

by the existing codes. Such findings were enhanced by other studies (Humboldt University Medical Faculty/Berlin, Soroka Medical Centre/ Israel, Risk Analysis and Management Institute/US, research under the UK MP David Drew).

Objectives

Scientists and consumer groups joined forces advocating for injury prevention practices. Despite vast efforts, the results are meagre and slow, possibly due to huge industrial interests. The last impressive blow came from Members of The European Parliament (MEPs) who tried to submerge the findings of a Scientific and Technological Options Assessment (STOA) study commissioned by the European Parliament (EP), evidencing the gravity of the problem by voting against its publication. This study further communicates the problem and proposes hazard-eliminating policies.

Method or Approach

A. Exchange of information: There are obstacles in obtaining information about products that may cause an injury. Collaboration of European and national institutions led to tracing choking incidents and upload info in the respective websites. The most recent fatal accident was recorded in Turkey (6 year-old suffocated from a toy in choco-egg, January 2003).

B. Requests for legal regulation were submitted to the competent national and EU institutions, as the Toy Directive is considered inadequate and no legal regulations towards minimizing the hazards are foreseen.

Results

a. Favourable outcomes:

Coalition of child safety organizations in the EU has been strengthened and the flow of information has increased. Communication channels have been established with national authorities and MEPs. Institutions and authorities understand that instead of disputing data, all parties should work towards a safer design for these products. Several safety conscious manufacturers withdrew or modified products.

b. Worrying facts .

It is difficult to substantiate the magnitude of the problem, because no rubric describing the respective consumer products is available in most injury databases. Despite the documented health hazards, inedibles in foods continue to be sold in the EU. Some manufacturers still claim that their products are safe. The issue has met great resistance, in particular from big manufacturers with latest negative result the unprecedented STOA research banning. No consistency with previous EU policy has been kept up, as the precautionary principle applied to other products of less self-evident risks (phthalates) has not been yet applied in the inedibles case.

Conclusion

- Although scientific reports on such injuries exist, legal solutions lag behind to what has been the case for other products.
- Early warning systems could more efficiently monitor new cases of product-specific injuries, facilitate exchange of information on the magnitude of the problem and promptly notify the risk to the EU consumers.
- A close collaboration of all interested parties could lead to safer product-design. Hazards should be firstly DESIGNED away (bigger size of the inedible part) and warnings used only when not technically possible to change the design.
- In depth studies have to be made, as many accidents are not recorded due to inefficiency of the monitoring systems. If there is nowhere to complain or parents do not know where to complain, the incidents are not reported.

Spahr, James

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Glove fit for firefighters : An accommodation comparison between U.S. NFPA 1971 and European EN 659 glove size schemes with a contemporary (CAESAR) anthropometric hand size database

Problem

The leading occupational injury treated in United States (U.S.) hospital emergency departments in 1996 was an acute hand injury. Hand injuries annually affect 30% of workers. Firefighters are one of the high risk occupational groups for hand injury because of their mechanical, thermal, chemical and electrical exposures. Appropriate glove fit and use at work is important as glove use has been shown to both increase the risk of hand injury and reduce the risk of hand injury depending on specific work place hazards and activities. Gloves used by firefighters are typically designed based on best available hand-size data collected from military personnel 20-30 years ago. This measurement data may be inadequate and out of date for firefighter glove design.

Objectives

This study is conducted to determine the current level of accommodation provided by two popular glove-sizing schemes, using two of the most updated U.S. and European civilian anthropometry databases. It also describes the design process required to establish glove sizing schemes. The discussion should be beneficial for glove manufacturers and in general for personal protective equipment and other product designers.

Method or Approach

Hand size measurements were compared to specific manufacturing specifications required for the certification of firefighting gloves used to control structural fires in the U.S. and Europe. Civilian anthropometric data sets included the 3rd National Health and Nutrition Examination Survey (NHANES III, 1988-94) and the Civilian American and European Surface Anthropometry Resource (CAESAR, 2002). Glove sizing schemes were taken from consensus standards developed for the design of firefighting gloves use in both the U.S. and the European Economic Community (EEC). The voluntary consensus standards included: U.S. National Fire Protection Association (NFPA), NFPA Standard 1971 (2000). Standard on Protective Ensemble for Structural Fire Fighting; and International Standards Organization, EEC European Glove Standards, EN 420-1994 Protective Gloves; and EN 659-1996 Protective Gloves for Firefighters.

Results

Average U.S. male hand length has grown approximately ½ inch (1.3cm) over last 50 years, while glove sizing schemes have remained static on both continents. Firefighters are generally taller and heavier compared with other occupational groups. Glove schemes are now accommodating a smaller percentage of firefighters. Hand size varies by gender, race/ethnicity and occupational status. An estimated one third of male and female firefighters are poorly accommodated by the current sizing schemes. Firefighter's with a stature taller than 6 feet (183cm) or shorter than 5 feet 6 inches (168cm) have the worst fit accommodation risk. Different coverage strategies were applied in the two standards. Their limitations are discussed.

Conclusion

Firefighters and other workers whose gloves fit poorly will opt to wear no gloves, or poorly fitted gloves, which may increase hand injury risks. Hand length/width continues to increase, resulting in poorer glove fit over time. The degree of accommodation depends on factors such as gender, race, and even occupational status as a career or volunteer firefighter. An adequate glove sizing scheme will promote better fit for more workers. By using appropriate measurements a sizing scheme can be designed to accommodate 98% of the variation represented in hand size dimensions. Because human dimensions change over time, sizing schemes should be periodically evaluated for changes in the workplace end-user population. Occupationally-focused anthropometric methods can be used to design better sizing schemes and improve end-user compliance and safety in gloves and other type of personal protective equipment and clothing.

Spallek, Melanie

University of Queensland, Australia

The effectiveness of a community wide hot water scalds prevention campaign

Co-authors: Bain, Christopher; Mcclure, Roderick; Najman, Jake; Nixon, Jim; Purdie, David; Scott, Debbie; Spinks, Anneliese

Problem

Scald injuries constitute approximately 50% of all thermal injuries in children under the age of 5 years. The seriousness of scalds depends on the type of the hot substance, its temperature and the duration of exposure. Consequences of scalds include long term hospitalisation, repeated operations scarring, physical disability and psychological harm. In 1998 the government of the state of Queensland, Australia conducted a public health scalds injury prevention campaign "Hot Water Burns like Fire". The primary objective of the campaign was to decrease the incidence of hot water scalds amongst children, by policy and legislation-driven household environmental change and in April 1998 a law was introduced that required all homeowners and landlords to install a temperature tempering valve in all new houses constructed. Under this law, tempering valves are to be set so that the temperature of water supplied to bathroom taps is no hotter than 50 degrees Celsius and thus, in the event of an accident, children can be exposed to hot tap water for a longer period of time before suffering a severe scald injury.

Objectives

To evaluate the effectiveness of the Queensland Government's 'Hot water burns like fire' campaign in terms of impact factors, (ie whether the temperature of the water from bathroom taps reduced subsequent to the intervention) and outcome factors (ie whether hospitalisation rates from injury decreased subsequent to the intervention).

Method or Approach

In 1992 hot water temperature was measured at the bathroom tap in 872 randomly selected households in Brisbane, Australia and measured again in 850 randomly selected households in 2002. Injury data was obtained from Queensland health administrative hospital separation data for the same period. T-test statistics were used to measure significance of differences in mean temperatures pre and post intervention and change point analysis was conducted on the trend in hospitalised burn injuries in Queensland to assess effect of intervention on injury outcomes.

Results

Temperatures recorded in 1992 ranged from 24 to 87 with a mean temperature of 56.3 C. In 2002, 871 households included in the study had a minimum temperature of 16 C, a maximum of 93 C, and a mean temperature of 58.8 C. The increase in temperature over the 10 year period was statistically significant ($p < 0.01$). Detailed analysis of trends in scalds injury-related hospitalisation rates over this period will be presented.

Conclusion

The results of this study suggest the 'Hot water burns like fire' scalds injury prevention campaign has not yet been effective. Several plausible explanations for this lack of effect include: i) the slow introduction of the tempering devices due to the relatively small numbers of new houses in Brisbane and ii) the possibility that tempering valves may become ineffective over a period of time, or they may not be being properly installed. The major implications of the study however lies in its challenge to the accepted view that injury prevention is simply a matter of finding an appropriate countermeasure and implementing it. While hot water tempering valves may 'work' it is the program that makes them work that needs to be kept in focus. Injury outcome based evaluations remain the gold standard measures of successful prevention.

Spanou, Clio

Coventry University, United Kingdom

Alcohol linked with osteoporosis and accidents in old age

Co-authors: Cooke, Matthew; Gough, Anna; Wright, Christine

Problem

Falls and osteoporotic fractures are highly prevalent, interrelated conditions in older adults. Approximately 30% of community-dwelling older people in developed countries fall at least once annually. Although less than 5% of falls among

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World
Health
Organization

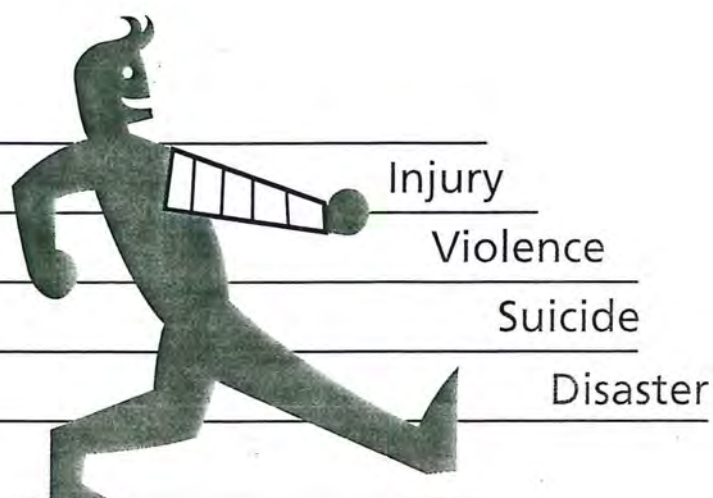


European
Commission



Abstract Book

7th World Conference on Injury Prevention and Safety Promotion



**GLOVE FIT FOR FIREFIGHTERS – AN ACCOMMODATION
COMPARISON BETWEEN U.S. NFPA 1971 AND EUROPEAN EN
659 GLOVE SIZE SCHEMES WITH A CONTEMPORARY
(CAESAR) ANTHROPOMETRIC HAND SIZE DATABASE.**

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Technology Branch, Protective Equipment Section, Morgantown, West Virginia, USA.

Abstract (600 words max.)

Problem Under Study: (word count: 119)

The leading occupational injury treated in United States (U.S.) hospital emergency departments in 1996 was an acute hand injury. Hand injuries annually affect 30% of workers. Firefighters are one of the high risk occupational groups for hand injury because of their mechanical, thermal, chemical and electrical exposures. Appropriate glove fit and use at work is important as glove use has been shown to both increase the risk of hand injury and reduce the risk of hand injury depending on specific work place hazards and activities. Gloves used by firefighters are typically designed based on best available hand-size data collected from military personnel 20-30 years ago. This measurement data may be inadequate and out of date for firefighter glove design.

Objectives: (word count: 60)

This study is conducted to determine the current level of accommodation provided by two popular glove-sizing schemes, using two of the most updated U.S. and European civilian anthropometry databases. It also describes the design process required to establish glove sizing schemes. The discussion should be beneficial for glove manufacturers and in general for personal protective equipment and other product designers.

Method: (word count: 121)

Hand size measurements were compared to specific manufacturing specifications required for the certification of firefighting gloves used to control structural fires in the U.S. and Europe. Civilian anthropometric data sets included the 3rd National Health and Nutrition Examination Survey (NHANES III, 1988-94) and the Civilian American and European Surface Anthropometry Resource (CAESAR, 2002). Glove sizing schemes were taken from consensus standards developed for the design of firefighting gloves use in both the U.S. and the European Economic Community (ECC). The voluntary consensus standards included: U.S. National Fire Protection Association (NFPA), NFPA Standard 1971 (2000) – Standard on Protective Ensemble for Structural Fire Fighting;

and International Standards Organization, ECC European Glove Standards, EN 420-1994 – Protective Gloves; and EN 659-1996 – Protective Gloves for Firefighters.

Results: (word count: 108)

Average U.S. male hand length has grown approximately ½ inch (1.3cm) over last 50 years, while glove sizing schemes have remained static on both continents. Firefighters are generally taller and heavier compared with other occupational groups. Glove schemes are now accommodating a smaller percentage of firefighters. Hand size varies by gender, race/ethnicity and occupational status. An estimated one third of male and female firefighters are poorly accommodated by the current sizing schemes. Firefighter's with a stature taller than 6 feet (183cm) or shorter than 5 feet 6 inches (168cm) have the worst fit accommodation risk. Different coverage strategies were applied in the two standards. Their limitations are discussed.

Conclusions: (word count: 137)

Firefighters and other workers whose gloves fit poorly will opt to wear no gloves, or poorly fitted gloves, which may increase hand injury risks. Hand length/width continues to increase, resulting in poorer glove fit over time. The degree of accommodation depends on factors such as gender, race, and even occupational status as a career or volunteer firefighter. An adequate glove sizing scheme will promote better fit for more workers. By using appropriate measurements a sizing scheme can be designed to accommodate 98% of the variation represented in hand size dimensions. Because human dimensions change over time, sizing schemes should be periodically evaluated for changes in the workplace end-user population. Occupationally-focused anthropometric methods can be used to design better sizing schemes and improve end-user compliance and safety in gloves and other type of personal protective equipment and clothing.

(Total Word Count: 546)

Glove fit for firefighters : An accommodation comparison between U.S. NFPA 1971 and European EN 659 glove size schemes with a contemporary (CAESAR) anthropometric hand size database

Author Spahr, James
CDC / NIOSH / DSR, USA

Co-Author(s)

Problem under study

The leading occupational injury treated in United States (U.S.) hospital emergency departments in 1996 was an acute hand injury. Hand injuries annually affect 30% of workers. Firefighters are one of the high risk occupational groups for hand injury because of their mechanical, thermal, chemical and electrical exposures. Appropriate glove fit and use at work is important as glove use has been shown to both increase the risk of hand injury and reduce the risk of hand injury depending on specific work place hazards and activities. Gloves used by firefighters are typically designed based on best available hand-size data collected from military personnel 20-30 years ago. This measurement data may be inadequate and out of date for firefighter glove design.

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Methodology

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Results

Average U.S. male hand length has grown approximately 1/2 inch (1.3cm) over last 50 years, while glove sizing schemes have remained static on both continents. Firefighters are generally taller and heavier compared with other occupational groups. Glove schemes are now accommodating a smaller percentage of firefighters. Hand size varies by gender, race/ethnicity and occupational status. An estimated one third of male and female firefighters are poorly accommodated by the current sizing schemes. Firefighter's with a stature taller than 6 feet (183cm) or shorter than 5 feet 6 inches (168cm) have the worst fit accommodation risk. Different coverage strategies were applied in the two standards. Their limitations are discussed.

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Occupationally-focused anthropometric methods can be used to design better sizing schemes and improve end-user compliance and safety in gloves and other type of personal protective equipment and clothing.



Work Safety and Health Monday, June 7th, 14:30–15:30

Foyer N

The number corresponds to the number of the poster board.

Monday, June 7th, 2004

Road Safety
Child Safety
Violence Prevention
Work Safety and Health
Trauma, Disaster,
Civil Protection, Terrorism
Sports, Leisure Safety
Suicide Prevention
Elder Safety
Home & Institutional Safety
Product Safety
Cross-Sectoral

08:00

08:30

09:00

09:30

10:00

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12:00

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14:00

14:30

15:00

15:30

16:00

16:30

17:00

17:30 All posters
18:00 remain hanging
18:30 until 10:00 the
following day.

648 Silveira, Cristiane Aparecida
Occupational accidents among rural workers according to information obtained from hospital records;
University of São Paulo at Ribeirão Preto College of Nursing, Brazil

649 Singh, BIR
Incidence of accidents related to agricultural activities in rural India
All India Institute of Medical Sciences (AIIMS), India

650 Spahr, James
Glove fit for firefighters: an accommodation comparison between U.S. NFPA 1971 and European EN 659 glove size schemes with a contemporary (CAESAR) anthropometric hand size database
CDC/NIOSH/DSR, USA

651 Stoyantschova, Sonja
Needlestick injuries among healthcare professionals in Austria
BD Austria GmbH, Austria

652 Tranfo, Giovanna
Accident prevention in antineoplastic drugs handling facilities
ISPESL, Italy

653 von Merten, Katja
Numerical simulation of sled tests: The influence of pelvis offset on thorax injury severity in a side impact scenario
Institute for Legal Medicine, University of Munich, Germany

654 Walker, Arlene
A psychological contract of safety?
Deakin University, Australia

655 Whysall, Zara
Stage of change approach to tackling work-related musculoskeletal disorders
Loughborough University, United Kingdom

656 Williamson, Ann
The effect of night work on fatigue and performance in truck drivers
NSW Injury Risk Management Research Centre, Australia

657 Yannikakis, Stavros
Consideration of the acoustic noise as a risk issue in the dental laboratory
Technological Educational Institute of Athens, Greece