

Sight on the effectiveness of injury prevention interventions



Hide Toet – Consumer Safety Institute

10th World Conference on Injury Prevention and Safety Promotion
London, 23 September, 2010



EMIP database

Database > Effective Measures in Injury Prevention (EMIP)

Objectives of EMIP

- To find, describe, store and provide access to information on 'what works or is believed to work in injury prevention'
- To formulate and disseminate information in evidence statements for specific interventions to prevent injuries
- To encourage evidence based practice in injury prevention



General design of EMIP

The EMIP database includes:

- Evidence statements
- Background document(s) with each evidence statement
- Reference(s) to literature or information source(s)



Target group of EMIP

Those who need info about effective preventive measures:

- Researchers
- Public health professionals
- Policy makers



EMIP topics

- Child safety
- Safety for seniors
- Vulnerable road users
- Sport safety



Sources for EMIP

Existing information

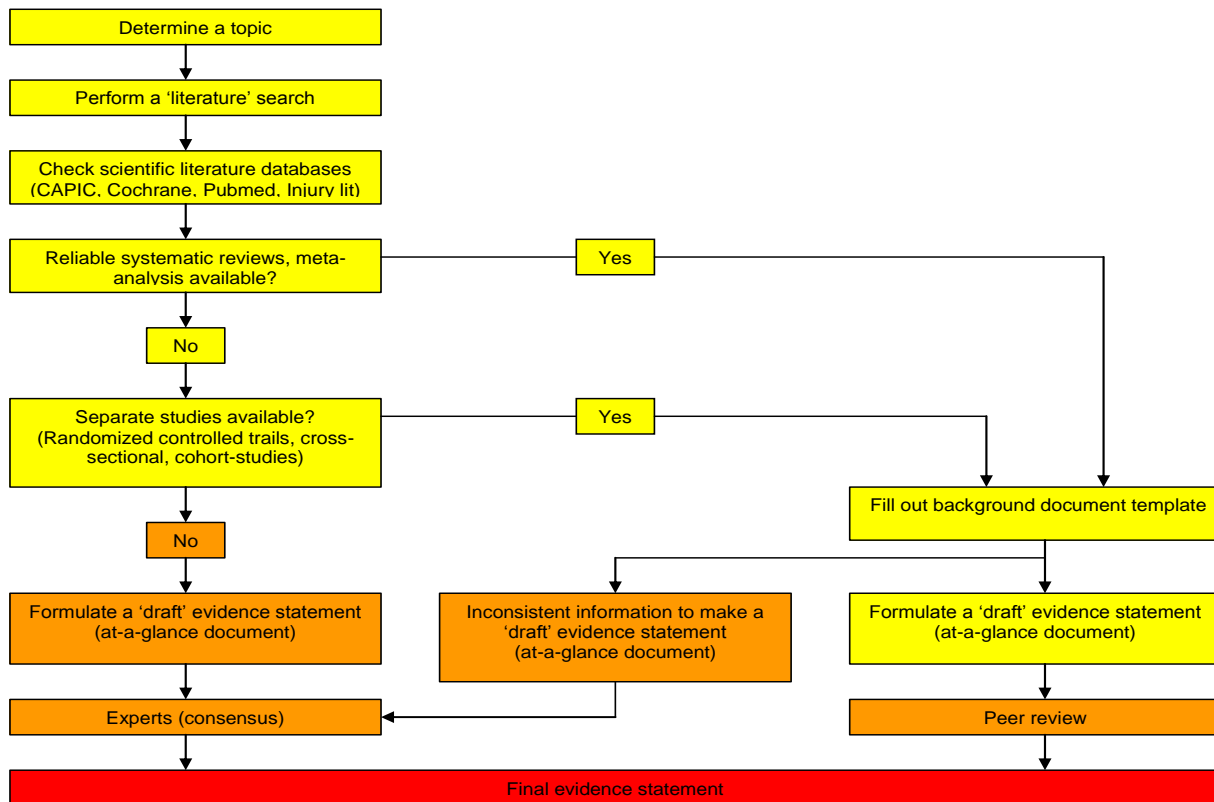
- Existing (systematic) reviews in literature
- Websites including evidence statements and/or overviews of systematic reviews

'New' information

- New literature research conducted especially for EMIP
- Expert consensus



Flow chart of EMIP filling process

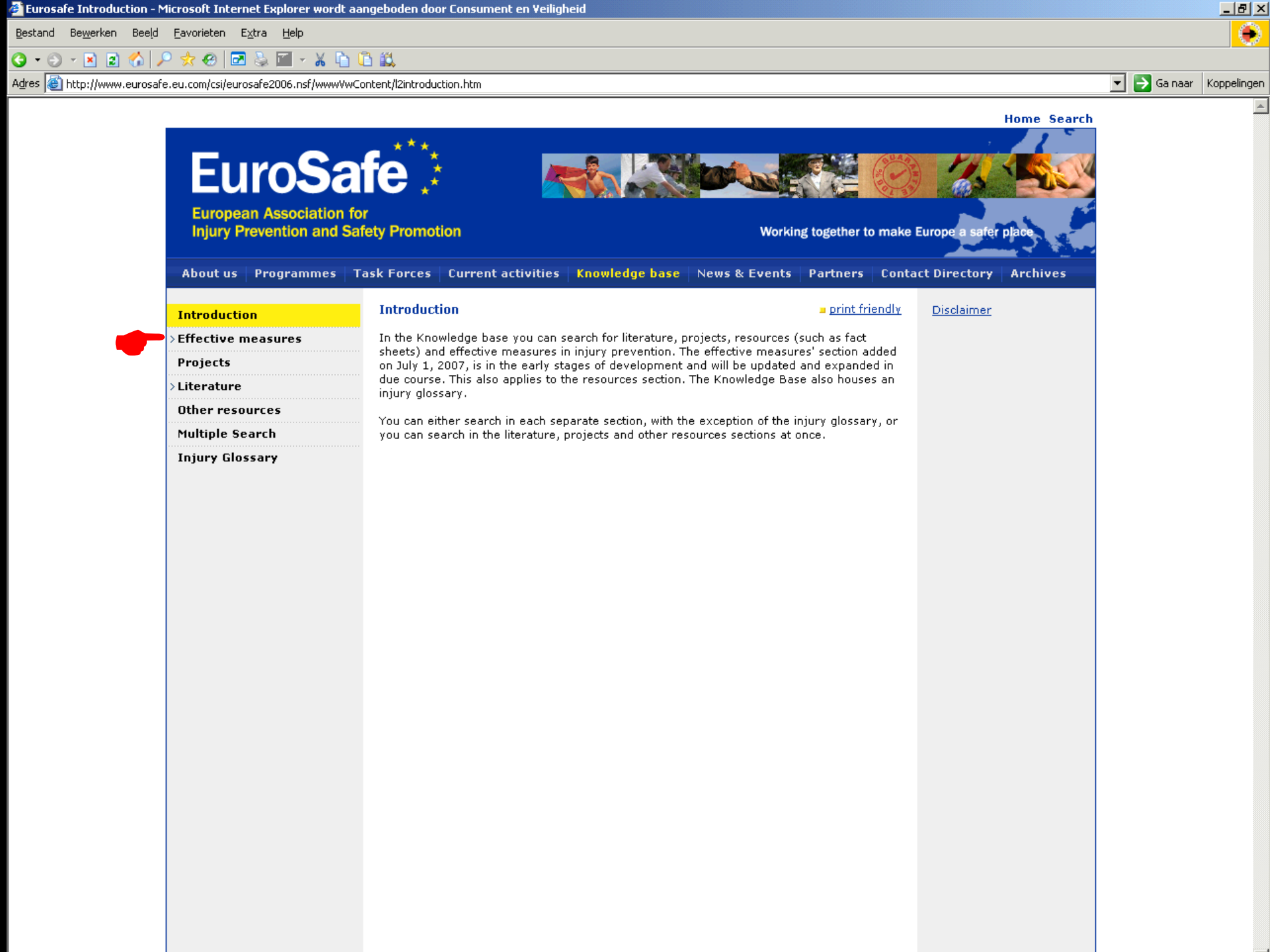


Range of conclusions on effectiveness

- Convincing evidence for effectiveness
- Strong indications for effectiveness
- Indications for effectiveness
- No indications for effectiveness
- Evidence shows that measure is not effective
- Conflicting evidence found to make an evidence statement
- No/inconclusive evidence found to make an evidence statement

<http://www.eurosafe.eu.com/effectiveness>





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- About us
- Programmes
- Task Forces
- Current activities
- Knowledge base**
- News & Events
- Partners
- Contact Directory
- Archives

Introduction

Introduction

[print friendly](#)

[Disclaimer](#)

> **Effective measures**

Projects

> **Literature**

Other resources

Multiple Search

Injury Glossary

In the Knowledge base you can search for literature, projects, resources (such as fact sheets) and effective measures in injury prevention. The effective measures' section added on July 1, 2007, is in the early stages of development and will be updated and expanded in due course. This also applies to the resources section. The Knowledge Base also houses an injury glossary.

You can either search in each separate section, with the exception of the injury glossary, or you can search in the literature, projects and other resources sections at once.

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- About us
- Programmes
- Task Forces
- Current activities
- Knowledge base**
- News & Events
- Partners
- Contact Directory
- Archives

- Introduction
- Effective measures**
- General search
- Child safety
- Sport safety
- Vulnerable road users
- Safety for seniors
- Contact
- > Risk assessment
- Injury glossary
- Projects
- > Literature
- Other resources
- Multiple search

Effective measures [print friendly](#)

The idea for the Effective Measures in Injury Prevention (EMIP) database originated from the work of injury practitioners and experts in the field. They identified the need to build capacity among those working in injury prevention by providing relevant and accessible information on current knowledge about the effectiveness of preventive measures to enhance decision making in injury prevention.

- ▶ The intent of the database is to:
- ▶ EMIP definitions of good practice
- ▶ Target audience
- ▶ Scope
- ▶ Launch

EuroSafe, in partnership with the Dutch Consumer Safety Institute has developed the database on Effective Measures in Injury Prevention (EMIP) as part of the European Commission funded and EuroSafe led initiative SafeStrat.

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[About us](#) [Programmes](#) [Task Forces](#) [Current activities](#) [Knowledge base](#) [News & Events](#) [Partners](#) [Contact Directory](#) [Archives](#)

Introduction

Effective measures

General search

Child safety

Sport safety

Vulnerable road users

Safety for seniors

Contact

Projects

Literature

Other resources

Multiple Search

Injury Glossary

General search

[print friendly](#)

[Disclaimer](#)

You can use the search form below to search for evidence statements or background documents by selecting a domain (only by evidence statements) or by using the free text search.

Search for

Evidence statements

Background documents

free search

Theme

[search](#)

Child safety
Safety for seniors
Sport safety
Vulnerable road users



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Working together to make Europe a safer place

- About us
- Programmes
- Task Forces
- Current activities
- Knowledge base**
- News & Events
- Partners
- Contact Directory
- Archives

- Introduction
- Effective measures**
- General search
- Child safety
- Sport safety
- Vulnerable road users
- Safety for seniors
- Contact

Vulnerable road users

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Bicycle helmets and injury reduction and severity

Review date: 15/11/2006
read more

Car seats to reduce the risk and/or occurrence of injuries in children.

Review date: 12/06/2007
read more

Interventions to improve pedestrian skills in children.

Review date: 13/06/2007
read more

Effectiveness of interventions promoting the use of car seats in children.

Review date: 13/06/2007
read more

The costs of speed reducing measures in the environment on cyclist traffic safety

Review date: 14/06/2007
read more

Community based programs promoting the use of bicycle helmets

Review date: 14/06/2007
read more

Speed reducing measures in the environment on pedestrian traffic safety

Review date: 14/06/2007
read more

Legislation on the use of bicycle helmets

Review date: 14/06/2007
read more

Community based education to improve pedestrian skills in children.

Review date: 14/06/2007
read more

Interventions to improve cyclist skills in children.

Review date: 14/06/2007



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[About us](#) | [Programmes](#) | [Task Forces](#) | [Current activities](#) | [Knowledge base](#) | [News & Events](#) | [Partners](#) | [Contact Directory](#) | [Archives](#)

Introduction

Effective measures

[General search](#)

[Child safety](#)

[Sport safety](#)

[Vulnerable road users](#)

[Safety for seniors](#)

[Contact](#)

Projects

Literature

Other resources

Multiple Search

Injury Glossary

Bicycle helmets and injury reduction and severity

[print friendly](#)

[Disclaimer](#)

Conclusion: Convincing evidence for effectiveness

There is consistent evidence indicating that wearing bicycle helmets significantly reduces the risk of head injury during a crash or collision: helmets decrease the risk of head by 29 to 85% and brain injury by 58 to 88%. Bicycle helmets also seem to decrease the risk on injury of upper and mid face by 65%. Moreover, a number of studies have shown that the effectiveness of bicycle helmets seem to be greater in children.

Nevertheless, there is no evidence for a protective effect on injuries of the lower face (especially children seem to be more vulnerable). In addition, in none of the included studies a distinction was made in the circumstances (sports or leisure time) in which the accidents occurred.

In addition, most studies were performed in non-European countries (USA, Canada, Australia, etc.). The findings might be different when performing case-control studies in European countries.

Recommendations (for research & practice)

Bicycle helmets have proven to be effective in reducing the risk for brain injury. It is recommended that one should wear a helmet while cycling. The use of a bicycle helmet by children (age 4-8) is especially emphasized, since these children are more prone to bicycle-related injuries and the effectiveness of bicycle helmets seem to be greater in children.

More research should be performed to gain insights in:

1. Negative effects of wearing a bicycle helmet (for example: helmets users are more likely for risk taking behavior or vice versa)
2. Innovation of helmets and their effectiveness on injury reduction
3. Effective interventions to increase the (proper) use of helmets
4. Helmet efficacy in European countries
5. Types of accidents associated with injuries
6. Care should be taken in the selection of control groups; preferably controls should be selected from the general population.

In addition, to make the studies more comparable, more consensus should be reached on the definitions of head, brain and face injuries.

Review

Date: 15-11-2006

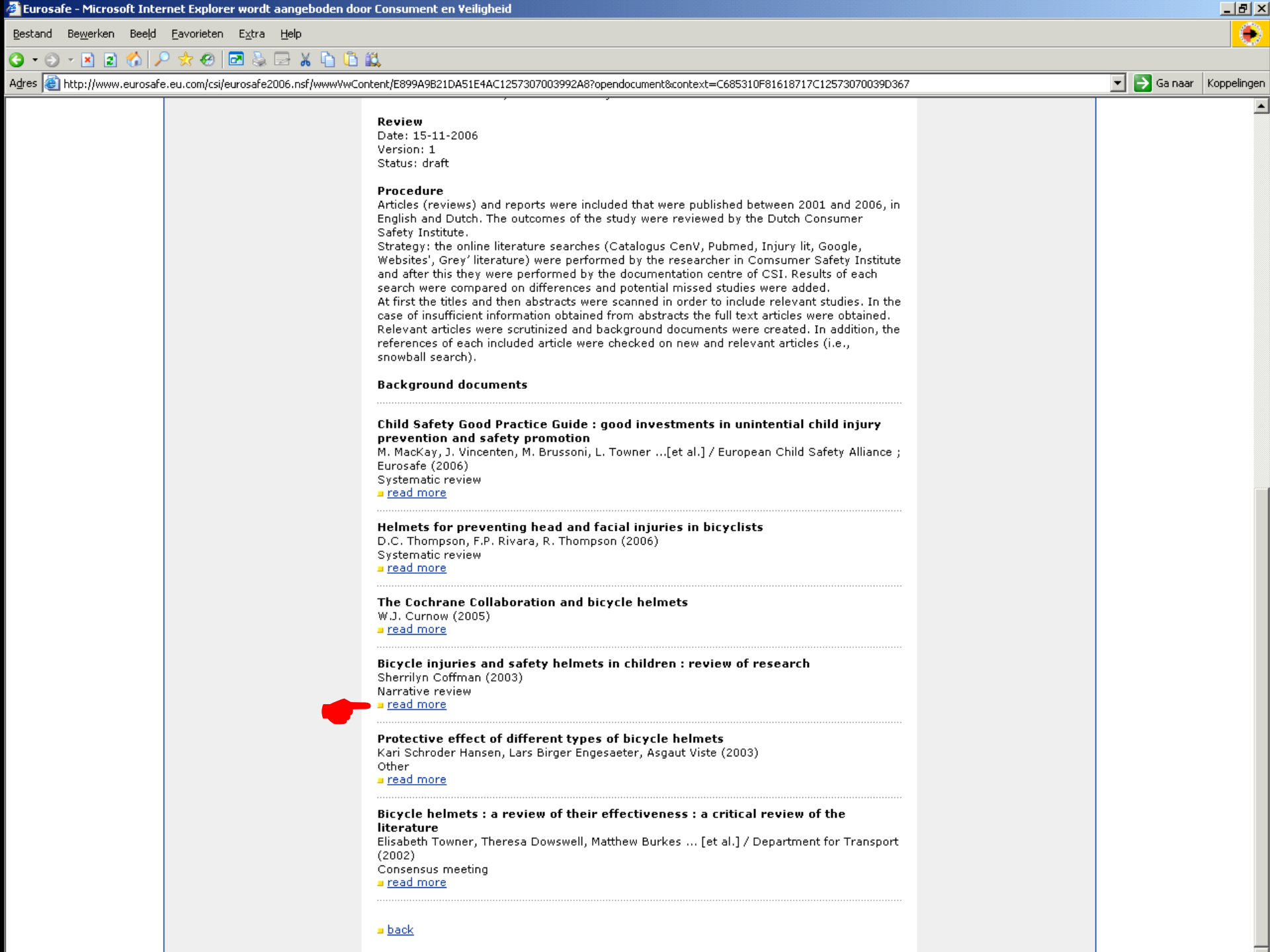
Version: 1

Status: draft

Procedure

Articles (reviews) and reports were included that were published between 2001 and 2006, in English and Dutch. The outcomes of the study were reviewed by the Dutch Consumer Safety Institute.

Strategy: the online literature searches (Catalogus CenV, Pubmed, Injury lit, Google,



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Articles (reviews) and reports were included that were published between 2001 and 2006, in English and Dutch. The outcomes of the study were reviewed by the Dutch Consumer Safety Institute.

Strategy: the online literature searches (Catalogus CenV, Pubmed, Injury lit, Google, Websites', Grey' literature) were performed by the researcher in Consumer Safety Institute and after this they were performed by the documentation centre of CSI. Results of each search were compared on differences and potential missed studies were added.

At first the titles and then abstracts were scanned in order to include relevant studies. In the case of insufficient information obtained from abstracts the full text articles were obtained. Relevant articles were scrutinized and background documents were created. In addition, the references of each included article were checked on new and relevant articles (i.e., snowball search).

Background documents

Child Safety Good Practice Guide : good investments in unintentional child injury prevention and safety promotion

M. MacKay, J. Vincenten, M. Brussoni, L. Towner ...[et al.] / European Child Safety Alliance ; Eurosafe (2006)
Systematic review
[read more](#)

Helmets for preventing head and facial injuries in bicyclists

D.C. Thompson, F.P. Rivara, R. Thompson (2006)
Systematic review
[read more](#)

The Cochrane Collaboration and bicycle helmets

W.J. Curnow (2005)
[read more](#)

Bicycle injuries and safety helmets in children : review of research

Sherrilyn Coffman (2003)
Narrative review
[read more](#)

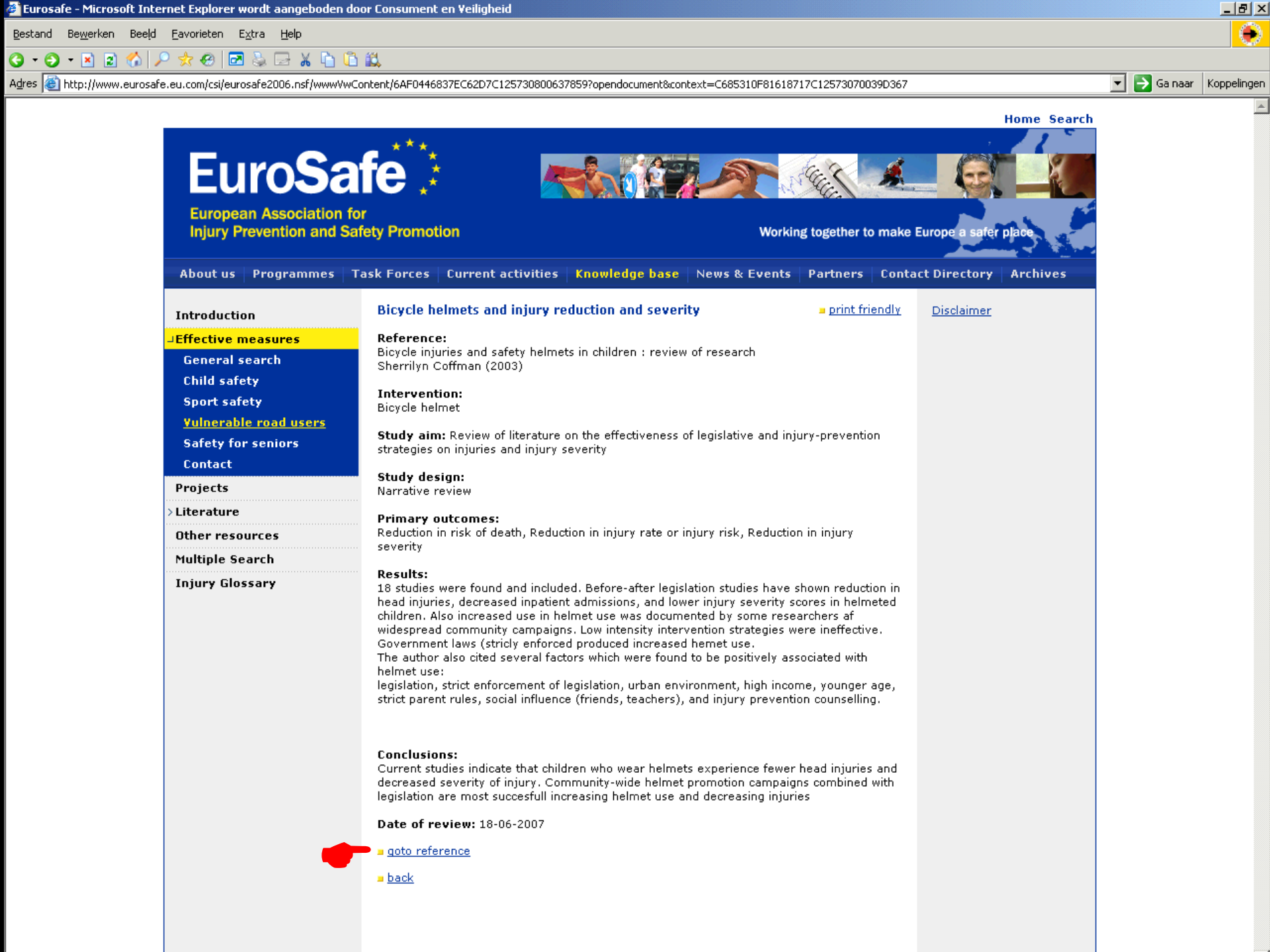
Protective effect of different types of bicycle helmets

Kari Schroder Hansen, Lars Birger Engesaeter, Asgaut Viste (2003)
Other
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Bicycle helmets : a review of their effectiveness : a critical review of the literature

Elisabeth Towner, Theresa Dowswell, Matthew Burkes ... [et al.] / Department for Transport (2002)
Consensus meeting
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[back](#)



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- About us
- Programmes
- Task Forces
- Current activities
- Knowledge base**
- News & Events
- Partners
- Contact Directory
- Archives

Introduction

Effective measures

General search

Child safety

Sport safety

Vulnerable road users

Safety for seniors

Contact

Projects

Literature

Other resources

Multiple Search

Injury Glossary

Bicycle helmets and injury reduction and severity

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Reference:

Bicycle injuries and safety helmets in children : review of research
Sherrilyn Coffman (2003)

Intervention:

Bicycle helmet

Study aim: Review of literature on the effectiveness of legislative and injury-prevention strategies on injuries and injury severity

Study design:

Narrative review

Primary outcomes:

Reduction in risk of death, Reduction in injury rate or injury risk, Reduction in injury severity

Results:

18 studies were found and included. Before-after legislation studies have shown reduction in head injuries, decreased inpatient admissions, and lower injury severity scores in helmeted children. Also increased use in helmet use was documented by some researchers of widespread community campaigns. Low intensity intervention strategies were ineffective. Government laws (strictly enforced produced increased helmet use.

The author also cited several factors which were found to be positively associated with helmet use:

legislation, strict enforcement of legislation, urban environment, high income, younger age, strict parent rules, social influence (friends, teachers), and injury prevention counselling.

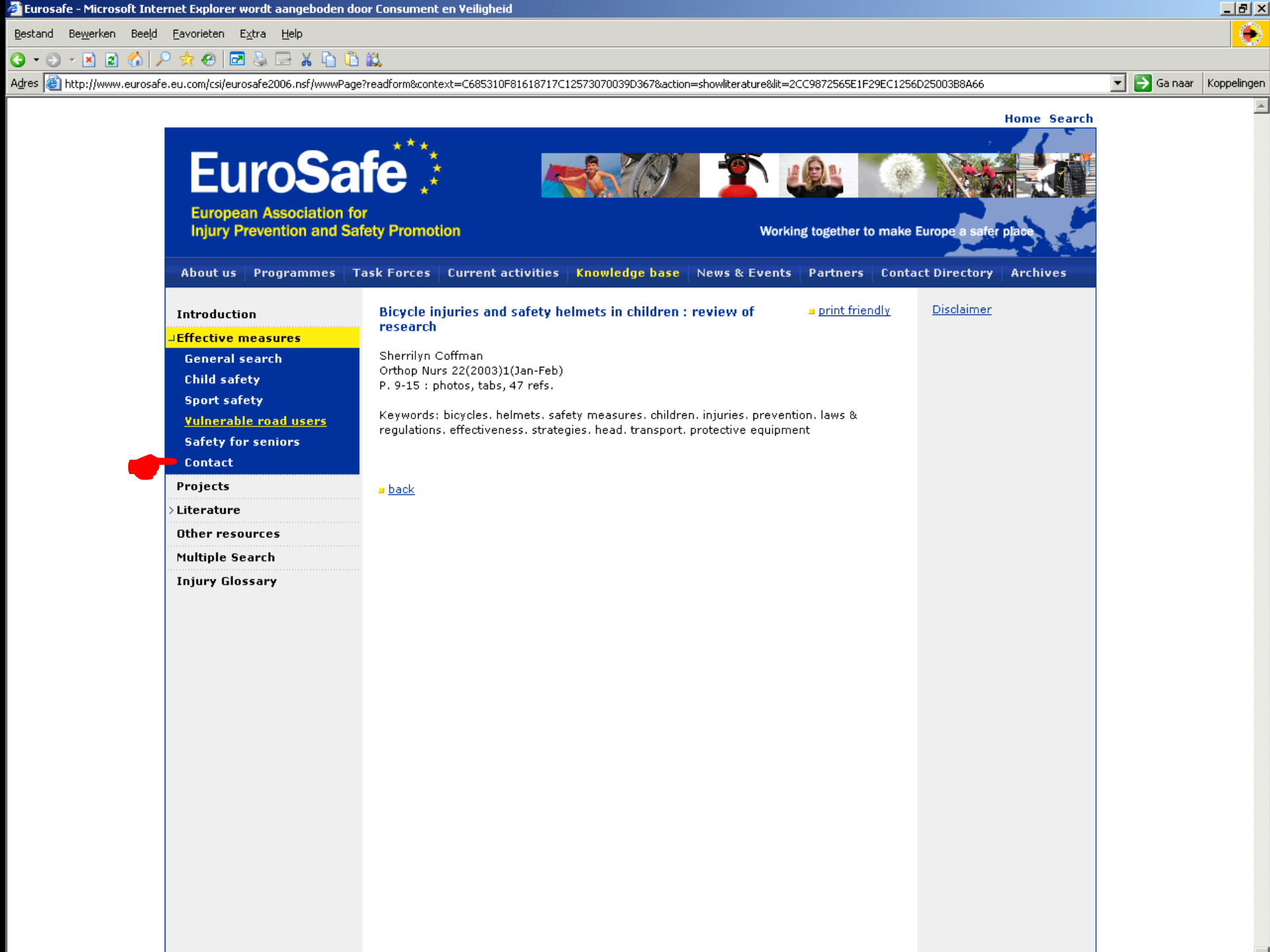
Conclusions:

Current studies indicate that children who wear helmets experience fewer head injuries and decreased severity of injury. Community-wide helmet promotion campaigns combined with legislation are most successful increasing helmet use and decreasing injuries

Date of review: 18-06-2007

goto reference

back



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[About us](#) | [Programmes](#) | [Task Forces](#) | [Current activities](#) | [Knowledge base](#) | [News & Events](#) | [Partners](#) | [Contact Directory](#) | [Archives](#)

[Introduction](#)

[Effective measures](#)

[General search](#)

[Child safety](#)

[Sport safety](#)

[Vulnerable road users](#)

[Safety for seniors](#)

[Contact](#)

[Projects](#)

[Literature](#)

[Other resources](#)

[Multiple Search](#)

[Injury Glossary](#)

Bicycle injuries and safety helmets in children : review of research

[print friendly](#)

[Disclaimer](#)

Sherrilyn Coffman
Orthop Nurs 22(2003)1(Jan-Feb)
P. 9-15 : photos, tabs, 47 refs.

Keywords: bicycles, helmets, safety measures, children, injuries, prevention, laws & regulations, effectiveness, strategies, head, transport, protective equipment

[back](#)





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[About us](#) | [Programmes](#) | [Task Forces](#) | [Current activities](#) | [Knowledge base](#) | [News & Events](#) | [Partners](#) | [Contact Directory](#) | [Archives](#)

Introduction

Effective measures

[General search](#)

[Child safety](#)

[Sport safety](#)

[Vulnerable road users](#)

[Safety for seniors](#)

[Contact](#)

Projects

Literature

Other resources

Multiple Search

Injury Glossary

Contact

[print friendly](#)

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We are very keen to receive your feedback so if you have any questions or suggestions for existing or new effective measures that are not yet included in the database please don't hesitate to contact us at emip@eurosafe.eu.com

Examples of interventions and effectiveness in EMIP

Examples of interventions and effectiveness in EMIP:

- **Convincing evidence effectiveness:** Interventions promoting the use of bicycle helmets
- **Strong indications for effectiveness:** Home and environmental intervention and the reduction of falls in high risk elderly
- **Indications for effectiveness:** Warm-up and stretching prior to exercise to reduce the risk and/or occurrence of muscle/tendon-related sports injuries (education)
- **No indications for effectiveness:** Hip protectors to reduce hip fractures



Way forward with EMIP

- Improving information in existing evidence statements
- Adding new evidence statements
- Try to link with other available sources

- Inform us on new available evidence!

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