



OWN YOUR HEALTH

ST. PAUL'S HOSPITAL
COMMUNITY FORUMS

Allergies

- Why More Common?
- New Manifestations
- Management Options

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OWN YOUR HEALTH

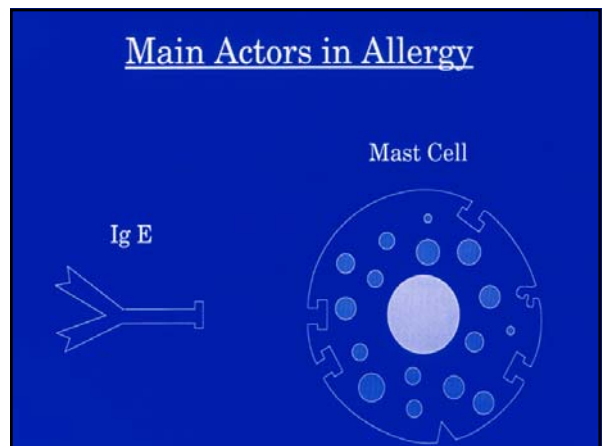
"Céad míle fáilte romhainn agus Lá
Fhéile Pádraig Sona Daoibh"



Allergy

Immune system produces special "allergy antibodies" called **IgE** that react to specific substances.

Substances that cause allergies are called **allergens**



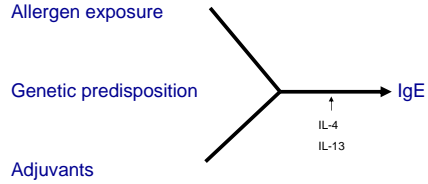
Allergy

Why do we develop them?

- Genetic predisposition
- Environmental interactions

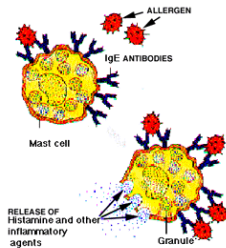


Allergic Sensitization



Allergy

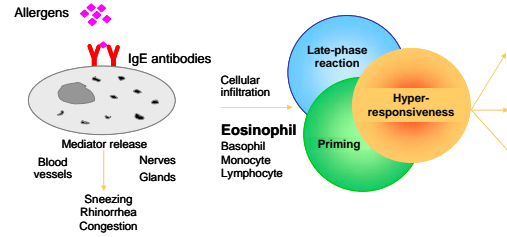
When the body is exposed to this allergen the IgE antibody will bind to it and cause allergy cells to trigger, releasing compounds that cause allergy symptoms.



Pathophysiology of Allergic Inflammation: Clinical Disease

Early Phase Reaction
Max. at 10-30 Minutes

Late Phase Reaction
Max. at 10-12 Hours



American Academy of Otolaryngology 2006



Allergic Diseases

- Allergic rhinitis / conjunctivitis
 - seasonal or year-round
- Asthma
- Anaphylaxis
- Urticaria (Hives) / Angioedema (Swellings)
- Atopic dermatitis (eczema)
- Food allergy
 - Severe life-threatening
 - Oral allergy syndrome
 - Eosinophilic esophagitis



Allergy

- Environment**
 - Dust mite, animal dander, pollen, mould
- Drugs**
 - Penicillin, sulfa antibiotics
- Foods / additives**
 - Nuts, seafood, sulfites
- Insect venom**
 - Bee, wasps
- Latex**





Factors Increasing Atopic Predisposition

- Cigarette smoke exposure
- Indoor allergens (e.g. dust mite, cockroach)
- Pollutants
 - Diesel exhaust particles
 - Ozone
- Gut microflora
- Diet
- Obesity



Indoor Allergens

- Dust mites
- Pets
- Rodents
- Cockroach
- Molds



Barnyard Benefits

- Number of studies demonstrating that children growing up on a farm have decreased likelihood of developing allergic disease.
- Increased levels of endotoxin in house dust from homes on farms.

Allergic Rhinitis

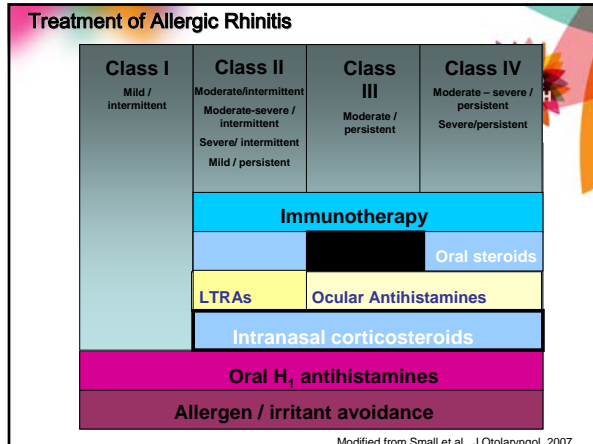


- Seasonal Allergic Rhinitis (SAR)
 - Tree, grass and ragweed pollens
 - Triggered by pollen in spring or fall season
- Perennial Allergic Rhinitis (PAR)
 - Dust mites, cockroaches, molds and animal dander
 - Chronic condition



Allergic Rhinitis – Quality of Life

- Reduced performance and days lost from school or work
- Sleep abnormalities
- Social limitations




Oral Allergy Syndrome (Class 2 Food Allergy)

Itching of lips, oral mucosa


Edema of lips and throat (affects swallowing but extremely rare to cause respiratory symptoms)

Abdominal cramps, diarrhea



Associations between Pollens and Foods


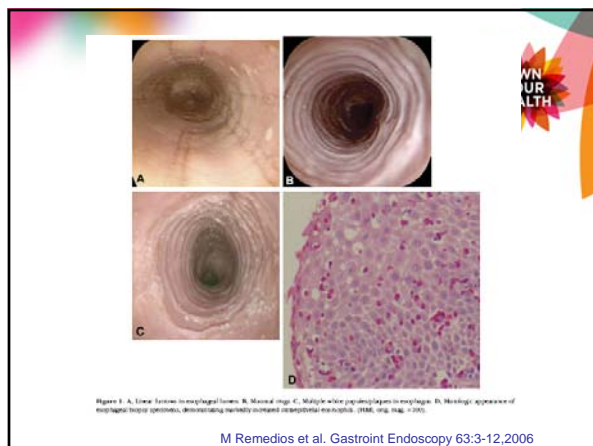
<u>Birch / Alder / Hazel</u>	<u>Grasses</u>
Apple, pear	Tomato
Plum, peach, apricot, etc.	Orange
Kiwi, Cherry	Kiwi
Celery, Carrot	Melon
Tree nuts	Peanut



Pathogenesis-related proteins

Induced in higher-order plants in response to:

- Infection (fungi, bacteria or viruses)
- Wounding
- Ripening
- Chemical stress





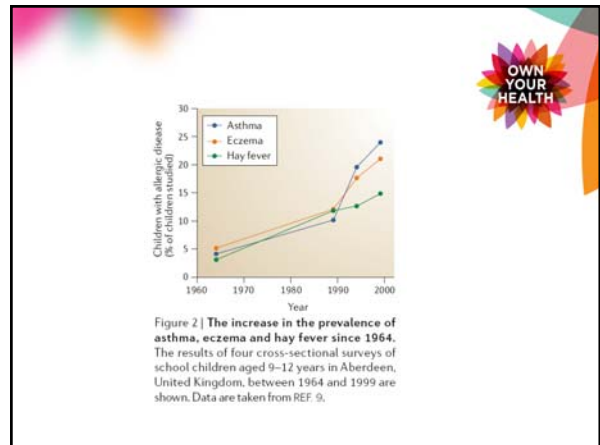
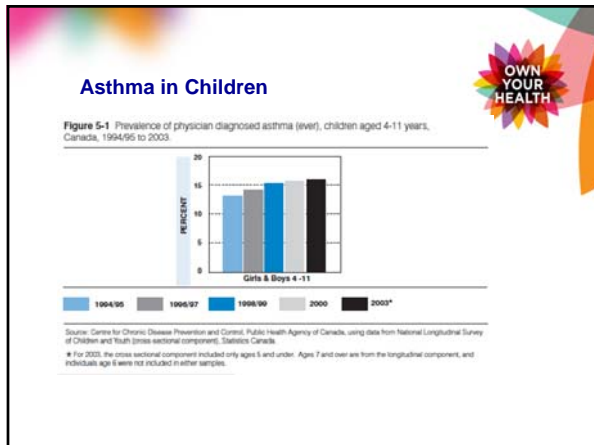
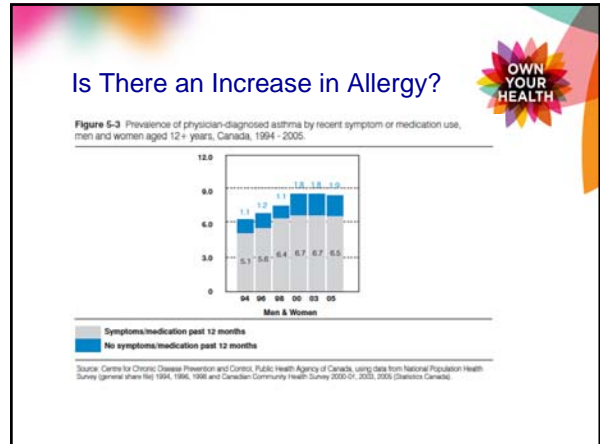
Eosinophilic Esophagitis Clinical Presentation in Adults

325 subjects - 77% male

Difficulty swallowing	93%
Impaction (food stuck in esophagus)	62%
Heartburn	24%
Blood eosinophilia	31%

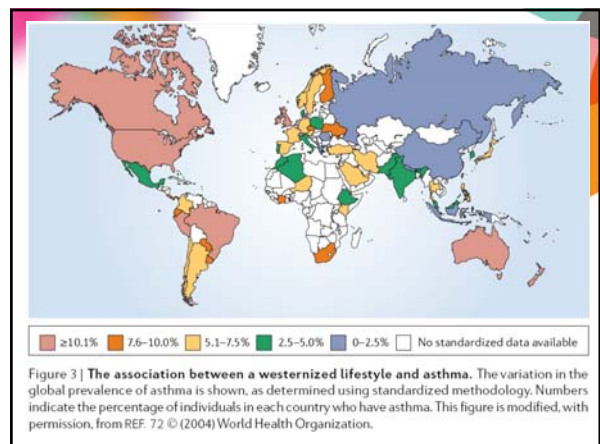
SN Sgouros et al. Eur J Gastro Hepat 18:211-217, 2006





Food Allergy

From 1997 to 2002 peanut or tree nut allergy increased from **0.6% to 1.2%** among children



Why the increase?

❖ Environment



❖ Diet



Hygiene Hypothesis

Societal changes over the past few decades:

- decline in family size
- improved sanitation
- higher standards of personal cleanliness,

Has led to reduced exposure to childhood infections, which in turn has altered immunologic development to favor an increase in allergic diseases



Vitamin D and asthma

- More time is spent indoors, and there is less exposure to sunlight, leading to decreased vitamin D production.
- Inadequate intake from foods and supplements,
 - Leads to vitamin D deficiency, particularly in pregnant women, resulting in more asthma and allergy in their offspring.
 - Vitamin D has been linked to immune system and lung development in utero, and epidemiologic studies show that higher vitamin D intake by pregnant mothers reduces asthma risk by as much as 40% in children 3 to 5 years old.



Antioxidants

Some studies have found beneficial associations between a higher intake of nutrients such as:

- vitamin E
- selenium
- carotene
- vitamin C



- Particularly from fresh fruit, nuts and vegetables



Fats

Some studies have suggested increase in the prevalence of asthma and allergy is due to:

- increased intake of **omega-6** fatty acids which are present in **margarine** and **vegetable oils**
- decreased intake of **omega-3** which are present in oily fish (such as herring, mackerel, trout and salmon)



- ✓ Is there an increase in allergies?

- Food allergy – how to recognize and treat



Food Allergy



- Direct food allergy
 - risk of anaphylaxis (life-threatening)
- Oral allergy syndrome
- Exacerbate eczema
- Eosinophilic esophagitis

Food Allergy



Occurs quickly after eating food

Involves

- skin
- breathing
- GI/stomach
- blood pressure

> **Anaphylaxis**

> **Risk of death**



Food Allergy



Food	Young Children	Adult
Milk	2.5%	0.3%
Egg	1.3%	0.2%
Peanut	0.8%	0.6%
Tree nuts	0.2%	0.5%
Fish	0.1%	0.4%
Shellfish	0.1%	2.0%
Total	6%	3.7%

H Sampson Food Allergy Update JACI 2004

Other types of reactions to foods



Intolerance / sensitivity	Lactose intolerance Celiac disease (gluten sensitivity)
Pharmacologic	Caffeine → jitteriness Tyramine in aged cheese → migraine Alcohol → redness/flushing
Toxins	Bacterial food poisoning

Sicherer and Sampson JACI 2006;117(2):S470-S475

Diagnosis of food allergy



- History from the patient

- Skin test



- Blood test for specific IgE to a specific food
- Food challenge

Inappropriate Food Tests



Alternative practitioners (naturopaths, herbalists, chiropractors, massage therapists...)

- Vega test
- Neuromuscular test
- Blood test for IgG to food



Treatment of Food Allergy

- Identify
- Avoid
- MedicAlert bracelet
- EpiPen or Twinject
- Hospital/ambulance

- Desensitization - experimental



Summary

Allergic Diseases:

- Common and increasing
- New manifestations
- Awareness and proper diagnosis important
- Treatment options



Thank you for your attention.

Questions and Comments

