

Allergic Rhinitis

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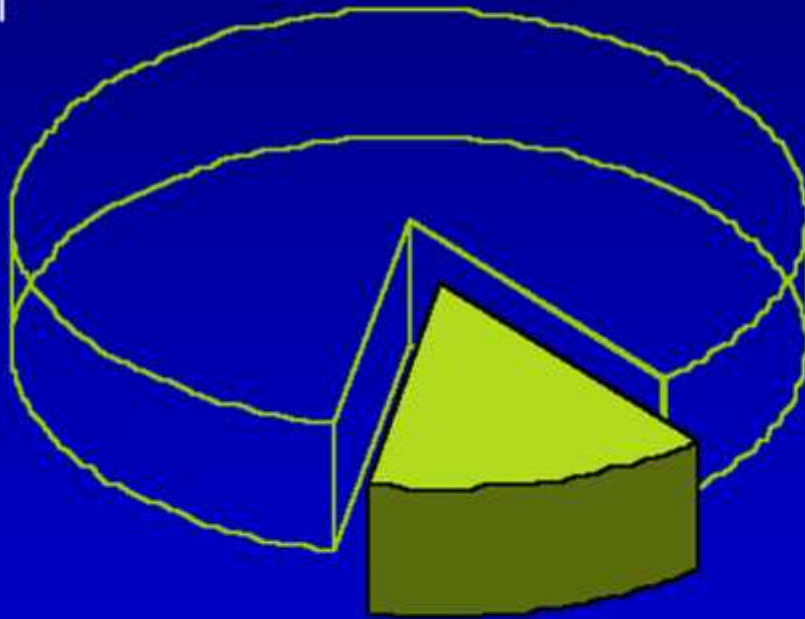
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Objectives

- **Understand importance of allergic rhinitis**
- **Recognize variation in allergic symptoms**
- **Apply appropriate treatment strategies**

Allergic Rhinitis (AR) in the United States

US population, 2000
~281 million



- Study based on survey responses from 9946 households representing 22,285 people
- AR prevalence in the US was 14.2%— almost 40 million people when extrapolated to the US population from the year 2000

■ AR prevalence, 14.2%
or about 40 million people

U.S. Census Bureau.

Nathan et al. *J Allergy Clin Immunol.* 1997;99:S808-S814.

Impact of AR in the United States

■ Productivity

- 3.4 million workdays lost to absenteeism
- 824,000 missed school days (NMES* 1987)
- 4,230,000 days of reduced activity (NMES* 1987)

■ Total treatment costs: \$3.5 billion (1993)

- Medication costs: \$2.4 billion
- Physician visits: \$1.1 billion

■ Comorbid disease

- Sinusitis 43%: tens of thousands of fiberoptic sinus surgeries annually (1993)
- Asthma 23%: \$6.2 billion in healthcare costs (1990)

* NMES = National Medical Expenditure Survey.

Storms et al. *J Allergy Clin Immunol.* 1997;99:S820-S824.

Collis. *HR Magazine.* 1997:1-6.

Malone et al. *J Allergy Clin Immunol.* 1997;99:22-27.

AR and Comorbid Airway Disease



Spector. *J Allergy Clin Immunol.* 1997;99:S773-S780.

Comorbidities: Implications for Treatment

- AR and asthma
 - Linked in epidemiologic, pathophysiologic, and clinical studies
 - Rhinitis may be independent risk factor for asthma
 - 80% of children with asthma have allergic disease
- AR and otitis media: strong 2-way link in children
- AR and sinusitis
 - AR possible risk factor for sinusitis
 - Sinusitis linked by CT to allergy (78%), asthma (71%)
- Treatment of AR may be important for its own sake and for its impact on other upper and lower airway diseases

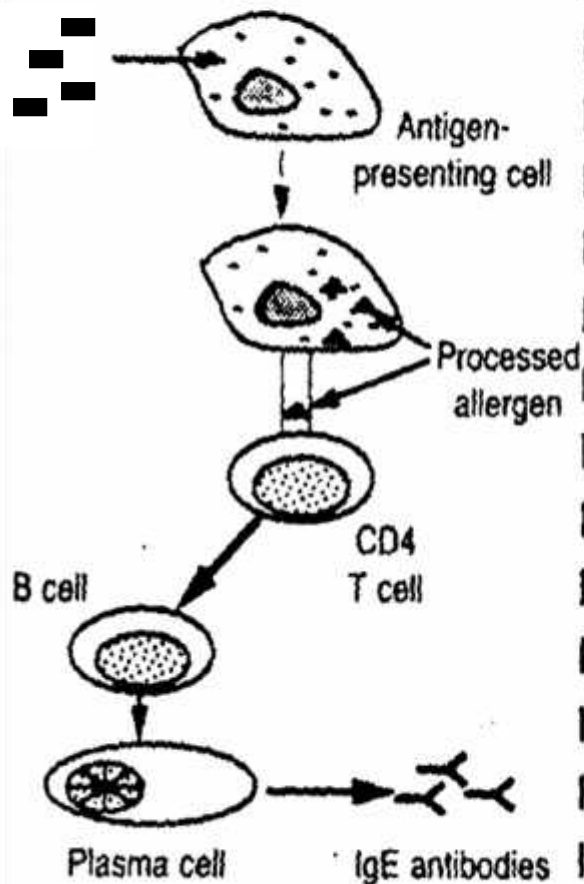
Leynaert et al. *J Allergy Clin Immunol.* 1999;104:301-304. Corren. *J Allergy Clin Immunol.* 1997;99:S781-S786. Spector. *J Allergy Clin Immunol.* 1997;99:S773-S780. Storms et al. *J Allergy Clin Immunol.* 1997;99:S820-S824. Sporik et al. *N Engl J Med.* 1990;323:502-507. Lundback. *Clin Exp Allergy.* 1998;28(suppl:2)3-10.

My child has allergies!

- **Pathophysiology**
- **History**
- **Physical Exam**

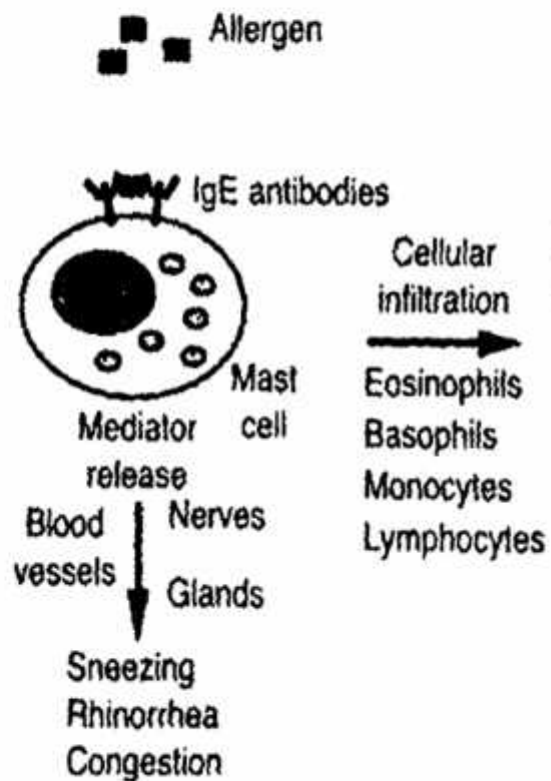
Phase 1 Sensitization

Allergen

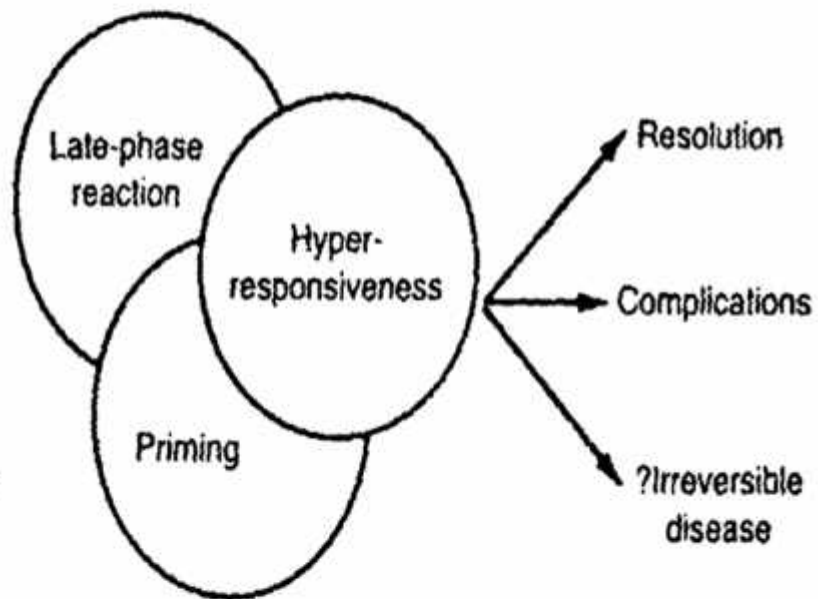


Phase 2 Clinical Disease

Early
Inflammation



Late
Inflammation



History

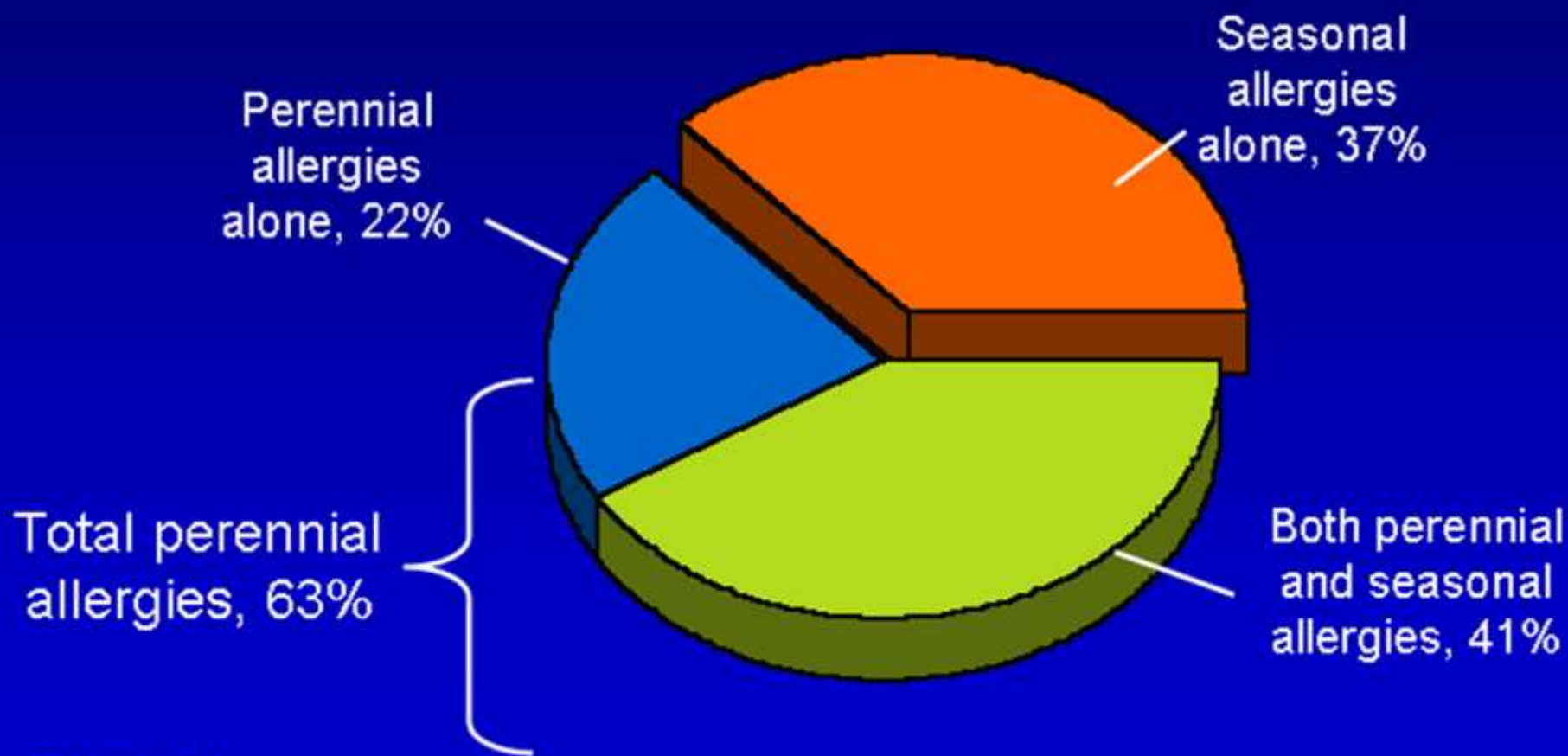
- **Onset of symptoms**
 - Infant less than 3 years old
 - Older child
- **Symptoms**
 - Headache
 - Nasal
 - Pruritis
 - Sneezing
 - Congestion
 - Postnasal drip
 - Rhinorrhea
 - Ocular
 - Oral

History

- **Frequency**
 - Perennial (cat, dog, dust mite, cockroach, molds)
 - Seasonal (trees, grass, weeds)
- **Severity**
 - School absence
 - Loss of smell
 - Behavioral changes
 - Comorbid conditions

Allergic Rhinitis: Seasonal vs Perennial

Consumer Survey of Allergy Sufferers (N = 400)



Data on file.

Physical Exam

- **Eyes**
- **Ears**
- **Nose**
- **Oropharynx**
- **Lungs**



FIG. 4-23 Allergic cobblestoning of the conjunctiva in chronic allergic conjunctivitis. This granular appearance is due to edema and hyperplasia of the papillae.



FIG. 4-4 Allergic shiners, or dark circles beneath the eyes, in patient with allergic rhinitis.



FIG. 4-6 The allergic salute is characteristic of children with allergic rhinitis and nasal itching and is usually noticed by parents.



FIG. 4-9 Pale, edematous inferior nasal turbinate of patient with allergic rhinitis, as seen through a fiberoptic rhinoscope. Even though this tool is not routinely used in evaluations, the physical findings are well illustrated, including watery nasal secretions.



FIG. 4-8 Characteristic adenoid-type facies in a patient with long-standing allergic rhinitis. Note the open mouth and gaping habitus.

Differential Diagnosis

- **Upper respiratory infection**
- **Chronic sinusitis**
- **Anatomical nasal obstruction**
 - **Concha bullosa**
 - **Deviated nasal septum**
 - **Nasal polyps**
 - **Adenoidal hypertrophy**
- **GERD**

Should you refer for skin testing?

NO

- Hx suggestive for AR
- Trial of appropriate therapy successful
- Symptoms mild and easily managed
- Mechanical, anatomical, or infectious causes

YES

- Poor response to therapeutic trial
- Drastic environmental changes are considered
- Strong desire for immunotherapy

Major Treatment Options

- Environmental control
 - Avoidance of “triggers”
- H1 antagonists
 - Cornerstone of treatment for AR
- Oral and nasal decongestants
 - Effectively reduce nasal congestion
- Nasal corticosteroids
 - Indicated for moderate-to-severe AR
- Immunotherapy
 - Indicated for severe AR, failure or intolerance of other treatments, prevention of onset or worsening of comorbid conditions

Pharmacologic Management

Agent	Sneezing	Itching	Congestion	Rhinorrhea	Eye
OA	+++	+++	+/-	++	++
NA	+	+	+/-	+	-
ICS	++	++	+++	++	+
OD	-	-	++	-	-
ND	-	-	+++	-	-
MCS	+	+	+	+	-
IND	-	-	-	++	-

Antihistamines

- **1st generation:**
 - Hydroxyzine (Atarax[®])**
 - Diphenhydramine (Benadryl[®])**
 - Chlorphenarimine (CTM[®])**
- **2nd generation:**
 - Certirizine (Zyrtec[®])**
 - Loratidine (Claritin[®])**
 - Fexofenadine (Allergra[®])**
 - Desloratadine (Clarinex[®])**

Second-Generation Oral Antihistamines

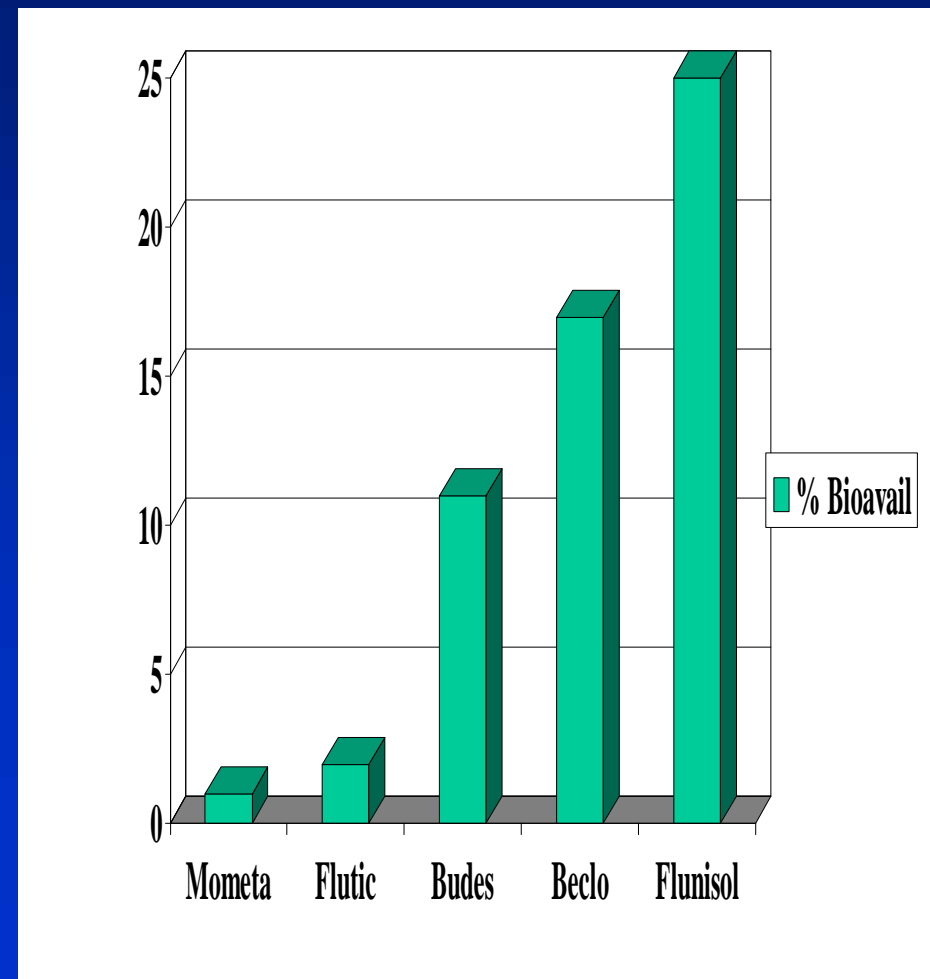
- Available second-generation agents
 - Cetirizine, loratadine, fexofenadine
- First-line therapy for AR
 - All reduce itching, sneezing, rhinorrhea, and allergic conjunctivitis
 - Less effective in reducing nasal congestion
- Second-generation agents are generally well tolerated
- No clinically significant prolongation of QTc intervals

Nasal sprays

- **Nasal steroids**
- **Cromolyn (Nasocrom[®])**
- **Oxymetolazone (Afrin[®])**
- **Nasal saline (Ocean[®])**

Nasal steroids

- **Mometasone (Nasonex[®])**
- **Fluticasone (Flonase[®])**
- **Budesonide (Rhinocort[®])**
- **Vancenase (Beclomethasone[®])**
- **Flunisolide (Nasalide[®])**



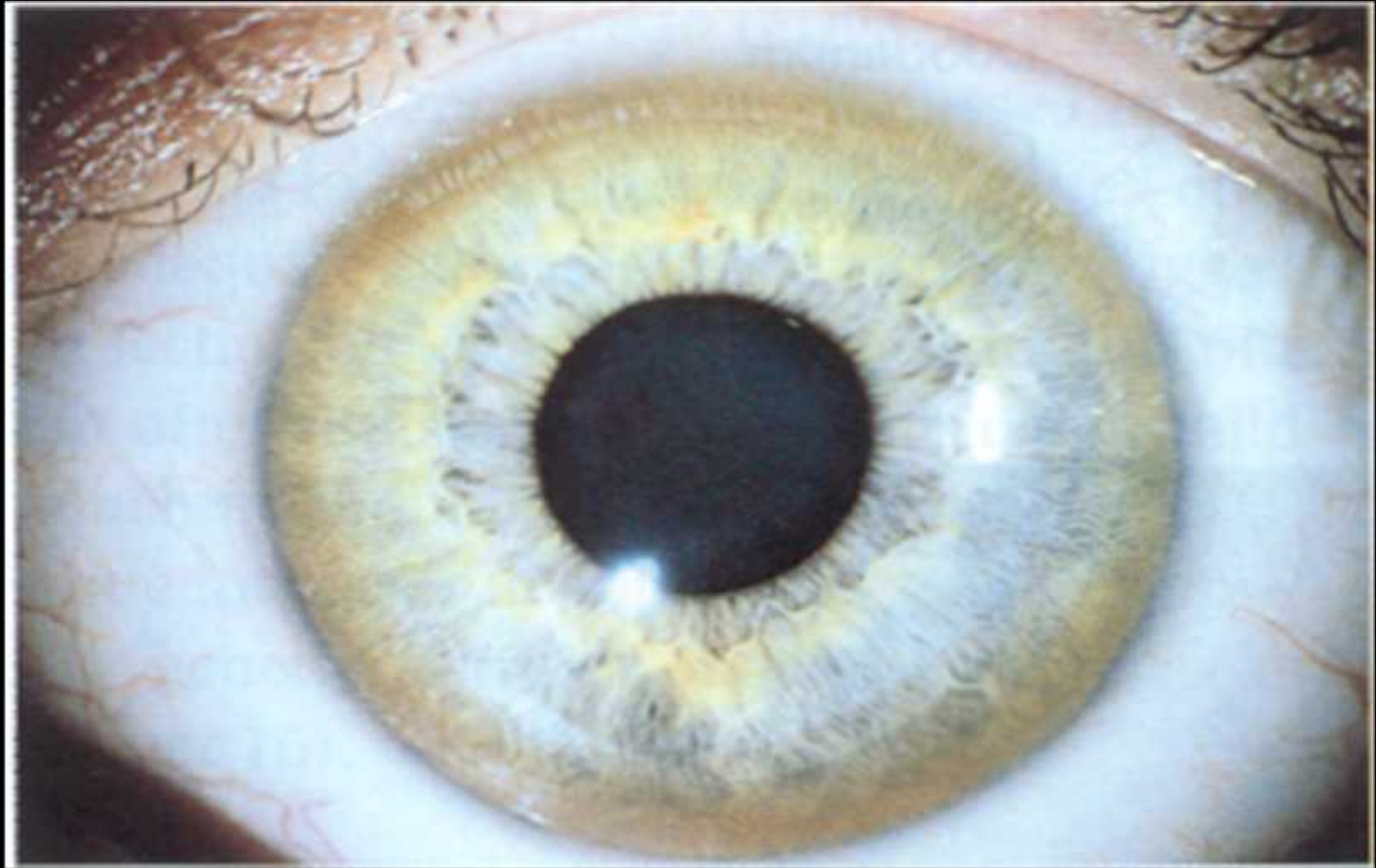
Immunotherapy

- Rise in IgG “blocking” antibodies
- Reserved for patients who find it difficult to avoid allergens but do not respond adequately to pharmacologic therapy
- Children > 7 years old

Allergist Referral

- **Symptoms should exceed 6 weeks and present for at least 2 years in a row**
- **Inadequate relief after one month of continuous treatment**
- **Intolerable side effects**
- **Complications of allergy**
- **Patients moving into the area already on immunotherapy**







MATCH

