



# Batteries swallowed by young children

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There was a total of 303 cases in the Injury Surveillance Information System (ISIS) in which a child, aged 0-9 years, swallowed a battery.

## About ISIS:

ISIS is a national collection of hospital emergency department attendance records. Over 50 hospitals and other medical centres have provided data to the collection over the period 1986-1994. It should be stressed however that the ISIS collection does not provide a comprehensive coverage of all injuries presenting to hospitals in Australia. Nonetheless, the collection is large (over 700,000 records) and can provide a good description of the circumstances leading to specific types of injury, as well as identify less common injury occurrences. Information about injury circumstances is usually self-reported by the injured person. Additional clinical information is provided by the treating medical staff.

More information on the ISIS coding system is available [here](#).

## Disclaimer

This is a brief analysis written in response to a specific question from one of the Centre's clients. It uses available data and should not be viewed as a detailed piece of research. The Centre releases this information in the interests of ensuring that work done for one client can inform others. The report must not be quoted or cited without written permission from the Centre.

Cases were selected using the following criteria: all cases involving children 0 to 9 years of age in which a 'BATTERY' (including wet cell battery) was coded as being a factor in causing the injury; where the mechanism of injury was coded as either 'INGESTION'; 'FOREIGN BODY IN'; 'INHALED' or 'OBSTRUCTED BY' and where the affected body part was consistent with a battery having been swallowed (ie cases in which a foreign body had been inserted into the ear or nose were excluded). These search criteria yielded a total of 303 cases.

In brief, these patterns were observable from the analyses undertaken:

- As would be expected, the greatest proportion (80.5%) involved children under the age of 5 years. More surprising, was the frequency of cases involving children between 5 and 9 years of age whose level of development would lead one to expect such events to be very rare.
- Most commonly, the injuries occurred whilst children were playing.
- Poisoning was a common outcome of swallowing batteries (43.9%).
- More than half of the cases (52.8%) required a significant level of treatment, and 10.9% were admitted to hospital.
- The batteries swallowed by children came from a diverse range of products including hearing aids, calculators, video games, remote controls, singing birthday cards, etc.

The following data tables appear below:

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- [Swallowed batteries - Table of frequencies by age in years](#)
- [Swallowed batteries - Cross tabulation of primary injury sustained by the coded mechanism of that injury](#)
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- [Swallowed batteries - Table of frequencies by context \(ie the activity being undertaken at the time of the injury event\)](#)
- [Swallowed batteries: Summary table of all relevant cases](#)

### Swallowed batteries - Table of frequencies by age group

Age group	Frequency	Percent	Valid Percent	Cumulative Percent
0-4 yrs	244	80.5	80.5	80.5
5-9 yrs	59	19.5	19.5	100.0
Total	303	100.0	100.0	

### Swallowed batteries - Table of frequencies by age in years

Age in years	Frequency	Percent	Valid Percent	Cumulative Percent
0	33	10.9	10.9	10.9
1	61	20.1	20.1	31.0
2	80	26.4	26.4	57.4
3	46	15.2	15.2	72.6
4	24	7.9	7.9	80.5
5	21	6.9	6.9	87.5
6	14	4.6	4.6	92.1
7	9	3.0	3.0	95.0
8	11	3.6	3.6	98.7
9	4	1.3	1.3	100.0
Total	303	100.0	100.0	

### Swallowed batteries - Cross tabulation of primary injury sustained by the coded mechanism of that injury

Primary injury sustained	Mechanism of injury				
	Foreign body in	Ingested	Inhaled	Obstructed by	Total
Bite		1			1
Foreign body in soft tissue	108	25		7	140
Poisoning	46	78	5	4	133
Injury not specified		2			2
No injury detected	18	7		2	27
	172	113	5	13	303

### Swallowed batteries - Cross tabulation of age in years by level of medical treatment received

Age in years	Level of medical treatment received									Total
	No treatment	Treated no referral	Treated referral OPD	Treated referral GP	Treated other referral	Short stay ward observation	Admitted	Transferred	Casualty review	
0	7	11					5	1	9	33
1	16	15	1	4		2	6	1	16	61
2	24	25		2			1	1	27	80

3	7	12	1	1	1	1	24	46		
4	3	3	1	1		3	1	12	24	
5	2	4	1	2	2	1	2	7	21	
6	1	5	1		1		1	5	14	
7		3						6	9	
8	1	3			1	5		1	11	
9		1						3	4	
Total	61	82	3	11	3	5	23	5	110	303

### Swallowed batteries - Cross tabulation of primary injury sustained by affected body part

Primary injury sustained	Affected body part									Total
	Not applicable	Mouth external	Abdomen or NEC	Mouth internal	Oesophagus	Stomach	Small bowel	Colon	Rectum	
Bite			1							1
Foreign body in soft tissue		2	23	1	9	94	9	1	1	140
Poisoning	133									133
Injury not specified	2									2
No injury detected	27									27
Total	162	2	24	1	9	94	9	1	1	303

### Swallowed batteries - Table of frequencies by primary injury sustained

	Frequency	Percent	Valid Percent	Cumulative Percent
Bite	1	.3	.3	.3
Foreign body in soft tissue	140	46.2	46.2	46.5
Poisoning	133	43.9	43.9	90.4
Injury not specified	2	.7	.7	91.1
No injury detected	27	8.9	8.9	100.0
Total	303	100.0	100.0	

### Swallowed batteries - Table of frequencies by geographic location of incident

Geographic location	Frequency	Percent	Valid Percent	Cumulative Percent
Public road	5	1.7	1.7	1.7
Private road or driveway	1	.3	.3	2.0
Train tram plane ferry other	4	1.3	1.3	3.3
Own home kitchen	18	5.9	5.9	9.2
Own home bath laundry or toilet	1	.3	.3	9.6
Own home living or sleeping	227	74.9	74.9	84.5
Own home garden etc	12	4.0	4.0	88.4
Other private home kitchen	1	.3	.3	88.8
Other private home bath laund toilet	1	.3	.3	89.1

Other private home living or sleep	12	4.0	4.0	93.1
Child care playground	1	.3	.3	93.4
School not playground	1	.3	.3	93.7
Public playground	1	.3	.3	94.1
Unknown or not elsewhere specified	18	5.9	5.9	100.0
Total	303	100.0	100.0	

**Swallowed batteries: Table of frequencies by level of medical treatment received**

Level of medical treatment	Frequency	Percent	Valid Percent	Cumulative Percent
No treatment	61	20.1	20.1	20.1
Treated no referral	82	27.1	27.1	47.2
Treated referral OPD	3	1.0	1.0	48.2
Treated referral GP	11	3.6	3.6	51.8
Treated other referral	3	1.0	1.0	52.8
Short stay ward observation	5	1.7	1.7	54.5
Admitted	23	7.6	7.6	62.0
Transferred	5	1.7	1.7	63.7
Casualty review	110	36.3	36.3	100.0
Total	303	100.0	100.0	

**Swallowed batteries - Table of frequencies by context (ie the activity being undertaken at the time of the injury event)**

	Frequency	Percent	Valid Percent	Cumulative Percent
Passenger car	4	1.3	1.3	1.3
Bus > 20 seats	5	1.7	1.7	3.0
Education activity excl sport	1	.3	.3	3.3
Playing	247	81.5	81.5	84.8
Recreation indoor	18	5.9	5.9	90.8
Recreation outdoor on land	1	.3	.3	91.1
Other recreation	10	3.3	3.3	94.4
Cooking	1	.3	.3	94.7
Cleaning	1	.3	.3	95.0
Other household activity	1	.3	.3	95.4
Eating or drinking	2	.7	.7	96.0
Walking or running	1	.3	.3	96.4
Sitting	2	.7	.7	97.0
Standing	1	.3	.3	97.4
Vehicle maintenance	1	.3	.3	97.7
Sleeping resting	5	1.7	1.7	99.3
Other catastrophe	2	.7	.7	100.0
Total	303	100.0	100.0	

**Swallowed batteries: Summary table of all relevant cases**

Age in years	Description	Primary injury	Level of medical treatment received
8	Watching t.v. found & swallowed a hearing aid battery	Foreign body in soft tissue	Admitted
2	Swallowed 2 small mercury batteries-part of toy belonging to older sibling	Foreign body in soft tissue	Admitted
8	Watching tv swallowed small battery-computer game battery	Foreign body in soft tissue	Admitted
2	Swallowed battery out of singing birthday card	No injury detected	No treatment
2	Unpacking after house move, child pulled small batteries (10mm dia.) From box	Poisoning	Treated no referral
4	Playing with toy and put battery in mouth and swallowed it	Foreign body in soft tissue	Treated no referral
0	Gagged, swallowed computer game batteries	Poisoning	Treated no referral
3	Swallowed watch battery	Foreign body in soft tissue	Casualty review
1	Playing in bedroom with battery - nothing else on form	Poisoning	Treated referral GP
0	Got back off child's video game swallowed button battery	Poisoning	Treated no referral
6	Playing with a battery, sister bumped his head, swallowed battery	Foreign body in soft tissue	Short stay ward observation
3	Swallowed battery	Foreign body in soft tissue	No treatment
2	Swallowed a small battery	Poisoning	Treated no referral
3	Watching t.v. - swallowed a battery	Poisoning	Casualty review
3	Swallowed batteries	Poisoning	Casualty review
2	Swallowed a button battery .	Foreign body in soft tissue	Treated no referral
1	Playing with handheld video game, suspect swallowed battery	Poisoning	Casualty review
5	Swallowed game batteries while travelling in car	Foreign body in soft tissue	Casualty review
4	Climbed into cupboard swallowed hearing aid battery	Foreign body in soft tissue	No treatment
3	Swallowed calculator battery	Poisoning	Casualty review
4	Siting on bus may have swallowed hearing aid battery	Foreign body in soft tissue	Casualty review
4	Playing in playground, swallowed old battery	Foreign body in soft tissue	Treated no referral
8	Sitting in bed, swallowed a battery	Foreign body in soft tissue	Casualty review
2	Climbed up onto cupboard with brother swallowed hearing aid battery	Foreign body in soft tissue	No treatment
3	Watching tv swallowed small battery and drank some wine	Poisoning	Casualty review
2	Swallowed hearing aid battery	Foreign body in soft tissue	No treatment
2	Laying on couch swallowed hearing aid battery	Foreign body in soft tissue	Casualty review
		No injury	

2	Swallowed hearing aid battery	detected	No treatment
1	Swallowed a battery	Foreign body in soft tissue	Admitted
2	Swallowed two batteries	Foreign body in soft tissue	Casualty review
3	Walking around - swallowed battery	Poisoning	Treated no referral
2	Swallowed button battery from computer game	Poisoning	Casualty review
9	Swallowed watch battery	Foreign body in soft tissue	Casualty review
3	Playing with electronic game swallowed battery	Foreign body in soft tissue	No treatment
2	Swallowed battery from calculator.	Foreign body in soft tissue	No treatment
1	Mother emptying kitchen cupboards child pulled back off calculator swallowed battery	No injury detected	No treatment
0	Swallowed a small battery	Foreign body in soft tissue	Treated no referral
2	Wandering around house swallowed battery	Poisoning	Casualty review
0	Took batteries out of keys swallowed battery	Poisoning	Casualty review
3	Swallowed a battery, no other details given	Poisoning	Casualty review
0	Parents were worried child may have swallowed light globe as it disappeared.	No injury detected	No treatment
1	Put battery in his mouth and swallowed it	Foreign body in soft tissue	Treated no referral
1	Swallowed button battery from tv controller	Poisoning	Short stay ward observation
0	Swallowed battery from tv remote control	Foreign body in soft tissue	Casualty review
1	Swallowed a button battery	Poisoning	Treated no referral
2	Watching t.v. - took back off computer game - swallowed button battery	Poisoning	Casualty review
2	Swallowed battery	Foreign body in soft tissue	Treated no referral
0	Brother opened tv remote control, he then swallowed battery	Poisoning	Treated no referral
2	Swallowed two batteries	Poisoning	Casualty review
1	Swallowed battery for game	Poisoning	No treatment
8	Opened back of calculator, swallowed battery	Foreign body in soft tissue	Admitted
2	Playing in loungeroom, ingested a watch battery	Poisoning	No treatment
3	Playing with a disc battery the size 0, he put in his mouth & swallowed it	Poisoning	No treatment
5	Playing. Victim swallowed battery. No other details.	Poisoning	Casualty review
3	Playing in troy room. Thought to have swallowed "AA" battery.	No injury detected	Treated no referral
5	Playing with his sister. Sibling pushed battery down brothers throat.	Poisoning	Casualty review
2	Playing, took batteries out of toy. ?swallowed one of the batteries.	Poisoning	No treatment
	Wears hearing aid. Took off aid, swallowed disc battery from	No injury	

1	hearing aid.	detected	Treated no referral
2	Playing, picked up a battery of the table & swallowed it. (calculator battery)	Poisoning	No treatment
0	Playing with a game which had fallen off couch, took out battery & swallowed it	Poisoning	Casualty review
4	Playing with a small computer game. Swallowed the battery.	Foreign body in soft tissue	Casualty review
1	Playing. Swallowed watch battery.	Foreign body in soft tissue	Casualty review
8	School excursion. Bus battery gave off fumes/gas. Inhalation of fumes.	Poisoning	Treated no referral
8	Passenger on bus on school excursion, child inhaled fumes from bus battery.	Poisoning	Treated no referral
8	Passenger on bus on school excursion, child inhaled fumes from bus battery.	Poisoning	Treated no referral
7	Passenger on bus on school excursion, child inhaled fumes from bus battery.	Poisoning	Treated no referral
2	Playing. Swallowed a flat watch battery.	No injury detected	Treated no referral
5	Swallowed battery	Poisoning	Admitted
4	Swallowed button-sized battery	Foreign body in soft tissue	Casualty review
5	Put a small battery in mouth before going to bed ag3 watch battery	Foreign body in soft tissue	Short stay ward observation
2	Swallowed hearing aid battery	Poisoning	Casualty review
2	Swallowed mercury hearing aid battery	Poisoning	No treatment
5	Ingested a small battery small flat battery	Poisoning	Treated no referral
2	Swallowed hearing aid battery	Poisoning	No treatment
3	Swallowed old watch button battery (had already been used) watch button batter	Foreign body in soft tissue	Casualty review
6	Watching t.v. when swallowed a battery small battery	Poisoning	Treated no referral
0	Swallowed mercury battery	Poisoning	Treated no referral
2	Removed batteries from tv game & swallowed one	Poisoning	Casualty review
4	Swallowed a hearing aid battery	Poisoning	Treated referral OPD
0	? Swallowed battery from remote control belonging to tv	Poisoning	Admitted
1	Swallowed battery	Poisoning	Short stay ward observation
2	Got into mothers handbag, possibly ingested hearing aid	Injury not specified	No treatment
3	Ingested button battery button battery	Poisoning	No treatment
0	Took button battery out of toy "echo chain" and swallowed it	Poisoning	Casualty review
2	Swallowed battery	Poisoning	No treatment
0	Sucking on electronic game - battery came out - swallowed duracell battery	Foreign body in soft tissue	Treated no referral
3	Ingested a small round battery whilst watching t.v.	Foreign body in soft tissue	Treated no referral
1	Swallowed the battery from a toy after brother had removed	Foreign body in soft tissue	No treatment



3	Playing, swallowed toy battery	Poisoning	Casualty review
2	Playing with batteries swallowed batteries	Foreign body in soft tissue	Casualty review
1	Playing, swallowed small calculator battery	Poisoning	Treated no referral
1	Found and swallowed watch battery.	Foreign body in soft tissue	Casualty review
3	Playing and swallowed a small battery.	Foreign body in soft tissue	Casualty review
1	Playing. Dismantled a toy. Possible ingestion of AA alkaline battery.	No injury detected	No treatment
5	Swallowed a small battery used in a video game.	Foreign body in soft tissue	No treatment
2	Playing with hand held computer game, may have ingested small button battery.	No injury detected	No treatment
1	Swallowed a watch battery	Foreign body in soft tissue	Casualty review
5	Swallowed a button battery	Poisoning	Treated no referral
1	Swallowed button battery out of clock	Poisoning	Casualty review
3	Found battery from broken watch, swallowed battery	Poisoning	Casualty review
2	Put a small hearing aid battery in his mouth and swallowed it	Poisoning	Treated no referral
7	Had a battery in his mouth which he swallowed	Poisoning	Treated no referral
7	Had a battery in mouth, hit on the head with a ball and swallowed battery	Poisoning	Treated no referral
6	Playing an electronic game, held it up to check battery and he swallowed it	Poisoning	Casualty review
2	Help making cake, bored, put battery in mouth & swallowed it	Poisoning	Casualty review
3	Swallowed a button battery	Poisoning	Casualty review
7	Swallowed a button battery	Poisoning	Casualty review
6	Playing computer game, swallowed battery	Poisoning	Treated referral GP
8	Sitting on a chair watching t.v. playing with a game, swallowed batteries.	Foreign body in soft tissue	No treatment
1	Swallowed a battery foreign body	No injury detected	No treatment
2	Playing with her hearing aids swallowed battery from one foreign body	Foreign body in soft tissue	No treatment
4	Swallowed a battery	Foreign body in soft tissue	Casualty review
5	Playing and swallowed micro battery	Foreign body in soft tissue	No treatment
2	Swallowed a button cell battery whilst laughing	Poisoning	No treatment
7	Swallowed small battery	Foreign body in soft tissue	Casualty review
1	Sitting in the car and swallowed a hearing aide battery.	Foreign body in soft tissue	No treatment
1	Playing with brothers toybox. video game opened, found with battery in mouth.	No injury detected	Treated no referral
1	Playing with hand held game, battery came out; swallowed battery.	Foreign body in soft tissue	Casualty review
4	Whilst playing, picked up a battery from bench and swallowed	Poisoning	No treatment



	it. cadmium battery		
3	Playing with watch batteries put them in his mouth swallowed one	Foreign body in soft tissue	Casualty review
4	Swallowed a watch battery	Foreign body in soft tissue	Casualty review
1	Swallowed a games battery	Foreign body in soft tissue	Treated no referral
1	Swallowed button battery	Foreign body in soft tissue	No treatment
1	Swallowed 2 batteries from pocket computer games	Foreign body in soft tissue	Admitted
5	Undid battery cover on hand held computer game and swallowed battery	Poisoning	Casualty review
2	Playing with metal objects swallowed a watch battery	Foreign body in soft tissue	Treated no referral
4	Swallowed 2 small button batteries	Foreign body in soft tissue	Treated no referral
4	Swallowed battery	Foreign body in soft tissue	Admitted
4	Playing swallowed AA battery	Foreign body in soft tissue	Transferred
2	Playing. Opened the back of a donkey kong game & place battery in her mouth.	Foreign body in soft tissue	Treated no referral
3	Found a bag of batteries. Swallowed one. Small calculator battery.	Foreign body in soft tissue	Treated no referral
0	Playing. Swallowed a battery 1cm diameter. No other particulars given.	Foreign body in soft tissue	Admitted
1	Climbed on toy box & removed video game from t.v. took out battery & ate it.	Poisoning	No treatment
2	Playing with mother. Possible ingestion of pen light battery from calculator.	No injury detected	Treated no referral
1	Playing. Mum using a calculator, fell on the floor. pea quartz battery missing.	Foreign body in soft tissue	Admitted
8	Playing with brother/accidentally swallowed battery	Poisoning	Admitted
1	Swallowed 4 hearing aide button batteries	Poisoning	Admitted
5	Swallowed battery from toy	Foreign body in soft tissue	Treated other referral
2	Swallowed button battery	Foreign body in soft tissue	Casualty review
5	Swallowed a battery belonging to a watch	Poisoning	Casualty review
4	Eating meal pulled remote control apart & swallowed battery	Foreign body in soft tissue	Treated referral GP
4	Playing swallowed small battery from toy car	Foreign body in soft tissue	No treatment
0	Home playing swallowed a battery.	Poisoning	Transferred
2	Placed a watch battery into right ear	No injury detected	Treated no referral
1	Swallowed button battery	Poisoning	Treated referral OPD
3	? Ingested battery left on the table (calculator battery) foreign body	No injury detected	No treatment

1	? Ingested battery from a calculator left on the table foreign body	No injury detected	No treatment
5	Playing with friends, swallowed small batteries from computer game	Poisoning	Treated no referral
0	Swallowed small camera battery	Foreign body in soft tissue	Casualty review
2	Climbing in kitchen when found and inserted hearing aid battery in ear	No injury detected	No treatment
2	Sat at the table been shown how to put battery in slot, he put it up his nose.	Poisoning	Treated no referral
1	Child swallowed a button sized battery	Foreign body in soft tissue	No treatment
2	Swallowed battery	Foreign body in soft tissue	Casualty review
4	Playing with other children put battery in mouth & swallowed it	Foreign body in soft tissue	Casualty review
4	Swallowed button battery	Foreign body in soft tissue	Admitted
0	Pulled cover off a toy and swallowed the button battery foreign body	Foreign body in soft tissue	Casualty review
0	Playing with keyring containing battery ? Swallowed same	No injury detected	No treatment
4	Swallowed watch battery foreign body	Foreign body in soft tissue	Casualty review
1	Swallowed battery foreign body	No injury detected	No treatment
6	Swallowed battery foreign body	Foreign body in soft tissue	No treatment
1	Playing with a digital toy, put battery in mouth	Injury not specified	Casualty review
2	Watching tv, swallowed small battery	Poisoning	Casualty review
2	Parent taking electronic key ring apart, battery fell into child's mouth	Poisoning	Casualty review
2	Watching tv took battery out of brothers hearing aid and swallowed it	Poisoning	Casualty review
0	Swallowed a small battery (button type)	No injury detected	No treatment
1	Swallowed small round battery	Poisoning	No treatment
2	Playing with hearing aid, swallowed battery from same	Poisoning	Casualty review
3	Playing, child swallowed a battery, had the battery in his mouth.	Foreign body in soft tissue	Treated referral GP
2	Playing on floor with video game when swallowed battery from game	Foreign body in soft tissue	Casualty review
0	Poisoning when ingested mercury button battery	Foreign body in soft tissue	Admitted
2	Took hearing aid out and swallowed battery from same	Poisoning	Treated no referral
0	Swallowed batteries from swatch watch	Foreign body in soft tissue	No treatment
2	Playing, swallowed battery	Poisoning	No treatment
3	Swallowed a small battery	Poisoning	Casualty review

1	Playing with a watch she swallowed 2 small batteries.	Foreign body in soft tissue	Treated no referral
4	Playing around with a battery and accidentally swallowed it.	Foreign body in soft tissue	Casualty review
2	Playing. Swallowed a button battery.	Foreign body in soft tissue	Casualty review
3	Removed battery from a toy putting it in his mouth	No injury detected	No treatment
9	Playing in parents room accidentally swallowed button battery	Foreign body in soft tissue	Casualty review
2	Playing on lounge with electronic game swallowed battery	Foreign body in soft tissue	Casualty review
3	Swallowed battery from watch foreign body	Foreign body in soft tissue	No treatment
5	Playing computer game-took battery out of game and swallowed the battery	Poisoning	Treated no referral
2	Playing in loungeroom swallowed a disc battery	Poisoning	Casualty review
3	Playing with his brother, swallowed small round battery.	Poisoning	Casualty review
4	Playing with toys/pencil case, found battery in case, ingested it.	Foreign body in soft tissue	Admitted
1	Playing with computer game she swallowed a disc battery.	Foreign body in soft tissue	Admitted
5	Watching television, playing with a battery. Swallowed the battery.	Foreign body in soft tissue	Treated referral OPD
0	Playing he found a battery on the floor and swallowed it.	Poisoning	No treatment
0	Playing on the floor with key ring, opened container & swallowed batteries.	Foreign body in soft tissue	Casualty review
4	Charging a battery and pt. Chewed an AA cell battery	Poisoning	Casualty review
6	Sitting at desk, swallowed calculator battery	Poisoning	Casualty review
5	Playing with a battery operated game, swallowed button battery	Poisoning	Treated other referral
3	Found button battery in carpet, swallowed same	Poisoning	Treated no referral
2	Swallowed small lithium battery	Poisoning	Treated no referral
2	Playing, swallowed a small battery which he removed from a game.	Foreign body in soft tissue	Casualty review
0	Sitting playing with keys, battery-operated keyring, disc batteries fell out.	Poisoning	Casualty review
1	Playing, swallowed a battery.	Poisoning	Casualty review
1	Playing around, swallowed 2 batteries.	Poisoning	Casualty review
2	Playing. Swallowed battery.	No injury detected	Treated referral GP
6	Playing under table, swallowed a hearing aid battery.	Foreign body in soft tissue	Treated no referral
0	Playing in cot with toy plastic piano, thought to have swallowed disc battery.	Poisoning	Admitted
1	Playing, put finger in hole (top of battery),dipped in acid, put finger in mouth	Poisoning	Admitted
8	Playing in shed grandmother pulled out car battery & knocked it over, patient inhaled fumes.	Poisoning	Admitted
		Foreign body in	Short stay ward

8	Playing when swallowed battery	soft tissue	observation
6	Swallowed watch battery whilst lying on back watching tv	Poisoning	Treated no referral
3	Ingested button battery from sister's toy	Poisoning	Casualty review
5	Put button battery in mouth, swallowed same	Poisoning	Treated referral GP
1	Swallowed a button battery	Poisoning	Treated referral GP
1	Helping water garden swallowed a small battery found on lawn	Poisoning	Casualty review
4	Playing with new toy, swallowed button battery	Poisoning	Casualty review
2	Swallowed button battery from toy	Poisoning	Treated no referral
0	Swallowed a small battery	Poisoning	Treated no referral
1	Found old camera battery in rubbish bin, swallowed it	Poisoning	Treated no referral
6	Playing swallowed battery	Poisoning	Treated no referral
3	Playing, opened toy laser gun battery case, swallowed battery	Poisoning	Treated no referral
3	Swallowed small camera battery ...m/r...	Poisoning	Treated no referral
2	Playing with batteries swallowed batteries	Foreign body in soft tissue	Transferred
3	Swallowed flat battery out of toy	Foreign body in soft tissue	Casualty review
3	Lying down reading and swallowed battery	Foreign body in soft tissue	Treated no referral
3	Swallowed battery from computer game	Foreign body in soft tissue	Casualty review
9	Swallowed a watch battery	Poisoning	Treated no referral
1	Possibly swallowed a hearing aid battery	Poisoning	Treated no referral
3	Playing, swallowed small battery.	Foreign body in soft tissue	Casualty review
3	Playing with little tea cups, swallowed a small carbon battery.	Foreign body in soft tissue	Treated no referral
0	Playing with sister, she swallowed a battery,	Foreign body in soft tissue	Treated no referral
3	Playing around and ingested a small battery, 8x5mm round.	Foreign body in soft tissue	Treated no referral
5	Found battery on floor swallowed it	Foreign body in soft tissue	Admitted
4	Swallowed battery from alarm clock	Foreign body in soft tissue	Casualty review
1	Swallowed a battery from sisters hearing aid	Foreign body in soft tissue	Casualty review
2	Swallowed a small calculator battery	Foreign body in soft tissue	Casualty review
2	Swallowed small calculator battery	Foreign body in soft tissue	Treated no referral
1	Possibly swallowed a keyring battery	No injury detected	No treatment
1	Playing ? Swallowed a battery from a small hand held video game	Foreign body in soft tissue	Casualty review
7	Swallowed small computer game battery foreign body	Foreign body in soft tissue	Casualty review
1	Ingested battery and \$2 coin foreing body	Foreign body in	No treatment

		soft tissue	
7	Swallowed battery foreign body	Foreign body in soft tissue	Casualty review
2	Swallowed a battery foreign body	Foreign body in soft tissue	No treatment
4	Jumping on bed with battery in mouth swallowed same foreign	Foreign body in soft tissue	Casualty review
5	Swallowed a game battery foreign body	Foreign body in soft tissue	Casualty review
0	Swallowed a battery foreign body	Foreign body in soft tissue	Admitted
1	Swallowed battery from hand game foreign body	Foreign body in soft tissue	Casualty review
3	Swallowed a battery foreign body	Foreign body in soft tissue	Casualty review
6	Cleaning mirror small battery in mouth looked up swallowed it	Foreign body in soft tissue	Casualty review
2	Playing with the television controls, swallowed a battery.	Poisoning	Casualty review
3	Playing with toy tank. Undid battery compartment. Put battery in mouth.	Poisoning	Treated other referral
3	Supposed to be going to sleep. Played with game. Swallowed small battery.	Foreign body in soft tissue	Casualty review
2	Opened back of tv remote control; ingested 2 calculator size batteries.	Foreign body in soft tissue	No treatment
6	Playing in her room, swallowed batteries.	Poisoning	Treated no referral
0	Playing in bedroom with big brother, swallowed a small battery from a toy.	Poisoning	Treated no referral
2	Playing with toy gun, swallowed battery from inside toy.	Foreign body in soft tissue	Treated no referral
2	Sitting in car seat in car when she swallowed battery	Foreign body in soft tissue	Treated no referral
1	Swallowed computer battery	Foreign body in soft tissue	Casualty review
1	Swallowed battery	Foreign body in soft tissue	Treated no referral
2	Playing with baby, swallowed battery from baby's hearing aid.	Foreign body in soft tissue	No treatment
2	Playing with a toy. battery missing from toy. possible ingestion.	No injury detected	Treated no referral
3	Swallowed small battery	Poisoning	Casualty review
2	Put battery in mouth swallowed	Poisoning	Casualty review
7	Put small battery in mouth and swallowed	Poisoning	Casualty review
2	Swallowed a calculator battery foreign body	Foreign body in soft tissue	Treated no referral
2	Pulled out hearing aide and swallowed battery foreign body	Foreign body in soft tissue	Casualty review
0	Swallowed 2 batteries foreign body	Foreign body in soft tissue	No treatment
0	Playing took cover off clock & ate battery.	Poisoning	Casualty review
2	Found battery on kitchen bench & swallowed it.	Poisoning	Treated no referral

3	Swallowed button battery	Foreign body in soft tissue	Casualty review
1	Child climbed up onto coffee table and swallowed a watch battery	Poisoning	Treated no referral
7	Put small battery in mouth and swallowed	Poisoning	Casualty review
9	Had battery in mouth, brother hit him over head, swallowed same	Poisoning	Casualty review
1	Swallowed a small button battery	Poisoning	Treated no referral
2	Swallowed a small battery foreign body	Foreign body in soft tissue	Treated no referral
1	Playing when possibly swallowed battery from brothers toy	Foreign body in soft tissue	Treated referral GP
3	? Swallowed button battery from hearing aid	Poisoning	Casualty review
1	Broke open back of musical key ring swallowed button battery	Poisoning	Casualty review
3	Swallowed small battery	Foreign body in soft tissue	Treated no referral
1	Ingested battery	Foreign body in soft tissue	No treatment
3	Swallowed a battery foreign body	Foreign body in soft tissue	Treated no referral
0	Playing with a battery, swallowed battery	Foreign body in soft tissue	Treated no referral
2	Swallowed small disc battery from computer game.	Foreign body in soft tissue	No treatment
0	Playing, pt was suspected to have swallowed a battery.	Foreign body in soft tissue	No treatment
1	Playing with toy sun, battery case opened, pt put batteries in mouth.	Foreign body in soft tissue	Casualty review
2	Whilst playing at home swallowed a battery.	Foreign body in soft tissue	Casualty review
2	Swallowed a watch battery foreign body	Foreign body in soft tissue	Treated no referral
1	Lying on back ready to change nappy think she swallowed AA battery.	No injury detected	No treatment
1	At home picked up a battery and swallowed it.	Foreign body in soft tissue	Treated no referral
2	Playing. May have ingested ??qty of lithium battery cells..	Poisoning	Casualty review
2	Playing by himself. Playing with book calculator.	No injury detected	Treated no referral
0	Playing, swallowed a watch battery	Foreign body in soft tissue	Treated no referral
3	Swallowed watch battery	Poisoning	Casualty review
5	Swallowed watch battery	Bite	Casualty review
2	Swallowed small battery	Foreign body in soft tissue	Treated referral GP
1	Playing at home when swallowed 2 small watch batteries.	Poisoning	Treated no referral
5	Swallowed battery from toy.	Poisoning	Treated referral GP
2	Playing with battery operated key finder. Swallowed battery.	Poisoning	No treatment
1	Playing around took battery from g/pas pocket & swallowed it.	Poisoning	Treated referral GP

2	Playing around with a battery and put it in his mouth.	Poisoning	No treatment
2	Playing with brother and swallowed a battery	Poisoning	No treatment
6	Swallowed battery	Foreign body in soft tissue	Casualty review
2	Playing with a toy with twin, toy broke, thought to have swallowed a battery.	No injury detected	Treated no referral
2	Playing with toy with twin, toy broke, thought to have swallowed battery.	No injury detected	Treated no referral
1	Playing at home, swallowed battery acid	Poisoning	Transferred
1	Playing, swallowed battery acid	Poisoning	Treated no referral
6	Playing, swallowed a battery	Foreign body in soft tissue	Transferred
6	Playing with toys when removed a battery and swallowed it.	Foreign body in soft tissue	Casualty review
3	Playing whilst mother unpacking shopping ing hearing aid battery from the floor.	Poisoning	Admitted

As explained at the top of this page, ISIS cases do not represent all injuries. It must therefore be borne in mind that the figures presented above for instances of children swallowing batteries is an under-representation of the problem - the data do not include, for example, visits to general practitioners.





## Explanation of some codes used in ISIS

### The Interdependence of Breakdown, Mechanism and the Factor Codes

At the heart of the multifaceted structure that is the ISIS database, lies the combination of up to six codes that become interdependent in telling the story of each injury event, viz:-

<b>Breakdown event</b>	tells us HOW things went wrong to precipitate the entire accident or injury sequence (VERB)
<b>Breakdown factors</b>	tell us WHAT (thing or person) went wrong (SUBJECT)
<b>Mechanism</b>	tells us HOW the injuries were caused (VERB)
<b>Mechanism factors</b>	tell us WHAT caused the injuries (SUBJECT). Most of the rest of the data relates to the victim (OBJECT)

Consider the case of the child who opens mother's handbag, left unattended on the lounge, and, having opened it, then proceeds to consume the packet of sleeping tablets inside.

<b>Breakdown event</b>	tablets left in a dangerous position (Code # 12)
<b>Breakdown factors</b>	MOTHER! (the tablets didn't go wrong, and both the handbag and the child appear to have operated to normal expectations! (Code # 6503)
<b>Mechanism</b>	ingestion (Code # 31)
<b>Mechanism factors</b>	the tablets (Code # 192?)

Now consider an almost identical circumstance; just add the information that the tablets were stored inside an allegedly child-proof container; whilst the Mechanism and mechanism Factors remain unchanged, the Breakdown event now becomes a product failure and the Breakdown factor is now the childproof container that wasn't.