

BUTTON BATTERY INGESTION, INHALATION OR INSERTION

Abstract

Button batteries are used to power many household devices, including toys and novelty greeting cards. They are small and round in shape, often the size of a small coin. If a button battery were to be accidentally swallowed or inhaled by a child and became lodged in the food or wind pipe it can cause very serious injury potentially leading to severe disability or even death.

In the United Kingdom, there have been many case reports and also media attention surrounding the damage that button batteries can cause to children who have either accidentally swallowed (ingested) or breathed in (inhaled) them. The purpose of this study is to establish the number of children who require a hospital admission with medical intervention in the UK and Ireland after swallowing or inhaling a button battery accidentally, over the period of one calendar year.

We will look at what happens to these children and see how many suffered serious injury and determine the nature of these injuries.

It is felt that children aged 1-3 years are particularly at risk because of their increasing independence, mobility, and curiosity. The tendency for these young children to investigate their environment with their hands and mouths puts them at particular risk and in this age group they are at danger from aspiration from various foods such as grapes, raisins, nuts, seeds, as well as any object less than 1.5 cm in diameter.¹

If a child has accidentally ingested or inhaled a button battery then their presentation to a healthcare professional may vary upon whether the event has been witnessed or not. Even if witnessed, there remains a lack of understanding in parents and medical personnel alike as to the emergency nature of such an event.²

In this study, we will describe the number of new cases (incidence) needing hospital admission and intervention. We will look at contributing reasons (factors), and outcomes of children who require an admission to hospital after a button battery ingestion or inhalation within our defined population, and use the data to inform prevention campaigns, policy change, and clinical care.

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Website

www.rcpch.ac.uk/bpsu/button-battery-ingestion

Coverage

England, Northern Ireland, Wales and Republic of Ireland (Excluding Scotland)

Duration

February 2021 to February 2022 (13-months of surveillance).

Research Questions	<ol style="list-style-type: none"> 1. To estimate the minimum incidence of button battery ingestion or aspiration leading to hospital admission in the childhood population of the England, Northern Ireland, Wales and the Republic of Ireland 2. To estimate the minimum incidence of complications resulting from the accidental ingestion or aspiration of a button battery. 3. To describe the outcomes and management of these children and to establish risk factors which to which may predispose children to harm
Case definition	Any presentation of any child under the age of 16 years who has ingested or aspirated a button battery of any description requiring hospital admission including those that were admitted for only observation (excluding Scotland).
Reporting instructions	Please report any child under 16 years of age who has a suspected or confirmed ingestion or inhalation of a button battery who has gone on to require admission, including those that were admitted for only observation (excluding Scotland).
Methods	<p>Each paediatrician reporting a child who meets the above case definition of button battery ingestion, insertion or inhalation will be sent a clinical questionnaire by the study team.</p> <p>Throughout the study, all patient data will be dealt with in strict confidence, and the families of affected children will not be contacted directly.</p>
Ethics approval	Yorkshire & The Humber - Bradford Leeds Research Ethics Committee (reference: 18/YH/0449); HRA Confidentiality Advisory Group (reference: 19/CAG/0019).
Support group	Child Accident Prevention Trust (https://www.capt.org.uk). Royal Society for the Prevention of Accidents (https://www.rospa.com)
Funding	The study is funded through the Sir Peter Tizard Research Bursary.
References	<ol style="list-style-type: none"> 1. Litovitz et al Preventing Battery Ingestions: An Analysis of 8648 Cases. <i>Pediatrics</i> 2010;125;1178 2. Thompson et al The hazards of button battery ingestion. <i>Archives of Disease in Childhood</i> 2015; 100 1049-1050