



A Manifesto for Change: Button Battery Ingestion in Children 2024

Button battery ingestion (BBI) is the most harmful type of foreign body ingestion in children¹, with potentially devastating consequences including severe injury and death. BBI cases are an increasing worldwide threat^{2,3} due to the abundance of button batteries in consumer electronics.⁴ The European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) and the European Portable Battery Association (EPBA) call on authorities, healthcare providers and policymakers to drive awareness and understanding of BBI in children and deliver effective prevention strategies to help achieve earlier diagnosis and, ultimately, save young lives.

The Challenge

Severe Consequences

Studies have shown that **12.6%** of children who ingest a button battery larger than 20mm **suffer severe or fatal injuries**⁵.

Worldwide increase in cases

Relative risk of severe injury due to BBI has increased **seven-fold in the last two decades**¹.

Reaching children at their most vulnerable

Over **84%** of BBIs occurred in children under 6 years old². Occurrence peaks at 1 year of age, aligning with the highest risk of complications^{2,6}.

In a recent ESPGHAN survey, 177 practitioners dealt with **1830 cases** in the last 3 years. **28.6%** of cases involved a >20mm button battery and **21 deaths of children** were reported⁷.

Why the Challenge Persists

- 1 Early recognition is critical for effective treatment and management of BBI** due to the extremely narrow 2-hour time window for removal of batteries impacted in the oesophagus⁸.
- 2 Far too few people are aware of the severe consequences of BBI.**

US and Europe Legislation



March 2024 - Reese's Law⁹

Requires the Consumer Product Safety Commission to establish product safety standards for button cell / coin batteries

Consumer products with these batteries must include:

- 1** A warning label to keep the batteries out of the reach of children
- 2** A battery compartment that prevents access to the batteries by children ≤6

Additionally, such batteries, if sold separately or included separately with a product, must comply with federal child-resistant packaging regulations.



Limited existing regulations. Only toys are currently required to have durable, secure battery compartments.



A study by Lahmar *et al.* calculated that just by securing the battery compartments on devices, 69% of BBI cases could have been prevented¹⁰. The US has taken steps forward through regulations, and ESPGHAN and EPBA call for Europe to do the same.

Resolving the Challenge: Our Calls to Policymakers

Action on BBI is urgently required and ESPGHAN and EPBA present 5 calls to action for public authorities, policymakers and healthcare providers to reduce the impact of BBI and ensure we protect future generations from this unnecessary burden:



1 IMPROVE SAFETY REGULATIONS AND ENFORCEMENT OF APPLICABLE RULES

Develop regulation that mandates child-resistant button battery packaging alongside durable and secure battery compartments for products powered by button batteries and ensure effective enforcement of applicable rules. Europe need to develop new specific legislation for industry, following the progress seen with Reese's Law implementation in U.S. in March 2024



2 IMPROVE UNDERSTANDING AND AWARENESS AT EUROPEAN AND NATIONAL LEVEL

Collaborate with key stakeholders like ESPGHAN and EPBA to conduct an ongoing active education and awareness campaign:¹¹

A To warn the public about the dangers of button batteries to children, providing practical mitigation measures and highlighting the importance of seeking early medical attention in case of suspected ingestion

B To improve early diagnosis and management of button battery ingestion amongst medical professionals by giving more attention to this subject in medical schools and relevant post-graduate paediatric training



3 IMPROVE DISPOSAL MECHANISMS AND INFORM CONSUMERS OF THEIR EXISTENCE

Enhance the implementation of pan-European battery disposal systems by better informing the public on the available collection points for all handheld batteries, including the provision of practical advice about household storage and transport of handheld batteries to disposal centres¹² and about the dangers related to wrong household storage and spare batteries



4 IMPROVE DATA COLLECTION

Drive all health authorities of European nations to co-ordinate and develop a harmonised reporting system for battery related exposures and injuries¹³



5 CONSIDER SAFETY INNOVATIONS

A novel child resistant circular packaging solution that dispenses new batteries by capturing the spent battery (e.g Battguard)¹⁴ and initiatives to develop a safer button battery with an inbuilt fuse to stop current flow in the event of ingestion, eliminating the need for time critical management (Universities of Delft and Groningen in the Netherlands)¹⁵.

#ButtonBatteryAwareness

About ESPGHAN

The European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) is a multi-professional organisation whose aim is to promote the health of children with special attention to the gastrointestinal tract, liver and nutritional status, through knowledge creation, the dissemination of science based information, the promotion of best practice in the delivery of care and the provision of high quality education for paediatric gastroenterology, hepatology and nutrition professionals in Europe and beyond.

ESPGHAN's available BBI resources include: Button Battery Position Paper, e-Learning course, Awareness campaigns. For more information visit: www.espghan.org

About EPBA

The European Portable Battery Association (EPBA) is the leading organisation representing the interests of primary and rechargeable portable battery manufacturers, those industries using portable batteries in their products and distributors of portable batteries active within the European Union, and beyond. For more information visit: www.epbaeurope.net

This policy document has been produced by the ESPGHAN Public Affairs Committee, in collaboration with members of the ESPGHAN Gastroenterology Committee and the European Portable Battery Association (EPBA).

References

1. Eliason M, et al. Button battery ingestion in children. *Current Opinion in Otolaryngology & Head & Neck Surgery*. 2017;25(6):520-526
2. Chandler D, et al. Pediatric Battery-Related Emergency Department Visits in the United States: 2010-2019. *Pediatrics*. 2022;150(3):e2022056709
3. Jatana K, et al. Pediatric button battery injuries: 2013 task force update. *International Journal of Pediatric Otorhinolaryngology*. 2013;77(9):1392-1399
4. Child Accident Prevention Trust. Button Batteries. Available at: <https://www.capt.org.uk/button-batteries-where-are-they> (Accessed: May 2022)
5. Litovitz T, et al. 1992 Annual report of the American Association of Poison Control Centers Toxic Exposure Surveillance System. *The American Journal of Emergency Medicine*. 1993;1(5):494-555
6. Varga Á, et al. Analysis of Complications After Button Battery Ingestion in Children. *Pediatric Emergency Care*. 2018;34(6):443-446
7. Almheiri M, et al. ESPGHAN Button Battery Ingestion Taskforce Survey Across Europe And Beyond – Iceberg Below The Surface. *ueg week*. 2024.
8. Mubarak A, et al. Diagnosis, Management, and Prevention of Button Battery Ingestion in Childhood: A European Society for Paediatric Gastroenterology Hepatology and Nutrition Position Paper. *J Pediatr Gastroenterol Nutr*. 2021;73(1):129-136
9. Consumer Product Safety Commission. Safety Standard for Button Cell or Coin Batteries and Consumer Products Containing Such Batteries. *U.S. Federal Register*. 2023;88(182):65296 – 65304
10. Lahmar J, et al. Esophageal lesions following button-battery ingestion in children: analysis of causes and proposals for preventive measures. *European annals of otorhinolaryngology, head and neck diseases*. 2018;135(2):91-94.
11. ESPGHAN has produced two advice guides for clinicians and the public respectively, which can be accessed here: <https://espghan.info/advice-guides/index.php>
12. Australia's official battery recycling scheme, B-cycle, have published a video for the public on how to store button batteries more safely: <https://www.youtube.com/watch?v=B6XHnSBCyn4>
13. The ESPGHAN Endoscopy Special Interest Group has launched a pan-European survey on BBI in children: <https://www.surveymonkey.com/r/6PC39JC>
14. Gideon J. Government must act to ban button batteries. *Comment Central*. Available at: <https://commentcentral.co.uk/government-must-act-to-ban-button-batteries> (Accessed October 2024)
15. UMCG Research. Doctors push for child-friendly button cell battery. Available at: <https://umcgresearch.org/w/doctors-push-for-child-friendly-button-cell-battery%C2%A0> (Accessed: October 2024)