

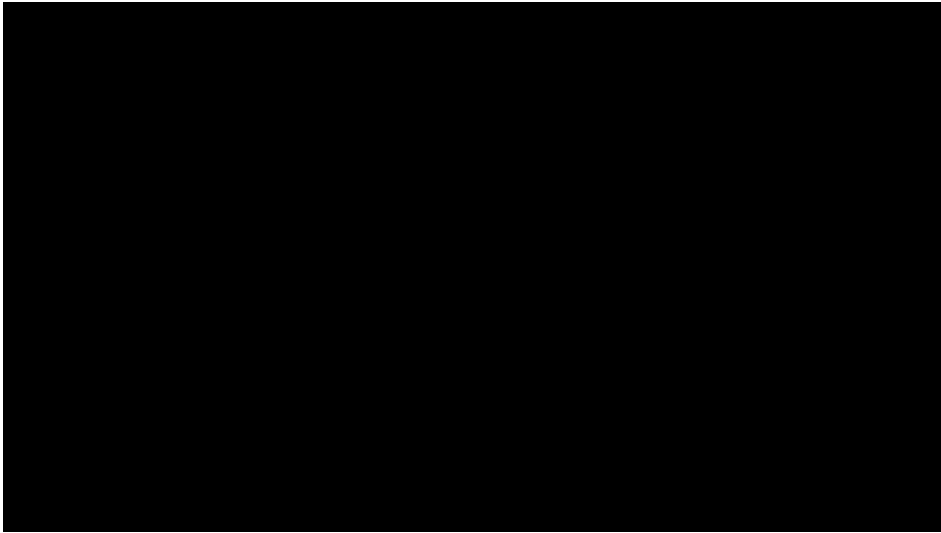
**Road Safety
Education:
How effective
is it?**



Dinesh Mohan



SPEED LIMIT 120 KM/H



Traffic Safety Handbook – Rune Elvik

Cochrane Review

<http://www.cochrane-injuries.lshtm.ac.uk>

**Insurance Institute for Highway Safety,
Washington DC www.iihs.org**

World Health Organization

http://www.who.int/violence_injury_prevention/en/

Characteristics of successful programs

- **Information regarding relative safety characteristics of similar products.**
- **That communicate health knowledge not previously well known.**
- **To support new law enforcement programs—publicizing the enforcement presence and results of the enforcement**
- **To support new designs**
- **Part of broader-based, longer-term community programs.**
- **Based on behaviour change models, teaching skills to resist social influences..**
- **Education of policy makers and professionals**

Adapted from:
Alan F. Williams (2007). Public information and education in the promotion of highway safety. Research Results Digest 322, NCHRP Project 17-33, TRB, Washington D.C.

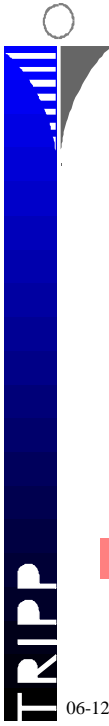
06-12-2019

Characteristics of unsuccessful programs

- **Passive messaging --- signs, pamphlets, brochures, and buttons.**
- **Educating children under 8-9 years old**
- **Slogans & simple exhortations.**
- **Education programs – lecture oriented, information-only in nature.**
- **Short-term programs that have low-intensity messages.**
- **Use of extreme fear or scare techniques, especially when directed at adolescents.**

Adapted form:
Alan F. Williams (2007). Public information and education in the promotion of highway safety. Research Results Digest 322, NCHRP Project 17-33, TRB, Washington D.C.

06-12-2019



REPORT OF THE
**Committee on Traffic
 Accident Statistics**

WASHINGTON • D C • MAY 6, 1930

and regrettable increase in the number of street and highway accidents, both fatal and nonfatal, in recent years, and especially in 1929. Attention of the whole nation is sharply focused on this increase, which in 1929 was more than ten per cent, and

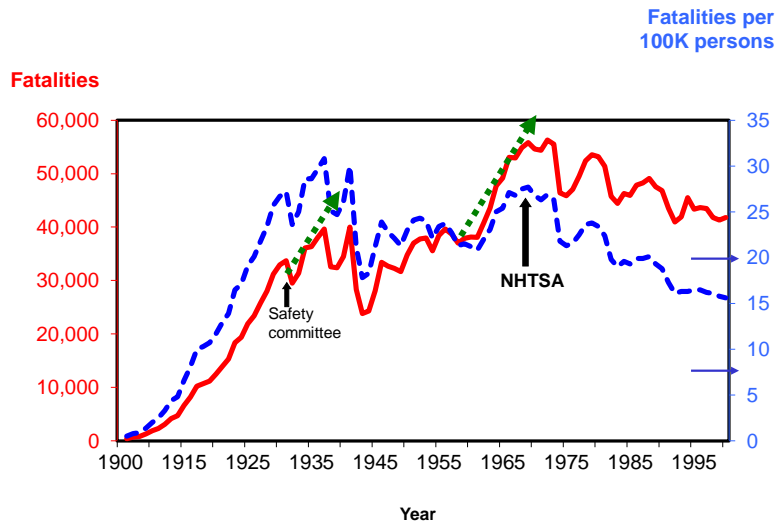
6. Whether this recent tendency is due to a more intensive utilization of the average automobile, or to the greater speeds at which now driven, or to a generally more reckless disregard of traffic and safety rules, or to all three factors combined, it is difficult to say. These factors and others doubtless play their

22. The Committee strongly urges that emphasis be given to safety education in the schools. Fatalities to children under 15

28. Accident spot maps or card files should be maintained, to be used primarily to detect points at which accidents occur most frequently, and as a basis for plans to eliminate the conditions

06-12-2019

Road traffic fatality trends USA



06-12-2019

LEARNING FROM EXPERIENCE

- The highway, the vehicle and the traffic management components must be **designed with a recognition of the limitations of road users**. This is contrary to the historical view that road users through training, supervision and retribution can cope with the demands of traditional highways without causing accidents (*Professor Murray Mackay, President IRCOB*)
- **Driver education was almost the exclusive focus of highway safety improvement efforts in the United States and elsewhere for 50+ years, and the evidence is clear it did not work**. The fact is, most highway safety educational programs do not work. Research in the early 1970s showed that a group of highly skilled competition race drivers actually had worse on-the-road crash records than a group of average drivers (*B. O'Neill, President IIHS*)
- **Road safety work needs professional institutions - an institution independent of the road building authority and objective research groups (GTST)**

06-12-2019

SUMMARIES OF STUDIES

- ▷ There is no clearly proven relationship between knowledge and attitude on the one hand and behaviour on the other hand – **OECD 1994**
- ▷ Education programs by themselves usually are insufficient to change behaviour. They may increase knowledge, but increased knowledge rarely results in an appropriate behaviour change – **O'Neill 2001**
- ▷ Contrary to the view that education cannot do any harm some of these programs have been shown to make matters worse – **Sandels 1978**

06-12-2019

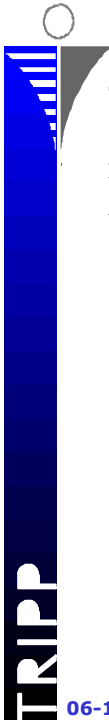
Title: **The Skandia Report II: Why Are Children Injured in Traffic? Can We Prevent Child Accidents in Traffic?**

Date: 1974

Authors: Sandels, Stina

Abstract: This investigation concerns traffic accidents in Sweden during 1968 and 1969 in which children ages 1-10 were active participants. A total of 182 complete police investigations including preliminary investigation records, police reports to the Central Bureau of Statistics, and memorandums, were analyzed. The purpose of this report is to determine the behavior of the people involved in the incident, and, if possible, what their responsibilities were. The behavior and the opinions of the children, their supervisors, the motorists and the witnesses were studied as well as the stationary and the moving environment in which the accidents took place. Every factor is examined separately and in detail in order to give a general picture of influential factors; suggestions for preventive measures are given. The last chapter explores the question of whether child accidents in traffic can be prevented. It is concluded that it is impossible to radically lower the number of children's accidents by teaching safety measures. (CS)

06-12-2019



Title: **Children in traffic. London, Elek.**

Date: 1975

Authors: Sandels, Stina

In her classic book, *Children in Traffic*, the Swedish psychologist Stina Sandels acknowledged Piaget's theory in drawing the following conclusion: "... it is impossible to adapt fully small children to the traffic environment. They are biologically incapable of managing many of its demands."

Children under 8-9 with traffic safety education can have more crashes than those who don't

06-12-2019

A controlled study on effect of TV messages on belt use



- ❑ A father lifting his teenaged son from a wheelchair into a car.
- ❑ Father's thoughts are voiced off-camera
- ❑ The father expresses guilt for not having encouraged his son to use safety belts before the crash in which he was injured.



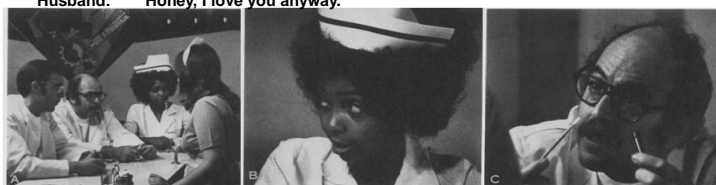
- ❑ "I'm not sick or anything. I could go out more but since the car crash, I just don't The crash wasn't Dad's fault. I go for walks with my father after dark ... that way I don't get, you know, stared at"
- ❑ She turns enough to reveal a large scar on what was the hidden side of her face. She continues, "It doesn't hurt anymore."
- ❑ An announcer says off-camera, "Car crashes kill two ways: right away and little by little. Wear your safety belts and live!"

Source: Robertson L et al. (1974) A Controlled Study of the Effect of Television Messages on Safety Belt Use. AJPH 64:11 1071-80

A controlled study on effect of TV messages on belt use



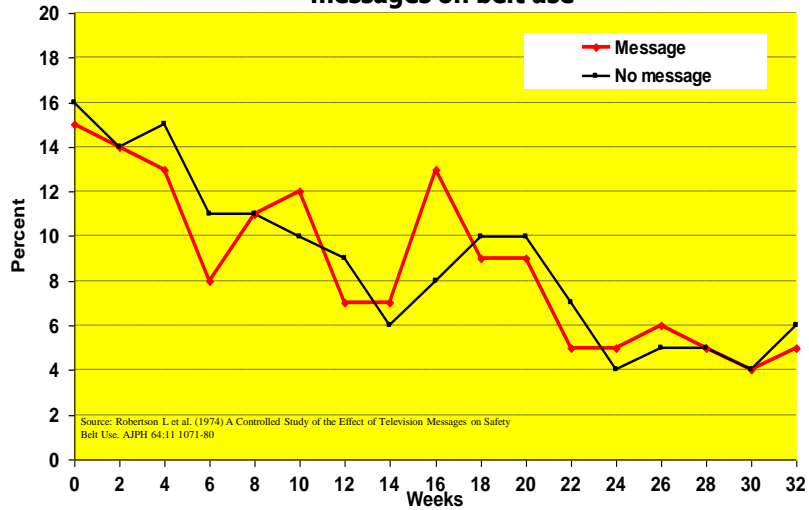
- ❑ A woman is shown in front of a mirror applying makeup. A full face picture on her dressing table shows her as a beautiful woman.
- ❑ Husband enters and suggests that they go to a party. She asks him not to look at her without makeup as she turns to reveal a scarred face.
- ❑ Announcer: "It's much easier to wear safety belts than to hear your husband say . . ." Husband: "Honey, I love you anyway."



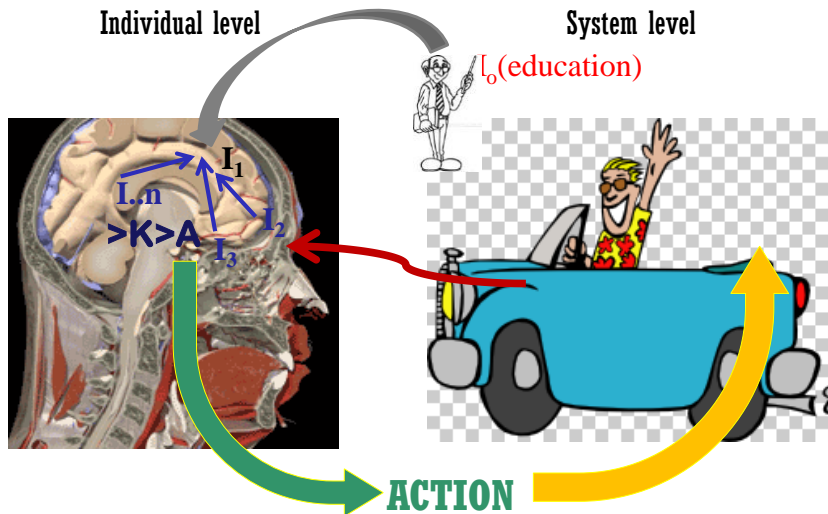
- ❑ Nurse: "Trouble?" Doctor: "Another guy driving home not wearing his safety belts." Nurse: "Gonna live?" Doctor: "Guess you could call it living."
- ❑ Nurse: "You've had a lot of car crash cases lately." Doctor: "Yeah, and I'm getting sick of it. They've got safety belts in the cars. Why ... why in the name God don't they put 'em on?"
- ❑ Waitress: "Do safety belts really make a difference?" The doctor shows her how a thermometer case can be hit and the thermometer inside not broken, but it shatters when hit out of the case.

Source: Robertson L et al. (1974) A Controlled Study of the Effect of Television Messages on Safety Belt Use. AJPH 64:11 1071-80

A controlled study of the effect of television messages on belt use



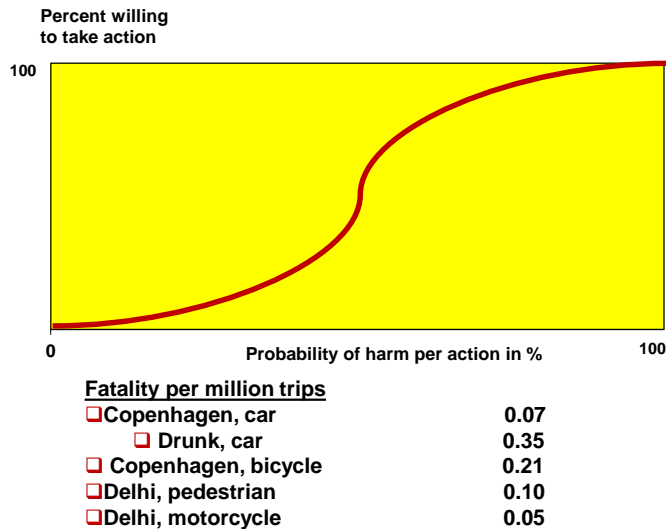
THEORY



$A \neq I_0$ What people do is not only based on what is taught & what they know

06-12-2019

EDUCATION – THEORY – RISK TAKING



EDUCATION - THEORY

■ People know the messages but don't follow them if the activity is

- > COMPULSORY (looking after children, working, eating, breathing, drinking, using the road, etc.)
- > EVERYDAY ACTIVITY
- > TO BE PERFORMED BY EVERYONE :

- Risk taking age – testosterone ~30%
- Personal tragedy ~02%
- Acrimony in family ~05%
- Psychologically disturbed ~02%
- Influence of alcohol, drugs and medication ~20%
- Problems with cognitive and locomotor abilities children, elderly, disabled ~20%

These people will not observe rules that day

30% ~ 60%?

Education of pedestrians

The Cochrane Collaboration
Cochrane Reviews

Search Reviews

Explore **New + Updated** Other languages Full Text: The Cochrane Library

by topic | full list of all reviews | by country of author | by date range

Evidence Aid summaries | Cochrane Methodology abstracts | What's a review? | User training | Impact of Cochrane evidence

- » Home
- » Cochrane reviews
 - > Browse free summaries
 - > About Cochrane Reviews
 - > Most visited
- » The Cochrane Library
- » News

Safety education of pedestrians for injury prevention

Duperrex O, Roberts I, Bunn F

Summary

Pedestrian safety education for children can improve their knowledge and change their road crossing behaviour, but effects on injury are unknown.

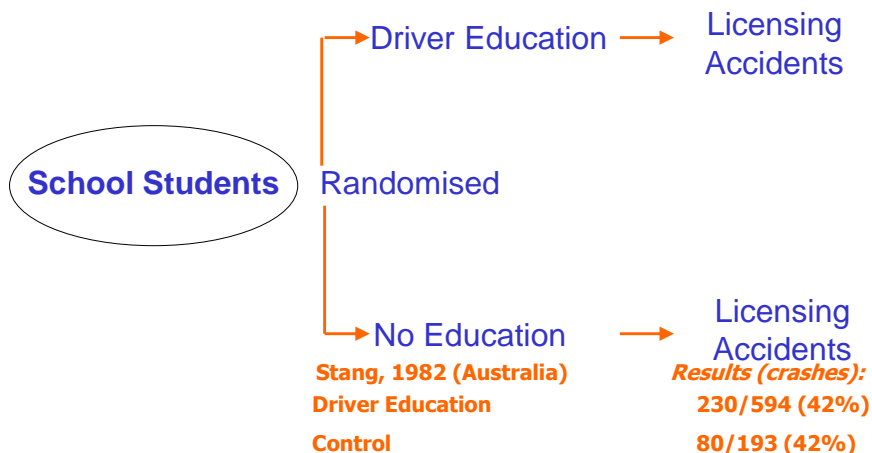
06-12-2019

IIT DELHI

<http://www.cochrane-injuries.lshtm.ac.uk/>

EVIDENCE - EDUCATION

Randomised Controlled Trials



06-12-2019

IIT DELHI

EVIDENCE - EDUCATION

Stock, 1983 (USA)

Participants:

16,338 high school students, who applied for driver education in DeKalb Country high schools

Results:

	<u>Licensing</u>	<u>Crashes</u>
72 hours education	88.4%*	28.6%*
24 hours education	86.2%*	26.5%
No education	84.3%	26.7%

* p<0.05

06-12-2019

IIT DELHI

EVIDENCE - EDUCATION

Wynne-Jones, 1984 (New Zealand)

Participants:

848 secondary school students aged 15-18 yrs from 23 schools in Christchurch.

Results:

	<u>Licensing delay</u>	<u>Crashes (self report)</u>
Males Experimental:	111 days (p<0.001)	14% OR= 0.86 (0.46-1.62)
Males Control:	300 days	16%
Females Experimental:	105 days (p<0.001)	15% OR= 3.62 (1.41-9.29)
Females Control:	415 days	5%


06-12-2019

IIT DELHI

School based driver education

The Cochrane Collaboration
Cochrane Reviews

Search Reviews

Explore **New + Updated** Other languages Full Text:  The Cochrane Library

by topic | full list of all reviews | by country of author | by date range
Evidence Aid summaries | Cochrane Methodology abstracts | What's a review? | User training | Impact of Cochrane evidence

- » Home
- » Cochrane reviews
 - > Browse free summaries
 - > About Cochrane Reviews
 - > Most visited
- » The Cochrane Library
- » News
- » Events
- » Training resources
- » For healthcare users
- » About us

School-based driver education for the prevention of traffic crashes

Ian Roberts, Irene Kwan and the Cochrane Injuries Group Driver Education Reviewers

Summary

School based driver education leads to early licensing and may increase road crash rates.


Teenagers have a higher risk of road death and serious injury than any other group. School based driver education has been promoted as a strategy to reduce the number of road crashes involving teenagers. The results of this systematic review show that driver education in schools leads to early licensing. They provide no evidence that driver education reduces road crash involvement, and suggest that it may lead to a modest but potentially important increase in the proportion of teenagers involved in traffic crashes.

<http://www.cochrane-injuries.lshtm.ac.uk/>

Training of licensed drivers

The Cochrane Collaboration
Cochrane Reviews

Search Reviews

Explore **New + Updated** Other languages Full Text:  The Cochrane Library

by topic | full list of all reviews | by country of author | by date range
Evidence Aid summaries | Cochrane Methodology abstracts | What's a review? | User training | Impact of Cochrane evidence

- » Home
- » Cochrane reviews
 - > Browse free summaries
 - > About Cochrane Reviews
 - > Most visited
- » The Cochrane Library
- » News
- » Events
- » Training resources
- » For healthcare users
- » About us

Post-licence driver education for the prevention of road traffic crashes

Ker K, Roberts I, Collier T, Beyer F, Bunn F, Frost C

Summary

Strong evidence that advanced and remedial driver education does not reduce road traffic crashes or injuries

Road traffic crashes are a major cause of death and injury worldwide. As drivers' errors are a factor often contributing to traffic crashes, driver education is often used in the belief that this makes drivers safer. Driver education for licensed drivers can be remedial programmes for those with poor driving records, or advanced courses for drivers generally. They can be offered by correspondence, in groups or with individualised training. The review of trials found strong evidence that no type of driver education for licensed drivers leads to a reduction in traffic crashes or injuries.

06-12-2019

IIT DELHI

<http://www.cochrane-injuries.lshtm.ac.uk/>

Graduated driver licesing

The Cochrane Collaboration
Cochrane Reviews

Search Reviews

Explore

New + Updated

Other languages

Full Text:  The Cochrane Library

by topic

full list of all reviews

by country of author

by date range

Evidence Aid summaries | Cochrane Methodology abstracts | What's a review? | User training | Impact of Cochrane evidence

- » Home
- » Cochrane reviews
 - > Browse free summaries
 - > About Cochrane Reviews
 - > Most visited
- » The Cochrane Library
- » News
- » Events
- » Training resources
- » For healthcare users
- » About us

Graduated driver licensing for reducing motor vehicle crashes among young drivers

Hartling L, Wiebe N, Russell K, Petruk J, Spinola C, Klassen TP

Summary

Graduated driver licensing effective in reducing crash rates of young drivers. Young drivers are at high risk of involvement in motor vehicle crashes. Graduated driver licensing (GDL) has been proposed as a means of reducing crash rates among novice drivers by gradually introducing them to higher risk driving situations. Nevertheless, relatively little research has been done to see whether GDL actually works. This review found 13 studies that have evaluated various types of GDL programs. All of the studies reported positive findings, with reductions for all types of crashes among all teenage drivers. However, the size of the reductions varied and, from the evidence available, it is not possible to say which aspects of GDL programs have the biggest effect. The reviewers have made recommendations for further research on GDL.

06-12-2019

IIT DELHI

<http://www.cochrane-injuries.lshtm.ac.uk/>

EVIDENCE - LICENSING

- There is no evidence that stricter licensing procedures for the general population reduces crash rates, except by reducing the number of license holders.
- Training with driving simulators does not reduce crash rates.
- Compulsory driver education in schools increases early licensing.
- Graduated licensing systems and curfews for teenagers are showing positive results.

06-12-2019

Evidence

"Exposure to driving advertisements (either positively or negatively framed) did not significantly alter implicit, automatic self-enhancement biases (measured using a computerized reaction-time task). These findings emphasize that positively framed messages are more effective than negatively framed messages at influencing important psychological processes underlying driving behaviour, although such effects are limited, at least in their immediacy, to deliberative fast-learning (or propositional) processes."

Chris G. Sibley, Niki Harré (2008) The impact of different styles of traffic safety advertisement on young drivers' explicit and implicit self-enhancement biases. *Transportation Research Part F* 12: 159–167.

06-12-2019

IIT DELHI

OTHER DISCIPLINES NEGATIVE

"The selected studies provided no evidence that educational interventions are effective in decreasing injury rates among agricultural workers. Financial incentives could reduce injury rates. Legislation to ban pesticides could be effective. Legislation expanding the use of safety devices (ROPS) on new tractors was associated with a decrease in fatal injuries."

Rautiainen RH, Lehtola MM, Day LM, Schonstein E, Suutarinen J, Salminen S, Verbeek J (2008). Interventions for preventing injuries in the agricultural industry (Review). *The Cochrane Library* 2008, Issue 1.

06-12-2019

OTHER DISCIPLINES NEGATIVE

“Primary prevention strategies (education) evaluated to date do not delay the initiation of sexual intercourse, improve use of birth control among young men and women, or reduce the number of pregnancies in young women. Sex education should be more positive with less emphasis on anatomy and scare tactics.”

(Alba DiCenso, Gordon Guyatt, A Willan, L Griffith (2002). Interventions to reduce unintended pregnancies among adolescents: systematic review of randomised controlled trials. *British Medical Journal*, 324: 1426-430)

06-12-2019

OTHER DISCIPLINES NEGATIVE

“Primary A targeted school based education programme produced a modest reduction in the number of carbonated drinks consumed, which was associated with a reduction in the number of overweight and obese children.

Janet James, Peter Thomas, David Cavan, David Kerr (2004) Preventing childhood obesity by reducing consumption of carbonated drinks: cluster randomised controlled trial. *BMJ*, doi:10.1136/bmj.38077.458438.EE.

06-12-2019

OTHER DISCIPLINES POSITIVE

"This review looked at trials of interventions to increase the use of hand washing in institutions in high-income countries and in communities in low- or middle-income countries, and found many of the interventions like educational programmes, leaflets, and discussions to be effective.."

Ejemot RI, Ehiri JE, Meremikwu MM, Critchley JA (2008). Hand washing for preventing diarrhoea (Review). The Cochrane Collaboration. Published by JohnWiley & Sons, Ltd

06-12-2019

Conclusions

- **Never assume that a PI & E program will be successful. In fact, most PI & E programs do not lead to a measurable reduction in crashes or injuries.**
- **Never assume that a PI & E program will do no harm. Some well-meaning educational programs, albeit a very few, actually lead to more crashes and injuries. Moreover, the implementation of a program that does not work will limit the amount of resources available for programs that can make a difference.**

06-12-2019

Alan F. Williams (2007). Public information and education in the promotion of highway safety. Research Results Digest 322. NCHRP Project 17-33, TRB, Washington D.C.

Epilogue

**If someone actually
knew how to change or
control our behaviour ---
-- then democracy will
have no future**

06-12-2019