



Australian Paediatric Surveillance Unit Important Information for Doctors

Severe Injury Related to Disc Battery (SIRDB)

Asking the right questions could prevent severe injuries due to disk battery in the future

Asking product-related information is important to support regulatory change to limit access by children to potentially fatal disc batteries. Whilst children occasionally access commercial/trade products and sustain a product-related injury, the bulk of product-related injuries, particularly for young children, are associated with domestic products. Injury rates due to ingested or inserted disc batteries are rising with the expanding market in domestic disc battery operated products, such as toys, 'electric' candles, watches, earphones, TV remotes etc.

Why do children insert or swallow disc batteries?

Children seem to go through a developmental phase where they swallow items (peaking between 1 and 3 years of age) or insert them into their ear/ nose or other body orifice (peaking between 3 and 4 years of age). This behaviour, particularly oral exploration, can persist in some children (those with developmental delay or on the autistic spectrum).

Why are there so many questions in the APSU SIRDB questionnaire relating to the battery products?

Although severe disc battery related injuries have been recognised for more than 30 years, it is only recently that industry has started considering their role in product design and how that affects battery accessibility. If we have information about the type of product, how the child accessed the product and battery, how the product or battery came into the home etc, we will be able to argue for better product/ packaging design, labelling and marketing.

Recent changes in Australia have included:

- Development of a **voluntary** industry guideline:
www.productsafety.gov.au/publication/industry-code-for-consumer-goods-that-contain-button-batteries
- Review and update of applicable **voluntary standards** for domestic electrical products requiring disc batteries to be retained in a secure battery compartment including:
AS/NZS 60335.1:2011/Amdt 4:2017 Household and similar appliances – general safety requirements and AS/NZS 62115: 2011 - Electric toys—Safety
- Some industry groups have repackaged their disc batteries in child resistant packaging

There has also been extensive work undertaken internationally, including the development of a new **voluntary standard** for the safety for products incorporating button or coin cell batteries of lithium technologies: *UL 4200A:2015*.

Further advocacy and data is required to continue to drive this issue such that industry reduces the danger or at least the accessibility of disc batteries in the home by:

- Redesigning the disc battery (this is some way off)
- Choosing alternative power sources to power devices
- Making packaging more secure
- Improving labelling
- Designing products with inaccessible/secure battery compartments
- Improving battery disposal/safe recycling

Are children only injured by products that are designed/marketed for them?

No! In addition to toys, children may access items designed/intended for routine adult use when they are left in accessible places or given to young children to play with, e.g. car keys, TV remotes, calculators etc.

Even items that are intended for a sole user, such as hearing aids, glucometers or thermometers if left in accessible places, can be accessed by young children.

How do products with disc batteries enter the home?

Disc battery containing products enter the home in a variety of ways - individual batteries directly purchased as replacement batteries, products purchased that contain disc batteries, or products given as presents, brought in by visitors, in party bags, as promotional gifts. Disc batteries may enter the home unpackaged, in specific battery packaging, loose in associated product packaging or already secured within the device. Parent/carer decisions about accepting that product into the home and how it is managed after it gets there are to some extent determined by how it enters the home, how it is packaged and their awareness of the risk.

What standards apply to domestic disc battery operated products designed and marketed for children?

Products primarily designed/marketed for young children (< 36 months of age) are required to meet a variety of **mandatory standards**. The most applicable Australian mandatory safety standard to address battery compartment security in children's products is the "Toys for children up to and including 36 months of age" standard. This standard includes mandatory clauses that are designed to address the choking hazard that small parts pose to young children. There are a number of requirements and tests that cover small parts, tests for shape and size and the security of small battery compartments.

Specific requirements set out in this standard require that, for toys intended for children under 36 months, battery compartments require either a tool or at least two independent movements **applied simultaneously** to open the battery compartment. Such products are also required to pass drop and shear tests to ensure that small parts (including batteries) do not come loose.

Whilst it is highly recommended by product safety regulators that all children's products have adequate warning labels regarding small parts and batteries, there are no mandatory requirements to do so. The voluntary standard does contain safety-labelling guidelines and manufacturer's markings to provide guidance to manufacturers and importers for labelling certain types of toys.

The quality of the product is apparent in the design, e.g. a screw down battery compartment where the screw is secured into brass housing and has a retention device to ensure that the screw is not lost.

'Toys' designed/marketed for older children that are outside the age grading scope of the mandatory standard are not required to pass small parts tests or comply with the mandatory requirements, including the requirements relating to secure battery compartments. Many products are manufactured as 'novelties' and often carry a label stating 'this is not a toy'. Such products are not required to meet the above mandatory safety requirements. They are often found in party/show bags, as fundraising items or as promotional products accompanying other purchases.

Perhaps because of the **mandatory standard** for toys for young children, the majority of disc battery exposures in Australia relate to non-toy items. Young children access and ingest batteries that are bought individually or sourced from a wide range of domestic products that are not covered by any standard.