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Hard Landings -- Unacceptable Risks of Trampolines

Summer has arrived in Alaska. School is out. Kids are jumping with joy. Some are jumping on trampolines. Risks associated with trampolines are great. Because use of trampolines seems to be increasing, we need to remember how dangerous they are.

The trampoline was developed and patented by George Nissen, a circus acrobat, in 1936. Used for conditioning and training of fighter pilots during World War II, the trampoline gained widespread popularity in the United States and Europe during the 1950s and 1960s.¹ This popularity was accompanied by reports of trampoline-associated, cervical spine injuries including vertebral body compression-burst fractures, facet dislocations and subluxations without fractures, fracture dislocations, and fracture-dislocations associated with intervertebral disc herniations. Over 100 cases of quadriplegia associated with trampoline-associated cervical spine injuries have been reported.²⁻⁷

In 1977 the Committee on Accident and Poison Prevention of the American Academy of Pediatrics issued the following statement:

"Trampoline accidents have resulted in a significant number of cases of quadriplegia. In many cases, these accidents have occurred while the victims were participating in supervised physical education activities. Next to football, trampolines were found to be the highest cause of permanent paralysis in this survey."

"Therefore, the Committee on Accident and Poison Prevention of the American Academy of Pediatrics recommends that trampolines be banned from use as part of the physical education programs in grammar schools, high schools and colleges, and also be abolished as a competitive sport."⁸

In 1981 the American Academy of Pediatrics published a second statement on trampolines:

"The trampoline is a potentially dangerous apparatus, and its use demands the following precautions:

- 1. The trampoline should not be a part of routine physical education classes.**
- 2. The trampoline has no place in competitive sports.**
- 3. The trampoline should never be used in home or recreational settings.**
- 4. Highly trained personnel who have been instructed in all aspects of trampoline safety must be present when the apparatus is used.**
- 5. Maneuvers, especially the somersault, that have a high potential for serious injury should be attempted only by those qualified to become skilled performers.**
- 6. The trampoline must be secured when not in use, and it must be well maintained.**
- 7. Only schools or sports activities complying with the foregoing recommendations should have trampolines."⁹**

In spite of these recommendations, home and recreational trampoline use has continued and recently has increased, as have trampoline-associated injuries. In 1992 Woodward et al.¹⁰ reported on 114 children with trampoline-associated injuries treated in the Emergency Department of the Primary Children's Medical Center in Salt Lake City, Utah, between June 1989 and November 1990. Fifty-five percent of the patients were males. The patients ranged in age from 1 to 16 years, the mean age was 8 years. Forty-eight percent were injured using their family's trampoline, and 49% were injured on trampolines belonging to friends or relatives. One child was injured on a gymnasium trampoline.

Over 40% of the children sustained their injuries in falls on the trampoline mat. Another 29% were injured falling off the trampoline. Ten percent of the injuries occurred during attempted flips. Seventy-seven percent of the injuries occurred when three or more children were on the trampoline. Most commonly the youngest child on the trampoline was the one injured.

Upper and lower extremity injuries were the most common, occurring in 55% of the children; 73% of these injuries were fractures. Thirty-seven percent of those injured sustained head and neck injuries, including concussions, skull fractures, neck sprains, and a cervical fracture. Fortunately, there were no deaths or permanent neurologic sequelae in this group.

Unfortunately, trampolines are available for purchase in stores in Alaska and sales appear to have increased. Parents must understand the potential risks trampolines may pose to children. **The Alaska Division of Public Health agrees with the 1981 statement of the AAP. We urge parents not to purchase trampolines and not to permit their children to play on trampolines owned by others.**

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