

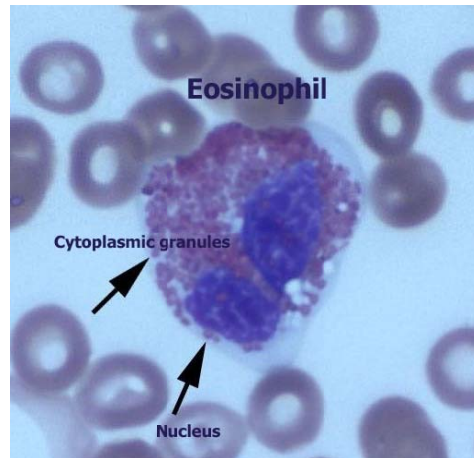
## Eosinophilic Esophagitis (EE)

American Partnership for Eosinophilic Disorders

### What is an Eosinophil?

Eosinophils, a type of white blood cell, are an important part of the immune system, helping us fight off certain types of infections, such as parasites. Many different problems can cause high numbers of eosinophils in the blood including allergies (food and environmental), parasite infection, eosinophil associated gastrointestinal disorders, leukemia, and other problems. When eosinophils occur in higher than normal numbers in the body, without a known cause, an eosinophilic disorder may be present.

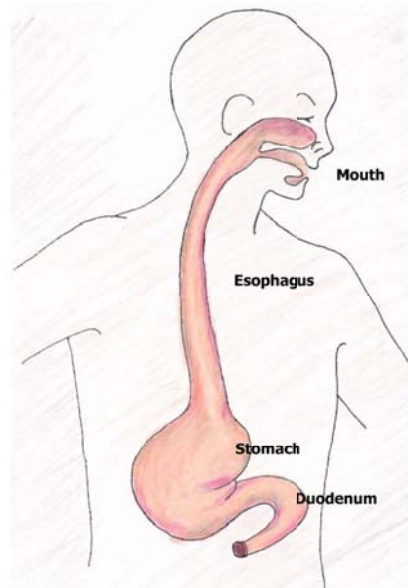
Eosinophilic disorders are further defined by the area affected. For instance, eosinophilic esophagitis means abnormal numbers of eosinophils in the esophagus. Separate files are available for individual disorders: Eosinophilic esophagitis, Eosinophil-associated gastrointestinal disorders, and Hypereosinophilic syndrome.



*Image 1: Eosinophil, Courtesy of Dr. Margaret Collins*

### What is EE?

Eosinophilic esophagitis is characterized by the infiltration of a large number of eosinophils, a type of white blood cell, in the esophagus (the tube connecting the mouth to the stomach). Eosinophils are an important part of the immune system, helping us fight off certain types of infections, such as parasites. A variety of stimuli may trigger this abnormal production and accumulation of eosinophils, including certain foods. Eosinophilic esophagitis means eosinophils infiltrating the esophagus, -itis means swelling. People with EE commonly have other allergic diseases such as asthma or eczema. EE affects people of all ages, gender and ethnic backgrounds. In certain families, there may be an inherited (genetic) tendency.



*Image 2: Upper gastrointestinal tract*

Eosinophils are not normally present in the esophagus, although they may be found in small numbers in other areas of the gastrointestinal tract. Diseases other than EE can cause eosinophils in the esophagus including gastroesophageal reflux diseases (GERD), food allergy, and inflammatory bowel disease. EE cannot be accurately diagnosed without first treating for reflux with acid blocking medicines, such as proton pump inhibitors.

#### **What are the symptoms of EE?**

Symptoms vary from one individual to the next and may differ depending on age. Vomiting may occur more commonly in young children and difficulty swallowing in older individuals. Common symptoms include:

- Reflux that does not respond to usual therapy (which includes proton pump inhibitors, a medicine which stops acid production in the stomach)
- Difficulty swallowing (dysphagia)
- Food impactions (food gets stuck in the throat)
- Nausea and Vomiting
- Failure to thrive (poor growth or weight loss)
- Abdominal or chest pain
- Poor appetite
- Malnutrition
- Difficulty sleeping

#### **How is EE diagnosed?**

In individuals with symptoms consistent with EE, an upper **endoscopy with biopsies** is needed for the diagnosis. The endoscopy is often performed after treatment with reflux medications have failed to relieve the symptoms. Medications for reflux include proton pump inhibitors or histamine-2 blockers.

During an upper endoscopy, the gastroenterologist looks at the esophagus, stomach and duodenum (first part of the small bowel) through an endoscope (small tube

inserted through the mouth) and takes multiple small tissue samples (biopsies) which the pathologist reviews under the microscope. Even if the esophagus appears normal, the biopsies may show EE. A high number of eosinophils (counted per high power field) suggest the diagnosis of EE. GERD also causes eosinophils in the esophagus, but typically far fewer. The pathologist will also look for tissue injury, swelling and thickening of the esophageal layers. With EE, the eosinophils are limited to the esophagus and not found in other areas. Once the diagnosis of EE is confirmed, food allergy testing is typically recommended to guide treatment. Skin prick testing to different foods is the most common type of allergy testing.

### **Treatment**

- Dietary
- Medications

Most children and adults with EE respond favorably to dietary treatments. The dietary restrictions are guided by food allergy testing and 'fine-tuned' with food trials once the symptoms have resolved.

**Elimination** diets, in which all 'positive' foods on allergy testing are removed from the diet, are one type of dietary treatment. An elimination diet may be the only treatment needed for some individuals with eosinophilic esophagitis.

**Elemental diets**, in which all sources of protein are removed from the diet, are another dietary therapy. The elemental diet includes only an amino acid formula (building blocks of protein), no whole or partial proteins. Simple sugars, salt and oils are permitted on an elemental diet.

**Food trials** involve adding back one ingredient at a time to determine specific foods causing a reaction. Food trials begin after symptoms resolve and eosinophils have cleared.

**Medications** for EE most commonly include steroids to control inflammation and suppress the eosinophils. Steroids are used if dietary measures do not resolve the symptoms. Steroids can be taken orally, intravenously or topically (swallowed from an asthma inhaler).

Patients with EE may require additional endoscopies to assess how the esophagus is responding to specific treatment.

The initial diagnosis of EE can be overwhelming and often affects the entire family. A positive attitude and a focus on non-food activities go a long way in learning to live with EE. With proper treatment, individuals with EE can lead a normal life.

### About APFED

American Partnership for Eosinophilic Disorders (APFED) is a non-profit organization dedicated to patients and their families coping with eosinophilic disorders. Our mission is **Education, Awareness, Support** and **Research**. All medical information is reviewed for accuracy by our medical advisory board.

Updated 5-5-05, Wendy Book, mail@apfed.org

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