



Office for Product
Safety & Standards

OPSS guidance for Local Authority Trading Standards on risk assessing products that contain button and coin batteries

February 2023



Office for Product Safety & Standards

Contents

Introduction	3
Consumers at risk	4
Injury data	4
The products	5
Regulatory frameworks and standards	10
The harms	11
Example risk assessment findings	13
Appendix I – NEISS Injury Data	16

Introduction

Following the OPSS button battery safety campaign, this document provides further information on the hazards of button and coin batteries and their use in products and provides specific risk assessment guidance for local authority trading standards services.

This document should be read alongside the OPSS Product Safety Risk Assessment Methodology (PRISM) guidance in relation to performing product safety risk assessments which can be found here: [PRISM guidance](#).

Button and coin batteries can be very harmful if swallowed, with the potential for choking and chemical burns following ingestion. The resultant injuries can be severe and, in some cases, fatal. These batteries can be found in many household products including, but not limited to:

- Light up clothing and footwear
- Keys & key fobs
- Remote controls
- Children's toys, games & talking books
- Hand-held computer games
- Watches
- Calculators
- Tools
- Torches, laser pens & laser pet toys
- Candles, tealights & nightlights
- Kitchen & bathroom weighing scales
- Musical greeting cards
- Hearing aids (for adults and children)

Note: hearing aids are medical devices so are outside the scope of this guidance and are not considered further.

The small size, shape and appearance of the batteries mean they can be mouthed and swallowed by children if they have access to them.

The toy safety standard BS EN 62115 defines button and coin batteries as follows:

Button Battery: *“small round battery where the overall height is less than the diameter and having an electrochemical system that does not contain lithium”*

Coin Battery: *“small round battery where the overall height is less than the diameter and having an electrochemical system that contains lithium”*.

Sizes:

Lithium battery sizes can be determined from their reference number. The first two numbers refer to the diameter of the battery and the second two numbers refer to the thickness. A CR2032 is 20mm in diameter and 3.2mm thick.

The size of other small batteries can also be identified from their reference number, so in the case of an L1154 the first two numbers refer to the “range” of the diameter of the battery, in this case “11” refers to 11.6mm, and the second two numbers refer to the thickness, in this case 5.4mm.

Example coin cell batteries (shown with a coin to indicate scale):



Image courtesy of the Child Accident Prevention Trust

Consumers at risk

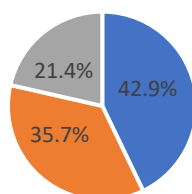
According to the UK NHS¹ the risk affects all age groups, but most cases involve children under 6 years of age who mistake the battery for a sweet and older people with confusion or poor vision who mistake the battery for a pill. Older children and adults may also ingest batteries to self-harm, this is not considered in this guidance.

The Child Accident Prevention Trust², says that at least two children a year have died in the UK because of harm from swallowing button and coin batteries. They go on to state “surgeons at Great Ormond Street Hospital are seeing one child a month with corrosive burns caused by button batteries”.

Injury data

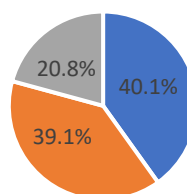
Specific numerical UK injury data relating to button and coin batteries is not readily available other than via the references quoted above. However, numerical injury data is available for the United States via the National Electronic Injury Surveillance System (NEISS)³. See Appendix I for details of specific incidents and summary graphs below showing the percentage of injuries by age group. Note the “over 6” category includes adults.

Injuries by age in 2019



■ <3 years ■ 3 to 6 ■ Over 6

Injuries by age 2020



■ <3 years ■ 3 to 6 ■ Over 6

¹ [NHS Product Safety Alert](#)

² <https://www.capt.org.uk/button-batteries-understanding-the-risks>

³ <https://www.cpsc.gov/Research--Statistics/NEISS-Injury-Data>

The summary charts above, support the UK NHS position that children aged under 6 years are most at risk, with ages 6 years and under accounting for between 78.6% and 79.2% of the total injuries reported in 2019 and 2020.

It was also noted there were several cases in the NEISS data of older people (in this case those people aged 18 and above) ingesting button and coin batteries. Although the cause was not always identified in the data, mistaking the batteries for medication was a common theme further supporting the UK NHS position.

Year	Number of incidents (See Appendix I)	Age or age range
2019	5	43-80
2020	6	20-81

Note: incidents relating to deliberate ingestion, self-harm, intoxication, and other similar reasons have been excluded.

Although most of the injuries reported in the NEISS data do not identify a specific product or cause, it was noted that hearing aids, broken toys, watches, and keys/key fobs were cited on multiple occasions as were unsecured replacement batteries not fitted in products.

In addition, there have been several fatalities associated with button and coin cell batteries reported in the UK.

The products

Due to the range of products that are powered by button and coin cell batteries, they can be found all over the typical home.

Many of these products will be accessible to and/or targeted at children, and some of these will be more child appealing than others.

Toys are designed and intended to be used in play, and children may play with them without adult supervision.

Remote controls and flickering candles may be less obvious in terms of the potential hazards but are both good examples of products that children may find appealing. In the case of remote controls, it is highly likely that children will use them, either to control the product in question (e.g., television) or to mimic the actions of adults they see using them. Flickering candles may also be appealing to children due to their size, design, and 'motion' of the flame affect.

An important consideration when assessing risks from products that use button and coin cell batteries is the likelihood of them being appealing and attractive to children (including appeal from mimicking behaviour), their potential accessibility to children and whether children will be supervised when using them. Some examples are given on the following pages where a "priority level" for regulatory consideration has been assigned to each product type along with an accompanying explanation.

Product	Potentially appealing & attractive to children? ⁴	Readily accessible to children?	Adult supervision likely?	Risk considerations
Torches/laser pens/laser pet toys	Yes	Yes	No	Torches can be appealing to children, and it is likely they will be used without supervision, for example at night in the child's bedroom. Laser pointers can also be appealing to children. There are also laser cat toys available which again could be used for unsupervised play and pet interaction. Battery compartments may not be designed to prevent or minimise access. Priority level: Very high
Candles, tealights & nightlights	Yes	Yes	No	Night lights can be appealing to children. It is likely these products will be used in children's bedrooms, hallways and landings and adults will not always be present. Battery compartments may not be designed to prevent or minimise access. Priority level: Very high
Musical greeting cards	Yes	Yes	No	These are likely to be appealing to children due to their interactive nature (music and/or lights) and decorative/colourful designs. It is not clear how "protected" these batteries are from becoming accessible. Priority level: Very High
Light up clothing/footwear	Yes	Yes	Not always	Light up clothing aimed specifically at children, or which is available in children's sizes is readily available. This clothing usually incorporates LED lighting and a control box located in the fabric. The button or coin cell batteries are housed in the control box which may or not be adequately secured. It is likely that children may be unsupervised when wearing these garments. Light up shoes are also readily available and powered by button or coin cell batteries with similar considerations. Priority level: Very high

⁴ Each product should be evaluated in terms of its child appealing nature on its own merits. It is important not over or underestimate the likelihood that a child will interact with a certain product type. As an example, bathroom scales with child appealing designs are likely to appeal more to children than those without.

Product	Potentially appealing & attractive to children? ⁴	Readily accessible to children?	Adult supervision likely?	Risk considerations
Remote controls	Yes i.e., mimicking behaviours	Yes	Not always	<p>Increasingly household products are operated by remote controls, for example blinds, windows, security systems, and lighting.</p> <p>It is foreseeable that children will use remote controls for their intended use e.g., to control the television – and may even be asked by an adult to undertake an operation that is performed using a remote control.</p> <p>It is also foreseeable that other types of remote control not intended for use by children (e.g., remote control for a kitchen extractor) may also be used by them, e.g., if left within easy reach and accessible or while mimicking adult behaviours.</p> <p>Due to their nature, remote controls using button and coin cell batteries tend to be smaller than other remote controls that use larger batteries. This means they are more likely to be mouthed and have the potential to be mislaid or left where children might find them. There is the potential that children will be unsupervised when using them.</p> <p>Priority level: Very High</p>
Watches	Yes	Yes	No	<p>Button and coin cell batteries are commonly used in watches, including children's watches. Watch backs are generally well secured and it is common to take watches to a specialist for battery replacement. There are videos and self-help guidance available on-line, but it is considered unlikely that this procedure would be routinely attempted by children as tools and a high degree of manual dexterity and determination may be required. However, injury data and other resources⁵ suggests watch batteries are a concern with at least one reported fatality.</p> <p>Priority level: High</p>

⁵ [Australian Competition & Consumer Commission, Button Battery Safety Issues Paper](#)
[Button Battery Ingestion Statistics \(poison.org\)](#)
[Girl, 12, dies after swallowing tiny lithium button battery from watch](#)
[Product Recall: Smiggle Fun Character Slapband Watch \(2203-0129\) - GOV.UK \(www.gov.uk\)](#)

Product	Potentially appealing & attractive to children? ⁴	Readily accessible to children?	Adult supervision likely?	Risk considerations
Children's toys, games & talking books	Yes	Yes	No	<p>Toys are intended to be used in play by children whether they are alone, with friends or siblings, or when they are supervised by adults. The toy safety standard BS EN 62115 has requirements for button batteries including mechanical strength, battery accessibility and labelling to minimise the likelihood of children accessing them from within the toy/s, but non-compliant toys may not provide necessary mitigations. Also see footnote below⁶</p> <p>Priority level: High</p>
Hand-held computer games	Yes	Yes	No	<p>Hand-held computer games are readily available with an increasing trend towards small key fob type designs. These games tend to be marketed towards both adults and children. Many are available as "party packs" which may mean they will be given as gifts at birthday parties and so on, where the presence of button and coin cell batteries may not be readily recognised as instructions, warnings and traceability information could become separated. It was noted that some of the products currently available for sale were described as only being suitable for use by ages 14 and above, but it is clear they would be very appealing for younger children also.</p> <p>Priority level: High</p>
Kitchen/bathroom weighing scales	No	Yes	Not always	<p>Children are likely to use both, e.g., kitchen scales when cooking or baking with a parent/carer or using bathroom scales. Battery compartments may not be designed to prevent or minimise access.</p> <p>Priority level: High</p>

⁶ The NEISS injury data in Appendix I identifies "broken toys" in several of the incidents so it may be assumed that rough handling during use may cause premature product failure potentially weakening the integrity of the battery compartment and aiding access to the batteries (although it should be noted that this data may not be representative of toys complying with BS EN 62115).

Product	Potentially appealing & attractive to children?⁴	Readily accessible to children?	Adult supervision likely?	Risk considerations
Calculators	Possibly	Yes	No	Calculators tend to be powered by AAA batteries or button/coin cell batteries. They are unlikely to be directly child appealing although young children may use them for play when mimicking adult or sibling behaviour. It is also likely that children aged 5 and over may use calculators in their learning. Priority level: Medium to high
Keys & key fobs	Yes i.e., mimicking behaviours	Potentially yes (depending on where they are stored)	Possibly	Car keys and key fobs are likely to appeal to children who are trying to mimic adult behaviour. There are also key fob “toys” available which may encourage children to play with real key fobs on the basis that they look alike, and children may not be able to readily differentiate. It is also possible that key fobs will be left unattended and within easy reach of children. However, it is expected that the battery compartments will generally be well secured. Priority level: Medium
Tools	No	No	Yes	Button and coin cell batteries are common on certain tools, e.g., measuring tools and for laser guides on power tools. It is reasonable to expect that access to such tools is restricted and where access is given to children they will likely be accompanied. Priority level: Low

Notes:

1. The above table is not an exhaustive list and is intended to cover a range of product examples which pose the lowest to highest priority in terms of product type and describes the considerations with each.
2. The “priority levels” above are based on the child appealing potential of the product type, whether the product is reasonably expected to be readily accessible to children, whether adult supervision is likely, and additional considerations as described in the “*risk consideration*” column.

Regulatory frameworks and standards

Because of the breadth of products using these batteries there are several different regulatory frameworks and safety standards that may apply, examples are summarised below:

Regulatory Framework	Product types that may be covered
General Product Safety Regulations 2005	Keys & key fobs Remote controls Hand-held computer games Watches Calculators Torches, laser pens, laser pet toys Candles, tealights & nightlights Kitchen/bathroom weighing scales Musical greetings cards Light up clothing/footwear
Radio Equipment Regulations 2017	Key fobs and remote controls Kitchen/bathroom weighing scales
Supply of Machinery (Safety) Regulations 2008	Tools
The Toys (Safety) Regulations 2011	Children's toys, games & talking books Hand-held computer games

Note: the above categorisation is intended to be indicative only. Applicability of specific regulatory frameworks will depend on each product, its features, functionality and intended use.

Standards and specifications that could be applicable:		
Standard	Title	Comments
BS EN 62368-1	<i>Audio/Video, Information and Communications Technology Equipment – Safety Requirements</i>	-
BS EN 62115	<i>Electric Toys – Safety</i>	-
BS EN 60335 series	<i>Household and similar electrical appliances</i>	-
PAS 7055	<i>Button and Coin Batteries</i>	Considered “good practice” and can be used to demonstrate compliance with the General Product Safety Regulations in the absence of a suitable Designated Standard.

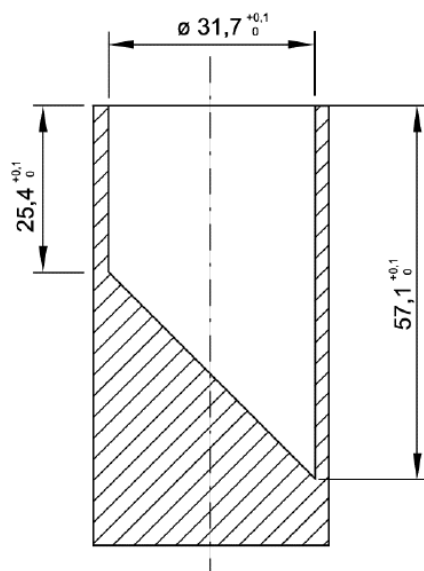
Note: the above standards and specifications are intended as examples only and failure to follow a standard(s) or specification(s) is not automatically a breach of the regulations.

The harms

There are two potential harms which are described below.

1. Choking

Small batteries can present a choking hazard if they fit completely within the small parts cylinder as defined in clause 8.2 of BS EN 71-1:2014+A1:2018 (as referenced by BS EN 62115), see illustration below:



Many, if not all button and coin cell batteries will fit wholly within the cylinder and therefore present a potential choking hazard. This risk is well understood and not explored further in this guidance.

2. Chemical burns

It is generally considered that coin cells present the greatest risk of chemical burns, primarily because of their larger diameter meaning they are most likely to get stuck in the oesophagus (and possibly because of their higher voltage (3V)). This is supported by a study detailed in an article titled “*Foreign Body Ingestion in Children: Should Button Batteries in the Stomach Be Urgently Removed?*” published in the National Library of Medicine in 2016⁷. The article studied twelve cases of coin and button cell ingestion in children. Of the twelve cases, seven involved button cell batteries (LR44 or LR57 with diameters of 0.95cm and 1.16cm) with six cases reporting no complications and only one case reporting a moderate complication. This contrasts with the remaining five cases which all involved coin cells (CR1616, CR1620, CR2032 with diameters between 1.6cm and 2.0cm) with three reporting moderate complications and two reporting major complications.

An article by Dr Neil Long⁸, an emergency physician at Burnaby Hospital in Vancouver explains the mechanism of injury. When swallowed the battery generates hydroxide ions at the negative terminal of the battery. This produces an alkaline corrosive injury with tissue liquefaction and necrosis which can occur within 2 hours of the battery becoming lodged. Injury severity depends on battery size, electrical current and the length time it is lodged in the body.

Complications include:

⁷ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4821979/>

⁸ <https://litfl.com/button-battery-update/>

- ***Oesophageal perforation***
(hole in the oesophagus)
- ***Tracheal-oesophageal fistula***
(connection between lower part of oesophagus and windpipe)
- ***Aorta-oesophageal fistula and stricture formation***
(abnormal communication between oesophagus and aorta and constriction formation)

These are all serious conditions and, in some cases, can be fatal if untreated.

Example risk assessment findings

SCENARIO #1: CHEMICAL BURNS

Child appealing LED cushion, unsecured battery compartment, containing button/coin cell batteries

Injury Step	Probability	Notes
Child unsupervised in presence of accessible cushion	9/10 (0.9)	High chance as product is a cushion which is highly likely to be used without adult supervision.
Child identifies unsecured battery compartment and gains access to the batteries	1/10 (0.1)	Likely to occur as cushion is “child appealing”, has some “play value” and because of the natural inquisitiveness of young children. Note: This will be a function of the ease of access so the probability will likely be a range and vary as a result.
Child mouths the batteries	3/10 (0.3)	Highly likely especially with children under 36 months because of the mouthing behaviour (and potentially because of the similarity of these batteries to sweets). Notes: The probability will likely be a range and vary as a result. In the case of children under 36 months, consideration has been given to the fact that the batteries may have been removed by an older child with a greater degree of manual dexterity.
Batteries ingested	5/10 (0.5)	Based on half of the batteries mouthed being ingested.
Batteries ingested causing chemical burns	1/10 (0.1)	Likely to occur following mouthing. The stated probability is intended to take into consideration that some button and coin cell batteries could pass through the system without a level 4 injury outcome. Note: coin cell batteries are more likely to cause injury or require significant medical intervention and therefore this probability will likely be a range and vary as a result.

SERIOUS RISK OUTCOME based on a level 4 injury (*Permanent damage to internal organ*).

(see notes above regarding ranges of probability which may affect the overall risk label)

SCENARIO #2: CHEMICAL BURNS

Tool, unsecured battery compartment, containing button/coin cell batteries

Injury Step	Probability	Notes
Child unsupervised in presence of accessible tool	1/100 (0.01)	Considered unusual but possible as young children should not have unaccompanied access to such tools.
Child identifies unsecured battery compartment and gains access to the batteries	1/50 (0.02)	Such tools are not generally likely to be appealing to young children unless to mimic adult behaviour. However, button and coin cell batteries are often used for lasers (on power tools) which children may find appealing. Note: This will be a function of the ease of access so the probability will likely be a range and vary as a result.
Child mouths the batteries	3/10 (0.3)	Highly likely especially with children under 36 months because of the mouthing behaviour and the similarity of these batteries to sweets. Note: An extra injury step may be needed for children <36 months to get access to/be given the battery.
Batteries ingested	5/10 (0.5)	Based on half of the batteries mouthed being ingested.
Batteries ingested causing chemical burns	1/10 (0.1)	Likely to occur following mouthing. The stated probability is intended to take into consideration that some button and coin cell batteries could pass through the system without a level 4 injury outcome. Note: Coin cell batteries are more likely to cause injury or require significant medical intervention and therefore this probability will likely be a range and vary as a result.

MEDIUM RISK OUTCOME based on a level 4 injury (*Permanent damage to internal organ*).
(see notes above regarding ranges of probability which may affect the overall risk label)

SCENARIO #3: CHEMICAL BURNS

Remote control, unsecured battery compartment, containing button/coin cell batteries

Injury Step	Probability	Notes
Child unsupervised in presence of accessible remote control	9/10 (0.9)	High chance as product is likely to be used without adult supervision.
Child identifies unsecured battery compartment and gains access to the batteries	1/10 (0.1)	Likely to occur as remote controls will be handled and operated by young children because of their function and because of their natural inquisitiveness. It is also likely that remote controls may be subject to rough handling which might aid access. Note: This will be a function of the ease of access so the probability will likely be a range and vary as a result.
Child mouths the batteries	3/10 (0.3)	Highly likely especially with children under 36 months because of the mouthing behaviour and the similarity of these batteries to sweets. Note: The probability will likely be a range and vary as a result. In the case of children under 36 months, consideration has been given to the fact that the batteries may have been removed by an older child with a greater degree of manual dexterity.
Batteries ingested	5/10 (0.5)	Based on half of the batteries mouthed being ingested.
Batteries ingested causing chemical burns	1/10 (0.1)	Likely to occur following mouthing. The stated probability is intended to take into consideration that some button and coin cell batteries could pass through the system without a level 4 injury outcome. Note: Coin cell batteries are more likely to cause injury or require significant medical intervention and therefore this probability will likely be a range and vary as a result.

SERIOUS RISK OUTCOME based on a level 4 injury (*Permanent damage to internal organ*).

(see notes above regarding ranges of probability which may affect the overall risk label)

Appendix I – NEISS Injury Data

Note: the injury data summarised below has been sanitised to remove:

- Entries relevant to batteries other than button or coin cells
- Entries relevant to self-harm incidents
- Entries relevant to intoxication and similar
- Entries relevant to deliberate misuse

The summary below includes all cases (sanitised as above), it does not include details of the outcome of the harm.

2019 – Incidents in ages < 3 years			
Age	Incident	Age	Incident
18 months	Swallowed small watch battery	2 years	Swallowed button battery
2 years	Ingested/swallowed battery	18 months	Playing with key fob and ingested button battery
2 years	Swallowed button batteries from laser light	2 years	Ingestion of 2 button batteries
21 months	Ingested/swallowed button battery from brother's hearing aid	22 months	Playing with broken toy, mom couldn't find button batteries, x-ray showed 2
21 months	Swallowed battery	8 months	Swallowed button battery
21 months	Playing with button battery at home, put in mouth and swallowed it	16 months	Ingestion of button battery from digital thermometer
14 months	Swallowed button battery	19 months	Swallowed watch batteries
2 years	Ingested/swallowed battery	2 years	Playing with watch, got the back off and swallowed button battery
12 months	Swallowed battery	18 months	Swallowed button battery from toy
21 months	Swallowed small laser pointer battery	22 months	Swallowed battery from hearing aid
14 months	Swallowed button battery	12 months	Playing with magnetic timer, back came off and she ingested button battery
2 years	Swallowed button battery	10 months	Got hold of tv remote, swallowed button battery
2 years	Swallowed button battery	12 months	Swallowed small hearing aid battery
23 months	Got into brother's toy box and swallowed button battery	2 years	Swallowed button battery from flashlight on kitchen counter
2 years	Told parent she swallowed button battery	2 years	Ingested button battery while playing with thermometer
13 months	Swallowed small button round battery	14 months	Ingested button battery
2 years	Swallowed button battery	19 months	Swallowed button battery
22 months	Swallowed button battery	17 months	Swallowed button battery
12 months	Swallowed disc battery	2 years	Swallowed button battery
18 months	Swallowed small watch battery	2 years	Found with flashlight, when asked about missing battery pointed to her mouth
14 months	Swallowed button battery	19 months	Swallowed battery from hearing aid
2 years	Swallowed button battery	23 months	Swallowed button battery
2 years	Swallowed button battery	2 years	Swallowed button battery
2 years	Swallowed small button battery	13 months	Swallowed button battery from hearing aid
23 months	Swallowed hearing aid battery	13 months	Ingestion of button battery
2 years	Swallowed button battery	2 years	Swallowed button battery
20 months	Swallowed battery	2 years	Found empty button battery package, admitted to swallowing the battery
2 years	Ingested watch battery	2 years	Parents noticed him choking and older child said "he ate the battery"
2 years	Witnessed swallowing button battery	17 months	Swallowed hearing aid battery
11 months	Ingested button battery	9 months	Swallowed button battery

2019 – Incidents in ages 3 to 6 years			
Age	Incident	Age	Incident
5 years	Swallowed nickel sized button battery from toy	3 years	Swallowed button battery, x-ray shows in stomach
6 years	Swallowed button battery	5 years	Swallowed battery from toy while playing at home
4 years	Told mother he swallowed a battery (small lithium button battery)	4 years	Playing in room and ingested button battery
3 years	Told mom he swallowed battery	3 years	Abdominal pain after swallowing button battery
4 years	Ingested/swallowed battery	3 years	Swallowed button battery
4 years	Swallowed button battery	5 years	Father saw patient take button battery from remote and swallow it
3 years	Swallowed button battery	4 years	Patient swallowed something; x-ray shows button battery
5 years	Swallowed tiny battery from flashlight	5 years	Swallowed button battery
4 years	Ingested hearing aid battery	4 years	Swallowed button battery
5 years	Swallowed battery belonging to remote control	4 years	Swallowed battery
3 years	Ingested/swallowed battery from remote control toy vehicle	5 years	Swallowed battery
6 years	Playing with friend at home and swallowed button battery	3 years	Told dad he swallowed a battery
4 years	Swallowed small button battery	6 years	Ingested button battery
3 years	Swallowed button battery	3 years	Swallowed button battery
5 years	Swallowed button battery	3 years	Swallowed button battery, x-ray shows it in stomach
5 years	Swallowed button battery	6 years	Swallowed button battery
5 years	Swallowed circle alkaline battery	3 years	Injured after swallowing button battery at home
4 years	Swallowed button battery from toy	3 years	Swallowed watch battery
3 years	Swallowed lithium button battery	4 years	Ingested button battery from small toy radio
3 years	Ingested small battery	3 years	Swallowed 2 button batteries from toy; x-ray showed in abdomen
4 years	Ingested button battery	4 years	Toy broke, patient ingested button battery
3 years	Playing with toy, opened the back and swallowed the little battery	6 years	Grabbed battery off floor, put in mouth, swallowed button battery
5 years	Swallowed button battery	3 years	Swallowed button battery
3 years	Swallowed watch battery	4 years	Playing with toys and told mom he had eaten battery
4 years	Swallowed small circular battery	5 years	Swallowed lithium battery

2019 – Incidents in ages > 6 years			
Age	Incident	Age	Incident
80 years	Swallowed hearing aid batteries after mistook for pills	12 years	Swallowed button battery
77 years	Swallowed battery from hearing aid while at nursing home	68 years	Woke up, grabbed hearing aid battery instead of a pill and took it
7 years	Found button batteries on couch and accidentally swallowed 2	8 years	Ingested button battery
10 years	Ingested disc battery	7 years	Swallowed hearing aid battery
16 years	Had button battery between her teeth and swallowed it	8 years	Playing with cup, penny, and button battery; swallowed both
11 years	Accidentally swallowed flat round watch battery, trying to open with teeth	7 years	Swallowed button battery
8 years	Swallowed button battery	7 years	Biting on hearing aid, battery popped out, patient swallowed it
16 years	Ingestion of button battery	13 years	Took calculator apart, put button battery in mouth, swallowed it
10 years	Swallowed button battery	9 years	Swallowed button battery
14 years	Ingested button battery from flashlight	11 years	Juggling and button battery and fell in her mouth
68 years	Accidentally swallowed battery from hearing aid	9 years	Mother states child told her found button battery under pillow, swallowed it
43 years	Accidental ingestion of button battery from hearing aid	12 years	Playing with six round batteries, swallowed them all
8 years	Found by father chewing on calculator & noticed battery was missing	8 years	Swallowed watch battery
16 years	Swallowed balloon with button battery in it	10 years	Swallowed button battery
10 years	Playing with button battery from flashlight and accidentally swallowed it	8 years	Playing with button batteries laying down in bed, accidentally swallowed

2020 – Incidents in ages < 3 years			
Age	Incident	Age	Incident
22 months	Swallowed three lithium button batteries	2 years	Swallowed button battery
13 months	Swallowed button battery	14 months	Ingested disc battery
18 months	Swallowed button battery	18 months	Swallowed button battery
19 months	Playing with toy, father noticed button batteries missing; x-ray shows 2	2 years	Ingestion of button battery at home
21 months	Swallowed button battery	15 months	Swallowed button battery from toy
2 years	Ingestion of button battery	15 months	Swallowed button battery
2 years	Swallowed small button battery	13 months	Swallowed battery
2 years	Swallowed button battery	15 months	Mom states he swallowed battery from tv remote
22 months	Swallowed button battery	15 months	Swallowed button battery
2 years	Ingested button battery	20 months	Swallowed button battery
14 months	Swallowed button battery	16 months	Swallowed 2 button batteries when chewing on back of toy
17 months	Swallowed circular battery	12 months	Swallowed button battery
10 months	Brother told parents patient ingested button battery from toy	12 months	Swallowed button battery
18 months	Swallowed small round lithium battery with markings LR44	13 months	Ingested button battery
2 years	Playing with car key fob, dislodged the button battery, swallowed it	2 years	Playing with flashlight, took out 22mm button batteries, swallowed them
11 months	Playing with remote control, ingested the button battery	2 years	Swallowed hearing aid battery
16 months	Swallowed watch battery	2 years	Swallowed watch battery
20 months	Ingested button battery	9 months	Ingestion of button battery
2 years	Ate small round flashlight battery	2 years	Swallowed watch battery
17 months	Ingestion of button battery	17 months	Swallowed button battery from watch
20 months	Swallowed button battery	2 years	Ingestion of button battery
9 months	Swallowed button battery	12 months	Button battery in upper thoracic oesophagus
14 months	Swallowed battery	14 months	Swallowed button battery
14 months	Accidental ingestion of button battery	15 months	Swallowed button battery
2 years	Mom saw patient hold small button battery to mouth and swallow it	16 months	Swallowed button battery
2 years	Swallowed hearing aid battery	20 months	X-ray to stomach discovered button battery
18 months	Found with open lighted make-up container, had 1 button battery in mouth	10 months	Swallowed button battery
14 months	Swallowed battery from remote	2 years	Swallowed button battery
12 months	Ingestion of button battery	15 months	Swallowed hearing aid batteries
2 years	Swallowed button battery from guitar tuner	2 years	Swallowed button battery
14 months	Swallowed button battery from flashlight	18 months	Swallowed button battery
21 months	Swallowed button battery from thermometer	2 years	Swallowed button battery
17 months	Swallowed button battery from window security sensor at friends' home	2 years	Swallowed button battery
2 years	Found disc battery on shelf and swallowed it	15 months	Playing with button batteries and mom states he swallowed one
2 years	Swallowed two watch batteries	18 months	Swallowed small button battery
7 months	Found round button battery in oesophagus	2 years	Put button battery in mouth, swallowed it
15 months	Swallowed button battery from thermometer	15 months	Swallowed button battery

2020 – Incidents in ages < 3 years, continued...			
Age	Incident	Age	Incident
20 months	Ingesting button battery	18 months	Ingested button battery
2 years	Ingested button battery	14 months	X-ray shows patient ingested button battery
2 years	Swallowed button battery while at home	13 months	Swallowed button battery
2 years	Accidental ingestion of button battery	2 years	Button battery seen in oesophagus
2 years	Swallowed button battery from Christmas ornament		

2020 – Incidents in ages 3 to 6 years			
Age	Incident	Age	Incident
5 years	Swallowed small disc battery	6 years	Swallowed watch battery
5 years	Swallowed battery from toy doll	4 years	Swallowed 2 tiny batteries
3 years	Swallowed button battery	5 years	Swallowed button battery
3 years	Swallowing button batteries	3 years	Swallowed button battery
4 years	Swallowed button battery	3 years	Ingestion of watch/toy battery
3 years	Ingested button battery	6 years	Has lithium coin battery in oesophagus
3 years	Swallowed button battery	3 years	Swallowed button battery
3 years	Swallowed button battery	3 years	Ingested two button batteries from dinosaur toy
3 years	Swallowing lithium battery	3 years	Swallowed button battery from thermometer
3 years	Swallowed button battery	6 years	Swallowed anywhere from 1-5 small round batteries
4 years	Swallowed button battery	3 years	Swallowing circle battery
6 years	Accidentally ingested button battery	4 years	Swallowed small button battery
3 years	Swallowed button battery	4 years	Swallowed button battery
4 years	At home when swallowed button battery from toy	3 years	Brother took apart book containing 3 watch batteries & swallowed one
6 years	Ingestion of button battery	3 years	Mother was changing button battery, patient said it was in his stomach
4 years	Swallowed button battery	3 years	Choked on and swallowed button battery
6 years	Eating from mom's purse, saw watch battery and swallowed it	4 years	Swallowed button battery
6 years	Swallowing hearing aid battery	4 years	Swallowed small round battery from toy
4 years	Swallowed button battery	4 years	Swallowed button battery
6 years	Taking apart laser pointer, swallowed the battery	3 years	Told mom she swallowed button battery from mini flashlight
3 years	Swallowed button battery	5 years	Swallowed button battery
5 years	Playing with button battery from key remote, swallowed it	3 years	Swallowed 3 button type batteries
3 years	Swallowed button type battery	3 years	Mom says patient swallowed button battery; sibling alerted mom
5 years	Ingestion of button battery at home	5 years	Swallowed coin battery from one of mother's gadgets for camera
4 years	Swallowed button battery	4 years	Swallowing button battery
4 years	Swallowed button battery from window security sensor	6 years	Swallowed button battery
3 years	Swallowed button battery	6 years	Swallowed button battery
3 years	Swallowed hearing aid battery	4 years	Swallowed button battery
5 years	Button battery ingestion, seen in stomach on x-ray	5 years	Swallowed button battery
4 years	Swallowed button battery that came out of toy	3 years	Playing with button batteries, swallowed one
4 years	Ate battery (small circular) from home temperature monitor	3 years	Swallowed watch battery at home
3 years	Swallowed button battery	4 years	Playing with Halloween toy & noticed battery missing. X-ray shows in stomach
5 years	Swallowed button battery from one of brother's toys	4 years	Told dad he swallowed button battery
3 years	Swallowed 2 button batteries from headlamp	4 years	Swallowed watch battery
6 years	Swallowed button battery at home	5 years	Swallowed small button battery from toy that the dog had ripped up
4 years	Swallowed small button battery, type LR44	5 years	Swallowed button battery
4 years	Playing with hearing aid, battery came out, patient swallowed it	5 years	Swallowed round flat battery

2020 – Incidents in ages 3 to 6 years, continued...			
Age	Incident	Age	Incident
4 years	Ingestion of button battery	6 years	Swallowed button battery that dad had thrown away
3 years	Swallowed button battery	4 years	Swallowed button battery
3 years	Ingestion of button battery	4 years	Swallowing 2 round batteries from led light laser pointer
4 years	Swallowed watch battery		

2020 – Incidents in ages > 6 years			
Age	Incident	Age	Incident
8 years	Swallowed button battery	71 years	Accidentally swallowed hearing aid battery
8 years	At school and swallowed battery	9 years	Swallowed hearing aid battery
7 years	Swallowing small button battery	10 years	Injured after swallowing button battery at home
7 years	Swallowed watch battery	15 years	Swallowing watch battery
7 years	Swallowed 3 small circular batteries from ball toy	9 years	Playing with 3 button batteries, put in mouth, accidentally swallowed one
8 years	Swallowing button battery	17 years	Swallowing button battery for a hearing aid
10 years	Swallowed small button battery	7 years	Swallowed small round battery
9 years	Swallowed small circular battery	12 years	Swallowed battery
14 years	Ingestion of button battery	9 years	Swallowed button battery while at home
20 years	Swallowed button battery	14 years	Ingested button battery
9 years	Swallowed button battery	8 years	Bored, put button battery from laser pointer in mouth, swallowed it
16 years	Swallowed button battery	13 years	Swallowed button battery
16 years	Swallowed button battery	14 years	Swallowed button battery
7 years	Swallowed battery from watch	7 years	Swallowed button battery
9 years	Ingestion of button battery from glucometer	7 years	Swallowed button battery
8 years	Swallowed button battery from window alarm	15 years	Swallowed lithium button battery
59 years	Accidentally swallowed button battery	81 years	Taking medications. accidentally swallowed hearing aid battery
14 years	Ingested watch battery	13 years	Swallowed button battery
9 years	Swallowed button battery from mom's key chain flashlight	70 years	Accidently ingested hearing aid batteries
13 years	Chewing on plastic watch, swallowed button battery	10 years	Accidentally swallowed button battery found on counter
14 years	Accidentally swallowed button battery after playing with it	11 years	Swallowed button battery
59 years	Button battery was laying close to pills, accidentally ingested it		