

SAN FRANCISCO EMERGENCY MEDICAL SERVICES AGENCY

Effective: 01/07/13
Supersedes: 01/01/11

Protocol: P-045

PEDIATRIC POISONING AND OVERDOSE

SUBJECTIVE FINDINGS

- **Surroundings and Safety:** Check for syringes, containers, flammables, gas cylinders, etc. Note odors in house or surroundings.
- **Drug Ingestions:** Note drug(s), dosage(s), number pill tablets remaining, and prescription date(s). Bring container(s) with patient to hospital.
- **Other Poisoning and Exposures:** If possible, note identifying information, product warning labels / numbers on packaging.
- **Duration of Illness:** Onset and progression of present state, antecedent symptoms such as headache, seizures, confusion, etc.
- **History of Event:** Ingested substances, drugs, alcohol, toxic exposures, suicidal intention, and the work environment.
- Examine scene for evidence of deliberate inhalation of volatile chemicals ("sniffing" or "huffing").
- Past Medical History or psychiatric problems.
- If possible, corroborate information with family members or responsible bystander.
- Investigate the "who, what, when, where" of ingestion.

OBJECTIVE FINDINGS

- Mental status
- Skin signs
- ABC's
- Vital signs, cardiac rhythm and oxygen saturation
- Blood glucose level
- Pupil size
- Breath odor
- Medic alert tags/bracelets/medallions

GENERAL TREATMENT of POISONING or OVERDOSE	
BLS Treatment	ALS Treatment
<ul style="list-style-type: none">• Routine Medical Care.• Assess need for C-Spine precautions.• Ensure ABC's, airway management, oxygenation, ventilation, and suction PRN.• Oxygen blow-by mask or high flow PRN. If indicated, assist ventilations with BVM.• Consider precautions if HAZMAT incident. (see P-016 HAZMAT Protocol).	<ul style="list-style-type: none">• IV or IO of NS if AMS and / or poor oxygenation, ventilation or perfusion.• Activated Charcoal (1 gram/kg) for possible ingestions if patient is >1 year of age and alert with intact airway reflexes. See PRECAUTIONS AND COMMENTS.• Consider Ondansetron for nausea/vomiting.<ul style="list-style-type: none">- Children ages 4 up to including age 8, use 4 mgs IV/IM.- Children over age 8, use 4 mg IV/IM. Dose may be repeated q 20" to a maximum total dose of 12 mg.

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- BLS TREATMENTS ARE THE SAME FOR ALL POISONING / OVERDOSES IN THIS PROTOCOL. THE FOLLOWING TREATMENT BOXES FOR SPECIFIC POISONINGS / OVERDOSES WILL ONLY LIST THE ALS TREATMENTS.

NARCOTICS

ALS Treatment

- IV or IO of NS.

NALOXONE

- Neonate: AVOID NALOXONE.
- Infant or Child up to 5 years old (<20 kg): 0.1 mg/kg IVP, IM or IO.
- Child 5 to 10 years old (>20 kg): 2 mgs IN via MAD (preferred) or IVP, IM OR IO, repeat PRN. See PRECAUTIONS AND COMMENTS in PEDIATRIC ALTERED MENTAL STATUS Protocol (P-041).
- Child over 10 years old: Administer 2 mgs IN via MAD (preferred) or IVP, IM OR IO. See PRECAUTIONS AND COMMENTS in PEDIATRIC ALTERED MENTAL STATUS Protocol (P-041).
- If rapid blood glucose test shows glucose < 60 mg/dl for child; < 40 mg/dl for newborn. See PRECAUTION AND COMMENTS.

ANTIPSYCHOTICS WITH EXTRAPYRAMIDAL REACTION

ALS Treatment

- IV or IO of NS.
- **Diphenhydramine** 1mg/kg IVP or IM. Repeat as needed to max dose 25 mg.

ORGANOPHOSPHATES

Recognize **SLUDGE** symptoms: (**S**alivation, **L**acrimation, **U**rination, **D**iaphoresis/diarrhea, **G**astric hypermotility, and **E**mesis/eye [small pupils, blurry vision]).

ALS Treatment

- IV or IO of NS.
- **Atropine** 0.02mg/kg IVP or IO. Repeat q 2-5 min until SLUDGE symptoms subside.

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TRICYCLIC ANTIDEPRESSANTS
ALS Treatment
<ul style="list-style-type: none">• IV or IO of NS.• Hyperventilate with 100% oxygen.• Manage airway according to AIRWAY MANAGEMENT Protocol (P-004).• Sodium Bicarbonate 1mEq/kg, IVP or IO for hypotension, seizure, and /or QRS widening >0.10 seconds. Repeat in 10 minutes with 0.5 mEq/kg, PRN to total of 2mEq/kg.• Treat seizures according to PEDIATRIC SEIZURE Protocol (P-047).

CALCIUM CHANNEL or BETA BLOCKER TOXICITY
ALS Treatment
<ul style="list-style-type: none">• IV OR IO of NS.• Activated Charcoal (1 gram/kg). See PRECAUTIONS AND COMMENTS.
BASE HOSPITAL CONTACT CRITERIA
<ul style="list-style-type: none">• BETA BLOCKER: In the setting of bradycardia and hypotension caused by a beta blocker. Contact Base Hospital Physician for administration of Glucagon 0.1 mg/kg IM (max dose 1 mg).• CALCIUM CHANNEL BLOCKER: In the setting of bradycardia and/or hypotension caused by a calcium channel blocker, CaCl 10% solution 20 mg/kg (0.2 ml/kg) SLOW IVP or IO q 20 min. CaCl will cause severe tissue damage if extravagated. Check IV patency and properly secured prior to CaCl administration.

CARBON MONOXIDE
<p>Consider carbon monoxide (CO) poisoning if patient is found unconscious, or has altered mental status, or has non-specific complaints (fatigue, malaise, nausea/vomiting, headache, "dizziness") or other non-specific complaints without clear etiology AND patient situation includes:</p> <ul style="list-style-type: none">• Found down in a closed space with an exposure to a potential source for CO (running motor vehicle, use of charcoal or gas grill indoors, use of generator indoors, heater malfunction, etc).• Multiple family members or persons in vicinity have similar symptoms.• Environmental CO detectors are alarming.
ALS Treatment
<ul style="list-style-type: none">• Oxygen blow-by mask or high flow with 100% NRB. Assist ventilations with BVM as needed.• Some inhalational poisonings, such as carbon monoxide and hydrogen sulfide, may result in

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patients with normal oxygen saturation readings, but cellular hypoxia due to displacement of the oxygen molecule from the hemoglobin in red blood cells. In all of the above cases, maximal oxygen therapy should be delivered to the patient regardless of pulse oximeter reading if the patient has signs of respiratory compromise.

UNKNOWN SUBSTANCE

ALS Treatment

- IV or IO of NS.

NALOXONE

1. Neonate: AVOID NALOXONE.
 2. Infant or Child up to 5 years old (<20 kg): 0.1 mg/kg IVP, IM or IO.
 3. Child 5 to 10 years old (>20 kg): 2 mgs IN via MAD (preferred) or IVP, IM OR IO, repeat PRN. See PRECAUTIONS AND COMMENTS in PEDIATRIC ALTERED MENTAL STATUS Protocol (P-021).
 4. Child over 10 years old: Administer 2 mgs IN via MAD (preferred). or IVP, IM OR IO. See PRECAUTIONS AND COMMENTS in PEDIATRIC ALTERED MENTAL STATUS Protocol (P-021).
- If rapid blood glucose test shows glucose < 60 mg/dl for child; < 40 mg/dl for newborn. See PRECAUTION AND COMMENTS.

DEXTROSE

Use rapid blood glucose level of < 40 mg/dl as indication for **D10W** in neonates.

1. Neonates (<1 month): **D10W**, 1 – 2 ml/kg IVP or IO. (D10 W is made by mixing 1 ml of **D50W** with 4 ml of NS.)
2. Child 1 month to 2 years: **D25W**, 2 ml/kg IVP or IO. (**D25W** is half strength of **D50W**. Mix 1 ml of **D50W** with each 1 ml of NS)
3. Child > 2 years: **D50W**, 1 ml/kg IVP or IO.
4. If no IV access: Give **Glucagon 0.1 mg/kg IM** (max dose 1 mg).

CHARCOAL

- **Activated Charcoal** (1 gram/kg) for patients able to maintain their own airway. See PRECAUTION AND COMMENTS.

FLUID

- If HYPOTENSIVE, administer fluid bolus 20 ml/kg.
- Continuously monitor vital signs, pulse oximetry, and cardiac rhythm during transport.

DOCUMENTATION

- Type of ingestion; including “unknown substance.”
- IV or IO of NS established if oxygen, ventilation or perfusion graded as poor.

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PRECAUTIONS AND COMMENTS

- Consider child maltreatment for poisonings in children especially if < 1 year of age or > 6 years of old.
- **Activated Charcoal** is NOT effective for iron, alcohol, lithium and heavy metal overdoses.
- **Activated Charcoal** is NOT recommended for use in Tricyclic Antidepressant overdoses. Patients with Tricyclic Antidepressant overdoses may experience rapid depression of mental status, sudden seizures, or worsening of vital signs.
- Never give **Activated Charcoal** to an uncooperative child or one who is not alert.
- **Blood glucose:** Consider **Dextrose** for any child with an altered level of consciousness and blood glucose test of < 80 mg/dl; and consider not treating a normal child with blood glucose > 60 mg.dl.
- **D25W** if half strength of **D50W**. Mix 1 ml of **D50W** with each 1 ml of NS.
- Use rapid blood glucose level of < 40 mg/dl as indication for **D10W** in neonates. **D10W** is made by mixing 1 ml of **D50W** with 4 ml of NS.
- Caustic ingestions are usually caused by alkali (e.g. lye or Drano) or acid substances.
- Hydrocarbons include gasoline, kerosene, turpentine, Pine Sol, etc. NEVER INDUCE VOMITING IF HYDROCARBONS OR CAUSTIC SUBSTANCES ARE INGESTED.
- Many pediatric patients will have multiple routes of ingestions, such as skin or eye contact. Remember to evaluate for skin, eye and gastric decontamination.
- Contact Poison Control whenever possible. Bring suspected ingestion substances to the Receiving Hospital.
- Do NOT use **Odansetron** in children under age (4) four.
- If there is evidence of deliberate inhalation of volatile chemicals, be aware of potential for sudden cardiac arrest or dysrhythmia. To minimize risk, keep patient as calm as possible, especially if agitated or actively hallucinating.