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# **Anaphylaxis & Drug Allergy** **For low resource settings**

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# Disclosures

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## Honoraria received in past 2 years

- ALK, Stallergenes Greer, Bausch Health, Biocryst, Sanofi, CSACI Food Allergy Educator Program

## Research Collaboration Support

- Research Institute, McGill University Health Centre

## Non-profit role

- Board member, Institute for International Medicine
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# Learning objectives

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- Recognizing anaphylaxis clinically
  - Using epinephrine confidently
  - Practical drug allergy assessment
  - Adapting safely when ideal resources are unavailable
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# Anaphylaxis



# What is anaphylaxis?

rapid onset

multiple systems

potentially life-threatening

clinical diagnosis



Anaphylaxis is a life-threatening allergic reaction that affects more than one organ system.

## Allergens that can set off anaphylaxis

### FOOD



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

### MEDICATION



- Penicillin
- Aspirin, ibuprofen and other NSAID pain relievers

### VENOM



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

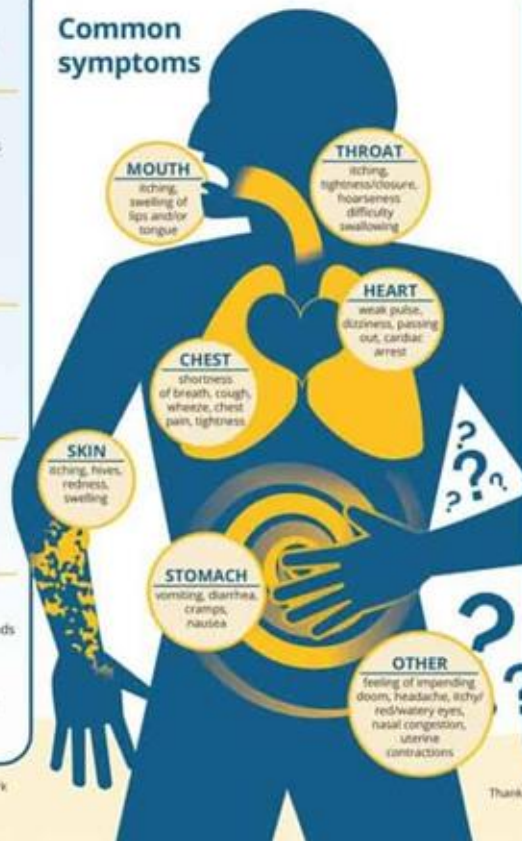
### LATEX



- Balloons
- Rubber gloves
- Rubber bands/elastic bands
- Bathmats/yoga mats
- Condoms
- Dental dams

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

## Common symptoms



## Epi First, Epi Fast!

### RECOGNIZE THE SEVERITY



Anaphylaxis is potentially life-threatening, unpredictable, presents in different ways, and can progress quickly.

### CARRY EPINEPHRINE WITH YOU



Epinephrine is the first line of treatment for anaphylaxis. Always keep epinephrine on hand. You need two devices in case symptoms recur.

### USE EPINEPHRINE IMMEDIATELY



Epinephrine can stop the progression of anaphylaxis. Use epinephrine at the first sign of symptoms. Don't wait to see what happens. Any delay can worsen symptoms.

### MONITOR SYMPTOMS



Closely monitor the anaphylactic episode. Call for emergency medical help and consider a second dose of epinephrine if you have severe anaphylaxis, if symptoms do not go away promptly or completely, or if symptoms return or worsen.

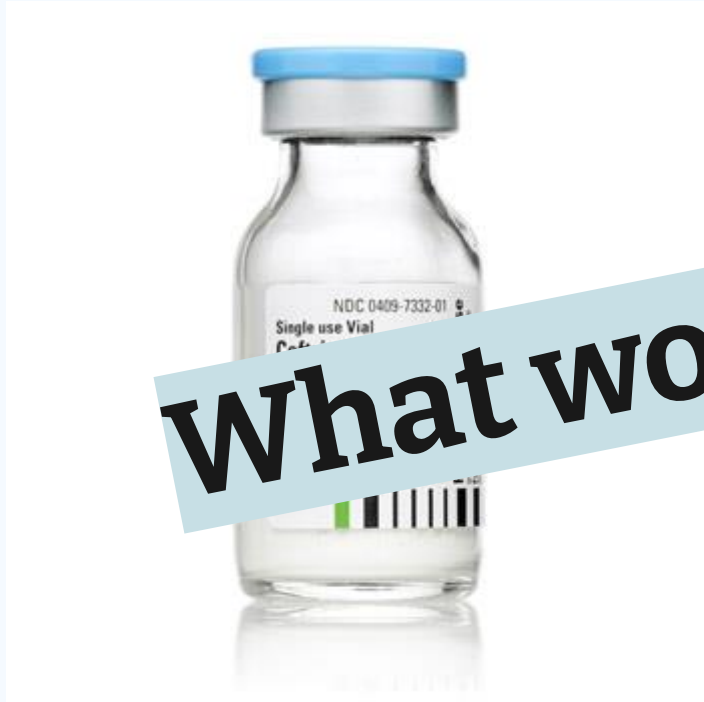
### FOLLOW UP WITH YOUR DOCTOR



Consult a board-certified allergist for an accurate diagnosis if needed. Work together to develop a prevention and treatment plan.



# Ceftriaxone IV



flushing

dizziness

**What would you do??**

throat "tightness"

tachycardia



# Know Your Emergency Epinephrine Options and How to Use Your Device







## BLUE TO THE SKY

# 1

- Grasp with orange tip pointing downward
- Remove blue safety cap by pulling it straight up – do not bend or twist



## ORANGE TO THE THIGH

# 2

- Place the orange tip against the middle of the outer thigh
- Push hard against the leg until you hear a pop, which signals that the injection has started
- Hold in place for 3 full seconds

# How to use *neffy*



## 1 Remove

Remove *neffy* from packaging. Pull open the packaging to remove the *neffy* nasal spray device.



## 2 Hold

Hold device as shown. Hold the device with your thumb on the bottom of the plunger and a finger on either side of the nozzle.

- Do not pull or push on the plunger.
- Do not test or prime (pre-spray). Each device has only 1 spray.



## 3 Insert

Insert the nozzle into a nostril until your fingers touch your nose, if possible. Keep the nozzle straight into the nose pointed toward your forehead.

- Do not point (angle) the nozzle to the nasal septum (wall between your 2 nostrils) or outer wall of the nose.



## 4 Press

Press plunger up firmly until it snaps up and sprays liquid into the nostril.

- Try to avoid sniffing during or after receiving a dose of *neffy*. If you sniff by accident, monitor your symptoms for at least 5 minutes and if they continue or get worse, give a second dose of *neffy* in the same nostril, if possible.

# Now what??

## Priorities

- airway & positioning
- repeat epinephrine
- transfer planning

## Supportive care

- bronchodilator
- antihistamines
- fluids & monitoring



# Allergy or side effect?

<b>More concerning for allergy</b>	<b>More suggestive of side effect</b>
Hives	GI upset
Facial swelling	Headache
Wheeze	Metallic taste
Hypotension	Isolated nausea
Rapid onset after dosing	Non-specific symptoms



# Why allergy labels matter



- fewer treatment options
- higher cost
- broader antibiotics
- delayed care

# Penicillin Allergy Decision Rule (PEN-FAST)



Identifies low-risk penicillin allergies.

When to Use ▾

Pearls/Pitfalls ▾

Why Use ▾

Five years or less since reaction

No

0

Yes/unknown

+2

Anaphylaxis or angioedema

No

0

Yes

+2

OR

Severe cutaneous adverse reaction

Treatment required for reaction

No

0

Yes/unknown

+1

**0** points

PEN-FAST Score

**<1** %

Very low risk of positive penicillin allergy test

Copy Results

Next Steps >>

Penicillin 2  
Penicillin  
Amoxicillin  
Amoxicillin  
Amoxicillin  
Cefazolin  
Cefazolin  
AS

?

Severe cutaneous adverse reaction: overlap AGEP and SJS/TEN\*



Painful widespread



Positive Nikolsky sign

**NOT challenge cases**

**\*\*Dosing of rescue medications**

- **Epinephrine<sup>1</sup>**

Dosing: (0.01mL/kg)

- 10 – 25 kg = EpiPen junior (or 0.15mg epinephrine)
- 25 – 50kg = epinephrine 0.3mg (EpiPen adults or Emerade)
- >50kg = 0.5mg (0.5mL epinephrine or Emerade)

- **Cetirizine<sup>2</sup>**

- Age ≥ 6 mos. to < 2 yrs  
2.5mg po

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**What resources do you actually have?**

**4. Provide**

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- 1000mL normal saline or Ringers lactate
- 1000mL normal saline or Ringers Lactate

- **Ventolin<sup>5</sup>**

Additional equipment

- Patient's own metered dose inhaler if possible
- Face mask

- **Glucocorticoids<sup>6</sup>**

1. Prednisone 50mg po
2. Solucortef 100mg vials



return to



## Amoxicillin allergy?

6-year-old treated with  
amoxicillin for ear infection

**Day 5:** diffuse rash + mild itching

No mucosal involvement

No respiratory symptoms

Child otherwise well

## Final points

- Not every situation is clear-cut
- Adapt to resources
- Epinephrine hesitation is common
- Good history-taking changes everything