ANAPHYLAXIS

Acute onset **life-threatening** allergic reaction with **multi-system** involvement

SIGNS AND SYMPTOMS

Skin/Mucosa (Present 80-90%)	Urticaria, pruritis, angioedema, flushing
Upper Airway (Present 60-70%)	Stridor, hoarseness, difficulty, swallowing, swollen lips/tongue
Lower Airway (Present 60-70%)	Dyspnea, wheeze, cough, hypoxemia, ↑ WOB
Cardiac (Present 10-30%)	Tachycardia, hypotension, dizziness, syncope, chest pain, arrhythmias, cardiac arrest
GI	Nausea, vomiting, diarrhea, abdominal pain
General/CNS	Fussiness, irritability, headache, altered LOC

DIAGNOSTIC CRITERIA (World Allergy Organization 2011)

Acute onset of illness with involvement of skin and/or mucosal tissue **AND** 1 or more of the following:
- Respiratory compromise
- Hypotension or associated symptoms of end-organ dysfunction (eg. hypotonia, syncope, or incontinence)

2 or more of the following occurring rapidly after exposure to a **LIKELY** allergen
- Involvement of the skin and/or mucosal tissue
- Respiratory compromise
- Hypotension or associated symptoms of end-organ dysfunction (eg. hypotonia, syncope, or incontinence)
- Persistent gastrointestinal symptoms

Low age-specific SBP **OR** >30% decrease in SBP after exposure to a **KNOWN** allergen

COMMON TRIGGERS

1. **Food:** eg. peanut, tree nuts, shellfish, fish, milk, eggs, wheat, soy, sesame, red meat (alpha gal syndrome)
   ****Trigger for up to 80% of peds anaphylaxis in Canada*
2. **Insect Stings:** eg. bees, wasps, hornets, fire ants
3. **Drugs:** eg. β-lactam antibiotics, ibuprofen

INITIAL MANAGEMENT

1. **Administer IM Epinephrine in outer mid thigh**
   - ➔ By autoinjector if available and ASAP in community if possible
   - ➔ Otherwise: **0.01mg/kg**, max 0.5mg per dose
2. Assess ABCs and vitals
3. Prepare for intubation if severe respiratory distress and stridor
4. Consult ENT/Anesthesia if significant edema and airway obstruction
5. Identify and remove trigger if possible

Hypotension
1. Supine or Trendelenburg position
2. Secure 2x large bore IV or IO
   - ➔ NS/RL 20mL/Kg rapid push

Respiratory Distress
1. Sitting position
2. 10-15L/min of 100% oxygen by non-rebreather mask
   Upper airway: inhaled epinephrine
   Lower airway: salbutamol

No improvement after 5-15min
- ➔ Repeat IM Epinephrine
- ➔ Hypotension: NS/RL 20mL/kg push
- ➔ Upper airway: inhaled epinephrine
- ➔ Lower airway: salbutamol

No improvement after 3 doses of IM epinephrine

Hypotension:
- ➔ IV epinephrine infusion
- ➔ IV glucagon if on beta-blockers

Respiratory Failure:
- ➔ IV steroids
- ➔ Intubation
- ➔ Consult PICU

OTHER SYMPTOM MANAGEMENT

Skin/Mucosa: Antihistamines
- ➔ Cetirizine PO
- ➔ Ranitidine PO/IV

Biphasic Reactions!
- ➔ Reoccurrence of symptoms after initial resolution
- ➔ **1-72h** after initial onset (most common **10-12h)**

DISCHARGE PLANNING

- ➔ Autoinjector prescription
- ➔ Referral to allergist/immunologist
- ➔ **Families should be educated on risk & signs of biphasic reaction and when to return for care**

September 2025
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