

Preventing Oral and Facial Injuries: Population-Based Interventions to Encourage Use of Helmets, Facemasks, and Mouthguards in Contact Sports (2001 Archived Review)

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Review Summary

Intervention Definition

Population-based interventions to encourage the use of helmets, facemasks, and mouthguards when engaged in contact sports aim to prevent injuries to the head, face, and mouth. Intervention programs educate health professionals, parents, coaches, players, and officials of organized sports about the risk of injury and potential benefits of protective equipment, offer incentives for regular use of protective equipment at both practice and formal competition, and encourage the enforcement of rules of play involving safety equipment.

Summary of Task Force Finding

The Community Preventive Services Task Force finds insufficient evidence to determine the effectiveness of population-based interventions that encourage use of helmets, facemasks, and mouthguards in contact sports for increasing equipment use or reducing sports-related injuries, because of a small number of studies with inconsistent findings and methodological limitations.

Results from the Systematic Reviews

Four studies qualified for the review.

- Individually, no study was of good quality, and no single effect estimate was large enough to meet the least demanding criterion of sufficiency of the evidence of effectiveness.
- Together, the studies compared different exposures and reported inconsistent effects using different outcomes.

These results were based on a systematic review of all available studies, conducted on behalf of the Task Force by a team of specialists in systematic review methods, and in research, practice and policy related to oral health.

Publications

Truman BI, Gooch BF, Sulemana I, et al. [Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](#) [www.thecommunityguide.org/oral/oral-ajpm-ev-rev.pdf]. *Am J Prev Med* 2002;23(1S):21-54.

Task Force on Community Preventive Services. [Recommendations on selected interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](#) [www.thecommunityguide.org/oral/oral-ajpm-recs.pdf]. *Am J Prev Med* 2002;23(1S):16-20.

Task Force on Community Preventive Services. [Promoting oral health: interventions for preventing dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries: A Report on Recommendations of the Task Force on Community Preventive Services](#) [www.cdc.gov/mmwr/preview/mmwrhtml/rr5021a1.htm]. *MMWR* 2001;50(RR21):1-13.

Task Force on Community Preventive Services. [Oral health](#) [www.thecommunityguide.org/oral/Oral-Health.pdf]. In: Zaza S, Briss PA, Harris KW, eds. *The Guide to Community Preventive Services: What Works to Promote Health?* Atlanta (GA): Oxford University Press;2005:304-28 (Out of Print).

Task Force Finding

Intervention Definition

Population-based interventions to encourage the use of helmets, facemasks, and mouthguards in contact sports aim to prevent injuries to the head, face, and mouth. Rules of play involving use of helmets, facemasks, goggles, and mouthguards vary by sport and position played. Intervention programs educate health professionals, parents, coaches, players, and officials of organized sports about the risks of injury and the potential benefits of protective equipment; offer incentives for regular use of protective equipment at both practice and formal competition; and encourage the enforcement of rules of play involving use of safety equipment.

Task Force Finding (November 2001)*

The Task Force identified four qualifying studies that evaluated the effectiveness of intervention programs in (1) increasing the frequency of correct use of helmets, facemasks, and mouthguards; and (2) reducing the incidence, prevalence, or recurrence and type and severity of sports-related injuries to the head, face, and mouth. Those studies provide insufficient evidence of the effectiveness of such programs in changing the behavior of players or in reducing the frequency of sports-related injuries to the head, face, and mouth. Although effectiveness could not be established, mainly because of inadequate number, design, or execution of studies, readers are reminded that the use of helmets, facemasks, and mouthguards is mandatory in many sports and encouraged by a Healthy People 2010 objective.

*From the following publication:

Task Force on Community Preventive Services. [Recommendations on selected interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](http://www.thecommunityguide.org/oral/oral-ajpm-recs.pdf) [www.thecommunityguide.org/oral/oral-ajpm-recs.pdf]. *Am J Prev Med* 2002;23(1S):16-20.

Supporting Materials

Analytic Framework

See Figure 1 on page 24 of Truman BI, Gooch BF, Sulemana I, et al. [Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](#)

[www.thecommunityguide.org/oral/oral-ajpm-ev-rev.pdf]. *Am J Prev Med* 2002;23(1S):21-54.

Evidence Gaps

What are Evidence Gaps?

Each Community Preventive Services Task Force (Task Force) review identifies critical evidence gaps—areas where information is lacking. Evidence gaps can exist whether or not a recommendation is made. In cases when the Task Force finds insufficient evidence to determine whether an intervention strategy works, evidence gaps encourage researchers and program evaluators to conduct more effectiveness studies. When the Task Force recommends an intervention, evidence gaps highlight missing information that would help users determine if the intervention could meet their particular needs. For example, evidence may be needed to determine where the intervention will work, with which populations, how much it will cost to implement, whether it will provide adequate return on investment, or how users should structure or deliver the intervention to ensure effectiveness. Finally, evidence may be missing for outcomes different from those on which the Task Force recommendation is based.

Identified Evidence Gaps

Community water fluoridation (CWF)

Most of the evidence indicates that CWF is safe and effective in reducing dental caries in communities. However, important research questions with practical applications remain unanswered, including:

- What is the effectiveness of laws, policies, and incentives to encourage communities to start or continue water fluoridation?
- What is the effectiveness of CWF in reducing socioeconomic or racial and ethnic disparities in caries burden?
- What is the effectiveness of CWF among adults (aged >18 years)?
- What, if any, are the effects of the increasing use of bottled water and in-home water filtration systems (which may not be fluoridated or may remove fluoride, respectively) on the benefits gained through CWF?
- How effective is CWF in preventing root-surface caries?

School-based or school-linked pit and fissure sealant delivery programs

The evidence is clear and convincing that sealants delivered through schools and school-affiliated clinics are safe and effective in preventing dental caries among children. Important research questions yet to be answered include:

- What is the effect of sealant delivery programs among adults aged >18 years (e.g., military recruits)?
- How do state dental practice laws and regulations affect use of sealants in school-based programs?
- How do school district oral health policies and curricula affect use of sealants?
- What is the effectiveness of sealants in primary teeth?

Statewide or community-wide sealant promotion programs

The available evidence of the effectiveness of statewide or community-wide sealant promotion programs was insufficient to support a recommendation by the Task Force. Therefore, research in the following areas is a high priority:

- What is the effect of public education on awareness, community mobilization (through coalitions), and resource allocation for sealant promotion?
- What is the effect of professional education, combined with provider reminders and other system-oriented strategies, on knowledge, skills, and appropriate use of sealants?
- What is the effect of insurance coverage and managed care plans on access to and use of sealants?
- How cost effective are models of sealant delivery other than school based?

Ecologic Approaches Using Multiple Interventions with Many Targets of Change

Research on ecologic approaches in various settings might involve multiple interventions with many targets of change and desirable health. Estimates of effectiveness might focus on increase in knowledge, behavioral intentions, and behaviors in the short term and the desirable health outcomes mentioned above in the long term. Questions such as the following need to be answered:

- What is the effect on several oral health outcomes of community-wide interventions that combine environmental change, legislative action, policy change, and social support within families to encourage behavior change?
- What is the effect on several oral health outcomes of community development coalitions, partnerships, mass media advocacy, and social marketing?
- What is the effect on several oral health outcomes of multicomponent interventions in selected settings?

Disclaimer

The findings and conclusions on this page are those of the Community Preventive Services Task Force and do not necessarily represent those of CDC. Task Force evidence-based recommendations are not mandates for compliance or spending. Instead, they provide information and options for decision makers and stakeholders to consider when determining which programs, services, and policies best meet the needs, preferences, available resources, and constraints of their constituents.

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