Learning Objectives

• Following the activity, participants should be able to:
  • Recommend how and when to introduce high allergen risk foods to the diet.
  • Recognize treatments for food allergies are available.
  • Recognize the need for increased anaphylaxis and epinephrine training.
  • Prepare for major changes in the recommendations in the treatment of asthma.
Food Allergies

How to prevent
The Most Common Food allergies

- Milk
- Egg
- Peanut
- Tree Nuts
- Soy
- Wheat
- Fish & Shellfish
- Sesame Seeds
- ? Sunflower Seed
- Skin reactions to strawberries, fruits, citrus is almost exclusively an irritation.
Food Allergies By The Numbers

- More than 170 foods have been reported to cause reactions in the U.S.\(^1\)
- 32 Million people in the U.S have food allergies.\(^2\)
- 5.6 million children (8%) have food allergies (survey 2015-2016.)\(^3\)
- 40% of children with food allergies have multiple food allergies.\(^4\)
- Between 1997-99 and 2009-11, food allergy prevalence increased by 50% in children.\(^5\)
- Peanut allergy has more than tripled between 1997-2008\(^6\)
What is a Food Allergy?

A specific immune response that occurs with an exposure to a food that is reproducible.
Diagnosis

• Percutaneous
  • Minimally invasive
  • Test at any age (no such thing as too young)
  • Sensitivity >85%, Specificity 40%-80%

• Immuno Assay IgE
  • Test at any age
  • Sensitivity >85%, Specificity 40%-80%

• Oral Challenge (gold standard)
  • Strong history of exposure and reaction or in office challenge
Diagnosis

- Test for food allergies when there are suspicions. “Shot gun” approach leads to large numbers of false positives.
- Most food allergies manifests in the first 1-2 years of life.
- Food allergies can occur at any age.
Prevention of Food Allergies

• 2000 AAP position statement avoid:\(^7\)
  • Cow’s milk until 12 months of age
  • Eggs until 24 months of age
  • Nuts and fish until 36 months of age

• 2006, the American College of Allergy, Asthma and Immunology agreed with the recommendations of the AAP.\(^8\)
Prevention of Food Allergies

Mistakes Realized!
Food Allergies By The Numbers

- More than 170 foods have been reported to cause reactions in the U.S.\textsuperscript{1}
- 32 Million people in the U.S have food allergies.\textsuperscript{2}
- 5.6 million children (8\%) have food allergies (survey 2015-2016.)\textsuperscript{3}
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- Peanut allergy has more than tripled between 1997-2008\textsuperscript{6}
Prevention of Food Allergies

• 2008, AAP updated position statement. No avoidance of any allergenic foods beyond 4-6 months of age.\(^9\)
• 2010, National Institute of Allergy and Infectious Disease guideline, supports the AAP’s position of allergenic food introduction not needing to be delayed.
Monumental Shift

First avoid to prevent, then eat at will, now eat to prevent
Prevention of Food Allergies
Prevention of Food Allergies

• 2015 Learning Early About Peanut (LEAP) Study.\textsuperscript{10}
  • Over 600 infants at risk for peanut allergy randomized to eat peanuts as early as 4 months or avoid until 5 years of age.
  • Risk groups
    • High: Severe eczema and/or egg allergy
    • Moderate: Mild to moderate eczema
    • Low: No eczema or history of a food allergy.
  • Infants were fed 2 grams of peanut protein 3 times a week.
  • Resulted in an 80% reduction of peanut allergy in the group starting to eat peanuts in the first year of life.

• New AAP guidelines published 2017\textsuperscript{11}
Severe eczema
—or
Egg allergy
—or
Both

Peanut sIgE*

- <0.35
  - Risk of reaction low
  - Over 90% will have (−) SPT** to peanut
  - Options:
    a) Introduce peanut at home
    b) Supervised feeding in the office (based on provider/parental preference)

- ≥0.35
  - Refer to specialist for consultation/SPT protocol

Peanut Skin Prick Test

- 0-2 mm
  - Risk of reaction low
  - (95% will not have peanut allergy)
  - Options:
    a) Introduce peanut at home
    b) Supervised feeding in the office (based on provider/parental preference)

- 3-7 mm
  - Risk of reaction varies from moderate to high
  - Options:
    a) Supervised feeding in the office
    b) Graded OFC*** in a specialized facility

- ≥8 mm
  - Infant probably allergic to peanut
  - Continue evaluation and management by a specialist

* To minimize a delay in peanut introduction for children who may test negative, testing for peanut-specific IgE may be the preferred initial approach in certain health care settings. Food allergen panel testing or the addition of sIgE testing for foods other than peanut is not recommended due to poor positive predictive value.

** skin prick test

*** oral food challenge
Instructions For Home Feeding of Peanut Protein for Infants

Prevention of Food Allergies

Have we over compensated?
Prevention of Food Allergies

- Recommendations are beginning to surface advocating for early introduction of the top 8 food allergens.
  - These recommendations have the same evidential strength as the 2000 AAP position statement recommending avoidance of “highly allergenic” foods early in life.
Prevention of Food Allergies

Commercial products

• No proven benefit
• No known possible benefit
• Significant cost

Just Eat Food!!
• Exclusive breastfeeding for the first 3-4 months, protect against eczema in the first 2 years of life.

• Restriction of the breast-feeding mother’s diet will not prevent food allergy or eczema.
  • Restricting mother’s diet can lead to nutritional deficits and significant decrease in quality of life.
Food Allergies-FAQ

- Hydrolyzed formula probably does not prevent allergies or eczema.
- Restricting infant/toddler diet: risk of malnutrition and inducing eating disorders (common).
- Egg allergy (egg anaphylaxis) and vaccines
  - *MMR*: Ruled safe to receive in the 1990’s. Give according to regular dosing schedule
  - *Influenza*: 2018 CDC recommendation, give according to regular schedule and without prolonged monitoring period post administration.
Food Allergy Treatment
Food Allergy Treatment

- **Palforzia**
  - FDA approved peanut flour utilizing oral immunotherapy
- **Customized Oral Immunotherapy**
- **Viaskin**
  - Peanut protein infused patch
- **Sublingual Immunotherapy**
Food Allergy Treatment

- **Palforzia (Peanut OIT)**
  - Approved by FDA February 2020
  - Treats peanut allergy only
  - Ages 4-17
  - Defatted peanut flour introduced in an incremental increasing amount.
  - Overall well tolerated
    - 9.4% required epinephrine during escalation phase
    - 21.9% discontinued the treatment during the study.
  - Cost is substantial: $450/each of the 11 escalation steps. $890/month thereafter ($11,000/year)
  - Significant increase of tolerance but needs to continue strict avoidance.
Food Allergy Treatment

• Customized Oral Immunotherapy (OIT)
  • All ages 1yr-Adults
  • All foods possible to treat
  • All severity of allergy (no one is too allergic)
  • Uses real food (no FDA approval)
  • Peanut treatment 5-7% anaphylaxis rate, drop out rate 10-12%
  • Each protocol adjusted to the patient’s needs
  • Long track record, thousands of patients over the last 14 years (I have treated over 900 patients).
  • At end of escalation patient can eat cross contaminated and for some freely eat the treated food.
  • Cost after completing the treatment is cost of the food at any grocery store.
  • Limited availability, 100’s of Drs offering across the U.S. Only 2 in Michigan.
Food Allergy Treatment

• **Viaskin- epicutaneous peanut patch**
  - August 4th 2020. FDA denied approval in its current form.
  - Complete restructuring of the therapy and new trials will be needed.
  - Most likely will not come to market.

• **Sub-lingual Immunotherapy**
  - Desensitization with much less side effects than OIT
  - Treatment much less robust than OIT
  - Limited number of foods studied, all studied showed efficacy
  - Limited availability in the U.S. (a few Allergists in MI offering).

• **All other trials are still in animal models or bench research.**
Asthma Recommendations Updated

• Asthma during SARS CoV-2 pandemic (as of August 2020)
  • Studies in the US and Europe showed no increased respiratory complications in patients with asthma.
  • Advise patients with asthma to continue taking all preventative medications
    • If planning of weaning a patient, do it slowly and stepwise.
  • When possible avoid using the nebulizer
    • Use a MDI with holding chamber (where needed)
  • Patients with confirmed/suspected COVID-19
    • Avoid all nebulized medications unless needed urgently.
    • MDI with holding chamber and in line ventilator MDI therapy efficacy is equivalent to nebulized therapy.
Asthma Recommendations Updated

• National Asthma Education and Prevention Program (NAEPP)
  • First guideline 1991
    • Significantly out of date
  • EPR-4: Draft published December 2019\textsuperscript{12}
    • Comment deadline was January 6\textsuperscript{th}, 2020
    • Planned to be available late 2020, but SARS-CoV2 pandemic most likely delay publication.

• Global Initiative For Asthma (GINA)
  • Yearly updates: Latest 2020\textsuperscript{13}
  • Historically GINA’s recommendations have closely aligned with the NAEPP
As of 2019 GINA recommends all adults and children >12yrs should receive ICS-containing controller treatment. With mild asthma, intermittently or daily with persistent asthma. This is also in the EPR-4.

- SABA’s do nothing to treat the underlying inflammation.
- Studies were done with either budesonide + formoterol or beclomethasone + formoterol (only Symbicort (budesonide + formoterol) available in the US.)
**Figure ii  Stepwise Approach for Management of Asthma in Individuals Ages 5–11 Years**

### Management of Persistent Asthma in Individuals Ages 5–11 Years

Consult with asthma specialist if Step 4 or higher is required.
Consider consultation at Step 3.

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
<th>Step 6</th>
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<tbody>
<tr>
<td>Intermittent Asthma</td>
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<tr>
<td>• PRN SABA</td>
<td>• Daily low-dose ICS and PRN SABA</td>
<td>• Daily and PRN combination low-dose ICS/formoterol</td>
<td>• Daily high-dose ICS + LABA and SABA</td>
<td>• Daily high-dose ICS + LABA + oral systemic corticosteroid and PRN SABA</td>
<td>• Daily high-dose ICS + LABA + oral systemic corticosteroid and PRN SABA</td>
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<tr>
<td><strong>Alternative:</strong></td>
<td><strong>Preferred:</strong></td>
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<tr>
<td>• Daily LTRA and PRN SABA</td>
<td>• Daily medium- dose ICS and PRN SABA</td>
<td>• Daily medium-dose ICS + LABA and PRN SABA</td>
<td>• Daily high-dose ICS + LTRA and PRN SABA</td>
<td>• Daily high-dose ICS + LTRA and PRN SABA</td>
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</tr>
</tbody>
</table>

**Steps 1-4:** Conditionally recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in children whose asthma is controlled at the initiation and during maintenance of immunotherapy.

**Each step:** Assess environmental factors, provide patient education, and manage comorbidities:

- In individuals with exposure (or symptoms) and sensitization to pests: conditionally recommend pest control as a single or multi-component allergen-specific mitigation intervention.
- In individuals with exposure and symptoms and/or sensitization to identified allergens: conditionally recommend a multi-component allergen-specific mitigation strategy.

**Quick-relief medication:**

- Use SABA as needed for symptoms. The intensity of treatment depends on severity of symptoms: up to 3 treatments at 20-minute intervals as needed. Short course of oral systemic corticosteroids may be needed.

  - In Steps 3 and 4, the preferred option includes the use of ICS/formoterol as needed for symptoms: 2 puffs every 4 hours as needed, up to a maximum of 8 rescue puffs per day.
  - Caution: Increasing use of SABA or use >2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and may require a step up in treatment.

**Assess Control**

- Step up if needed
  (first, check adherence, inhaler technique, environmental factors, and comorbid conditions)

- Step down if possible
  (if asthma is well controlled at least 3 months)
Figure iii  Stepwise Approach for Management of Asthma in Individuals Ages 12 Years and Older

**Intermittent Asthma**

**STEP 1**
- **Preferred:** Daily low-dose ICS and PRN SABA
- **Alternative:** Daily LTRA and PRN SABA

**STEP 2**
- **Preferred:** Daily and PRN combination low-dose ICS/ formoterol
- **Alternative:** Daily medium-dose ICS and PRN SABA

**STEP 3**
- **Preferred:** Daily and PRN combination medium-dose ICS/ formoterol
- **Alternative:** Daily medium-dose ICS + LABA + PRN SABA

**STEP 4**
- **Preferred:** Daily medium-high dose ICS + LABA + LAMA and PRN SABA

**STEP 5**
- **Preferred:** Daily medium-high dose ICS + LABA + LAMA and PRN SABA

**STEP 6**
- See **below**

Assess Control

- **Step up if needed**
  - (first, check adherence, inhaler technique, environmental factors, and comorbid conditions)

- **Step down if possible**
  - (if asthma is well controlled at least 3 months)

---

**Steps 1-4:** Conditionally recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in adults and children whose asthma is controlled at the Initiation and during maintenance of immunotherapy.

**Each step:**
- Assess environmental factors, provide patient education, and manage comorbidities.
  - In individuals with exposure (or symptoms) and sensitization to pests: conditionally recommend pest control as a single or multi-component allergen-specific mitigation intervention.
  - In individuals with exposure and symptoms and/or sensitization to identified allergens, conditionally recommend a multi-component allergen-specific mitigation strategy.

**Quick-relief medication:**
- Use SABA as needed for symptoms. The intensity of treatment depends on the severity of symptoms: up to 3 treatments at 20-minute intervals as needed. Short course of oral systemic corticosteroids may be needed.
- In Steps 3 and 4, the preferred option includes the use of ICS/formoterol as needed for symptoms: 2 puffs every 4 hours as needed, up to a maximum of 10 rescue puffs per day.
- Caution: Increasing use of SABA or use >2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and may require a step up in treatment.

Control assessment is a key element of asthma care. This involves both impairment and risk. Use of objective measures, self-reported control, and health care utilization are complementary and should be employed on an ongoing basis, depending on the individual's clinical situation.
Adults & adolescents 12+ years

**Personalized asthma management:**
Assess, Adjust, Review response

**Symptoms**
**Exacerbations**
**Side-effects**
**Lung function**
**Patient satisfaction**

**Confirmation of diagnosis if necessary**
**Symptom control & modifiable risk factors (including lung function)**
**Comorbidities**
**Inhaler technique & adherence**
**Patient preferences and goals**

**Asthma medication options:**
Adjust treatment up and down for individual patient needs

**PREFERRED CONTROLLER**
to prevent exacerbations and control symptoms

**Other controller options**

**PREFERRED RELIEVER**

**STEP 1**
As-needed low dose ICS-formoterol *

**STEP 2**
- Daily low dose inhaled corticosteroid (ICS), or as-needed low dose ICS-formoterol *
- Daily leukotriene receptor antagonist (LTRA), or low dose ICS taken whenever SABA taken †

**STEP 3**
Low dose ICS-LABA

**STEP 4**
Medium dose ICS-LABA
- Medium dose ICS, or low dose ICS+LTRA #
- High dose ICS, add-on ICS, or add-on LTRA #
- Add low dose OCS, but consider side-effects

**STEP 5**
High dose ICS-LABA
Refer for phenotypic assessment ± add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/5R, anti-IL4R

**STEP 6**
As-needed low dose ICS-formoterol for patients prescribed maintenance and reliever therapy†

* Data only with budesonide-formoterol (bud-form) † Separate or combination ICS and SABA inhalers

† Low-dose ICS-form is the reliever only for patients prescibed bud-form or BDP-form maintenance and reliever therapy # Consider adding HDM SLIT for sensitized patients with allergic rhinitis and FEV1 >70% predicted
Asthma Recommendations Updated

• Limitations of new ICS-formoterol update
  • Only Symbicort available in the US (Dulera - mometasone was not studied)
  • Off label use if duo therapy leading to supply issues. If using Symbicort as a rescue inhaler more frequent refills may be needed which will not be covered by insurance companies.
Asthma Recommendations Updated

- Long-acting muscarinic antagonists (LAMA)
  - Long acting bronchodilator
- Uncontrolled persistent asthma while on ICS
  - Recommended to add LABA first
  - If additional support needed next add on LAMA to ICS+LABA
- Spiriva Respimat 1.25mcg 2 inhalations once a day
  - Approved 6yr and older
  - All other LAMA not approved in children.
Figure iii  Stepwise Approach for Management of Asthma in Individuals Ages 12 Years and Older

Management of Persistent Asthma in Individuals Ages 12 Years and Older*
Consult with asthma specialist if Step 4 or higher is required.
Consider consultation at Step 3.

**STEP 1**
- **Preferred:** Daily low-dose ICS and PRN SABA
- **Or:** PRN concomitant ICS and SABA
- **Alternative:** Daily short-acting β2-agonist (LABA) and PRN SABA

**STEP 2**
- **Preferred:** Daily low-dose ICS and PRN SABA
- **Alternative:** Daily medium-dose ICS and PRN SABA

**STEP 3**
- **Preferred:** Daily PRN combination of low-dose ICS/short-acting β2-agonist (LABA), medium-dose ICS/long-acting β2-agonist (LABA), and PRN SABA
- **Alternative:** Daily medium-dose ICS + LABA and PRN SABA

**STEP 4**
- **Preferred:** Daily medium-dose ICS + LABA and PRN SABA
- **Alternative:** Daily medium-dose ICS + LABA and PRN SABA

**STEP 5**
- **Preferred:** Daily medium-high dose ICS + LABA
- **Alternative:** Daily medium-high dose ICS + LABA + PRN SABA

**STEP 6**
- See **below**

**Steps 1-4:** Conditionally recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in adults and children whose asthma is controlled at the initiation and during maintenance of immunotherapy.

Each step:
- Assess environmental factors, provide patient education, and manage comorbidities.
- In individuals with exposure to allergens and sensitization to pets, conditionally recommend pest control as a single or multi-component allergen-specific intervention.
- In individuals with exposure and symptoms and/or sensitization to identified allergens, conditionally recommend a multi-component allergen-specific mitigation strategy.

Quick-relief medication:
- Use SABA as needed for symptoms. The intensity of treatment depends on the severity of symptoms: up to 3 treatments at 20-minute intervals as needed. Short course of oral systemic corticosteroids may be needed.
- In Steps 3 and 4, the preferred option includes the use of ICS/formoterol as needed for symptoms: 2 puffs every 4 hours as needed, up to a maximum of 10 rescue puffs per day.
- Caution: Increasing use of SABA or use >2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and may require a step up in treatment.

Control assessment is a key element of asthma care. This involves both impairment and risk. Use of objective measures, self-reported control, and health care utilization are complementary and should be employed on an ongoing basis, depending on the individual's clinical situation.
Asthma Medication Update

• Montelukast
  • Singulair and generics
  • FDA black box warning March 2020
    • Neuropsychiatric/ behavioral side effects
      • Agitation
      • Depression
      • Sleep disturbances
      • Suicidal ideations and actions
  • Counsel all patients receiving montelukast
  • Only prescribe montelukast for allergic rhinitis who have an inadequate response or intolerance to alternative therapies (antihistamines, nasal corticosteroids, nasal antihistamines, allergy immunotherapy.)
Asthma Medication Update

- Combination ICS/long-acting beta-agonists
  - Black box warning removed December 2017
  - Studies showed safety and superiority of combination therapy compared to high dose ICS.

- Budesonide Flexhaler approved down to 6yr of age
  - I recommend caution in use in younger children. The LPM inhalation is difficult to achieve and proper use is difficult to obtain.

- Beclomethasone RediHaler (Qvar) approved down to 4 yrs
  - Can not be used with a holding chamber
  - Many young kids can not learn how to hold their breath, making for ineffective medication delivery.
  - In a pinch the top of the apparatus can be twisted off (counter clockwise, easier if the stickers are removed or cut at the seam) then it can be used as a normal MDI with a holding chamber (off label use)
Asthma Medication Update

• Fluticasone propionate HFA approved to 4 yr of age
• Mometasone Twisthaler approves to 4 yr of age
• Mometasone HFA approved down to 5 yr of age
• Fluticasone furoate approved down to 5 yr of age
• Proventil HFA now is generic, cost differential $87-> $17
• Advair multiple generics: Airduo, Wixela inhup, Fluticasone/salmeterol
• Symbicort generic available
• During the SARS CoV2 pandemic consider using a MDI with a holding chamber and mask instead of nebulized budesonide.
Anaphylaxis

Epinephrine - Epidemic of Misuse
Anaphylaxis

• April 2020 practice parameter update

• Anaphylaxis is variable and unpredictable. It is not possible to predict how severe it will become or how rapidly it will progress.

• Epinephrine should be administered as soon as anaphylaxis is recognized. It should also be administered to patients who have symptoms consistent with impending anaphylaxis, even if formal diagnostic criteria are not met.
Anaphylaxis

• Epinephrine is the first and most important treatment.
  • Intramuscular injection (anterolateral thigh or deltoid) is preferred with a much more rapid increase in tissue and plasma concentrations over subcutaneous
  • Intramuscular injection is preferred over IV, due to time of administration and lower risk of complications.
  • Repeat dosing every 5-15 min as needed
  • A second dose is needed in 36% of patients needing epinephrine.
Anaphylaxis

• Epinephrine is **FIRST LINE** treatment for anaphylaxis
  • There is no equivalent substitute
  • H1 blockers (antihistamines) do not relieve lower airway obstruction, hypotension or shock.
    • Glucocorticoids: little evidence of benefit. Onset of action is several hours.

• **Delayed administration of epinephrine**
  • Contributes to fatalities and biphasic reactions
Epinephrine is FIRST LINE treatment for anaphylaxis
Anaphylaxis

- Underuse of epinephrine has consistently been shown to be an issue.
  - Parents and patients are afraid to use it.
    - Correct rates of use is as low as 22% \(^{16}\)
    - Less than HALF of patients presenting to the ED with anaphylaxis never receive epinephrine \(^{17,18,19}\)
- Overuse of epinephrine is rare.
- There is no absolute contraindication to epinephrine.
- Overdose, in general, occur more often with IV than IM administration \(^{20}\)
- Computer simulation predicted epinephrine associated death in 0.07% of recipients. Also noting with the assumed 10-fold increase of risk of fatal anaphylaxis from epinephrine nonuse, simulated anaphylaxis deaths go from 226/yr to 1090. \(^{21}\)
Anaphylaxis

• **Epinephrine dosing:**
  - Infants <10kg: 0.1mg auto injector. If not available, the 0.15 autoinjector should be used.
  - Infants and children 10-25kg should carry a 0.15mg auto injector
  - Children >25kg should have the 0.3mg auto injector
    - At my office we increase to 0.3mg the first refill after reaching 50lbs (~23kg)

• **Recommended to have 2 doses of epinephrine available at all times.**
Auto Injectors

• Barriers of proper use
  • Cost
  • Unfamiliar with device
  • Afraid of use of a needle
  • COVID-19 and desire to avoid ED/Hospital
Auto Injectors
Auto Injectors

• Cost over $600!
  • Auvi-q cost up to $25 per set of 2 (non state insurances.) You can get 2 sets of 2 at this reduced price.
    • Send Rx to ASPN pharmacy in NJ (eprescribe), Form available to fax on website.
  • Impax autoinjector
    • $110 at CVS
    • www.epinephrineautoinject.com $10 off coupon
  • Mylan generic epinephrine autoinjector
    • $126 at Walgreens (coupon on GoodRx).
Auto Injectors

• **Training is a must!!**
  • Gather trainers for the Mylan epinephrine auto injector, Auvi-Q, and Teva auto injector from patients. Also, calling the company can get the trainers you need.
  • Order trainer for Impax autoinjector from [www.epinephrineautoinject.com](http://www.epinephrineautoinject.com)
  • Sympjepi trainer… No idea why anyone would want to use this. It is more expensive, and it is not an autoinjector. Product was developed and released years too late.

• **You need to train patients on all the auto injectors because you can not predict what they will end up at home with.**
New Delivery Modes

• 2 new modes of epinephrine delivery in the works.
  • Aquestiv: Sublingual Epinephrine
    • FDA Fast Track
    • Phase one study starting 2020
  • ARS Pharmaceuticals: Epinephrine Nasal Spray
    • Patents issued
    • Human trials pending
Anaphylaxis in the Age of COVID-19

- New FARE Revised Anaphylaxis Management Algorithm During COVID Pandemic available.
  - Derived from published paper: Acute At Home Management of Anaphylaxis During the Covid-19 Pandemic

- FARE Food Allergy & Anaphylaxis Emergency Care Plan
  - I recommend Zyrtec (liquid or chewable) as the antihistamine for mild non-anaphylactic reactions. It is longer acting, and it is easier to monitor a patient if they are not sleepy from use of Benadryl.
Patients with history of severe anaphylaxis such as those who have been intubated and ventilated, or had reactions treated with more than two doses of epinephrine should follow their routine anaphylaxis plan and activate emergency services immediately when anaphylaxis is recognized.

IMPORTANT: Anaphylaxis is a potentially life-threatening, severe allergic reaction. If in doubt, give epinephrine.

SEVERE SYMPTOMS: ANY OF THE FOLLOWING

**LUNG**
- Shortness of breath
- Wheezing, repetitive cough

**HEART**
- Pale or bluish skin, faintness, weak pulse, dizziness

**GUT**
- Repetitive vomiting, severe diarrhea

**THROAT**
- Tight or hoarse throat, trouble breathing or swallowing

**SKIN**
- Many hives over body, widespread redness

**MOUTH**
- Significant swelling of the tongue or lips

**OTHER**
- Feeling something bad is about to happen, anxiety, confusion

Mild symptoms from more than one system area:
- Itchy runny nose, sneezing and/or itchy mouth and/or few hives, mild itch and/or mild nausea or discomfort

1. **INJECT EPINEPHRINE IMMEDIATELY** while seated; have telephone within reach
2. Notify a housemate or neighbor to help you
3. Lay down with legs elevated near the doorway, which should be unlocked or open to allow others to enter and help. Keep children in a position of comfort, to minimize respiratory distress and agitation and risk of aspiration in case of vomiting.
4. **Administer oral antihistamine,** preferably non-sedating (e.g. cetirizine)
5. **Administer albuterol** for respiratory symptoms if prescribed and available
6. Monitor symptoms and blood pressure/pulse if possible

**SYMPTOMS DON’T IMPROVE OR WORSEN**
- Repeat epinephrine injection in 5 minutes or sooner if symptoms escalate rapidly

**SEVERE SYMPTOMS DON’T IMPROVE OR WORSEN:**
- Activate Emergency Services (Call 911)

**SEVERE SYMPTOMS RESOLVE**
- Continue to monitor for 4-6 hours for the recurrence of symptoms
- Be ready to administer treatment if symptoms reappear (biphasic anaphylaxis)
- Notify your physician on a non-urgent basis
- Replenish emergency medications
1. **INJECT EPINEPHRINE IMMEDIATELY** while seated; have telephone within reach
2. Notify a housemate or neighbor to help you
3. Lay down with legs elevated near the doorway, which should be unlocked or open to allow others to enter and help. Keep children in a position of comfort, to minimize respiratory distress and agitation and risk of aspiration in case of vomiting.
4. Administer oral antihistamine, preferably non-sedating (e.g. cetirizine)
5. Administer albuterol for respiratory symptoms if prescribed and available
6. Monitor symptoms and blood pressure/pulse if possible

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**SEVERE SYMPTOMS DON’T IMPROVE OR WORSEN:**
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Thank You

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References


References


