Food allergies

Diarmuid Kerrin
Consultant Paediatrician
BHNFT

So Many Questions….

‘What are they?’

‘Why do they happen?’

‘When do they occur?’

‘How do we recognise them?’

‘What do we do about them?’

‘Why bother anyway?’

‘How many are affected?’

‘Where do we go for help?’

‘Can we prevent them?’

‘Is it our fault?’

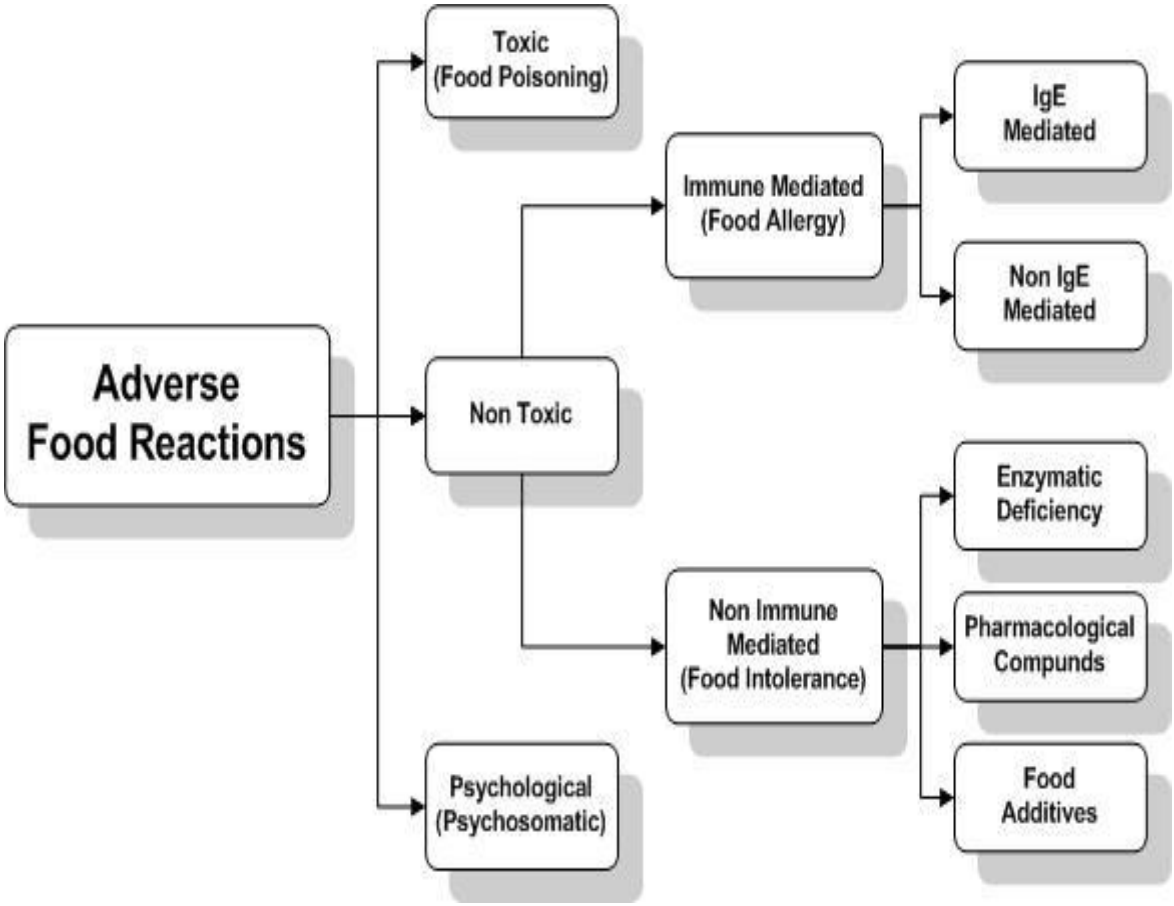
‘Will it happen again?’

‘Is it dangerous?’

‘Why now?’

‘Why wasn’t this done earlier?’

‘Are they more common now?’


Adverse Food Reactions
Toxic (Food Poisoning)
Non Toxic
Psychological (Psychosomatic)
Immune Mediated (Food Allergy)
Non Immune Mediated (Food Intolerance)
IgE Mediated
Non IgE Mediated
Enzymatic Deficiency
Pharmacological Compunds
Food Additives

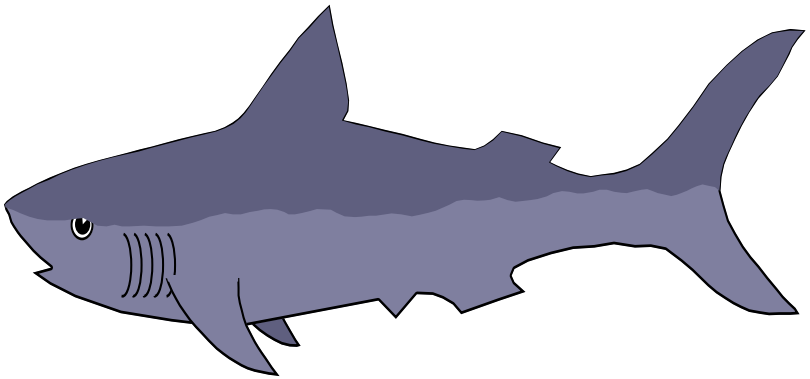
How common are allergies?

- Depends…(age, country)
- UK children ??3-5%
- 2010 IOW paper re peanut
  - Cohorts showed increase from 0.5% allergy if born in 1989 to 1.2% if born mid-90s and 1.4% in early 2000s
- 2011 MAAS paper
  - 10% peanut sensitisation; 2% clinical allergy

Which foods can cause it?

milk, eggs, (pea)nuts, fish

(wheat, soy)



Cow's milk protein allergy

- Most common
- May be IgE or non-IgE mediated
- May be associated soy allergy
- Dietetic input important

- NOT the same as lactose intolerance (probably less common)

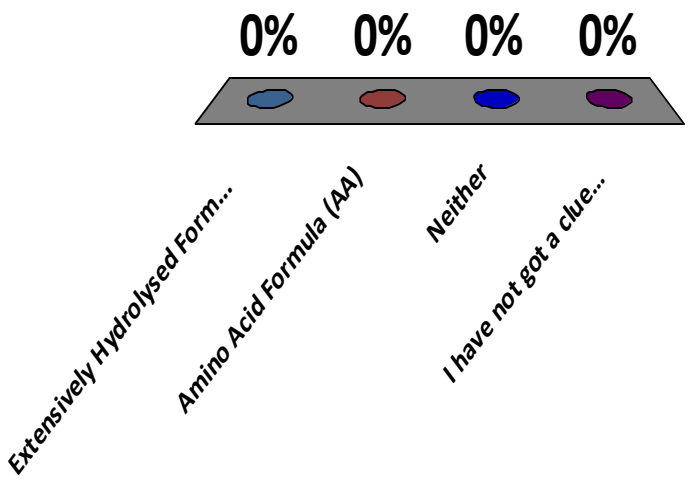
Cow’s milk allergy quiz

- Are the following products
  - Extensively Hydrolysed Formula (EHF)
  - Amino Acid Formula (AA)
  - Neither
  - Don’t know

?

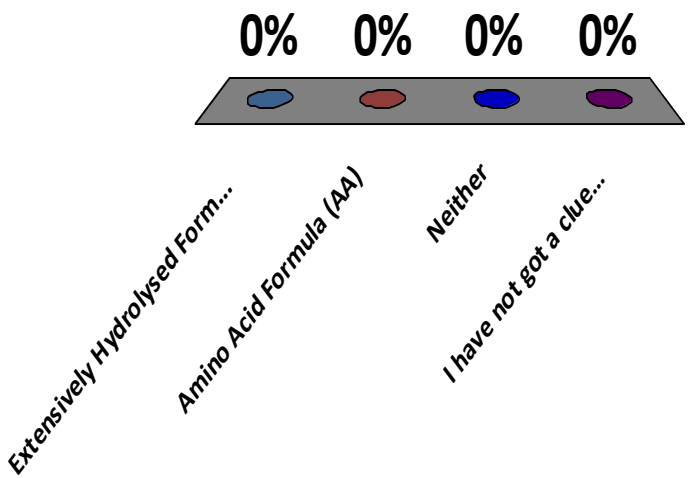
Aptamil Pepti

A. Extensively Hydrolysed Formula (EHF)
B. Amino Acid Formula (AA)
C. Neither
D. I have not got a clue…



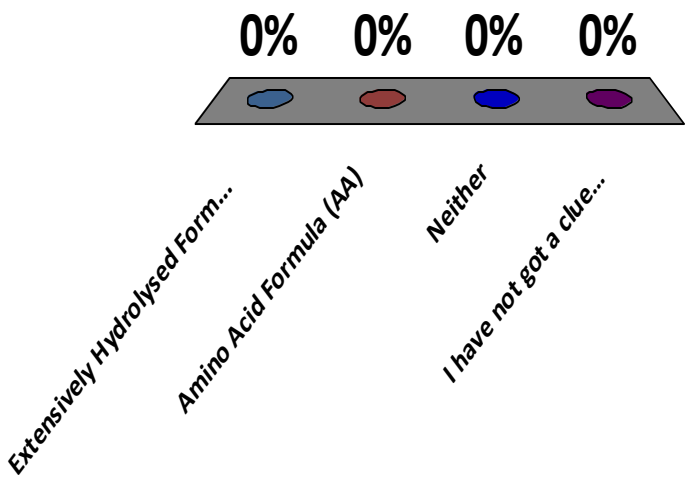
Nutramigen

A. Extensively Hydrolysed Formula (EHF)
B. Amino Acid Formula (AA)
C. Neither
D. I have not got a clue…



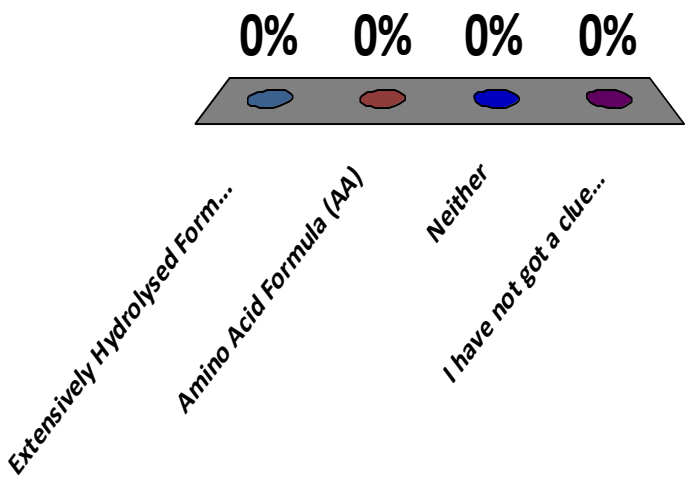
Neocate Advance

A. Extensively Hydrolysed Formula (EHF)
B. Amino Acid Formula (AA)
C. Neither
D. I have not got a clue…



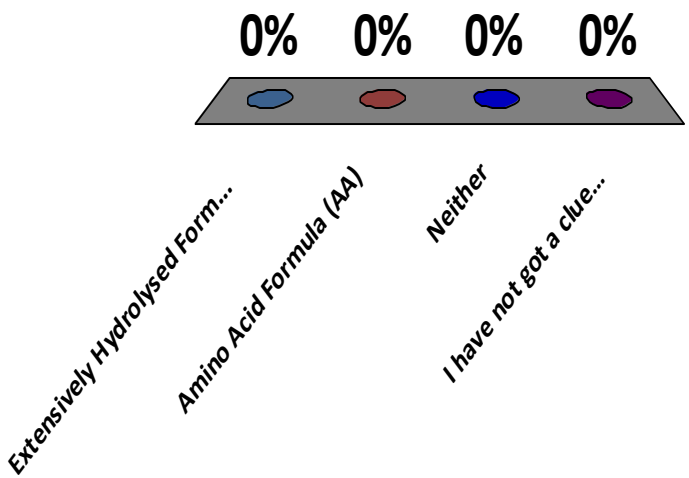
Alpro

A. Extensively Hydrolysed Formula (EHF)
B. Amino Acid Formula (AA)
C. Neither
D. I have not got a clue…



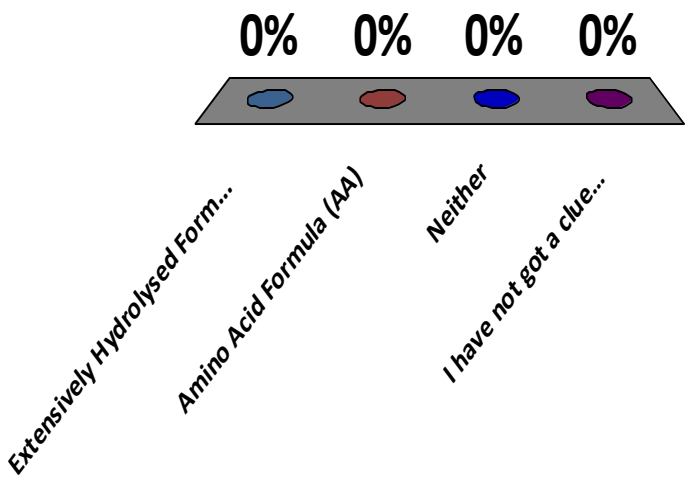
Similac Alimentum

A. Extensively Hydrolysed Formula (EHF)
B. Amino Acid Formula (AA)
C. Neither
D. I have not got a clue…



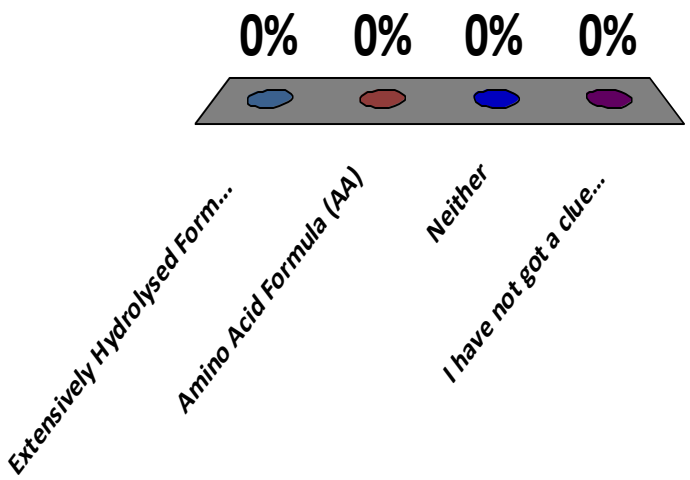
Puramina

A. Extensively Hydrolysed Formula (EHF)
B. Amino Acid Formula (AA)
C. Neither
D. I have not got a clue…



Althea

A. Extensively Hydrolysed Formula (EHF)
B. Amino Acid Formula (AA)
C. Neither
D. I have not got a clue…



What about additives?

- Non-protein antigens unable to cause IgE mediated acute allergic reactions

- May be intolerances via other mechanisms but rare in children

- These ‘pseudoallergens’ may be relevant in some cases of chronic urticaria in adults

- May be possible to confirm by blinded challenges in adults

Don’t children grow out of their food allergies?

It varies...

- Milk and egg allergies: most grow out by 1-5 years, milk typically sooner than eggs; but some take longer; later risk of other atopy

- Nut and fish allergies persist in majority of cases
- Recent estimates that 90% outgrow egg and milk, 20% outgrow peanut and 10% outgrow tree-nut allergy (by school age)
- Science behind this (epitopes)

What does an allergic reaction to food look like?

Mild

- Urticarial rash
- Itching
- Facial swelling
- Flushing

Moderate

- Rhinitis
- Conjunctivitis
- ‘Soreness / tingling / itching’ in mouth / throat*
- Lip or tongue swelling
- Vomiting / abdominal pain

- *may be first and best clue that food is trigger

Severe

- Breathing difficulty
- Wheeze
- Cyanosis
- Collapse

Severity

- 13% of reactions to nuts admitted to hospital Hourihane et al, Clin Exp Allergy, 1997
- Anaphylaxis < 1 / yr / million in UK
  - Only 25% food related
  - None under 13 yrs Pumphrey, Clin Exp Allergy, 2000

  BUT…

  2003: 5 month old boy died in Milton Keynes nursery of milk allergy

So what can we do about it?

Can we prevent it?

Controversial?

- Recommend atopic families to avoid peanuts during pregnancy and lactation
  - COT report, 1996

- Advice reversed 2009 by Food Standards Agency

- No good evidence that avoiding prenatal exposure prevents later atopy and little evidence re limiting diet during lactation

  EAACI, 2001

Who has it? (Diagnosis)

NICE Food Allergy clinical guideline 116, February 2011

www.nice.org.uk/cg116

- Take an allergy-focused history
- Take an allergy-focused history
- Take an allergy-focused history
- Take an allergy-focused history

- Testing
- Information
- Referral

History

- Exposure
- Timescale
- Detailed description of reaction
- Resolution
- Repeatability
- Personal history of atopy
- FH of atopy

Examination

Signs of associated atopy:

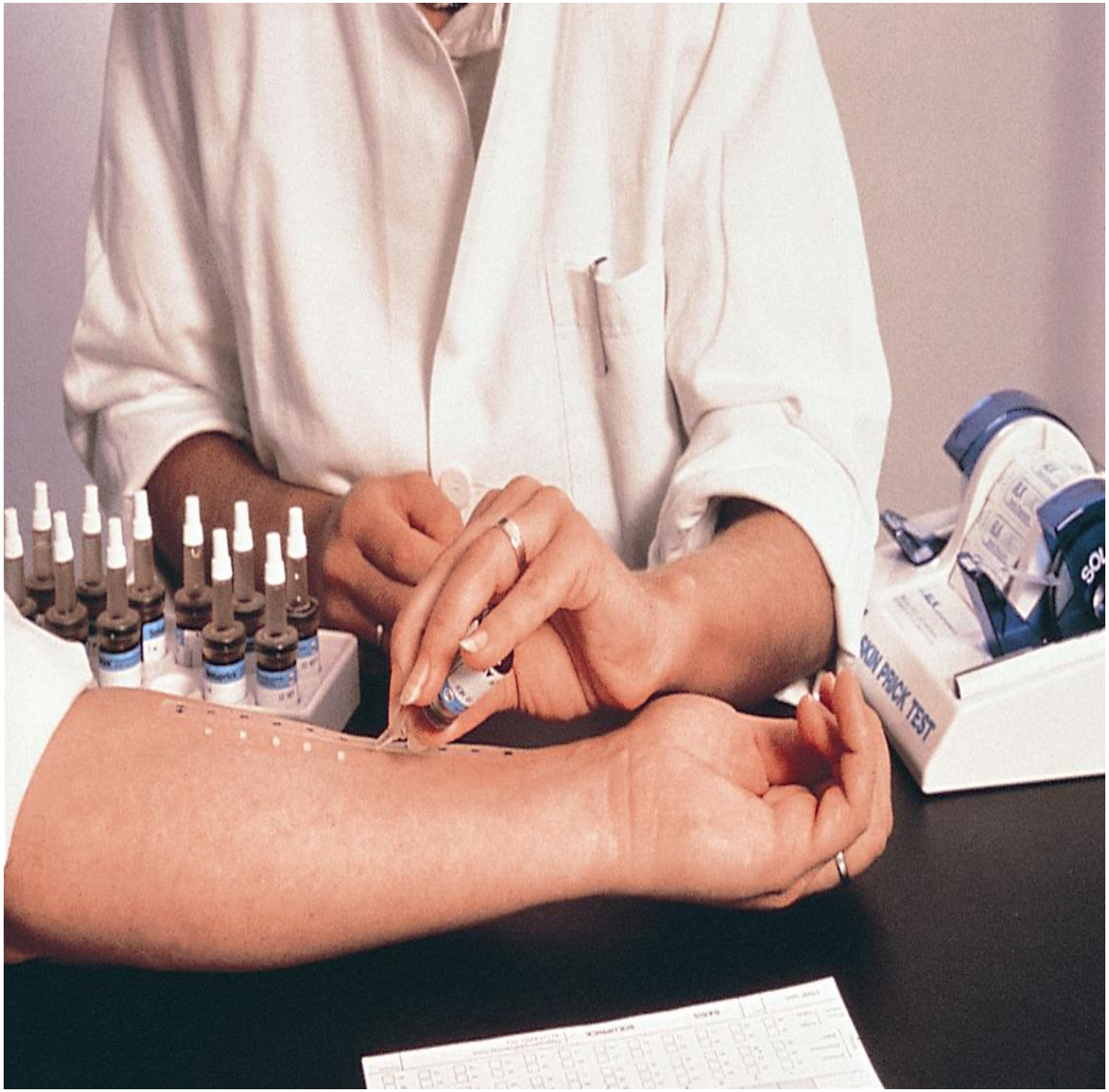
- Chest
- ENT
- Skin

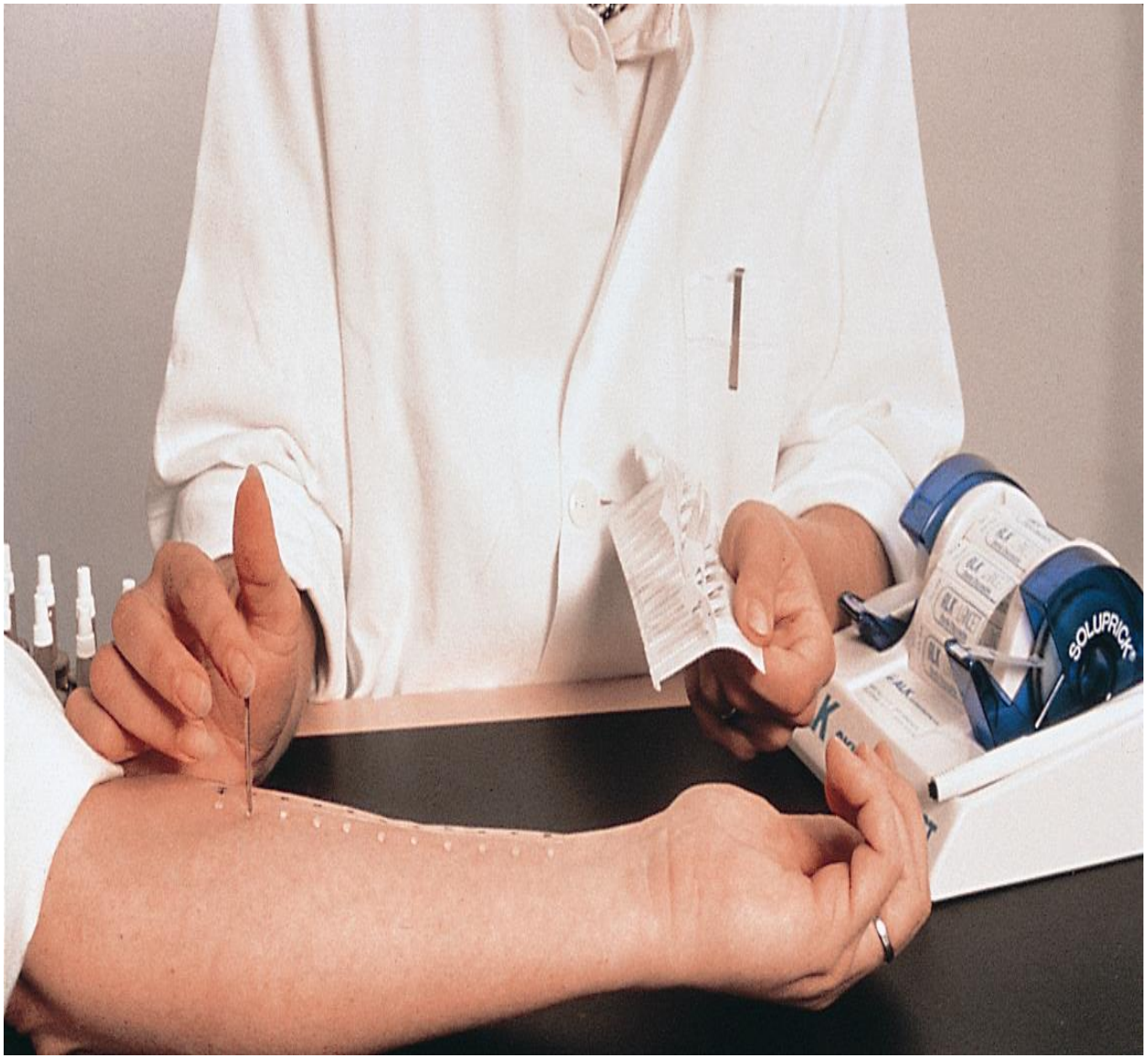
Investigations

- SPT
- Specific IgE (‘RAST’)
- Food challenge

Skin Prick Test (SPT)

- Advantages
  - Cheap
  - Easy
  - Immediate result
  - Sensitive
- Disadvantages
  - Antihistamines / steroids
  - Extensive eczema
  - Limitations of solutions


SKIN PRICK TEST


SOLUPRICK

Tests (SPT / spIgE)

- Not appropriate to use as ‘screen’
- Good negative predictive value
- Positive results indicate sensitisation but do not prove allergy
- Degree of sensitisation may indicate likelihood of actual allergy (but some with allergy will only have moderate sensitisation)
- Do not provide information about likely severity of reactions
- (Component resolved diagnostics – unlikely utility in most cases)

- York testing / VEGA, etc – no evidence

Food challenge

- Advantages
  - Gold standard
  - Unequivocal
- Disadvantages
  - Specialist
  - Labour and time consuming
  - Risk of adverse events

Avoidance

- Shops: labelling
  - ‘May contain traces of nuts’
- School
- Restaurants
- Travel
- Alcohol, independence, etc...

www.anaphylaxis.org.uk

Antihistamine

- For all reactions
- Use alone for mild reactions
- We tend to use non-sedating in over-2s; and as tablets when over 6

- Steroids - not so important acutely as...

Adrenaline (Epinephrine)

- Injected
  - **Definitive treatment for anaphylaxis**
  - **Adrenaline Autoinjector AAI**
- Inhaler
  - May have a role in ‘intermediate’ reactions
  - May be helpful if laryngeal oedema main feature

Epipen

- Preloaded, self administered
- i.m, outer thigh
- Lasts ?10 mins - prescribe in twos
- Junior (150mcg, < 30kg)
- Adult (300 mcg, > 30kg)
- Shelf life 18-24 months
- Ineffective if solution discoloured

http://www.epipen.co.uk/

Other AAIs

- Jext
- Emerade
- Anapen

- Aim for consistency across the borough
- Law change in future for schools?

So, who needs an Epipen?

Case 1 Epipen – Y or N?

12 month old boy

Rash around mouth after drinking

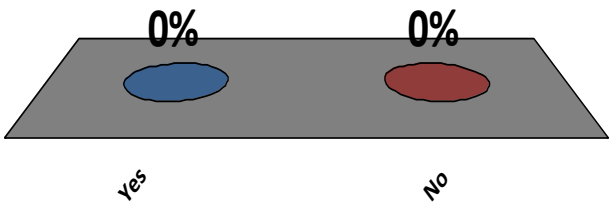
200mls cow's milk

Fine with yoghurts

No other symptoms

A. Yes

B. No



Case 2 Epipen ? 1 or N?

12 year old girl, never eaten nuts

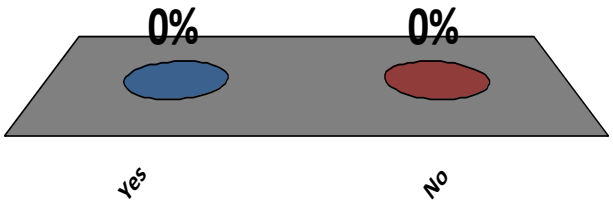
Significant asthma (symbicort / montelukast)

Reacted to a mouthful of chicken korma, containing ground peanuts

Wheeze and respiratory distress, pallor, urticarial rash, vomiting

A. Yes

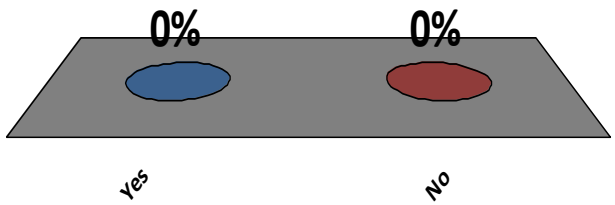
B. No



Case 3 Epipen – Y or N?

5 year old boy
Gets rash with peanuts and eggs
On beclomethasone
Parents anxious

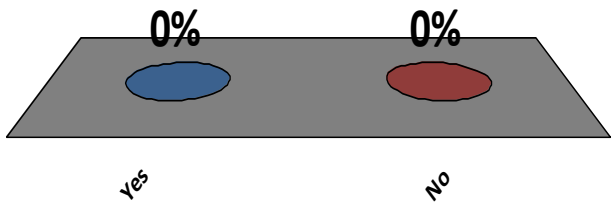
A. Yes
B. No



Case 4 Epipen – Y or N?

5 year old boy
Gets rash with peanuts and eggs
On beclomethasone
Parents not anxious

A. Yes
B. No



15 year old girl

One episode of urticarial rash for 2 days

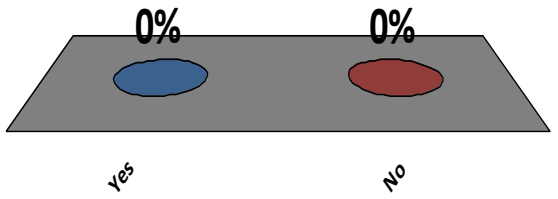
Associated with severe wheeze at one point needing ED attendance

No obvious food trigger

Does not have asthma

A. Yes

B. No



Fruit – pollen syndrome (Oral allergy syndrome)

- Oral reaction to fruit profilins in proportion of people with pollen allergy, eg birch – apple, carrot, etc

- NB also latex – fruit syndrome (kiwi, banana, avocado, potato)

Isolated urticaria

- Not commonly food

(especially if more than a few hours)

- More likely viral, idiopathic, drug

Food allergies in children

- Common, but not that common

- Dangerous in some
- Accurate diagnosis crucial

- Full management plan for those affected is essential

Local (Barnsley) paediatric allergy service

- For many, one stop hospital visit for diagnosis, prescription and written treatment plan
- Follow up by community children's nurse
- School nurses / (HVs) – yearly review within school reducing need for OPD follow up
- Local, consistent, evidence-based management plans
- Feedback welcomed