

# Evaluation of the ThinkFirst For KIDS Injury Prevention Curriculum for Primary Students

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## ThinkFirst For Kids Curriculum:

The ThinkFirst for KIDS curriculum was designed to enhance children's interest in, learning about, and acceptance of safety messages. The curriculum is based on applied-learning and behavioral theories which suggest that varied messages, introduced over time, increase understanding, knowledge retention, and sustained behavior. Accordingly, the curriculum has been organized into six safety behavior units taught over a six-week period that are integrated into teachers' regular math, science, reading, spelling, and health curricula. The six units cover the following: 1) general function and structure of the brain and spinal cord; 2) motor vehicle and pedestrian safety; 3) bicycle safety; 4) conflict resolution and weapon's safety; 5) water safety; and 6) playground, recreation, and sports safety. The safety topics are not only presented in a range of subject contexts, but by means of different teaching strategies, activities, and media, which include role-playing, storytelling, reading, hands-on demonstrations, and visual aids, such as classroom posters, a comic book series, and an animated video; and, in Oregon, free bike helmets. The curriculum also includes unit-specific parent information letters.

## Objectives:

This three-phase, nonrandom experimental study developed and tested a measurement instrument, and evaluated the efficacy of a comprehensive injury prevention curriculum for students in grades 1-3.

## Methods:

The curriculum, ThinkFirst For Kids, was tested in 55 selected classrooms in seven elementary schools in the Portland, Oregon metropolitan area during two consecutive school years, 1995-1997. Forty-three classrooms in six schools served as controls. The short-term effects of this school-based, teacher-delivered, six-week, six-subject curriculum on student knowledge were measured by comparing pre- and post-test scores in control and treatment schools. Schools were selected for participation by meeting specific criteria and ranking of socioeconomic status.

A two-hour teacher training session for participants provided both Oregon and national injury data on injury prevention, strategies for reducing the occurrence of injury, a resource guide for supplemental data and information, a discussion of protocol implementation, and all curriculum materials. Teachers were offered a \$100 stipend for attending the training and teaching the

curriculum. Teachers were required to devote a minimum of one hour per week to teaching each of the six units; the reported average (73% reporting) was 1.4 hours per week.

**Statistical analysis:** Each question was scored by computing the proportion of correct answers given for each classroom. Then, pre- and post-test scores for units of study were computed by averaging the number of correct answers given for specific questions related to each unit. Similarly, a total pre- and post-test score was computed for each classroom. The unit of analysis was the classroom, and the number of students in the classroom was a weighting factor for calculating the weighted means for the classroom. Each classroom was given a score representing "change" by computing the final score minus the initial score. Treatment effects were taken to be differences in pre- to post-scores between intervention (treatment) and control schools. Significant differences between treatment and control schools were assessed using multiple regression analysis and analysis of variance.

### **Results:**

The results indicate a significant increase ( $p < 0.01$ ) in knowledge of injury prevention in all three grades at the treatment schools in comparison to the control schools. Treatment schools with a lower socioeconomic rank showed a greater increase in knowledge than higher ranked schools in both grade two ( $p = 0.0016$ ) and grade three ( $p = 0.0066$ ).

### **Conclusion:**

This study, though not intended to measure long-term knowledge, beliefs, or observe behavior, did provide education and create awareness, and both are necessary and effective first steps in the prevention of injury. Moreover, the study has underscored the importance of early intervention. The rationale for targeting younger children stems from evidence that reaching youngsters at an early age may decrease risk-taking behavior later when they are older adolescents. At the same time, it should be noted that parental involvement is a critical factor in the development of younger children's behaviors, and that parents often underestimate their children's risks for injury. Thus, health education interventions that also help to change family attitudes and habits are more likely to promote long-lasting health behavior changes.

The ThinkFirst for KIDS program is part of an ongoing national effort by ThinkFirst to provide injury prevention instruction and guidance to all school-age children. Additionally, this study supports the original implementation design of providing classroom-based, teacher-taught injury prevention education for a minimum of six hours or one hour per unit. The ThinkFirst for KIDS curriculum incorporates many components necessary to effecting positive behaviors in young children, and, given ThinkFirst National Injury Prevention Foundation's national delivery system, has the potential to effectively reach one million children annually. It is recognized that strengthening individual knowledge and skills is only a first step in injury prevention efforts, however. Future studies should therefore address whether the curriculum provides any long-term effects on student knowledge and behavior, whether the curriculum increases educators' knowledge, and whether the implementation of the curriculum affects school-based injury prevention policies.

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