquired informally, whether in the work context, through voluntary work, in the family or through hobbies. Older workers have typically acquired considerable experience that can be put to use in a new occupation.

The ICT tool for finding a new occupation will be embedded in an information platform. SMEs will find information there on the demographic trend in their particular regions, together with guidance on conducting an age structure analysis. This enables them to estimate whether they are already affected by bottlenecks in recruiting skilled personnel, and to what degree they can identify hidden potential among their workers and exploit it for sideways career moves.

The New Quality of Work Initiative (INQA) is sponsoring this IAG project until June 2014. Technical support is being provided by the Federal Institute for Occupational Safety and Health (BAuA). The project administrator is gsub mbH, the Society for Social Consulting.

www.inqa.de/82640
Professor Ilmarinen, you have been studying the subject of work and age for almost 40 years. What changes in the social debate have you observed over this time?

Society’s fundamental view of the relationship between ageing and work has changed. Hardly anyone would now disagree that we need to get to grips with the opportunities and risks presented by an ageing workforce. The principal reason for this heightened awareness is the demographic shift. In many countries the baby-boomers, who account for the largest group of the population, will have left working life by 2013. At the same time, the working lifetime is being extended by one to three years. Companies have increasingly registered that their workforces are ageing and have recognized in particular the challenges presented by this development. Many companies have already made substantial progress in adjusting their internal procedures or reorganizing their workplaces. The general attitude to age and to ageing is also slowly changing as a result. Prejudices are still legion, however; worldwide, there are still only 15 countries in which over 50% of the older potential workforce is still in employment. A lot still needs to be done here.

In your opinion, where should we start?

In my view, we need to begin by promoting work ability and active age management, because work ability is the starting point for people to be able to work, to choose to do so and to be allowed to do so. Work ability means a good balance between the demands of work and personal resources, in all age groups. Studies have shown that management has a key role to play here. In practice, age or generation management means that managers must consider the strong points of each generation within their companies. Generation management improves the ability to cope with work, and increases the well-being of all workers and therefore ultimately also the company’s productivity and efficiency. Generation management also motivates older workers to stay longer in their jobs with the company.

In your “work ability house” model, you state four factors for the retention of work ability: health; competence; motivation and attitudes; and the area of work. Is one of these factors more important than the others?

I believe that the most important of these four factors is work, the fourth and largest floor of the house. This floor encompasses tasks and demands, and also the organization of work and its environment, the working conditions and the working atmosphere – in other words, physical and psychosocial aspects. This floor is very complex, and has a major influence upon the other floors. Managers in particular have a key role here.

The fourth floor is the one with the greatest potential for improvement to the various conditions, much more so than in the personal areas on the three lower floors. We therefore assume, and this assumption is substantiated by research, that the fourth floor and in particular the behaviour and skill of management are of crucial importance with regard to older workers. I would also like to emphasize another point: the better the compatibility between the individual floors of the work ability house – values, competence, health, work – the greater the work ability.

What role is played by the environment of the house? How does that influence the work ability?

The environment is clearly significant, two other factors in particular: the family and the close community. These two aspects have a major influence upon the health of workers, and in particular they also influence the values and attitudes with regard to the fourth floor, that of work. Altogether then, there are six dimensions that have an influence upon our work ability.

Do the various European countries differ in this respect? How do you see the situation in Germany compared to other countries?

In my view, there is a clear North-South gradient. After the Nordic countries, the Netherlands, Germany and Austria are...
those that have paid the greatest attention to this topic. These countries have already invested a great deal in activities for the retention of work ability, and have transferred them to practice. Other countries, such as Spain, Italy, Greece or even France, have done very little as yet. In this respect, Germany is well placed in a group of countries that are paving the way.

Finland is a leader in this area. Why is this?
Finland has a long tradition of successful prevention activity. Perhaps because the country does not have a large population and has always had to use the resource of labour responsibly. We are continuing to shrink as a result of the demographic change, something that Finland recognized at an early stage. We therefore want to keep our ageing workforce fit for work. But we are not the only ones; in the Netherlands, for example – another small country, like ours – a lot of good work is being done in this area.

What can companies do to retain the work ability of their employees and to make better use of their potential?
Firstly, it is important to develop the right attitude to age and ageing. The benefits of age, and not just the drawbacks, must be recognized and made use of. As many studies have shown, not all skills necessarily deteriorate with age. In addition, the experience gained with age is a major benefit and in some occupations virtually essential. Managers should therefore organize work such that the older workers use their resources effectively and are able to contribute their experience. Organizing work with consideration for age then benefits all age groups, young as well as old, with the result that the employees work with the greatest efficiency and make the best possible use of their resources.

And what contribution can and should be made by the workers themselves?
Both sides, the employers and the employees, have a responsibility of course. The employees are responsible for their health, their competence, their values and their attitudes. Interaction between managers and personnel is therefore always important in this context. An equilibrium between work and workers’ resources is needed in the work ability house. This improves both individual well-being and the work ability. Equilibrium, though, can be reached only by joint effort by superiors and workers alike. Consequently, both groups ultimately share responsibility.

A number of factors therefore have an influence upon the work ability. What are the implications for the German Social Accident Insurance? Where should it place the focus of its prevention activity?
Safe and healthy organization of work is extremely important, because work as such has an immediate effect upon health. When the balance is upset, the result is overload, which is detrimental to health. This cause-and-effect relationship has been known now for three decades. Allow me to draw attention to another aspect: that of time pressure, which is continually rising at work as a result of changes in the world of work. The demands and workload of a job must not therefore be allowed to have a negative impact upon health. This is a major challenge and one in which a number of parties are involved: not only the companies, but also for example those responsible in the branches of the social insurance system, such as the German Social Accident Insurance Institutions.
A change in occupation may be an alternative to early retirement. The Institute for Work and Health is studying this concept with reference to a model occupation for the woodworking and metalworking industries, the German Federal Agency for Employment, and the IG BCE, the industrial union for the mining, chemical and energy sector.

Comparable areas of work were selected in the two companies and the design of the main study defined in the feasibility study conducted beforehand. The focus now lies upon the requirements analysis in the selected areas of work, the identification of early-warning indicators for premature retirement, and interviews with workers who have succeeded in remaining in the occupation or who have successfully changed career. The project has been specified in close detail and can serve as a model for an entire sector.

The objective is for specific recommendations for action to be published for persons with human resource responsibility and for workers in companies within the metals sector. The recommendations are to provide support in organizing work appropriately for an ageing workforce in order for workers to remain longer in their occupations, and to provide advice and training for new career models by which individuals in occupations that are usually of limited duration can be kept fit for work. The project is to be extended at a later stage to service-sector occupations associated with high levels of mental stress.

Helmut Schmidt himself is an example of what people are still capable of at an advanced age, even if his example cannot necessarily be extrapolated to other employees. Two observations can nevertheless be made. First, an increase in the statutory retirement age will be inconceivable for people in some occupations without a change in career direction. Second, a job that is designed to promote learning and that involves changes and redirection supports the retention of fitness for work in a flexible world of work through to an advanced working age.

"In occupations that often cannot be exercised up to the statutory retirement age even with the aid of prevention measures, consideration must be given at an early stage to a change in job or occupation, before health is permanently impaired."

Dr. Frauke Jahn
Head of the Research and Consultancy Department at the IAG
Health-conscious management of an ageing workforce

How can management personnel deal with the consequences of demographic change? A new series of seminars supports them in implementing existing findings in practice

Companies confronted with an ageing workforce and a shortage of skilled personnel need to take active measures to promote their employees’ work ability. This enables older employees to be retained in the workforce longer in good health, and prevents their expertise from being lost. Managers are often considered the key to success in this context. Indeed, research findings show that managers play the most important role in promoting work ability. Management personnel are however themselves under strong pressure, and subject to a range of demands. In order for them to be able to manage an ageing workforce health-consciously, they must begin by considering their own work ability and serving as models. This is the strategy taken by the new series of seminars run by the Initiative for Health and Work (iga) on health-conscious management of an ageing workforce. In these seminars, management personnel learn strategies for action by which they can cope with the challenges of demographic change.

The series of seminars consists of three one-day modules and a further day of reflection and supervision. Module 1 comprises the introductory seminar. Facts and figures, legal principles and findings from labour science are presented and discussed. Prof. Juhani Ilmarinen’s “work ability house” serves as the central concept. Since a realistic concept of ageing is an important factor for success, existing concepts of ageing are reviewed and challenged. Module 2 examines the topic of job design as a management task in greater depth. Actual cases are discussed in group work, and possible measures identified. In Module 3, the focus lies upon self-leadership and the interaction between the manager and his or her personnel. In this module, particular attention is paid to the dialogue between the manager and the personnel. Transfer of the subject-matter of the seminar into practice within companies is supported by concrete “tasks in the companies”.

The day of reflection and supervision reviews the preceding modules and the practical trials again, and enables further steps to be agreed for transfer into practice within companies. The seminar days are separated by intervals of between two and four weeks, in order for transfer into practice to be supported as effectively as possible and dedicated strategies to be developed.

The seminars were developed, trialled and evaluated by the DGB Bildungswerk BUND. They are available to the German Social Accident Insurance Institutions and members of the iga associations.

www.iga-info.de
Stress caused by permanent reachability

Many people can be reached in a vocational capacity even outside working hours. A research project has studied the causes and consequences.

The absence of explicit arrangements may be one reason why many people can be reached in a vocational capacity even outside working hours. This conclusion can be drawn from the results of a study by the Institute for Work and Health of the German Social Accident Insurance (IAG) in Dresden. They show that many employees assume that their superiors expect them to be reachable; explicit instructions to this effect are however very much the exception. Communication, i.e. clear agreements, would therefore be one means of reducing the stress.

For the purpose of the study, the IAG surveyed 430 persons in co-operation with the German Social Accident Insurance Institution for the public sector in Hesse. Over two-thirds of those questioned stated that they often or always had to be reachable during working hours when travelling or in field service. 40% were still reachable in a vocational capacity during most or all of their leisure time. Only 10% were never reachable outside working hours. “Most of those questioned associated being permanently reachable with little or no stress,” says Dr Hiltraut Paridon, author of the study and psychologist at the IAG. However, around one in seven stated that they found being continually reachable highly or very highly stressful, and were not able to switch off even outside working hours.

Many of those surveyed stated that they were reachable because their superiors expected this of them. “When these people are asked however how they know this to be the case, this turns out only to be their impression. Only a minority have received explicit instructions to this effect,” says Paridon. “A clear agreement with superiors concerning which members of a team are to be reachable, and when, is therefore seen by many as a means of reducing the stress caused by reachability.” The agreements should be made for both working hours and leisure time.

Those who are deliberately rarely available could also serve as an example. Says Paridon: “When asked the reasons, these individuals answer that they also have to be able to switch off some of the time. In addition, they have confidence that their colleagues will make the right decisions in their absence.”

www.dguv.de/publikationen (order No: 12058)
The retention of employees' fitness for work is of crucial importance if the challenges presented by an ageing population and the continually changing world of work are to be adequately managed. Health-related topics are thus increasingly coming under the spotlight of the prevention activity conducted by the German Social Accident Insurance. Important aspects in this context are the design of safe and healthy workplaces, with particular attention being paid to mental stresses, the enhancement of workers' health skills, and the creation of working conditions conducive to good health, which are also reflected in corporate and educational culture.

Workplace health promotion and workplace health management are therefore also growing in importance for the German Social Accident Insurance. The accident insurance institutions' scope for action is based upon their common understanding of the form to be taken by workplace health as an area of prevention. Workplace health promotion can help to prevent health hazards from arising in companies or to eliminate them where they already exist. The German Social Accident Insurance Institutions therefore support companies in the introduction of a systematic workplace health management system.

An important element in the holistic prevention approach of the German Social Accident Insurance is its co-operation with the statutory health insurance institutions in workplace health promotion and the prevention of work-related health hazards. This aspect is manifested in many different forms of bilateral co-operation between individual institutions and in co-operation at association level. Examples are the Initiative for Health and Work (iga) and the German Network for Workplace Health Promotion (DNBGF).

Joint activities are worthwhile, as has been shown by an analysis conducted by the statutory health and accident insurance institutions: the institutions with many years of experience of co-operation with other bodies are particularly innovative in doing so. A decisive criterion for launching joint activity is identification of the right contact for company projects. Particular support in this context is provided by the "prevention in the world of work" working group of the accident and health insurance institutions, which provides overviews on the Internet of regional working groups and contacts and also examples of joint activity, and the iga's liaison office, which assists in the search for suitable partners.

www.dguv.de (webcode: d138325)
www.praevention-arbeitswelt.de
www.iga-info.de/iga-kontaktstelle.html
Progress with the G 46 prophylaxis concept

The “Think of me. Love, your back” campaign supports occupational medical prophylaxis in the area of musculoskeletal stress in accordance with the G 46 principle

Since 2005, the proven DGUV guidelines for occupational medical examinations have included a concept that addresses work-related disorders of the musculoskeletal system. This concept has the aim of identifying functional impairing stress reactions at an early stage and of facing them by means of suitable measures for promotion, retention or restoration of employees’ fitness for work. The concept is based upon three pillars: the guidance document for risk assessment (BGI/GUV-I 504-46), the G 46 principle concerning stresses upon the musculoskeletal system, including vibration, and the guide to the diagnosis of musculoskeletal disorders (MSDs) in occupational medical examinations. The instrument enables occupational physicians to support employers in optimizing the underlying conditions in their companies by means of carefully tailored intervention.

The advice provided to the workers concentrates on the following aspects:

- Fitness and resistance to stress at the present time
- Extent to which the workload is responsible for the results of examinations
- Possible health risk should the job be continued
- Need for treatment in order for fitness for the occupation to be retained

In view of the scale of the MSD issue in the world of work, it is surprising that the use of the G 46 has as yet failed to meet expectations in practice. One of the aims of the “Think of me. Love, your back” prevention campaign is for example that the G 46 prophylaxis concept would meet with wider use through the provision of information to occupational physicians and through further training events for doctors. Parallel to these measures, the prophylaxis concept is being developed further by intensive research. This DGUV study examines the effectiveness and practicability of the G 46. The study is currently being performed by the RWTH Aachen in conjunction with the Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA).

In the course of the study, intensive functional diagnostic examinations are being conducted together with risk assessments of the physical and mental stress upon approximately 400 machinists in ten metalworking companies. The physical and mental exposure data are then correlated with the results of the functional diagnoses, in order for approaches to be identified where needed for improvements to occupational medical prophylaxis in accordance with G 46. These further developments encompass the addition of mental stress factors to the risk assessment, validation of the G 46 selection criteria, and improvements to the practicability of the G 46. In addition, the further development of methods for risk assessment of physical work stresses will be the subject of a DGUV research project beginning in 2013. This is to be conducted in conjunction with the Federal Institute for Occupational Safety and Health (BAuA) during the second period of the Joint German OSH Strategy (GDA).

www.dguv.de (webcode: d17569)
Health promotion in classrooms

The design of classrooms that are safe and conducive to good health is a core topic for the prevention work conducted for schools by the German Social Accident Insurance Institutions

At the end of 2011, the DGUV approved a strategy for further development of its prevention activity in the educational sector. This activity is based upon the “good healthy school” approach, and its implementation is intended to raise awareness sustainably for safety and health in schools. A part of the strategy is the development of supporting resources for promotion of the new prevention approach. The DGUV’s “ergonomic classroom” project, completed in April 2012, has already contributed positively to this strategy. The expertise generated in the project for the design and furnishing of classrooms in a way that is healthy and conducive to learning is already available to schools as a practical, publicly available DGUV guide (BG/GUV-SI 8094). From a prevention perspective, the reduction of noise in the classroom in particular has an effect that is conducive to good health.

Prevention and the promotion of good health have the objective of creating healthy learning, working and living environments. In order for a long-term effect to be attained for the health, safety and performance of the children and teachers, changes and developments in the school must extend into the lessons. The location at which teaching and learning most frequently take place is the classroom. The “Ergonomic classroom” project therefore concentrated on making classroom conditions as healthy as possible. The objective was a holistic approach; a model embodying the chief forms of exposure and their interaction was developed first. Together, the exposure model and the expertise of the accident insurance institutions were used to redesign existing classrooms at a primary school in Dresden and a secondary school in Hennef in accordance with ergonomic considerations, and to study the results. The surveys were to provide insights into how the design aspects of acoustics, ventilation, lighting, colour, flooring and furnishings affect health and learning. Accordingly, particular importance was attached to these aspects in the design of the model classroom.

The results show that the redesigned classrooms met with a high degree of acceptance among the participating children and teachers, and that the teaching and learning conditions were improved substantially. The improved acoustics for example facilitated the use of alternative teaching methods (such as group work). At the same time, the stress upon the teachers was reduced, owing to the improvements in concentration and comprehensibility of speech. In addition, a subsequent survey revealed that greater use was made by the teachers of the flexible furniture, such as mobile and height-adjustable chairs and desks, in the structuring of the lessons. Ergonomic furniture enables work to be performed standing, sitting and lying down. This active change in working position in particular satisfies the needs of the growing young people for movement in a manner that is conducive to good health. Finally but significantly, the children also feel better owing to the design changes. Well-being is closely related to good health, and therefore has a positive effect upon learning success.

The “Ergonomic classroom” project is a good example of how carefully planned changes to the teaching conditions in classrooms have a positive impact upon both health and the quality of education. Well-being in lessons is of crucial importance for a strong learning performance. Intelligent and attractive design of the classrooms can make a substantial contribution to this well-being. For this reason, design and furnishing of classrooms that are safe and conducive to good health are key topics for the German Social Accident Insurance Institutions.

www.dguv.de (webcode: d40310)

Part of the rear wall of a classroom, faced with sound-damping acoustic material

“Children and young people are best able to learn when not only is the educational expertise assured, but also the conditions are safe and conducive to learning. The design and furnishing of classrooms is therefore a particularly relevant aspect of school quality.”

DR INGO ZAKRZEWSKI
Head of the Education and Training Sub-division of the DGUV’s Safety and Health division (SiGe)
Inclusion: healthy and safe

With a new guidance document, the DGUV is supporting efforts to integrate people with disabilities on the general labour market

In accordance with the German Social Code Volume IX, Section 136, sheltered workshops (workshops for adapted work) have the function of facilitating disabled persons’ integration into working life and participation in it. They are also to enable suitable individuals to transfer to the general labour market. For this purpose, they offer the widest possible range of vocational training and workplaces. This includes the maintenance of external workplaces on the primary labour market.

External workplaces located in companies outside the workshop provide supervised workers with occupational rehabilitation under conditions similar to those on the wider labour market. At the external workplace they nevertheless retain their status of employees of the sheltered workshop, together with their entitlement to vocational training, support, supervision and assistance. Owing to the rehabilitative nature of the work, the employment of workers at sheltered workshops at external workplaces differs fundamentally from that of workers covered by the German legislation governing the secondment of workers (AÜG).

Further characteristics of external workplaces are as follows:

- Only when external workplaces are carefully organized and prepared do the working arrangements benefit both parties involved.
- Only when supervised employees from the sheltered workshops are appropriately integrated into the host company’s occupational safety and health measures are they able to work safely and effectively.

In recent years, difficulties and problems have repeatedly arisen during day-to-day implementation owing to the two parties to the arrangement, the sheltered workshop and the host company, having different expectations and knowing too little about each other.

The new BGI/GUV-I 5168 informative publication concerning safety at external workplaces of sheltered workshops, published by the “Health and welfare services” expert committee of the DGUV, provides sheltered workshops and host companies with information on points to consider during the assignment of supervised workers from the sheltered workshop to external workplaces, in order for these individuals to be able to work in a safe and healthy manner. The brochure explains how the workers from the sheltered workshop can be integrated into existing procedures within the host company. It also formulates criteria, checklists and model documents that support the individuals responsible in sheltered workshops and in host companies with regard to occupational safety and health issues during the drafting of contracts and the setting up of external workplaces.

The German Social Accident Insurance makes an essential contribution to an inclusive society. “The focus lies upon human beings”: this philosophy is at the heart of the activities of the German Social Accident Insurance. This is particularly reflected in its Action Plan for implementation of the UN Convention on the Rights of Persons with Disabilities (UN CRPD). The Action Plan contains a wealth of measures in the five fields of action of “awareness-raising”, “access”, “participation”, “individualization and diversity”, and “life environments and inclusion”.

Prevention is also called for within the Action Plan. A focus here lies upon the field of action of access, for example during the design of accessible workplaces. A guide to suitable (re)design measures for buildings and workplaces is currently being drawn up as a basis for consultancy concepts of the accident insurance institutions and for seminars run by them for external partners, such as architects.

In order for the inclusion philosophy of the UN CRPD to be implemented on the ground within the activity of the labour inspectors and OSH professionals, appropriate materials and curricula are also being developed for the initial and further training of these individuals.

The philosophy of participation is for example manifested in the fact that people with disabilities themselves are involved in development of the guides for the accessible design of work premises and for corporate integration management, and in advising on concepts for corporate OSH management for persons with disabilities. This active involvement of these individuals as experts on their own situations is also significant within the field of action of “life environments and inclusion”. Persons with a range of disabilities are for example involved in the production of safety concepts for companies, for example for education measures. Consideration is also given to educational institutions, and the philosophy of an inclusive school environment is promoted within the “Good and healthy school” concept, among other things by the raising of awareness among teaching staff.

www.dguv.de (webcode: d124618)

“...”

ANGELA KNOLL
Head of Unit Health promotion of the DGUV

“The DGUV and the German Social Accident Insurance Institutions contribute towards an inclusive society because their safety and health activities also consider the diversity of human beings, with and without disabilities.”
A buffer against mental disorders

A training course is to raise the personal capacity for self-control and thereby to reduce the risk of burnout and mental disorders

In both vocational and private life, people are often required to suppress impulsive reactions, overcome internal resistance or resist distraction. At times they may even have to express feelings at variance from those they are experiencing. These reactions require self-control, i.e. the purposeful control of behaviour.

Research results have shown that exercising self-control requires effort. An individual who is required to exercise self-control very frequently, whether at the workplace or in private life, faces a higher risk of suffering from psychosomatic or mental disorders such as burnout or depression. One possible preventive approach is therefore to reduce the need for self-control to be exercised at the workplace. When for example workers have intensive contact with customers throughout the working day, it can be a relief for them to be assigned to tasks without such contact for at least part of the time.

A second preventive approach is the enhancement of the individuals’ capacity for self-control. Persons who possess strong self-control are able to adjust purposefully and flexibly to situations and to adapt their behaviour when necessary. This capacity increases their chances of success, both at work and in private life. From the perspective of prevention, however, it is particularly notable that this ability can compensate for the negative consequences of demands for a high level of self-control. Thus it constitutes a valuable resource that can protect individuals against suffering from mental disorders.

Enhancing this individual ability is the goal of a training course that has been developed within a project conducted jointly by the Leibniz Research Centre for Working Environment and Human Factors at TU Dortmund University (IfADo) and the Initiative for Health and Work (iga). At the beginning of the training course, the participants discuss situations in which they are required to exercise self-control at work. Based upon this discussion, personal strategies are communicated and discussed that can assist in coping with this demand. The focus lies upon cognitive approaches, such as self-reflection and the re-evaluation of situations.

The training course is currently being tested in a pilot study. It was conducted and systematically evaluated in four different companies. The initial results indicate that the training course is able to enhance an individual’s capacity for self-control. Concluding results are to be available shortly.

www.dguv.de (webcode: d159279)
Because new technology should not make us ill.

New sources of energy instead of new risks

Wind, sun, water, and agricultural renewable raw materials: these are all among the envisaged sources of tomorrow’s energy. Regardless of the source of energy and how it reaches us, the energy revolution clearly also presents new challenges for occupational safety and health. Together with the International Labour Organization (ILO), the German Social Accident Insurance has monitored this process from the outset and ensures that the risks associated with production, installation and disposal are not overlooked. For more energy and less risk.
THE CHALLENGES OF NEW TECHNOLOGY

Faster, better, more effective: new technology is changing the world of work – and prevention is keeping pace with it. In order for innovations to benefit everyone.

Electromobility and occupational safety & health

The German government has placed the subject of “electromobility” at the top of its agenda. For issues relating to occupational safety and health, the German Social Accident Insurance is an important partner in this area.

In order to assure mobility in Germany, the aim of the German federal government is for at least a million electric vehicles to be in use on German roads by 2020. For occupational safety and health however, this topical policy issue means much more than merely a new form of drive technology associated with greater electrical hazards.

This has been shown by a cross-sector analysis conducted in conjunction with the German Social Accident Insurance Institutions. From the outset of this technical development, the prevention experts at the German Social Accident Insurance have therefore been valued partners to industry for OSH-related issues. The analysis further showed all of the German Social Accident Insurance institutions to be affected, directly or indirectly, by the consequences of electromobility. Besides the greater electrical hazard, the lithium-ion batteries used as the new energy storage devices may present further risks, such as an anticipated elevated risk of accident for pedestrians owing to electric cars being almost completely silent. Since lithium-ion batteries present elevated fire or explosion risks, for example to rescue service personnel or in vehicle workshops, special requirements apply to their storage and transport. With the increasing numbers of electric vehicles appearing on the roads, enquiries are increasingly being received from other sectors of industry and public bodies regarding their safe use.

The aim of the German Social Accident Insurance is to channel the activities of the accident insurance institutions as the number of vehicles on the roads increases, to formulate a technical consensus, and to produce guidance documents for selected target groups. In addition, the German Social Accident Insurance endeavours to network its experts, who have comprehensive, cross-sector expertise in safety, even more closely with industry associations and sectoral representatives, in order to be able to bring its expertise to bear at an early stage.

www.dguv.de (webcode: d130382)

“Preventive activity is predictive when new trends can be identified and observed from the beginning and the skill of prevention experts can be brought to bear. This has been achieved in an exemplary way with regard to the subject of electromobility.”

DR HEINZ SCHMID
Head of Unit Physical hazards/power supply of the DGUV
In Germany and other countries, we have been observing the trend towards an ageing working population for some time now. The reason for this is the falling birth rate accompanied by higher life expectancy. Professor Amick, do we have enough knowledge to develop measures to enable workers to remain gainfully employed for as long as possible? Or do we need more research in this area?

We already know a good deal about the human factors of ageing and their impact upon performance and safety. Ageing is often automatically but wrongly associated with reduced physical and cognitive ability and the related problems, even though there is increasing evidence that experienced workers greatly benefit their companies. Technology is no substitute for wisdom.

We must guard against discriminating according to age. Implementation research (i.e. into what conditions and methods could further the implementation of innovations) conducted to date in companies in order to identify examples of good practice is well short of being sufficient. Instead, this research must be stepped up with a focus upon performance and safety.

We also need to consider another important aspect, namely that the process of ageing is not linear. We cannot simply assume that each successive year at an advanced age leads to a general deterioration in physical and cognitive ability. There are huge differences in the way in which we age. Up to now, companies have concentrated on creating a safety culture. What we really need to work on creating, though, is a health culture, one that promotes health-conscious behaviour at home and at work. The results of comprehensive research suggest that with appropriate physical exercise, good nutrition and sufficient sleep, the ageing curve can be lowered. We must link the safety culture with the health culture. Forward-thinking employers have long begun bringing their companies into line with a culture of health.

In your view, what strategies are most suited to the increasing need of industry and commerce for flexible working hours, including night shifts – in other words, for a society that is working around the clock?

Companies have exploited the opportunities offered by information technology in order to control the flow of goods and products and to make better use of their human resources. Up to now, we have given very little consideration to how these systems could be used for more flexible organization of companies. We need to attach greater attention to such innovations in research and in the field. In the knowledge society, networking and information technology enable work to be carried out flexibly with regard to its location and scheduling. The production of goods and delivery of services still requires physical locations, however.

If the workers are given greater flexibility, this leads to greater worker autonomy, which in turn has been shown to be good for health.

As a matter of principle, we should do whatever we can to prevent workers from being trapped within the shift-work system, which is an obstacle to harmony between working and private life. A growing number of examples of good practice now exist with which companies implement this work-life balance. Common to all of them is that management staff have a key role to play in effective implementation.

For the majority of workers, the psychological demands are growing. At the same time, we observe increasing numbers of people taking early retirement owing to mental disorders such as depression. Do you see a direct relationship between these two phenomena? And if so, what must be done at the workplace to resolve the problem?

“Technology is no substitute for wisdom”

An interview with behavioural scientist Benjamin C. Amick III

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We also need to consider another important aspect, namely that the process of ageing is not linear. We cannot simply assume that each successive year at an advanced age leads to a general deterioration in physical and cognitive ability. There are huge differences in the way in which we age. Up to now, companies have concentrated on creating a safety culture. What we really need to work on creating, though, is a health culture, one that promotes health-conscious behaviour at home and at work. The results of comprehensive research suggest that with appropriate physical exercise, good nutrition and sufficient sleep, the ageing curve can be lowered. We must link the safety culture with the health culture. Forward-thinking employers have long begun bringing their companies into line with a culture of health.

In your view, what strategies are most suited to the increasing need of industry and commerce for flexible working hours, including night shifts – in other words, for a society that is working around the clock?

Companies have exploited the opportunities offered by information technology in order to control the flow of goods and products and to make better use of their human resources. Up to now, we have given very little consideration to how these systems could be used for more flexible organization of companies. We need to attach greater attention to such innovations in research and in the field. In the knowledge society, networking and information technology enable work to be carried out flexibly with regard to its location and scheduling. The production of goods and delivery of services still requires physical locations, however.

If the workers are given greater flexibility, this leads to greater worker autonomy, which in turn has been shown to be good for health.

As a matter of principle, we should do whatever we can to prevent workers from being trapped within the shift-work system, which is an obstacle to harmony between working and private life. A growing number of examples of good practice now exist with which companies implement this work-life balance. Common to all of them is that management staff have a key role to play in effective implementation.

For the majority of workers, the psychological demands are growing. At the same time, we observe increasing numbers of people taking early retirement owing to mental disorders such as depression. Do you see a direct relationship between these two phenomena? And if so, what must be done at the workplace to resolve the problem?
That is a very good question. We now know that health complaints are the main factor for early retirement. But there is no clear evidence that depression or other psychological conditions are the main reason. I don’t therefore think that we can assume a relationship.

We know that impairing mental stress at work is increasing everywhere. According to prognoses by the World Health Organization, impairing mental stress will be the second most common disorder by 2030. We also know that the majority of measures for dealing with impairing mental stress at work are not based upon scientific findings. We therefore need more research into examples of good practice at work in this area. The existing scientific evidence is not sufficient.

What importance does international co-operation have for the creation of safe workplaces and for the identification of new relationships between exposure and disease?

Co-operation at international level is extremely important. We must co-ordinate our research activities much better internationally. No single country is able to conduct the number of studies required for research. Data can however be gathered from different countries, which permits more meaningful evaluation of new relationships between exposure and disease.

If you are not able to assess the potential impact upon health of a new technology, such as nanomaterials, what are your recommendations for OSH measures?

When human life is at stake, no compromises can be made. For 30 years I have witnessed how the USA has attempted to adopt regulations on the basis of the costs and benefits. They do not consider research measures to be beneficial to a cost-benefit analysis. The costs and benefits identified for new technology are therefore still based on a whole range of assumptions. We are currently observing this in the public debate of the health impact of fracking in the petrochemical industry. Rather than conducting large-scale research in order to resolve the health risks, many of those involved simply reject this technology out of hand. In the absence of sound scientific findings, we should always take the side of workers’ health.
Defining nano, monitoring risks

Safe use of nanomaterials at workplaces often depends upon how they are defined and what risks are attributed to individual materials

In 2011, the European Commission published its provisional recommendations for the definition of “nanomaterials”. This does not however signal an end to the discussion of what actually constitutes a nanomaterial. In the QNano project for example, 26 institutes from throughout Europe are addressing the starting-point for definition of the toxicity of nanomaterials and the risks presented by them. QNano can be regarded as the successor to the NanoImpactNet project, which was successfully completed in 2012. NanoImpactNet promoted standardization, harmonization and training in research into risks associated with nanomaterials. The project contributed considerably to making the definitions used in international standardization accessible free of charge. Nanoparticles which in the future can be referred to as standards for the purpose of risk assessment are now being studied in “QNano Centers of Excellence”. Other subjects, from toxicology to risk management, are however also being addressed in QNano.

The Institute for Occupational Safety and Health of the DGUV (IFA) is particularly addressing the subject of nanotechnology at the workplace. In industry, the issue is for example often much less whether or not individual particles constitute nanomaterials; instead, larger product quantities, such as a sack of nanostructured pigments, must be assessed, and suitable protective measures taken for production processes involving this material. The Nano Test Center of the Institute for Hazardous Substance Research (IGF) at the German Social Accident Insurance Institution for the raw materials and chemical industry is available for this purpose, as are the latest standard measurement instruments in the IFA’s instrument park and the measurement technicians at the two institutes. The Center is also available to the member companies of the German Social Accident Insurance Institutions, and provides favourable conditions for training in the measurement of nanoparticles, pooling of experience, and comparison of specific instruments in round-robin tests. The first round-robin tests have already been performed within the NanoDevice project. The various instrument prototypes were tested not only under standardized conditions at the Nano Test Center, but also in the field. The objective is to promote the development of user-friendly instruments for measuring the effectiveness of protective measures simply and reliably.

Data obtained on exposure at workplaces involving nanotechnology, together with the measurement strategy used and all relevant environmental factors, are to be recorded in future in the NECID (Nano Exposure and Contextual Information Database). The IFA is currently developing this database in conjunction with foreign partners, not least in order to create a basis for the international harmonization of measurements of nanomaterials at workplaces. The same objective is being pursued by a proposal for a tiered measurement strategy and shift-based recommended exposure limits for biopersistent granular nanomaterials. This proposal has since been taken up by international standardization activity. Even though nanoparticles represent only a small fraction of ultrafine particles, developments in the area of nanomaterials mean that they will continue to be topical within occupational safety and health.

www.dguv.de (webcode: e95204)
Robots at the workplace: estimation of risks

A force/pressure instrument developed at the IFA assists in the safe design of workplaces at which human beings and robots work side-by-side

Workplaces at which human beings work in close proximity to robots are increasingly being created in industry. These workplaces combine human skills and abilities with the precise functions and power of the robot. The result is efficient manufacturing which relieves the persons involved of heavy work. The safety and health of the workers must be ensured by suitable design of the workplace and the robot. Collisions between the human being and the robot cannot be ruled out entirely, however, since guards between them are no longer present. The risk assessment must therefore pay particular attention to foreseeable use and misuse.

Together with the German Social Accident Insurance Institution for the woodworking and metalworking industries, the Institute for Occupational Safety and Health of the DGUV (IFA) has drawn up recommendations, particularly for the biomechanical and medical resistance to strain of the human body in the event of a collision. The recommendations state limit values for stress forces and pressures, thereby enabling unacceptable strain upon the body to be avoided. The robot system features safe technology which enables it to keep pressures and forces reliably within the acceptable range during operation. These recommendations have already been incorporated into the ISO standard governing industrial robots.

The risk assessment required for a workplace application involving a collaborative robot can be used to estimate the risk of collision with human beings. Critical collision processes must then be measured and evaluated with reference to the limit values. A lifelike instrument, i.e. one mechanically resembling the human body, is required for this purpose. For use in the field, the IFA has developed a force/pressure instrument. It takes account of the essential biomechanical properties of the human body: deformability, inertia, and the movement behaviour of regions of the body following a collision. The overall forces arising in the collision surface and the local pressure peaks are measured, visualized and documented.

For simulation of the body and the recording of entrapment, crushing or shock variables, two types of instrument are available for flexible use in the widest range of collision environments. The instruments are relatively small and therefore easy to use. They can be mounted in a number of different ways and are therefore suitable for a range of real-case applications. This has been confirmed by ongoing tests and certification of collaborative robots. With the aid of the instrument and by suitable design of the workplace or selection of parameters for the robot system, the stress upon the body in the infrequent event of a collision can be reduced to acceptable levels.

www.dguv.de (webcode: e141826)
Ambient intelligence (AmI) is currently a buzzword. At the same time, the concept is still in the early stages of its development to application maturity. We are presented with the possibility of intelligent houses with heating systems that adjust to user behaviour, and of cars which give their drivers more and more assistance with the driving task. AmI is however also making inroads into the world of work: in some cases in the visible form of devices such as head-mounted displays, in others invisibly, in the form of sensors and networking.

During some maintenance tasks, information displayed in the visual field of a head-mounted display worn by a worker already shows how work tasks are to be completed properly. Workplaces with intelligent light control are also being engineered: sensors detect the onset of worker fatigue and change the light colour accordingly.

These developments prompted the Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA) to analyse the use of AmI technology at the workplace. The results are currently being used to produce a product requirements document for operators and manufacturers. Three primary sources of possible stresses and hazards have initially been identified: the human-centric nature of the technology, its ubiquity, and the possible risk of accident caused by distraction.

Ambient intelligence – such as heating systems that adjust to user behaviour – has long found its way into the world of work.

Ambient intelligence in the world of work

In the future, ambient intelligence will also be a factor at the workplace. New hazards are to be detected and reduced to a minimum in advance

Since AmI applications such as head-mounted displays or lighting control systems respond directly to their behaviour, workers may perceive this human-centric aspect of the technology as depriving them of control, and their personal experience of the work may suffer as a result. Tasks free of context must therefore be avoided.

A further aspect of AmI is that information technology will increasingly cease to be the focus of attention during work, and the environment itself will become the interface. This may give workers the impression of increasing loss of control and of continually being under possible surveillance. For this reason, surveillance systems should not focus on individual persons, and should not record bodily data or expressions of life. The workers should be informed of the characteristics of the sensor system and of the use made of the data.

Finally, distraction may be a hazard factor, for example when head-mounted displays are used. Focussing on information displayed within the device is a natural aspect of work with head-mounted displays, and gives rise to continual multitasking situations. Besides causing mental stresses, these situations may also present risks of tripping, falling, and other accidents. The use of head-mounted displays should therefore be examined regarding the potential for distraction and obstruction. Manufacturers should draw up user information covering this aspect.
Tracking trends: observation of risks

A risk observatory is to gear preventive activity even more effectively to current developments and changes in the working environment.

Nothing is as constant as change. Technical developments, demographic structures in society, social and economic trends and many other factors bring about changes to the world in which we live. And with it, our workplaces, schools and universities also change, as in consequence do the challenges to occupational safety and health. What form exactly do these challenges take, and what services and measures can the German Social Accident Insurance Institutions use to address them? Answers to these two key questions are sought by the risk observatory of the German Social Accident Insurance Institutions, which is located at the Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA). The process is supported by a web-based questionnaire which has been developed by the IFA in conjunction with labour inspectors from the accident insurance institutions. The questionnaire asks questions about new and future global trends and developments which are also considered relevant to the future at European level. For the purposes of the risk observatory, the collection of trends and developments was extended and adapted to the particular structures and requirements of the German Social Accident Insurance.

In the first survey, conducted in 2012, the prevention experts of the German Social Accident Insurance Institutions for the public sector were consulted. They evaluated the trends from two perspectives: their essential relevance to the world of work and education, and their particular relevance to the safety and health of insured individuals, i.e. to the emergence of new risks. At the same time, they provided very specific guidance on the resources required for prevention. The results of the survey are being interpreted with reference to specific sectors and accident insurance institutions. They will be made available in the course of 2013 to the institutions consulted. At the same time, the survey is entering its second stage, in which labour inspectors from the German Social Accident Insurance Institutions for trade and industry will participate.

Continual adjustment is also required on the part of the risk observatory if it is to keep track of the right trends. For this purpose, trend scouting is to be conducted in conjunction with the Safety and Health Department of the DGUV (SiGe), in order to examine cutting-edge developments with regard to their essential significance for occupational safety and health. The IFA and SiGe will work hand-in-hand in this area in the future. Should the results of the evaluation be positive, the questionnaire will be amended to take account of the trends concerned. The scope of the issues monitored by the risk observatory is also to be widened. With the support of the German Road Safety Council, it will in future also consider trends and their effects upon safety on the roads and in other forms of transport.

www.dguv.de (webcode: d129113)

“Prevention means ‘coming before’. Precisely that is the aim of the risk observatory: to identify future hazards in sufficient time to enable them to be prevented.”

INA NEITZNER
Head of Unit Scientific cooperation at the IFA
The progressive development of information and communications technology (ICT) has had a fundamental impact upon modes of work and its organization in many occupations. Thanks to the intensive media support, tasks in an increasing number of areas can be performed spread over multiple locations or even independently of any particular location, i.e. on a mobile basis.

These mobile and IT-supported procedures offer the potential to make work more efficient. At the same time however they present new challenges which must be faced. Besides technical and organizational deficits, which were also revealed by preliminary studies conducted by the Institute for Occupational Safety and Health of the DGUV (IFA), concepts for personnel development have to date been lacking which adequately address the specific required skills and other requirements for IT-supported work.

The underlying principle of conventional personnel development is for the most efficient use to be made of the labour force as a resource. This need not necessarily be at odds with occupational safety and health; it is however clearly not an approach that is conducive to prevention. If however this principle is changed from a focus upon productivity to the experience of self-efficacy, the result is an excellent instrument for the prevention of mental stresses at the workplace.

The experience of self-efficacy can be understood as workers’ successful performance of their own work. The workers are conscious of being competent players within their own work systems, and receive positive feedback from their actions. They develop expectations of their self-efficacy for future challenges, resulting in potentially lower mental stress. In order for this creative process to be triggered or for suitable conditions to be created for it, suitably modified instruments of conventional personnel development can be used to set a course that is conducive to prevention.

Based upon quantitative surveys and qualitative interviews with workers in the mobile sector and with persons with human resource responsibility, a model sector-specific task and skills analysis was created for mobile IT-supported work. The analysis describes the general and physical qualification criteria required for this work, together with the skills required for successful completion of it. The profile, with its empirical and analytical basis, will in future enable persons with responsibility for human resources to develop efficient and appropriate concepts for personnel development. They will thus be able to enhance, extend and promote decision-making and responsibility among workers and their associated experience of self-efficacy, in consideration of the developments of the labour market.

www.dguv.de (webcode: e119872)
Vibration exposure on compact sweepers

Compact sweepers offer limited space for their drivers. The vibration to which the driver is exposed can nevertheless be combated effectively.

Compact sweepers have a range of uses. Their compact dimensions enable them to be used for the cleaning not only of streets, but also of pavements and pedestrian zones. During their use, vibration is transmitted from the mounted equipment and the running gear to the cab, and from there through the seat to the driver. This vibration is described as whole-body vibration, and exposure to it over many years may harm the lumbar spine.

In order for workers to be protected against this hazard to their health, the exposure to vibration must first be determined and then evaluated. The available vibration data for compact sweepers were not sufficient for the risk to be assessed. The Institute for Occupational Safety and Health of the DGUV (IFA) therefore worked with six accident insurance institutions in order to obtain representative data on vibration exposure in five member companies. The results show that vibration, as with many other forms of exposure, depends strongly upon the conditions in use. It is for example higher in driving than sweeping duty; it also increases strongly on cobbled roadway surfaces. These effects can be particularly evident on vehicles with unsprung running gear. A particular focus of prevention activity is the seat, which ideally should dampen the vibration excitation sufficiently to prevent health hazards from arising. The small cab dimensions of the sweepers studied constitute a problem in this context. Drivers of the vehicles must adjust their seats first and foremost to enable them to drive and work safely. This may lead to the seat being set very low and to the rear, or conversely very high, in order for the driver to be able to see the sweeper brush. In both of these cases, the vibration displacement of the seat may be so limited that it no longer damps the vibration excitation and under unfavourable conditions may even amplify it.

Guidance for prevention can be inferred from this observation: during the purchase of new machines, consideration should be given to the suspension. In some cases, it may also be possible to increase the dimensions of the driver’s cab in order to be able to extend the vibration displacement of the driver’s seat. The seats should be capable of damping the vibration excitation whilst at the same time taking up as little space as possible. Drivers should always be informed of the facilities for seat adjustment. Instruction on driving technique is also important, particularly on bumpy roadway surfaces. Good maintenance of the seats, and organization of the areas to be swept such that pure driving time to and from the site of use is kept as low as possible, are also important.

The results of the project are also incorporated into standardization projects: manufacturers’ information on vibration and possibly also test data from the seat manufacturers are in future to facilitate purchasing decisions.
Germany works. Safely.

- 610,000 safety delegates
- 370,000 people in initial and further training
- 76 million insured individuals in Germany
- 1.3 million first-aiders
- 82,000 OSH professionals
- 3.9 million insured companies and institutions
- 76 million insured individuals in Germany

DGUV PREVENTION YEARBOOK 2012/2013
Work – a safe assumption

The German Social Accident Insurance

Whether at work, in schools or higher education, in children’s daycare facilities or in voluntary service: the German Social Accident Insurance offers safety and protection. It forms part of Germany’s social insurance system. All salaried employees, schoolchildren and students, preschool children, and voluntary workers, particularly those in the voluntary fire services, are generally insured automatically against occupational, school and commuting accidents and against occupational diseases. Altogether, around 76 million people in Germany enjoy such protection. The bodies responsible for the statutory accident insurance system are the German social accident insurance institutions. Companies in the private sector are insured by the competent institution for their respective trade or industry. Accident insurance institutions for the public sector are responsible for their respective region.

The DGUV

The DGUV (German Social Accident Insurance) is the umbrella association of the individual German social accident insurance institutions. It assumes responsibility for the common interests of its member institutions and promotes their activity in the interests of both member companies and insured individuals. It represents the accident insurance institutions in their dealings with government bodies, German (federal and regional), European and other national and international institutions, and with the social partners. It maintains a head office in Berlin and further offices in Sankt Augustin and Munich. It also runs institutes and academies at sites in Bad Hersfeld, Bochum, Dresden, Hennef and Sankt Augustin. The DGUV is active in KAN, the Commission for Occupational Health and Safety and Standardization, which is funded by the VFA, the Association for the Promotion of Occupational Safety in Europe.

Prevention activity of the DGUV

The statutory accident insurance system also has the function of preventing occupational, school and commuting accidents, occupational diseases, and work-related health hazards. Prevention is of decisive importance for this purpose and is also a statutory function of the German social accident insurance institutions. The individual institutions perform inspection and consultancy tasks within the sectors for which they are responsible, oriented towards the actual hazard and exposure situations. In addition, they have developed a package of needs-based prevention activities and services in recent years that are cost-effective, practical and efficient. In the area of prevention, foci of their association’s work particularly include:

- Performance, co-ordination and support of joint measures and of research relating to the prevention of occupational, school and commuting accidents, occupational diseases and work-related health hazards
- Preparation, formulation and updating of model accident prevention regulations; involvement in the issuing of accident prevention regulations, and measures for the assurance of consistency within legislation
- Involvement in testing, certification and standardization at national, European and international level
- Deciding of all fundamental technical and legal issues for assurance that the legislation is applied uniformly within the statutory accident insurance system; provision of expert consultancy and of information to the individual accident insurance institutions; promotion of the pooling of their experience
- Drafting of principles; conducting of initial, further and continuing training of employees of the individual accident insurance institutions and of their umbrella association, including the review and approval of promotion and aptitude examinations under the civil-service legislation and the promotion and co-ordination of initial and further training measures
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Prof. Dr Dirk Windemuth
DRESDEN

Institute for Occupational Safety and Health of the DGUV (IFA)

Prof. Dr Helmut Blome
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Chairs of the Members’ Meeting:
Manfred Wirsch (German Social Accident Insurance Institution for the trade and distribution industry), Helmut Etschenberg (German Social Accident Insurance Institution for the public sector in North Rhine-Westphalia)

Chairs of the Governing Committee:
Dr Hans-Joachim Wolff (German Social Accident Insurance Institution for the building trade), Marina Schröder (German Social Accident Insurance Institution for the energy, textile, electrical and media products sectors)

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Dr Joachim Breuer

Deputy Directors General:
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