A. An allergic reaction is an exaggerated response by the immune system to a foreign substance. Reactions can range from mild skin rashes to severe, life-threatening reactions that involve virtually every body system. The most severe type of allergic reaction is anaphylaxis.

B. Anaphylaxis is a life-threatening emergency that requires prompt recognition and treatment.

C. Some of the signs and symptoms are listed in the table below. Note that not all signs and symptoms will be present in every case.

<table>
<thead>
<tr>
<th></th>
<th>Mild Allergic Reaction</th>
<th>Severe Allergic Reaction or Anaphylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Onset</strong></td>
<td>Gradual</td>
<td>Sudden (30-60 seconds but can be more than an hour after exposure)</td>
</tr>
<tr>
<td><strong>Skin / Vascular System</strong></td>
<td>Mild flushing, rash, or hives</td>
<td>Severe flushing, rash, or hives; Angioedema (swelling) to face and neck</td>
</tr>
<tr>
<td><strong>Respiration</strong></td>
<td>Mild bronchoconstriction</td>
<td>Severe bronchoconstriction (wheezing), laryngospasm (stridor), breathing difficulty</td>
</tr>
<tr>
<td><strong>GI System</strong></td>
<td>Mild cramps, diarrhea</td>
<td>Severe cramps, abdominal rumbling, diarrhea, vomiting</td>
</tr>
<tr>
<td><strong>Vital Signs</strong></td>
<td>Normal to slightly abnormal</td>
<td>Increased pulse early, may fall in late/severe case; increased respiratory rate early, decreasing rate late; falling BP late</td>
</tr>
<tr>
<td><strong>Mental Status</strong></td>
<td>Normal</td>
<td>Anxiety, sense of impending doom, may decrease to confusion and to unconsciousness</td>
</tr>
<tr>
<td><strong>Ominous Signs</strong></td>
<td></td>
<td>Respiratory distress, signs of shock, falling respiratory rate, falling pulse rate, falling blood pressure</td>
</tr>
</tbody>
</table>

**Basic EMT**

A. Assess and manage airway
   1. Administer oxygen as needed to treat shock and/or respiratory distress
   2. Apply pulse oximeter and treat per pulse oximeter procedure

B. Evaluate patient’s general appearance, relevant history of condition and determine OPQRSTI and SAMPLE – especially ask about past allergic reactions, recent exposures and new medications.

C. Ask patient or bystanders if epinephrine auto-injector has been prescribed for these situations and if medication available:
   1. IF MEDICATION IS NOT AVAILABLE – Transport immediately, unless ALS unit is en route AND has ETA less than 5 minutes
   2. IF MEDICATION IS AVAILABLE:
      - Assure medication is prescribed for patient
      - Check medication – expiration date, administration method
      - Administer epinephrine auto-injector in mid-thigh and hold injector firmly against leg for at least ten seconds to assure all medication is injected
3. Record patient’s response to medication and relay to Medical Control – be sure to have vital signs

D. Transport patient IMMEDIATELY in position of comfort

**Advanced EMT**

A. Reassess patient. Monitor airway and respiratory status closely.

B. Monitor ECG

C. Obtain IV access – Normal Saline at TKO. If patient is hypotensive – SBP < 100 mmHg in adults and age-specific in pediatrics – administer Normal Saline IV bolus:
   - 250 – 500 ml for adults
   - 20 ml/kg for pediatric patient (to a maximum of 500ml)
   - Repeat boluses as needed to maintain blood pressure

D. For Moderate Allergic Reaction (e.g., hives, itching, redness, stable vitals) administer:
   1. **Diphenhydramine (Benadryl):**
      - **Adult Dose:** 25-50 mg IM or 25 mg slow IVP (over 3 minutes)
      - **Pediatric Dose:** 1 mg/kg IM or slow IVP (over 3 minutes)
   2. **Albuterol aerosol.** May repeat.

E. For Severe Allergic Reaction / Anaphylaxis administer:
   1. **Epinephrine 1:1000:**
      - **Adult Dose:** 0.3 mg IM
      - **Pediatric Dose:** 0.01 mg/kg IM (Maximum dose of 0.3 mg)
   2. **Diphenhydramine (Benadryl):**
      - **Adult Dose:** 25-50 mg IM or 25 mg slow IVP (over 3 minutes)
      - **Pediatric Dose:** 1 mg/kg IM or slow IVP (over 3 minutes)
   3. **Albuterol aerosol.** May repeat.

**Paramedic**

A. For a patient with significant hypotension (SBP < 100 mmHg) or severe respiratory distress that has not responded to IM epinephrine 1:1000, consider **epinephrine 1:10,000**
   - **Adult Dose:** 0.3 – 0.5 mg slow IVP (over 3-5 minutes)
   - **Pediatric Dose:** 0.01 mg/kg slow IVP (over 3-5 minutes) Maximum dose is 0.3 mg.

B. Administer **methylprednisolone (Solu-Medrol)** for severe reaction / anaphylaxis and consider for lesser reactions:
   - **Adult Dose:** 125 mg IVP
   - **Pediatric Dose:** 2 mg/kg IVP
**ALLERGIC REACTION / ANAPHYLACTIC SHOCK**

- Assess and manage airway
- Maintain O2 SATS >95%
- Evaluate patient condition
- Monitor vital signs
- Obtain medical history
- Reassure patient
- Administer epinephrine – auto-injector (must be patient prescription)
- Transport in position of comfort

**IV NS (Run to maintain perfusion)**
- Monitor ECG
- Administer epinephrine 1:1,000
  - Adults: 0.3 mg IM
- Administer diphenhydramine (Benadryl)
  - Adults: 25-50 mg IM or 25 mg slow IV push
- Administer albuterol aerosol for wheezing

**For patient with significant hypotension or severe respiratory distress that does not respond to IM epinephrine:**
- Administer epinephrine 1:10,000
  - Adult: 0.3 mg – 0.5 mg slow IV push
- Administer methylprednisone (Solu-Medrol) for severe reactions and consider administration for lesser reactions
  - Adult: 125 mg IV push

**Mild allergic reaction**
- **Onset:** Gradual
- **Skin:** Mild flushing, rash, hives
- **Respiration:** Mild bronchoconstriction
- **GI System:** Mild cramps, diarrhea
- **Vital Signs:** Normal to slightly abnormal
- **Mental Status:** Normal

**Severe allergic reaction or anaphylaxis**
- **Onset:** Sudden (typically 30-60 seconds)
- **Skin:** Severe flushing, rash, hives; angioedema (swelling) to face or neck
- **Respiration:** Severe bronchoconstriction (wheezing), laryngospasm (stridor), breathing difficulty
- **GI System:** Severe cramps, diarrhea, vomiting
- **Vital Signs:** Increased pulse early, may fall in late severe cases; increased respiratory rate early, decreasing late, falling BP late
- **Mental Status:** Anxiety, sense of impending doom, may decrease to confusion and to unconsciousness
- **Ominous signs:** Respiratory distress, signs of shock, falling respiratory rate, falling pulse rate, falling blood pressure

**Key**
- Basic EMT
- Advanced EMT
- Paramedic
- Med Control
**ABDOMINAL PAIN / NAUSEA / VOMITING**

- ASSESS AND MANAGE AIRWAY
- MAINTAIN O2 SATS >95%
- EVALUATE PATIENT CONDITION
- MONITOR VITAL SIGNS
- OBTAIN MEDICAL HISTORY
- REASSURE PATIENT
- ADMINISTER **EPINEPHRINE – AUTO-INJECTOR** (MUST BE PATIENT PRESCRIPTION)
- TRANSPORT IN POSITION OF COMFORT

**KEY**

- BASIC EMT
- ADVANCED EMT
- PARAMEDIC
- MED CONTROL

**MILD ALLERGIC REACTION**

- **ONSET:** GRADUAL
- **SKIN:** MILD FLUSHING, RASH, HIVES
- **RESPIRATION:** MILD BRONCHOCONSTRICTION
- **GI SYSTEM:** MILD CRAMPS, DIARRHEA
- **VITAL SIGNS:** NORMAL TO SLIGHTLY ABNORMAL
- **MENTAL STATUS:** NORMAL

**SEVERE ALLERGIC REACTION OR ANAPHYLAXIS**

- **ONSET:** SUDDEN (TYPICALLY 30-60 SECONDS)
- **SKIN:** SEVERE FLUSHING, RASH, HIVES; ANGIOEDEMA (SWELLING) TO FACE OR NECK
- **RESPIRATION:** SEVERE BRONCHOCONSTRICTION (WHEEZING), LARYNGOSPASM (STRIDOR), BREATHING DIFFICULTY
- **GI SYSTEM:** SEVERE CRAMPS, DIARRHEA, VOMITING
- **VITAL SIGNS:** INCREASED PULSE EARLY, MAY FALL IN LATE SEVERE CASES; INCREASED RESPIRATORY RATE EARLY, DECREASING LATE, FALLING BP LATE
- **MENTAL STATUS:** ANXIETY, SENSE OF IMPENDING DOOM, MAY DECREASE TO CONFUSION AND TO UNCONSCIOUSNESS
- **OMINOUS SIGNS:** RESPIRATORY DISTRESS, SIGNS OF SHOCK, FALLING RESPIRATORY RATE, FALLING PULSE RATE, FALLING BLOOD PRESSURE

**PEDIATRICS**

**FOR PATIENT WITH SIGNIFICANT HYPOTENSION OR SEVERE RESPIRATORY DISTRESS THAT DOES NOT RESPOND TO IM EPINEPHRINE:**

- ADMINISTER **EPINEPHRINE 1:1,000** PEDIATRICS: 0.01 MG/KG IM (MAX DOSE 0.3 MG)
- ADMINISTER **DIPHENHYDRAMINE (BENADRYL)** PEDIATRICS: 1 MG/KG IM OR SLOW IV PUSH
- ADMINISTER **ALBUTEROL AEROSOL** FOR WHEEZING

**FOR PATIENT WITH SIGNIFICANT HYPOTENSION OR SEVERE RESPIRATORY DISTRESS THAT DOES NOT RESPOND TO IM EPINEPHRINE:**

- ADMINISTER **EPINEPHRINE 1:10,000** PEDIATRIC: 0.01 MG/KG (0.1ML/KG) SLOW IV PUSH
- ADMINISTER **METHYLPREDNISONE (SOLU-MEDROL)** FOR SEVERE REACTIONS AND CONSIDER ADMINISTRATION FOR LESSER REACTIONS PEDIATRICS: 2 MG/KG IV PUSH