



Revising the Current Hazardous Products Act



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Noisy Toys – An Issue Paper Prepared By The
Canadian Association of Speech-Language Pathologists and Audiologists
(CASLPA)

“Noisy Toys” – What you need to know

Audiologists, speech-language pathologists and supportive personnel across Canada are concerned that some toys have the potential to harm hearing. This can lead to serious communication and learning difficulties. Members of the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) have seen first-hand the hearing, speech and language implications that can arise from hearing loss due to unacceptable noise conditions.

In Canada, regulation exists under the Hazardous Products Act which bans toys emitting noise levels exceeding 100 decibels (dB). While CASLPA supports Health Canada’s efforts to protect our children’s hearing, as audiologists, we have found that 100 dB is an unsafe level, and noise-induced hearing loss (N-IHL) could be the result. The 100 dB level needs to be re-examined and researched to protect our children.

Current regulations – not safe enough for our children’s hearing health

Toy sales in Canada are a multibillion-dollar business. A large majority of the manufacturing is done in China. The numerous recalls in the past months have forced government to look at the important issue of toy safety. In fact, the Prime Minister addressed toy safety in his Throne Speech last Fall. In light of the issues surrounding toy safety in general, the Government has promised to introduce measures on product safety. CASLPA would like to ensure that noise levels in toys are included in the assessment when legislation is being revised.

Selling toys in Canada is a \$1.4 billion business, according to the Canadian Toy Association. Approximately 60% of the toys sold around the world are from China. Canada’s import rate is higher than this average.

CASLPA applauds Health Minister Tony Clement’s November 27, 2007 announcement of a new joint Canada-Chinese health committee to share information and help enhance product safety. Minister Clement also signed a Memorandum of Understanding (MOU) with China’s Minister of the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) to enhance cooperation on issues related to consumer product safety. The MOU will:

- Establish technical working groups that will share information on regulatory requirements and laboratory testing procedures for specific consumer products of common concern, such as **toys** and children’s jewellery;
- Set up training workshops for Chinese manufacturers in order to ensure their full understanding and compliance with Canadian safety requirements; and
- Establish ongoing information-sharing mechanisms and approaches between the two governments, including an urgent consultation mechanism which would be used when critical product safety issues arise. ¹

¹ The Government of Canada Announces New Measures to Enhance Canada’s Food and Product Safety, press release, November 27, 2007



It is very important that testing for noisy toys be included in the regulatory requirements.

Health Canada's website states:

“Health Canada:

- Conducts research on potential hazards associated with consumer products,
- Raises awareness of potential risks of injury through our product safety advisories, warnings and recalls,
- Develops and enforces product safety regulations and standards.”

The issue of safe levels for noise in toys has audiologists concerned. Further research and safety advisories on noise as it relates to toy safety should be promoted by Health Canada to a greater degree to ensure more public awareness of safe noise levels for toys.

In Canada, the Hazardous Products Act bans toys emitting noise levels exceeding 100 dB, measured at a specified distance from a child's ear (arm's length). However, we know that children often hold their toys much closer to the ear than the distance specified in the current law's measurement protocol.

The International Standards Organization (ISO) technical committee recommends that close-to-the-ear toys should not exceed 65 dB when measured in the free field and all other toys should not exceed 85 dB. The current Canadian Act permits a noise level which is potentially dangerous, because it does not take into account the typical use of the toys.

If we were to compare current regulatory framework on workplace noise requirements under the Occupational Health and Safety Act, we would find that in Alberta, the current industrial regulation provides an allowable noise exposure of 85 dB for 8 hours. This exposure regulation varies from province to province and can be as low as 80 dB. In this case, a 3-decibel exchange rate is applied. The exchange rate is used to calculate the amount by which the permitted sound level may increase if the exposure time is halved. For example, using the 3-dB "rule", if the sound level increases from 85 to 88 dB, a worker may only be exposed to the sound for 4 hours, instead of 8 hours.

If we were to apply the regulations on workplace noise conditions indicated above to toys, a toy producing 100 dB of noise should only be used by an adult for 15 minutes! Hold that toy to a child's ear, and the noise at the level of the eardrum is increased to dangerous levels.



Studies on hearing health and noise

In an assessment of toy safety conducted in 2004 by *Option consommateurs* (Québec), field tests revealed that the majority of toys in this study (53%) designed for the 0–3 age group were in fact held much closer to the ear than the distance specified in the current law’s measurement protocol.

In view of this finding and the toy noise levels measured as if the toy were held at the ear, it was observed that a large majority of the toys tested are likely to cause hearing loss in the long run, even with very short periods of use.

At birth, the inner ear is fully developed and has its full complement of hair cells, supporting cells and nerve fibres. Unlike most other tissues in the body, hair cells and nerve fibres do not regenerate when damaged. Children are more susceptible to the effects of noise because of their behaviours and also because of their smaller ear canals. A sound travelling down a child’s ear canal will arrive at the eardrum at a greater intensity than in an adult who has a larger ear canal. Boyle’s Law: pressure (in this case sound pressure) and volume (in this case ear canal volume) are inversely proportionate. Noise affects the hair cells in the inner ear. Repeated exposure will wear these hair cells down and eventually cause permanent damage.

On March 13, 1991, the Quebec Consumers’ Association (Association des consommateurs du Québec) presented a report to Consumer and Corporate Affairs to challenge its permissive noise level standard for toys, which they felt posed unnecessary risks to children’s hearing, and the lack of an adequate test method to assess the noise levels from toys on the Canadian market.

The report was prepared by two audiologists from a Montreal consulting firm, who proposed that the regulation should be amended to impose a noise level maximum of 75 dB, the noise safety limit defined by the World Health Organization.

According to the Montreal researchers, research tends to show that the inner ear of the child is more sensitive to noise and may be susceptible to hearing loss for noise exposures that are safe for adults. They feel, then, that no child’s toy should make noise exceeding 75 dB, regardless of the amount of time that the child might play with it. They also propose that a clear, precise test method that spells out the distance at which noise levels are measured should be applicable to all kinds of toys.

A 1989 University of Montreal study found that almost 85% of children’s toys on the Québec market exceeded the World Health Organization’s noise limit, and are hazardous to children’s hearing. In fact, some toys exceed even the 100 decibel limits imposed by the current Hazardous Products Act.²

² Noisy Toys, Canadian Hearing Society web site.

Potential consequences

Noise-induced Hearing Loss (N-IHL) is hearing loss caused by excessive exposure to loud sounds. The two primary factors that can contribute to N-IHL are the loudness of the noise and the length of time that a person is exposed to that noise. Moderate exposure to potentially damaging sounds may cause temporary shifts in hearing. For example, after a rock concert, your ears may hurt or ring, or you may have difficulty hearing. Repeated exposure to intense noise gradually produces permanent N-IHL.

The social and financial costs of hearing impairment are significant. Hearing aids that are prescribed generally provide digital signal processing. The average cost of one digital hearing aid is \$2000. Children often need to replace their hearing aids every 3 years. Throughout a child's lifetime there are many other direct and indirect costs associated with treating and managing hearing impairment. Factors such as decreased quality of life and educational experience and loss in employment opportunities must be considered. Additional potential effects of excessive noise include tinnitus (or ringing in the ears), balance problems, nausea, tension, anxiety, sleep disturbance, irritability, and headaches. Legislative changes now will have the potential to save costs to the Canadian Health Care system in the future.

An Audiologist is a trained professional who can help to detect if hearing loss may be developing.

Consumer Concerns

Canadian consumers at risk

One of the most important criteria for examining a revision to this legislation is the impact of toy safety on the consumer. Canadian consumers feel protected and trust that the products they purchase for their children are safe, but may be unaware that the current noise level regulations may not be adequate.

Toys sold in Canada currently must register sound levels below 100 dB. This level is too high. One must also consider that the toys noise levels are not measured at a distances close to a child's ear. Rather, they are measured at distances simulating arms length.

A toy sold in Canada may register a 100 dB rating when tested at arm's length. However, if measured at close range to simulate a young child bringing the toy near his or her ear, the measurement can easily exceed the 100 dB limit established as acceptable by the Hazardous Product Act, despite the fact that this toy was deemed safe by current standards.

International purchases

It is also important to consider that in our global economy, toys can come from anywhere, especially if purchased on the internet or during a trip to a foreign country, where noise standards may not exist. International standards should be sought to ensure acceptable noise levels in toys.





What Members of Parliament Should Do

The Hazardous Products Act must be revised to reflect noise levels emitted by toys when a child is playing with them under all circumstances. Further research needs to be conducted with this consideration in mind.

CASLPA strongly recommends revision of current legislation in order to lower the acceptable loudness level in toys from 100 decibels to a level comparable with international standards, and to consider aspects such as the distance from the ear when establishing acceptable noise standards in toys.

CASLPA understands that there are many items to be considered by Health Canada related to toy safety. Noise is one element of toy safety that should never be overlooked. The Canadian Association of Speech-Language Pathologists and Audiologists would be pleased to assist Health Canada when this important piece of legislation is being revisited, by providing expert witnesses who will consult with the appropriate review committee.

