



Defining the Role of the Allergist in EoE Management

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Learning Objectives

- Review the role of type 2 (T2) inflammation in EoE
- Discuss the role of the allergist in EoE diagnosis and management
- Introduce promising testing modalities that may be effective at monitoring disease activity in EoE

Definition of EoE (2025)

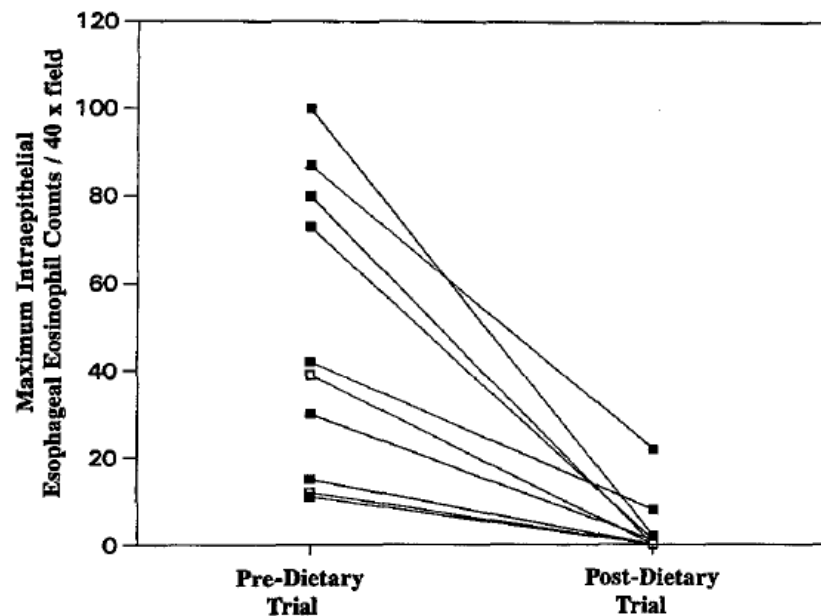
- **A clinicopathologic disorder defined by the following criteria:**
 - Symptoms related to esophageal dysfunction
 - Eosinophil-predominant inflammation on esophageal biopsy (≥ 15 eos/hpf)
 - Secondary causes of esophageal eosinophilia are excluded

EoE is an Allergic Disease

- >85% of patients with EoE have other allergic conditions
 - ❑ Atopic Dermatitis (eczema): 40-60%
 - ❑ Allergic Rhinitis: 40-74%
 - ❑ Asthma: 40-70%
 - ❑ Food Allergy: 15-43%
- Inflammation is characterized by eosinophils and mast cells
- EoE is associated with a T2 profile (IL-4, IL-5, IL-13)

Role of Food Allergens

- Elemental and empiric elimination diets can induce disease remission
- Most common triggers: milk, wheat, egg, legumes
- Unfortunately, we do not yet know how allergens trigger EoE



Role of Aeroallergens

- Aeroallergens can be the sole driver of inflammation in some patients
- Seasonal variation in inflammation and symptoms is seen
- Dust mite and cockroach can drive inflammation in EoE mouse models



Reed CC *et al*, Ann Allergy, 2018
Mishra A *et al*, J Clin Invest, 2001



What is the Allergist's Role?

- Recognize EoE symptoms in allergy patients
- Manage other allergic comorbidities
- Optimize food elimination diets
- Monitor disease activity over time



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Is this just the tip of the iceberg?



The diagnosis requires an endoscopy

Symptoms are gradually progressive

Lack of access to specialty providers

Patients modify eating behaviors

Other financial barriers to care

We rarely ask questions about dysphagia





Questions

- What is the prevalence of EoE symptoms in an allergy clinic population?
- Do any of those patients have undiagnosed EoE?

Pilot Study



1. Allergy Clinic Patients

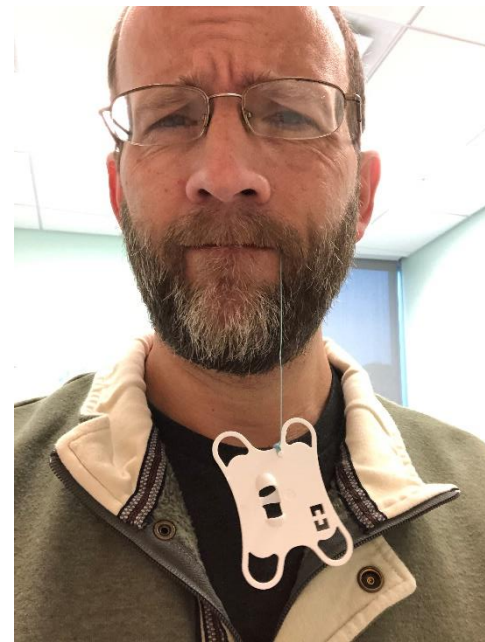
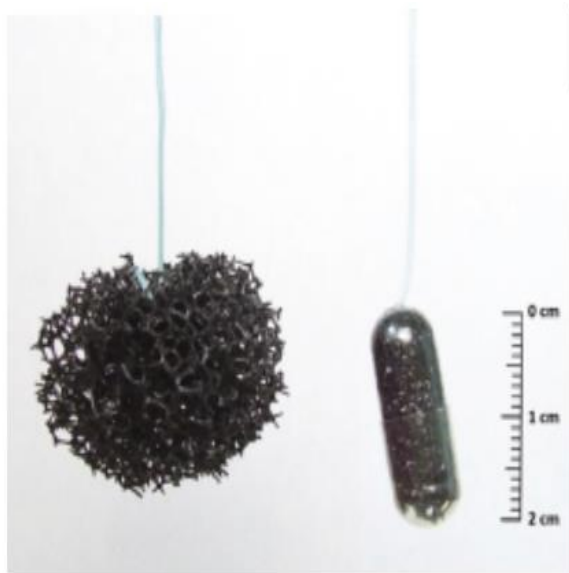
- Asthma
- Allergic Rhinitis
- IgE-Mediated Food Allergy
- Eczema

2. Unselected Adults

	Atopics n=101	Control N=102	P-value
Trouble eating solid food			
Once or more in the last 14 days	27 (26.7%)	2 (2.0%)	p<<0.001
Rarely/ Never	71 (71.0%)	100 (98.0%)	
Coughing or choking while swallowing food			
Once or more in the last 14 days	42 (41.6%)	2 (2.0%)	p<<0.001
Rarely/ Never	57 (56.4%)	100 (98%)	
Pain/Discomfort with eating solid food			
Once of more in the last 14 days	33 (32.7%)	4 (3.9%)	p<<0.001
Rarely/Never	60 (65.2%)	98 (96.1%)	
In the last 12 months.....Had Food stuck in your throat for 30 min.			
Once	3 (3%)	0 (0.0%)	p<<0.001
Twice	4 (4%)	0 (0.0%)	
More than Twice	5 (5%)	0 (0.0%)	

Both groups completed the Brief Esophageal Dysphagia Questionnaire

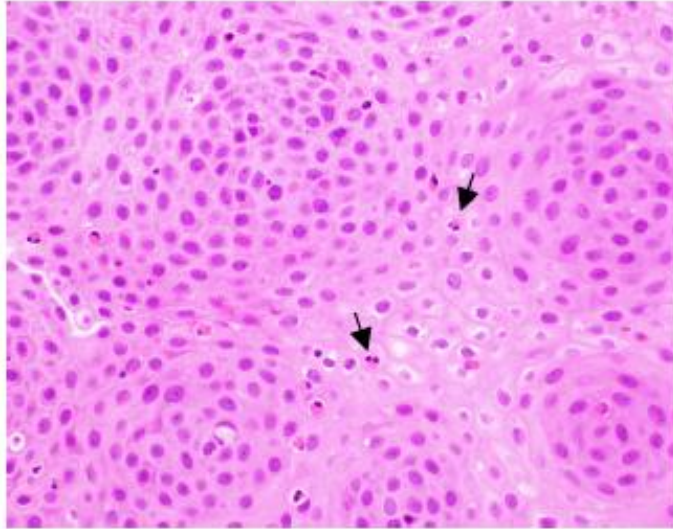
The Cytosponge



Eosinophils via the Cytosponge



A. Biopsy histology



B. Cytosponge cytology

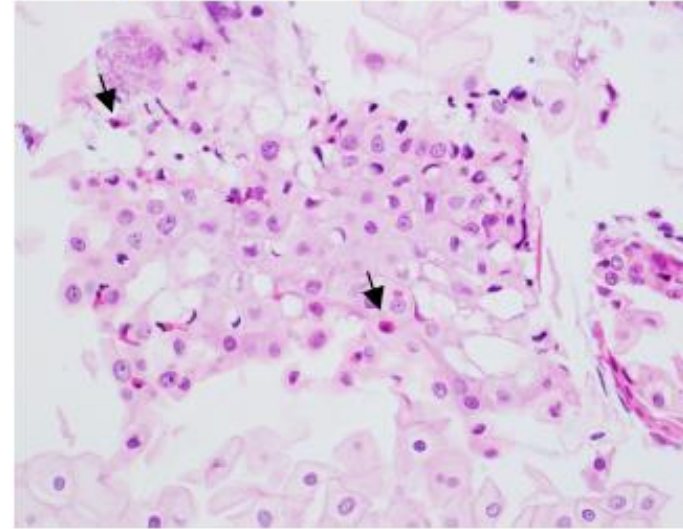
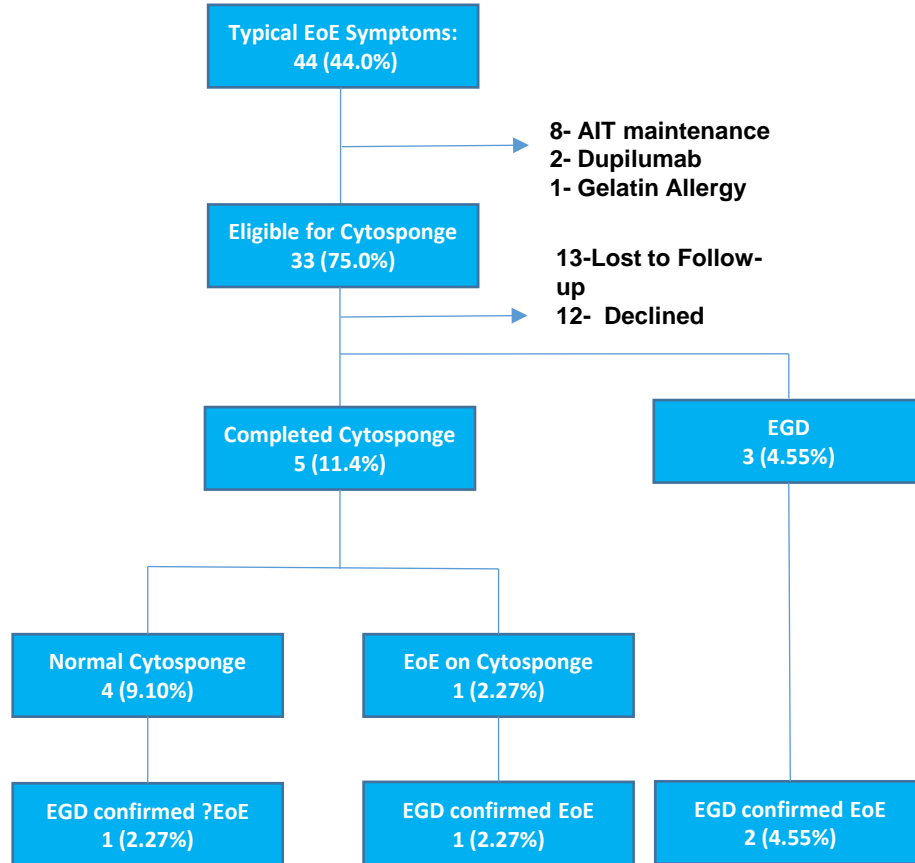


Figure 1: Histology obtained via esophageal biopsy and Cytology obtained via the Cytosponge in the same individual with EoE. Arrows represent eosinophils.



**Weighted estimate of EoE:
8.8 – 16.5% of allergy
patients**



Study Take-Home Points

- The prevalence of EoE symptoms in allergy patients is very high
- There is likely undiagnosed EoE in patients with other allergic conditions
- As allergists, we should always ask about symptoms of dysphagia!

IMPACT Symptoms

- **I**mbibe fluids
- **M**odify foods
- **P**rolonged meal times
- **A**void certain textures
- **C**hew excessively
- **T**urn away tablets/pills



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Allergic Rhinitis

- More EoE diagnoses in the spring, summer, and fall
- More food impactions in the summer and fall
- Pollen exposure may affect elimination diet efficacy:
 - During birch season: 21.4%
 - Outside of birch season: 77.3%
- Could allergy shots help?



Fahey L *et al*, *JPGN*, 2017
Ekre M *et al*, *Dis Esoph*, 2020
Visaggi P *et al*, *Am J Gastro*, 2023

IgE-mediated Food Allergy (FA)



- Prevalence of EoE among those with FA: ~5%
- High prevalence of baseline esophageal eosinophilia:
 - 38% of children with milk allergy
 - 14% of adults with peanut allergy
- Can be a result of oral immunotherapy (2.7 – 5.1%)
- Patients may develop FA after elimination diets

Hill D et al, *JACI-IP*, 2017; Guarnieri KM et al, *JACI-IP*, 2023
Barbosa AC et al, *JACI-IP*, 2018; Wright BL et al, *Front Immunol*, 2018

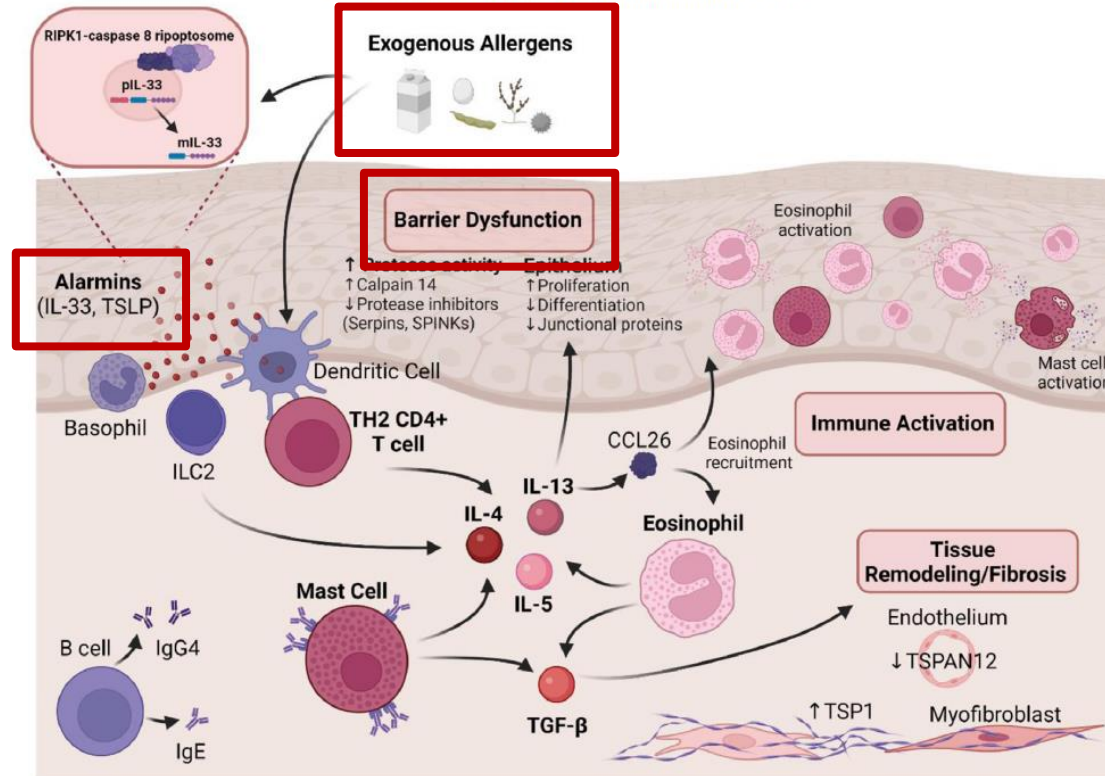


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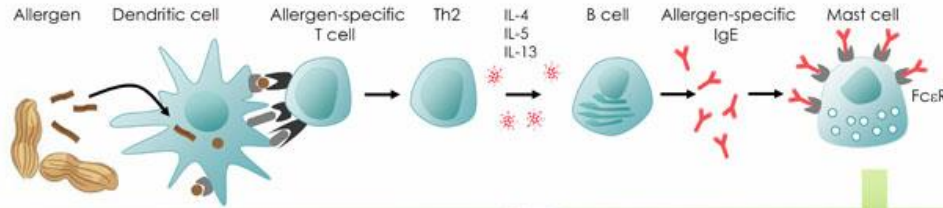
Pathophysiology

B. Underwood et al. / Ann Allergy Asthma Immunol 130 (2023) 28–39

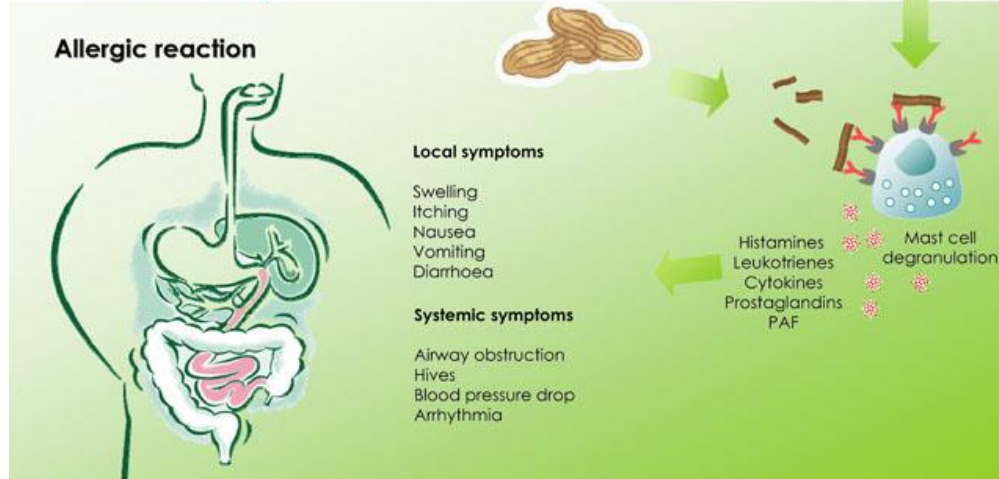


IgE-Mediated Food Allergy

Sensitisation



Allergic reaction



Allergy-Testing Directed Diets

- Has been studied in both children and adults
- Overall efficacy: 45%
 - ☐ Children: 48%
 - ☐ Adults: 32%
- **No longer recommended to guide therapy**
- Still a role for allergy testing to assess:
 - ☐ Aeroallergen sensitization
 - ☐ Risk of IgE-mediated reactions

Updated EoE Guidelines



CLINICAL GUIDELINES

31

CME

ACG Clinical Guideline: Diagnosis and Management of Eosinophilic Esophagitis

Evan S. Dellon, MD, MPH, FACP¹, Amanda B. Muir, MD^{2,3,4}, David A. Katzka, MD, FACP⁵, Shailja C. Shah, MD, MPH^{6,7}, Bryan G. Sauer, MD, MSc, FACP⁸, Seema S. Aceves, MD, PhD^{9,10}, Glenn T. Furuta, MD^{11,12}, Nirmala Gonsalves, MD, FACP^{13,*} and Ikuo Hirano, MD, FACP^{13,*†}

Dellon ES *et al*, AJG, 2025



Dietary Therapy

1. “We suggest an empiric food elimination diet as a treatment for EoE.”
 - ☐ Low quality of evidence, conditional strength
2. “We do not suggest currently available allergy testing to direct food elimination diets for treatment of EoE.”
 - ☐ Very low quality of evidence, conditional strength



Allergist's Role in Diet Therapy

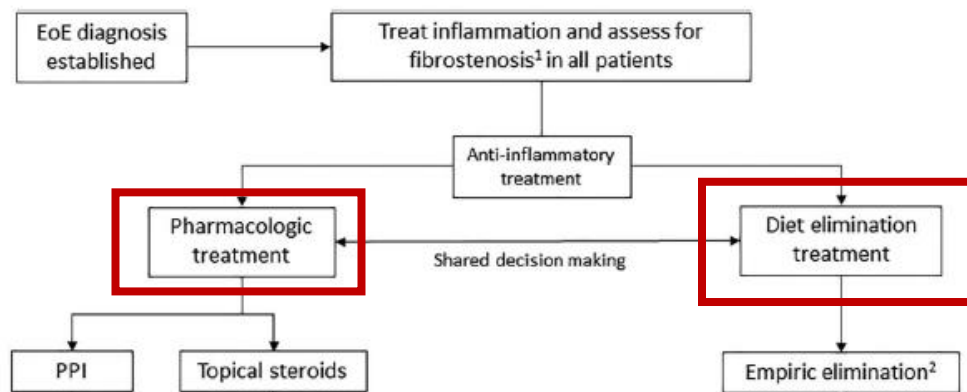
- Educating patients on elimination diets
- Identifying relevant cross-reactivity patterns
- Discussing the nuances of dietary therapy (i.e. baked versus unbaked foods)
- Assisting in food reintroduction
- Differentiating IgE-mediated reactions from EoE

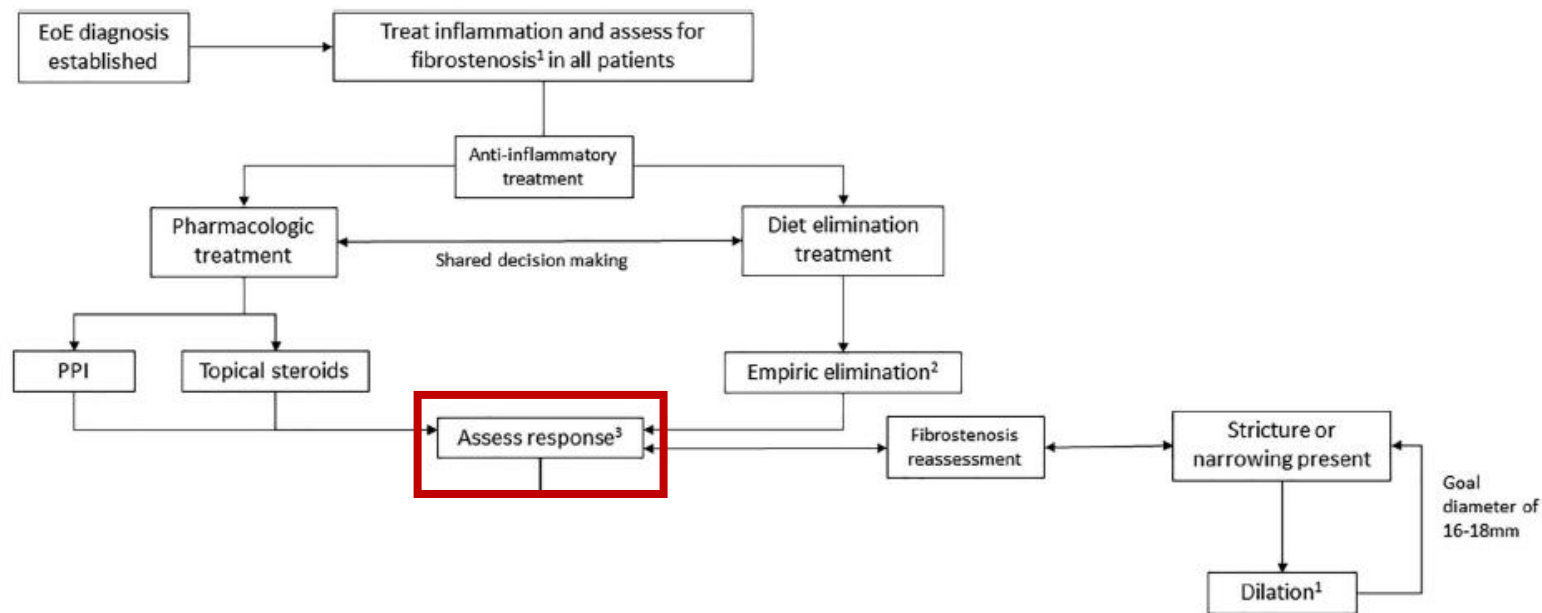


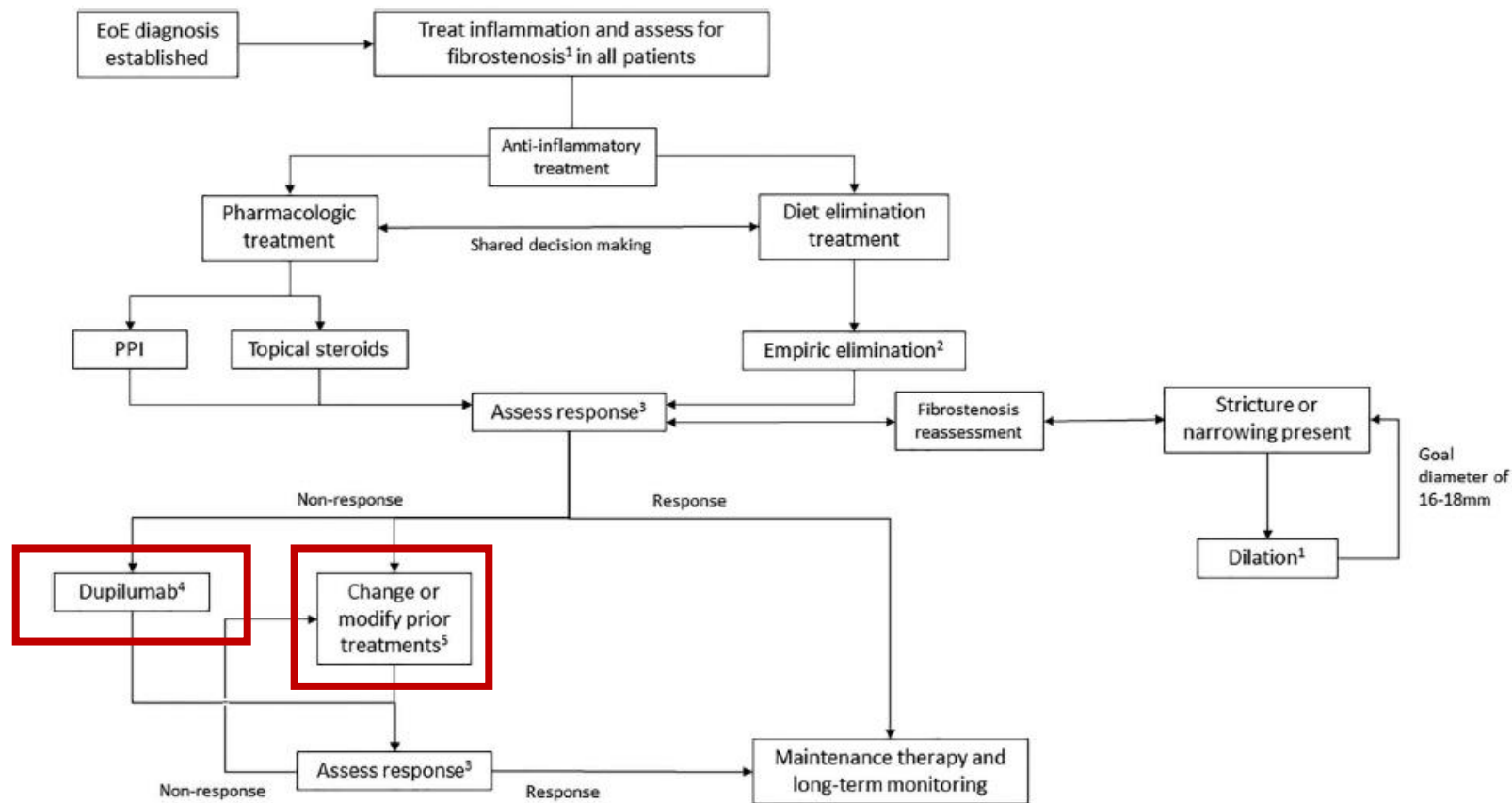
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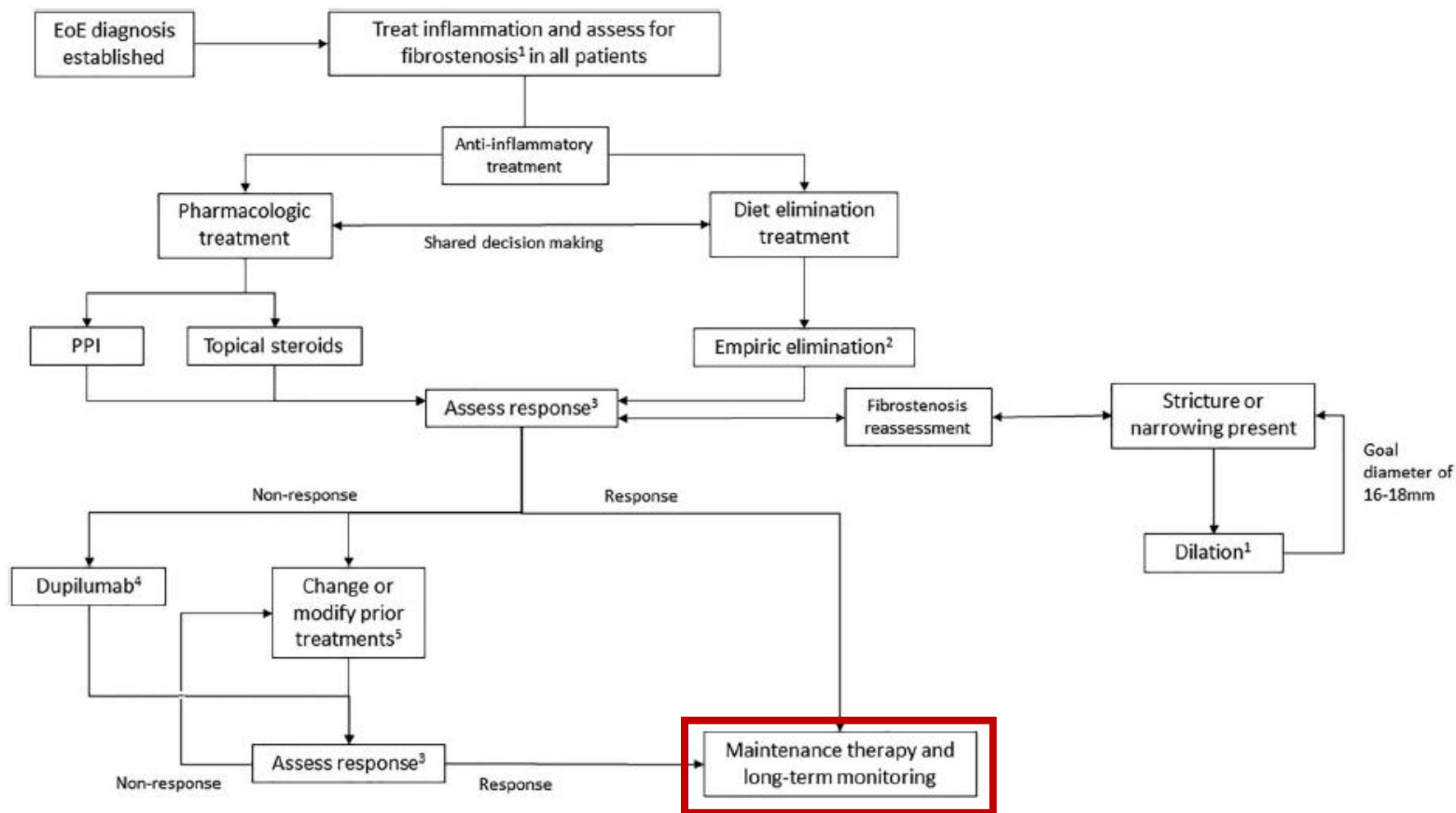
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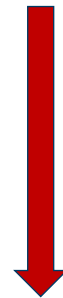




Emerging Diagnostics

- Transnasal endoscopy
- Cytosponge Cell Collection Device
- Esophageal String Test
- ^{99m}Tc Technetium-labeled heparin
- Non-invasive biomarkers

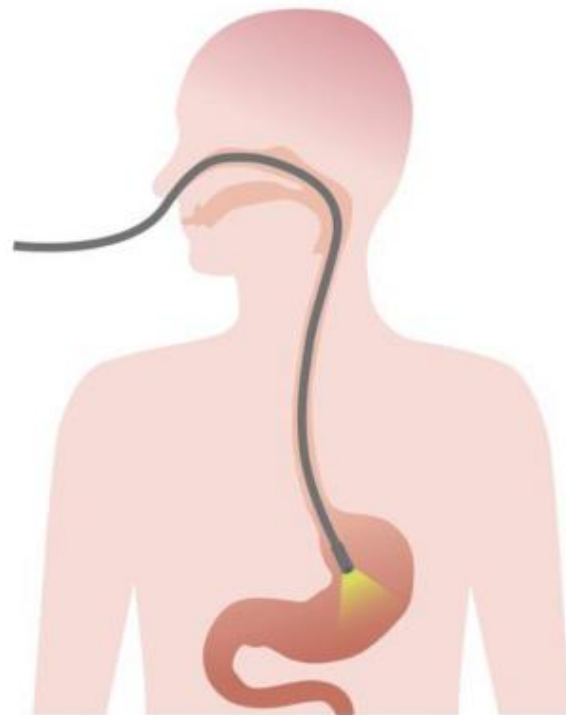
Most invasive



Least invasive

Transnasal Endoscopy (TNE)

- Outpatient procedure
- Takes 5-15 minutes
- Ultrathin endoscope is inserted through the nose and down the esophagus to the stomach
- Biopsies are taken of esophageal tissue
- Virtual reality goggles can be used for patient distraction



Strengths and Limitations

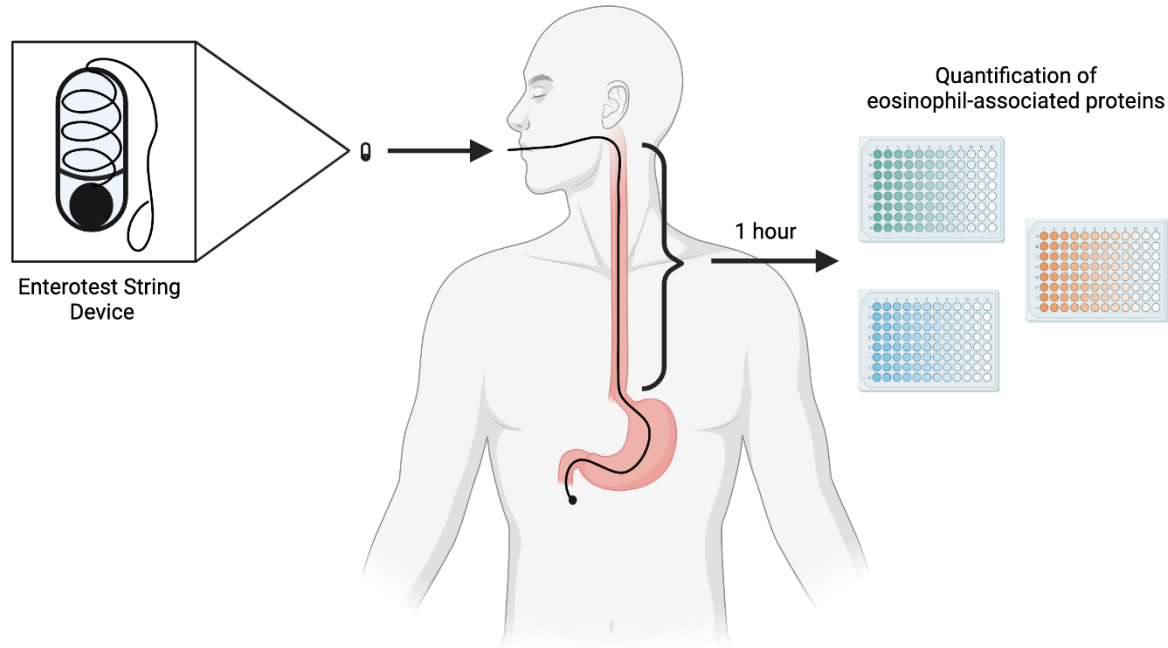
Strengths

- Can be used in pediatric population
- Provides direct visualization of esophagus
- Biopsy samples are similar to conventional endoscopy
- Could be performed by Allergy/ENT

Limitations

- Need for distraction technique (i.e. virtual reality goggles)
- Specialized training required
- May have limited utility in adults
- Cost is lower, but still high

Esophageal String Test



Strengths and Limitations

Strengths

- Has been studied in pediatric and adult patients
- Correlates with histology and endoscopic findings
- "EoE Score" can be used to classify patients
- No specialized equipment is necessary

Limitations

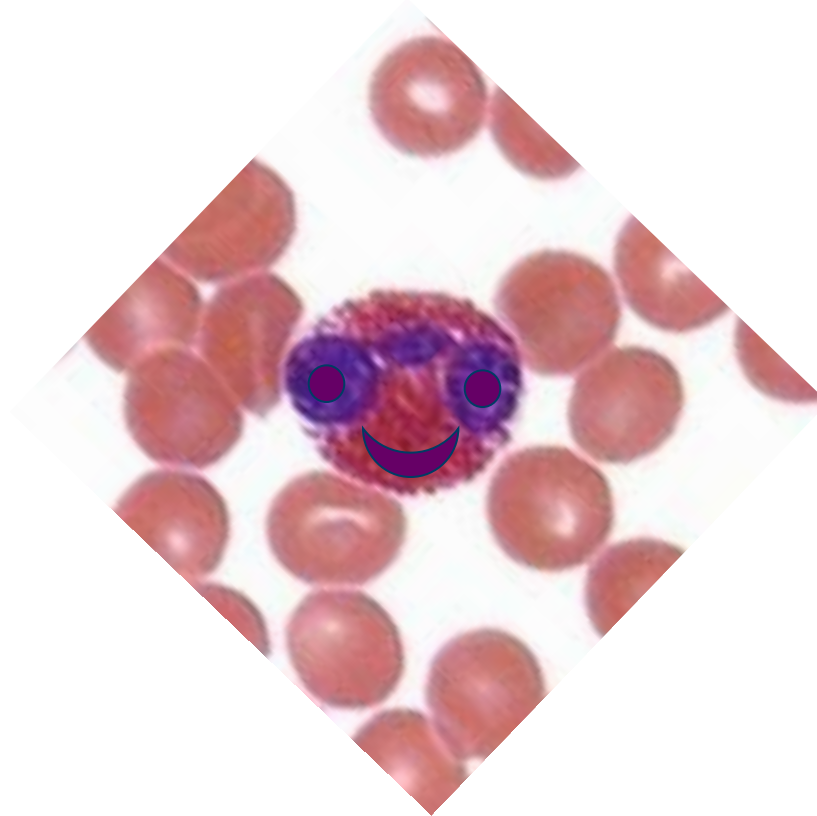
- Some patients were not able to swallow the string (16%)
- The string must remain in place for 1 hour

Summary



- EoE is an allergic disease characterized by Type 2 inflammation
- Standard allergy tests are based on IgE — which doesn't drive EoE — and allergy testing-directed diets are no longer recommended
- Allergists play an important role in identifying high-risk patients, managing allergic comorbidities, guiding elimination diets, and monitoring disease activity

Thank You!





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