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Webinar training contents:

TUESDAY 12th Jan 2021
3.30 PM – 5.00 PM CET

- Introduction
- From Giudelines To Practice
- Principles Of Healthy Diet
- Dietary Advice And Practice
- Q & A

FOOD ALLERGY

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INTRODUCTION

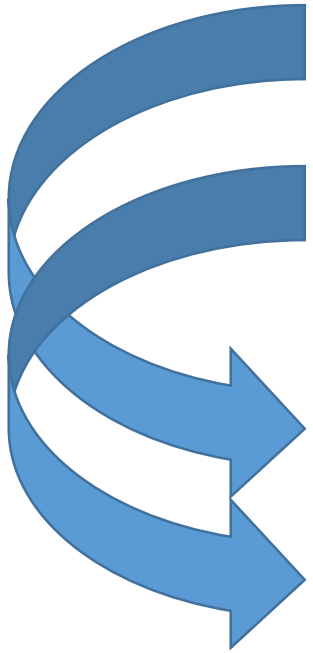
DEFINITION

FOOD ALLERGY is defined as an immune reaction to proteins in the food and can be

- immunoglobulin (Ig)E-mediated

or

- non–IgE-mediated



Nutritional implications

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INTRODUCTION

DEFINITION

FOOD INTOLERANCE is defined as an nonimmune reaction caused by metabolic, toxic, pharmacologic, and undefined mechanism

Nutritional implications

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Q1. WHY IS FOOD ALLERGY A RELEVANT ISSUE ?

A1. IgE-mediated food allergy is a **worldwide health problem** that affects **millions of persons** and numerous aspects of a person's life

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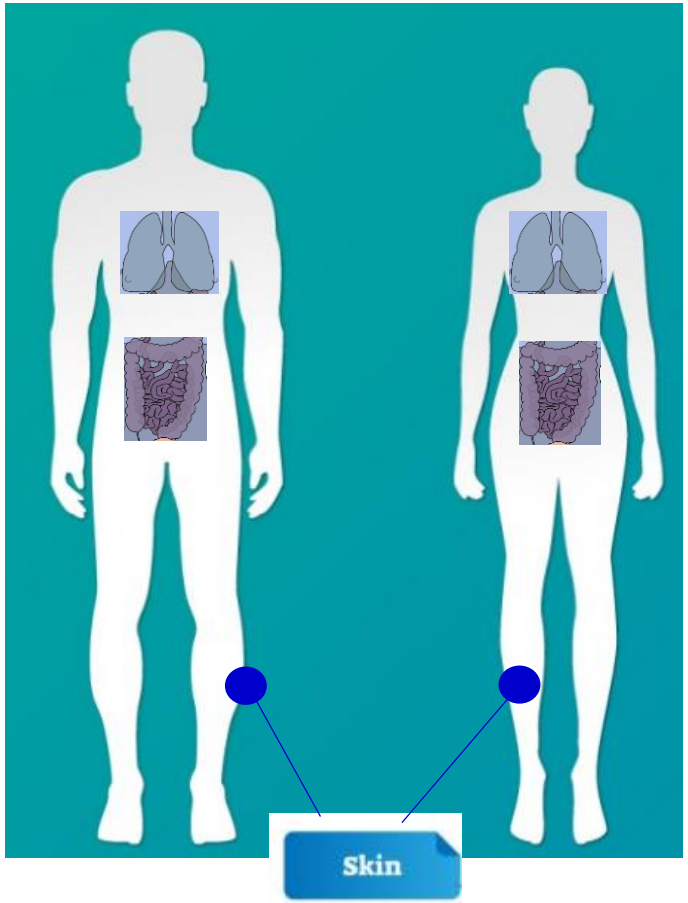
Q1. WHY IS FOOD ALLERGY A RELEVANT ISSUE ?

A2. Allergic reactions secondary to food ingestion are responsible for a **variety of symptoms** involving the skin, gastrointestinal tract, and respiratory tract.



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Q1. WHY IS FOOD A RELEVANT ISSUE ?

A3. Prevalence rates are uncertain, but the **incidence** appears to have **increased** over the past three decades, primarily in countries with a **Western lifestyle**

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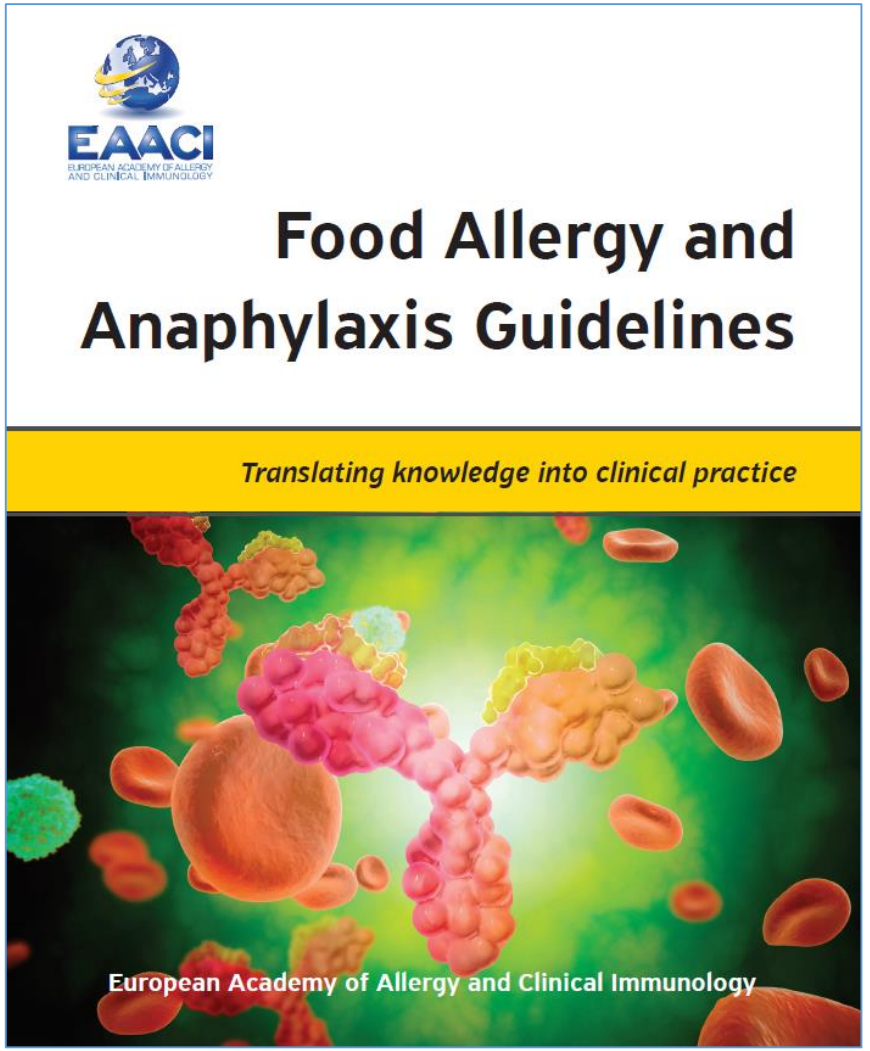
FROM GUIDELINE TO PRACTICE



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EAACI GUIDELINES

SECTION 1

FOOD ALLERGY DIAGNOSIS AND MANAGEMENT

CONTENTS

FOOD ALLERGY: DIAGNOSIS AND MANAGEMENT

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1.1 THE EPIDEMIOLOGY OF FOOD ALLERGY IN EUROPE

Background

- The **frequency of food allergy appears to have increased during the last 10-20** years, leading to the thought that food allergy may have different risk factors.
- Despite the suggested increasing frequency of food allergy and the attributed public health burdens, estimates of the **actual incidence and prevalence are uncertain.**
- Both self-perception and allergic sensitization are known to substantially **overestimate the actual frequency of food allergy.**

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What we know

Summary of range of estimates of the frequency of LIFETIME PREVALENCE of FA in Europe by self-report

Frequency of FA	<1 year	2-5 year	6-10 year	11-18 year	18-60 year	>60 year
LIFETIME PREVALENCE						
Self-report	5.7-38.4%	5.8-38.4%	5.7-41.8%	10.6-38.4%	9.5-35%	15.5-35%

The overall lifetime prevalence of self-reported food allergy is 17.3%

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Key Messages

- The **highest prevalence** of self-reported FA was seen in Northwestern Europe.
- The **lowest prevalence** of self-reported FA was seen in Southern Europe.
- The **highest prevalence** of self-reported FA was seen in children.
- The **prevalence** appeared to be **increasing**.
- The **incidence** of FA seemed to be **stable** overtime.

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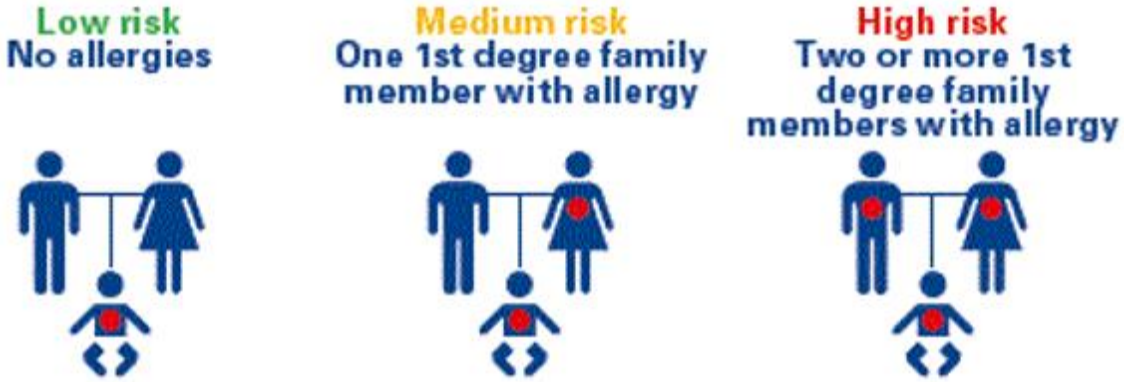
REMINDER

Risk or prognostic factors may be important for the development of FA

Familial history of allergy



Sex & Age

The presence of other allergic diseases

Country of residence

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1.2 PREVALENCE OF COMMON FOOD ALLERGIES IN EUROPE

Background

- The majority of allergic reactions to foods, particularly in children, are suggested to be caused primarily by eight foods:

Cow's milk  Egg  Wheat  Soy 

Peanut  Tree nut  Fish  Shellfish 

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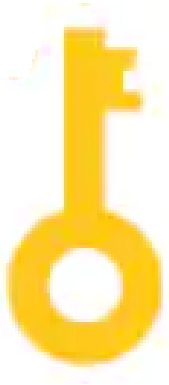
Key Messages



- The **prevalence of cow's milk allergy** and **egg** allergy were **higher in younger** age groups than older age groups.
- The **prevalence of peanut allergy, tree nut allergy, fish allergy**, and **shellfish** allergy were **higher in the older** age groups.
- The **prevalence of cow's milk allergy, egg allergy, wheat allergy, tree nut allergy, fish allergy**, and **shellfish** allergy were in general higher in **Northern Europe**.
- The **prevalence of soy allergy** and **peanut allergy** were higher in **Western Europe**.

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REMINDER

FOOD ALLERGY - LIFETIME

self-reported prevalence

- Highest
  for cow's milk allergy (6.0%)

- Lowest
  for soy allergy (0.3%)

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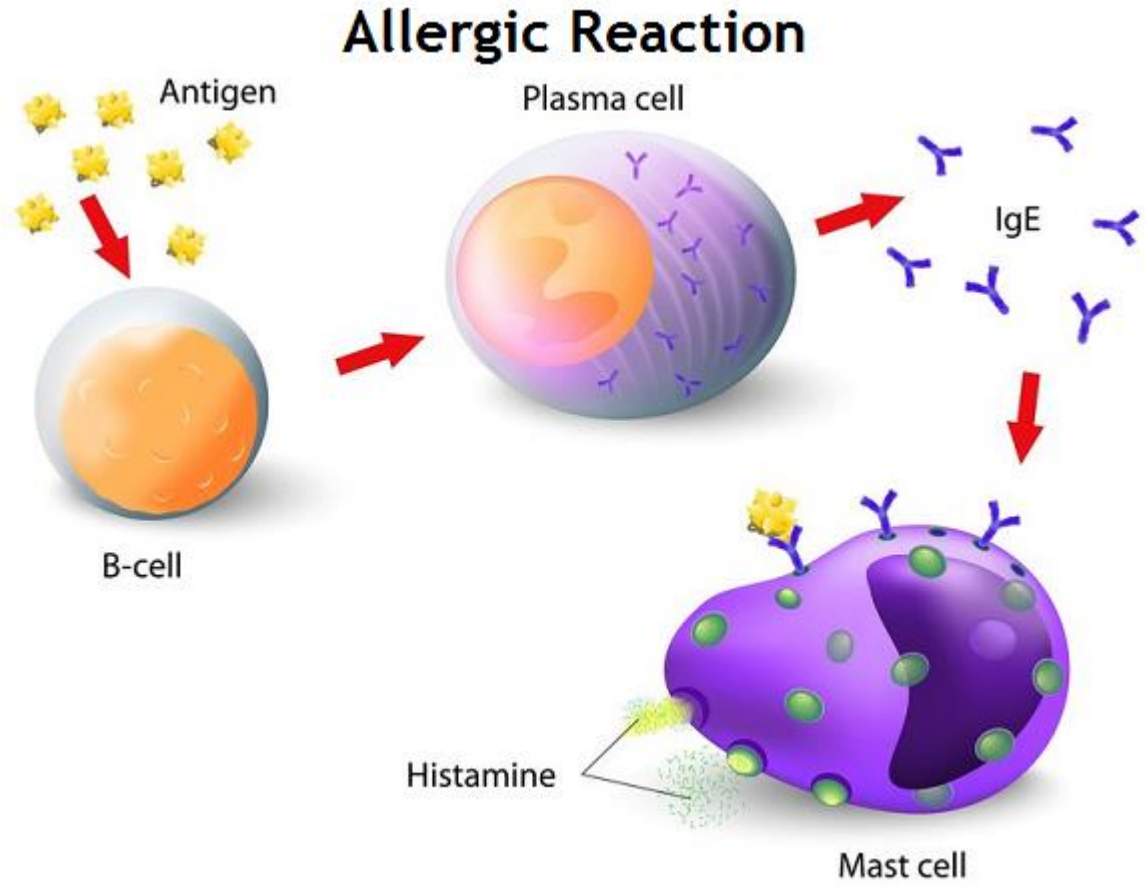
1.3 THE DIAGNOSIS OF FOOD ALLERGY

Background

- ‘Food allergy’ refers to the subgroup of food hypersensitivity reactions in which **immunologic mechanisms have been implicated**.



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KEY MESSAGE

- The first and most important step in the diagnosis of food allergy is a **FULL DIETARY HISTORY** and this should be supplemented with a clinical examination.

MY FOOD DIARY

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REMINDER

Questions in the evaluation of food allergy

- What is the suspected food allergy?
- Was the suspected food allergen ingested, inhaled, or touched?
- Does the subject have an aversion to the suspected food allergen?
- How soon after exposure to the food allergen did the symptoms occur?
- What are the specific symptoms and how severe are they?
- How long did it take for the symptoms to resolve?
- How reproducible are the symptoms with previous or subsequent ingestion?
- Does exercise precipitate the symptoms?
- Does the subject have early-onset severe eczema?
- Is the subject birch pollen- or grass pollen-allergic?

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1.4 ACUTE AND LONG-TERM MANAGEMENT OF FOOD ALLERGY

Background

Main approaches to managing food allergy

Targeting immediate non-life threatening symptoms of food allergy

Aiming to manage long-term symptoms and promote desensitization /tolerance

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Managing acute reactions

People with FA are often advised to completely avoid allergenic foods, but this may not always be possible.

The most common class of drugs assessed for this purpose is anti-H1 drugs, taken as required when symptoms occur.

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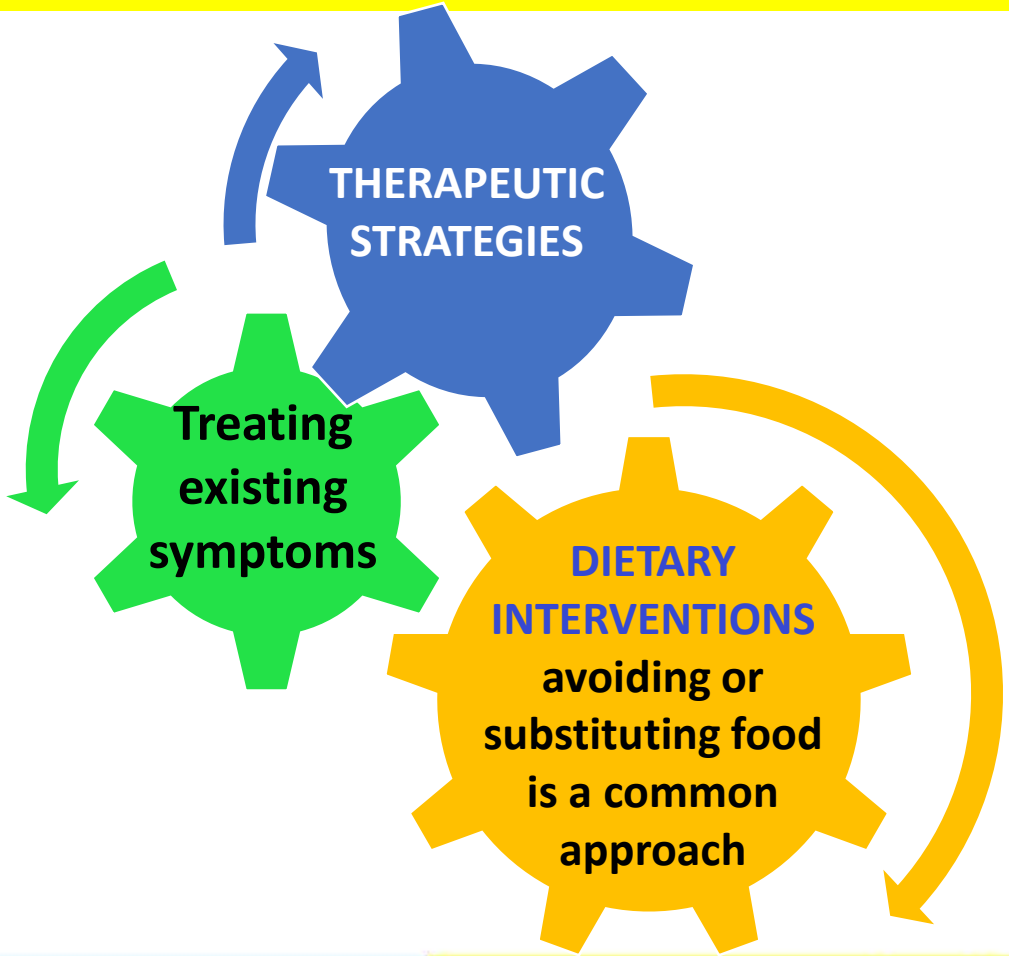
REMINDER

Longer-term management



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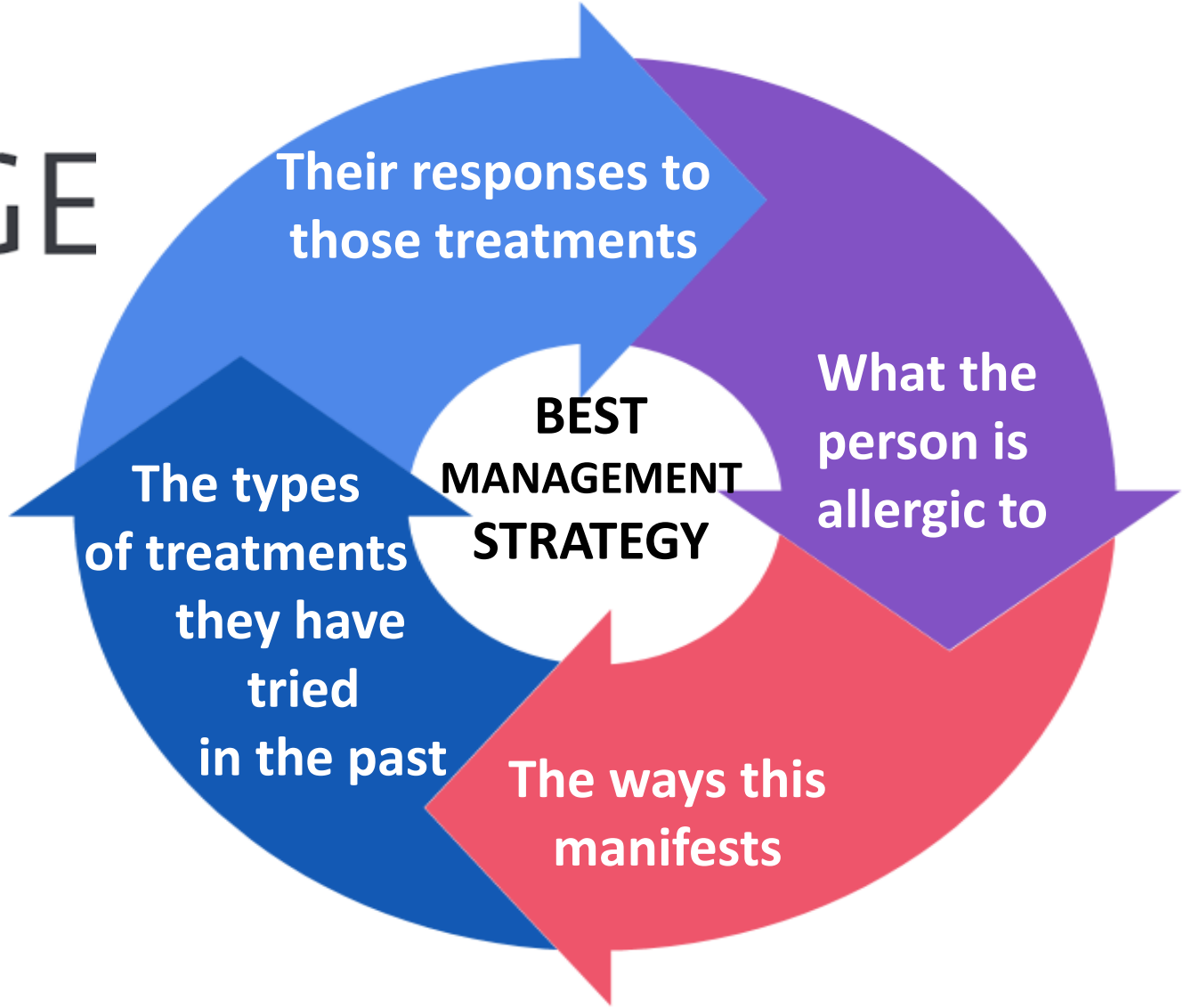
KEY MESSAGE



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Background

1.5 DIAGNOSIS AND MANAGEMENT OF FOOD ALLERGY

Dietary avoidance

key intervention in the management of food allergy resulting in complete or almost complete resolution of symptoms.

Dietary restrictions

should eliminate the culprit food allergen(s).

Management

should be tailored to the individual's specific allergic and nutritional needs.

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Patient's clinical history

The clinical presentation of FA involves a large spectrum of symptoms ranging from

- **Skin** (i.e. urticaria, angioedema, atopic eczema/ dermatitis)
- **Gastrointestinal** (i.e. vomiting, colic, abdominal pain, diarrhoea, constipation)
- **Respiratory** (i.e. rhinorrhea, sneezing, cough, dyspnea)
- **Circulatory** (i.e. cardiovascular collapse)

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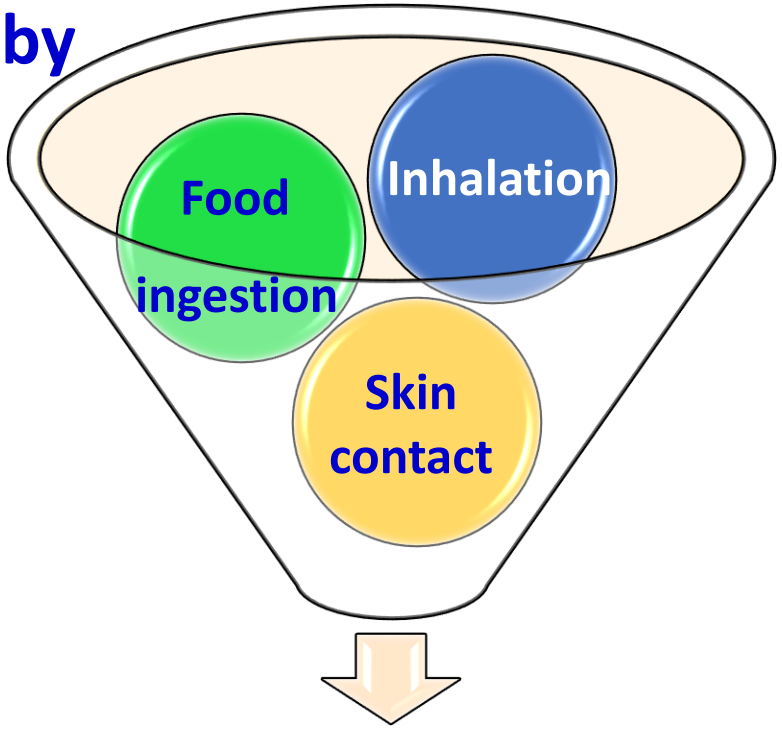
Patient's clinical history

- **Reactions can be triggered by**



- **Careful dietary history** is fundamental to the diagnosis of food allergy.

ALLERGIC REACTION

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Elimination diet

- An **elimination diet consists** of the avoidance of the food(s) suspected of triggering allergic reactions based on the clinical history, allergy focused diet history.
- The **duration of the avoidance** should be no longer than necessary to achieve a significant relief of symptoms, usually two to four weeks.
- When a properly performed elimination diet does **not ameliorate the symptoms**, food allergy to the eliminated foods is highly unlikely.

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Key Messages

Elimination diet

AVOIDANCE PHASE

PLANNED REINTRODUCTION of the eliminated food(s)

EVALUATE INDIVIDUAL TOLERANCE levels to the allergenic food

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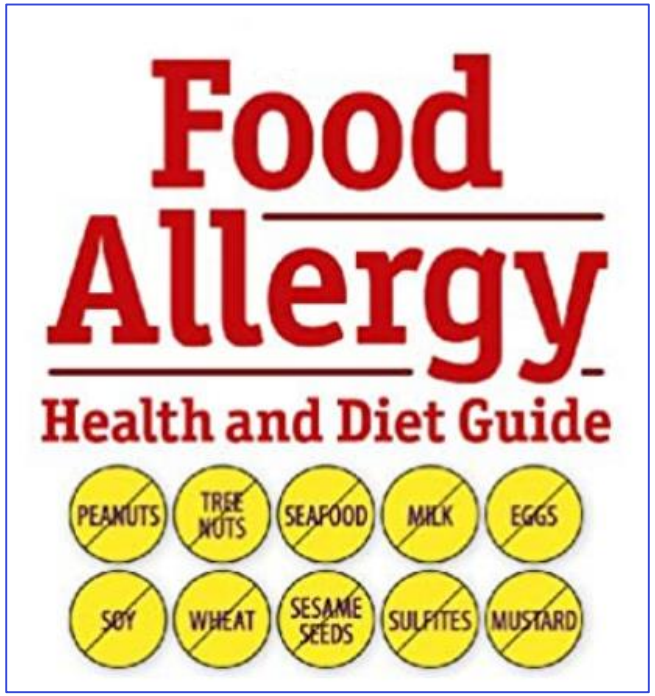
Key Messages

Elimination diet

- Extensive and long-term avoidance should be carefully monitored as it can result in **nutritional compromises** and impair **quality of life**.

- Ideally the **patient should receive proper counselling by a dietician** with specific competence in food allergy.



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Key Messages

EDUCATION is the key pillar of an effective long-term elimination diet

Patients, their families, close relatives and caregivers should:

- ❑ be aware of risk situations, and should be instructed in **reading labels** and how to avoid the relevant food allergens both in and outside the home (e.g. at restaurants).
- ❑ know that European Union (**EU**) **directives** ask for the declaration of allergenic ingredients in foods and be informed about **precautionary labelled foods**.
- ❑ be provided with information on **possible substitute** products for most food allergens.

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Cow's milk substitutes

- In young children these products are especially necessary **to ensure a diet that is adequate for growth and development.**
- These products have to fulfil the general requirements for **full nutrition needs**.
- These products may also be required to ensure a **satisfactory caloric intake**.

Cow's milk substitutes

- The substitutes for cow's milk should fulfil the criteria for
  - ***documented hypoallergenicity***
  - ***nutritional adequacy***

- Attention should be paid to:
  - ***taste***
  - ***price as reimbursement policies*** for these types of cow's milk substitutes differ across the EU.

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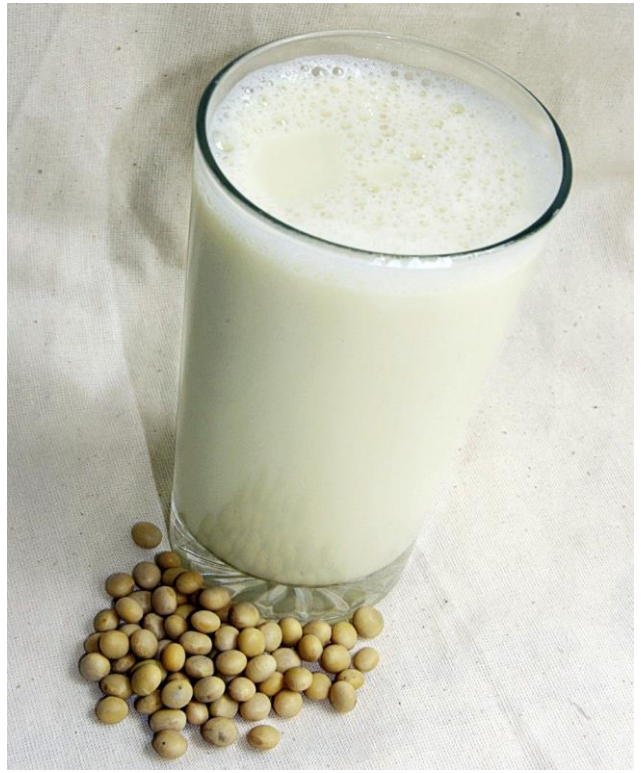
Cow's milk substitutes

- **Soy milk** may be useful provided that nutritional evaluation regarding the phytate and phyto-oestrogens content is considered.

- **Soy milk** cannot be recommended in very young children (<1 year of age).



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Cow's milk substitutes

- **Rice milk** has been recently introduced to the market in some European countries.
- Further research is needed to compare rice milk with soy milk.

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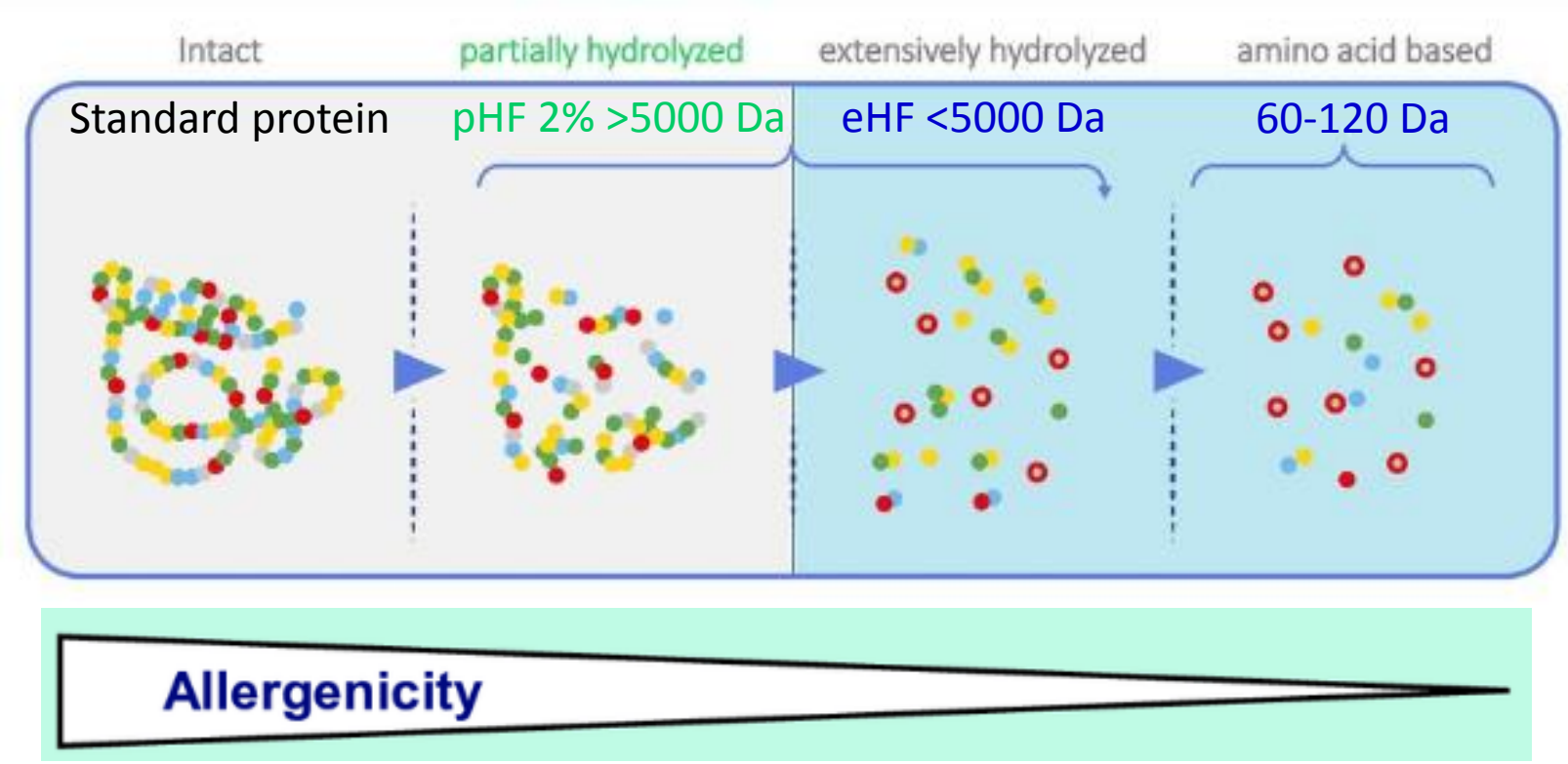
Cow's milk substitutes

- In children with cow's milk allergy some moderate level evidence about each type of substitutes.



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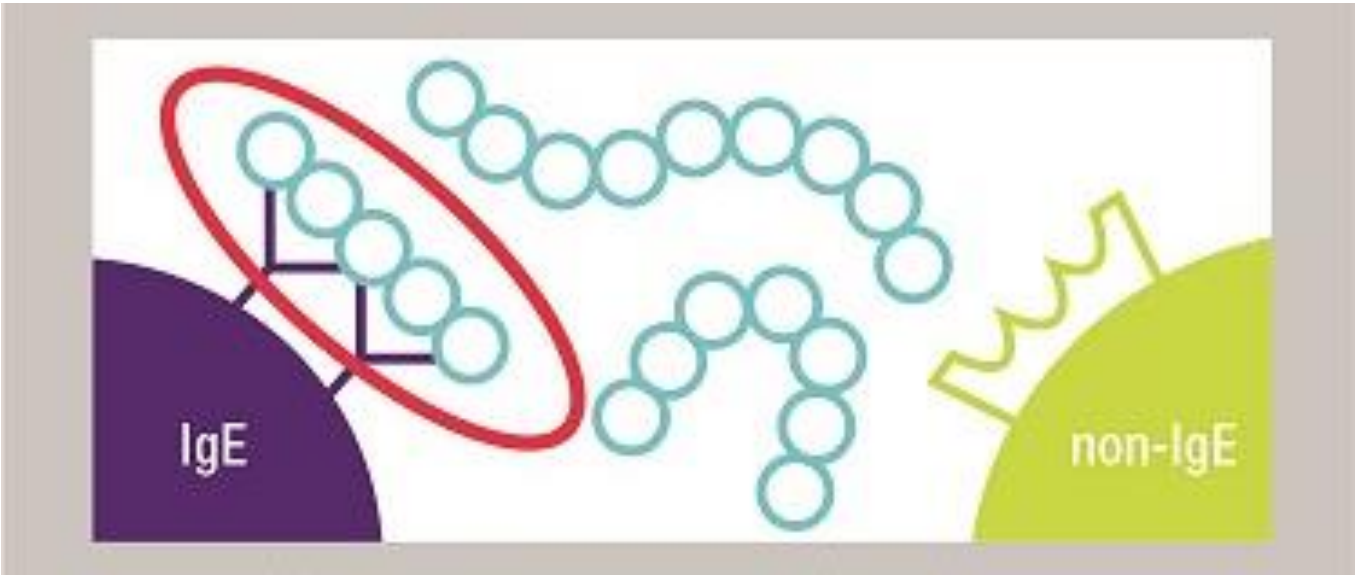
- Standard formula (e.g. cow' milk based)



- Whole protein chains can easily bind to immune cells and can therefore cause allergic reaction

Cow's Milk Protein Allergy or CMPA

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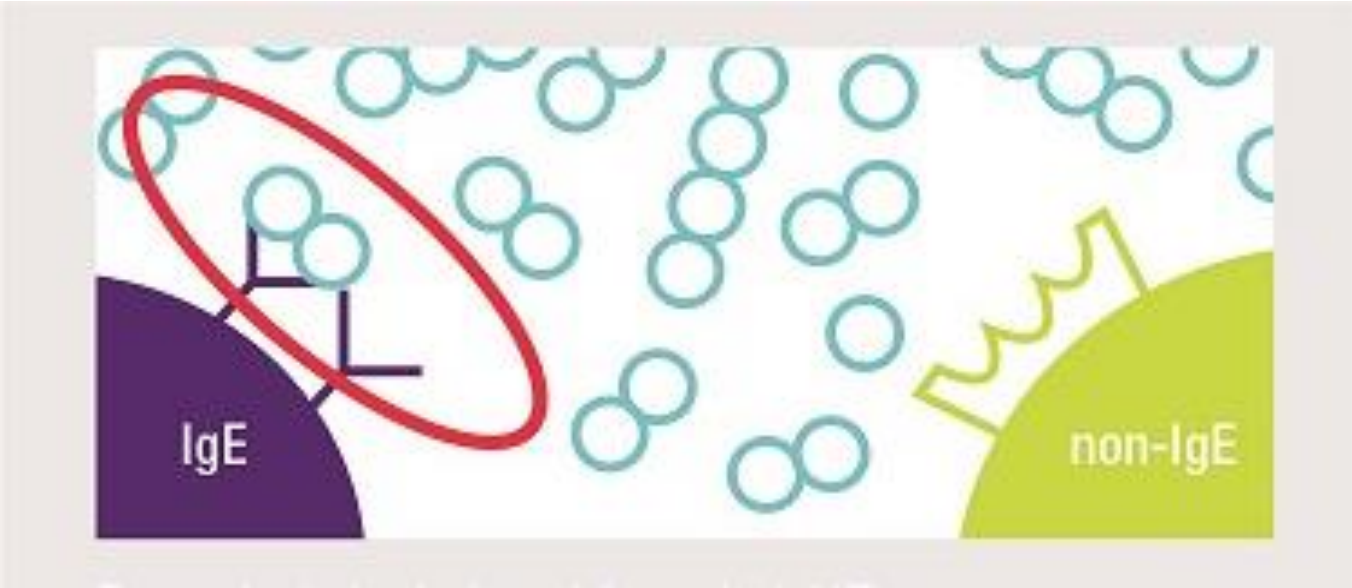
Cow's milk substitutes

- Cow' milk Protein Hydrolysate Formula (eHF)



- Protein fragments <5000 Da have the potential to bind immune cells

can still cause allergic reaction in subjects with CMPA

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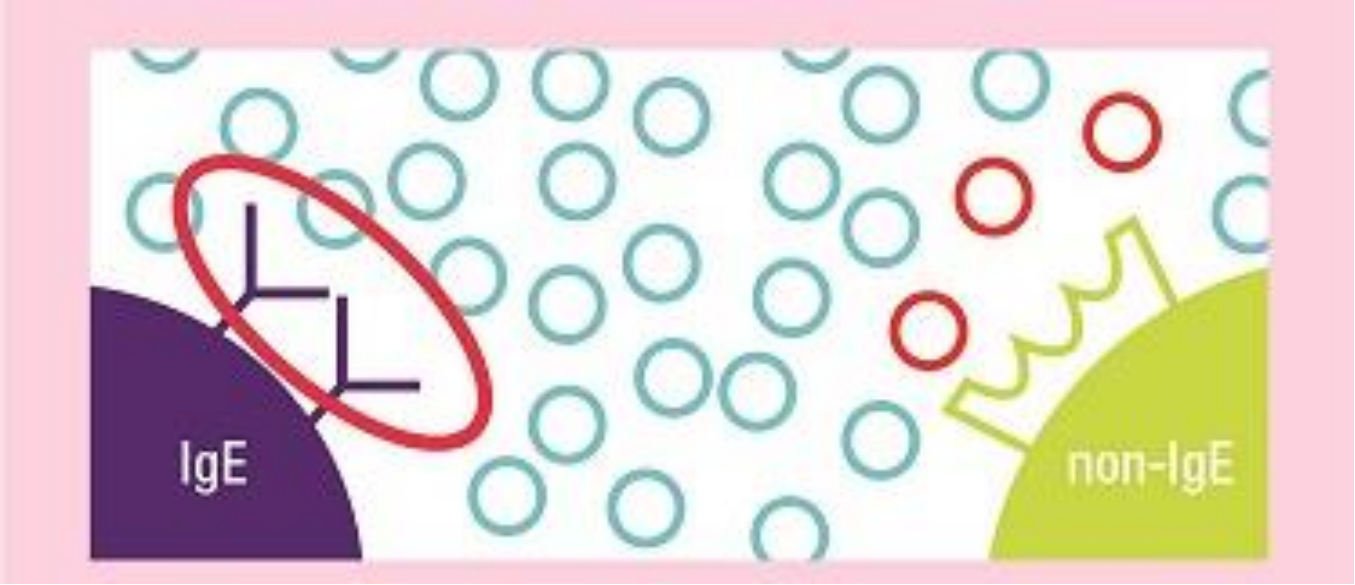
Cow's milk substitutes

- Amino Acid-based Formula



- Amino acid 60-120 Da are unlikely to bind immune cells

do not cause an allergic reaction in subjects with CMPA

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partially Hydrolysed cow's milk Formulas (pHF)
are not regarded as safe for patients with CMPA

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Goat milk is very similar to the proteins in cow's milk, and therefore should **not be recommended for patients with CMPA**

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Sheep milk is very similar to the proteins in cow's milk, and therefore should **not be recommended for patients with CMPA**

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Camel milk has been shown to be cross-reactive and therefore evidence for recommendations is lacking

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Donkey milk has been shown to be cross-reactive and therefore evidence for recommendations is lacking

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Mare milk has been shown to be cross-reactive and therefore evidence for recommendations is lacking

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Cow's milk substitutes

KEY MESSAGE

- It is **recommended that the choice of an appropriate cow's milk substitute should be assessed carefully balancing the following factors:** age, coexistence of gastrointestinal symptoms, history of life threatening reactions and nutritional requirements, as well as cost effectiveness.

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EAACI GUIDELINES

SECTION 2

PRIMARY PREVENTION OF FOOD ALLERGY

Rationale for prevention

Food allergy can have significant effects on morbidity and quality of life and can be costly in terms of medical visits and treatments. There is therefore considerable interest in generating efficient approaches that may reduce the risk of developing food allergy.

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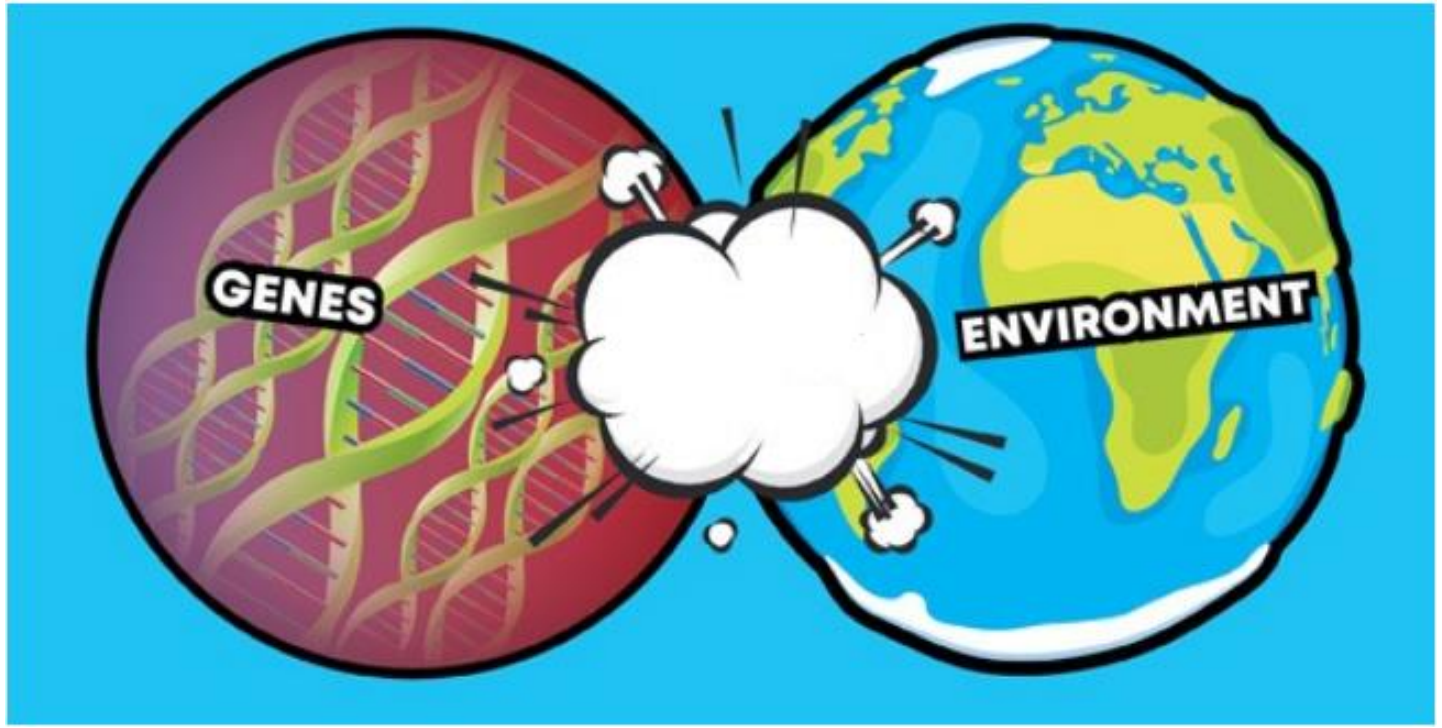
The causes of food allergy

Likely to reflect an interaction between genetic factors and environmental exposure



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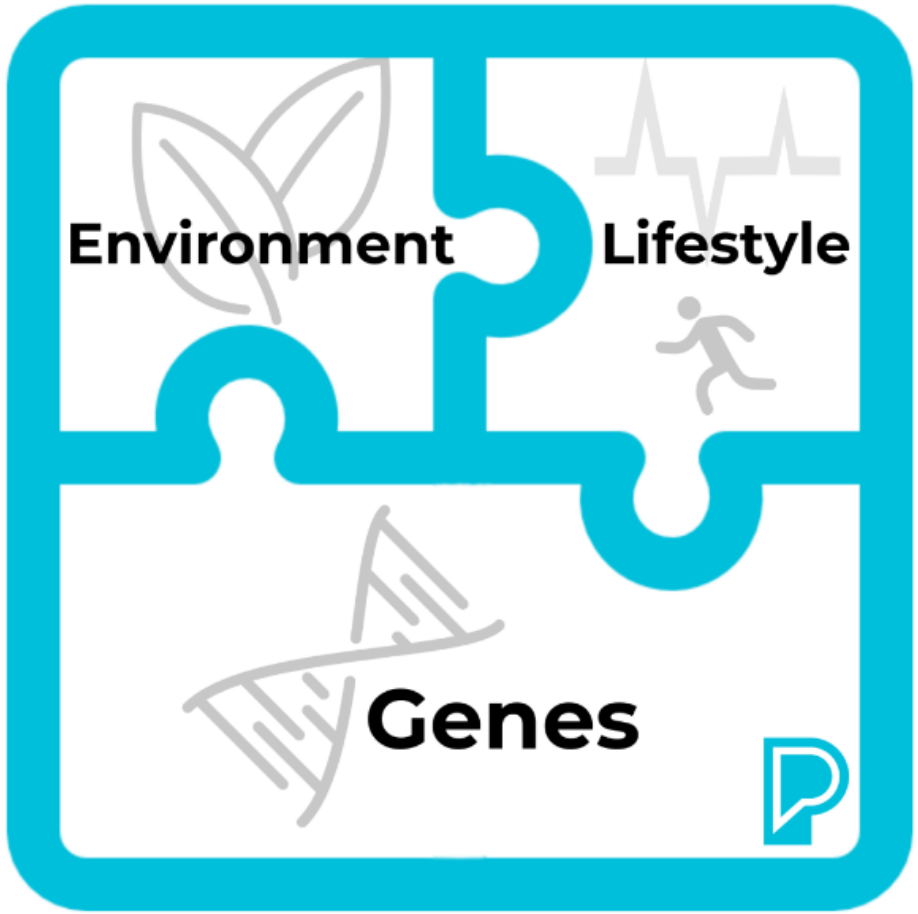
Which strategies for prevention



Strategies to prevent FA have tended to focus on early exposures to the food proteins most likely to be involved in its development.

Genetic factors are currently not modifiable.

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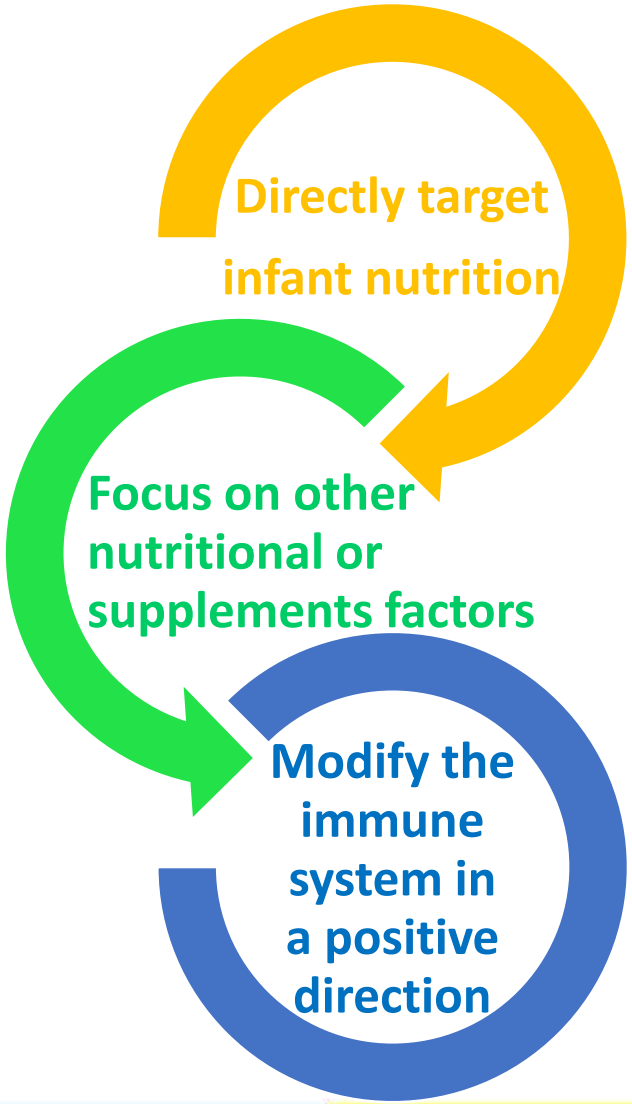
How implement the strategies for prevention



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Strategies for prevention

#FACT

Dietary supplements

There is NO EVIDENCE to recommend pre- or probiotics or other dietary supplements based on particular nutrients to prevent food allergy.

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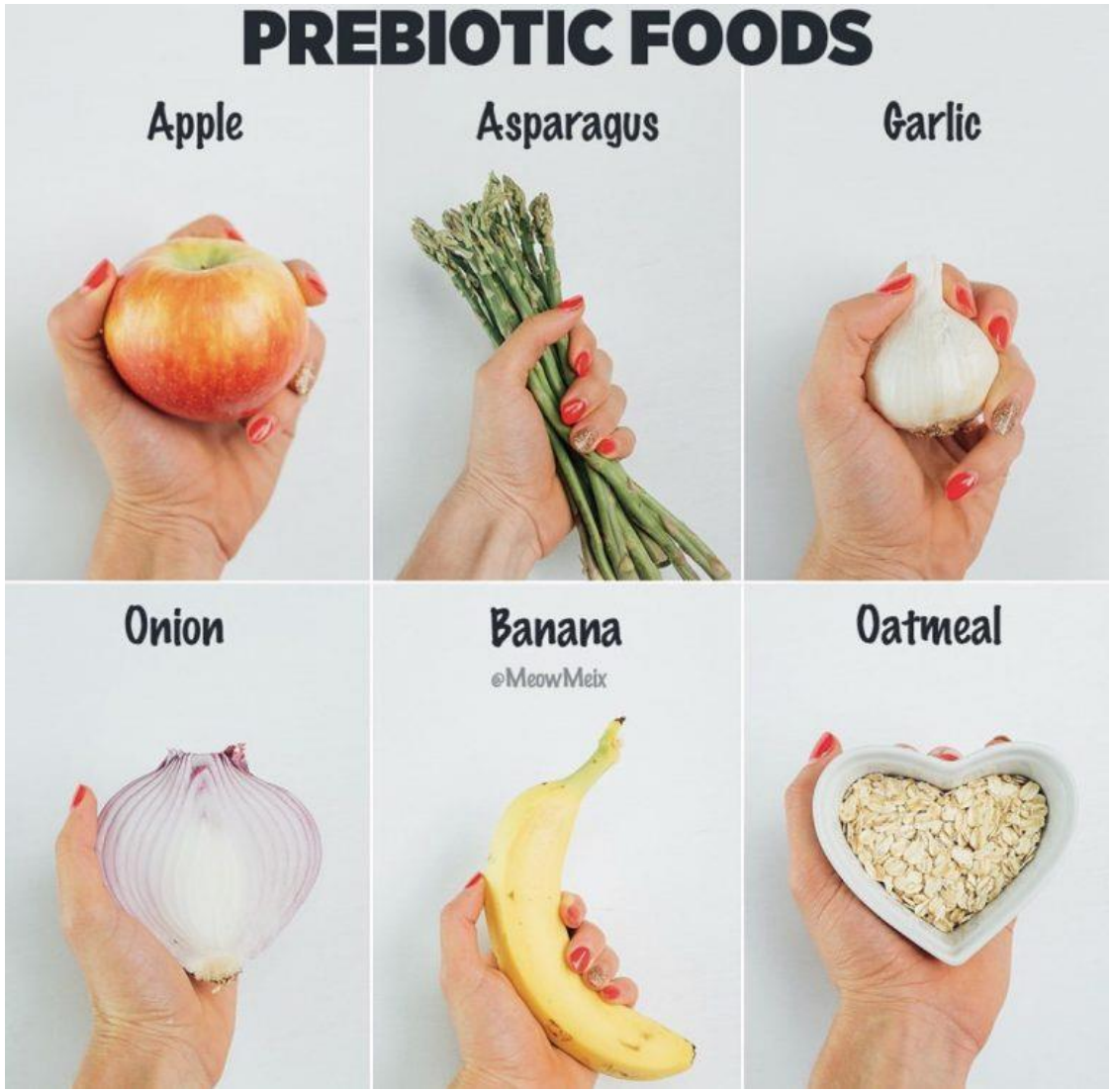

Prebiotics

Non-digestible substances
that provide a beneficial physiological effect for the host by selectively stimulating the favorable growth or activity of a limited number of indigenous bacteria.

- **Apples** – rich in **pectin fiber**
- **Asparagus** – rich in prebiotic **fiber** and antioxidants
- **Garlic** – great for flavoring foods and gives **prebiotic** benefits
- **Onions** – rich in **inulin** and **fructo-oligosaccharides**
- **Banana** – good source of **fiber**
- **Oatmeal** – rich in **beta-glucan fiber**

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Probiotics

Live microorganisms which, when administered in adequate amounts, confer a health benefit on the host.

- **Sauerkraut** – **fermented cabbage**
- **Kombucha** – a healthy **fermented** tea with fruit
- **Pickles** – **fermented cucumbers**
- **Yogurt** – **fermented dairy or coconut milk**
- **Miso soup** – **fermented soups**
- **Kimchi** – **fermented vegetables**

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Strategies for prevention

#FACT

Complementary foods

There is **INSUFFICIENT EVIDENCE** to make specific recommendations about the timing of the introduction of complementary foods and individual solid foods in regards of FA prevention for all children.

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#FACT

Complementary foods

Guideline recommends introducing complementary foods from 4-6 months of age according to standard local practices and the needs of the infant, irrespective of atopic heredity.

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Strategies for prevention

#FACT

Potential food allergens

There is
INSUFFICIENT EVIDENCE
about either withholding or encouraging exposure to potentially allergenic foods during infancy
in regards of FA prevention.

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#FACT

Highly allergenic foods

Guideline recommends no withholding or encouraging of exposure to "highly allergenic" foods irrespective of atopic heredity, once weaning has commenced.

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Strategies for prevention

#FACT

Childhood and Adulthood

There is NO EVIDENCE to recommend fish oil supplements or taking vitamins before age 5 to prevent food allergy.

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Key Messages

Strategy for prevention

- Advice for all mothers includes the consumption of a normal healthy diet without restrictions during

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Key Messages

Strategy for prevention

- For all infants ***exclusive breastfeeding*** is recommended for the first 4-6 months of life.

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Key Messages

Strategy for prevention

- No need to avoid introducing ***complementary foods*** beyond four months.

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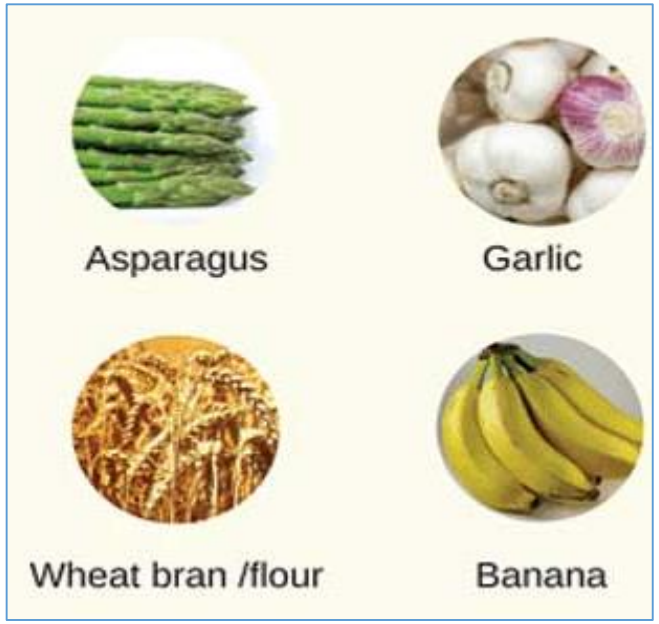
Key Messages

Strategy for prevention

- No need to take supplements such as

prebiotics ***or*** ***probiotics***



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Key Messages

Strategy for prevention

- Not justify recommendations about either withholding or encouraging exposure to ***potentially allergenic foods*** after the age of four months, once weaning has commenced, irrespective of atopic heredity.

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Key Messages

Strategy for prevention

- Whilst considering these recommendations, it should be remembered that a lack of evidence for some issues, does not necessarily mean they are not useful, merely that there is yet ***insufficient proof of a potential benefit***.

Need for future studies

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SECTION 3

QUALITY OF LIFE IN FOOD ALLERGY

World Health Organization

WHO defines Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations standards and concerns.

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Key Messages

Food Allergy has a considerable impact on the day-to-day lives of patients and carers

- Long-term management of FA is focused on the avoidance of the food(s) that trigger the allergic reactions, which in turn places a psychological burden on patients and carers that can result in stress and anxiety.
- Further anxiety relating to the burden of managing acute reactions – particularly if the decision to administer adrenaline (epinephrine) also falls on the patient and/or carer.

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Need to be aware of the impact of food allergy on an individual's life and their families.

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SECTION 4

CLINICAL FEATURES

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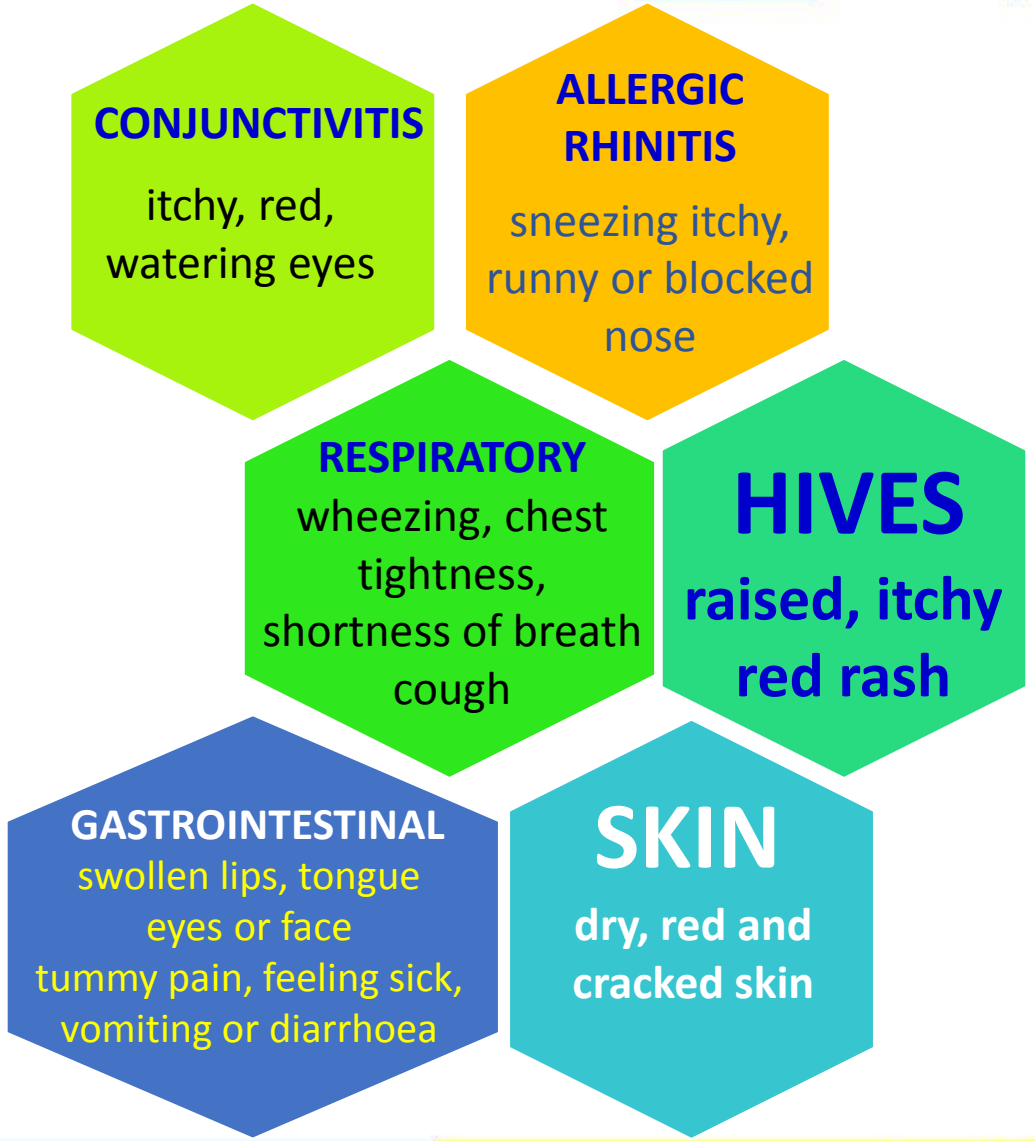

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Common symptoms of an allergic reaction

Itchy, red, watering eyes

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Common symptoms of an allergic reaction

Sneezing and an itchy, runny or blocked nose (allergic rhinitis)

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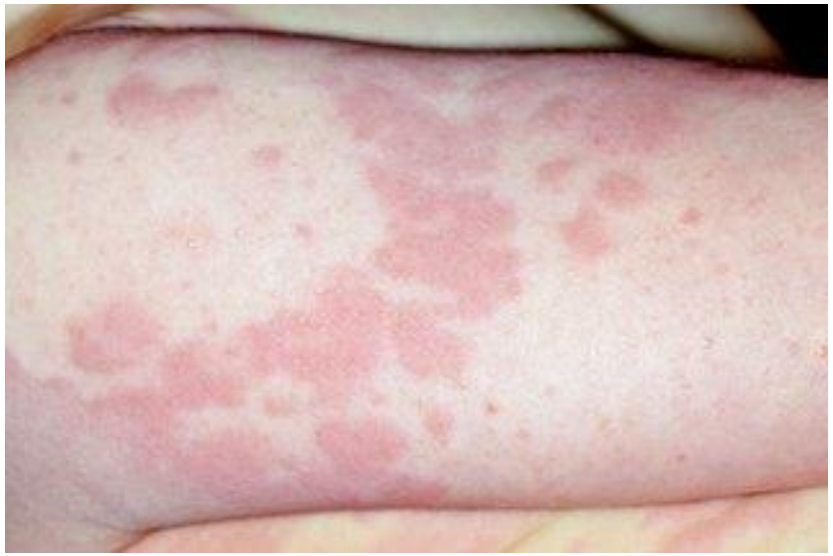
Common symptoms of an allergic reaction



Raised, itchy, red rash (hives)

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Common symptoms of an allergic reaction

Chest tightness

Shortness of breath

Wheezing

Cough

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Common symptoms of an allergic reaction

Hives

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Anaphylaxis

Tight throat, swollen lips, hives, severe stomach pain

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Anaphylaxis

- Quick onset
- Involvement of the respiratory and circulatory system
- Involvement of skin and mucous membrane (not constant)

Severe and extreme allergic reaction to food

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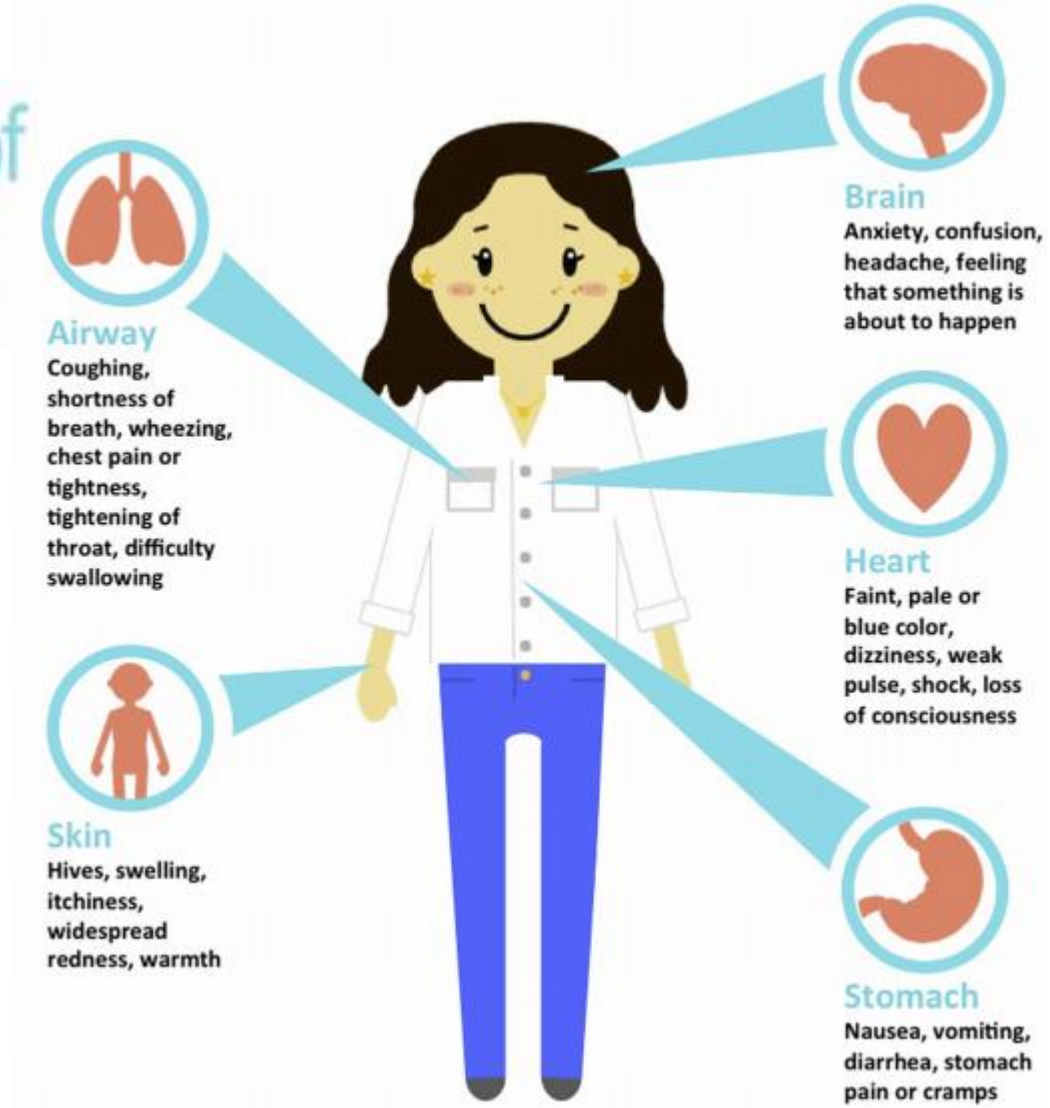
SIGNS and SYMPTOMS of ANAPHYLAXIS



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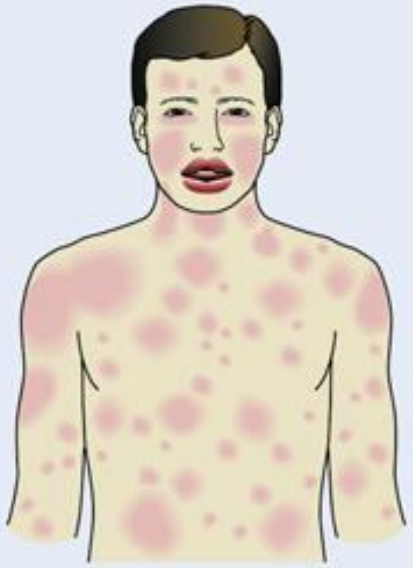
Anaphylaxis is highly likely when any one of the following three criteria is fulfilled:

CRITERION n.1

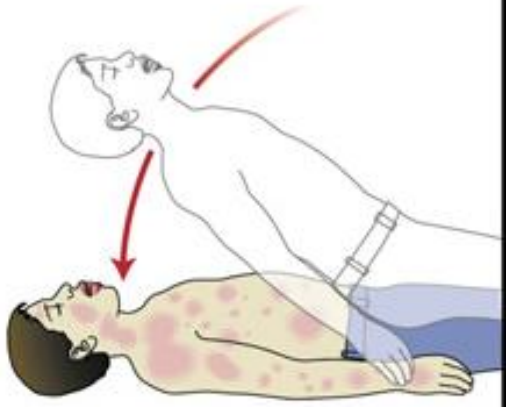
Simons et al. J Allergy Clin Immunol 2011;127:587-93

1 **Sudden onset of an illness (minutes to several hours), with involvement of the skin, mucosal tissue, or both (e.g. generalized hives, itching or flushing, swollen lips-tongue-uvula)**



AND AT LEAST ONE OF THE FOLLOWING:

Sudden respiratory symptoms and signs (e.g. shortness of breath, wheeze, cough, stridor, hypoxemia)



Sudden reduced BP or symptoms of end-organ dysfunction (e.g. hypotonia [collapse], incontinence)

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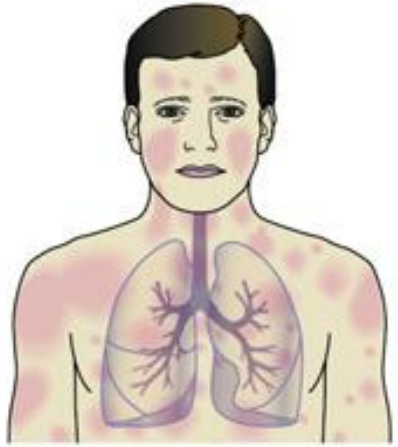
Anaphylaxis is highly likely when any one of the following three criteria is fulfilled:

CRITERION n.2

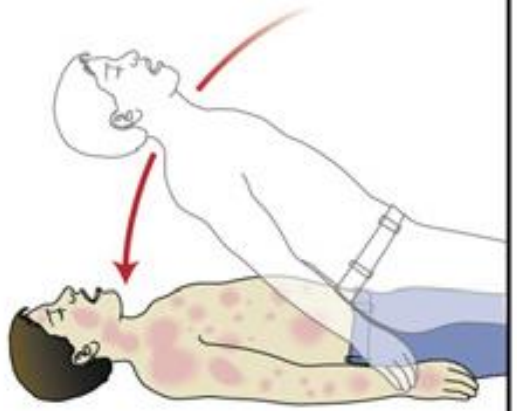
Simons et al. J Allergy Clin Immunol 2011;127:587-93

OR 2 **Two or more of the following that occur suddenly after exposure to a *likely allergen or other trigger** *for that patient* (minutes to several hours):**

Sudden skin or mucosal symptoms and signs (e.g. generalized hives, itch-flush, swollen lips-tongue-uvula)



Sudden respiratory symptoms and signs (e.g. shortness of breath, wheeze, cough, stridor, hypoxemia)



Sudden reduced BP or symptoms of end-organ dysfunction (e.g. hypotonia [collapse], incontinence)

Sudden gastrointestinal symptoms (e.g. crampy abdominal pain, vomiting)

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Anaphylaxis is highly likely when any one of the following three criteria is fulfilled:

CRITERION n.3

Simons et al. J Allergy Clin Immunol 2011;127:587-93

OR 3 Reduced blood pressure (BP) after exposure to a *known allergen** for that patient* (minutes to several hours):

Infants and children: low systolic BP (age-specific) or greater than 30% decrease in systolic BP***

Adults: systolic BP of less than 90 mm Hg or greater than 30% decrease from that person's baseline

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REMINDER

SIGNS and SYMPTOMS of ANAPHYLAXIS

GIVE EPINEPHRINE &

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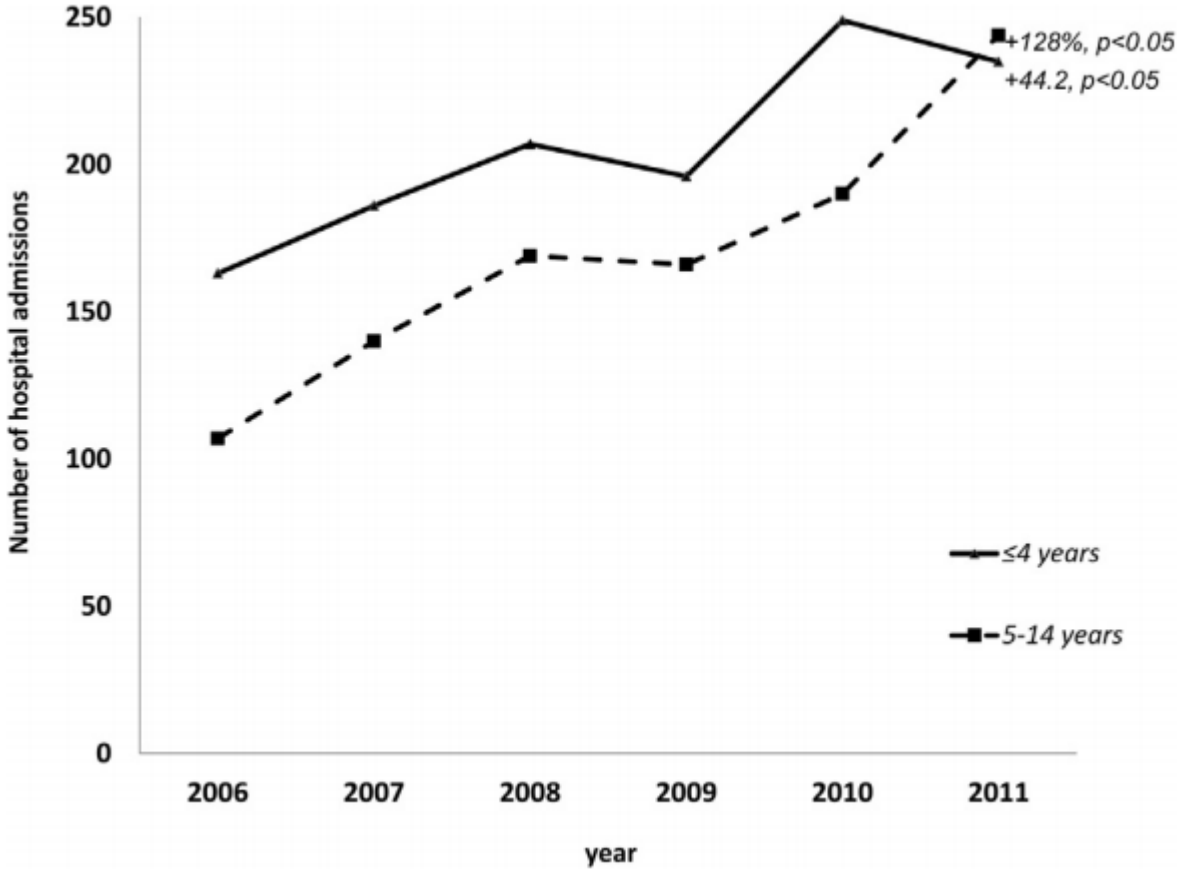
WHAT WE KNOW

Anaphylaxis incidence



- Increasing trend of the number of hospital admissions for food-induced anaphylaxis among Italian children from 2006 to 2011.
- More pronounced in children aged 5 to 14 years than in those younger than 4 years (1128% and 144.2%, respectively; P < .05).

Nocerino R, et al. J Allergy Clin Immunol. 2015

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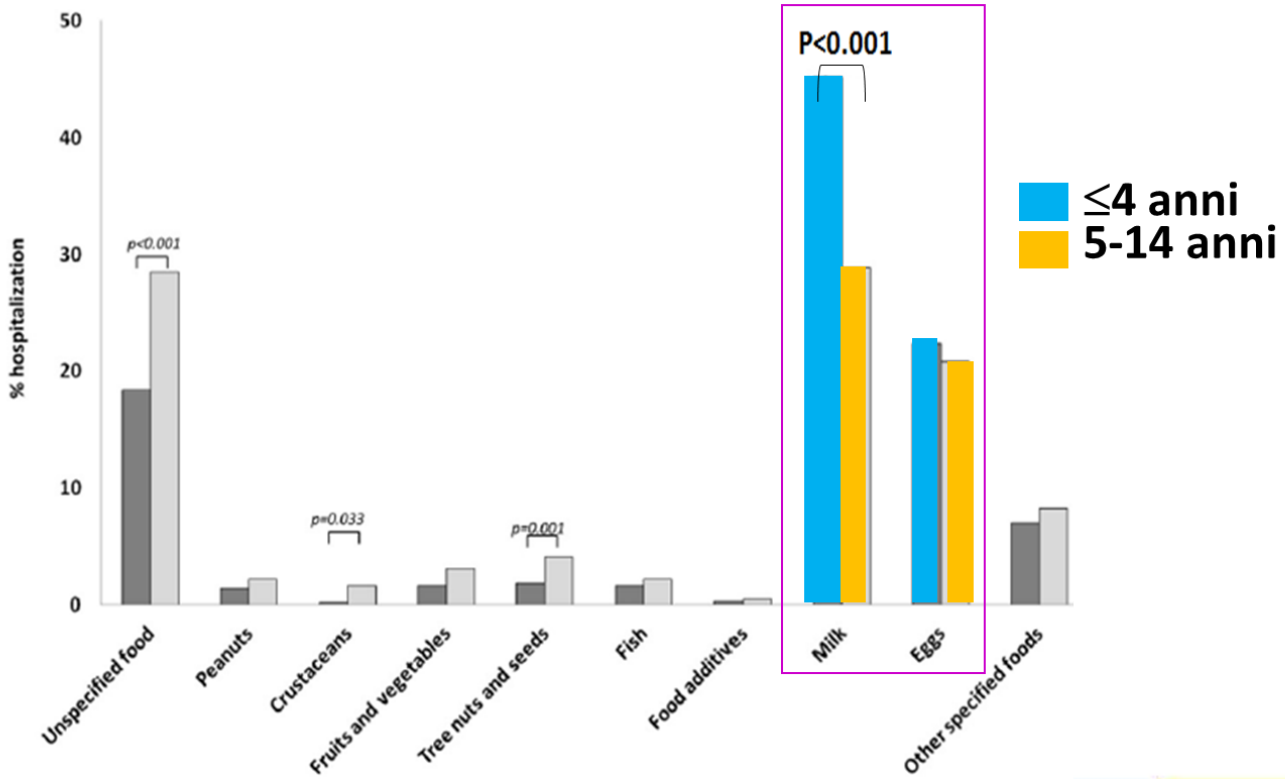
WHAT WE KNOW

Anaphylaxis incidence



Main foods responsible for anaphylaxis requiring hospitalization among Italian children as reported by the specific ICD-9-CM code

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WHAT WE KNOW

Anaphylaxis epidemiology

- 10 European studies suggest an **incidence** of 1.5 to 7.9 per 100000 person-years
- Based on three European population-based studies, **prevalence** is estimated at 0.3% (95% CI, 0.1- 0.5).
- Overall, the **case fatality rate** for anaphylaxis is low, below 0.001%.

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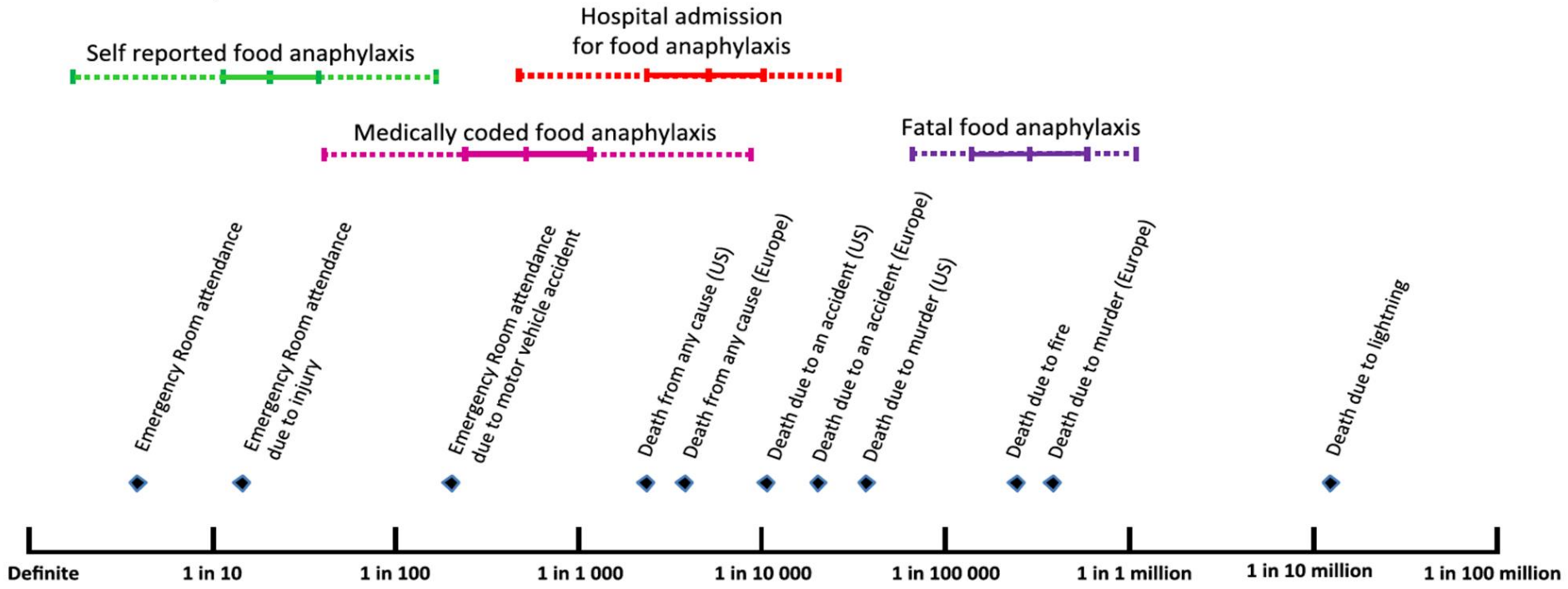
WHAT WE KNOW

Anaphylaxis epidemiology

RARE EVENT

Annual incidence rate for different events in food-allergic people aged 0–19 years, 1.81 per million person-years



Turner PJ, et al. Allergy 2016; 71: 1241–1255.

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WHAT WE KNOW

Food Triggers for Anaphylaxis

Milk
Peanut
Egg
Tree Nuts
Soy
Fish
Wheat
Shellfish

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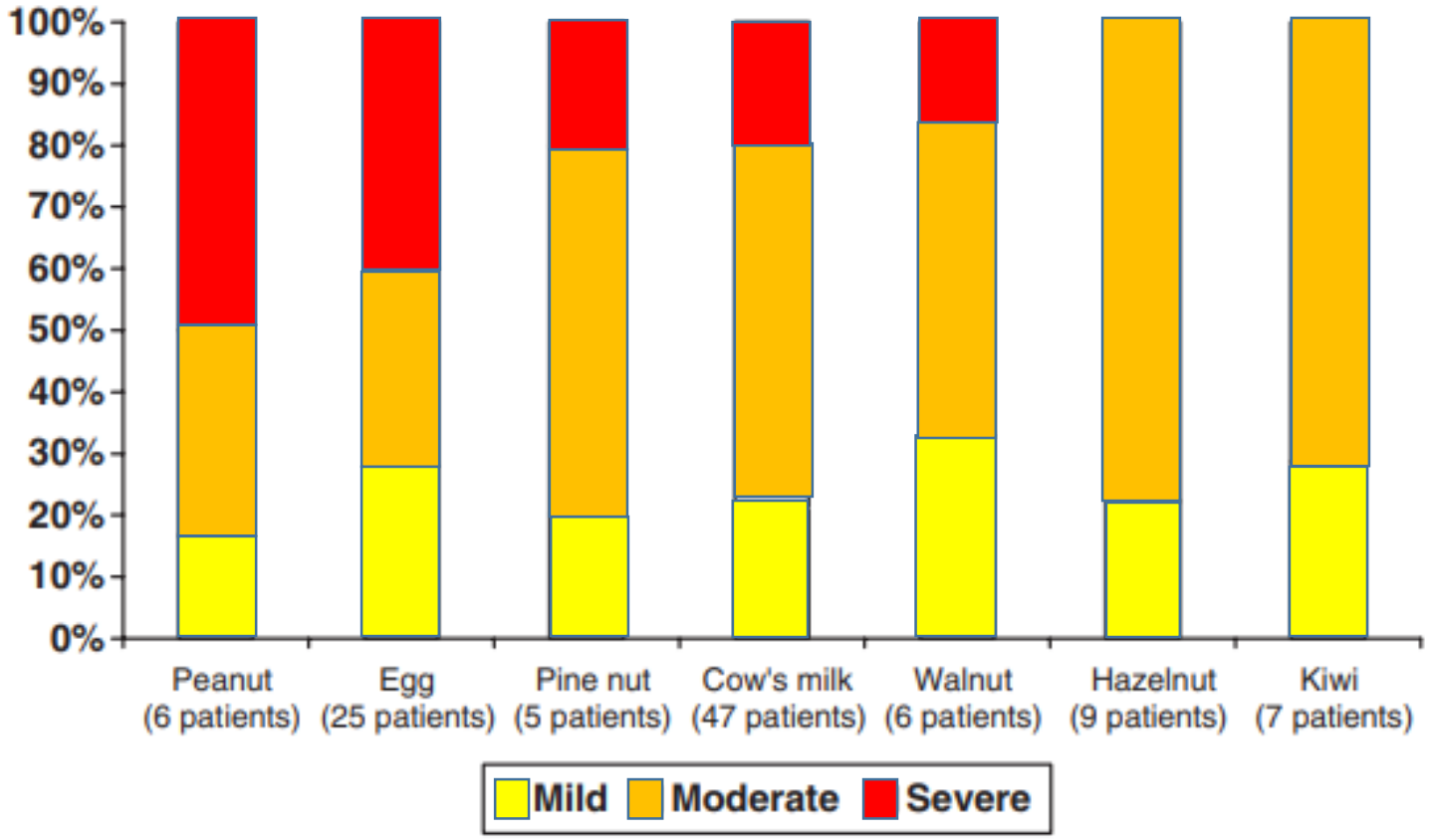
WHAT WE KNOW

Food Triggers for Anaphylaxis

Severity of anaphylaxis according to food



Calvani M, et al.Risk factors for severe pediatric food anaphylaxis in Italy. Pediatr Allergy Immunol. 2011

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MAMMALIAN FOOD PRODUCTS ANAPHYLAXIS

- **Typical immune response to a mammalian oligosaccharide epitope, galactosealpha-1,3-galactose (alpha-gal, is known to be present on both tissues and meat from non-primate mammals)** associated with delayed onset anaphylaxis 3–6 hours after ingestion of mammalian food products (e.g., beef, pork, lamb).

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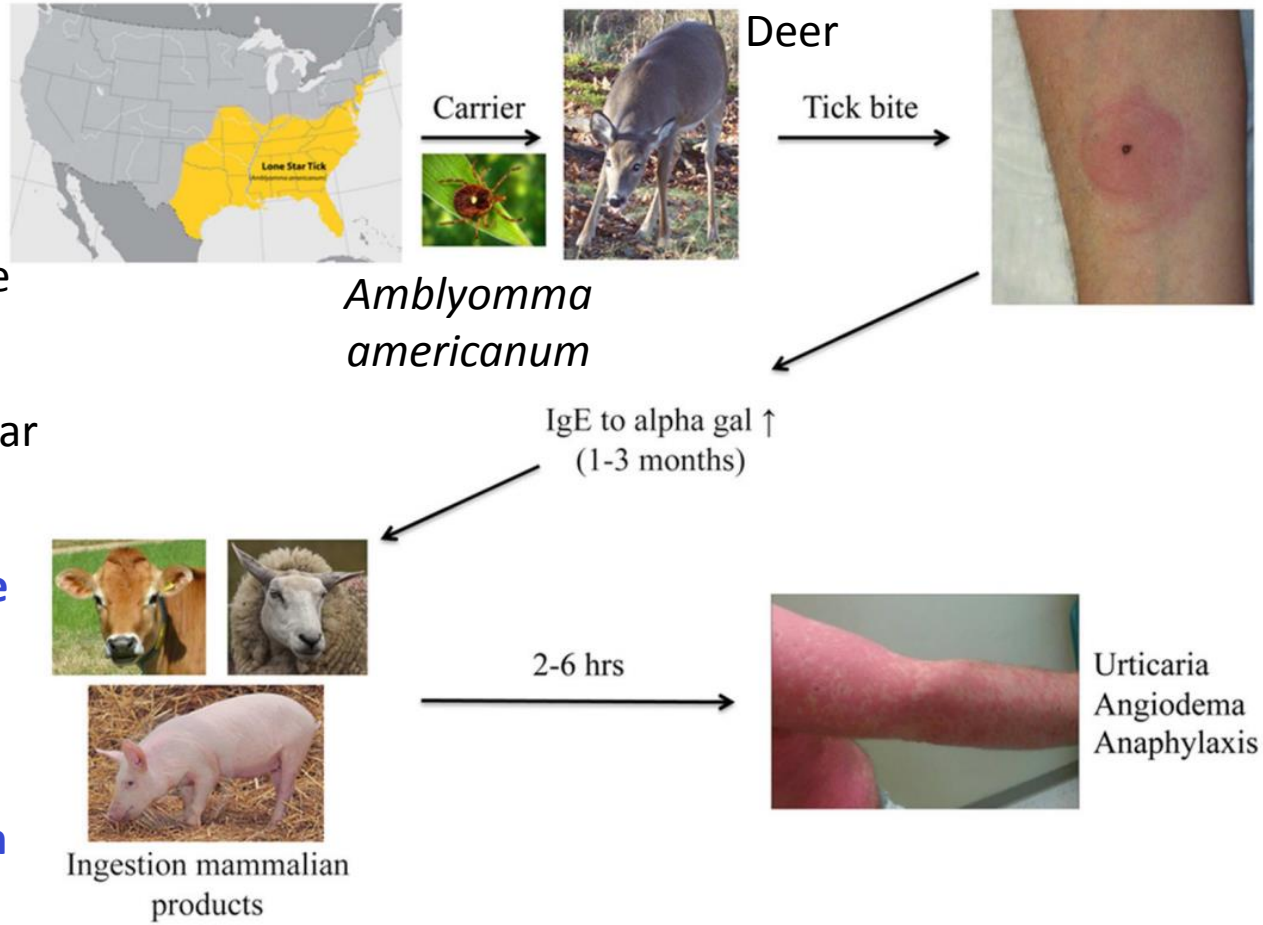
REMINDER

Alpha-gal sensitization leading to clinical symptoms of red meat allergy

- The southeastern section of the US is where most of the **reactions to red meat** have been reported.
- This region overlaps with the distribution of the Lone Star tick.
- The current hypothesis is that people are bitten by **Lone Star ticks carried by deer** into rural and urban areas.
- Following a period of time, **IgE to alpha-gal develops**.
- Once IgE to alpha-gal reaches sufficient levels, **ingestion of red meat can trigger reactions.**



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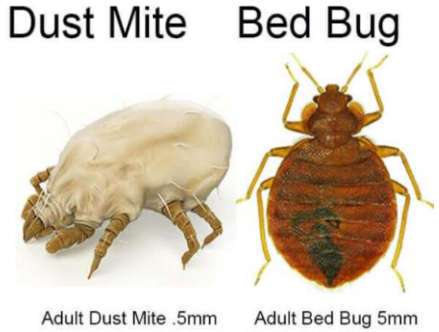
REMINDER

Anaphylaxis from ingestion of mites: PANCAKE ANAPHYLAXIS

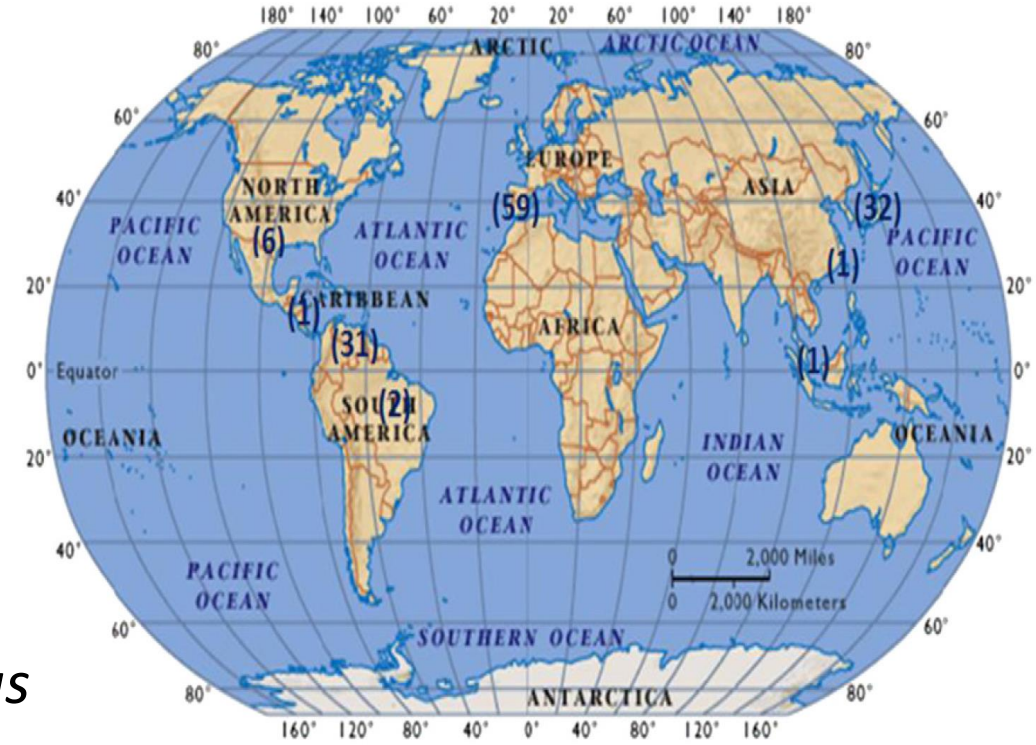


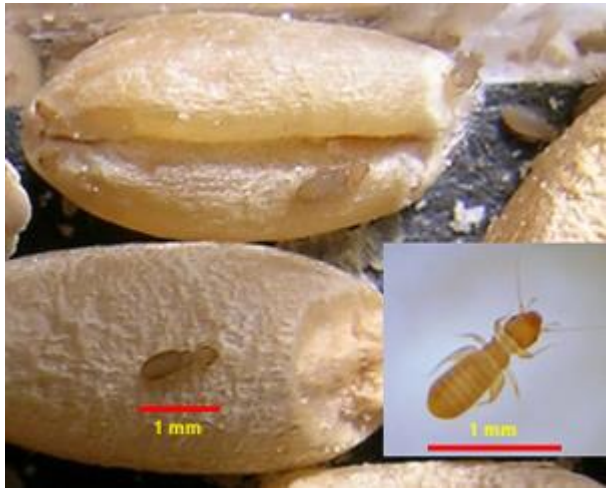
Domestic mites

D. Pteronyssinus

D. Farinae

Blomia tropicalis





Food mites

Lepidoglyphus destructor

Tyrophagus putrescientiae

Tyreophagus entomophagus

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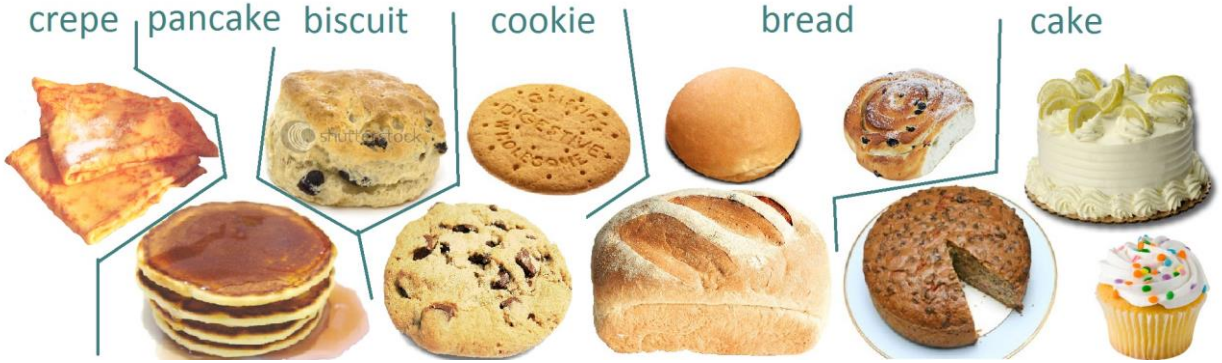
REMINDER

Anaphylaxis from ingestion of mites: PANCAKE ANAPHYLAXIS

Potential food allergens

- baked foods: bread, pizza, pancakes, cream puffs, crepes



- cheeses cold cuts cereal flakes (also for inhalation)

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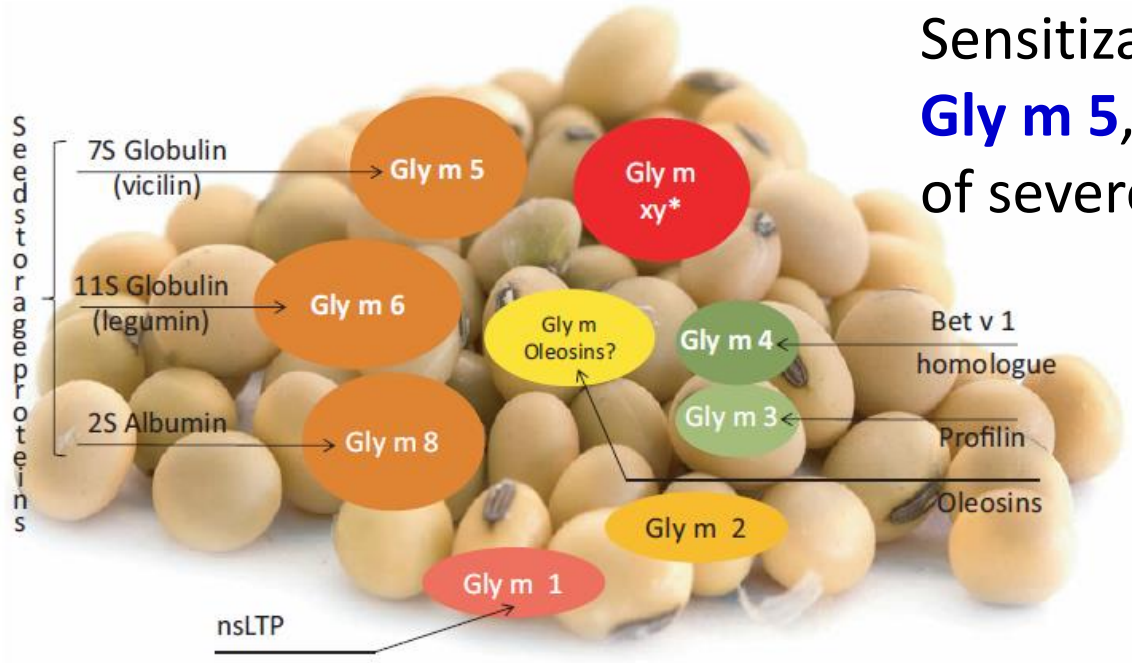
REMINDER

ANAPHYLAXIS FROM HIDDEN ALLERGEN

Severe anaphylaxis after eating soy sauce in a Japanese restaurant



Sensitization to the soybean allergens **Gly m 5**, **Gly m 6** are potentially indicative of severe allergic reactions to soy.

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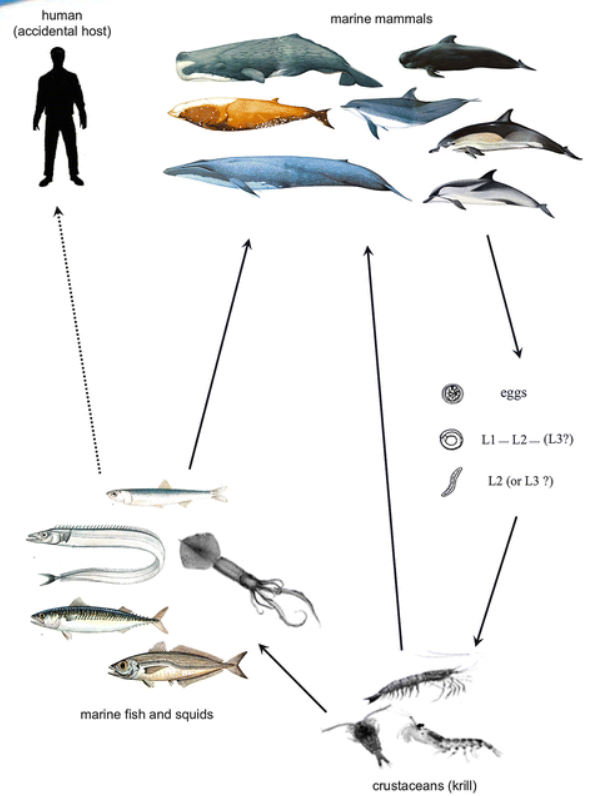
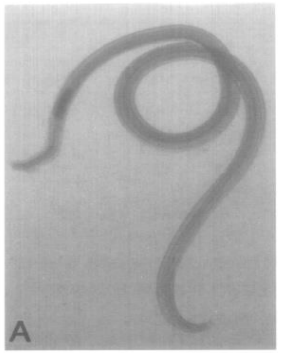
REMINDER



ANAPHYLAXIS TO ANISAKIS PROTEINS

- Anisakis allergens are resistant to cooking and degradation by the digestive enzyme pepsin.



- Reactions to Anisakis proteins after ingestion of cooked or canned fish.

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REMINDER

PREVENTION OF ANISAKIASIS

The best mean of avoiding infection with live Anisakis is to ensure that:

- ❑ all fish meant for consumption is deep-frozen (at –20°C) for at least 24 h.
- ❑ fish is cooked for at least 10 min or longer at 60°C.

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REMINDER

PREVENTION OF ANISAKIASIS

The current European Community regulations require visual examination of fish with removal of heavily parasitized specimens from the market and extraction of visible larvae in less heavily parasitized specimens, as well as freezing of fish for 24 h.

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REMINDER

PREVENTION OF ANISAKIASIS

U.S Food and Drug Administration

The current FDA regulation

requires that all fish and shellfish that will not be processed at temperatures above 60°C have to be frozen at −35°C or lower for 7 days.

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Key Messages

ANAPHYLAXIS TO ANISAKIS PROTEINS

- *Anisakis* anaphylaxis should therefore be considered as a possibility when symptoms occur after exposure to seafood.

- Consumers are advised to **properly freeze** or **cook fish** prior to consumption to avoid unexpected adverse reactions.

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Key Messages

FACTORS INCREASING THE RISK OF ANAPHYLAXIS include individual subject related factors and circumstances

- **Concomitant diseases:** co-existing asthma, cardiovascular disease
- **Specific allergens:** peanut and tree nut allergy
- **Co-factors:** exercise, fever, acute infection, premenstrual status and emotional stress, nonsteroidal anti-inflammatory drugs (NSAIDs) and alcohol.

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Shorter the interval between allergen exposure and symptom onset (<30 min)

GREATER THE SEVERITY OF ANAPHYLAXIS

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Key Messages

EMERGENCY MANAGEMENT OF ANAPHYLAXIS

- **A** Airway
- **B** Breathing
- **C** Circulation
- **D** Disability
- **E** Exposure

INTRAMUSCULAR ADRENALINE

before instituting other interventions as adrenaline is still underutilized in anaphylaxis although it is potentially lifesaving.

There are no absolute contra-indications to treatment with adrenaline in a patient experiencing anaphylaxis; benefits outweigh the risks in the elderly and patients with pre-existing cardiovascular disease.

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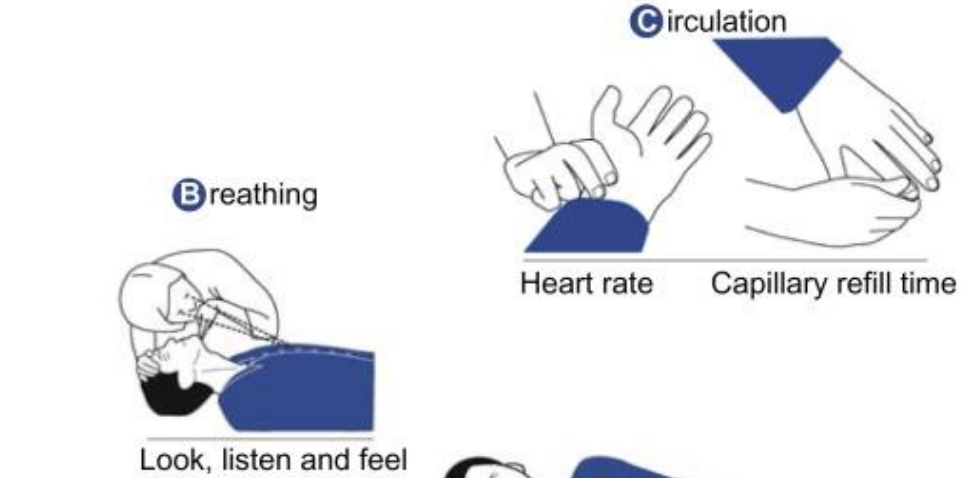
Key Messages

EMERGENCY MANAGEMENT OF ANAPHYLAXIS

- **A** Airway
- **B** Breathing
- **C** Circulation
- **D** Disability
- **E** Exposure



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Key Messages

ANAPHYLAXIS: ADRENALINE ADMINISTRATION

- Adrenaline should be given by intramuscular injection into the mid-outer thigh.

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Key Messages

ANAPHYLAXIS: ADRENALINE ADMINISTRATION

- The **safety profile** of intramuscular adrenaline is **excellent** although subjects may experience transient pallor, palpitations and headache.

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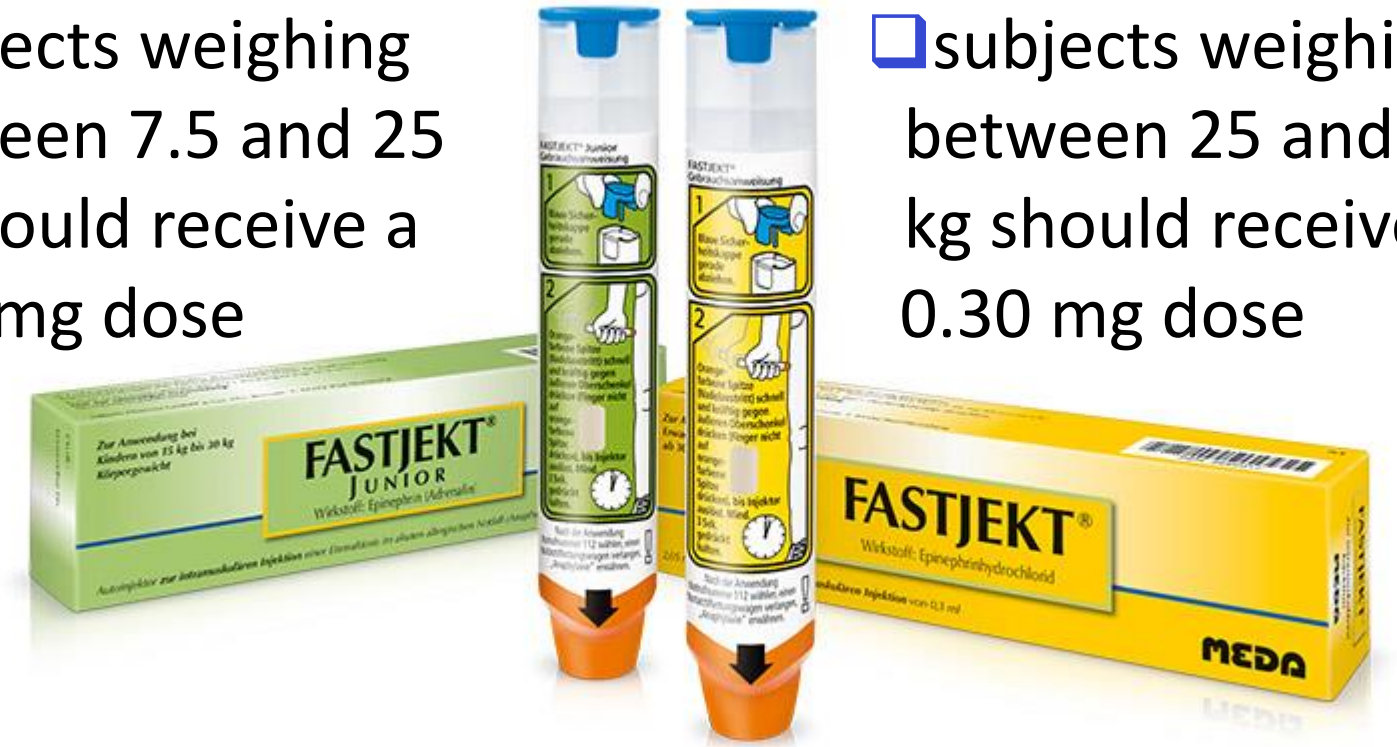
Key Messages

ANAPHYLAXIS: ADRENALINE auto-injectors

- subjects weighing between 7.5 and 25 kg should receive a 0.15 mg dose
- subjects weighing between 25 and 30 kg should receive a 0.30 mg dose



The adrenaline dose can be repeated after at least a 5 min interval.

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Key Messages

Suggested indications for prescription of a second **ADRENALINE** **auto-injectors**

- **Co-existing unstable asthma**
- **Lack of rapid access to medical assistance** to manage an episode of anaphylaxis due to geographical or language barriers
- **Previous near fatal anaphylaxis**
- **If available auto-injector dose is much too low for body weight**
  - subjects weighing between 7.5-25 kg should receive a 0.15 mg dose
  - subjects weighing between 25-30 kg should receive a 0.30 mg dose

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Key Messages

ADRENALINE auto-injectors - TRAINING

1

Remove the blue safety cap.

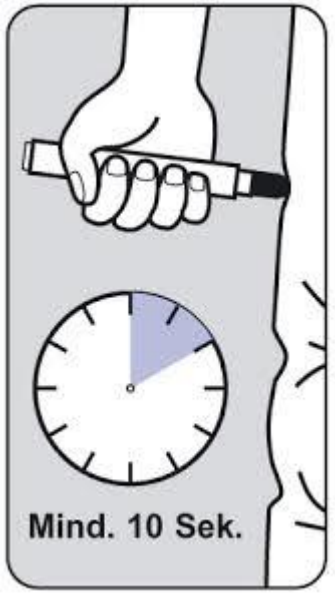
2

Give the injection through clothing but avoid pockets or seams.

With the orange tip facing down, hold the adrenaline auto-injector firmly in your fist and pull off the blue safety release.

3

Hold the leg still and place the orange end against the outer mid-thigh.



Hold for 10 seconds.

https://www.youtube.com/watch?v=vZrsNqXSn4w

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Key Messages

ADRENALINE auto-injectors - TRAINING

Who should be trained

Subjects at risk of anaphylaxis and their caregivers should be provided with educational resources and training to be able to self-manage reactions.

What training should cover

Training should cover patient-specific avoidance strategies at home, in the social environment and when traveling.

How they should be trained

Training should be offered to all professionals dealing with subjects at risk of anaphylaxis; multi-disciplinary approach and repeated instructions on how to use an adrenaline auto-injector improved correct use.

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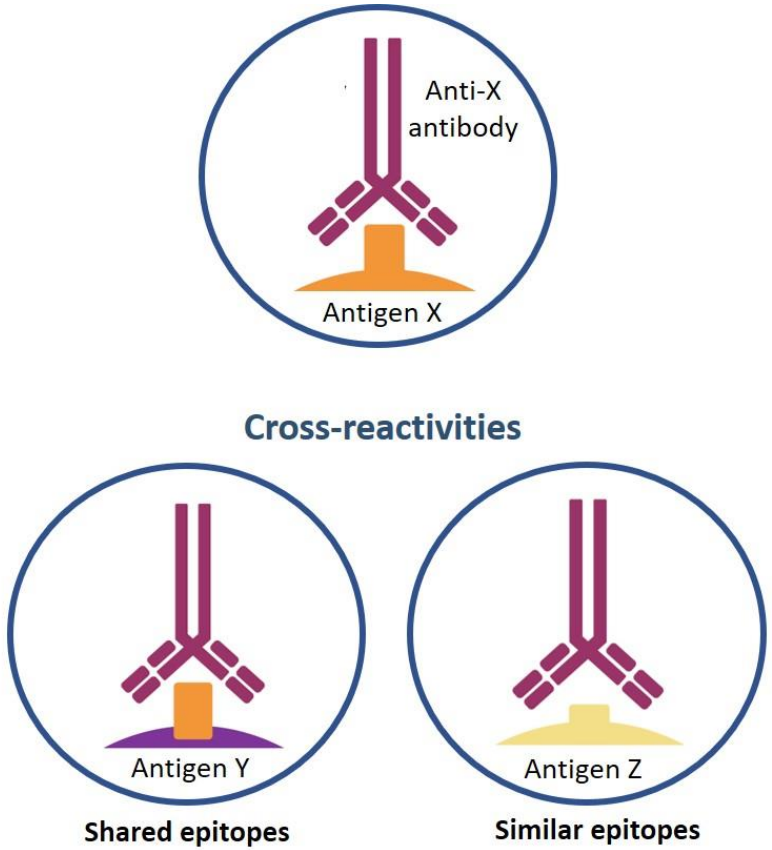
SECTION 5

CROSS-REACTIVITY

DEFINITION

Occurs where the proteins in one food or substance share characteristics with those in another food or substance.



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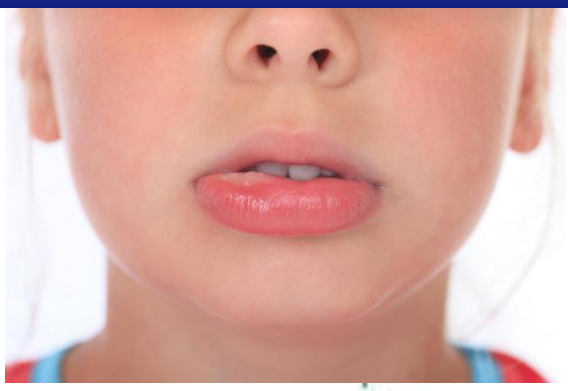
REMINDER

CROSS-REACTIVITY

People who are allergic to the proteins in birch tree pollen can also have positive tests to certain plant foods.

The allergy caused by this cross-reaction is known as POLLEN FOOD SYNDROME or oral allergy syndrome.



Birch

Apple Peach Plum Pear Cherry Apricot Almond

Rosaceae

Carrot Celery Parsley Caraway Fennel Coriander Aniseed

Apiaceae

Soybean Peanut

Fabaceae (old Leguminosae)

Hazelnut

Betulaceae

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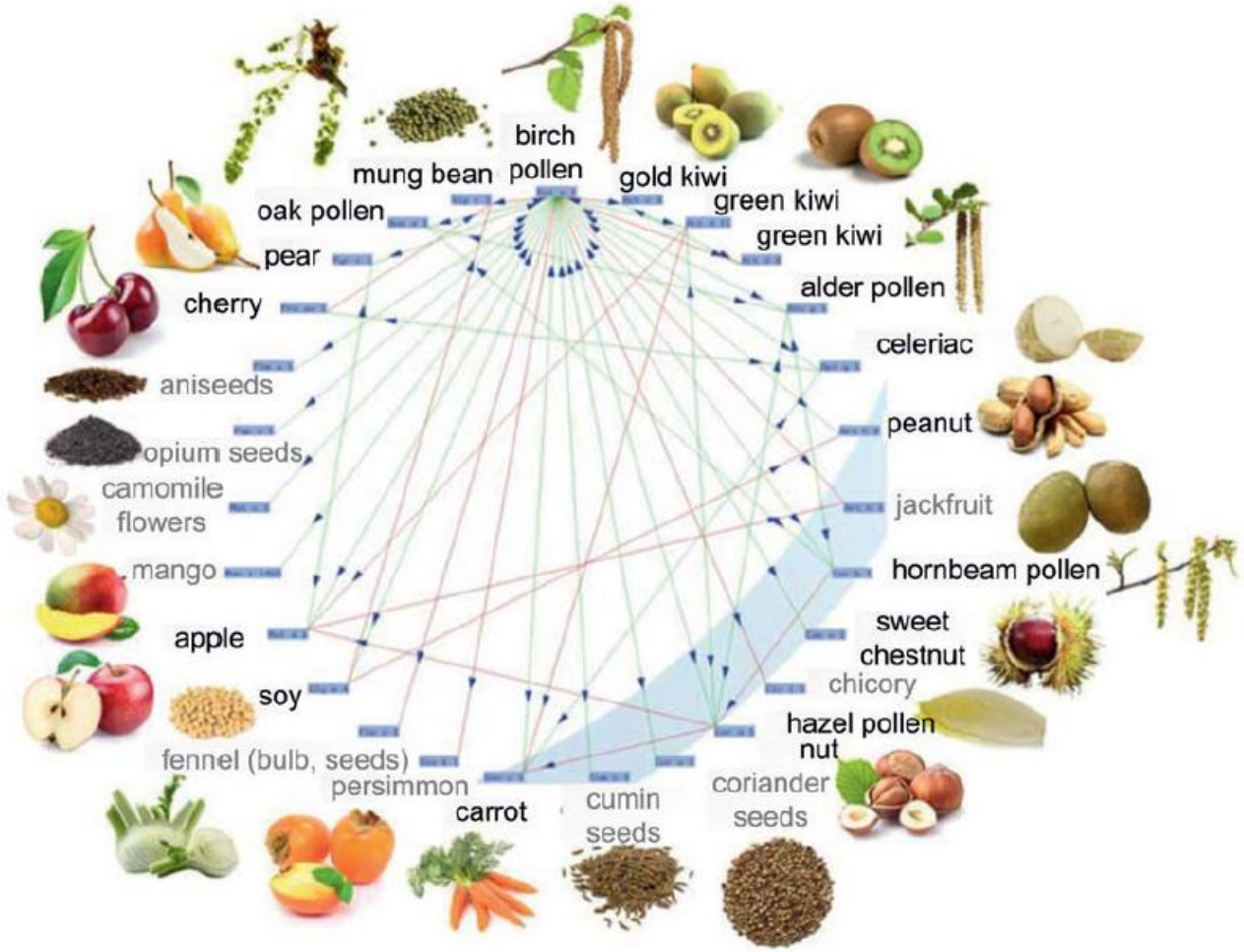
REMINDER

CROSS-REACTIVE PANALLERGENS

Cross-reactivity between the birch pollen major allergen

Bet v 1 and related allergens in tree pollen of the order Fagales, in pome and stone fruit, tree nuts, vegetables, and legumes.



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REMINDER

CROSS-REACTIVITY

People who are allergic to the proteins in birch tree pollen can also have positive tests to certain plant foods.

Ragweed

Cantaloupe Honeydew Watermelon Zucchini Cucumber

Cucurbitaceae

Banana

Musaceae

The allergy caused by this cross-reaction is known as POLLEN FOOD SYNDROME or oral allergy syndrome.

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REMINDER

CROSS-REACTIVITY

The allergy to plant foods caused by this cross-reaction is known as POLLEN FOOD SYNDROME but can also be called oral allergy syndrome.

Mugwort

Celery Carrot Parsley Caraway Fennel Coriander Aniseed

Apiaceae

Bell pepper

Solanaceae

Black pepper

Piperaceae

Mustard Cauliflower Cabbage Broccoli

Brassicaceae

Garlic Onion

Liliaceae

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REMINDER

CROSS-REACTIVITY

The allergy to plant foods caused by this cross-reaction is known as POLLEN FOOD SYNDROME but can also be called oral allergy syndrome.

Orchard

Cantaloupe Honeydew Watermelon

Cucurbitaceae

Peanut

Fabaceae (old Leguminosae)

White potato Tomato

Solanaceae

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CROSS-REACTIVITY

REMINDER

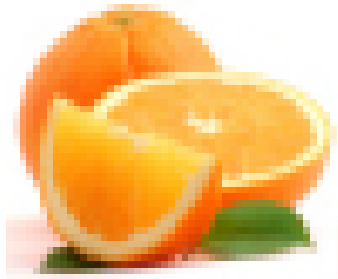
The allergy to plant foods caused by this cross-reaction is known as **POLLEN FOOD SYNDROME** but can also be called **oral allergy syndrome.**

Phleum pratense

Timothy

Swiss chard

Amaranthaceae



Orange

Rutaceae

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REMINDER

POLLEN-FOOD CROSS-REACTIVITY

The allergy to plant foods caused by this cross-reaction is known as **POLLEN FOOD SYNDROME** but can also be called **oral allergy syndrome.**

Grass Pollen Season

ORAL ALLERGY SYNDROME

Allergic reactions can become more severe when another allergen — such as grass pollen — is present. When this happens, a food that might not normally cause a reaction can cause problems if the air is filled with grass pollens that cause reactions.

- Legumes
  - Peas
  - Beans
  - Soybeans
  - All beans such as kidney, navy, garbonzo, etc.
- Grains
- Apple
- Carrot
- Celery
- Wheat
- Orange
- Tomato
- White potato
- Zucchini

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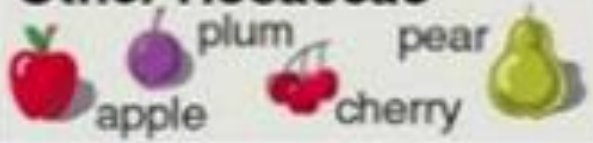
REMINDER

POLLEN-FOOD CROSS-REACTIVITY

If Allergic to:	Risk of Reaction to at Least One:	Risk:
Pollen 	Fruits/vegetables 	55% 
Peach* 	Other Rosaceae 	55% 
Melon* 	Other fruits 	92% 

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REMINDER

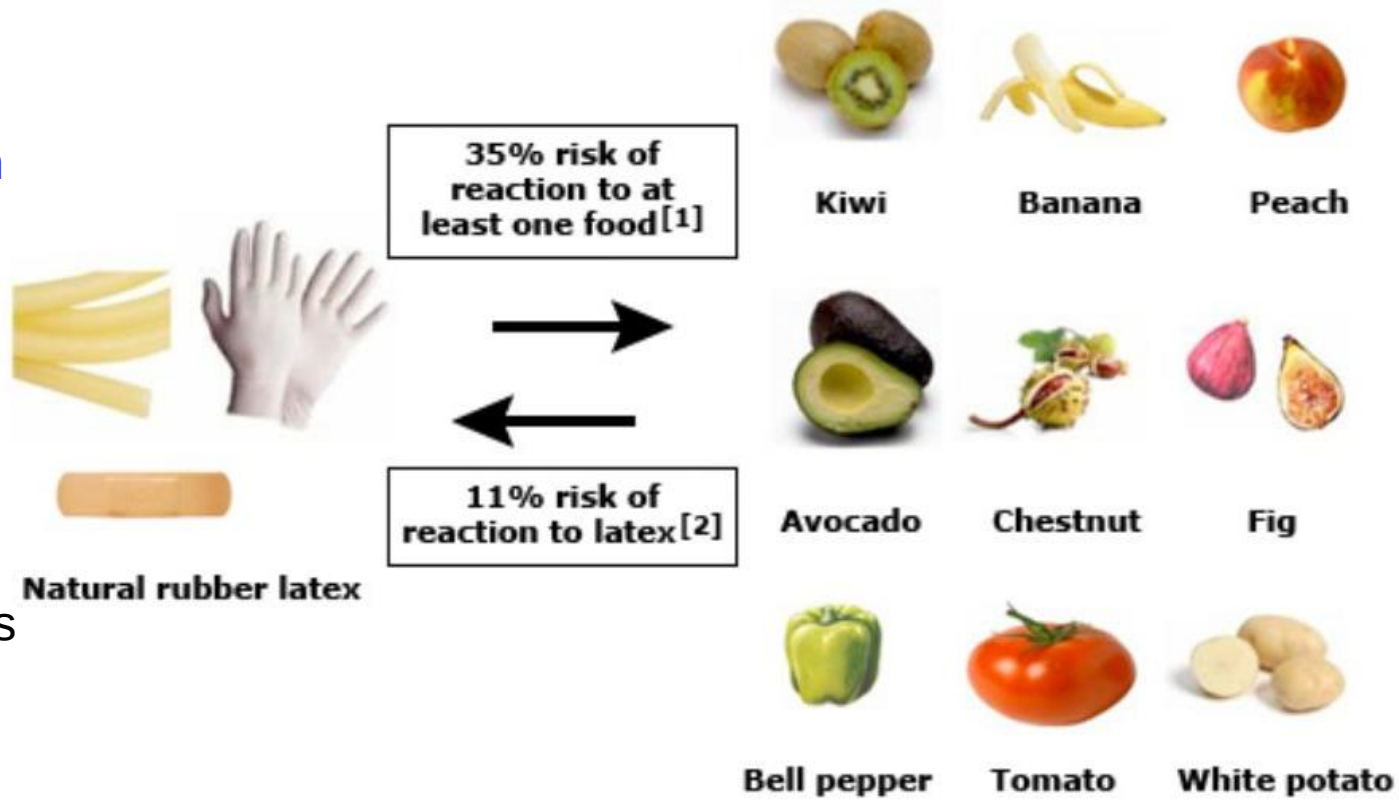
CROSS-REACTIVITY LATEX AND FOOD

Latex-fruit syndrome

- Approximately **30-50% of individuals who are allergic to natural rubber latex (NRL) show an associated hypersensitivity** to some plant-derived foods, **especially fresh fruits.**

- In one series, **over 50% of reported reactions to foods in latex-allergic individuals were anaphylactic.**

- An **increasing number of plant foods**, such as avocado, banana, chestnut, kiwi, peach, tomato, white potato, and bell pepper, have been associated with this syndrome.



CHEEP
cooking healthy european paths

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REMINDER

Latex-fruit syndrome

Food that have the potential to cross-react with natural rubber latex

High latex proteins

avocado | banana | chestnut | kiwi

Moderate latex proteins

apple | carrot | celery | melons | papaya | potato | tomato

Low or undetermined latex proteins

apricot	chick peas	grapes	oregano	pineapple	soybean	walnut
buckwheat	citrus fruits	hazelnut	peach	plum	strawberry	wheat
castor beans	coconut	lychee	peanut	rye	sunflower	zucchini
cayenne pepper	dill	mango	pear	sage	seed	
cherry	fig	nectarine	persimmon	shellfish	sweet pepper	

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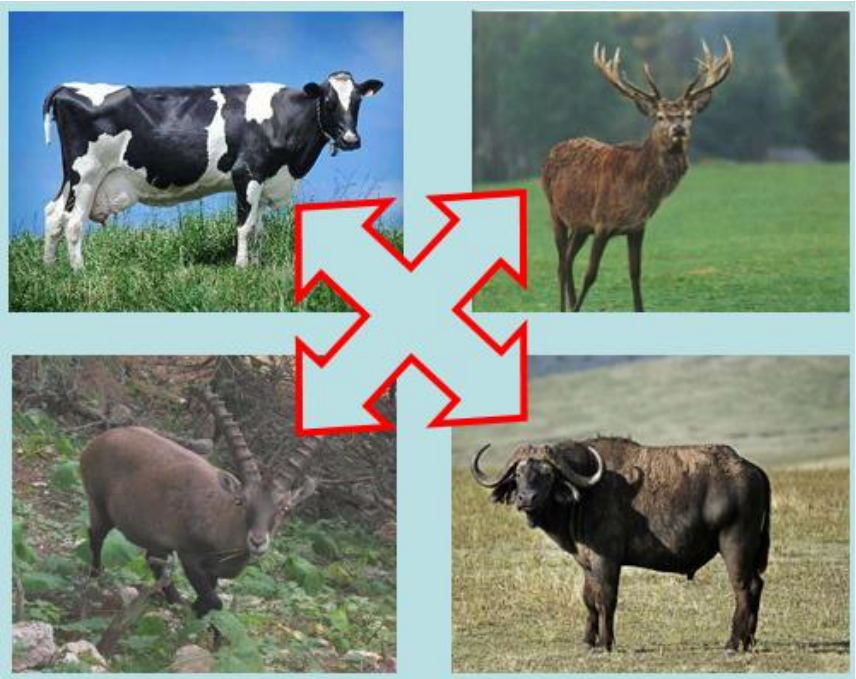
REMINDER

MAMMALIAN CROSS-REACTIVITY



If Allergic to:	Risk of Reaction to at Least One:	Risk:
Cow's milk*	Beef (hamburger)	10%
Cow's milk*	Goat's milk (goat)	92%
Cow's milk*	Mare's milk (horse)	4%

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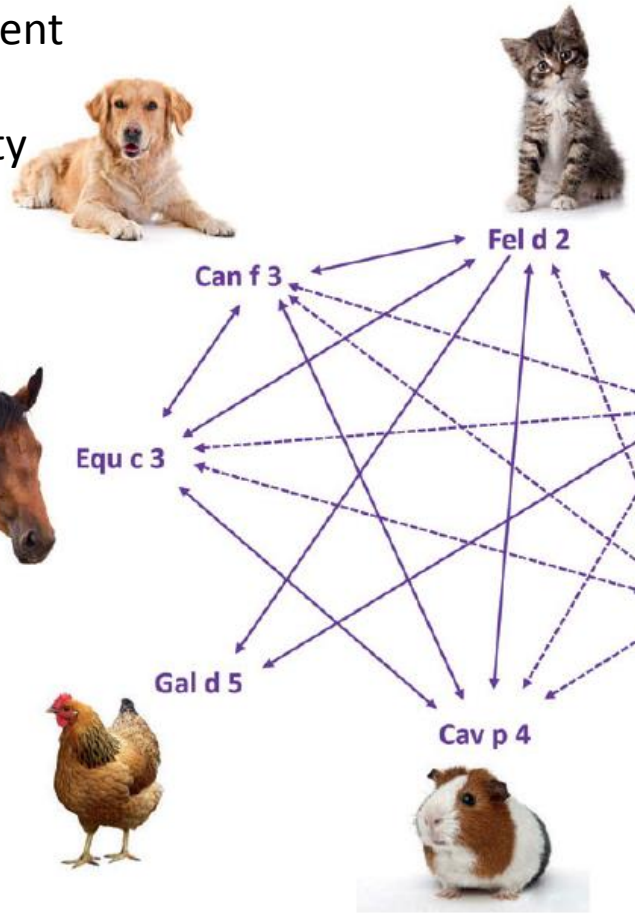
REMINDER

MAMMALIAN serum albumins CROSS-REACTIVITY

Solid lines represent documented IgE cross-reactivity

Dashed lines hypothetical cross-reactivity



Clinical cross reactivity between mammalian serum albumins of cat and pork and Gal d 5 are rare and have been documented only from mammal to bird.

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REMINDER

FISH & SHELLFISH CROSS-REACTIVITY

If Allergic to:	Risk of Reaction to at Least One:	Risk:
A fish*  salmon	Other fish  swordfish  sole	50% 
A shellfish  shrimp	Other shellfish  crab  lobster	75% 

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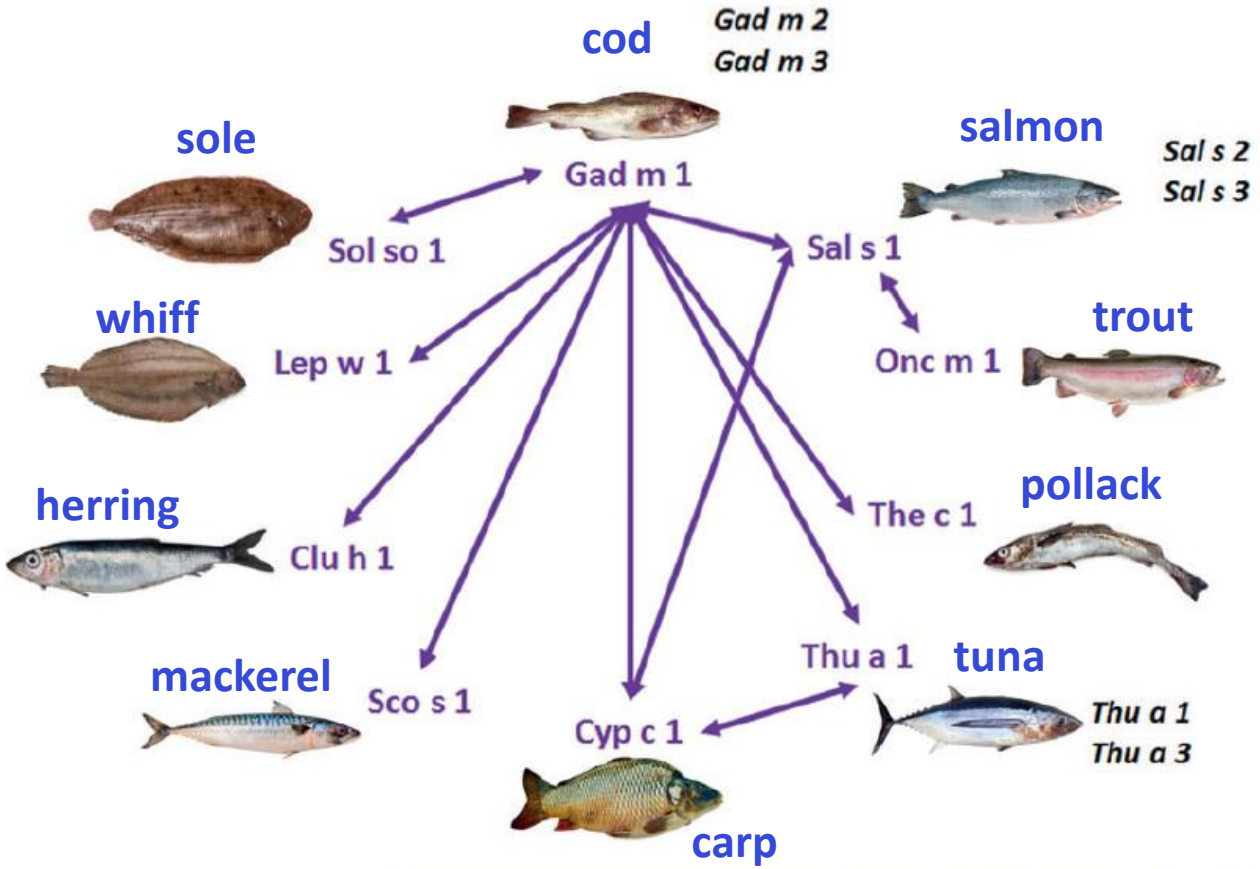
REMINDER

FISH PARVALBUMINS CROSS-REACTIVITY

All parvalbumins have a high potential for cross-reactivity based on high sequence homology.

Lines represent documented IgE cross-reactivity.



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CROSS-REACTIVE PANALLERGENS

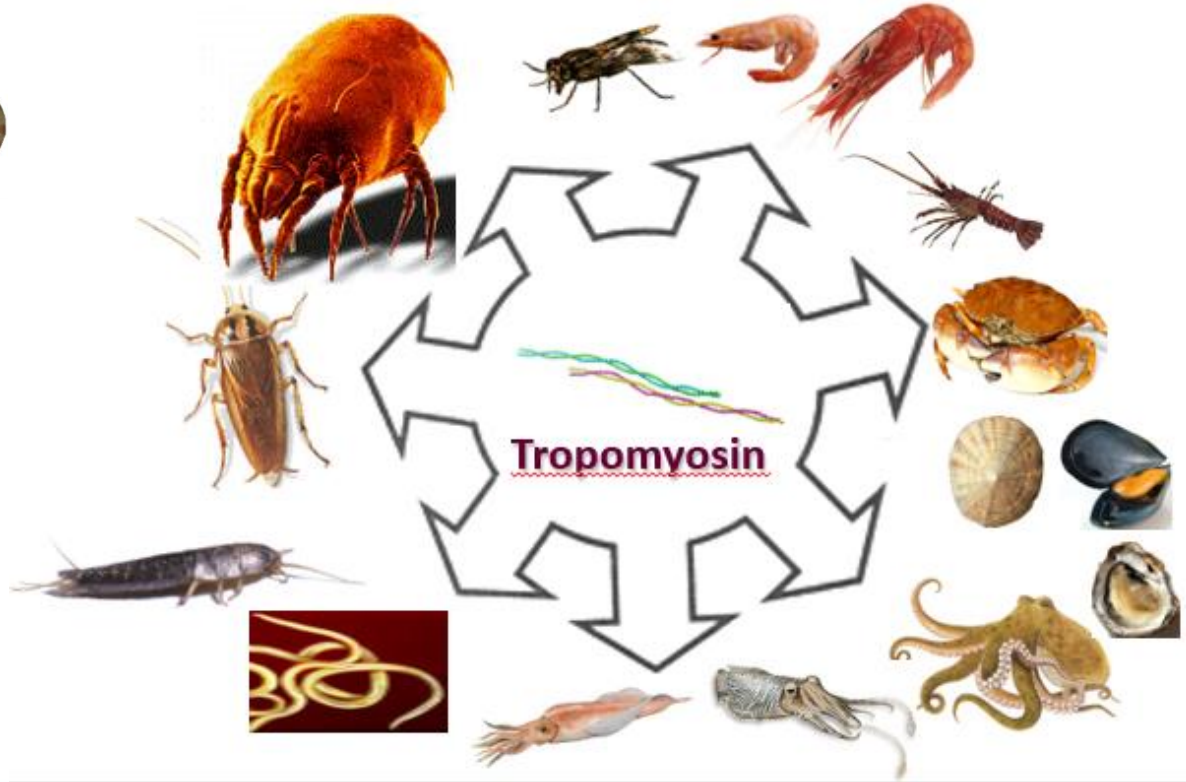
REMINDER

Major allergen of CRUSTACEANS

Tropomyosin

Allergen responsible for the molecular and clinical cross-reactivity for inhalation with INVERTEBRATES

Allergen responsible for the molecular and clinical cross-reactivity for ingestion with MUSSELS



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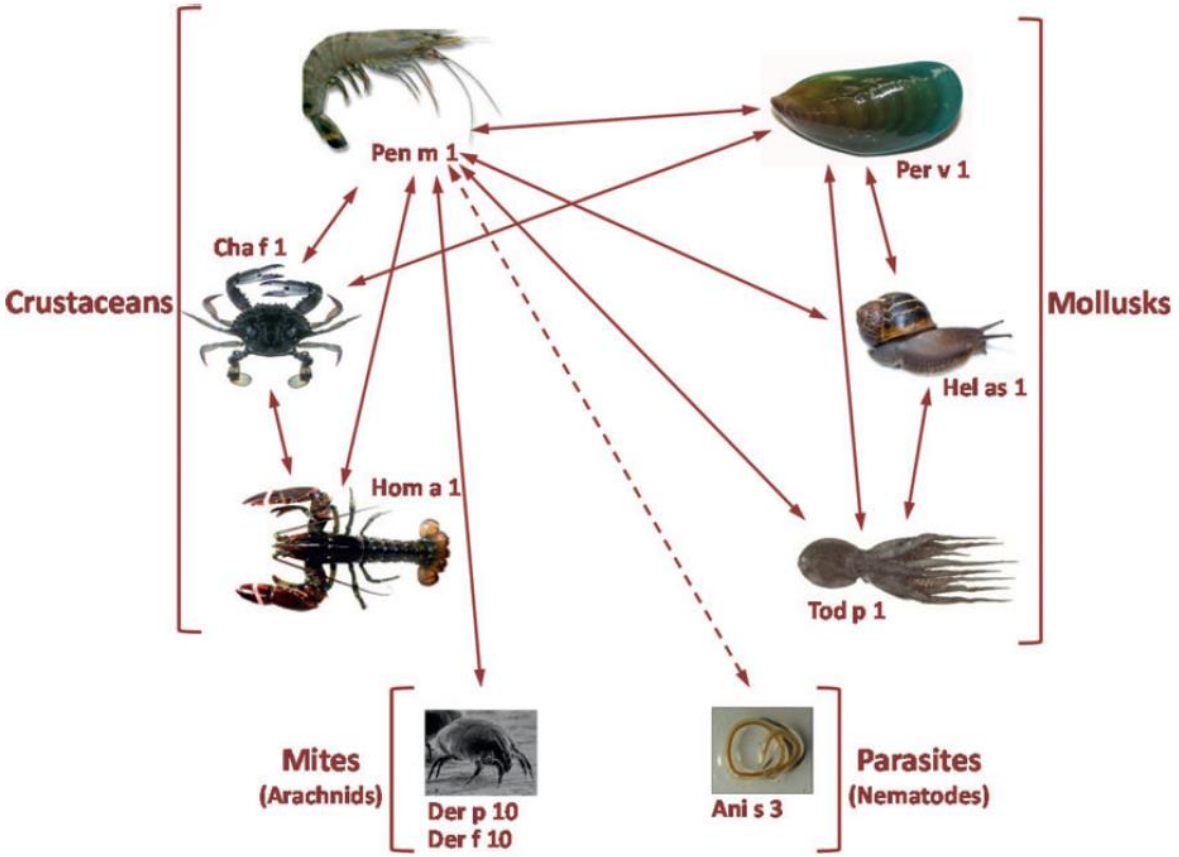
REMINDER

Clinically relevant cross-reactivity between shellfish and invertebrate allergens

Case history

- Previous reaction(s) to crustacean or mollusk
- Additional (allergic) features of house dust mite or insect (e.g., cockroach, moth) allergy
- Reactions to seafood poisoning (e.g., histamine from Scombroid poisoning (fish) or marine biotoxins from filter feeders (mussels)
- Additional atopic diseases, that is, atopic asthma.



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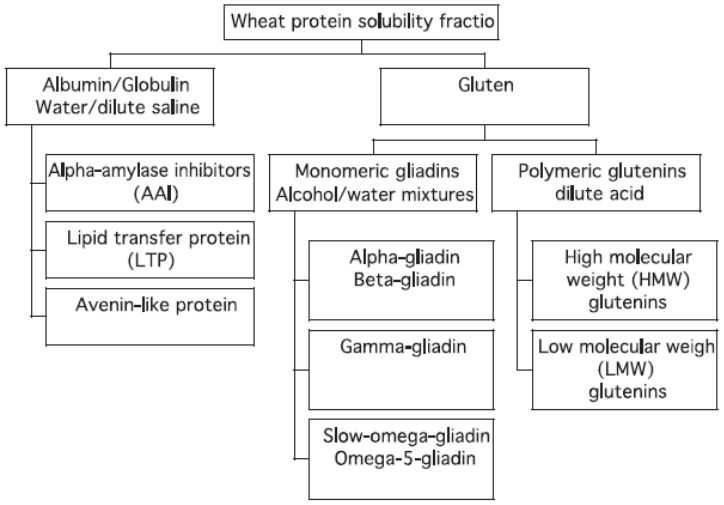
REMINDER

GRAIN CROSS-REACTIVITY

If Allergic to:	Risk of Reaction to at Least One:	Risk:
A grain* wheat	Other grains barley rye	20%

Allergenic molecules of wheat grouped according to their solubility



Wheat allergy affects approximately 0.5 percent of children and up to 1.2 percent of adults in the United States.

This may manifest as allergy to wheat grain, flour, beer, malted products, cereal grains, occupational-related asthma (asthma provoked by inhalation of wheat produce in industrial settings, often called "baker's asthma"), or as a food-dependent but exercise-induced reaction to wheat.

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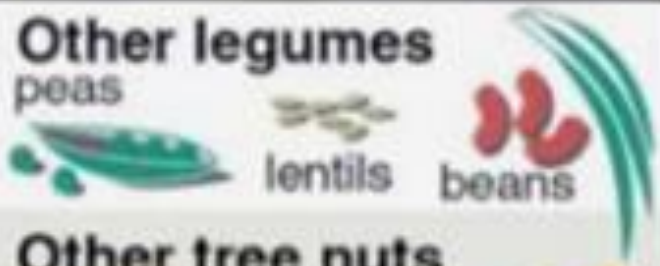
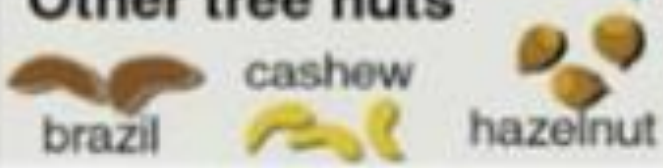
REMINDER

LEGUME & TREE NUTS CROSS-REACTIVITY

If Allergic to:	Risk of Reaction to at Least One:	Risk:
A legume* 	Other legumes 	5% 
A tree nut 	Other tree nuts 	37% 

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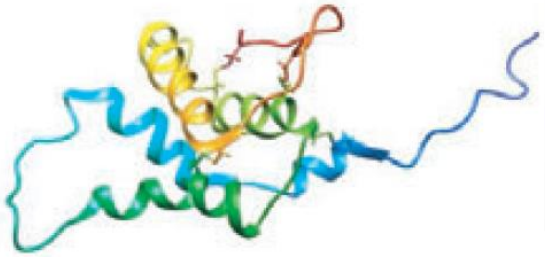
REMINDER

TREE NUTS CROSS-REACTIVITY



Ara h 6 from peanut and other sources of allergenic 2S albumins: Brazil nut, hazelnut, walnut, sesame seeds, and yellow mustard.

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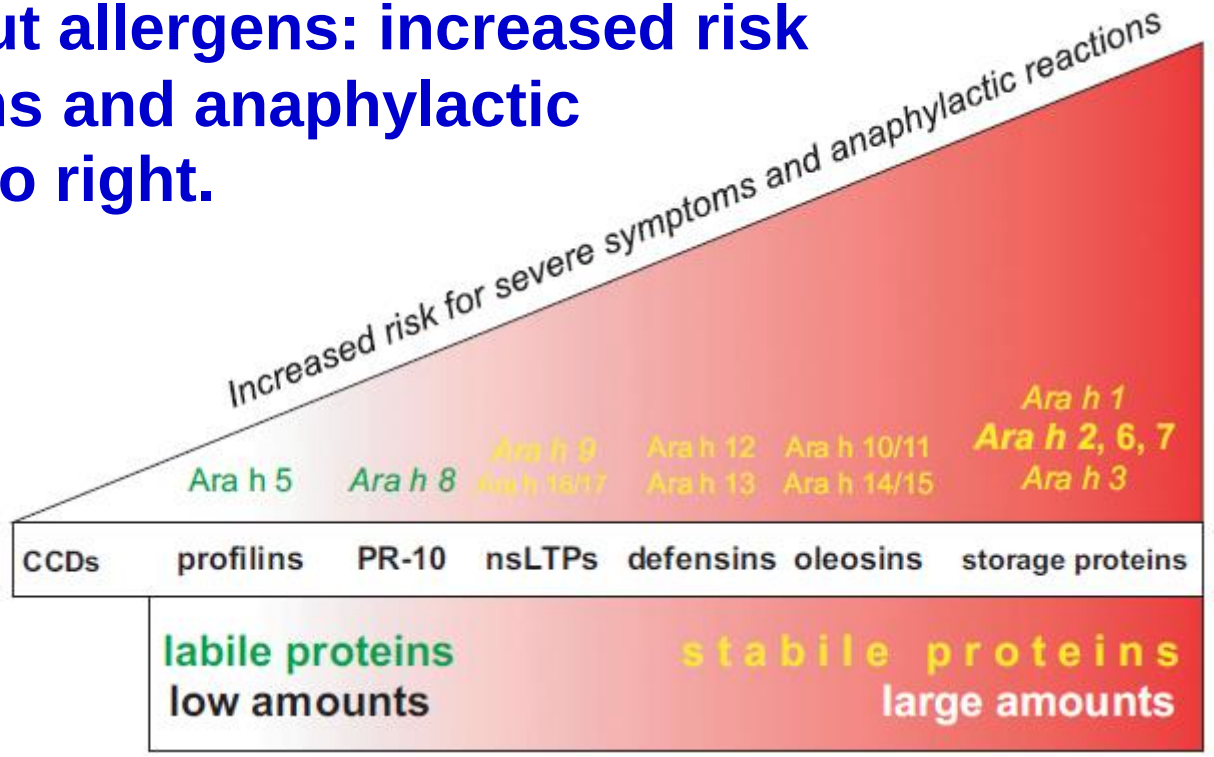
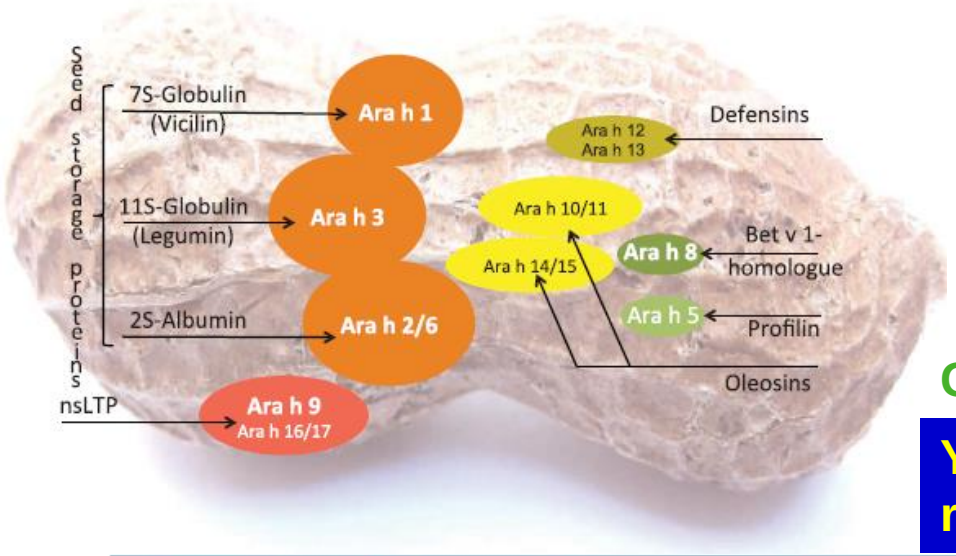
REMINDER

PEANUT ALLERGEN

Risk ramp for peanut allergens: increased risk for severe symptoms and anaphylactic reactions from left to right.



The size of the ellipses reflects roughly the proportion *vs.* to the total protein content



Green: Pollen-related highly cross-reactive allergens.

Yellow: Food allergens with increased thermal stability and digestive resistance.

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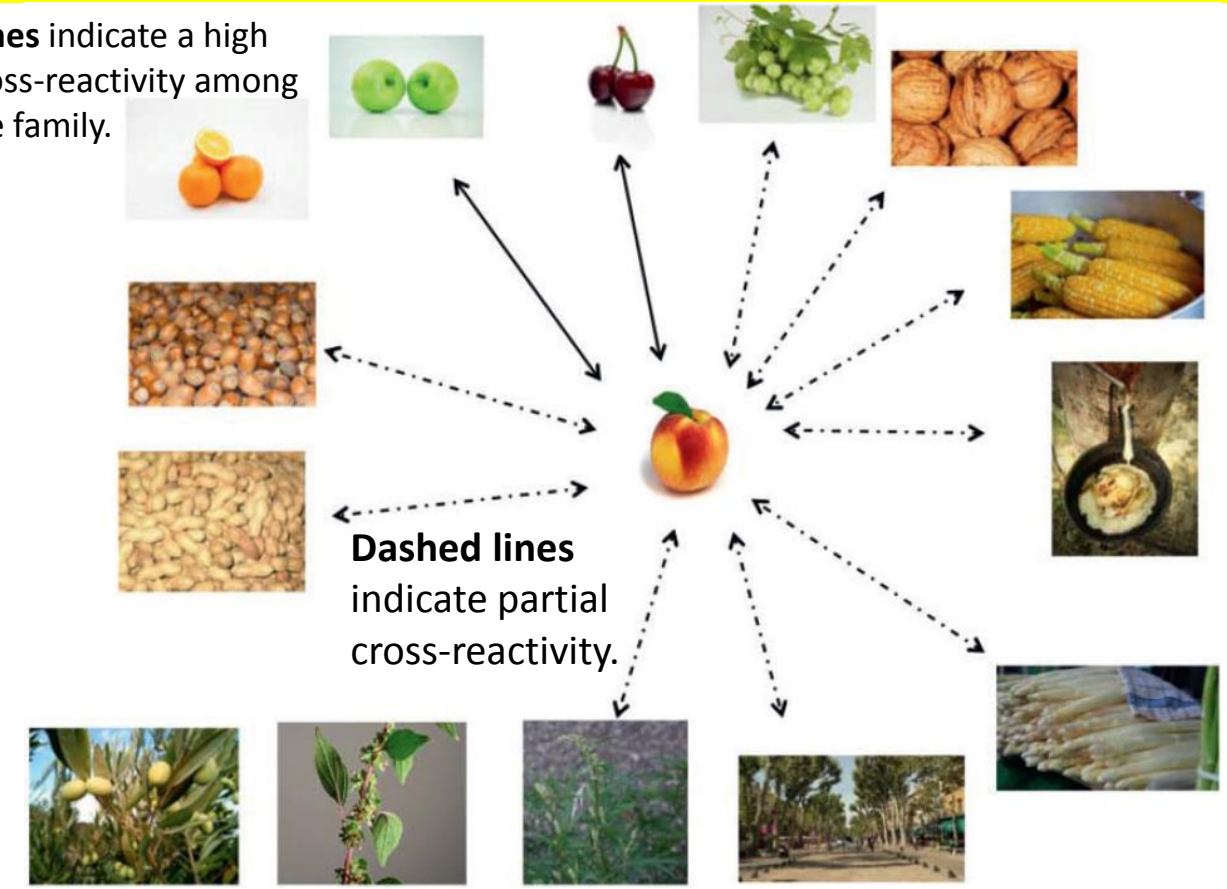
REMINDER

Cross-reactivity due to non-specific lipid transfer proteins nsLTP molecules between different allergenic sources

Representative members of the nsLTP family and crossreactivity between them

Botanical family	Allergen source	Allergen
Plant foods		
Rosaceae	Peach (Prunus persica)	Pru p 3
	Apple (Malus domestica)	Mal d 3
	Cherry (Prunus avium)	Pru av 3
Vitaceae	Grape (Vitis vinifera)	Vit v 1
Rutaceae	Orange (Citrus sinensis)	Cit s 3
Solanaceae	Tomato (Lycopersicon esculentum)	Lyc e 3
Corylaceae	Hazelnut (Corylus avellana)	Cor a 8
Juglandaceae	Walnut (Juglans regia)	Jug r 3
Fabaceae	Peanut (Arachis hypogaea)	Ara h 9
Asteraceae	Lettuce (Lactuca sativa)	Lec s 1
Poaceae	Maize (Zea mays)	Zea m 14
	Wheat (Triticum aestivum)	Tri a 14
Occupational allergens		
Euphorbiaceae	Natural Rubber Latex (Hevea brasiliensis)	Heb b 12
Asparagaceae	Asparagus (Asparagus officinalis)	Aspa o 1
Pollens		
Urticaceae	Parietaria (Parietaria Judaica)	Par j 1
Asteraceae	Ragweed (Ambrosia artemisiifolia)	Amb a 6
	Mugwort (Artemisia vulgaris)	Art v 3
Oleaceae	Olive (Olea europaea)	Ole e 7
Platanaceae	Plane (Platanus acerifolia)	Pla a 3

Continous lines indicate a high degree of cross-reactivity among the Rosaceae family.



Dashed lines indicate partial cross-reactivity.

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EAACI GUIDELINES

SECTION 6

file:///C:/Users/user/Downloads/Food%20Allergy%20Guidelines.pdf

To provide guidance

to all stakeholders in order to reduce the risk of accidental allergic reactions to foods in the community.

To assist providers

of non-pre-packaged food (e.g. restaurants, bakeries, take-away, deli counters, and fast-food outlets).

PRINCIPLES OF HEALTHY DIET

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REMINDER

Why the community is important

Food allergy, particularly to peanuts, tree nuts, egg and milk, is the leading cause of anaphylaxis

The location for anaphylaxis to occurs in the community accounting for 16-22% of reactions

Reactions also occur in a wide variety of other community locations including **restaurants,** sports fields, beaches, and gymnasiums

Fatalities due to food allergy are equally likely to occur or in community locations such as a **restaurant/take away**

The management of food allergic should to protect against the risk of allergen exposure outside the home

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Why the community is important

Improved education of individuals at risk and their families, peers, school staff and restaurant and other food service staff about reducing risk can help to prevent fatalities

Increased awareness of policy makers may improve care at local and national levels

Educational multidisciplinary programmes targeting the restaurant

Harmonized legislation is urgently required for the generic availability and administration of adrenaline

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ALERT FOR PROVIDERS OF NON-PREPACKED FOODS

DANGER

Restaurants and other food establishments, such as bakeries, take-aways, and fastfood outlets, pose a number of potential **DANGERS** for individuals with food allergy, particularly due to unexpected ingredients

HIDDEN

In 50% of these incidents, the food item was **"HIDDEN"** (e.g. in sauces and dressings)

CONTAMINATION

In 22% of these exposures **CONTAMINATION** caused primarily by shared cooking or serving supplies

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ALERT FOR PROVIDERS OF NON-PREPACKED FOODS

The food providers have a **RESPONSIBILITY** to provide clear, comprehensive information on potential allergenic ingredients so the individual/family can make an informed decision about food consumption

WHERE THE RISK IS UNKNOWN, this should also be stated, and the restaurant should be avoided

From December 2014, the Food Information for Consumers Regulation **EU REGULATION NO. 1169/2011** will also require to provide information about allergenic ingredients

Current food allergen legislation requires any of the **14 EU regulatory allergens**, where used as ingredient, **TO BE CLEARLY DECLARED** within the ingredients list of prepacked foods

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List of 14 Allergens

Food ingredients that must be declared as allergens in the EU

1. CEREALS CONTAINING GLUTEN, namely: wheat (such as spelt and khorasan wheat), rye, barley, oats or their hybridised strains, and products thereof, except:

(a) wheat based glucose syrups including dextrose
(b) wheat based maltodextrins
(c) glucose syrups based on barley
(d) cereals used for making alcoholic distillates including ethyl alcohol of agricultural origin

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List of 14 Allergens

Food ingredients that must be declared as allergens in the EU

2. Crustaceans and products thereof

3. Eggs and products thereof

4. Fish and products thereof, except:

(a) fish gelatine used as carrier for vitamin or carotenoid preparations

(b) fish gelatine or Isinglass used as fining agent in beer and wine

5. Peanuts and products thereof

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List of 14 Allergens

Food ingredients that must be declared as allergens in the EU

6. Soybeans and products thereof, except:

(a) fully refined soybean oil and fat

(b) natural mixed tocopherols (E306), natural D-alpha tocopherol, natural D-alpha tocopherol acetate, and natural D-alpha tocopherol succinate from soybean sources

(c) vegetable oils derived phytosterols and phytosterol esters from soybean sources

(d) plant stanol ester produced from vegetable oil sterols from soybean sources

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List of 14 Allergens

Food ingredients that must be declared as allergens in the EU

7. Milk and products thereof (including lactose), except:

(a) whey used for making alcoholic distillates including ethyl alcohol of agricultural origin

(b) lactitol

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List of 14 Allergens

Food ingredients that must be declared as allergens in the EU

8. Nuts, namely:

- **almonds (*Amygdalus communis L.*)**
- **hazelnuts (*Corylus avellana*)**
- **walnuts (*Juglans regia*)**
- **cashews (*Anacardium occidentale*)**
- **pecan nuts (*Carya illinoinensis (Wangenh.)* K. Koch)**
- **Brazil nuts (*Bertholletia excelsa*)**
- **pistachio nuts (*Pistacia vera*)**
- **macadamia or Queensland nuts (*Macadamia ternifolia*)**

and products thereof, except for nuts used for making alcoholic distillates including ethyl alcohol of agricultural origin.

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List of 14 Allergens

Food ingredients that must be declared as allergens in the EU

9. Celery and products thereof

10. Mustard and products thereof

11. Sesame seeds and products thereof

12. Sulphur dioxide and sulphites

at concentrations of more than 10 mg/kg or 10 mg/litre in terms of the total SO2 which are to be calculated for products as proposed ready for consumption or as reconstituted according to the instructions of the manufacturers

13. Lupin and products thereof

14. Molluscs and products thereof

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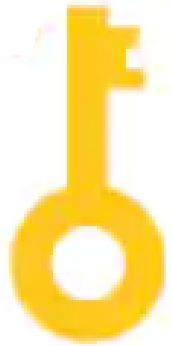
Key Messages



Good communication between staff preparing food and front-of-house serving staff is essential to prevent risk

The need for more training for restaurant staff and consumer caution on staff knowledge

Provide allergy information cards in the host language and a sufficient supply of emergency medication

CHEEP
cooking healthy european paths

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DIETARY ADVICE AND PRACTICE

CASE 1

HISTORY: Female, 39 years: Since 2015 for the first time during spring time eye itch, tearing, swelling, sneezing, runny and blocked nose, later chest tightness, wheezing, coughing, and white sputum. In addition, since spring 2015 itchy throat after eating raw fruits (apples, cherries, peaches).

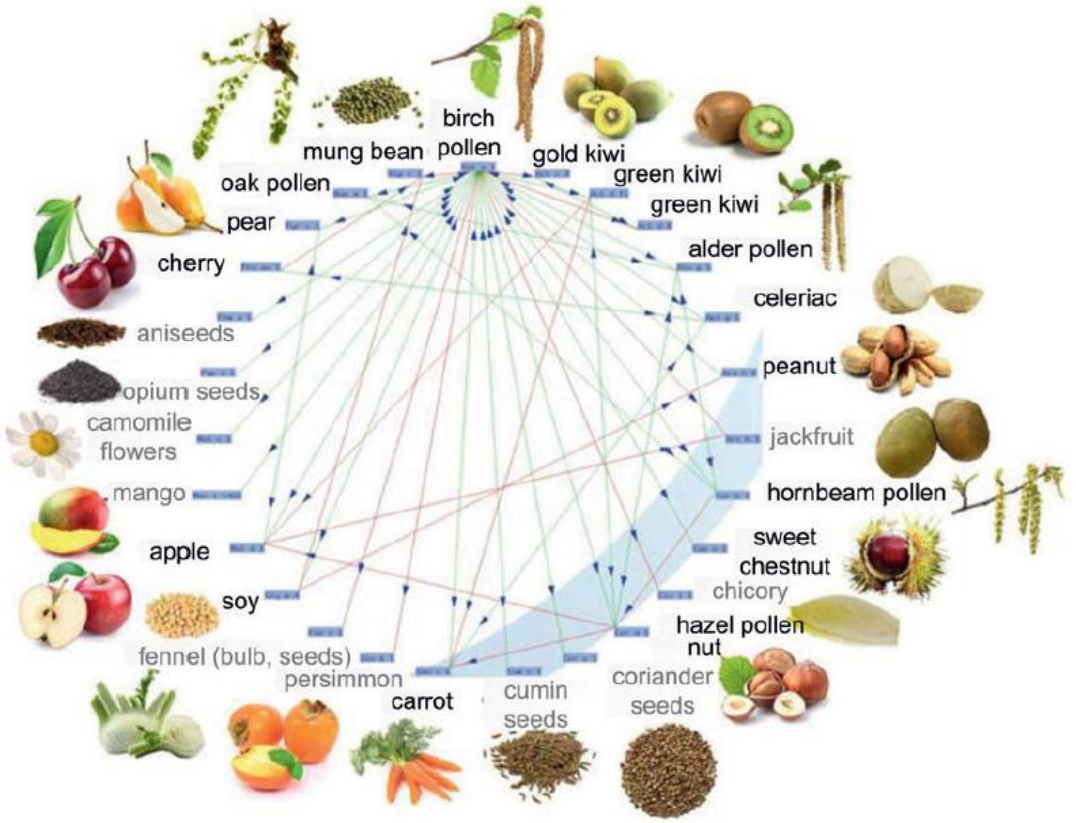
DIAGNOSIS:

(A) Allergic rhinoconjunctivitis due to Fagales tree pollen;

(B) Bet v 1-associated food allergy (oropharyngeal symptoms to certain raw Rosaceae fruits)

RECOMMENDATIONS:

Avoidance of raw Bet v 1-crossreactive pome and stone fruits; cooked, baked or roasted plant products without dietary restriction (due to *thermal instability of Bet v 1-related allergens*).



Cross-reactivity between the birch pollen major allergen Bet v 1 and related allergens in tree pollen of the order Fagales, in pome and stone fruit, tree nuts, vegetables, and legumes.

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DIETARY ADVICE AND PRACTICE

Baked milk products

Introduction of baked products with cow's milk should be attempted under physician supervision for subjects with **Cow's Milk Protein Allergy**.

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DIETARY ADVICE AND PRACTICE

CASE 2

HISTORY: 2-year-old child with atopic dermatitis and history of milk-induced generalized urticaria at the age 6 months.

A physician-supervised oral challenge with baked milk in a form of a muffin is performed in the office and the child tolerates it without an adverse reaction.

RECOMMENDATIONS:

Baked milk products are incorporated into the diet.

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DIETARY ADVICE AND PRACTICE

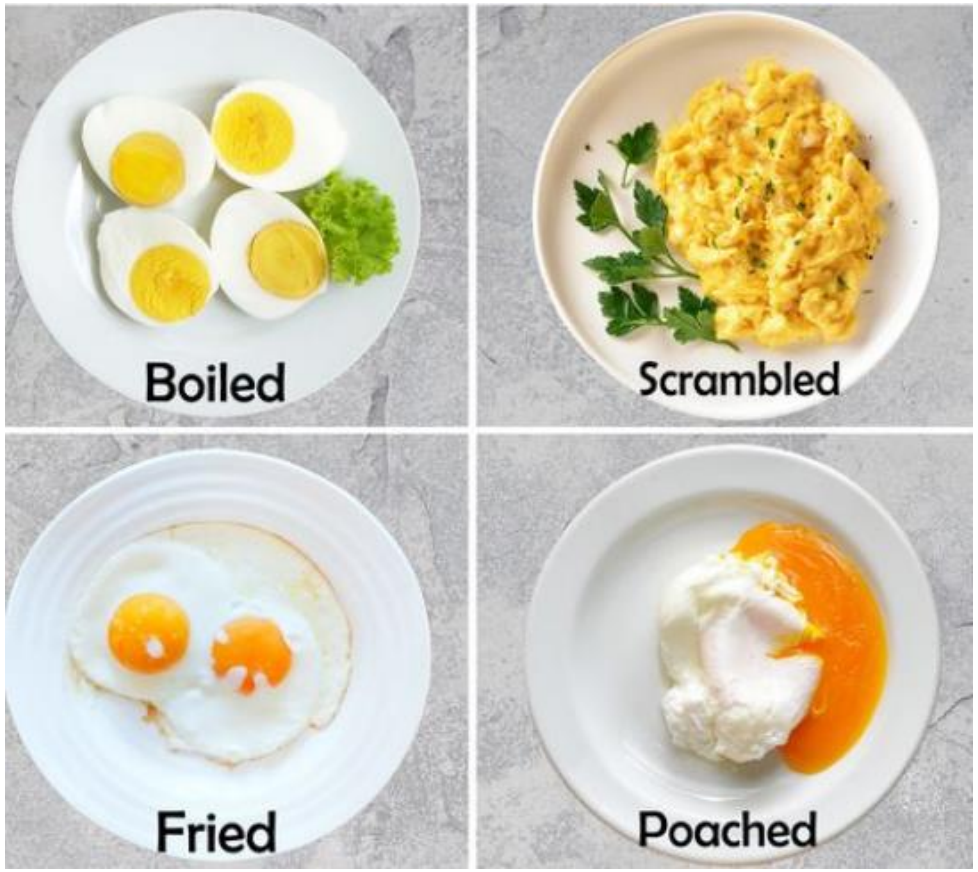
CASE 3

HISTORY: child, 8 years old, severe atopic eczema.
Has never eaten eggs, neither isolated or in processed foods.

ORAL CHALLENGE: Egg is progressively introduced at home in baked goods as well as in pasta with eggs. Well tolerated, without immediate reactions or flaring of atopic eczema.

DIAGNOSIS: Sensitization to egg white in the context of moderate atopic eczema.

RECOMMENDATION: ***Continue eggs in cooked form***, retesting and possibly a food challenge before introducing egg in partially cooked or raw forms.



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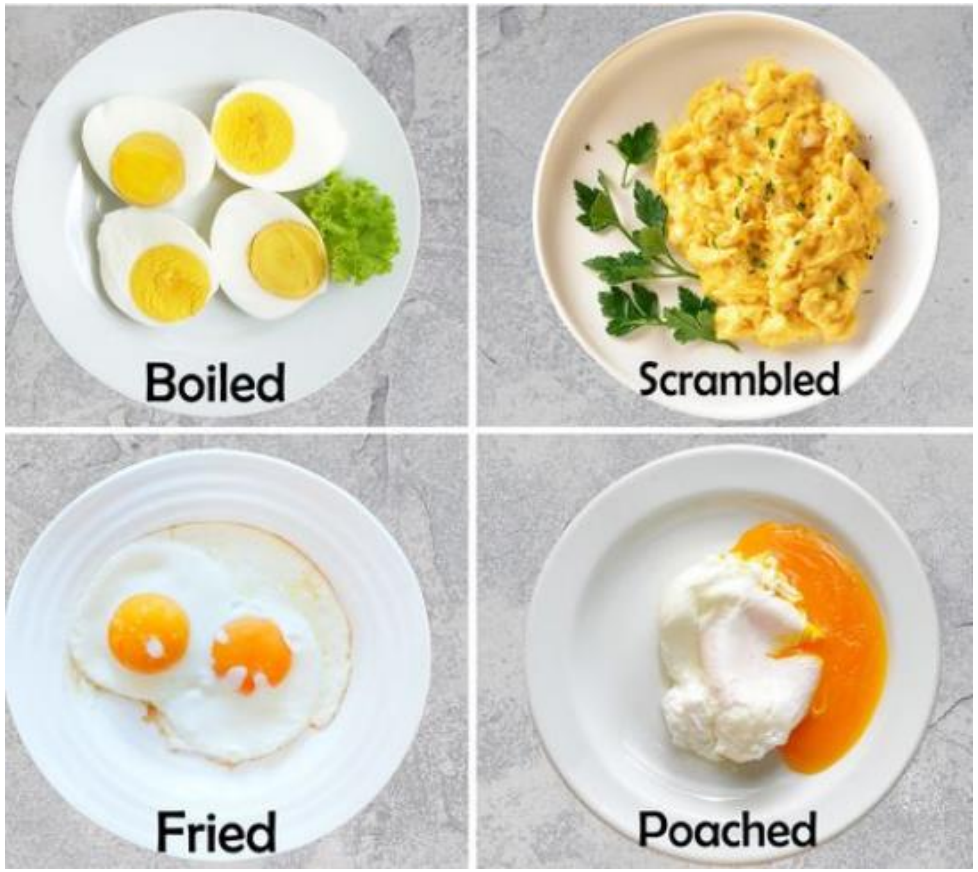
DIETARY ADVICE AND PRACTICE

CASE 4

HISTORY: Girl, 5 years old, in good health.
Eats cooked eggs, either isolated or in processed foods without any symptoms since 8 months of age.
PRESENT: Is given for the first time a chocolate mousse made with raw beaten egg white. Within minutes a facial rash spreading to the upper thorax, a dry cough, and several episodes of sneezing.

DIAGNOSIS: Allergy to raw eggs only.

RECOMMENDATION: ***Eggs well tolerated in baked goods or hard boiled can be eaten.***
Elimination diet of incompletely cooked, or raw eggs in any form.



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DIETARY ADVICE AND PRACTICE

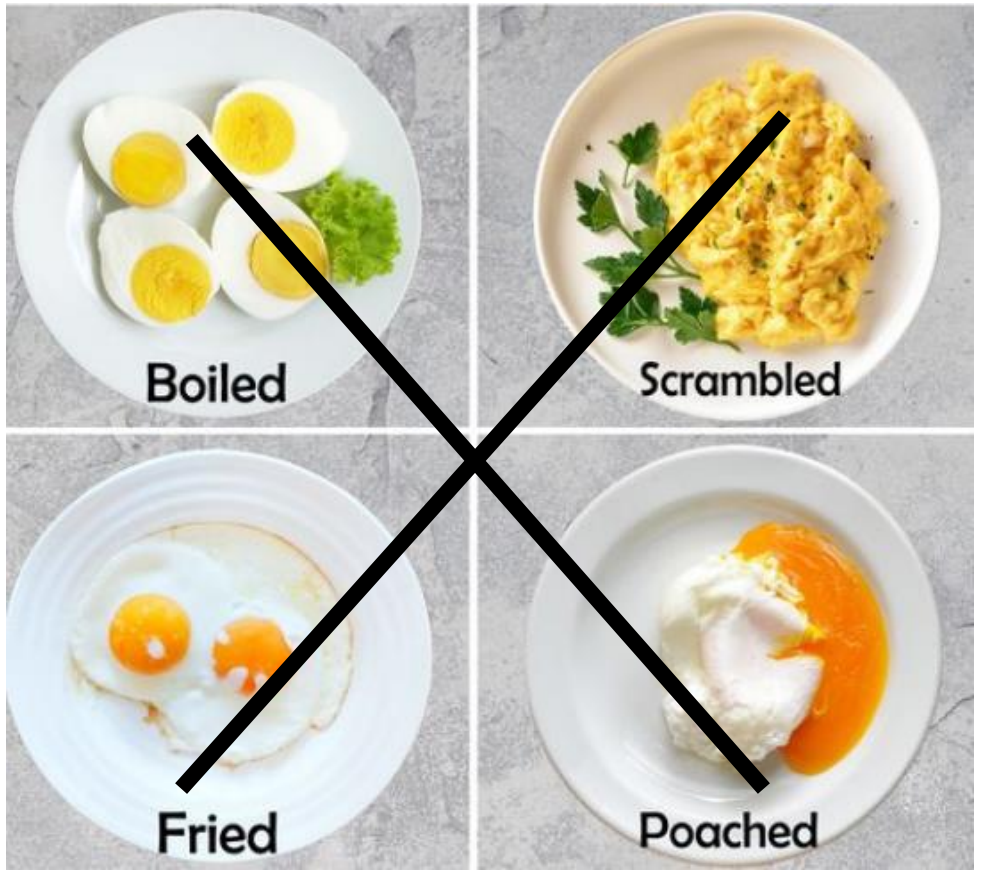
CASE 5

HISTORY: Boy, 12 months old, history of moderate atopic eczema.

PRESENT: Eats for the first time a hardboiled egg, followed within minutes by an urticarial rash over the thorax, and episode of vomiting.

DIAGNOSIS: Allergy to all forms of egg.

RECOMMENDATION: ***Eggs in all forms and foods containing eggs need to be avoided.***



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Key Messages

ALLERGENICITY AND FOOD PROCESSING

Consequences of thermal treatment on allergenicity

- Some allergenic foods, are described as
  - **HEAT STABLE** (e.g. milk, egg, fish, peanuts, and products thereof)
  - **PARTIALLY STABLE** (e.g. soya bean, cereals, celery, tree nuts, and their products)
  - **LABILE** (fruits of the Rosaceae family and carrots)

- Thermal processing can create new allergenic epitopes as well as destroying existing epitopes.

Whether and how heat treatments may significantly alter the allergenicity of a food is thus a complex question.

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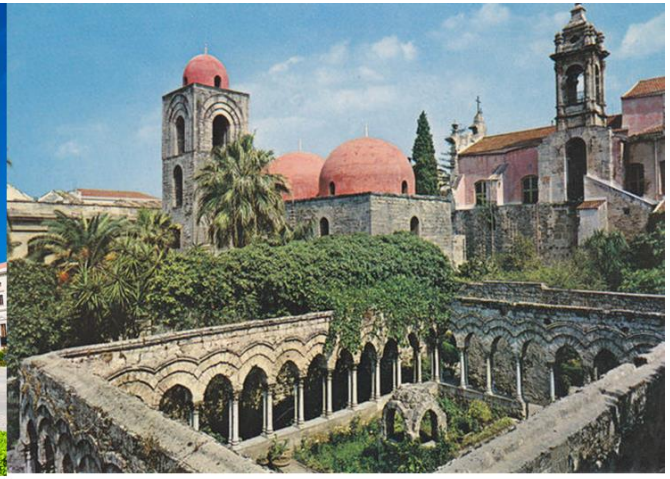

Thank you for your attention!