# What is Eosinophilic Asthma and How's It Treated?

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## Eosinophilic Asthma Treatment?

For many years, healthcare providers considered asthma as a distinct diagnosis – a blanket diagnosis for inflammation of the airways and difficulty breathing. Healthcare providers now realize that there are various subtypes of asthma; eosinophilic asthma (EA) is one such subtype.

Eosinophilic asthma, also called EA, is a subtype of asthma that is characterized by elevated levels of white blood cells. This specific subtype is quite rare and unfortunately is severe, difficult to treat and presents in adulthood.

So, how does EA differ from classic asthma? In the case of classic asthma, asthma symptoms are typically triggered by an allergen, such as dust or mold. This allergen causes inflammation of the airways, which causes wheezing and difficulty breathing. Though there are various degrees of severity, this type of asthma can be treated using conventional treatment modalities, such as corticosteroid inhalers.

In the case of EA, it typically presents in adulthood and is rarely caused by allergies. It causes swelling of the airways of the lungs, and the initial symptom is typically shortness of breath. As such, it may not appear as if the diagnosis is asthma because wheezing may not be present.

Those with EA have increased numbers of eosinophils (a type of white blood cell) in the blood, lung tissue and mucus that is coughed up from the lungs. Research indicates that having elevated eosinophils may correlate with an increased risk of developing EA in the future.

Symptoms of EA include:

- Wheezing.
- Coughing.
- Shortness of breath.
- Chest tightness.
- Airflow obstruction.
- Chronic rhinosinusitis.
- Inflamed nasal mucus membranes.

### Eosinophilic Asthma Treatment Options

There are various eosinophilic asthma treatment options available. For example, a conventional treatment option is inhaled corticosteroids. Some people with EA will respond to these treatments, but the majority of those with EA will be resistant to these treatments.

For those who are resistant to corticosteroids, biologic therapy is typically prescribed. Biologics that are FDA-approved to treat EA in the US include:

- Benralizumab (Fasenra).
- Mepolizumab (Nucala).
- Reslizumab (Cinqair).

**How Do Eosinophilic Asthma Treatment Options Work?**

All of the aforementioned biologic therapies work similarly but slightly differently.

Benralizumab is a humanized monoclonal antibody. It blocks the action of interleukin-5 (IL-5), which is a protein that works with the immune system. According to the American Partnership for Eosinophilic Disorders, “It is approved for use in the U.S. for the add-on maintenance treatment of patients with severe asthma aged 12 and older with an eosinophilic phenotype of asthma. It is used in combination with other asthma medications.”

Mepolizumab is also a humanized monoclonal antibody; it recognizes and also blocks the action of IL-5. This biologic can be used for those with EA over the age of 12 and is used in conjunction with other asthma medications.

Reslizumab is an anti-IL-5 monoclonal antibody, also blocking the action of IL-5.

Another biologic therapy that is FDA-approved to treat asthma in general, as opposed to EA, is omalizumab. Omalizumab is a monoclonal antibody that directs its action against the allergy antibody IgE; this can result in less allergy activity, thus reducing asthma symptoms.

Another type of biologic treatment that is used to treat moderate-to-severe eczema is showing promise for the treatment of asthma. Dupilumab is a monoclonal antibody that binds to the protein interleukin-4 (IL-4) receptor alpha subunit (IL-4Ra)]; this action appears to reduce inflammation.

**Who Should Use Eosinophilic Asthma Treatments?**

Everyone with asthma should have a treatment plan. Often, traditional treatments will be prescribed initially. If these treatments do not work, making a switch to eosinophilic asthma specific treatments is recommended. Why?

According to Healthline, “…doctors aim to promptly manage the inflammation caused by EA and reduce the likelihood of future severe inflammation. If the inflammation can be managed, the symptoms and side effects of this type of asthma may be less severe.”

In addition, complications can develop if EA is not treated appropriately or if treatment is ineffective. Complications of EA include:

- Chronic sinus infections.
- Inner ear infections.
- Nasal polyps.
- Aspirin-exacerbated respiratory disease (AERD).

**When to See a Doctor**

Anyone with suspected asthma symptoms should see a healthcare provider. If EA is suspected, a referral to an allergist or a pulmonologist is indicated. An allergist can rule out allergic causes for asthma, while a pulmonologist can most effectively treat this complicated type of asthma.

It is important for those with EA to receive treatment and have close follow-ups with their healthcare provider; long-term complications have not yet been evaluated, as there is still much we do not know about EA. As such, it is very important to maximize lung function and improve symptoms.