

# Think**First** for Kids

## Longitudinal Study Summary

*Think First for Kids (TFFK) addresses the Healthy People 2010 objectives aimed at the reduction of injury and providing education on injury prevention in at least 50% of the public school system.*

*TFFK fulfills the CDC criteria of planned, sequential, and evaluated comprehensive school-based programs to promote childhood injury prevention*

### Excerpted Material

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- ✚ The problem addressed in this study is the primary prevention of injury through participation in the Think First For Kids (TFFK) injury prevention program. This program teaches injury-related knowledge and behavior change among elementary school-aged children in San Diego, CA, and follows the CDC and Committee on Comprehensive School Health recommendation that students receive sequential, comprehensive, and evaluated school health programs.
- ✚ The purposes of this longitudinal study were to evaluate the effectiveness of an elementary school injury prevention curriculum, TFFK, on improving knowledge and self-reported safety behaviors among students of diverse socioeconomic backgrounds, and to determine whether or not sequential educational TFFK interventions over a 3 year period, 2000-2002, lead to retention of knowledge and behavior compared to control schools with no educational intervention.

Of the 226 elementary school actively involved in the TFFK program, 19 schools were included in The California Endowment research study, with a total of 18,876 students participation events and 1,251 parent participation events from the Cajon Valley, Lakeside, San Diego Unified, Imperial, Cajon Valley, Carlsbad, Chula Vista, and Santee school districts in San Diego County. This represented over 24,000 records in the database that stored pre- and post-tests for each student, the fifth grade test and the parent survey data. The evaluation consisted of pre- and post-tests in Grades 1-3, modified for different developmental stages, a post-test for Grade 4, and a risky behavior inventory for Grade 5, and a parent observational survey. Keeping schools, especially the control schools, enrolled in the study for 3 years was one of the challenges of this longitudinal study – a challenge that was met successfully by the Sharp on Survival staff.

The California Endowment research established that there is a clear need for injury and violence prevention curriculums among elementary children. All grade levels lack basic knowledge of safety and all grade levels self-report risky behaviors. Among the approximately 19,000 students of

diverse socioeconomic and racial/ethnic backgrounds, Hispanic students had the lowest baseline knowledge and self-reported safe behavior scores, but the gap between Hispanic, Black and White closed dramatically after participation in TFFK curriculum.

The comparative research design has also established a clear pattern of increasing knowledge and injury-associated behavior among children as they progress as a cohort from one grade to another-receiving TFFK curriculum. Sequential exposure to the TFFK curriculum as the child progressed from one grade to the next lead to an increase in injury-related knowledge and self-reported behavior, and, importantly, to retention of knowledge and behavior over a three year period when compared to children without the intervention.

The research provides critical information on child safety behavior on three levels: 1) self-report on select behaviors, 2) self-report on a risky behavior inventory, and 3) observed behavior change (as observed by a parent or guardian). The TFFK program led to positive behavior changes in children related to pedestrian, sport, interpersonal and car safety as self-reported and also as observed by their parent/guardian. The Think First for Kids intervention was a significant predictor of higher safety behavior scores in 5<sup>th</sup> graders adjusting for gender, race/ethnicity and the school academic performance index.

✚ Twenty five percent of the students self-reported being Hispanic, 31% White, 10% Black, 5% Asian. Thirty percent of the elementary school children self-reported unknown. Compared to the population breakdown of San Diego County, Hispanics reflected the County population statistics and Blacks were overrepresented.

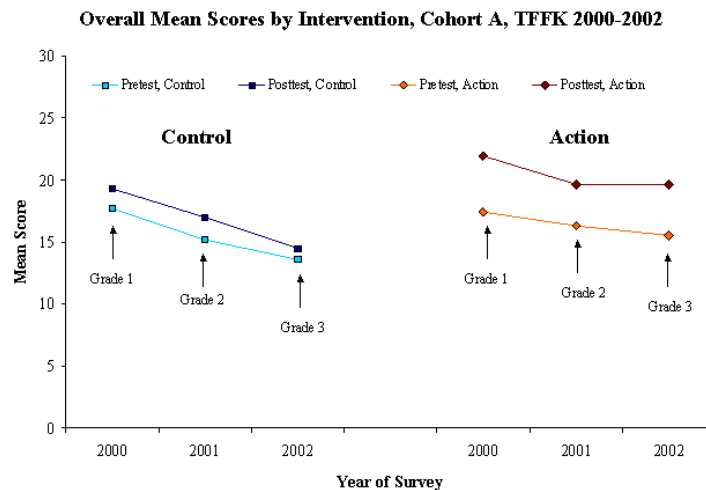
✚ The Action and Control students participating in the comparative study were followed through time as cohorts (shown below) from 2000-2002

	Spring 2000	Spring 2001	Spring 2002
<b>Cohort</b>			
<b>A</b>	Grade 1	Grade 2	Grade 3
<b>B</b>	Grade 2	Grade 3	Grade 4
<b>C</b>	Grade 3	Grade 4	<i>Grade 5</i>
<b>D</b>	Grade 4	<i>Grade 5</i>	
<b>E</b>	<i>Grade 5</i>		
<b>F</b>		Grade 1	Grade 2
<b>G</b>			Grade 1

Cohort A Grade 1 scored similarly to Cohort F Grade 1 and Cohort G Grade 1 (none had TFFK prior to that grade). This was true of Grade 1 across all racial/ethnic groups. Cohort A Grade 2 (one year of TFFK prior to that grade) scored higher on baseline than Cohort B Grade 2 (no prior TFFK).

This observation of higher scores at baseline show retention from the prior year. This observation did not hold for Grade 3. Cohort C Grade 4 (1 year of TFFK) scored higher on the test than Cohort D Grade 4 (no intervention). A pattern was observed for the fifth grade risky behavior survey. For fifth grade, Cohort C (2 years TFFK) scored higher on positive safety behaviors than Cohort D (1 year of TFFK) that scored higher than Cohort E (no TFFK). This adds evidence as to the overall positive impact of the TFFK program as well as the concept of retention of knowledge and safety behaviors over time.

✚ The pre-test baseline scores were similar for Grade 1 for both the action and control schools. When Cohort A progressed to grade 2 the action students that had already had 1 year of the TFFK program scored a higher baseline on the Grade 2 pre-test than the control students who had not been exposed to the TFFK program. Similarly, when Cohort A progressed to Grade 3 the gap between the pretest scores for students that had already had 2 years of the TFFK program and the control students was even larger – the action students scoring higher. Observing this trend is important in addressing the overall impact of the TFFK program as well as the concept of retention of knowledge over time, from one grade to another.



White students attained the highest scores on the pre-tests (baseline) but Hispanics and then Blacks attained the greatest increase from the pre to post-test scores. Although Hispanics and Blacks had lower baseline scores, they were able to achieve high results after the curriculum. For Grades one and three, Hispanics had a significantly higher post-test score when compared to the control schools. For grade two all three racial/ethnic groups in the action schools performed significantly better on the posttest.

- ✚ Behavior was assessed on three levels, two self-report measures of the students (as part of the pre-/post-tests and the fifth grade risk behavior survey) and one parent/guardian survey of their child's actual behavior.
  
- ✚ An important part of this study was the parent survey. It represented another avenue of assessing the child's behavior, without relying on child self-report of behavior. The results show that the TFFK program generated substantial interest in safety, the child increased verbalization of safety rules, and the child increased positive behaviors related to pedestrian safety.
  
- ✚ A GLM (generalized Linear Model ) was used to test the null hypothesis that there was no difference in 5<sup>th</sup> grade self-reported risky behaviors among those who had TFFK versus those who did not have the intervention, controlling for the covariates of gender, race/ethnicity and API (the school Academic Performance Index). Think First for Kids intervention was a statistically significant predictor of increased report of safety behaviors adjusting for gender, race/ethnicity and API. The 95% confidence interval (CI) around the mean score for those who had the TFFK intervention was (15.62, 16.06) compared to 95%CI (14.82, 15.39) for those students who did not.
  
- ✚ This study successfully addressed common elements of successful community-based approaches 1) strategies grounded in behavior change theory 2) integration of the intervention into the community 3) include stakeholders for broader adoption of the intervention 4) use sound methods of evaluation, and 5) conduct interventions at the most developmentally appropriate time.

Educational and community-based programs provide injury prevention guidelines to the public, as well as establish safe physical and social aspects of communities. Making changes within existing systems, such as the school system (schools have been recognized as the most influential factor in the lives of youth, with the exception of family), can effectively and efficiently improve the health of a large segment of the community.

In the future surveillance systems will provide in-depth data on injury occurrence which will serve as a resource to design and implement national injury prevention programs. Efforts to establish this have primarily been a result of the public health initiative to recognize injuries as an epidemic. New legislation in California requires that all emergency department visits be documented, but this law will likely not be implemented in San Diego County until 2004 at the earliest. Although this new injury data will provide new avenues of evaluation, we cannot wait – we must move forward today to provide information and skills to students that may protect them from death or disability.

TFFK serves as a model of a successful childhood injury prevention curriculum which has the potential for implementation throughout all elementary school systems in California. The epidemic of childhood injuries affects the entire nation, and thus requires a proportional response. The infrastructure of the National Foundation is a viable and important structure from which to launch an injury prevention model.