

Stop, Drop and Roll

A comprehensive study



Summary

The Alisa Ann Ruch Burn Foundation (AARBF) hired a consultant to conduct expert interviews and a literary search on “Stop, Drop and Roll” in April 2020. The research addressed the history of “Stop, Drop and Roll” as well as its benefits and concerns surrounding its practice in fire and burn situations.

In the expert interviews conducted, many experts cited “Stop, Drop and Roll” as an educational tool, but none cited its history. Some experts cited the Alisa Ann Ruch Burn Foundation as the organization that coined the term “Stop, Drop and Roll”, while some cited the National Fire Protection Association (NFPA). Many did not know the origins of “Stop, Drop and Roll.”

There were no references to the history of “Stop, Drop and Roll” in textbooks, the Cochrane database, or published literature reviewed. Google searches yielded a few interesting results about the history of the practice, including a National Fire Academy white paper, Dick Van Dyke Public Service Announcements (PSAs) and public search database.

Through our research, we have determined that the concept of “Stop, Drop and Roll” was first mentioned in America Burning 1, published by the National Commission on Fire Prevention and Control in 1973. As early as 1974, “Stop, Drop and Roll” was becoming better known in outreach fire prevention education through programs such as the NFPA’s “Learn Not to Burn” school program and PSAs starring actor Dick Van Dyke. The Alisa Ann Ruch Burn Foundation was able to popularize the life-saving message with the development of a simple graphic in 1979.

History

According to the Alisa Ann Ruch Burn Foundation, the “Stop, Drop and Roll” technique was used to save the life of a five-year-old boy, during a backyard barbeque fire.

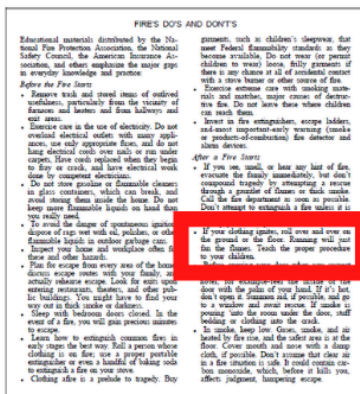


1970 Alisa, Ethan and David Ruch
“It was Memorial Day weekend in 1970, when the Ruch Family- Diane and Ernie Ruch, along with their children Ethan (10), Alisa Ann (8), David (5)- were celebrating with a small family gathering. Diane, who was pregnant at the time with her fourth child, and her sister Esther were in the kitchen preparing lunch, while Ernie and the children were in the backyard getting the barbeque grill ready. Ernie attempted to light

the barbeque grill, with David and Alisa Ann close behind him, when a fireball erupted, shooting Ernie backwards onto David and Alisa Ann. All three caught on fire. Ethan, witnessing what had just happened, pushed his little brother David to the ground and rolled him around, smothering the flames.”

In an interview with Ethan Ruch in 2020, the 10-year-old who used the “Stop, Drop and Roll” technique on his five-year-old brother in 1970, he said, “I ran to the backyard with him and I throw him in the dirt and rolled him over. And that’s where the whole, you know, stop, drop and roll thing supposedly was about. But you know, of course it was God’s hand on the whole thing because yeah, I was 10 years old.”

According to the National Fire Protection Association (NFPA), the concept behind “Stop, Drop and Roll”, dates back to at least America Burning [1], published by the National Commission on Fire Prevention and Control in 1973. After the National Commission on Fire Prevention and Control America Burning [1] was published, there was a focus among burn units on flammable fabrics as a major cause of burns in children.



If your clothing ignites, roll over and over on the ground or the floor. Running will just fan the flame. Teach the proper procedure to your children.

1973 America Burning. Page 115

As early as 1974, “Stop, Drop and Roll” was becoming better known in outreach fire prevention education through programs such as the NFPA’s “Learn Not to Burn” school program, and the Smoke, Fire and Burn Foundation (MA) started by Dr. Anne Phillips who served on the National Commission on Fire Prevention and Control.

Learn Not to Burn PSA



In 1974, the NFPA and the Public Service Council released the first television “Learn Not to Burn” PSAs starring actor Dick Van Dyke. A clip from the Dick Van Dyke NFPA PSA – Rolling (1979) PSA Commercial is pictured on the left.

1975 Learn Not to Burn Poster

Another early mention of the phrase “stop, drop, and roll” was found on page 6 of the June 1977 Smoke Detector Resource Catalog[2], published by National Commission on Fire Prevention and Control:



“In addition, families-should know how to react to clothing fires. Wearing flame retardant sleepwear will help protect you from clothing fires. Each member of the family should know and practice the “Stop-Drop-And-Roll” technique for smothering clothing fires.”

In an article, “Audio-visual teaches children fire safety,” in the January 1978 edition of the NFPA’s Fire News, the article described “Sparky’s Friends Learn Not to Burn.”

“It also teaches the basics of escaping a fire, including the “Stop, Drop, and Roll” technique of extinguishing clothing fires.” [3]

A November 1978 Fire Journal article by Lee Liberman ‘Interim Report Card on NFPA “Learn Not to Burn” Curriculum’ noted that:

“For the last few years, the NFPA’s public education efforts have been geared to emphasize correct fire safety behavior. The Dick Van Dyke TV commercials, spearheading this approach, have emphasized positive actions such as crawling, dropping and rolling, and feeling the door in fire situations...” (p. 34)

“To produce the “Learn Not to Burn” Curriculum, the NFPA sought the aid of fire service personnel, NFPA technical staff, and leading educators in health/safety education and educational evaluation.” (p. 34)

“Parents of experimental students provided information that indicated a high impact on the home, with ... 94 percent reporting that life-saving procedures (such as stop, drop, and roll) were being demonstrated by students to family members...” (p. 37) [4]

In October 1979, the Alisa Ann Ruch Burn Foundation (AARBF) rolled out a “Stop, Drop & Roll” brochure with a simple graphic image to convey the message. The brochure was developed and distributed in time for Fire Prevention Week, October 6, 1979. The design for “Stop, Drop & Roll” was developed by the AARBF’s Board Chair/ Santa Monica Fire Captain Craig Collier, and AARBF Board Member/ Graphic Designer and owner of Graphic Arts, Hal Juhl. Copyright forms were submitted by AARBF for the “Stop, Drop and Roll” Brochure with the U.S. Copyright Office. A date of creation was listed as 1979 and a date of publication of 1979-10-01. The brochure was then followed up with a 2 foot by 2 foot mobile, so that teachers could hang them up in their classroom of a constant reminder of Stop, Drop and Roll.

1979 Alisa Ann Ruch Burn Foundation “Stop, Drop and Roll” mobile

The 2006 Fire Protection Research Association (FPRF) report, “Stop, Drop, and Roll” – The Technical Substantiation behind Public Fire Safety Messaging [5], by Cates and Milke states:

“The original SDR technique has been recognized for saving lives. The NFPA began to document successes as early as 1975, the same year the message was released.”



Although, it is likely that this is referring to the technique, not the message. This report also shared the findings of research conducted by the NFPA, on where hands should be placed while performing the act of “Stop, Drop and Roll.” The findings were inconclusive in terms of hand placement, but a recommendation was made to modify the slogan to “Stop, Drop, Roll and Cool.”

Efficacy

The science behind “Stop, Drop and Roll” was evident.

1. “Stop” – minimize airflow that would fan flames if the person were to run (common instinct);
2. “Drop” – flames are vertical, by dropping to the ground reduces area of burn, especially facial burns;
3. “Roll” – to further reduce airflow, extinguish the flames, and reduce injury.

If done correctly, “Stop, Drop and Roll” can extinguish the fire (on clothing/hair/person) quickly and likely reduce the severity of injury.

In addition, the short lifesaving slogan and technique was easy to remember as well as to teach.

In an article written by Bill Kimball from [ECSI eNews: September 2012](#) [6], he states:

Stop, Drop and Roll. Those familiar with this concept know that these three words helped define a simple, yet highly effective message for personal fire safety.

The beauty of the Stop, Drop and Roll campaign was its simplicity. It was simultaneously a call to action and a lesson. It could be easily understood, recalled and implemented by all ages, and represented a low-cost method for safety agencies to disseminate the word to the masses.

While the threat of fire is still a concern, fire prevention and education efforts (part of which was Stop, Drop and Roll) have vastly reduced mortality rates. In the United States, these deaths dropped 66% from 1979 to 2007, as collected in the U.S. Fire Administration’s (USFA’s) National Fire Incident Reporting System (NFIRS).

Concerns

Concerns cited by the experts around “Stop, Drop and Roll” include the tendency for children to confuse “Stop, Drop and Roll” with how to respond to a smoke alarm by getting low under smoke to quickly escape a fire; lack of consensus as to whether to place hands over the face or the chest; and a lack of effectiveness when clothing is saturated with accelerants.

Confusion about when to “Stop, Drop and Roll”

Younger children are really skilled at demonstrating “Stop, Drop and Roll,” but some young children aren’t developmentally able to apply it and use it in the correct situations. This can cause more harm than good. Sometimes when teaching young children about what to do when they hear a smoke alarm, their instinct is to “Stop, Drop and Roll” versus escaping quickly. According to a study done by Oklahoma State University, children can be expected to understand and use fire safety messages only when they have achieved the necessary physical, cognitive, and socio-emotional milestones. It is important to understand the capabilities of children in order for the “Stop, Drop and Roll” technique to be correctly taught and used in appropriate situations.

Lack of consensus as to whether to place hands over the face or the chest

Safety professionals have also expressed concerns around the issue around the issue of “where do you place your hands” while rolling? Cover your face? At your sides? Across your chest?

When covering your face, there are pros and cons.

Pros: Protect your face from the flames and burn injury

Cons: If your sleeves are on fire, you’re bringing the flames to your face.

The other issue was the difficulty in rolling with your hands covering your face, or at your sides. It seemed easier for children to place their hands across their chest. But again, what if their shirt was on fire? The best and most effective approach varies with each unique situation (i.e., over the face is preferred except

if it would bring the flames closer to the face), which makes teaching difficult, as it is relying on the child to apply their knowledge and adapt/revise their behavior based on the individual situation.

A lack of effectiveness when clothing is saturated with accelerants.

Another concern with “Stop, Drop and Roll” is that it is not effective when the clothing is saturated with accelerants (e.g., gasoline, aerosol sprays, hand sanitizer, etc.).

Other Concerns around Stop, Drop and Roll

“Stop, Drop and Roll” is a physical action that can be challenging or impossible for some individuals (i.e., older adults or persons with disabilities) to perform.

“Stop, Drop and Roll” does not prevent the fire from occurring.

The NFPA’s Educational Messages Advisory Committee (EMAC) meets periodically to review NFPA’s fire and burn safety education messages and provide recommendations to NFPA public education staff for updating and revising the messages. In the NFPA Educational Messages 2020 Edition [7], NFPA states that “Use stop, drop, and roll only if your clothes are on fire” (page 40) and that “the stop, drop, and roll method may not put out clothing that catches fire from splattered or spilled gel fuel. A dry chemical portable fire extinguisher can be used to extinguish the fire.” (page 29).

Conclusion

As the Alisa Ann Ruch Burn Foundation celebrates its 50th Anniversary in 2021, we reflect on our organization’s long-standing commitment to fire safety and burn prevention. “Stop Drop and Roll” was a lifesaving technique used to save David Ruch’s life in 1970, and had it been more widely known then, it may have saved the life of Alisa Ann Ruch. “Stop, Drop and Roll” is a simple and catchy slogan, life-saving technique and call to action that has withstood the test of time and continues to save lives today. It is imperative to know when to utilize “Stop, Drop and Roll” and that it is not effective in all cases of when clothing catches on fire (i.e. when accelerants are involved).

References

- 1 [America Burning: The Report of the National Commission on Fire Prevention and Control](#). Washington: For sale by the Supt. of Docs., U.S. G.P.O., 1973. Print.
- 2 June 1977 Smoke Detector Resource Catalog. Washington: National Commission on Fire Prevention and Control, 1977. Print.
- 3 National Fire Protection Association. (1978, January). Audio-visual teaches children fire safety. *Fire News*, p. 10.
- 4 Liberman, L. (1978, November). Interim Report Card on NFPA “Learn Not to Burn” Curriculum. *NFPA Journal*, 72(6), 34-37.
- 5 “Stop, Drop, and Roll” – The Technical Substantiation Behind Public Fire Safety Messaging, Tiffney. A. Cates and James A. Milke – University of Maryland, (2006).
- 6 Kimball, Bill. Stop, Drop, & Roll Reinvented: Active Shooter Survival, blogs.psglearning.com/public-safety/stop-drop-roll-reinvented-active-shooter-survival.
- 7 NFPA Educational Messages: Desk Reference for the Fire Service and Fire and Life Safety Educators, 2020 Edition. **Authors/Contributors**
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