

Trampolines can cause serious injuries; use sho

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Many people consider trampolines a backyard staple along with barbecues and lounge chairs. However, the recreational use of trampolines is a relatively modern phenomenon.

Trampolines were developed in 1945 as a training tool for acrobats and gymnasts. The use of trampolines as a leisure activity has largely been driven by marketing and increased availability of inexpensive trampolines promoted for home use and exercise.

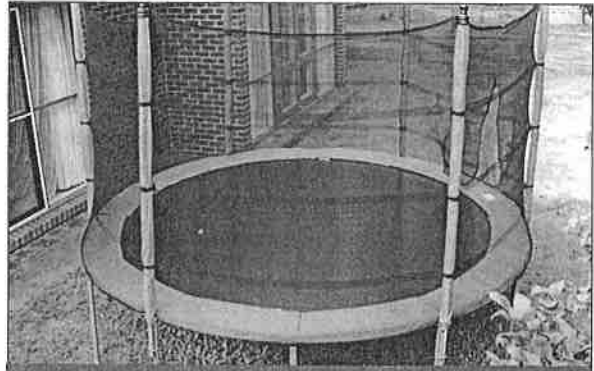
Parents are well aware of other backyard dangers such as swimming pools and take significant precautions to protect their children. However, they still unwittingly allow their children to play on trampolines.

The rates of trampoline injuries are similar to those in swimming pools, according to the U.S. Consumer Product Safety Commission National Electronic Injury Surveillance System. Between 2002 and 2011, there were over 1 million emergency department (ED) visits for trampoline injuries with the vast majority in patients younger than 17 years (Loder RT, et al. *J Pediatr Orthop*. 2014;34:683-690). One-third of these injuries resulted in broken bones, and one in 200 led to permanent neurologic damage.

An AAP policy statement published in 2012 and reaffirmed in 2015 states that home use of trampolines is dangerous for children and should be strongly discouraged (<https://pediatrics.aappublications.org/content/130/4/774>).

Younger children are much more likely to sustain an injury on a trampoline, especially when bouncing with an older or larger child. These young children have the highest risk of severe injuries, including spine and lower extremity fractures. Approximately 75% of trampoline injuries occur when more than one child jumps at a time, and the smaller child is approximately 14 times as likely to be injured as the larger one (Wootton M, Harris D. *Emerg Med J*. 2009;26:728-731).

The cost of these injuries to the U.S. health care system is astronomical. From 2002 to 2011, the ED expense for treating these injuries was over \$1 billion



More than 85% of trampoline injuries happen at home. AAP policy advises pediatricians to counsel patients and families against using recreational trampolines. If families persist in using home trampolines, pediatricians should recommend they take precautions and follow strict rules.

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The rise of commercial trampoline parks has demonstrated an increased risk of orthopedic injuries as well as injuries requiring surgical intervention (Doty J, et al. *J Am Acad Orthop Surg*. 2019;27:23-31). Between 2011 and 2014, the number of ED visits from injuries sustained at trampoline parks rose more than 10-fold from 600 to almost 7,000. Injuries at trampoline parks are more likely to be musculoskeletal in nature with a higher risk of dislocations and sprains, whereas home trampolines demonstrate a higher risk of head injuries and lacerations (Kasmire KE, et al. *Pediatrics*. 2016;138(3):e20161236).

Trampoline park injuries have a 1.7 times higher likelihood of requiring admission to the hospital, have a longer length of stay if admission is required and are more costly to treat compared to injuries sustained at home (Kasmire KE, et al. *Pediatrics*. 2016;138(3):e20161236; Chen M, et al. *J Paediatr Child Health*. 2019;55:175-180).

However, more than 85% of injuries still happen at home. AAP policy advises pediatricians to counsel their patients and families against recreational trampoline use. If families persist in using home trampolines,

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pediatricians should recommend they adhere to the following guidelines:

- Somersaults and flips should be discouraged. Failed attempts at these maneuvers can cause devastating cervical spine injuries, resulting in permanent disability or even death.
- Only one child should be allowed on the trampoline at a time.
- Never allow children to jump without supervision. The supervising adult should be willing and able to enforce the recommendations above and should never leave children unattended.
- Netting and other safety equipment have *not* been shown to decrease trampoline-related injuries. Vigilance is necessary when using any type of trampoline, even trampolines with safety devices.
- Springs should be covered with padding to avoid pinching fingers or toes and to protect against falling into the crevice between the springs.
- Trampolines should be inspected regularly for tears, rust and detached springs or pads.
- Keep ladders away from trampolines as they provide a mechanism for small children to get on the trampoline and jump without supervision.
- Homeowners with a trampoline should verify that their homeowner's insurance covers trampoline-related claims.

The use of trampolines as recreational structures should not be taken lightly, and parents should have an appropriate understanding of the risks. Safety precautions for trampoline use should be viewed in a similar light as those for swimming pools.

The safest option is for families to simply not have a trampoline. However, if they choose to have one, strict rules should be set and precautions followed.



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