

Poisoning and drug overdose (PIP)

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Key Amendments

Date	Amendment	Approved by
9/2/24	Updates from PIP guideline Button battery ingestion added	Paediatric Guideline Review Day

The following guidance is taken from the Partners In Paediatrics (PIP)

Poisoning and drug overdose 2022-2024

POISONING AND DRUG OVERDOSE

*Always follow your local child safeguarding policies and procedures.
The safety of children is everyone's responsibility*

BACKGROUND

Toxbase

- Check **Toxbase** for poisoning and drug overdose management
- www.toxbase.org access and password **available in A&E**
- if further information required, contact UK National Poisons Information Service (**NPIS**) 0344 892 0111

The poisoned

- Toddlers (typically accidental poisoning)
- Aged <9yr: household products most common cause of poisoning – vast majority accidental
- Aged 10-19yr:
 - Drugs and alcohol more common
 - >50% intentional

The poisoners

- Most childhood poisonings are accidental
- Intentional poisoning may be by the child or an adult
- Inadvertent poisoning may occur in a medical setting

The poison

- Children will eat and drink almost anything

RECOGNITION AND ASSESSMENT

Symptoms and signs

- Depressed respiration suggests centrally-acting drug
- Skin blisters (**at pressure points**) common after barbiturates and tricyclics
- Hypothermia after exposure to barbiturates
- Venepuncture marks and pinpoint pupils suggest opioid overdose
- Burns around mouth

Life-threatening features

- Coma
- Cyanosis
- Hypotension
- Paralytic ileus

Poison(s)/drug(s) information

- Ask patient, relatives, GP, ambulance crew. Retain any containers found
 - if identification doubtful, ask parents to retrieve poison from home

- Ask about visitors to the house/visits to other houses (e.g. grandparents)
- Quantity ingested: difficult to quantify but parents may know how full a bottle should have been
 - **assume child has ingested something even if found with a few tablets or an empty bottle**
- Time of ingestion, including multiple doses/staggered overdose
- Other possible poisons/drugs taken
- If child presents with no clear history to suggest button battery ingestion but symptoms e.g. haematemesis, haemoptysis and respiratory difficulties present, see **Known/suspected button battery ingestion**

Investigations

- Save blood and urine for toxicological analysis
 - all suspected cases of paracetamol ingestion should have concentrations measured
 - if history of ingestion, urgent measurement of plasma/serum concentration is essential in diagnosis and management of poisoning with ethylene glycol, iron, lithium, methanol, paracetamol, theophylline and salicylate
- Other investigations as recommended by **Toxbase** or clinical condition: U&E, blood gases and acid-base

Request plasma paracetamol concentration in all unconscious patients in whom drug overdose considered

Always admit a child who is symptomatic or who has ingested iron, digoxin, aspirin or a tricyclic antidepressant

IMMEDIATE MANAGEMENT

Separate guidelines give more detailed advice on management of overdose with alcohol, iron, paracetamol, phenothiazines, salicylates and tricyclic antidepressants

Assess airway, breathing and circulation

- Maintain airway
 - if airway not protected, consider airway adjunct or intubation and ventilation
 - if cyanosed or rate and depth of respiration obviously low, arterial blood gases indicated
 - if PaCO₂ high or rising, mechanical ventilation indicated
- Correct hypotension
 - raise foot of bed
 - if in haemodynamic shock, give IV bolus of sodium chloride 0.9% (20 mL/kg over 10 min). Assess and repeat if still in shock
 - consider need for central venous pressure (CVP) monitoring

Neurological

- Control convulsions (**follow local seizure protocol**)
- if unconscious, treat as head injury until proved otherwise

Drug absorption

- Give antidote if appropriate (see **Toxbase**)
- If child has ingested potentially life-threatening amount of toxic agent within last hour give activated charcoal 1g/kg (maximum dose 50g) oral (disguised with soft drink/fruit juice) or via NG tube
 - do not give if child unconscious and airway cannot be protected
 - activated charcoal does not affect absorption of acids, alkalis, alcohols, cyanide, ethylene glycol, petroleum distillates, malathion, and metal salts including iron or lithium
- Do not give ipecacuanha, it does not empty the stomach reliably and can be dangerous
- Do not **perform** gastric lavage or whole bowel irrigation unless specifically recommended by **Toxbase**, or after consultation with NPIS (**0344 892 0111**)

- Stop any regular medication that might enhance effect of substance taken in overdose

Button (disc) battery ingestion

See [Flowchart: Known/suspected button battery ingestion](#)

SUBSEQUENT MANAGEMENT

- Follow additional guidance on www.toxbase.org
- If unconscious, admit to a high-dependency nursing area and attach ECG monitor
- Supportive care alone required for majority of acutely poisoned patients
- If deliberate self-harm, **follow local protocol for referral** (see **Self-harm** guideline)
- **Share information** with other agencies as relevant e.g. school nurse, social services
- Give advice to seek further medical assistance if symptoms develop after discharge

Monitoring treatment

- Monitor conscious level, temperature, respiration, pulse and BP until these return to normal
- No need to monitor drug concentrations other than to guide use of measures to enhance drug elimination
- If unconscious, make full head injury observations
 - record pulse, respiratory rate, BP, pupil size and reaction, and level of consciousness hourly for ≥ 4 hr, then increase interval if stable

PSYCHIATRIC REVIEW

- All deliberate acute self-poisoning or drug overdose must be seen by the local acute mental health assessment team or CAMHS within 24 hr of admission or regaining consciousness **and** before discharge

Safeguarding

- If not referred to social services complete information sharing form for all deliberate or accidental poisonings or overdoses

DISCHARGE AND FOLLOW-UP

- **When discharged from hospital patients should have:**
 - been conscious and alert with normal vital signs for ≥ 6 hr
 - no evidence of significant organ dysfunction as a result of poisoning/drug toxicity
 - been interviewed by a member of the local acute mental health assessment team or CAMHS where indicated
 - follow-up appointment in **psychiatric clinic** (if recommended by **psychiatrist**)
 - follow-up appointment in **paediatric clinic** (if persistent sequelae of poisoning require review)

KNOWN/SUSPECTED BUTTON BATTERY INGESTION

Background

- Oesophageal button batteries are a surgical emergency
 - easily lodged in the oesophagus
- Damage can occur within 2 hours
 - mucosal surface allows conduction causing fluid hydrolysis and hydroxide build up, leading to obstruction, bleeding, perforation and fistulae and can cause significant morbidity and mortality
 - damage tends to occur on negative side (narrowest) – may give an indication of resultant complications

Presentation

Caution – may present in a variety of ways; many children are asymptomatic and have history of ingestion only

- For any child presenting with history of ingestion, always ask about possibility of button battery and magnet ingestion
 - If ingested, do not use metal detector (this is for swallowed coins)

Symptoms

May include:

- Drooling
- Regurgitation
- Food/drink refusal
- Stridor
- Dysphasia
- Chest discomfort
- Haematemesis
- Can have atypical symptoms (e.g. Horner's syndrome)

Investigations

- Examine nose and ears for foreign bodies
 - If AP/PA – halo sign
 - If lateral – step sign
- Batteries can become lodged at
 - Cricopharyngeus (C5)
 - Mid-oesophagus (T5)
 - Gastro-oesophageal junction (T10)
 - Duodeno-jejunal flexure (L2)
- If not seen on CXR perform an AXR
- Lateral CXR can help show direction negative pole is facing – do not delay transfer/removal to obtain lateral xray
- Monitor for erosion into trachea and aorta

Discharge

- Advise parents to attend ED if symptoms develop in next 28 days e.g. abdominal pain, GI bleeding

Management of Retained Button Battery

