



EOSINOPHILIC ESOPHAGITIS (EoE)

Eosinophilic (ee-uh-sin-uh-fil-ik) esophagitis (EoE) is a recognized chronic allergic/immune condition. A person with EoE will have inflammation of the esophagus. The esophagus is the tube that sends food from the mouth to the stomach.

In EoE, large numbers of white blood cells called eosinophils are found in the tissue of the esophagus. Normally there are no eosinophils in the esophagus. The symptoms of EoE vary with age. In infants and toddlers, you may notice that they refuse their food or are not growing properly. School-age children often have recurring abdominal pain, trouble swallowing or vomiting. Teenagers and adults most often have difficulty swallowing, particularly dry or dense, solid foods. The esophagus can narrow to the point that food gets stuck. This is called food impaction and it is a medical emergency.

Allergists and gastroenterologists are seeing many more patients with EoE. This is due to an increased incidence of EoE and greater physician awareness. EoE is considered to be a chronic condition and is not outgrown.

Other diseases can also result in eosinophils in the esophagus. One example is **acid reflux**. Proton-pump inhibitors (PPIs) are medications that help reduce stomach acid production. These drugs are commonly used to treat heartburn, GERD (gastroesophageal reflux disease) and other conditions caused by too much stomach acid. Proton-pump inhibitor responsive esophageal eosinophilia or PPI-REE is a condition that has the same symptoms and esophageal biopsy findings as EoE. However, after a trial of PPIs, symptoms resolve and repeat esophageal biopsies are normal.

DIAGNOSING EOSINOPHILIC ESOPHAGITIS

Currently the only way to diagnose EoE is with an endoscopy and biopsy of the esophagus. An endoscopy is a medical procedure that lets your doctor see what is happening in your esophagus. During a biopsy, tissue samples will be taken and analyzed.

There are certain criteria for diagnosing EoE that are followed by gastroenterologists, pathologists and allergists. These include symptoms consistent with EoE, a visual look at the esophagus during the endoscopy procedure and careful evaluation of tissues taken from the esophagus by a pathologist.

Eosinophilic Esophagitis and Allergies

The majority of patients with EoE are atopic. An atopic person is someone who has a family history of allergies or asthma and symptoms of one or more allergic disorders. These include asthma, allergic rhinitis, atopic dermatitis (eczema) and food allergy. EoE has also been shown to occur in other family members. After the diagnosis of EoE has been made by a gastroenterologist, you may be referred to an allergist for allergy testing. It will provide you, your family and the gastroenterologist with information so that any allergic aspects of EoE can be properly treated. It may also help plan diet therapy and eventual reintroduction of foods to your diet.

Eosinophilic Esophagitis: Environmental Allergies

Environmental allergies to substances such as dust mites, animals, pollen and molds can play a role in EoE. For some patients, it may seem like their EoE is worse during pollen seasons. Allergy testing for these common environmental allergies is often part of the EoE evaluation.

Eosinophilic Esophagitis: Food Allergies

Adverse immune responses to food are the main cause of EoE in a large number of patients.

Allergists are experts in evaluating and treating EoE related to food allergies. However the relationship between food allergy and EoE is complex. In many types of food allergy, the triggers are easily diagnosed by a history of a severe allergic reaction like hives after ingestion of the food. In EoE, it is more difficult to establish the role of foods since the reactions are delayed, and can develop over days, making it harder to pinpoint a specific food as the trigger. Allergists may do a series of different allergy tests to identify the foods causing EoE. Foods such as dairy products, egg, soy and wheat are the main causes of EoE. However allergies to these foods often cannot be easily proven by conventional allergy tests (skin tests, patch tests or blood tests). This is because most food allergy reactions in EoE are delayed, caused primarily by immune mechanisms other than classical IgE-mediated food allergy. Once a causative food has been removed from a person's diet, symptoms generally improve in a few weeks.

Eosinophilic Esophagitis: Prick Skin Testing

People who have allergies react to a particular substance in the environment or their diet. Any substance that can trigger an allergic reaction is called an allergen.

Prick skin testing introduces a small amount of allergen into the skin by making a small puncture with a prick device that has a drop of allergen. Foods used in allergy testing sometimes come from commercial companies. Occasionally foods for skin prick testing are prepared fresh in the allergist's office or supplied by the family.

Allergy skin testing provides the allergist with specific information on what you are and are not allergic to. Patients with allergies have an allergic antibody called Immunoglobulin E (IgE). Patients with IgE for the particular allergen put in their skin will have an area of swelling and redness where the skin prick test was done. It takes about 15 minutes for you to see what happens from the test. However, these tests may have limited use in identifying foods causing or driving EoE.

Eosinophilic Esophagitis: Blood Tests

Sometimes an allergist may do a blood test (called a serum specific immune assay) to see if you have allergies. This test can be helpful in certain conditions linked to food allergies. While there are limitations to both prick testing as well as blood testing for allergy in EoE, some studies have suggested that prick testing is more helpful than blood testing in EoE, but these studies are few in number and additional research will be needed in this area. There are also a number of types of blood testing to look for IgE to foods, and it is possible that research may reveal that some methods may be more helpful than others.

Eosinophilic Esophagitis: Food Patch Tests

Eliminating foods based on prick skin testing alone does not always improve EoE. Food patch testing is another type of allergy test that can be useful in diagnosing EoE in some patients. There is some evidence in studies that it may be relatively more useful in children, but less useful in adults. This test is used to determine if the patient has delayed reactions to a food. The patch test is done by placing a small amount of a fresh food in a small aluminum chamber called a Finn chamber. The Finn chamber is then taped on the person's back. The food in the chamber stays in contact with the skin for 48 hours. It is then removed and the allergist reads the results at 72 hours. Areas of skin that came in contact with the food and have become inflamed may point to a positive delayed reaction to the food. The results from the food patch test may help your doctor see if there are foods you should avoid. It is important to understand that skin prick, allergy blood tests and food patch tests can have false positive tests. This means that these tests may suggest you are allergic to a food that you can

tolerate. Your allergist can help determine when a food can be introduced to help determine if it is a trigger for EoE. It is also possible to have a false negative test, meaning that the prick, blood or patch tests are negative yet that food does contribute towards a patient's EoE.

EOSINOPHILIC ESOPHAGITIS: TREATMENT

Food Testing Directed Diets

If you are diagnosed with specific food allergies after prick skin testing and patch testing your doctor may remove specific foods from your diet. In some individuals this helps control their EoE.

Empiric Elimination Diets

Eliminating major food allergens from the diet before any food allergy testing is also an accepted treatment of EoE. The foods excluded usually include dairy, egg, wheat, soy, peanut, tree nuts and fish/shellfish. These diets have been shown to be very helpful in treating EoE, although they can be very difficult to follow, especially without the help of a dietician with experience in dealing with EoE. Foods are typically added back one at a time with follow up endoscopies to make sure that EoE remains in control.

Elemental Diets

In this diet, all sources of protein are removed from the diet. The patient receives their nutrition from an amino acid formula as well as simple sugars and oils. All other food is removed from the diet. A feeding tube may be needed since many people do not like the taste of this formula. This approach is generally reserved for children with multiple food allergies who have not responded to other forms of treatment.

Medical Therapy

No medications are currently approved by the U.S. Food and Drug Administration (FDA) to treat EoE. However, medications have been shown to reduce the number of eosinophils in the esophagus and improve symptoms. Corticosteroids, which control inflammation, are the most helpful medications for treating EoE. Swallowing small doses of corticosteroids is the most common treatment. Different forms of swallowed corticosteroids are available. At first, higher doses may be needed to control the inflammation but the higher doses are linked with a greater risk of side effects. As a result, once esophageal inflammation is adequately controlled the dose of swallowed corticosteroid is tapered to the smallest dose necessary to maintain control.

Proton pump inhibitors, which control the amount of acid produced, have also been used to help diagnose and treat EoE. Some patients respond well to proton pump inhibitors and have a large decrease in the number of eosinophils and inflammation when a follow up endoscopy and biopsy is done. However, proton pump inhibitors can also improve EoE symptoms without making the inflammation any better. Researchers are now looking into using them to manage EoE. Careful monitoring by a physician knowledgeable in treating EoE is very important.

New types of treatment which could greatly help patients are being studied.

Working with Your Doctors

EoE is a complex disorder. It's important for patients to listen to their gastroenterologist for advice on managing EoE and figuring out when endoscopies are needed to check to see if the condition is getting better or worse. Patients also need to work closely with their allergist / immunologist to find out if allergies are playing a role. An allergist / immunologist will also be able to tell if you need to avoid any foods and can help you manage related problems like asthma and allergic rhinitis. If you are following a diet to treat your EoE, it's often recommended to visit a registered dietitian (RD).

It's important to have cooperation among physicians and families. When you first find out you have EoE, it can be overwhelming. Families often benefit from participating in support groups and organizations. Visit [**APFED**](#) and [**CURED**](#). These are two lay organizations that have ongoing relationships with the AAAAI.

Your [**allergist / immunologist**](#) can give you more information on EoE, allergy testing and treatment.

Video - What is EoE?

ADDITIONAL INFORMATION

2017 Non-CME Recordings »

What role does genetics play in Eosinophilic Esophagitis? »

Role of organ-specific responses in allergy? »

Dietary Therapy and Nutrition Management of Eosinophilic Esophagitis: A Work Group Report of the American Academy of Allergy, Asthma, and Immunology »

[Eosinophilic esophagitis can occur in common variable immunodeficiency despite antibody dysfunction »](#)

[Elimination diets in eosinophilic esophagitis: wheat-free or wheat, barley and rye-free? »](#)

[Long term control of remodeling in pediatric eosinophilic esophagitis »](#)

[Elevated eosinophil levels may signal rare blood cancers »](#)

[Hope for patients who failed eosinophilic esophagitis initial standard treatment »](#)

[Study finds increased prevalence of Eosinophilic Esophagitis in racial minorities »](#)

[IgE ab to minor milk proteins may identify the proteins that are relevant to eosinophilic esophagitis »](#)

[Symptoms gauge pathogenic features of eosinophilic esophagitis in children »](#)

[Environment is key to understanding eosinophilic esophagitis »](#)

[Nutritional Impact of Dietary Therapy in Pediatric Eosinophilic Esophagitis »](#)

[Optimizing empiric elimination diets for eosinophilic esophagitis in adults »](#)

[Eosinophilic Esophagitis in black children: An overlooked population? »](#)

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