



Button batteries – using them safely

A wide variety of things in the home are powered by button batteries – also known as coin batteries – but they can cause severe problems if swallowed by a child. This information sheet from Great Ormond Street Hospital (GOSH) explains the risks of swallowing a button battery, what treatment might be required if your child swallows one and how to prevent it happening in the first place.

What are button batteries?

Batteries work by mixing two chemicals together to create electrical energy – they only work when a circuit is created. When the chemicals have run out, the battery can no longer create a charge so can be thought of as 'dead', but even dead batteries can still be dangerous.

Button (or coin) batteries are the tiny flat circular batteries that are used to power many objects around the home including:

- Watches
- Calculators
- Remote controls
- Electronic toys
- Key fobs, such as car keys
- LED lights
- Monitoring devices, for instance, blood glucose monitors
- Digital thermometers
- Greetings cards that make a sound

Button batteries come in various sizes but most are 1 to 2cm in diameter. This means that they are of a similar size and shape to some sweets so can be easily swallowed.



Why are they so dangerous?

The problems caused by button batteries are not usually due to chemicals leaking from the battery but because the battery itself reacts with bodily fluids, such as mucus or saliva. This creates a circuit to release a substance like caustic soda, which is a strong alkali that can burn through tissue. An alkaline substance is at the opposite end of the pH scale to an acid but is just as dangerous. Even 'dead' batteries have the potential to create the alkali so should be treated just as carefully as new batteries.

What happens if my child swallows one?

If you suspect your child has swallowed a button battery, you should take them to your nearest Accident and Emergency (A&E) department as quickly as possible. Do not give them anything to eat or drink or try to make them sick as this could cause damage as the battery is vomited back up as well as the damage it caused when swallowed. If possible, try to find out what sort of battery your child swallowed but do not delay taking them to hospital if you cannot immediately see what they have swallowed.

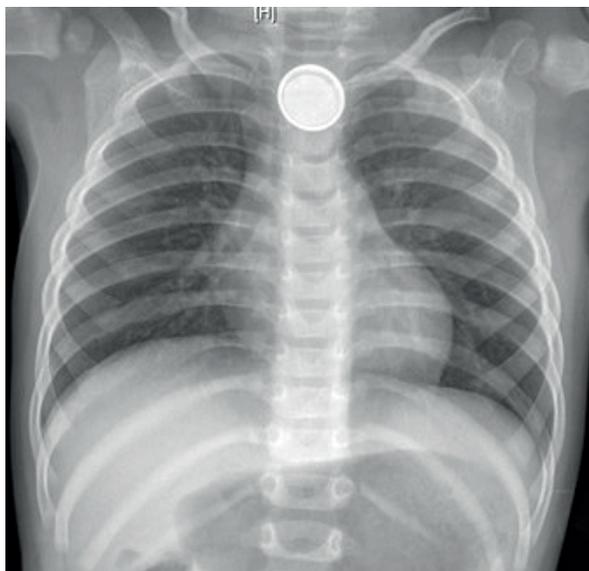
Sometimes, symptoms of swallowing a button battery do not become immediately obvious. Children may have breathing difficulties or be generally unwell. If the swallowed button battery starts to cause problems, children may cough up or vomit blood. Batteries inserted into the nose or ear can also cause problems, such as nose bleeds or bleeding from the ear.

What will happen in hospital?

The doctors in the A&E department will usually x-ray your child to locate the button battery and estimate its size. Your local hospital may try to remove the battery by passing an endoscope – a thin flexible plastic tube with a light and camera on the end – down your child's throat to try to grasp the battery and pull it up. This will usually be carried out while your child is under general anaesthetic. They will also be able to look at the damage caused by the button battery through the endoscope to decide what further treatment is needed. Doctors can also use an endoscope to remove batteries inserted in the nose or ear. Depending on the amount of damage caused by the battery or if they are unable to remove it safely, your child may be transported to a specialist hospital such as Great Ormond Street Hospital (GOSH) for further treatment.

What happens next?

The button battery may have caused significant damage to the lining of your child's oesophagus (foodpipe) – in some cases it may have burned through the oesophagus completely to form a hole. This may create a passage (fistula) between the oesophagus and the trachea (windpipe). It may also have damaged the vocal cords. It may have burned through the blood vessels in the chest area, including the aorta (main blood vessel leading from the heart).



All of these problems require treatment, often with repeated operations which may include tracheo-oesophageal fistula repair, oesophageal resection to remove the damaged portion or oesophageal dilatation to widen the damaged section. In the most severe cases, oesophageal replacement surgery may be needed.

If the damage was severe, your child may not be able to eat by mouth while the oesophagus is being corrected and healing after surgery. In most cases, we will suggest creating a gastrostomy – a surgical opening through the abdomen into the stomach – through which a feeding device is inserted. This allows your child to be fed directly into their stomach, bypassing the mouth and throat. If it is not possible to have a gastrostomy feeding device, nutrition may need to be delivered directly into your child's bloodstream. If the damage was less severe, your child will be able to eat by mouth after surgery but may take time to get back to their usual diet.

How do I keep my child safe?

There are lots of things we can do to reduce the risk of a child swallowing a battery:

- Keep new batteries in their original blister packaging out of the sight and reach of your children.
- Tape down battery compartments if possible or keep the entire watch or key fob out of sight and reach of your children.
- Only buy toys and other equipment from reliable sources – they are more likely to have passed safety regulations.
- When a battery has died, dispose of it safely straightaway – do not store them up to dispose of in one go. Batteries should not be put in the household rubbish but put into special disposal

containers in your local area. Many supermarkets have battery disposal bins so see what is available when you next visit. You could also check your council's website for details of your nearest one.

- Share information about safe battery usage and storage with friends and family to spread the word about how dangerous batteries can be to children.

Further information and support

The **Royal Society for the Prevention of Accidents** provides additional information on button battery safety – visit their website at www.rosipa.com for further details.

The **Child Accident Prevention Trust** also contains lots of advice on keeping your child safe – their website is at www.capt.org.uk.