

Trampolines by Dr. Neil Davies

Trampolines are a favourite Christmas or birthday present. The big day comes, dad spends hours setting it up and then the kids all pile on and start jumping. It looks like fun and it looks like it would be great for the kids health and fitness, but alas such is not the case.

The recreational use of trampolines has increased dramatically during the last 10 years. There has been a striking parallel increase in the number of children presenting to fracture clinics with injuries associated with trampoline use in that same time period. To a large extent, the serious injuries that happen to children while trampolining do so when they have no adult supervision. In one study conducted in Ireland, of the children presenting to a public hospital orthopaedic clinic over a 6 month period with injuries sustained while trampolining, 60% were unsupervised by an adult at the time. A study conducted in the US demonstrated that there is no significant difference between the rate or type of injuries occurring with the so-called mini-trampolines as opposed to full sized trampolines.

Injuries related to trampolining are typically orthopaedic in nature involving the cervical spine (neck) and upper limb (arm). However, more serious neurological injuries do occur, such as quadriplegia and conditions involving the blood vessels are also seen to be on the rise. While strokes, thrombus and embolus formation in children related to sports injuries are rare, the incidence associated with trampoline use is increasing. Minor trauma to the vulnerable arteries in the neck as they travel towards the brain can begin a cascade of events that may result in arterial dissection, thrombus formation, and embolization with cerebral infarction (stroke). Other vascular complications of trampoline injuries have also been recorded in the scientific literature.

Some physicians and physiotherapists charged with caring for children with cystic fibrosis (CF) claim that heart and lung performance, sputum production and general wellbeing are all enhanced by the judicious and supervised use of trampolining. However, a study conducted at the National Center for Cystic Fibrosis, Edmond and Lily Safra Children's Hospital, Chaim Sheba Medical Center in Tel-Hashomer, Israel in which the authors conducted an exhaustive search of the scientific literature on trampolining as a therapeutic modality for cystic fibrosis patients concluded that the presumed benefits of trampoline use for CF patients are not proven and furthermore, the suggested benefits could be acquired using other types of exercise. The authors further concluded that, weighing the known risks of trampolines against the potential benefits that are not unique to this particular exercise modality suggests that the use of trampolines for CF should not be recommended. The rate of increase in trampoline-related injury to children is becoming a serious public health issue and has resulted in various calls in the scientific literature ranging from those who favour a complete ban on sales of trampolines to those who recommend that strict guidelines for the

recreational use of trampolines be put in place and further recommend that no child should be on a trampoline either with another child or unsupervised by an adult.

In 1999 the American Academy of Pediatrics (AAP) recommended that trampolines should never be used in the home environment, in routine physical education classes, or in outdoor playgrounds. In 2006 this policy was reaffirmed based on the evolving data of recorded injuries from trampolining accidents, 30% of which were fractures, many resulting in hospitalization and surgery.

Given the increasing frequency of serious injury to children using trampolines in a home environment and the less severe injuries, some of which are being seen by chiropractors that are not being reported in the scientific literature, it seems that on balance the most appropriate advice to offer parents is to avoid buying a trampoline for home use. This advice would be in keeping with the official policy of the American Academy of Pediatrics and would be the most resonant with the opinions expressed in the scientific literature.