




Eosinophilic Gastrointestinal Disorders

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Eosinophilic gastrointestinal disorders (EGIDs) are rare conditions that affect the gastrointestinal (GI) tract. EGIDs can occur in infants, children, and adults. They are often identified by irregular food-related reactions. This occurs with a high number of eosinophils in the GI tract. Eosinophils are white blood cells linked with allergic-type reactions. Their exact role is not known, but they are part of the body's immune response. These cells release toxins that are harmful to the body. Inflammation occurs when these are active, which causes redness and swelling. Immune response is the body's ability to recognize foreign objects that might be harmful, such as bacteria and viruses. The body then destroys them by using specialized cells, eosinophils. EGIDs can occur in any area of the GI tract and are named to match the organs affected. People with EGID's may have more than one of these disorders.

Overview of Eosinophilic gastrointestinal disorders (EGIDs)

EGID's can occur throughout the body. In this article we will discuss the four EGID's affecting the GI tract:

- **Eosinophilic Esophagitis (EoE):** high numbers of eosinophils occur in the esophagus. The esophagus is the muscular tube that passes food from the mouth to the stomach. This is the most common EGID.
- **Eosinophilic Gastritis (EG):** high numbers of eosinophils occur in the stomach.
- **Eosinophilic Gastroenteritis (EGE):** high numbers of eosinophils occur in both the stomach and small intestine.
- **Eosinophilic Colitis (EC):** high numbers of eosinophils occur in the large intestine (colon).

The **duodenum** is the beginning of the small intestine.
The **anus** is the lower opening of the GI tract.
The **rectum** is the final portion of the GI tract that stores bowel

Diagnostic tests for EGIDs are similar among all four types. The diagnosis should start with a detailed medical history review. It is important to consider all symptoms and conditions a person has. When a healthcare provider suspects EoE, they will likely choose to test the entire GI tract. This will show if any other EGIDs are present. Testing is always completed to confirm a diagnosis. Either an upper endoscopy or colonoscopy will be done to do so.

The test chosen depends on the area of the GI tract being looked into.

- An **endoscopy** is a simple test that does not involve cutting into the body. A physician using a long flexible tube called an endoscope. It is placed into the mouth, down the esophagus, and into the stomach and beginning of the small intestine. This tube has a camera and light on the end. This tool allows your physician to see inside your GI tract during the test.
- A **colonoscopy** is a similar test that examines the lower portion of the GI tract. This flexible tube is inserted through the anus, into the rectum and large intestine.

Both of tests are done with anesthesia. This is often referred to as "sleeping" through the test. A specialist, known as an anesthesiologist, gives patients the drug. This drug causes you to lose feeling or awareness before the procedure. During the test, your physician will take biopsies to further check the health of your GI tract. A biopsy is a small tissue sample that is removed from an organ. This sample is then reviewed to find the number of eosinophils present. Biopsies are an important part of an accurate diagnosis.

These tests are important throughout treatment of EGID's after the original diagnosis. They may be repeated to check the disease progress. This makes it easier to track if the disease is worsening or getting better. Regular testing will show if treatment is working or may need changed.



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Eosinophilic Esophagitis (EoE)

This EGID occurs within the esophagus. Eosinophils gather in the esophagus, causing redness, swelling, and damage.

Symptoms

- Reflux – a burning feeling in the esophagus (that does not respond well to acid controlling medication)
- A hard time swallowing
- Food getting stuck in the esophagus
- Nausea – a feeling of sickness with an urge to vomit
- Vomiting – bringing food back up from the stomach
- Poor growth or malnutrition (a lack of proper nutrient intake)
- Abdominal or chest pain – pain varying from dull to sharp that occurs inside the stomach, intestines, or chest
- Poor appetite or refusing to eat
- Problems sleeping in children (often because of the symptoms listed above)

These symptoms can occur in patients of all ages. Certain symptoms are seen more often in specific age groups. Poor growth, lack of appetite and refusing to eat are most common in infants and children. Abdominal pain, vomiting and difficulty swallowing are common in school age children. Food getting stuck in the esophagus is most likely to occur in adults.

Diagnosis

A healthcare provider may also do tests that are not discussed in this fact sheet. These are to see if other conditions might be causing symptoms. Gastroesophageal Reflux Disease (GERD) has many symptoms similar to those of EoE. GERD is a common condition where patients feel burning in their chest and throat. An upper endoscopy is done to look for visible signs of EoE. Biopsies are taken to confirm an EoE diagnosis. The endoscopy will show any damage, inflammation, or thickening of the esophagus wall. The biopsy is reviewed to find the number of eosinophils in the tissue sample. A high number suggests an EoE diagnosis. At least six biopsies of the esophagus are recommended for an accurate diagnosis of EoE. Biopsies are especially important in EoE testing. About

20% of people with EoE can have an endoscopy that appears normal.

Treatment

Treatment of all EGIDs vary from person to person. The symptom severity and other conditions play a role in building a treatment plan.

- Dietary restrictions are one of the most common treatment options for EoE. Food allergy testing may be used to find foods that are causing the increase in eosinophils. The results of this test are then used to develop restriction diets. This type of diet is used to find and eliminate foods that cause symptoms. IFFGD's Dietitian Listing is a resource that allows you to search for a dietitian that is in your area or treats a specific condition.
- Drugs are also a common treatment option for EoE. Examples of these drugs are listed in the table below.
- Many people need topical or systemic corticosteroids (see table) to ease symptoms. These drugs can cause long or short-term symptom improvement. Topical and systemic corticosteroids are man-made drugs. They mimic the hormones naturally found in the body. This can help to control tasks in the body when there are not enough hormones present. One important task of these hormones is to minimize swelling.
- Proton pump inhibitors (PPIs) are used for people who have reflux symptoms. Reflux occurs when there is burning feeling in the throat or chest. PPI's affect the glands in the stomach to reduce the amount of acid they produce.
- Some people with EoE will sometimes feel food getting stuck in their throat. A healthcare provider might suggest dilating the throat to resolve this symptom. This procedure involves inserting a tube or balloon into the narrowed portion of the throat. The tube or balloon then expands to stretch out the muscle.



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Eosinophilic Gastritis (EG) and Eosinophilic Gastroenteritis (EGE)

EG occurs within the stomach. EGE occurs within both the stomach and small intestine. Eosinophils accumulate in these organs, causing redness, swelling, and injury to the tissue there. EG and EGE are most diagnosed in adults from 30 to 50 years of age. Like all EGIDs, EG and EGE can occur at any age.

Symptoms

- Nausea – a feeling of sickness with an urge to vomit
- Vomiting – bringing food back up from the stomach
- Difficulty eating and/or weight loss
- Poor growth (more common in infants and children)
- Abdominal pain – dull to sharp pain that occurs inside the belly, commonly in the stomach or intestines
- Anemia – low blood counts
- Fatigue – feeling low energy, overly tired

Diagnosis

The diagnosis of either EG or EGE is confirmed by an upper endoscopy. Biopsies are taken from the esophagus, stomach, and small intestine. A high number of eosinophils suggests a diagnosis of EG or EGE. A healthcare provider will consider all symptoms with the biopsy results. High numbers of eosinophils can be seen in other conditions such as celiac disease and inflammatory bowel disease (IBD).

Treatment

Treatment of EG and EGE depends on how severe each person's symptoms are. The treatment goal is to reduce the damage, redness, and swelling caused by the disease. A healthcare provider will consider any other drugs the patient is taking.

- Dietary restrictions is one of the most common treatment options for EG and EGE. Food allergy testing may be used to find foods that are causing the increase in eosinophils. The results of this test are then used to develop restriction diets. This type of diet is used to find and eliminate foods that cause symptoms. IFFGD's Dietitian Listing is a resource that allows you to search for a dietitian that is in your area or treats a specific condition.
- Many people need topical or systemic corticosteroids (see table) to ease symptoms. These drugs can cause long or short-term symptom improvement. Topical and systemic corticosteroids are man-made drugs. They mimic the hormones naturally found in the body. This can help to control tasks in the body when there are not enough hormones present. One important task of these hormones is to minimize swelling.



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Eosinophilic Colitis (EC)

EC occurs when eosinophils gather in the large intestine (colon). This then causes redness, swelling, and damage in the intestines.

Symptoms

Infants with EC may have bloody diarrhea. In some cases, this can lead to weight loss, difficulty feeding, and not taking in enough nutrients. Symptoms may be worsened by proteins in cow's milk.

Both children and adults may experience the following symptoms:

- Bloody diarrhea – passing of loose stools that contain blood, blood may be bright red to dark black in color
- Anemia – low blood counts
- Nausea – a feeling of sickness with an urge to vomit
- Vomiting – bringing food back up from the stomach
- Difficulty feeding and/or gaining weight
- Poor growth and weight loss
- Malnutrition – not taking in enough nutrients
- Abdominal pain – dull to sharp pain that occurs inside the belly, commonly in the stomach or intestines
- Fatigue – feeling low energy, overly tired

Diagnosis

EC is most common in infants under 6 months of age. However, children and adults may develop this condition. The diagnosis is confirmed by a colonoscopy. During this test, a biopsy is taken from

the large intestine. A high number of eosinophils suggests EC. High levels of eosinophil can also be seen in other conditions such as celiac disease and inflammatory bowel disease (IBD). It is important that people discuss all symptoms and concerns with their healthcare provider. A full medical history helps to properly rule out other conditions.

Treatment

Treatment of EC is based on each person's symptom severity. The goal is to reduce damage, redness, and swelling in the large intestine. Symptom severity and other medical conditions will be considered to find the best treatment option.

- Like other EGIDs, dietary restrictions may be used to treat EC. Infants often show EC as an allergic response to cow milk protein. Unlike other EGIDs, EC is the least likely to be caused by an allergic response in adults. Food allergy testing may still be used to see if foods are causing the increase in eosinophils. The results of this test are then used to develop restriction diets. This type of diet is used to find and eliminate foods that cause symptoms.
- Drugs may be used to treat EC. Systemic corticosteroids (see table) or other anti-inflammatory drugs to reduce pain, swelling, and redness (such as ibuprofen or naproxen sodium) may be prescribed.



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Conclusion

For all people diagnosed with EGIDs, a treatment plan designed for each person is ideal. Biopsies will be done throughout treatment to manage the disease and check if treatment is effective. It is important to discuss all symptoms with a healthcare provider. A full medical history helps provide an accurate diagnosis. Successful treatment can only happen after a proper diagnosis. Early diagnosis is important to ensure the best symptom relief and overall health. Building a healthcare team will ensure the best care and disease management. This team may include a gastroenterologist, allergist, pathologist, dietitian, and any other relevant healthcare provider.

About IFFGD

The International Foundation for Gastrointestinal Disorders (IFFGD) is a 501(c)(3) nonprofit education and research organization. We work to promote awareness, scientific advancement, and improved care for people affected by chronic digestive conditions. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. Founded in 1991, we rely on donors to carry out our mission. Visit our website at: www.iffgd.org.

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Common Treatment options for Eosinophilic gastrointestinal disorders (EGIDs)	
Drug	Brand name examples
Systemic Corticosteroid	
Prednisone	Rayos, Prednisone Intensol, and Deltasone
Proton Pump Inhibitors	
Pantoprazole	Protonix
Rabeprazole	AcipHex
Omeprazole	Prilosec OTC, Zegerid OTC, OmePPi
Topical Corticosteroid	
Budesonide	Entocort, Uceris, Rhinocort Allergy

This table does not include all drugs available but can be used as a guide to help discuss treatment options with your healthcare provider.