

# Serious injuries more likely for kids using trampoline centers than home trampolines

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Credit: Pixabay/CC0 Public Domain

Children who use trampoline centers are more likely to be seriously injured and require hospital admission than those who use trampolines at home, finds a pooled data analysis of the available international

evidence, published online in the journal *Injury Prevention*.

Greater public awareness of the potential dangers and mandatory safety standards for trampoline centers are urgently required, insist the researchers.

Trampolining is fun but potentially dangerous, say the researchers. It accounts for nearly 100,000 [emergency room visits](#) by children every year in the U.S., while trampoline injuries explain half of all emergency admissions among under-14s in the U.K.

Similarly, in Australia trampoline injuries were responsible for 1,500 children being admitted to hospital every year between 2002 and 2011.

In response to safety concerns, industry safety standards have been developed globally to curb potential hazards associated with the manufacture, assembly, maintenance and use of trampolines. But despite this, rates of trampoline injuries haven't fallen, note the researchers.

The number and popularity of trampoline centers have skyrocketed over the past decade: there are currently about 840 commercial trampoline centers in the U.S. and more than 400 were reported in other countries in 2017, they highlight.

To tease out the evidence on the location and type of children's injuries caused by trampolining, the researchers trawled major research databases for relevant observational studies published up to the end of December 2021.

The findings of 11 studies out of an initial haul of 154, detailing nearly 13.9 million injuries, were included in the pooled data analysis. The studies were carried out in the U.S., South Korea, Canada, the U.K., Singapore, Australia and New Zealand.

The analysis revealed a different pattern of injuries sustained at commercial centers and at home, and that children who used trampoline centers tended to be older than those trampolining at home.

There was no difference in the risk of head, face, or trunk injuries, dislocated joints, broken bones, or [spinal injuries](#) between the two locations.

Leg injuries, sprains, and requirement for surgery were more common at trampoline centers, possibly because of structural differences in the trampoline mat used at home and at trampoline centers, say the researchers.

Kids using trampolining centers were more than twice as likely to sustain orthopedic and musculoskeletal injuries as kids trampolining at home. Leg injuries were three times as common.

"The higher tensile strength used in commercial trampoline centers may produce a harder bounce which amplifies the loading in bones and ligaments," explain the researchers.

While there was no difference in the risk of [hospital admission](#) after a trampoline [injury](#) at either location, the need for surgery was nearly twice as high for injuries sustained at a trampoline center.

A higher risk of injuries was observed in older children and teenagers at trampoline centers. This may reflect higher rates of risk-taking behaviors in pre-teens and teens, suggest the researchers.

And age limit restrictions or greater levels of supervision may explain lower rates of injury among children under the age of 6 at trampoline centers, they add.

Fewer arm injuries, cuts, and concussions (52% less likely) were observed among children using trampoline centers.

Wall-to-wall gymnastics-grade protective padding to cover exposed structures and spring mechanisms might explain the lower risk of concussion and cuts in trampoline centers, say the researchers.

And a fall from a trampoline often causes an arm injury, with such falls the most common cause of injury among children trampolining at home.

This is an observational study, and as such, can't establish cause, added to which few of the included studies directly compared trampolining injuries sustained at home and at commercial centers. And exactly what caused the injury while trampolining wasn't specified in many of the included studies.

Notwithstanding these caveats, the researchers highlight: "Presently, safety guidelines are not legislated for commercial trampoline centers anywhere in the world."

They go on to say: "Most trampoline centers only demand a user's injury liability waiver before admission, and the current AAP [American Academy of Pediatrics] [policy statement](#) on trampolines does not include trampoline centers because of the lack of data regarding the safety of these recreational venues."

While AAP policy discourages backflips and somersaults in the home setting due to reported deaths and spinal cord injuries, many commercial trampoline franchises don't have these rules, they note.

And they conclude: "Considering the rapid global expansion of the commercial [trampoline](#) industry in the last decade, the increasing injury rates, and the cost to [health systems](#), the development and

implementation of evidence based safety standards and preventative strategies and public awareness campaigns are urgently required."

**More information:** Trampoline centre injuries in children and adolescents: a systematic review and meta-analysis, *Injury Prevention* (2022). [DOI: 10.1136/injuryprev-2022-044530](https://doi.org/10.1136/injuryprev-2022-044530)

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