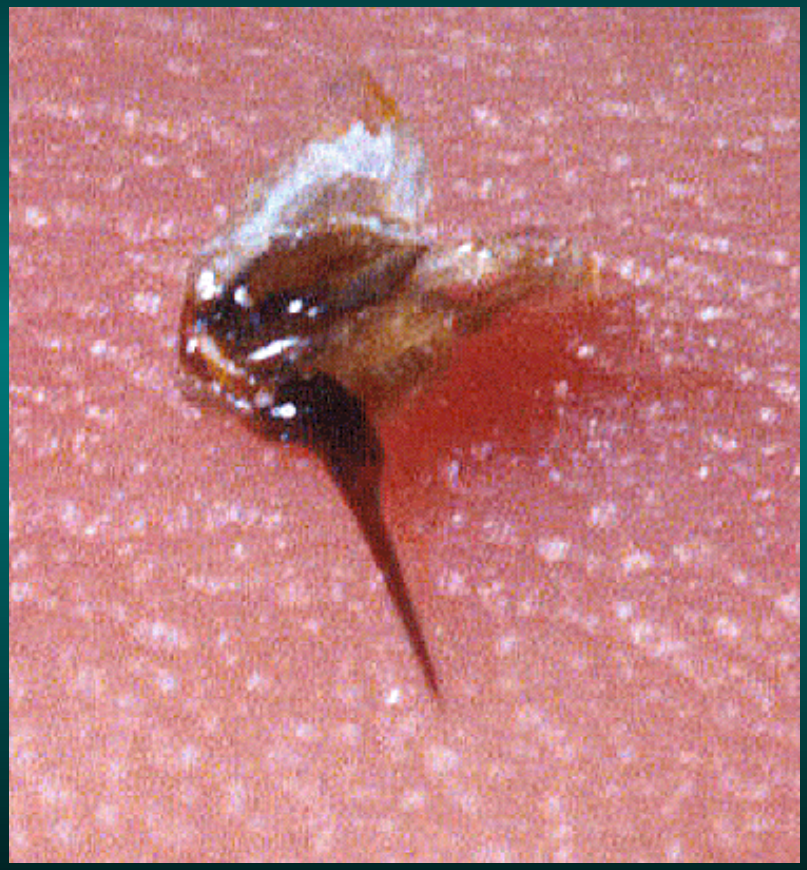
Ouch !!! Anaphylaxis

Richard W.O. Beebe MS RN REMTP Clinical Assistant Professor SUNY – Cobleskill

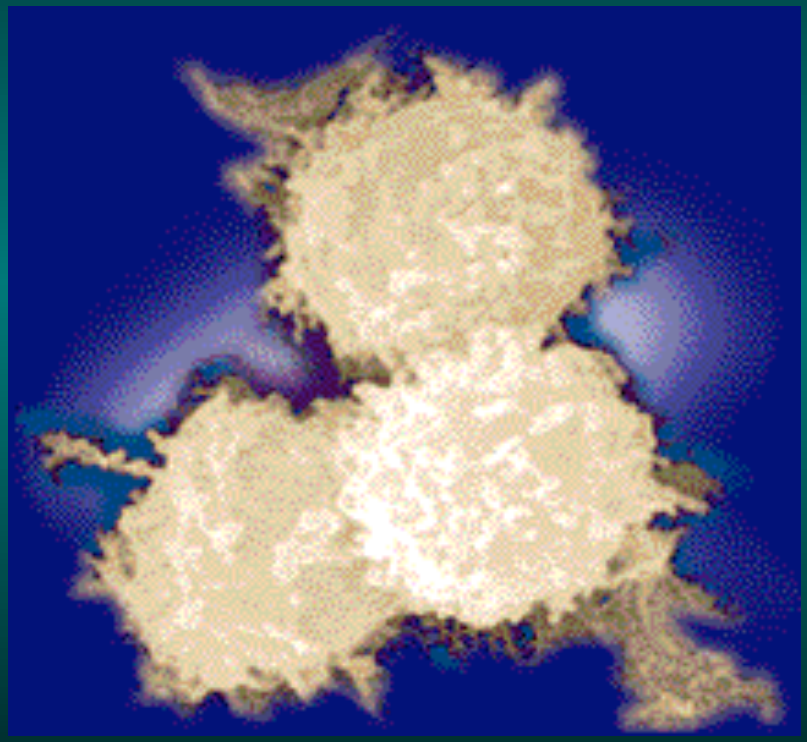
When the Bee Stings…



39 YO male

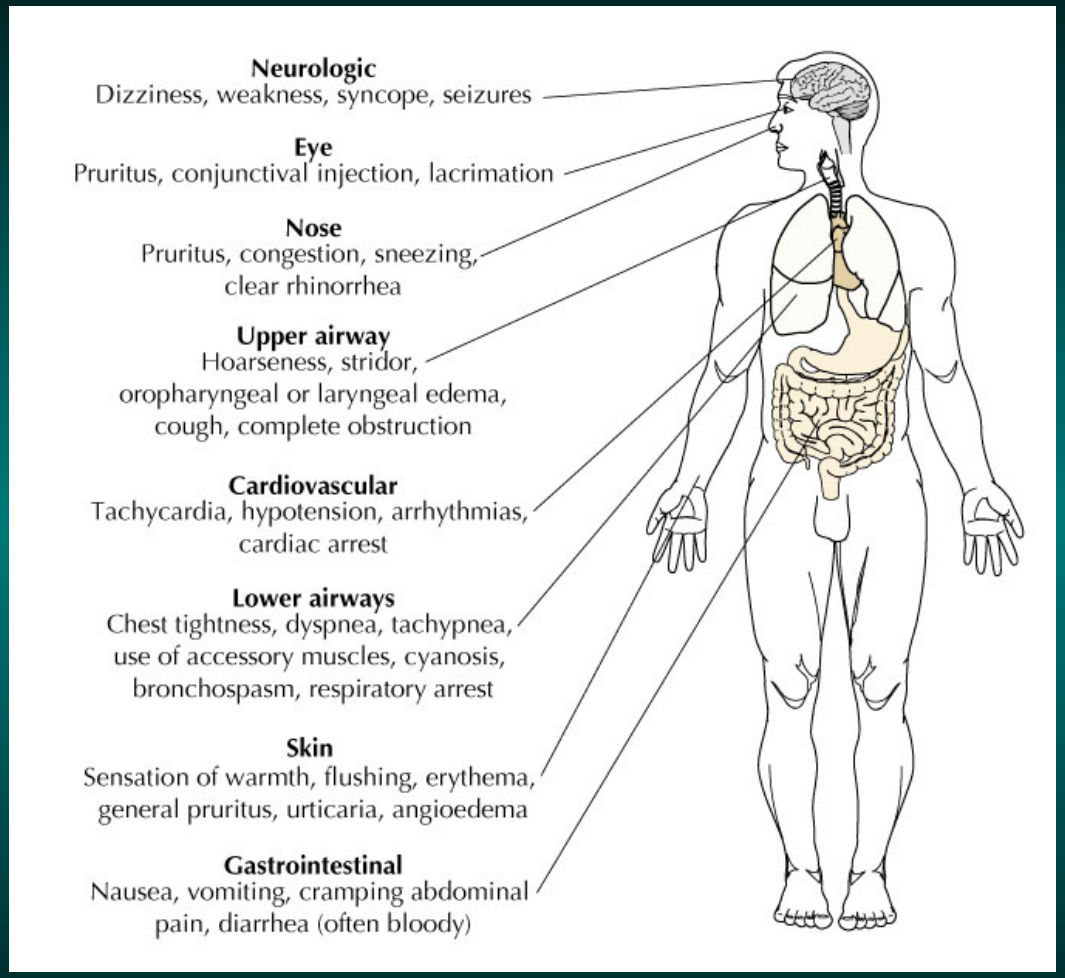
"I don't feel good…"

Anaphylaxis



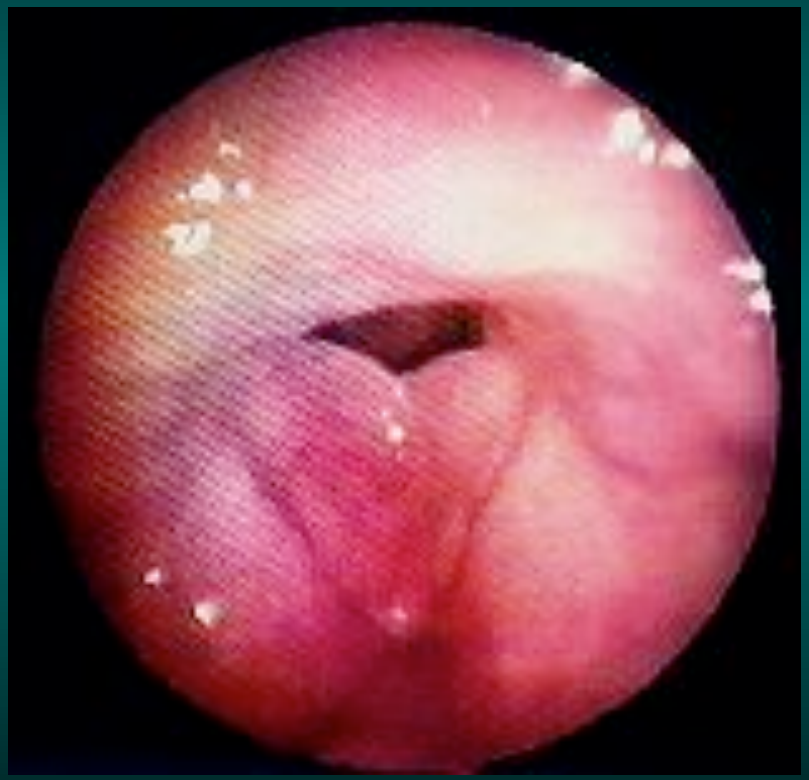
- Systemic Reaction
- Multiple Organ Systems
- Antigen Induced
- IgE Mediated
- Immunulogic Response
- Previous Sensitization

How does it manifest?



- Clinical Syndrome!

What causes the deaths?



- Laryngeal Edema
- Acute Bronchospasm
- Circulatory Collapse

What does the word mean?

- Ana
- Phylax

Overview of pathophysiology of TRUE ANAPHYLAXIS

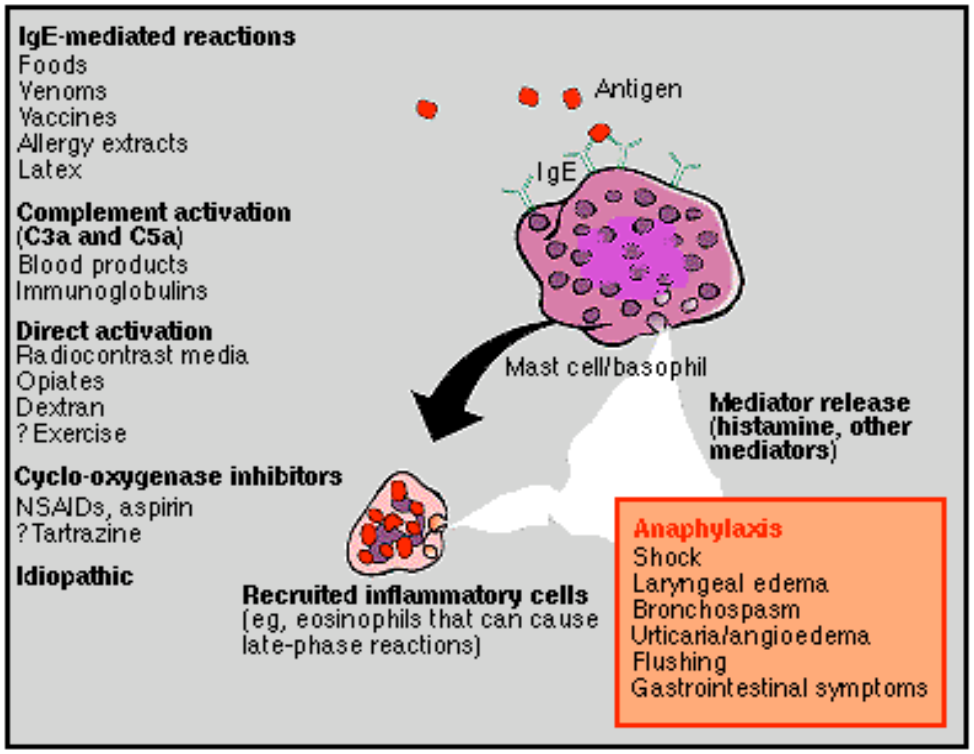
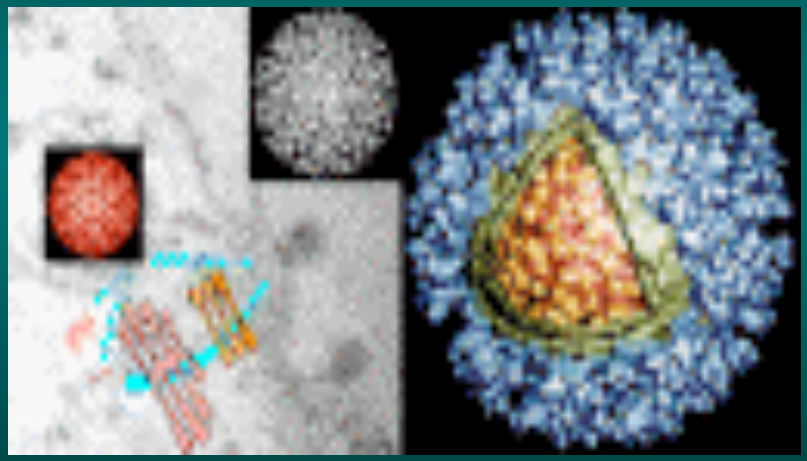


Figure 1. Mechanisms of mediator release in anaphylaxis. NSAIDs, nonsteroidal anti-inflammatory drugs.

MAST cell – Granulocyte

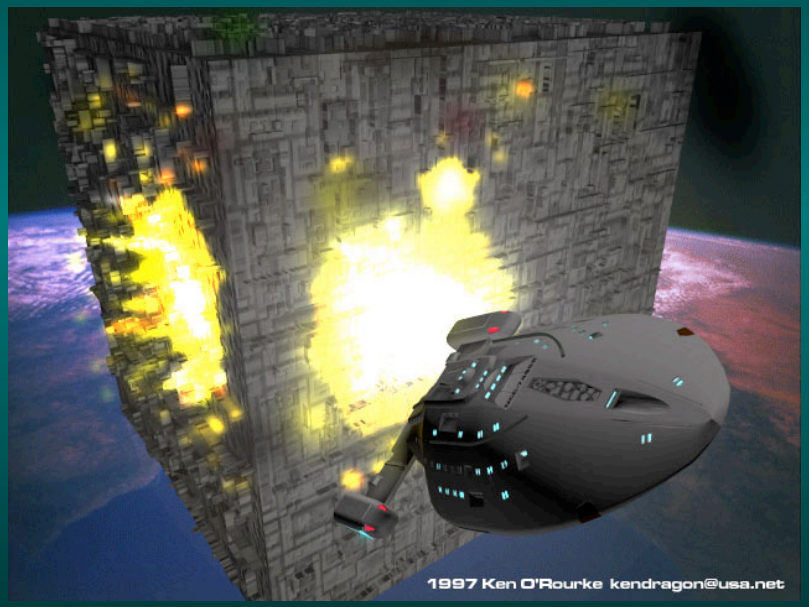
- Complement Activation
- Synthesis of Anaphylatoxins
- MAST Cell Stimulation
- Inhibition of Arachidonic Pathways

Major components of a Type I (anaphylactic) reaction are…



- IgE…
- MAST cells…
- Basophils…
- Eosinophils…
- Histamine releasing factors…

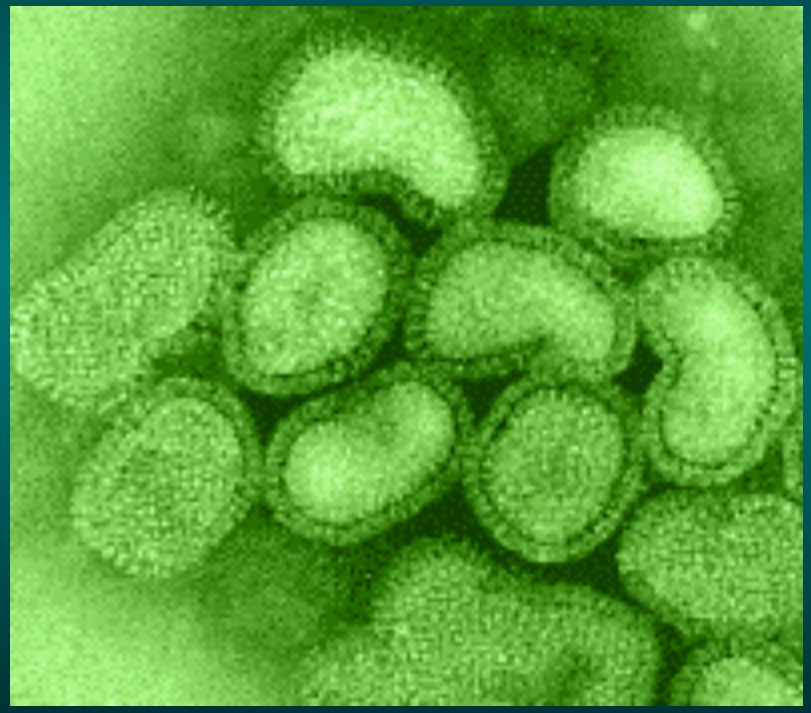
Mechanism of "classic" immediate hypersensitivity



First Contact!

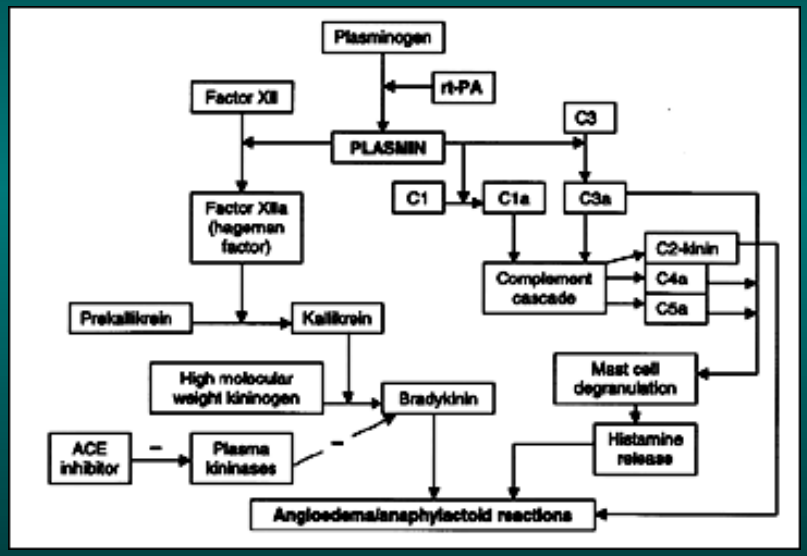
- Preformed mediators are…
- Newly formed mediators are…

Histamine is the…



- Prime Mediator
  - –H1
  - –H2
  - –H3

ANAPHYLACTOID Reactions



- NON-IgE mediated

Hymenoptera

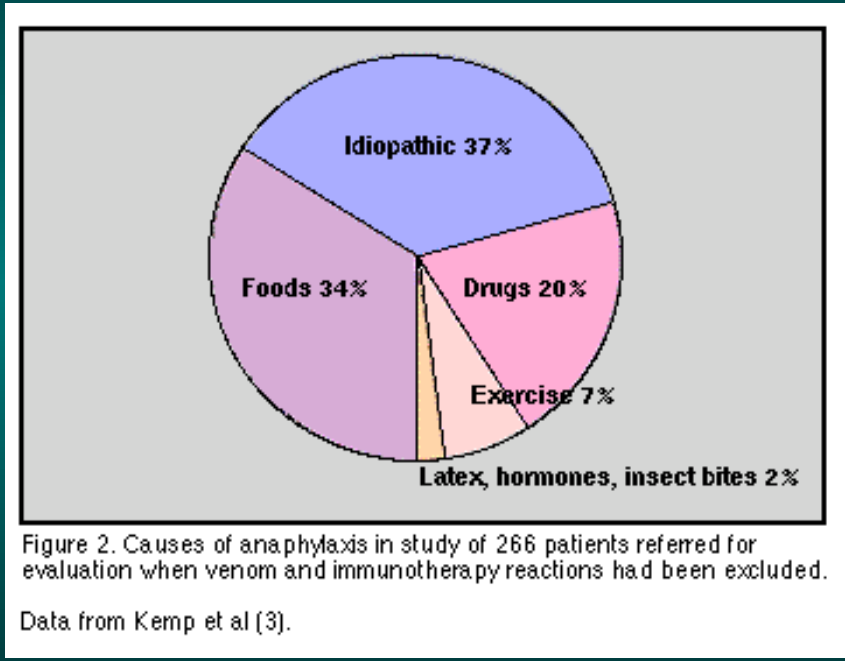


Figure 2. Causes of anaphylaxis in study of 266 patients referred for evaluation when venom and immunotherapy reactions had been excluded.

Data from Kemp et al (3).

- Yellow Jackets
- Hornets
- Wasps
- Honey Bees
- Bumble Bees
- Fire Ants

Medications

- PCN
- ASA
- Tetanus
- Insulin
- Lidocaine
- Dye

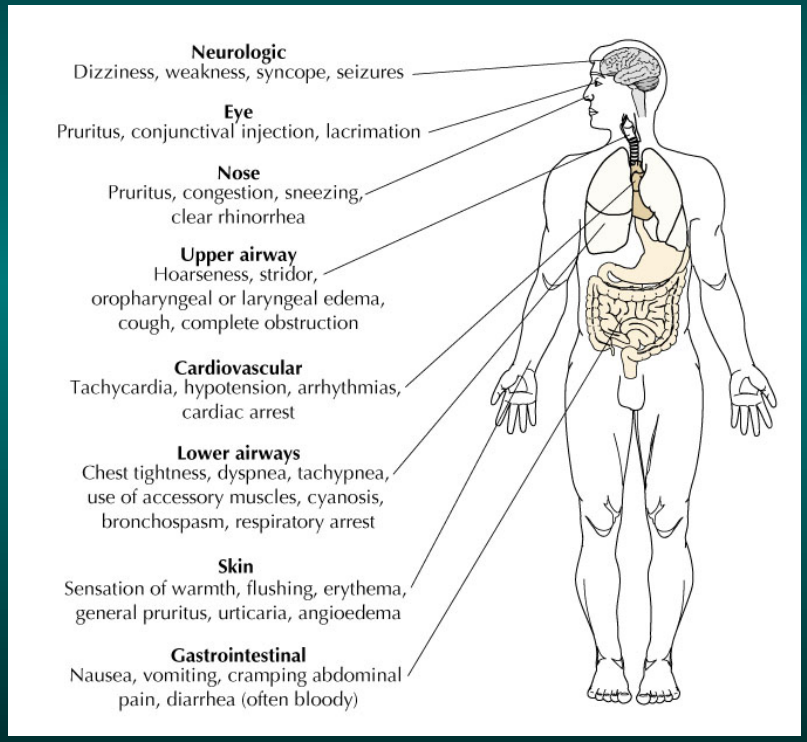
Foods!

- Shellfish
- Peanuts
- Eggs
- Sulfites

Bizarre and Unusual

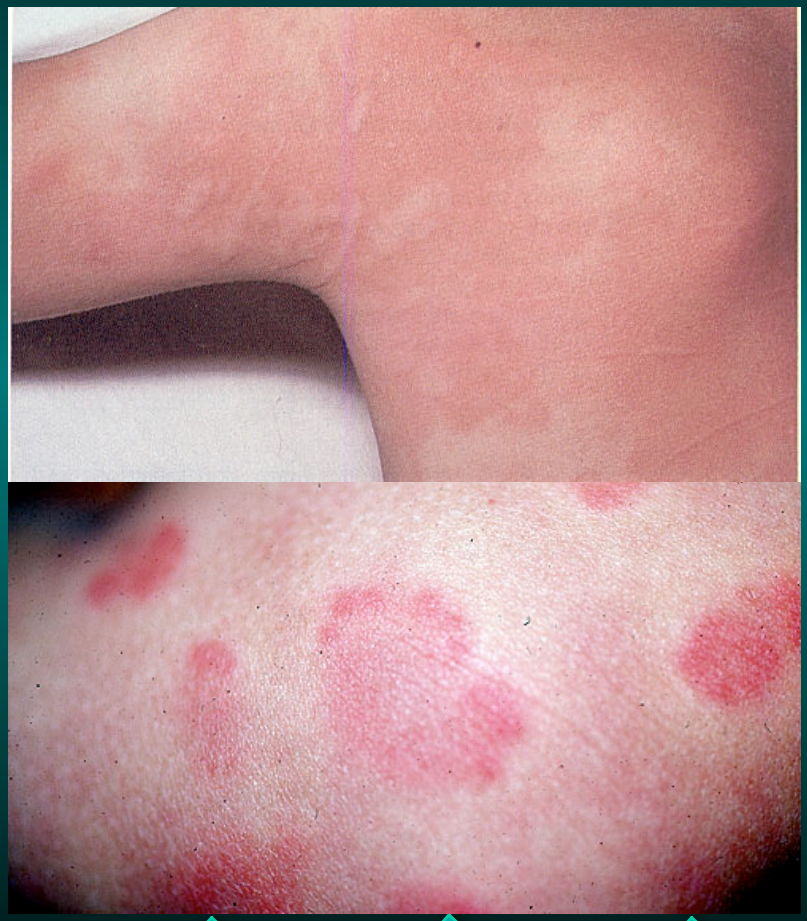
- Ventolin
- Chamomile Tea
- Exercise
- Seminal Fluid

Clinical expression of anaphylaxis depends on…



- Target Organs
  - Skin
  - GI Tract
  - Cardiovascular
  - Respiratory

The 1st clinical manifestation…



- Warmth
- Tingling
  - Face
  - Mouth
  - Upper Chest
  - Palms and Soles

Respiratory symptoms soon follow…

- Cough
- Chest Tightness
- Throat Tightness
- Odynophagia
- Dysplagia

Many may also complain of…

- Syncopy
- Ocular Itch!
- Borborgymi
- Tenesmus

Some may also complain of…

- Headache
- Pelvic Pain
- Sense of Impending DOOM

Examination may reveal…

- Urticaria
- Angioedema
- Rhinitis
- Conjunctivitis
- Hypotension

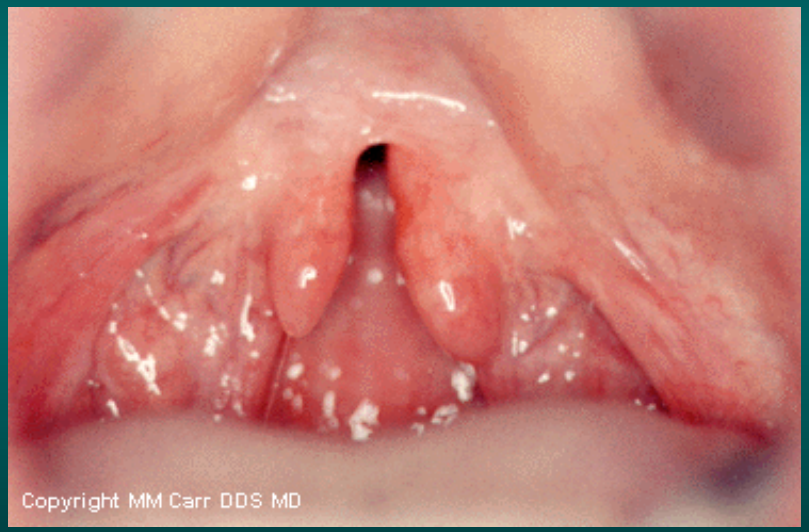
Optimal management requires…

- High Index of Suspicion!

The motto of emergency medicine:

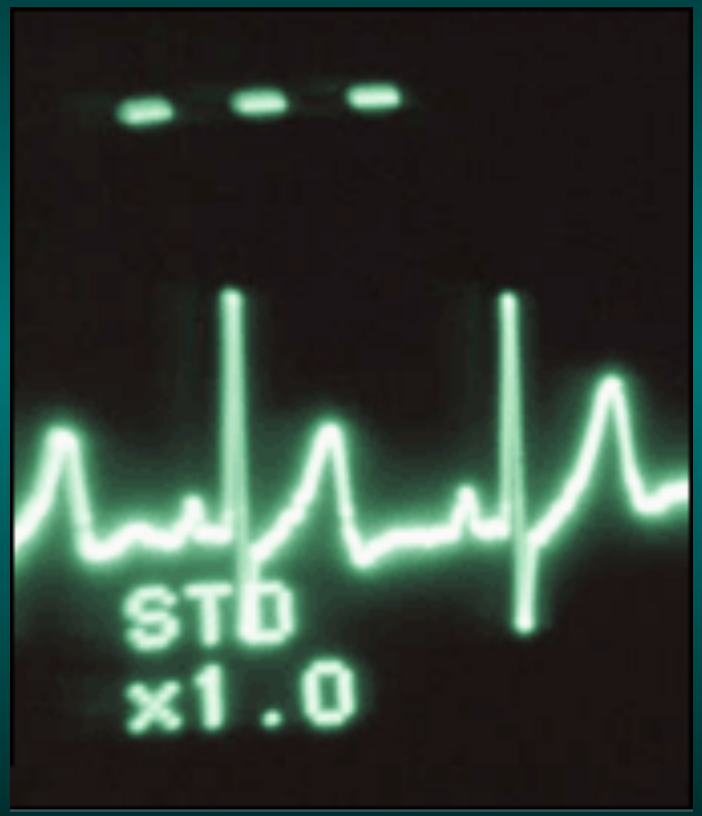
- TREAT FIRST - ASK QUESTIONS LATER

Differential diagnosis includes…



- Epiglottitis
- Restropharyngeal Adscess
- Peritonsilar Abscess
- Foreign Body Aspiration
- Tumor

Other EKG changes seen are…



- PAC
- Atrial Fib
- PVDC
- Ischemic Changes
- Intraventricular Conduction Delays

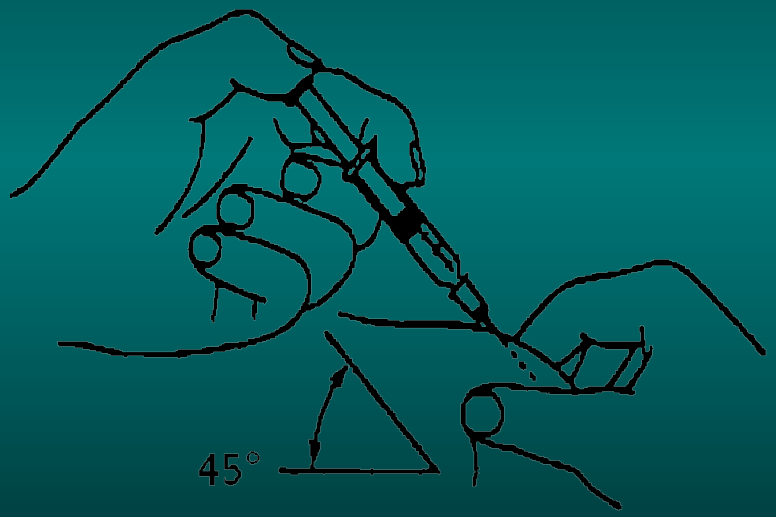
Prehospital management

- Benadryl
- Epi - Pen

Does inhaled epinephrine work?

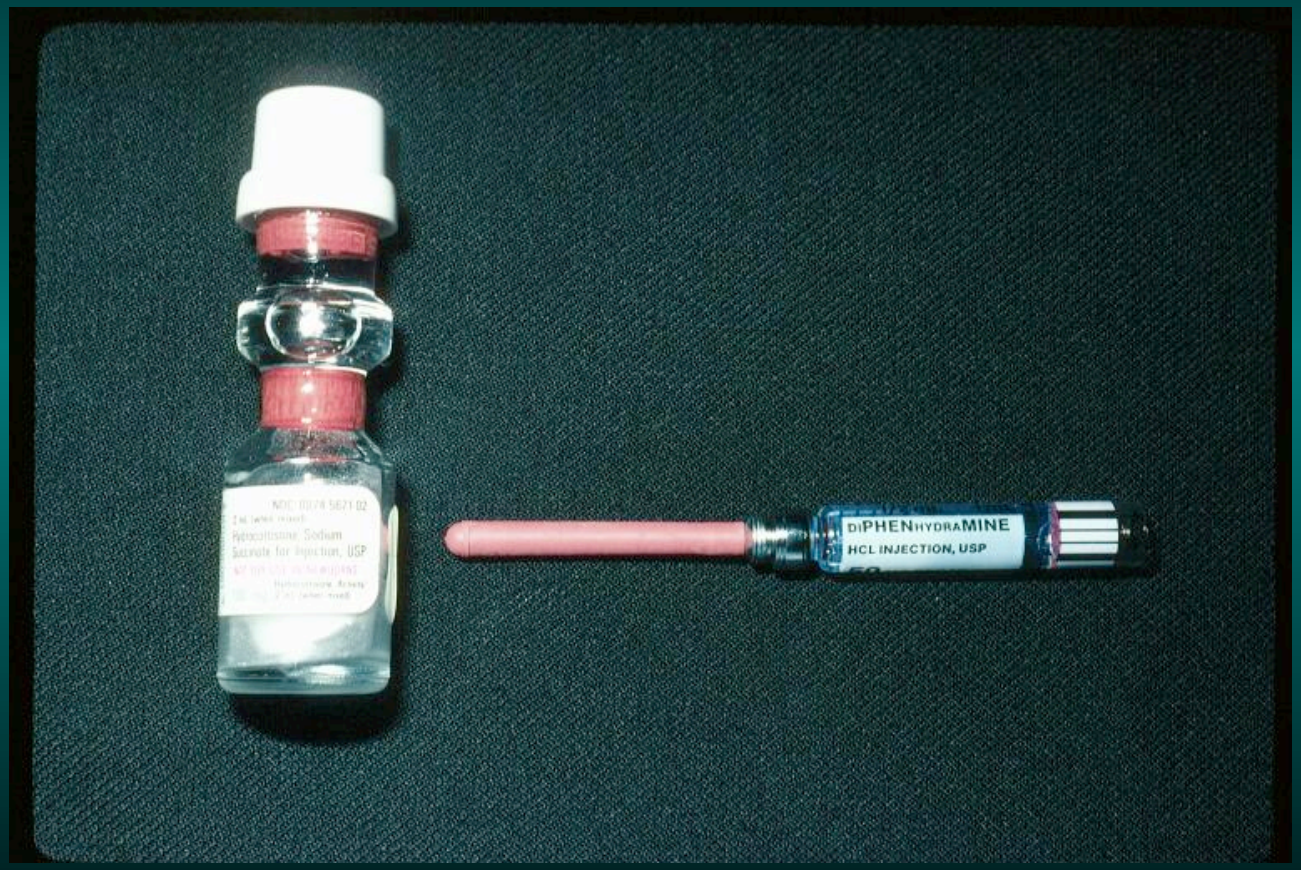
- Effective
- Inexpensive

Treating mild anaphylaxis…

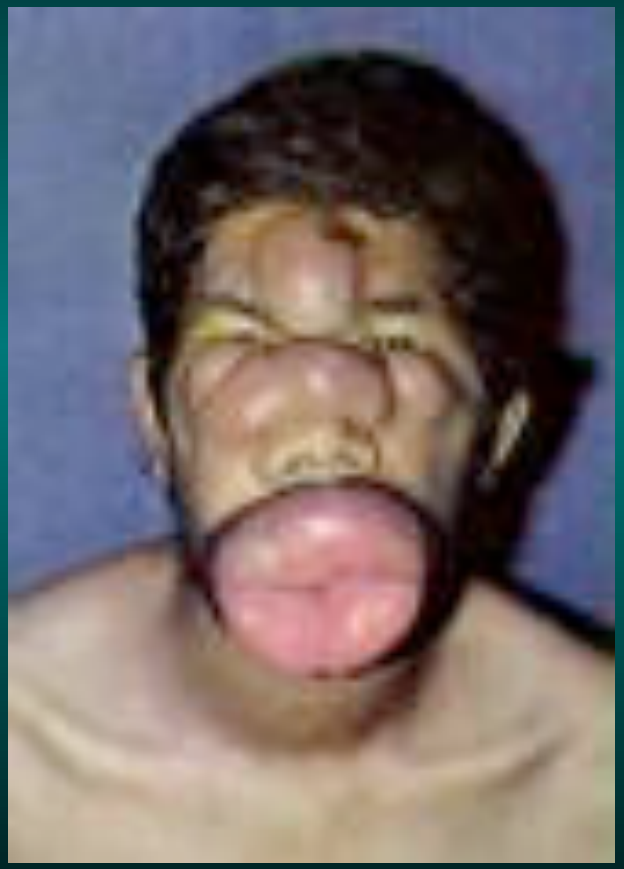


- Epi 1:1000 0.3cc SubQ
- Susphrine 0.15cc SubQ
- Benadryl 25 mg IM

Treating moderate anaphylaxis…



Treating severe anaphylaxis…

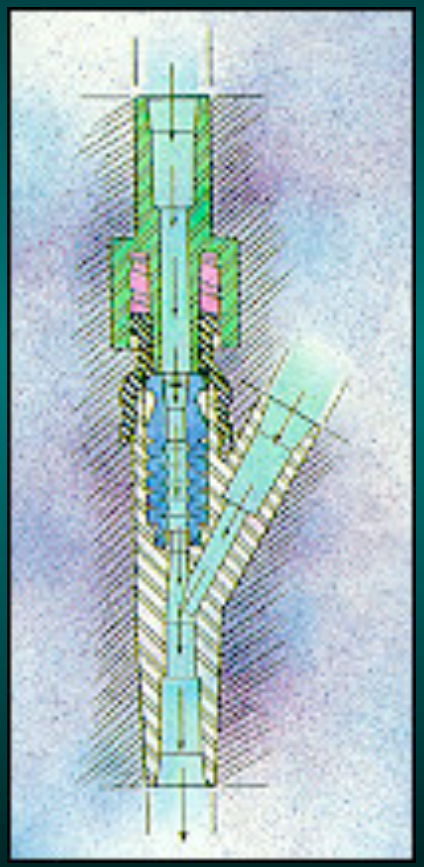


- Oxygen
- MAST
- Epinephrine
  1cc
  1:10,000 IV

Persistent brochospasm

- 80% - 20% Heliox
- Racemic Epinephrine SVN
- Elective Intubation

Persistent hypotension



- VASOPRESSORS
- Epinephrine Drip
- Dopamine Drip
- Isorpterenol Drip
- Levophed Drip

What about glucagon?

- Epinephrine CONTRAINDICATED
  - –Betablockers
  - –CAD
  - –Pregnant

Transportation is mandatory…

- Upper Airway Compromise
- Hypotension

Consider admission for…

- Elderly
- CAD
- Asthma
- Beta-blockers

Outpatient management includes…

- Benadryl
- Cimetidine
- Prednisone
- ALLERGIST

How to avoid future stings

- Don't "Smell Like A Rose!"
- Brown Bears and Bee Stings
- Fields of Clover