

Allergy

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GP Update Course – Royal London



Adrenaline

Who gets it?



Give adrenaline?

- A&E / in-patient
 - Acute anaphylaxis
 - Discharge
- Outpatients
 - Previous anaphylaxis
 - At higher risk of future anaphylaxis



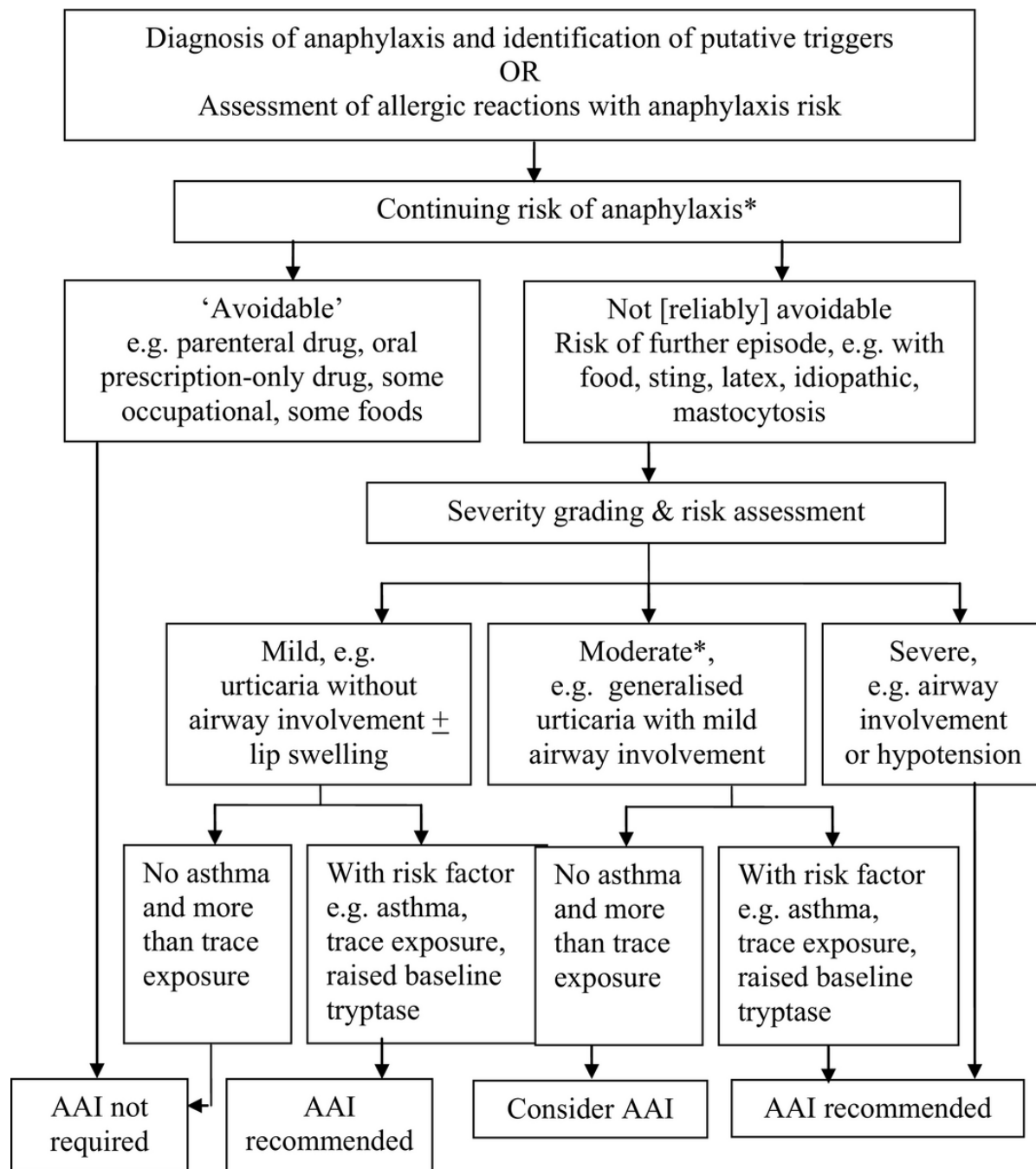
BSACI guideline: prescribing an adrenaline auto-injector

Clinical & Experimental Allergy

Volume 46, Issue 10, pages 1258-1280, 29

SEP 2016 DOI: 10.1111/cea.12788

<http://onlinelibrary.wiley.com/doi/10.1111/cea.12788/full#cea12788-fig-0001>



Guidelines

- NICE
- BSACI
- EACCI
- WAO
- AAAI
- Gov.uk

NICE

National Institute for
Health and Care Excellence



Guidelines

WAO Guidelines	AAAAI/ACAAI Guidelines	EAACI Guidelines
<p><i>"a serious life-threatening generalized or systemic hypersensitivity reaction"</i></p> <p><i>and</i></p> <p><i>"a serious allergic reaction that is rapid in onset and might cause death"</i></p>	<p><i>"an acute life-threatening systemic reaction with varied mechanisms, clinical presentations, and severity that results from the sudden release of mediators from mast cells and basophils"</i></p>	<p><i>"a severe life-threatening generalized or systemic hypersensitivity reaction"</i></p>

Fatality is how common ?

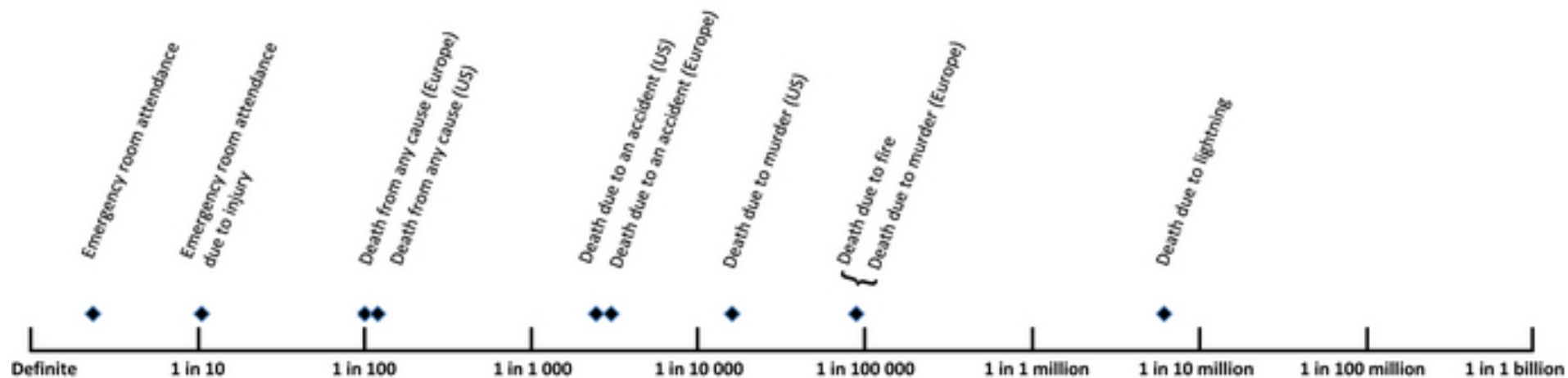
- More likely to be burned to death or murdered than fatal food reaction
- Highest incidence in 0-19yr age group

Annual incidence rate for different events in food allergic people

Fatal food anaphylaxis



(a)



UK numbers

- More admitted with anaphylaxis
- No change in number of deaths

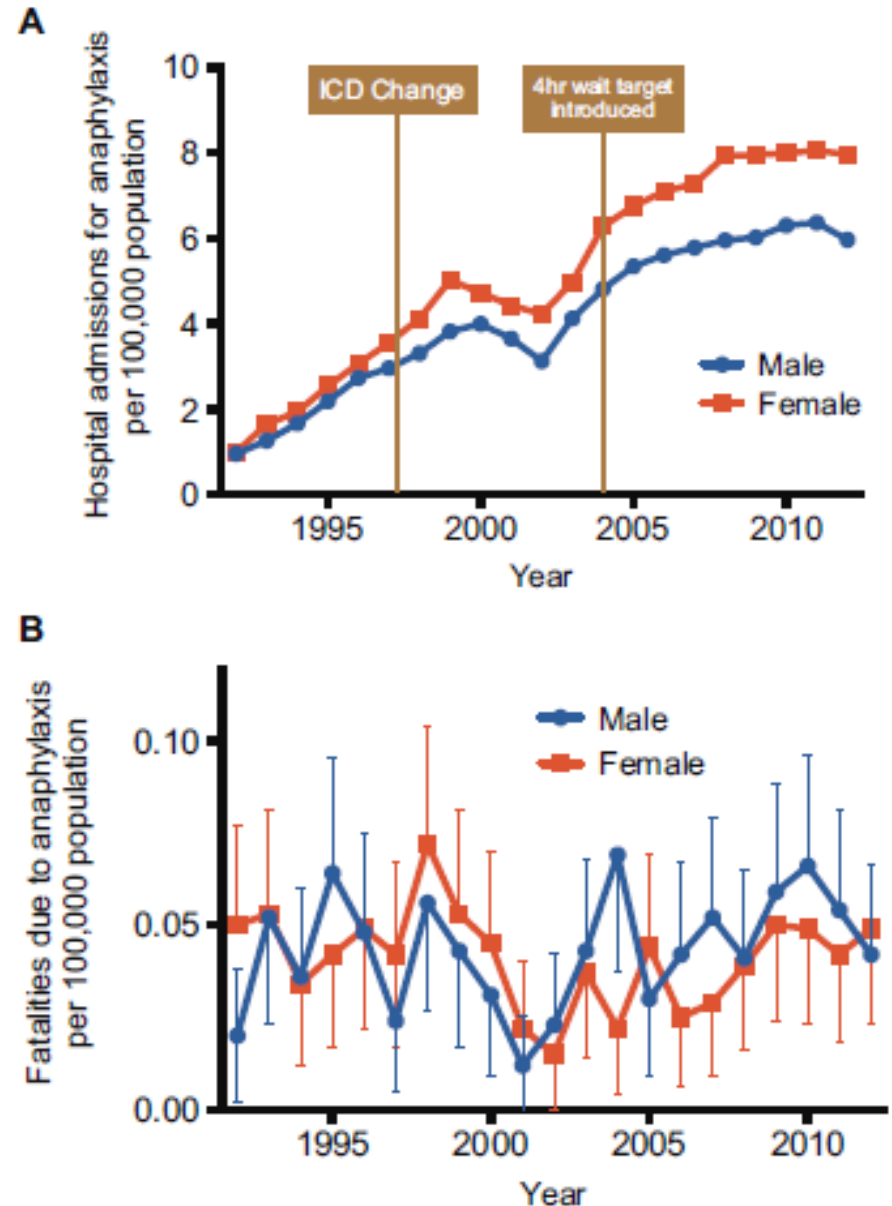


FIG 1. Time trends in hospital admissions (A) and fatalities (B) for all-cause anaphylaxis between 1992 and 2012. Vertical bars represent SEMs.

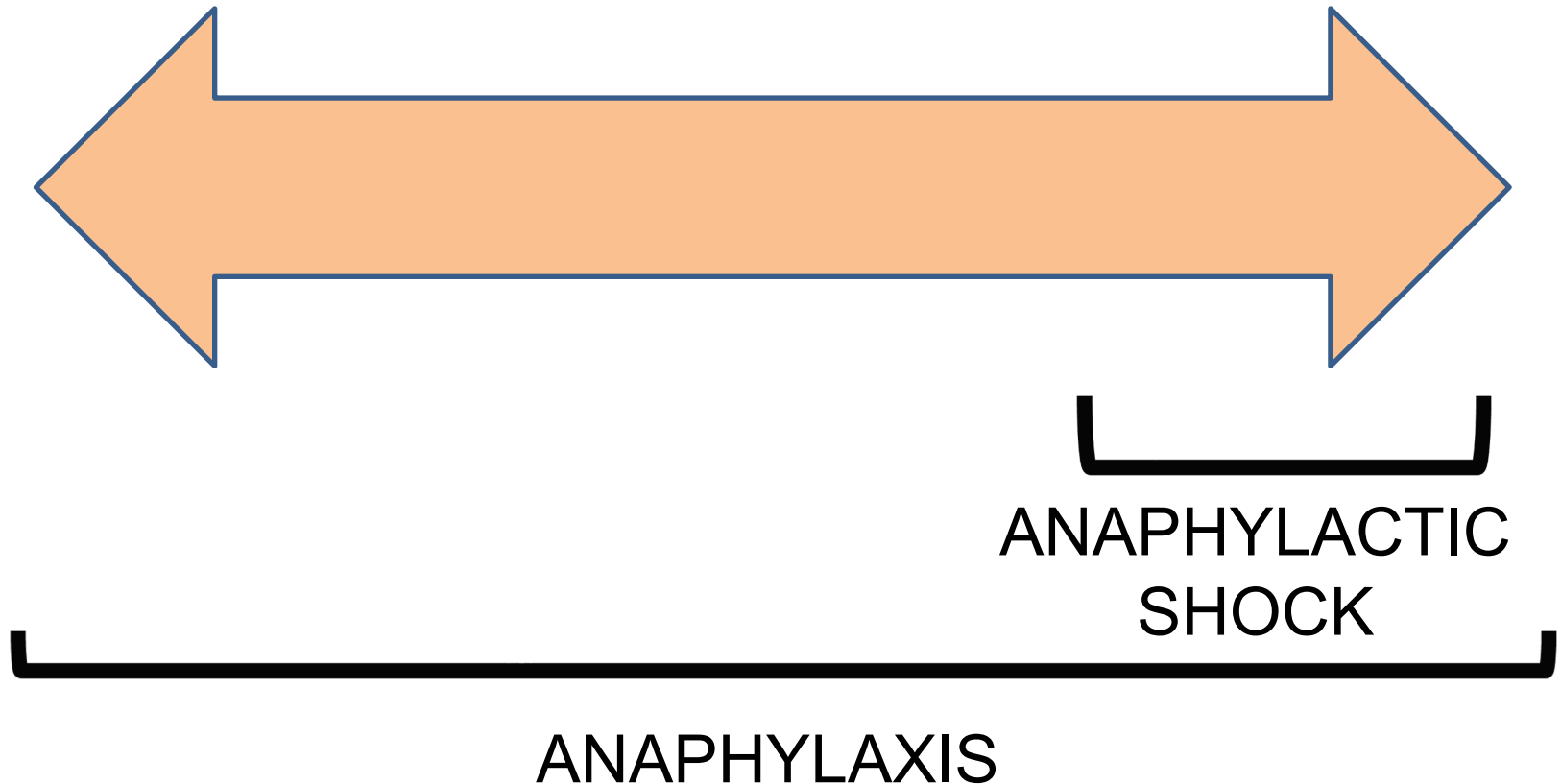
Allergic reactions

- Spectrum of severity



Anaphylaxis?

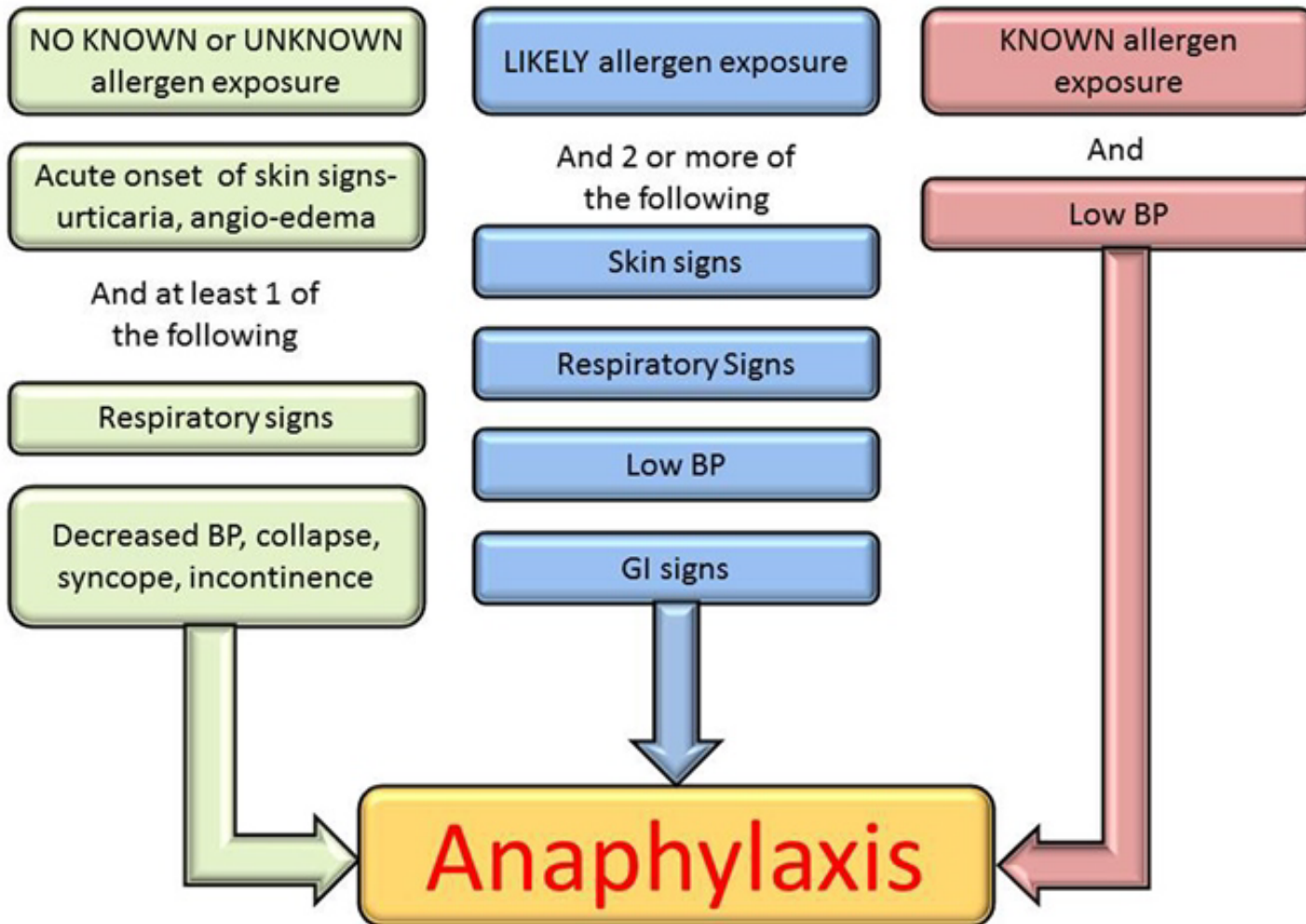
- Also a spectrum of reactions



Which person having anaphylaxis?



Acute algorithm for diagnosis



Anaphylaxis

- Affects the respiratory or cardiovascular systems

More often in food allergy

Airway

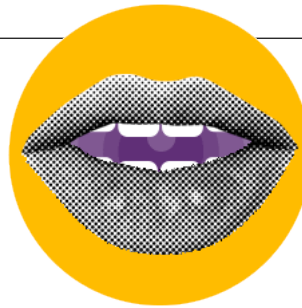
- Persistent cough
- Vocal changes (hoarse voice)
- Difficulty in swallowing
- Swollen tongue

Breathing

- Difficult or noisy breathing
- Wheezing (like an asthma attack)

Consciousness/Circulation

- Feeling lightheaded or faint.
- Clammy skin
- Confusion
- Unresponsive/unconscious (due to drop-in blood pressure)



More often in drug allergy

- So this is what we ask about in the history

Anaphylaxis

- Affects the respiratory or cardiovascular systems

Mild, localized skin symptoms and/or swelling of lips/face

Generalized skin reactions

Airway/Breathing/Circulation problems ± skin symptoms

No Airway/Breathing/Circulation problems:
NOT ANAPHYLAXIS

**A/B/C problems:
ANAPHYLAXIS**

**SEVERE
ANAPHYLAXIS**

Skin is not an absolute

- 10% of anaphylaxis cases have no “hives”

A irway	B reathing	C onsciousness/Circulation
<ul style="list-style-type: none">• Persistent cough• Vocal changes (hoarse voice)• Difficulty in swallowing• Swollen tongue	<ul style="list-style-type: none">• Difficult or noisy breathing• Wheezing (like an asthma attack)	<ul style="list-style-type: none">• Feeling lightheaded or faint.• Clammy skin• Confusion• Unresponsive/unconscious (due to a drop-in blood pressure)

Anagnostou K, Turner PJ

Myths, facts and controversies in the diagnosis and management of anaphylaxis

Archives of Disease in Childhood 2019;**104**:83-90.

Adrenaline





Antihistamines will not stop anaphylaxis.



The first line of treatment for severe allergic reaction is Adrenaline



Resuscitation Council 2021 - Update

1. Avoid acute Chlorphenamine / Piriton
2. No automatic acute steroids
3. Intramuscular adrenaline remains the 1st line treatment in all settings
4. New algorithm for refractory anaphylaxis
(use if poor response after 2 doses of adrenaline)
5. Observation periods post reaction based on risk assessment

Non-acute risk assessment

- Previous reactions:
 - Severity
 - Dose of allergen and route of exposure
 - Speed of reaction
 - Which allergen
- Co-morbidities
- Medications *e.g. β blockers, ACE inhibitors*
- Social/personal circumstances
- Chance of recurrence



National guidelines

- Previous severe systemic reaction where the allergen cannot be easily avoided
- Allergy to high-risk allergens (e.g. nuts) **PLUS** other risk factors (such as asthma), even if the reaction was relatively mild
- Reaction to trace amounts of allergen/trigger
- Allergen cannot be easily avoided
- Continuing risk of anaphylaxis (e.g. food-dependent exercise-induced)
- Idiopathic anaphylaxis
- Significant co-factors (e.g. asthma in food allergy)

Practically

- Provide one if:
 - History of anaphylaxis (or if suspected)

A irway	B reathing	C onsciousness/Circulation
<ul style="list-style-type: none">• Persistent cough• Vocal changes (hoarse voice)• Difficulty in swallowing• Swollen tongue	<ul style="list-style-type: none">• Difficult or noisy breathing• Wheezing (like an asthma attack)	<ul style="list-style-type: none">• Feeling lightheaded or faint.• Clammy skin• Confusion• Unresponsive/unconscious (due to a drop-in blood pressure)



Practically

- Provide one if:
 - History of anaphylaxis (or if suspected)
 - Minor reaction but has a significant risk factor (e.g. asthma)



Anaphylaxis and Asthma

- In all UK fatal food reactions - difficulty in breathing
(86% led to respiratory arrest)
- Only 1 of those who died did not have asthma
- Asthmatics more likely to have a severe reaction
(even if asthma mild, but more severe = higher risk)



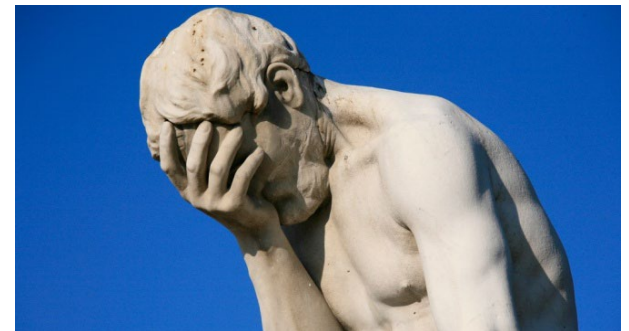
Practically

- Provide one if:
 - History of anaphylaxis (or if suspected)
 - Minor reaction but has a significant risk factor (e.g. asthma)
 - Reacted to traces



Consider an AAI

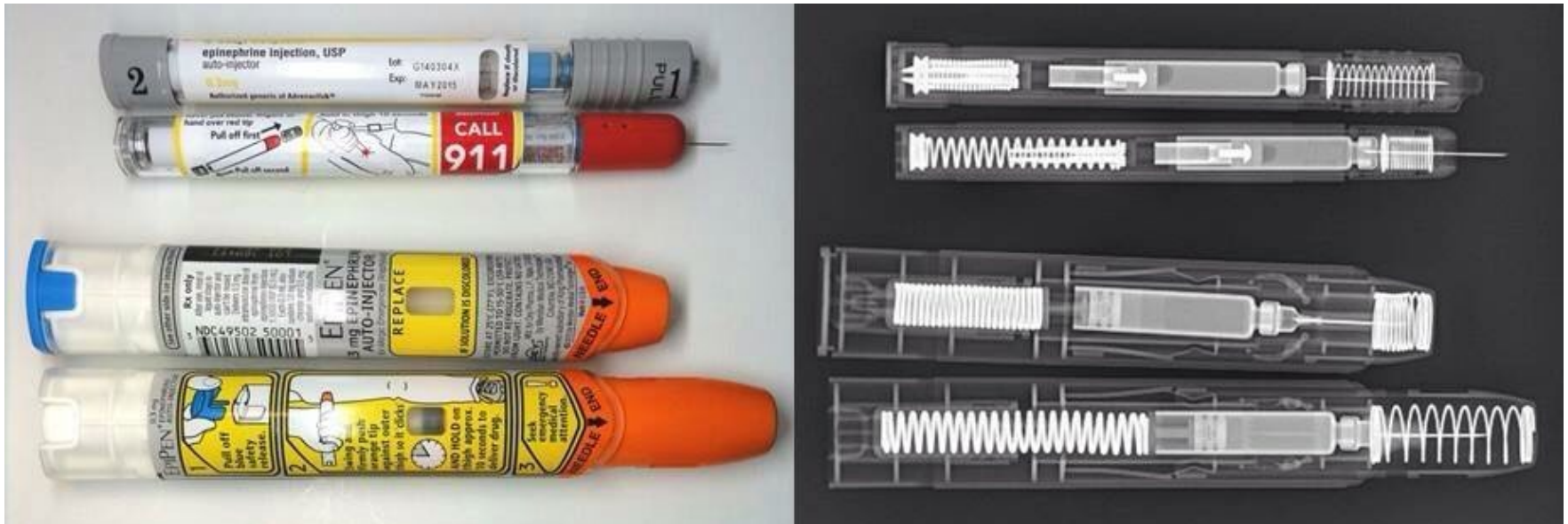
- Teenagers / young adult with food allergy
- Previous mild-moderate reaction to a nut
- Remote location
- Cognition or communication impairment



Adrenaline auto-injectors

- 1:1000 adrenaline vial

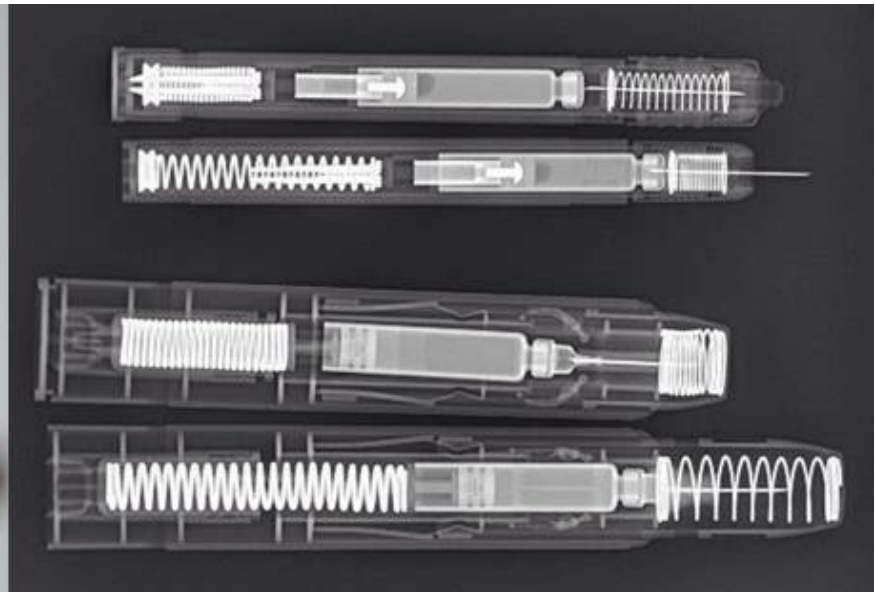
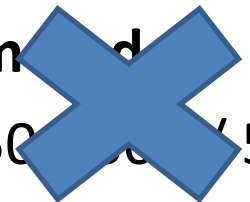
- Prefilled: **Epipen** **Emerade** **Jext**
 150 / 300 150 / 300 / 500 150 / 300



Adrenaline auto-injectors

- 1:1000 adrenaline vial

- Prefilled: **Epipen** **Emad** **Jext**
150 / 300 150 / 500 150 / 300



Adrenaline auto-injectors

- 1:1000 adrenaline vial

- Prefilled: **Epipen** ~~Emad~~ **Jext**
 150 / 300 150 / 300 / 500 150 / 300

	Weight	Dose
Epipen®	7.5 - 25 kg > 25 kg	150 micrograms 300 micrograms
Jext®	15 - 25 kg > 25 kg	150 micrograms 300 micrograms

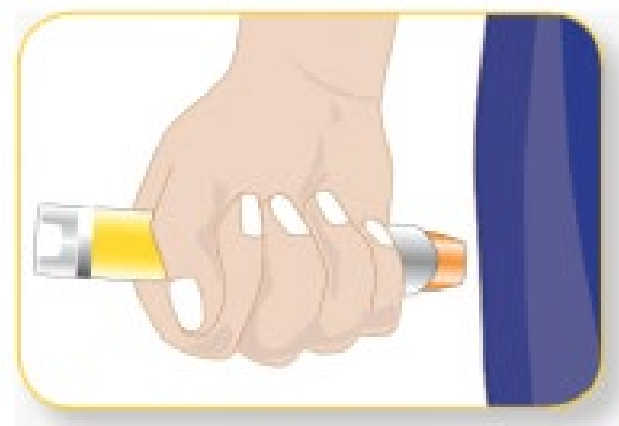
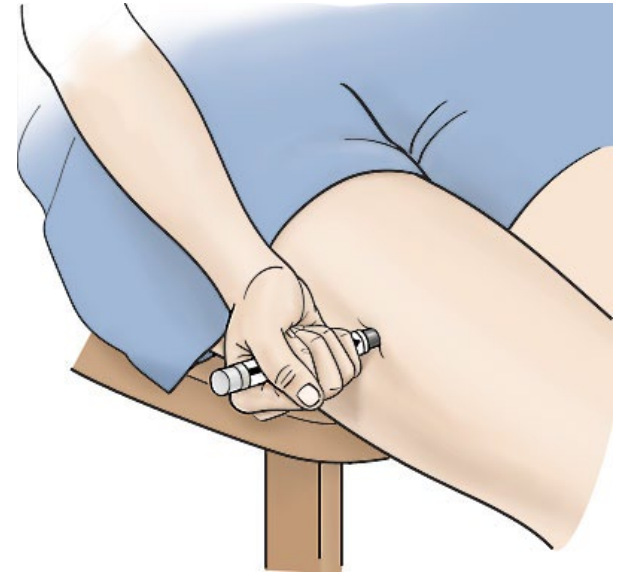
Adrenaline auto-injector DoH recall



- Gov.UK suggest that a single Epipen[®] 300 micrograms or Jext[®] (300 micrograms) is a suitable replacement for a single Emerade[®] 500 micrograms

Teach how to use the AAI

- EpiPen 3 seconds *(from November 2017)*
- Emerade 5 seconds
- Jext 10 seconds



Teach how to use the AAI

How to give EpiPen®



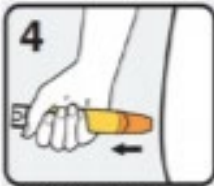
Form fist around EpiPen® and PULL OFF BLUE SAFETY CAP



SWING AND PUSH ORANGE TIP against outer thigh (with or without clothing) until a click is heard



HOLD FIRMLY in place for 10 seconds



REMOVE EpiPen®. Massage injection site for 10 seconds

©The British Society for Allergy & Clinical Immunology, 09/2017

Videos

<http://www.epipen.co.uk/demonstrationvideo/>

<https://kids.jext.co.uk/about-jext/how-to-use/>

<https://www.emerade.com/instruction-video>

Trainer pen

Free from the company – JUST ASK

Pharmacist



Why is this so important?

- People make mistakes



Adrenaline – *short half-life*

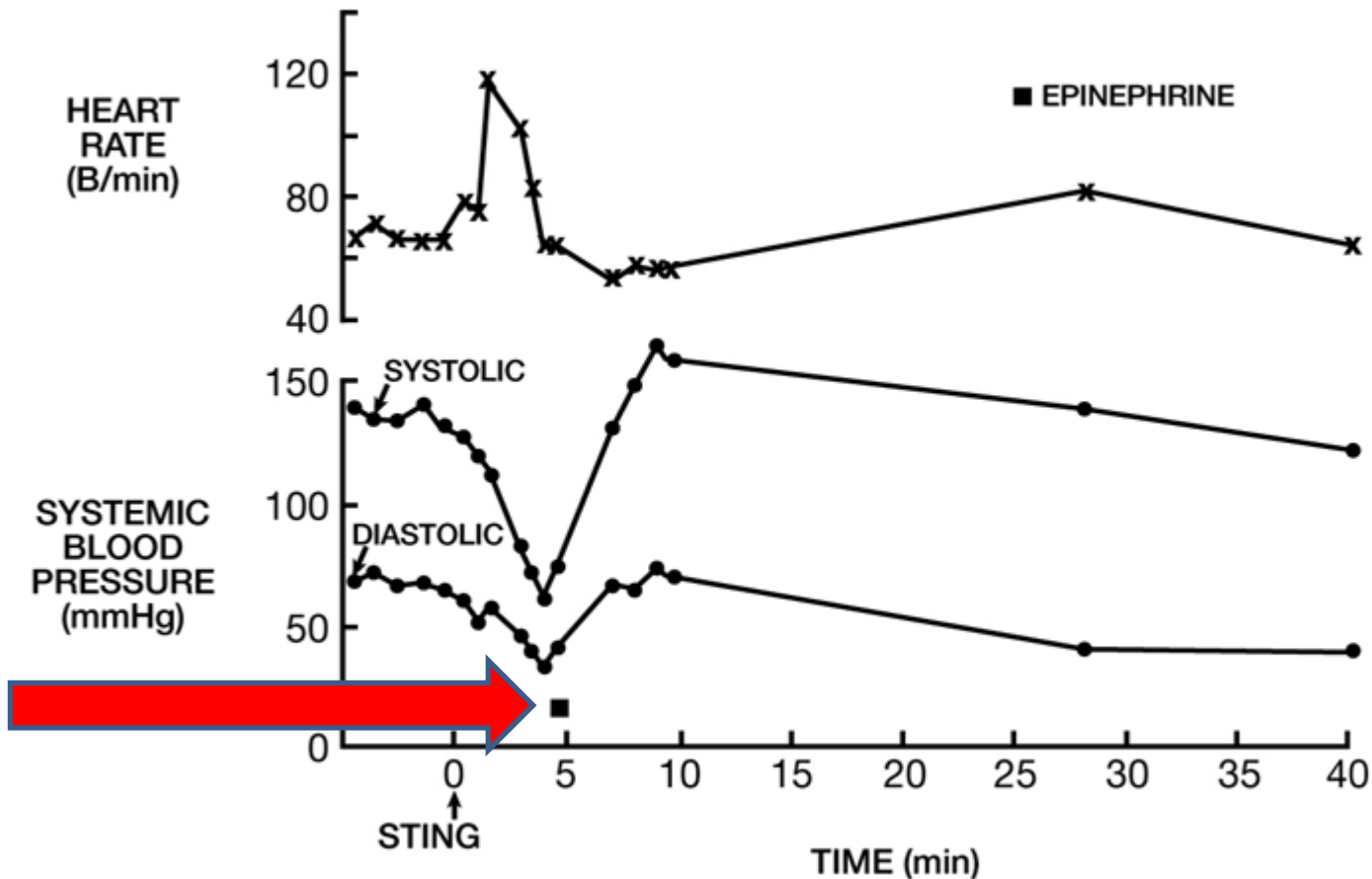
- Boosting your “natural” adrenaline
- It works quickly and potentially life saving

BUT

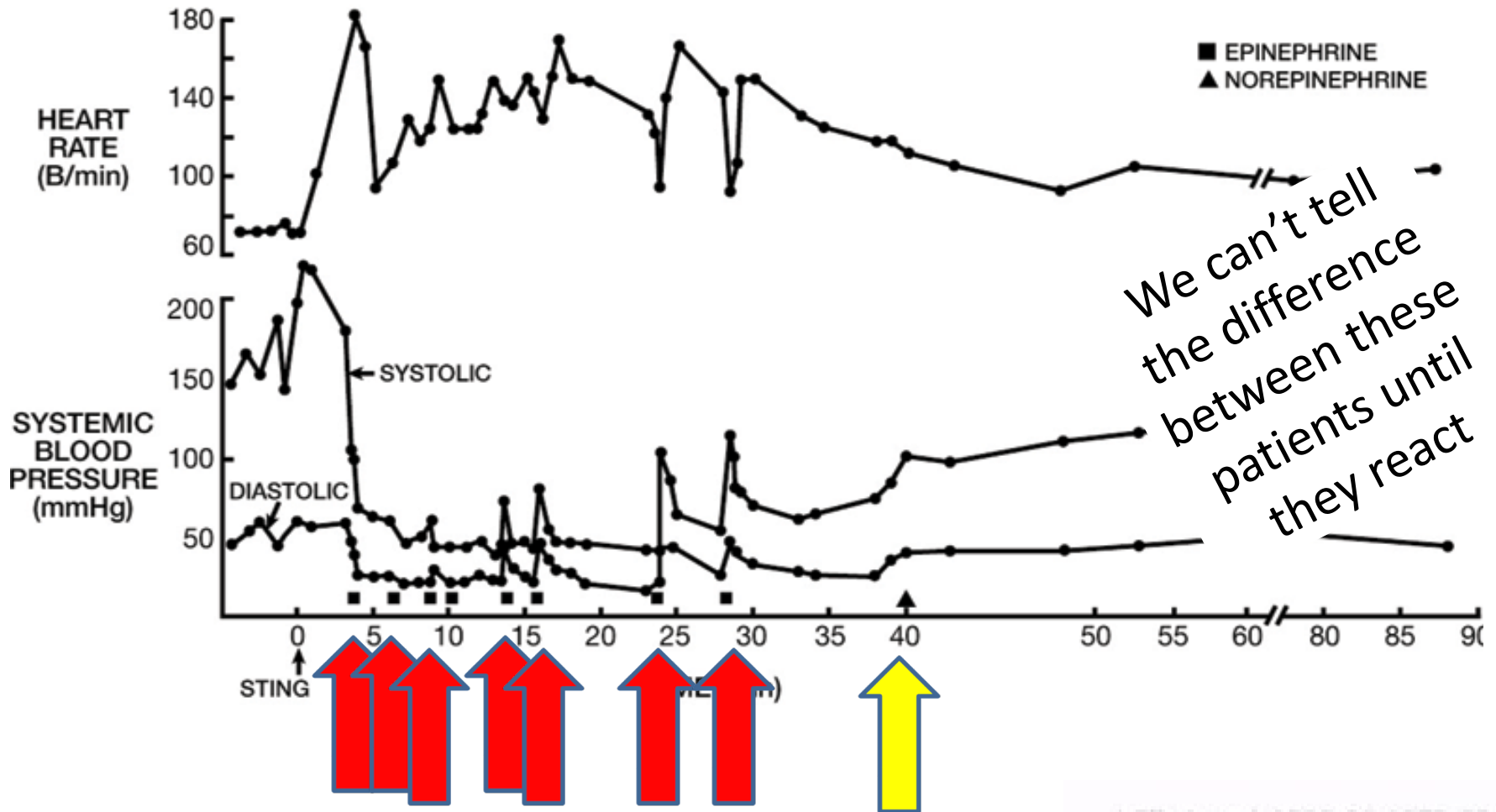
- It wears off quickly too



Why is this so important?



Why is this so important?



NEWS

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England | Local News | Regions | London

Bow pur
reaction

Mail Online

12 May 20

Supp
Com
Sadie
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INDEPENDENT

13-year-old boy dies of allergic reaction after having 'cheese thrown down his T-shirt', inquest hears

Karanbir Cheema died 10 days after incident at school in Greenford

Adam Forrest | @adamtomforrest |
Wednesday 19 September 2018 16:41 | 52 comments

Tennis Association



Click to follow
The Independent



Click to follow
The Independent
May suffers
Politics live

Brexit deal
£30

Predicting reaction severity?

- Dose, route of exposure of allergen
- Risk taking, intoxication/situational awareness, exercise
- Other conditions (e.g. asthma, viral infection)
- Medications (e.g. β -blockers, NSAIDs)
- Body's ability to compensate
- Inadequate or delayed treatment



Don't forget

- Allergy management plan

The screenshot shows the BSACI website header with the logo 'bsaci' and tagline 'improving allergy care through education, training and research'. Navigation links include 'Home', 'About BSACI', 'Professionals', 'Resources for Allergy Sufferers & Carers', 'Meetings, Education & Events', 'Guidelines', and 'Research Hub'. A search bar is visible with the text 'Contact Us' and a magnifying glass icon.

About BSACI

- The History of the BSACI →
- Research →
- BSACI President →
- BSACI Council and Executive →
- BSACI Sub- +

Allergy Action plans for Children

There are 4 plans available (click on the link to download the relevant plan and complete electronically):

- [Personal plan for individuals prescribed EpiPen](#)
- [Personal plan for individuals prescribed Jext](#)
- [Personal plan for individuals prescribed Emerade](#)
- [A generic plan for individuals assessed as not needing AAI](#)

This child has the following allergies:

- *Epipen*
- *Emerade*
- *Jext*
- **No AAI**

- **FREE**
- Pdf and printable versions

Name: _____

DOB: _____

Photo

Mild/moderate reaction:

- Swollen lips, face or eyes
- Itchy/tingling mouth
- Hives or itchy skin rash
- Abdominal pain or vomiting
- Sudden change in behaviour

Action to take:

- Stay with the child, call for help if necessary
- Locate adrenaline autoinjector(s)
- **Give antihistamine:**

(If vomited, can repeat dose)

.....

- Phone parent/emergency contact

Watch for signs of ANAPHYLAXIS (life-threatening allergic reaction)

Anaphylaxis may occur without skin symptoms: ALWAYS consider anaphylaxis in someone with known food allergy who has **SUDDEN BREATHING DIFFICULTY**

<p>A AIRWAY</p> <ul style="list-style-type: none"> • Persistent cough • Hoarse voice • Difficulty swallowing • Swollen tongue 	<p>B BREATHING</p> <ul style="list-style-type: none"> • Difficult or noisy breathing • Wheeze or persistent cough 	<p>C CONSCIOUSNESS</p> <ul style="list-style-type: none"> • Persistent dizziness • Pale or floppy • Suddenly sleepy • Collapse/unconscious
--	--	---

IF ANY ONE (OR MORE) OF THESE SIGNS ABOVE ARE PRESENT:

- 1 Lie child flat with legs raised** (if breathing is difficult, allow child to sit)

- 2 Immediately dial 999** for ambulance and say ANAPHYLAXIS ("ANA-FIL-AX-IS")
- 3 In a school with "spare" back-up adrenaline autoinjectors, ADMINISTER the SPARE AUTOINJECTOR** if available
- 4 Commence CPR** if there are no signs of life
- 5 Stay with child** until ambulance arrives, **do NOT stand child up**
- 6 Phone parent/emergency contact**

***** IF IN DOUBT, GIVE ADRENALINE *****

You can dial 999 from any phone, even if there is no credit left on a mobile. Medical observation in hospital is recommended after anaphylaxis. For more information about managing anaphylaxis in schools and "spare" back-up adrenaline autoinjectors, visit: sparepensinschools.uk

Emergency contact details:

Additional instructions:

1) Name:



2) Name:



Parental consent: I hereby authorise school staff to administer the medicines listed on this plan, including a "spare" back-up adrenaline autoinjector (AAI) if available, in accordance with Department of Health Guidance on the use of AAIs in schools.

Signed:

Print name:

Date:

For more information about managing anaphylaxis in schools and "spare" back-up adrenaline autoinjectors, visit sparepensinschools.uk

This BSACI Action Plan for Allergic Reactions is for children and young people with mild food allergies, who need to avoid certain allergens. For children at risk of anaphylaxis and who have been prescribed an adrenaline autoinjector device, there are BSACI Action Plans which include instructions for adrenaline autoinjectors. These can be downloaded at bsaci.org

For further information, consult NICE Clinical Guidance CG116 Food allergy in children and young people at guidance.nice.org.uk/CG116

This is a medical document that can only be completed by the child's healthcare professional. It must not be altered without their permission. This document provides medical authorisation for schools to administer a "spare" adrenaline autoinjector in the event of the above-named child having anaphylaxis (as permitted by the Human Medicines (Amendment) Regulations 2017). The healthcare professional named below confirms that there are no medical contra-indications to the above-named child being administered an adrenaline autoinjector by school staff in an emergency. **This plan has been prepared by:**

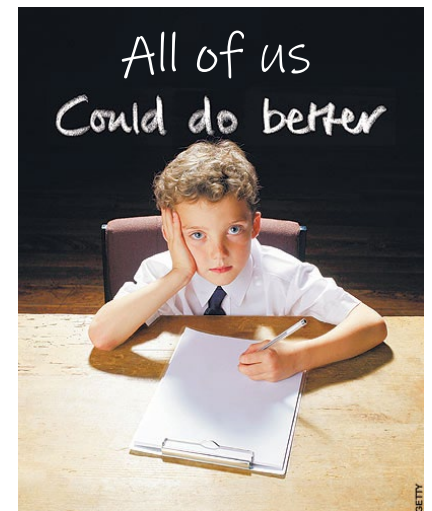
Sign & print name:

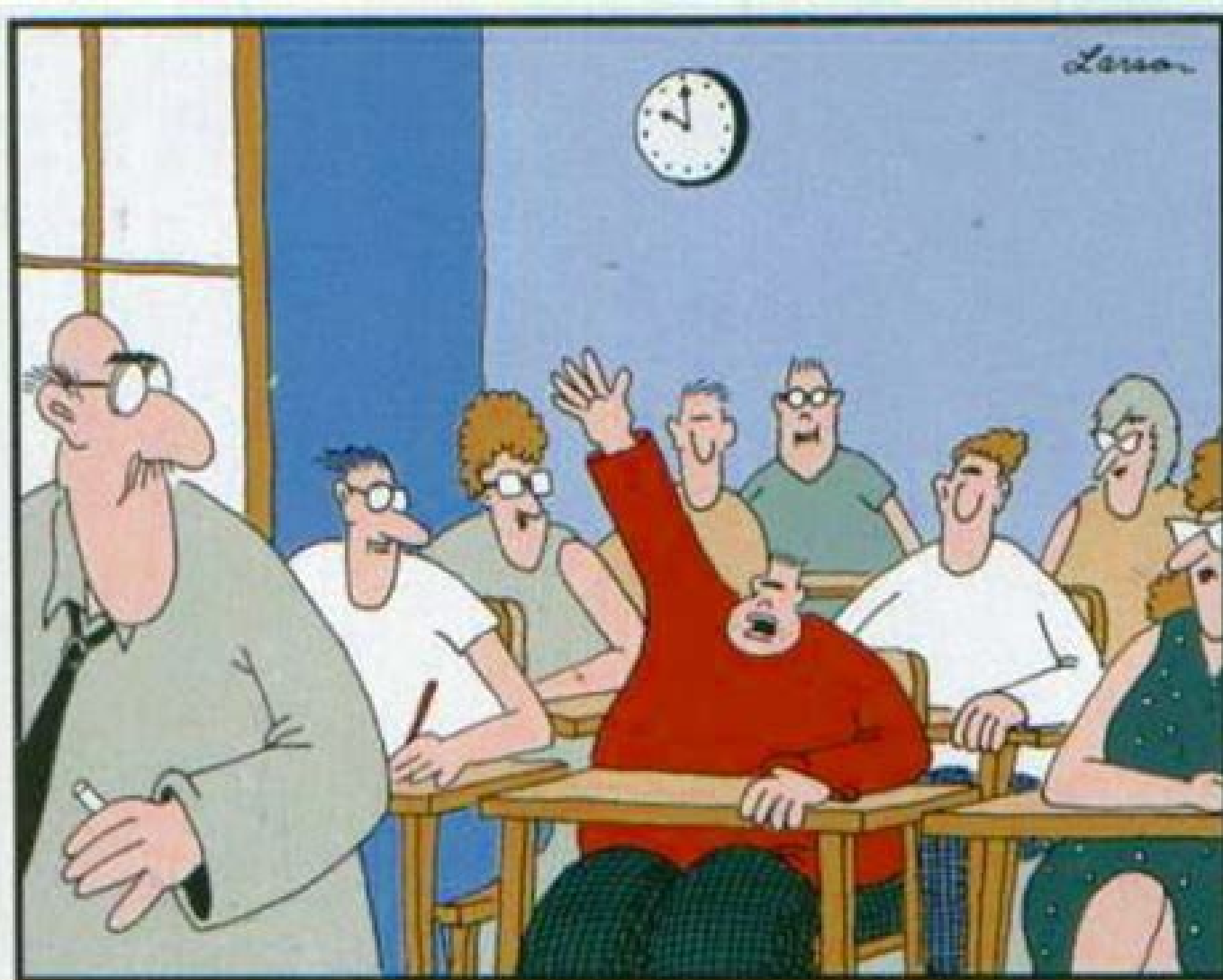
Hospital/Clinic:

Date:

Summary

- Adrenaline:
 - guidelines when and who to prescribe to
 - an allergy focused history is needed to make a risk assessment
 - training is essential
- Allergy management plans





**"Mr. Osborne, may I be excused?
My brain is full."**