

MILLER ENGINEERING, INC.

EXPERTISE AREA:

*Product Design & Testing:

- Human Factors
- Ergonomics

* Other Child Safety Areas Researched

- ATV Label Warnings
- Child Plastic Bag
- Electronic Game Controller
- Toys & Dolls Choking Hazards
- Child Strangulation - toys, mini-blinds, packaging
- Food Choking Hazard
- Infant Carriers / Child Car Seats
- Entertainment Center & TV Stand Tipping
- ASTM F-15 Committee
- Smoke Detectors

* Additional Safety Areas Researched

- Boating Operations
- Slips & Falls
- Climbing

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TECHNICAL BULLETIN:

Common Household Hazards for Children

- Child Choking from Toys and Dolls
- Infant Carriers/Child Car Seats
- Entertainment Center & TV Stand Tipping
- ASTM F-15 Committee
- Swimming Pools as a Hazard for Children
- Child Choking Hazard of Food
- Child Strangulation - Toys, Mini-Blinds, & Packaging
- Electronic Game Controller & Repetitive Hand Trauma

Child Choking from Toys and Dolls

Current CPSC standards have addressed the normal choking hazards of toys having small parts which can separate from the main product, or which are part of the many components making up a game or assembly package, such as Lego blocks. With the availability of electronic

dolls and complex soft toys, additional potential hazards have been introduced. In performing safety analyses for some manufacturers, Miller Engineering has recommended design changes where less easy access to electronic parts & battery chambers is possible.



Button type batteries such as the one seen here pose a serious choking/ingestion hazard to young children whose older siblings have electronic toys & remotes.

Infant Carriers/Child Car Seats

State laws typically require infants to be constrained within car seats & Federal/consensual standards establish criteria which qualifying car seats must pass. Specific features of some manufacturer's car seat models have resulted in notifications and recalls by the CPSC. A different aspect of this issue is the interaction of products labeled as "infant carriers" which are not intended and should never be used for

child restraint in a car. Miller Engineering found that warnings relative to product intended use may be necessary, both at the point of sale and on the products themselves. This issue has been explored in our publication "Communicating a Safety-Critical Limitation of an Infant Carrying Product," available through our webpage.



Proper sizing and installation of infant & child safety seats are crucial to the user's safety during an accident.

Entertainment Center & TV Stand Tipping

Entertainment Centers and TV Stands have been frequently associated with tipovers involving children. A few U.S. groups have started to address this issue from a standards perspective, and international safety groups have created stability standards. Miller Engineering has done independent testing on such furniture to deter-

mine their susceptibility to tipover by children playing in and around such furniture. Dynamic testing is probably necessary to establish reasonable standards in that static children weights themselves may not take into account the activities which lead to tipover accidents.



Dressers and other large pieces of furniture have been involved in fatal tipover accidents as well.

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ASTM F-15 Committee - Dr. Miller's Membership

The most prolific organization in the USA developing standards relative to children is the American Society for Testing Materials. This organization has taken it on itself to set up an elaborate structure of committees to address the construction and

design of toys, furniture, & play equipment and has radically improved their safety. Dr. Miller is a member of the ASTM F-15 Main Committee & has an opportunity to review, comment & vote on the various standards

under development or in revision. In the past few years, those standards have included playground swings, sliding boards, matches, bunk beds, child seating, dressers and entertainment centers.

Miller Engineering Experience Example:

Miller developed a corporate-wide policy for warning labels on plastic bags used in all packaging by a major computer product manufacturer.

The policy ensured compliance with all existing state, Federal & international standards.

Swimming Pools as a Hazard for Children

Swimming pools pose many hazards for young children. Unsupervised children have the potential of drowning. Head, neck, & back injuries occur when swimmers dive

into areas of the pool with insufficient depth. Miller Engineering has worked with several permanent & inflatable swimming pool manufacturers to develop

warning labels & identify label placement on the product for maximum effectiveness. Pumping systems in pools & hot tubs have also been analyzed.

Child Strangulation - Toys, Mini-Blinds, & Packaging

Strings & rope capable of child strangulation appear from unexpected sources. each of the above named areas. Mini-blinds have hidden strings which have the capability to accidentally engage children left unsupervised to play in their vicinity. We participated in developing

the warnings which are now provided on these products. Strings which are a part of toys are no different from ties that are used as part of the packaging. While the length of pull & suspension strings on toys have standards, we have recommended to

manufacturers of certain child susceptible products that either package ties be limited in length or warnings be placed relative to immediate and proper disposal of all packaging parts to prevent child contact.

The warnings were written in 5 different languages to reflect the broad base of marketing which characterizes this company.

Electronic Game Controller & Repetitive Hand Trauma

It may be too early to appreciate the health consequences to children of extreme time spent using electronic game technology. One consideration is the eventual development of hand/wrist repetitive trauma caused

by specific designs of game controllers. While there are no known research findings relative to children injuries as of yet, Miller Engineering has recommended preemptive warnings to parents about

taking the same precautions in usage as might be recommended for the adult using products which have the potential for cumulative repetitive trauma injuries.



Child Choking Hazard of Food

Being a necessity which cannot be eliminated, nearly any food has the potential for choking if not properly served and its consumption not sufficiently supervised. There are certain foods which have statistically been pointed out through the NEISS system and pediatricians as having higher levels of risk for children during consumption, i.e., peanuts, whole grapes, and hot dogs. Currently there are no

government agencies known to us which investigate, regulate or take responsibility for child food choking hazards, although CPSC has regulated toy choking hazards. Manufacturers producing those products particularly susceptible to child choking have been advised to review whether their particular product justifies any change in formulation or warnings

on exterior packages. A few food product manufacturers have in the past few years begun to include such warnings on their products. Included in such warnings have been issues of parent supervision, form and quantities being served, danger of older children feeding younger siblings, and location and limitations of levels of activities while consuming food.

