

# Comparison of Two Programs to Teach Firearm Injury Prevention Skills to 6- and 7-Year-Old Children

Brian J. Gatheridge, MS; Raymond G. Miltenberger, PhD; Daniel F. Huneke, BS; Melisa J. Satterlund, BS; Amanda R. Mattern, BS; Brigitte M. Johnson, BS; and Christopher A. Flessner, MS

**ABSTRACT.** *Background.* Each year, hundreds of children unintentionally kill or injure other children while playing with firearms in the United States. Although the numbers of these deaths and injuries are distressing, few prevention programs have been developed to prevent gun play among children.

*Objective.* This study compared the efficacy of 2 programs designed to prevent gun play among young children.

*Design.* A posttest-only, control group design with 2 treatment groups was used. Children were randomly assigned to 1 of 2 treatment groups or a control group. For all children who did not exhibit the skills after training, 1 in situ (ie, real-life situation) training session was conducted.

*Setting.* Participant recruitment, training sessions, and assessments were all conducted in the children's after-school program facility.

*Participants.* Forty-five children, 6 or 7 years of age, were recruited for participation.

*Interventions.* The efficacy of the Eddie Eagle Gun-Safe Program, developed by the National Rifle Association, and a behavioral skills training program that emphasized the use of instruction, modeling, rehearsal, and feedback was evaluated.

*Main Outcome Measures.* The criterion firearm safety behaviors included both motor and verbal responses, which were assessed in a naturalistic setting and then assigned a numerical value based on a scale of 0 to 3.

*Results.* Both programs were effective for teaching children to verbalize the safety skills message (don't touch the gun, get away, and tell an adult). However, children who received behavioral skills training were significantly more likely to demonstrate the desired safety skills in role-playing assessments and in situ assessments than were children who received Eddie Eagle program training. In addition, in situ training was found to be effective for teaching the desired safety skills for both groups of children.

*Conclusions.* Injury prevention programs using education-based learning materials are less effective for teaching children the desired safety skills, compared with programs incorporating active learning approaches (eg, modeling, rehearsal, and feedback). The efficacy of both types of injury prevention programs for teaching the desired skills could be significantly enhanced with the use of in situ training. This program, when imple-

mented with 6- and 7-year-old children, was effective in teaching the desired safety skills. *Pediatrics* 2004; 114:e294–e299. URL: <http://www.pediatrics.org/cgi/content/full/114/3/e294>; *gun safety, gun play, Eddie Eagle, behavioral skills training, in situ training, injury prevention, children.*

---

ABBREVIATION. BST, behavioral skills training.

---

Childhood injuries and deaths resulting from firearms represent a substantial public health problem.<sup>1–3</sup> Research findings suggest that, when children find guns, they often engage in gun-play behavior; the gun play often results in injury or death.<sup>4–6</sup> Statistics from the Centers for Disease Control and Prevention show that 174 children between the ages of 0 and 14 years were unintentionally killed by firearms between 1999 and 2000<sup>7</sup> and that 2218 children between the ages of 0 and 14 years sustained nonfatal firearm injuries in 2001 and 2002.<sup>8</sup>

Although not all firearm injuries among children are attributable to gun play, the number of injuries that do occur as a result of gun play warrants intervention.<sup>9</sup> However, few safety skills programs have been developed to teach children not to play with guns if they find them in the home or elsewhere.<sup>10–14</sup> Of these programs, the Eddie Eagle Gun-Safe Program, developed by the National Rifle Association, is the most recognized and implemented. The National Rifle Association estimates that the Eddie Eagle program has educated 15 million children since 1988, with an estimated 700 000 children receiving Eddie Eagle firearm injury prevention training each year.<sup>15</sup> The main objective of the Eddie Eagle program is to teach children what they should do in the event that they find a firearm, ie, “stop,” “don’t touch,” “leave the area,” and “tell an adult.”

Although the Eddie Eagle program is one of the most widely used gun safety programs, only 1 study has examined its efficacy. Himle et al<sup>12</sup> examined the effectiveness of the Eddie Eagle program in comparison with a firearm safety skills training program involving behavioral skills training (BST). Thirty-one preschool-aged children (4 or 5 years of age) were randomly assigned to the Eddie Eagle program, a BST program using instruction, modeling, rehearsal, and feedback, or a control group. Firearm safety skill acquisition was assessed with self-report, role-playing, and in situ assessments. The researchers showed that both programs were effective in teaching chil-

From the Department of Psychology, North Dakota State University, Fargo, North Dakota.

Accepted for publication Apr 1, 2004.

DOI: 10.1542/peds.2003-0635-L

Reprint requests to (R.G.M.) Department of Psychology, North Dakota State University, Fargo, ND 58105. E-mail: ray.miltenberger@ndsu.nodak.edu  
PEDIATRICS (ISSN 0031 4005). Copyright © 2004 by the American Academy of Pediatrics.

dren to report the correct safety behaviors. However, when children who participated in the Eddie Eagle program were assessed in a role-playing situation, they were unable to perform the behavior they had easily verbalized. In addition, none of the children who received the Eddie Eagle training were able to perform the correct behavior in a simulated real-life situation. In contrast, all of the children who received BST used the correct safety skills in role-playing assessments, although only 2 children used these safety skills in a simulated real-life situation.

A limitation to be noted is that, although the children who received BST were able to learn the skills, most were not able to use them in an in situ assessment. A possible reason why children failed to use the safety skills is their young age. There is an existing body of literature suggesting that preschool-aged children may have difficulty learning safety skills concepts, showing little or no improvement in knowledge and skills after participation in child-based injury prevention programs.<sup>10,16–18</sup> In addition, a number of studies have documented that older children benefit more from safety skills training programs, compared with younger children, often scoring much higher on follow-up assessments.<sup>17,19–21</sup> The generally lower performance of preschool-aged children, compared with school-aged children, is predicted by developmental theory, which suggests that children need to reach a particular developmental stage before they can achieve the most benefit from such training.<sup>22</sup>

The current study involved a comparison of BST and the Eddie Eagle program implemented in a small-group format, similar to that used by Himle et al,<sup>12</sup> with school-aged children. The goals of this study were to examine the effectiveness of the Eddie Eagle program and a BST program with 6- and 7-year-old children and to examine the efficacy of in situ training (training in a naturalistic situation) to teach safety skills to children. In previous research, in situ training was shown to increase the effectiveness of BST.<sup>13</sup> It was hypothesized that 1) the Eddie Eagle group and the BST group would score significantly better than the control group in the self-report measure (in both groups, children would be able to say what to do if they found a gun), 2) the BST group would perform better than the Eddie Eagle group and the control group in the role-playing measure, 3) the BST group would score significantly better than the Eddie Eagle group and the control group in the in situ assessment (children in the BST group would engage in the correct behavior when they were tested in a naturalistic situation without their knowledge), and 4) 1 in situ training session after training would be effective for teaching both groups of children firearm injury prevention skills.

## METHODS

### Participants

This study was approved by the North Dakota State University institutional review board for the protection of human research participants. The participants were 45 children (23 female subjects and 22 male subjects), 6 to 7 years of age, who were recruited from a local after-school program located in a community of 100 000

people. The researchers met briefly with a parent of each participant, to explain the rationale of the study. Consent forms containing a detailed description of the study were then reviewed and signed by the parent and/or legal guardian. Only children whose parents signed consent forms were enrolled in the study. Approximately 20% of parents declined to allow their children to participate in the study.

### Setting

All training sessions were conducted in the participating children's after-school program facility. Assessments took place in a room at the after-school program facility in which the children had not been trained.

### Experimental Design

The design was a posttest-only control group design with 2 treatment groups, ie, the Eddie Eagle GunSafe Program (level 1) and BST.

### Procedure

#### Randomization

Each participant in the study was randomly assigned to 1 of 3 conditions, as follows: BST, 15 subjects (6 female subjects and 9 male subjects); Eddie Eagle program, 15 subjects (9 female subjects and 6 male subjects); control group, 15 subjects (7 female subjects and 8 male subjects). Training (Eddie Eagle program and BST) was conducted at the after-school program facility during a 5-consecutive day period, with groups of 3 to 5 children. If a child missed a day of training for some reason, an individual training session was used to bring the child current with the group.

#### BST

A BST program, which was developed and implemented by the researchers and included instructions, modeling, rehearsal, praise, and corrective feedback, was used to teach children skills to use if they ever encountered a firearm. The skills taught in this program included stopping as soon as they found a firearm, not touching the firearm, leaving the area, and telling an adult what they found. In the first training session, a trainer conducted a discussion with the children about general safety concepts. Next, the trainer explained why it is important to be safe around firearms and described the safety skills. Children then verbally rehearsed the safety skills message.

After the children could state the safety skills, a trainer modeled the first behavior in the chain by approaching a disabled firearm and verbally stating "stop, don't touch." Each of the children in the group then rehearsed this behavior. If the child performed the desired behavior correctly, then the trainer gave praise. If the child did not perform the desired behavior correctly, then the trainer provided corrective feedback, explained to the child what he or she did wrong, again modeled the appropriate behavior, and allowed the child to rehearse the correct behavior. Corrective feedback continued until the child performed the desired behavior correctly. After each child had correctly performed this behavior, the trainer moved to the next behavior in the chain. The same procedure was used for both the "leave the area" and "tell an adult" behaviors. After each child had learned all of the desired behaviors, each child demonstrated that he or she could use the entire sequence after finding a firearm in a role-playing scenario. After the child had demonstrated that he or she could use the response sequence after finding a firearm, he or she rehearsed the sequence in a variety of situations (eg, finding a gun on a bookshelf, in a drawer, or in a closet). Each child was required to perform the correct behavior in 5 consecutive rehearsals. Throughout the training process, the trainers continued to use instructions, modeling, praise, and corrective feedback to ensure that the children engaged in the correct responses in the role-playing situations. The length of each training session was tailored to match the length of each session in the Eddie Eagle program (~10-15 minutes).

#### Eddie Eagle GunSafe Program (Level 1)

The level 1 Eddie Eagle GunSafe Program was used. The basic message taught to children was "stop, don't touch, leave the area, and tell an adult," after finding a gun. Implementation of this

program followed the suggested curriculum outlined in the Instructional Procedures section of the administration manual provided with the program materials. Each session lasted for the recommended time outlined in the manual (10-15 minutes). The first session was designed to teach children general safety concepts and introduce them to the Eddie Eagle GunSafe Program, using techniques such as discussions and pictures illustrating safe and unsafe behaviors. During the second session, children were shown a videotape titled "Gun Safety with Eddie Eagle," in which they were introduced to Eddie the Eagle and the "stop, don't touch, leave the area, and tell an adult" message. The third session used a variety of learning tools, such as a coloring book, poster, and discussion of the safety skills, to teach children what they should do if they ever encountered a firearm. The fourth session of the program involved reviewing the Eddie Eagle gun safety message through the use of discussion. The children's acquisition of knowledge about the gun safety message was then tested through a series of "what would you do if" scenarios that required the children to respond with the Eddie Eagle message and specific information regarding how they would react to finding a gun. The final session was an awards day; the children received a certificate of merit and a sticker showing that they had completed the program.

### *In Situ Training*

If a child did not perform the criterion behaviors (refraining from touching the gun, leaving the room, and telling an adult) during the in situ assessment after training with BST or the Eddie Eagle program, an in situ training session commenced. The experimenter, who was nearby but unseen by the child, entered the room and turned the failed assessment into a training session using instructions, modeling, praise, and corrective feedback. Once again, the child was required to perform the correct behavior in 5 consecutive rehearsals.

### *No-Treatment Control Group*

Children in this group received no form of gun safety training. After participation in the assessment, the children received 1 BST session.

### **Target Behaviors**

The criterion firearm safety behaviors included both motor and verbal responses. The motor requirement involved the child not touching the firearm and quickly leaving the vicinity of the firearm. The verbal requirement consisted of the child immediately reporting to a trusted adult about the firearm he or she had just found. Participants' responses were assigned numerical values, as follows: 0 = touched the firearm, regardless of subsequent responses; 1 = did not touch the firearm but did not leave the area and/or tell an adult; 2 = did not touch the firearm and left the area but did not tell an adult; 3 = did not touch the firearm, left the area, and told an adult.

### **Assessments**

#### *Procedure*

Firearm safety skills were assessed with self-report, role-playing, and in situ assessments within 1 week after completion of training. In situ assessments were always conducted first, followed by role-playing and then self-report assessments. If required, 1 additional in situ assessment was conducted within 1 week after in situ training. The experimenter who trained the children conducted the role-playing and self-report assessments. A familiar teacher conducted the in situ assessments.

#### *In Situ Assessment*

Children from each group were placed in a situation that required the use of firearm safety skills. The assessments were conducted in a novel room located at the children's after-school program facility. The assessments were conducted in such a way that the child was unaware he or she was being assessed. The child was instructed by a teacher to go into another area of the building for a particular reason (eg, go into the room and play with the new Lego blocks). A gun had been placed in this room near the desired activity, and a hidden camera was positioned in the room to record the child's behavior after discovery of the firearm. The

child's responses were scored and issued a numeric value, as described above.

### *Role-Playing Assessment*

The interviewer verbally presented the child with a detailed situation for the child to imagine. An example of a scenario is as follows. "Pretend you are upstairs in your parents' closet searching for your Christmas presents as your parents sit downstairs in the living room. As you are shuffling through the packages you find a small box. When you open the box you find a gun. What would you do?" Each situation was designed so that, when the child was presented with the scenario, the physical layout of the room allowed the child to "act out" the situation as it was presented in the verbal scenario. The child's behavior was videotaped and scored with the rating scale described above.

### *Self-Report Assessment*

The interviewer described a situation in which the child found a firearm (eg, in the backyard playing on the swing set), and the child was asked to state what he or she would do in that situation. Responses were recorded and assigned a numerical value as follows: 0 = does not verbalize that he or she would not touch the gun or indicates that he or she would touch the gun; 1 = verbalizes that he or she would not touch the gun but does not report any subsequent response; 2 = verbalizes that he or she would not touch the gun and would leave the area but fails to report telling an adult; 3 = verbalizes that he or she would not touch the gun, would leave the area, and would tell an adult and identifies an appropriate adult for the situation.

### **Interobserver Reliability**

A second observer, who was blinded with respect to the experimental group, scored 25% of all videotaped assessments among the groups. The observer reviewed the assessment and issued a numeric value. Agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements; this figure was then multiplied by 100%. An agreement was defined as the 2 observers assigning the same score. Agreement between observers was 100%.

### **Statistical Analyses**

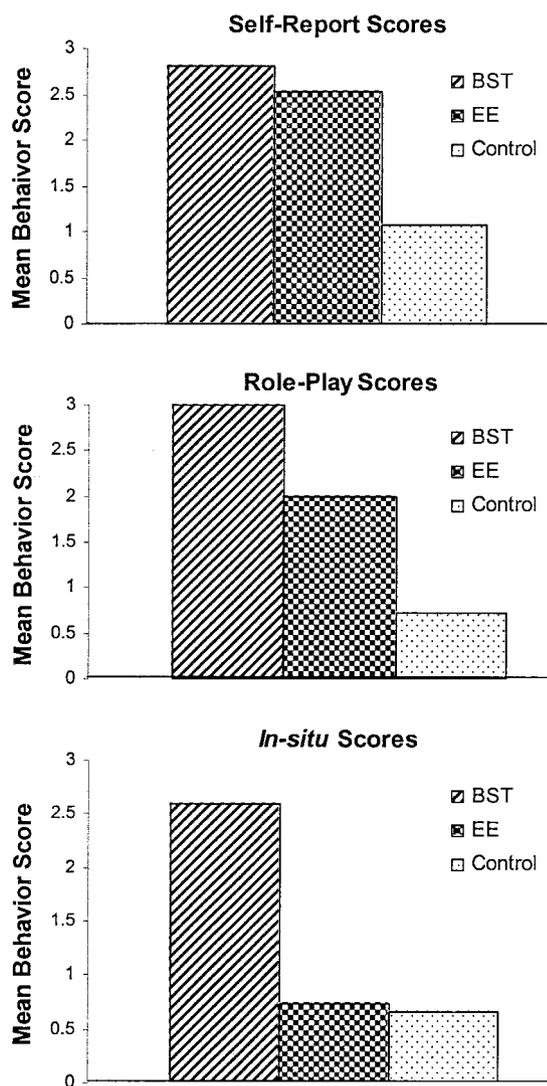
Kruskal-Wallis tests were conducted with SPSS 10.0 for Windows (SPSS, Chicago, IL).

## **RESULTS**

The mean scores for each group (BST, Eddie Eagle program, and control groups) in each of the assessments (self-report, role-playing, and in situ assessments) are plotted in Fig 1. Results of a Kruskal-Wallis test showed a significant overall effect for self-report assessments [self-report assessments:  $H(2, n = 45) = 25.08, P < .001$ ; role-play assessments:  $H(2, n = 45) = 27.41, P < .001$ ; in situ assessments:  $H(2, n = 45) = 23.57, P < .001$ ].

Additional Kruskal-Wallis tests showed that, in the self-report assessments, the Eddie Eagle group [mean  $\pm$  SD:  $2.53 \pm 0.91$ ;  $H(1, n = 30) = 14.19, P < .001$ ] and the BST group [mean  $\pm$  SD:  $2.8 \pm 0.41$ ;  $H(1, n = 30) = 22.015, P < .001$ ] scored significantly higher than did the control group, showing that children who received the training were able to verbalize the safety skills message. The Eddie Eagle and BST groups did not differ in this measure [ $H(1, n = 30) = 0.348, P = .555$ ], suggesting that the 2 training methods are equally effective in teaching children to verbalize what they would do when provided with a hypothetical situation.

In the role-playing assessments, both the Eddie Eagle group [mean  $\pm$  SD:  $2 \pm 1.19$ ;  $H(1, n = 30) = 8.431, P < .05$ ] and the BST group [mean  $\pm$  SD:  $3 \pm$



**Fig. 1.** Mean assessment scores for the 3 groups for each of the 3 assessments (self-report, role-playing, and in situ). The first graph shows the mean score for each group in the self-report assessment, the second graph shows the mean score for each group in the role-playing assessment, and the third graph shows the mean score for each group in the in situ assessment. Participants' responses were assigned numerical values, as follows: 0 = touched the firearm, regardless of subsequent responses; 1 = did not touch the firearm but did not leave the area and/or tell an adult; 2 = did not touch the firearm and left the area but did not tell an adult; 3 = did not touch the firearm, left the area, and told an adult.

0;  $H(1, n = 30) = 26.41, P < .001$ ] scored significantly better than did the control group. In addition, the BST group performed significantly better than did the Eddie Eagle group [ $H(1, n = 30) = 8.65, P < .01$ ], which suggests that children trained with the BST procedure not only were able to verbalize the safety skills message but also were able to demonstrate those skills in a role-playing scenario. In contrast, the data suggested that, although children who received training with the Eddie Eagle GunSafe Program could verbalize what they would do if they ever found a firearm, they were unable to perform the skills as well as children in the BST group in a role-playing scenario.

In the in situ assessments, the BST group (mean  $\pm$  SD:  $2.6 \pm 0.73$ ) scored significantly higher than did

the Eddie Eagle group [mean  $\pm$  SD:  $0.73 \pm 1.03$ ;  $H(1, n = 30) = 15.18, P < .001$ ] and the control group [mean  $\pm$  SD:  $0.67 \pm 0.49$ ;  $H(1, n = 30) = 20.476, P < .001$ ]. However, the Eddie Eagle group did not differ significantly from the control group [ $H(1, n = 30) = 0.338, P > .05$ ]. These results showed that, when children were not aware they were being assessed in a naturalistic setting, children in the BST group were more likely to perform the desired skills than were children in the Eddie Eagle group.

For all children who did not perform the desired skills in the initial in situ assessment (score of 3), an in situ training session and an additional in situ assessment were conducted. Four of 15 children in the BST group required the additional training session, whereas 13 of 15 children in the Eddie Eagle group required the training session. The results of the second in situ assessment showed that all 4 children in the BST group learned the skills. In addition, 11 of 13 children in the Eddie Eagle group performed the skills in the second in situ assessment. These findings showed that 1 in situ training session with BST was effective in teaching the safety skills for all except 2 children.

## DISCUSSION

The first hypothesis of this study was supported. The results showed that children who received Eddie Eagle program training and BST scored significantly better than did those in the control group in the self-report measure. The second hypothesis of the study was also supported. Children trained with the Eddie Eagle program verbalized the safety skills message but did not demonstrate the firearm injury prevention skills when in the presence of a firearm, whereas children trained with BST verbalized the safety skills message and performed the desired safety skills in the presence of a firearm. The third hypothesis was also supported. Children trained with the BST procedure, but not those trained with the Eddie Eagle program, demonstrated the skills in naturalistic assessments, which showed that the skills learned in the after-school program could be generalized to real-world settings. Our final hypothesis, ie, that in situ training would be effective for teaching children the desired safety skills, was also supported. All 4 children in the BST group who received in situ training and 11 of 13 children in the Eddie Eagle group performed the correct behavior in their second in situ assessments.

The current findings are similar to those of Himle et al.<sup>12</sup> Children in the Eddie Eagle group were able to verbalize the safety skills message but were unable to perform the desired skills as well as children trained with BST. Children in the BST group not only were able to verbalize the skills but also were able to demonstrate the skills in a role-playing scenario. One major difference between the 2 studies is that, in contrast to the findings of Himle et al.,<sup>12</sup> the children in the BST group in this study were able to demonstrate the desired safety skills in an in situ assessment. Furthermore, the demonstration that 1 in situ training session after Eddie Eagle or BST interventions was effective for almost all children is a novel

finding that goes beyond the results reported by Himle et al.<sup>12</sup> It appears that age may have an effect on young children's ability to learn injury prevention skills.

One possible reason why the Eddie Eagle program failed to teach children the desired skills is that it does not use an active learning approach. Research has shown that information-based programs are less successful, compared with active learning programs involving BST, or are unsuccessful in teaching children safety skills.<sup>12,23,24</sup> Information-based programs are less effective because they do not allow children the opportunity to practice actively the skills being taught. This active rehearsal ensures that the child is able to perform the correct target behavior, and it allows trainers to provide feedback immediately after the child's attempt at the desired target behavior.

Although the BST program was found to be superior to the Eddie Eagle program in this study, some methodologic limitations should be noted. Although we assessed the children's behavior in a novel setting within the after-school program facility (in which they found the gun while alone), we did not assess the children's skills in real-world areas outside the after-school program facility (eg, the home environment). Future studies should assess the generalization of safety skills to other settings. Another limitation was that assessments were conducted with children individually; therefore, it is unclear how children would perform if they found the gun in the presence of other children. Because children sometimes find a gun when other children are present, future research should examine children's ability to use safety skills in the presence of another child or group of children. In addition, no long-term follow-up assessments were conducted. Therefore, we were unable to determine whether the children's acquisition of the desired safety skills would be retained with time. Another potential limitation was that the data collectors were not blinded with respect to the experimental conditions. However, 100% interobserver agreement was obtained with reliability observers who were blinded with respect to the experimental conditions. A final limitation of the study was the absence of a pretest measure to determine whether there were any differences among the participants in the different groups. However, random assignment limited the possibility of any confounding differences.

The findings of this study have several implications for future research and practice. One of the criticisms of current injury prevention programs is that researchers are targeting children too early. A number of studies have shown that preschool-aged children often show little or no improvement in knowledge and skills after participation in child-based injury prevention programs.<sup>10,16–18</sup> Although the children in the study by Himle et al<sup>12</sup> who received BST were able to learn the safety skills, as determined with role-playing assessments, the skills were not generalized to naturalistic settings. In contrast, the results of the current study, showing that 6- and 7-year-old children trained with BST were able

to learn the desired safety skills and apply them to real-world scenarios, provide support for the argument that safety skills training should target older, school-aged children.<sup>17,19–21</sup> In addition, researchers should investigate the efficacy of different methods for teaching safety skills to younger children, so that children can benefit from training at a younger age.

Another important finding of this study involves the results of the in situ training session conducted with children in the 2 treatment groups. The results showed that all children, with the exception of 2 in the Eddie Eagle group, learned the skills after 1 in situ training session and were able to apply them when assessed. These findings have important implications, suggesting that the efficacy of BST programs and the Eddie Eagle program can be enhanced with the addition of an in situ training session. Future studies should examine the effects of in situ training on the effectiveness of programs designed to teach safety skills to children.

In conjunction with the results of Himle et al,<sup>13</sup> this study is one of the first to demonstrate that young children can learn safety skills to prevent gun play. Although these findings have important implications for preventing firearm injuries, it must be emphasized that keeping guns out of the hands of children is the first line of defense for preventing firearm injuries.<sup>25</sup> Researchers should continue to focus on ways to promote safe storage practices, so that children cannot access the firearms that may be used to injure or kill another child.

## REFERENCES

1. Annett JL, Mercy JA, Gibson DR, Ryan GW. National estimates of nonfatal firearm related injuries: beyond the tip of the iceberg. *JAMA*. 1995;273:1749–1754
2. Becker TM, Olson L, Vick J. Children and firearms: a gunshot injury prevention program in New Mexico. *Am J Public Health*. 1993;83:282–283
3. Jagger J, Dietz D. Death and injury by firearms: who cares? *JAMA*. 1986;255:3143–3144
4. Jackman GA, Farah MM, Kellermann AL, Simon HK. Seeing is believing: what do boys do when they find a real gun? *Pediatrics*. 2001;107:1247–1258
5. Wiley CC, Casey R. Family experiences, attitudes, and household safety practices regarding firearms. *Clin Pediatr*. 1993;32:71–76
6. Wintemute GJ, Teret SP, Kraus JF, Wright MA, Bradfield G. When children shoot children: 88 unintended deaths in California. *JAMA*. 1987;257:3107–3109
7. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. WISQARS: Web-Based Injury Statistics Query and Reporting System: injury mortality rates, 1999–2000. Available at: <http://webapp.cdc.gov/sasweb/ncipc/mortrate10.html>. Accessed October 28, 2003
8. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. WISQARS: Web-Based Injury Statistics Query and Reporting System: nonfatal injury reports. Available at: <http://webapp.cdc.gov/sasweb/ncipc/nfirates2001.html>. Accessed October 28, 2003
9. Sinauer N, Annett JL, Mercy JA. Unintentional, nonfatal firearm-related injuries: a preventable public health burden. *JAMA*. 1996;275:1740–1743
10. Hardy MS. Teaching firearm safety to children: failure of a program. *J Dev Behav Pediatr*. 2002;23:71–76
11. Hardy MS, Armstrong FD, Martin BL, Strawn KN. A firearm safety program for children: they just can't say no. *J Dev Behav Pediatr*. 1996; 17:216–221
12. Himle MB, Miltenberger RG, Gatheridge BJ, Flessner CA. An evaluation of two procedures for training skills to prevent gun play in children. *Pediatrics*. 2004;113:70–77
13. Himle MB, Miltenberger RG, Flessner CA, Gatheridge BJ. Teaching

- safety skills to children to prevent gun play. *J Appl Behav Anal.* 2004;37:1–9
14. National Rifle Association, Safety and Education Division. *Eddie Eagle GunSafe Program*. Fairfax, VA: National Rifle Association; 1988
  15. National Rifle Association Institute for Legislative Action, Research and Information Division. *Fact Sheet: Firearm Safety in America*. Fairfax, VA: National Rifle Association Institute for Legislative Action; 2001. Available at: [www.nraila.org/FactSheets.asp](http://www.nraila.org/FactSheets.asp). Accessed June 21, 2002
  16. Borkin J, Frank L. Sexual abuse prevention for preschoolers: a pilot program. *Child Welfare.* 1986;65:75–81
  17. Conte JR, Rosen C, Saperstein L, Shermack R. An evaluation of a program to prevent the sexual victimization of young children. *Child Abuse Negl.* 1985;9:319–328
  18. Repucci ND, Haugaard JJ. Prevention of child sexual abuse: myth or reality? *Am Psychol.* 1988;44:1266–1275
  19. Miltenberger RG, Thiesse-Duffy E. Evaluation of home based programs for teaching personal safety skills to children. *J Appl Behav Anal.* 1998;21:81–87
  20. Wurtele SK, Salawsky DA, Miller CL, Marrs SR, Brichter JC. Teaching personal safety skills for potential prevention of sexual abuse: a comparison of treatments. *Consult Clin Psychol.* 1986;54:688–692
  21. Yeaton WH, Bailey JS. Teaching pedestrian safety skills to young children: an analysis and one-year follow-up. *J Appl Behav Anal.* 1978;11:315–329
  22. Blum NJ, Williams GE, Friman PC, Christopherson ER. Disciplining young children: the role of verbal instructions and reasoning. *Pediatrics.* 1995;96:336–341
  23. Carroll LA, Miltenberger RG, O'Neill HK. A review and critique of research evaluating child sexual abuse prevention programs. *Educ Treat Child.* 1992;15:335–354
  24. Poche C, Yoder P, Miltenberger RG. Teaching self-protection to children using television techniques. *J Appl Behav Anal.* 1988;21:253–261
  25. American Academy of Pediatrics, Committee on Injury and Poison Prevention. Firearm-related injuries affecting the pediatric population. *Pediatrics.* 2000;105:888–895

## Comparison of Two Programs to Teach Firearm Injury Prevention Skills to 6- and 7-Year-Old Children

Brian J. Gatheridge, Raymond G. Miltenberger, Daniel F. Huneke, Melisa J. Satterlund, Amanda R. Mattern, Brigitte M. Johnson and Christopher A. Flessner

*Pediatrics* 2004;114;e294

DOI: 10.1542/peds.2003-0635-L

<b>Updated Information &amp; Services</b>	including high resolution figures, can be found at: <a href="/content/114/3/e294.full.html">/content/114/3/e294.full.html</a>
<b>References</b>	This article cites 21 articles, 4 of which can be accessed free at: <a href="/content/114/3/e294.full.html#ref-list-1">/content/114/3/e294.full.html#ref-list-1</a>
<b>Subspecialty Collections</b>	This article, along with others on similar topics, appears in the following collection(s): <b>Injury, Violence &amp; Poison Prevention</b> <a href="/cgi/collection/injury_violence_-_poison_prevention_sub">/cgi/collection/injury_violence_-_poison_prevention_sub</a> <b>Firearms</b> <a href="/cgi/collection/firearms_sub">/cgi/collection/firearms_sub</a>
<b>Permissions &amp; Licensing</b>	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: <a href="/site/misc/Permissions.xhtml">/site/misc/Permissions.xhtml</a>
<b>Reprints</b>	Information about ordering reprints can be found online: <a href="/site/misc/reprints.xhtml">/site/misc/reprints.xhtml</a>

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2004 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## **Comparison of Two Programs to Teach Firearm Injury Prevention Skills to 6- and 7-Year-Old Children**

Brian J. Gatheridge, Raymond G. Miltenberger, Daniel F. Huneker, Melisa J. Satterlund, Amanda R. Mattern, Brigette M. Johnson and Christopher A. Flessner

*Pediatrics* 2004;114:e294

DOI: 10.1542/peds.2003-0635-L

The online version of this article, along with updated information and services, is located on the World Wide Web at:

</content/114/3/e294.full.html>

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2004 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

