

Management of Medical Emergencies

For all emergencies

1. Discontinue dental treatment
2. Call for assistance/someone to bring oxygen and emergency kit
3. Position patient: ensure open and unobstructed airway
4. Monitor vital signs
5. Be prepared to support respiration, support circulation, provide cardiopulmonary resuscitation (CPR), and call for emergency medical services

Condition	Signs and symptoms	Treatment	Drug dosage	Drug delivery*
Allergic reaction (mild or delayed)	Hives; itching; edema; erythema-skin, mucosa conjunctiva	<ol style="list-style-type: none"> 1. Discontinue all sources of allergy-causing substances 2. Administer diphenhydramine 	Diphenhydramine 1 mg/kg Child: 10-25 mg qid Adult: 25-50 mg qid ¹	Oral
Allergic reaction (sudden onset): anaphylaxis	Urticaria-itching, flushing, hives; rhinitis; wheezing/difficulty breathing; broncho-spasm; laryngeal edema; weak pulse; marked fall in blood pressure; loss of consciousness	<p>This is a true, life-threatening emergency</p> <ol style="list-style-type: none"> 1. Call for emergency medical services 2. Administer epinephrine 3. Administer oxygen 4. Monitor vital signs 5. Transport to emergency medical facility by advanced medical responders 	Epinephrine 1:1000 0.01 mg/kg every 5 min until recovery or until help arrives ^{1,2}	IM or SubQ
Acute asthmatic attack	Shortness of breath; wheezing; coughing; tightness in chest; cyanosis; tachycardia	<ol style="list-style-type: none"> 1. Sit patient upright or in a comfortable position 2. Administer oxygen 3. Administer bronchodilator 4. If bronchodilator is ineffective, administer epinephrine 5. Call for emergency medical services with transportation for advanced care if indicated 	<ol style="list-style-type: none"> 1. Albuterol (patient's or emergency kit inhaler) 2. Epinephrine 1:1000 0.01 mg/kg every 15 min as needed^{1,2} 	Inhale IM or SubQ
Local anesthetic toxicity	Light-headedness; changes in vision and/or speech; metallic taste; changes in mental status—confusion; agitation; tinnitus; tremor; seizure; tachypnea; bradycardia; unconsciousness; cardiac arrest	<ol style="list-style-type: none"> 1. Assess and support airway, breathing, and circulation (CPR if warranted) 2. Administer oxygen 3. Monitor vital signs 4. Call for emergency medical services with transportation for advanced care if indicated 	Supplemental oxygen	Mask
Local anesthetic reaction: vasoconstrictor	Anxiety; tachycardia/palpitations; restlessness; headache; tachypnea; chest pain; cardiac arrest	<ol style="list-style-type: none"> 1. Reassure patient 2. Assess and support airway, breathing, and circulation (CPR if warranted) 3. Administer oxygen 4. Monitor vital signs 5. Call for emergency medical services with transportation for advanced care if indicated 	Supplemental oxygen	Mask
Overdose: benzodiazepine	Somnolence; confusion; diminished reflexes; respiratory depression; apnea; respiratory arrest; cardiac arrest	<ol style="list-style-type: none"> 1. Assess and support airway, breathing, and circulation (CPR if warranted) 2. Administer oxygen 3. Monitor vital signs 4. If severe respiratory depression, establish IV access and reverse with flumazenil 5. Monitor recovery (for at least 2 hours after the last dose of flumazenil) and call for emergency medical services with transportation for advanced care if indicated 	Flumazenil 0.01-0.02 mg/kg (maximum: 0.2 mg); may repeat at 1 min intervals not to exceed a cumulative dose of 0.05 mg/kg or 1 mg, whichever is lower ¹	IV (if IV access is not available, may be given IM)

Tables continues on next page

For all emergencies

1. Discontinue dental treatment
2. Call for assistance/someone to bring oxygen and emergency kit
3. Position patient; ensure open and unobstructed airway
4. Monitor vital signs
5. Be prepared to support respiration, support circulation, provide cardiopulmonary resuscitation (CPR), and call for emergency medical services

Condition	Signs and symptoms	Treatment	Drug dosage	Drug delivery*
Overdose: narcotic	Decreased responsiveness; respiratory depression; respiratory arrest; cardiac arrest	<ol style="list-style-type: none"> 1. Assess and support airway, breathing, and circulation (CPR if warranted) 2. Administer oxygen 3. Monitor vital signs 4. If severe respiratory depression, reverse with naxolone 5. Monitor recovery (for at least 2 hours after the last dose of naxolone) and call for emergency medical services with transportation for advanced care if indicated 	Naxolone 0.1 mg/kg up to 2 mg. ^{1,2} May be repeated to maintain reversal.	IV, IM, or SubQ
Seizure	Warning aura—disorientation, blinking, or blank stare; uncontrolled muscle movements; muscle rigidity; unconsciousness; postictal phase—sleepiness, confusion, amnesia, slow recovery	<ol style="list-style-type: none"> 1. Recline and position to prevent injury 2. Ensure open airway and adequate ventilation 3. Monitor vital signs 4. If status is epilepticus, give diazepam and call for emergency medical services with transportation for advanced care if indicated 	Diazepam Child up to 5 yrs: 0.2-0.5 mg slowly every 2-5 min with maximum=5 mg Child 5 yrs and up: 1 mg every 2-5 min with maximum=10 mg ¹	IV
Syncope (fainting)	Feeling of warmth; skin pale and moist; pulse rapid initially then gets slow and weak; dizziness; hypotension; cold extremities; unconsciousness	<ol style="list-style-type: none"> 1. Recline, feet up 2. Loosen clothing that may be binding 3. Ammonia inhales 4. Administer oxygen 5. Cold towel on back of neck 6. Monitor recovery 	Ammonia in vials	Inhale

* Legend: IM = intramuscular IV = intravenous SubQ = subcutaneous

References:

1. Hegenbarth MA, Committee on Drugs. Preparing for Pediatric Emergencies: Drugs to Consider, American Academy of Pediatrics. Pediatrics 2008;121(2):433-43.
2. Pediatric Advanced Life Support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation 2010;122:S876-S908.

DISCLAIMER: This information is not intended to be a comprehensive list of all medications that may be used in all emergencies. Drug information is constantly changing and is often subject to interpretation. While care has been taken to ensure the accuracy of the information presented, the AAPD is not responsible for the continued currency of the information, errors, omissions, or the resulting consequences. Decisions about drug therapy must be based upon the independent judgment of the clinician, changing drug information, and evolving healthcare practices.

Copyright of Pediatric Dentistry is the property of American Society of Dentistry for Children and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.