

INTRODUCTION

There are 3 main types of poisoning in children:

1. accidental ingestion of a poisonous substance or medicine by an inquisitive child (common)
2. deliberate ingestion (overdose) of (usually a medicine) in a mentally distressed child who needs help
3. deliberate poisoning of children, a type of child abuse which is extremely unlikely to be discovered by the ambulance service, but if it is suspected it must be reported following the safeguarding children guideline. It will not be discussed further (*refer to the safeguarding children guideline*).

HISTORY

Accidental ingestion

This usually occurs with young children. Ingestion of tablets is common but almost anything, however unpalatable and incredible to the adult palate, may be ingested. The event may not be obvious and may only be found on detailed questioning of the child, if old enough to give a history.

Take a history of:

- the event e.g. when did it happen?
- the drug/substance ingested
- the quantity of the drug/substance ingested
- collect all suspected drugs/substances
- mode of poisoning e.g. ingestion, inhalation
- any other factors that may be relevant
- has any treatment occurred yet?

A rapid mental health assessment should be undertaken including assessment of suicide risk.

ASSESSMENT

Assess ABCD's

- try to find out what, if anything, has been ingested and take the substance to hospital. This includes berries and plants
- gather up tablets/medicines etc., and try to estimate the maximum amount that may have been consumed
- ask about **ALL** tablets in the house however apparently inaccessible.

Evaluate if there are any **TIME CRITICAL** features present. These may include:

- impaired ABCDs
- decreased level of consciousness and respiration are often combined in overdose (*refer to decreased level of consciousness guideline*)
- extreme hypotension (BP <70 mmHg) is common in sedative and anti-depressant overdose
- arrhythmias (*refer to cardiac rhythm disturbance guideline*)
- convulsions (*refer to fitting guideline*)
- hypothermia – especially if the child has been unconscious for a time (*refer to hypothermia guideline*)
- hyperthermia

If any of these features are present, **CORRECT A AND B PROBLEMS ON SCENE THEN COMMENCE TRANSFER** to nearest suitable receiving hospital

Provide a **Hospital Alert Message / Information call**.

MANAGEMENT

Follow Medical Emergencies Guidelines, remembering to:

Start correcting:

- **AIRWAY**
- **BREATHING**
- **CIRCULATION**
- **DISABILITY** (mini neurological examination)
- oxygen saturation and ECG monitoring should be undertaken unless it is certain that the child has not taken a harmful substance
- ensure adequate ventilation. If respiration and levels of consciousness are decreased, and drugs such as morphine, heroin or other related drugs are suspected, provide respiratory support to relieve respiratory depression. Consider the use of naloxone (IV/IM) to reduce respiratory depression (*refer to naloxone protocol for dosages and administration*). Be aware that naloxone can induce sudden recovery with severe agitation and acute withdrawal symptoms
- establish IV access as appropriate en-route to hospital.

Overdose and Poisoning in Children

- if the child is exposed to chemicals, remove the child from the source of chemical at once. In the case of **SKIN CONTAMINATION** with chemicals, remove clothing with care **NOT** to contaminate rescuers, and **IRRIGATE** with generous amounts of water
- if the child has decreased consciousness (**refer to decreased level of consciousness guideline**) **ALWAYS** check blood glucose level and correct if low (blood glucose <4.0mmol/l) with glucose 10% IV (**refer to glucose 10% protocol for dosages and information**). Glucagon is often not effective in overdoses.
- collect any **MEDICINE CONTAINERS** or **ACTUAL MEDICINES** for inspection at hospital
- if the child vomits, retain a sample, if possible, for inspection at hospital
- NEVER** induce vomiting
- in the case of swallowed caustics and petroleum products dilute by giving a glass of **milk** at the scene wherever possible

- activated charcoal may be of benefit if given within one hour of ingestion. However, at present, it is not routinely recommended for use in pre-hospital care because of the difficulty of administration and the risks of aspiration (which are exacerbated by the risk of motion sickness).

Specifically consider:

- transfer all children who have ingested a substance to hospital
- take a sample to hospital, unless it is specifically verified on Toxbase¹ to be harmless and it is certain that ingestion was accidental**
- the health visitor or General Practitioner must always be informed**
- unknown plants and tablets can usually be identified
- if a young person has taken a deliberate overdose of **anything** (even if it is known to you to be harmless), they must be transferred to hospital. They require a mental health assessment
- refer to **table 1** for specific substance management.

Table 1 – Specific substance management

Alcohol (ethanol)	Common in young teenagers. Can cause severe hypoglycaemia even in teenagers. ALWAYS check the blood glucose levels in any child or young person with a decreased conscious level especially, in children and young adults who are “drunk”, as hypoglycaemia (blood glucose <4.0mmol/l) is common and requires treatment with oral glucose, glucose 10% IV (refer to glucose 10% protocol for dosages and information). NOTE: Glucagon is not effective in alcohol induced hypoglycaemia.
Tricyclic antidepressants	Poisoning with these drugs may cause decreased consciousness, profound hypotension and cardiac arrhythmias. Newer anti-depressants such as fluoxetine (Prozac) and paroxetine (Seroxat) have different effects. ECG monitoring and IV access should be established early in the treatment of tricyclic overdose. The likelihood of fitting is high; this should be treated as per convulsions guidelines.
Iron	Iron pills are regularly used by large numbers of the population including pregnant mothers. In overdose, especially in children, they are exceedingly dangerous. They may cause extensive damage to the liver and gut and these children will require hospital assessment and treatment. Charcoal is contra-indicated as it may interfere with subsequent treatment.
Paracetamol	Remember that many analgesic drugs contain paracetamol and a combination of codeine or dextropropoxyphene. This, in overdose, creates two serious dangers for the child. The codeine and dextropropoxyphene are both derived from opioid drugs. This in overdose, especially if alcohol is involved, may well produce profound respiratory depression. This can be reversed with naloxone (refer to naloxone protocol for dosages and administration) . The secondary problem is the paracetamol that, even in modest doses, may induce severe liver and kidney damage in susceptible children. There is no evidence of this initially and this may lull the child's carers, the child, and Ambulance Clinicians into a false sense of security. It frequently takes 24 to 48 hours for the effects of paracetamol damage to become apparent and urgent blood paracetamol levels are required to assess the child's level of risk.
Non-harmful substances	Always check the substance(s) is non-harmful and document.

Key Points – Overdose and Poisoning in Children

- All overdoses in children and adolescents must be transferred to hospital.
- Alcohol often causes hypoglycaemia even in adolescents.
- **NEVER** induce vomiting.
- If the child vomits, retain a sample, if possible, for inspection at hospital.
- Bring the substance or substances and any containers for inspection at hospital. Try and estimate the maximum amount ingested.

REFERENCE

¹ The National Poisons Information Service (NPIS). TOXBASE Available from: <http://www.spib.axl.co.uk/>.

METHODOLOGY

Refer to methodology section.