

# Dietary Histamine Intolerance



Histamine is a normal and important chemical in the immune system. However, excess blood levels can lead to symptoms. Histamine intolerance is a theory that dietary histamine increases blood histamine and allergy-like symptoms in susceptible individuals. A low histamine diet and diamine oxidase supplements may reduce symptoms.

## Histamine Toxicity

[Histamine toxicity](#) is a type of food poisoning . As food spoils, the bacteria produce histamine and related compounds. The most common food associated with histamine toxicity outbreaks is scombroid species fish, such as tuna (therefore, histamine toxicity used to be called scombroid poisoning). The dietary histamine is absorbed and circulates through the blood leading to allergy symptoms (see table below). With histamine toxicity, everyone that eats the histamine rich food develops symptoms.

## Histamine Intolerance Theory

Histamine intolerance is a theory that some people are more likely to absorb histamine from food. They can experience histamine toxicity with a dietary histamine intake that most people tolerate.

Typical symptoms include:

Histamine intolerance is more likely if you experience several symptoms, especially digestive. If you experience one or two symptoms only, you probably don't have histamine intolerance.

There are two overlapping parts to this theory:

- 1) Low levels of diamine oxidase (DAO) enzyme: histamine in food is broken down in the digestive system by the diamine oxidase enzyme. If DAO is not working properly, you are more likely to absorb dietary histamine. Read [Diamine Oxidase Enzyme \(DAO\)](#) for more details.
- 2) Histamine releasing foods: Certain foods (such as egg white and strawberries) are said to trigger cells in the digestive system to release histamine. The histamine is absorbed into the body (especially with low levels of DAO).

If you are susceptible as described above, a diet low in histamine and histamine releasing foods and diamine oxidase enzyme supplements will improve your symptoms.

## Very Little Research

A group of German physicians first proposed the histamine intolerance theory in the 1970s. There were a few initial studies, but there has not been much research since. Dr. Janice Joneja (Immunology Ph.D. and Canadian dietitian) was one of the first health care professionals to translate this information and create English diet guidelines. I completed a Master of Science degree at the University of British Columbia (Dr. Joneja was one of my supervisors) in the mid-1990s research-

Organ System	Symptoms associated with inflammation in these tissues
Facial area	Nasal congestion and runny nose (rhinorrhea), itchy watery eyes, sinus congestion
Lungs	Respiratory tightness and difficulty breathing (asthma)
Skin	Hives (urticaria), swelling (angioedema), flushing, itching, etc.
Cardiovascular	Blood pressure irregularities, light headedness, increased heart rate (tachycardia)
Digestive	Vomiting, diarrhea, pain, reflux, etc.
Other	Headache, brain fog, anxiety, etc.

ing the [Benefit of a Histamine Reducing Diet in Chronic Urticaria and Angioedema](#). In summary, around 20% of the low-histamine diet subjects had substantial symptom improvement, which is what we expected. Diet is one of many possible contributing factors to chronic urticaria (hives), so we did not expect everyone to improve. There have been a few studies investigating the low histamine diet since this time, but they have not used a strong study design.

## Educated Guess

Since there is very little research, most histamine intolerance information is opinion or speculation. For example, there is no research to support the concept of histamine-releasing foods. This theory is a possible explanation for why some people experience allergy-like symptoms with specific foods, even though they don't have a true allergy to the food. The theory was repeated through the years, and at some point, was assumed to be fact. As awareness of this concept spread on the internet, those suffering from symptoms started adding their problematic foods to the lists. Restricted food lists grew longer and longer. In summary, the lists are anecdotal internet reports, not objective scientific information.

The low histamine diet is an educated guess, not a definitive diet. *"Foods that have been reported to increase histamine-like symptoms"* would be a more appropriate name for these lists.

## No Accepted Diagnostic Tests

Unvalidated laboratory tests measuring blood histamine or diamine oxidase enzyme are available, but the clinical relevance is questionable. Read [Diamine Oxidase Enzyme \(DAO\)](#) for more details.

Histamine intolerance is a popular diagnosis right now. Many practitioners are giving people with hard to diagnose and treat "allergy-like" symptoms this diagnosis. However, dietary histamine intolerance is a self-diagnosis based on symptom improvement with a low histamine diet and/or diamine oxidase (DAO) supplementation. It is im-

portant to systematically trial these treatments and only continue if they make a difference. I've talked with several clients that have been diagnosed with histamine intolerance (without objective evidence that a low histamine diet or DAO supplements are beneficial) and the client just assumes that they need to follow a modified diet.

## Many Possible Symptom Causes

If you have typical symptoms (see list above), it is natural to assume you have histamine intolerance and need to follow a low histamine diet. However, blood histamine can be high for many reasons (e.g., seasonal allergy, stress, hormones, etc.). Diet may or may not be a factor.

Some practitioners claim that a low histamine diet will lower total body histamine. This theory may be true for individuals with dietary histamine intolerance (e.g., low DAO activity). However, excess histamine from a different source (e.g., seasonal allergies), will not improve with a low histamine diet.

If a low histamine diet and/or diamine oxidase supplements have not improved your symptoms, you probably don't have dietary histamine intolerance.

## Overlap with Mast Cell Activation

Histamine intolerance and mast cell activation disease may overlap for some patients. Histamine releasing foods is one part of the histamine intolerance theory. In other words, certain foods are claimed to cause a release of histamine from cells in the digestive system. Histamine comes from mast cells, so this would be a form of mast cell activation.

For more information: [Comparing Allergy, HIT and MCAD](#)

## Low Histamine Diet Trial

Even though there is very little research to support the theory, many people have reported benefit from a low histamine diet. The good news is that symptoms will improve quickly. A three-week trial is long enough to know if you will benefit. Further details: [The Practical Guide to the Low Histamine Diet](#).