

Severe Allergic Reaction Training for School Staff

Molalla River School District

A Allergens that can set off anaphylaxis

FOOD



- Peanuts
- Tree nuts: almonds, pecans, cashews, walnuts
- Shellfish
- Cow's milk products
- Hen's eggs
- Fish
- Soy

VENOM



- Yellow jackets
- Wasps and hornets
- Honeybees
- Fire ants
- Spiders

LATEX



- Balloons
- Rubber gloves
- Condoms
- Elastic bands (i.e., physical therapy bands/rubber bands)
- Dental dams

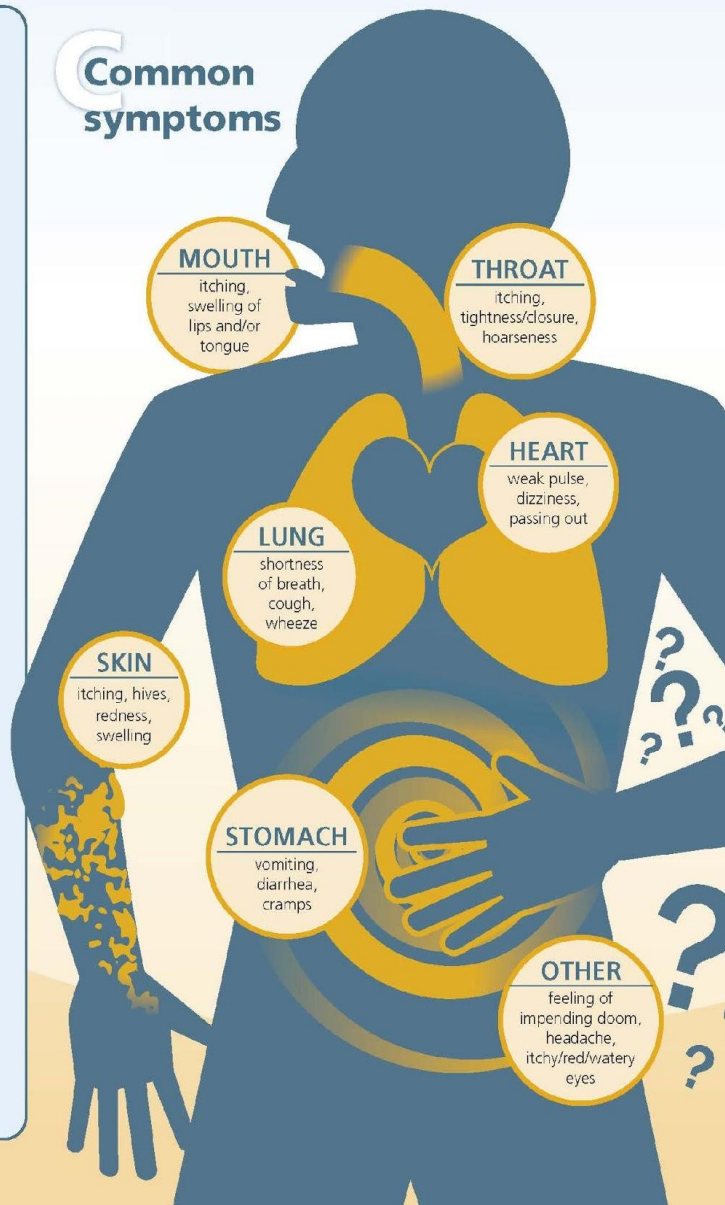
Foods with cross-reactive proteins to natural rubber: banana, avocado, chestnut and kiwi

MEDICATION



- Penicillin
- Aspirin, ibuprofen and other NSAID pain relievers

C Common symptoms



E Epi Everywhere! Every Day! Right Away

RECOGNIZE THE SEVERITY



Anaphylaxis is life-threatening, unpredictable, presents in multiple ways and can progress quickly

USE EPINEPHRINE IMMEDIATELY



An epinephrine auto-injector is the **first line** of treatment to stop the progression of anaphylaxis in all body systems. Use it at the **first sign of symptoms** – don't wait to see what happens!

CALL 911



Always call for emergency medical assistance and go to the emergency room for follow-up observation and treatment.

CARRY TWO AUTO-INJECTORS



Keep two epinephrine auto-injectors on hand, in case symptoms recur before emergency medical assistance is available. Up to 35% of people will require more than one.

FOLLOW UP



Consult a board-certified allergist for accurate diagnosis and prevention/treatment plan.

Background & Rationale

Anaphylaxis has increased in frequency over the past couple of decades. Severe allergic reactions can occur at any time, and develop at any age. Twenty five percent of children experience their first anaphylactic reaction in the school setting. Epinephrine is fundamentally important in the management of Anaphylaxis (WHO, 2013) Delayed injection of epinephrine is potentially associated with fatal anaphylaxis, related to the progression of cardiac arrest without treatment (Pumphrey, 2010) and is one of several factors contributing to multiphasic or severe protracted anaphylaxis, which is an indicator for multiple doses of epinephrine administration due to lack of symptoms relief by the initial dose (Manivannan, 2009). This prompted the need and legislation for early detection of symptoms associated with severe allergic reactions and access to immediate treatment in population based settings

Purpose

- Staff in population based settings trained to recognize anaphylaxis allows for immediate response and administration of epinephrine.
- Timeliness of epinephrine prevents fatalities.
- Having trained staff on site allows for available doses of stock epinephrine.
- Evidence base supports population based training and access to stock epinephrine and Oregon Legislation is describes this as a necessary practice.

The Laws

Laws were passed in 1981 and revised in 1989, 1997 and 2012 respectively

ORS 433.805-803 allows for persons who complete training to administer emergency epinephrine in a situation where a person is suffering from a severe allergic reaction when a licensed health care provider is not immediately available

OAR 333-055-000 to 333-055-0035 completion of the course provides authorization for emergency supply of epinephrine.

The Protocol

Created by the Oregon Health Division, the protocol outlines the laws as per the bills introduced by the Oregon Medical Association which covers:

Allergens

Anaphylaxis

Causes

Symptoms

Response

Administration of Epinephrine

Follow up

Who can be trained?

- Over the age of 18.
- Must reasonably expect to have contact with populations who may experience severe allergic reactions.
- Preferably staff also trained in CPR.

Who can train staff?

- A physician
- A nurse practitioner.
- A registered nurse with a prescription delegation from a prescriber.
- A paramedic under the supervision of an EMS Medical Director (OAR 333-265).

Allergy Definitions

- ❑ Allergen- a protein not normally found in the body that may cause an exaggerated allergic response.
- ❑ Most common allergens:
 - ❑ Food
 - ❑ Medication
 - ❑ Pollen
- ❑ Reactions
 - ❑ Normal (None or minimal)
 - ❑ Localized
 - ❑ Anaphylaxis

The Nature of Anaphylaxis

- Anaphylaxis is life threatening
 - Constriction of airway
 - Dramatic drop in blood pressure (shock)
- Symptoms are almost always immediate
 - Reactions are less commonly delayed by several hours
- Most important factor in whether someone experiencing anaphylaxis lives or dies is how quickly they receive epinephrine.
- Immediate administration of epinephrine requires recognition of symptoms

Anaphylaxis (play video)



Symptoms of Anaphylaxis:

- Shortness of breath
- Difficulty breathing
- Itching
- Rash
- Intractable sneezing, wheezing or coughing
- **Difficulty swallowing**
- **Hoarseness**
- **Loss of consciousness**
- **Angioedema (swelling)**
- **Hypotension (low blood pressure)**
- **Rapid, weak pulse**
- Nausea, vomiting, abd pain, diarrhea
- **Cyanosis**
- Burning of the face or chest
- Sweating and anxiety
- Flushing

Triggers:

Most common identifiable causes:

- Insect venom
- Food
- Medication
- Latex
- Physical exercise
- Idiopathic

Prevention

- Identify sensitive individuals
 - Anyone can experience an anaphylactic reaction. But those who have experienced previous reactions are at a higher risk
 - Those with asthma are at a higher risk of severe reactions.
- Know triggers
- Make all attempts to decrease risk of exposure to triggers

Stings

- Bees, wasps, hornets are the culprits. Yellow jackets are the most common cause of SAR in the Pacific northwest.
- Venom is more potent during late summer and early fall
- Insects are more likely to sting on hot days, particular following rain

Sting Prevention

Prevention includes:

- Avoiding insects, not swatting if present
- Avoiding flowering trees or shrubs
- Avoid bright colors or rough fabrics, instead wear light colors with smooth textures, wear shoes
- Avoid perfumes, fragrant lotions
- Avoid eating outside or known areas with garbage

If a student has a known bee sting allergy and will participating in activities outdoors, the responsible adult should carry the student's epi-pen.



Normal Reactions to Stings:

- Varying levels of pain, redness and swelling and heat. Swelling on the hands or feet may have longer lasting symptoms.
- This generally does not require medical attention.
- Secondary infections may occur and should not be confused for allergic reactions.



Stings around eyes nose or throat:

- Medical attention should be sought if someone is stung around the eyes , nose or throat as even minimal swelling may cause obstruction and become dangerous.
- Stings around the eyes can cause long-term eye damage.
- Parents should be immediately contacted.

Localized reaction to stings

- Localized reaction may involve pain, itching and swelling that extends over an area larger than a quarter.
- The pain, itching and swelling may extend past a major joint line but limited to the affected extremity.
- This response may be delayed for several hours and may persist for more than a week.



Toxic Reactions

- Toxic reactions to multiple stings
- Toxic reactions are the result of multiple stings (usually 10 or more) .
- The evaluation and treatment should be the same as you would for anaphylaxis.



Picture: www.embracingcivility.com



Picture: ABC news

Food Allergies

- Any food can cause an allergic reaction
- About 8 % of US children's have a food allergy.
- About 25 % of these allergies occur for the first time at school
- Most common food allergens include:
 - Peanuts/ Tree nuts
 - Milk
 - Eggs
 - Wheat
 - Soy
 - Fish/ Shellfish

Avoiding Food Allergens

- Avoid foods
- Inform food prep personnel of allergy
- Prohibit food swapping
- Read labels (including skin care products)
- Avoid cross contamination
- Encourage hand washing
- Be cautious with classroom parties
- Provide allergy free zones/classrooms, specifically for younger students.

Medications

- Penicillin is by far the most common cause of anaphylactic reaction
- People experience reactions even if they have taken the medication previously without incident.
- Individuals must be exposed before they can be sensitized.
- Kids do take antibiotics at school

Other causes of SAR:

- Exercise with exposure to environmental allergens
- Latex
 - balloons
 - gloves
 - rubber bands
 - art supplies etc.



Treatment of Anaphylaxis

1. Determine if the person is suffering an anaphylactic reaction. It is safer to give the epinephrine than to delay treatment.

This is a life-and-death decision.

2. Do not move the person, unless the location possesses a safety threat.
3. Have the person sit or lie down.
4. Select the proper version of the auto-injector.
5. Administer epinephrine through the device.

Treatment of Anaphylaxis cont...

6. Have someone call for emergency medical assistance (9-1-1).

DO NOT LEAVE THE PERSON UNATTENDED.

7. Note the time when the auto-injector was used.

8. Remove the stinger if one is present. Do this by scraping with a plastic card or fingernail. Do not pinch or squeeze the stinger because this can cause more venom to be released.

9. Check and maintain the person's airway and breathing. Administer CPR if required and trained. If the person has stopped breathing and does not respond to rescue breathing, he/she may have severe swelling of the throat, which closes the airway. Continue CPR efforts

Treatment of Anaphylaxis cont...

10. Monitor for changes such as an improvement in breathing, increase in the person's consciousness, or a decrease in swelling.

11. If EMS is more than 10 minutes away and if the person's condition does not change or worsens after 5 minutes of the auto-injector, then administer a second dose of auto-injector.

12. Upon the arrival of EMS, advise them of the person's signs before the auto-injector was given and any changes of the person's condition since then. If the person experiencing an anaphylactic reaction is also asthmatic, you can assist the person in the use of his or her own inhaler if desired, after epinephrine is given. **It is recommended that any person who received epinephrine for an anaphylactic reaction follow-up with medical care as soon as possible.**

Epinephrine

- Also known as adrenaline
- Prescription use is only for anaphylaxis
- Most immediate and effective treatment available
- Opposes the actions of anaphylaxis
- Effects are fast acting but short lived
- Causes some side effects

Auto-injectors



Auvi- Q and Twinject are not OSHA approved for school use.



Storage

- Epinephrine should have a designated area that trained staff are aware of
- Epinephrine should be stored in a dark place at room temp (between 59-86 degrees F)
- Epinephrine must be protected from freezing
- Sunlight will hasten deterioration.
- Regularly inspect your supply of epinephrine. Inspect each auto-injector for the following:
 - The solution should be clear and without particles. Solution that appears cloudy, discolored (brown) or with particles must be replaced.
 - The auto-injector should be in date and not expired

Dosing

Auto-Injector	Epinephrine Concentration	Patient Weight
EpiPen [®] Auto-Injector	0.3 mg (0.3 mL, 1:1000)	≥30 kg (≥66 pounds)
EpiPen Jr [®] Auto-Injector	0.15 mg (0.3 mL, 1:2000)	15-30 kg (33-66 pounds)

Although the EpiPen[®] JR and Auvi Q .15 are not recommended for use with small children (infants and toddlers), the risks of death from true anaphylaxis are greater than the risks for administering epinephrine to this age group.

Table: epi-pen.com

Administration

- Administer epinephrine at the first sign of anaphylaxis.
- The most important aspect of intervention for severe allergic response is timing.
- Always be ready to treat the affected person immediately.
- The effects of epinephrine last approximately 10-20 minutes.
- If the signs of anaphylaxis continue after 5 minutes administer the second auto-injector.
- If the signs of anaphylaxis return and EMS has not arrived, administer the second auto-injector.

Auto-injector Administration

1. Remove the auto-injector from its protective case.
2. Remove the safety caps of the injector, which are typically found on the trigger (if applicable) and or/ the tip of the injection device
3. Hold the auto-injector firmly. Keep fingers away from the tip of the device.
4. Position the device at a 90-degree angle to the outer thigh. For those devices that will trigger upon contact with the skin, jab the device firmly into the thigh until a click is heard
5. Hold the device against the thigh firmly for 5-10 seconds to allow the full dose to be administered (consult the product directions for the exact timing).



Auto-injector Administration cont...

6. Remove the device and place it back into its protective case when applicable.
7. Massage the skin at the injection site for 10 seconds.
8. If medical assistance has not been summoned, then call 9-1-1 or have someone do this for you.

DO NOT LEAVE THE PERSON UNATTENDED. Advise the dispatcher that epinephrine was given

NOTE: Any person who received epinephrine for anaphylaxis ultimately requires evaluation by a physician. Ambulance transport to the emergency department is recommended.

9. Note the time when the auto-injector was used

RETURN DEMONSTRATION



Review

- Definition
- Causes
- Symptoms
- Response
- Administration
- Prevention

Quiz

<https://docs.google.com/a/molallariv.k12.or.us/forms/d/1r-V7p0Jy8AFKG3tp7TBYBx6Ex6T4sssF71wnjQDL-28/edit>

Questions?



References

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Treatment of Allergic Response – Statement of Completion

This certifies that:

Address:

Has completed an approved training program covering recognition of symptoms of systemic reactions to allergens and proper administration of epinephrine, pursuant to ORS 433.605 to 433.830 and rules of the Oregon Health Authority, Public Health Division. Under ORS 433.825 this person is authorized to administer epinephrine in a severe allergic reaction emergency.

Signature of Authorized Trainer

Date Trained

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