

The Histamine effect

A diverse microbiome boasts tons of benefits, but some common microbes actually produce toxins that may leave you feeling less-than-blessed. These toxins include “biogenic amines” such as the well-known histamine, and tend to mess with certain people’s guts more than others. If fermented foods leave you nauseous, inflamed, bloated, or just feeling gross, you may be more sensitive to histamine-producing bacteria or foods.

Histamines are neurotransmitters that influence your brain function and immune health. In an allergic response, mast cells (a part of your immune system) release histamines, triggering quick inflammation to increase blood flow and let immune cells react to an intruder. This leads to those classic allergy symptoms like puffy, watery eyes; headaches; skin rashes; or a stuffy or runny nose. Histamines also form when bacteria break down proteins, both during fermentation, and during digestion in your gut.

Histamine intolerance and fermented foods

For most people, histamines are no problem, but genetics or a damaged gut can lead to low levels of the enzymes DAO and HNMT needed to break down the amount of histamines coming in. ^[8] Histamine intolerance occurs when your body can’t metabolize the amount of histamine in your diet, and it starts to accumulate in your bloodstream, sending your body into panic mode.

A build-up of histamine can look a lot like allergies or food sensitivities, but the signs tend to be slow, subtle, and even chronic, making it hard to identify. Symptoms of histamine intolerance include skin irritation, hives, throat tightening, increased heart rate, nasal congestion, migraines, fatigue, heartburn, reflux, trouble with inflammation, and weight gain. ^[9]

Which bacteria produce histamines?

To understand how fermented foods work with your body, it's important to understand which bacteria produce histamines. When a food ferments, certain bacteria convert the amino acid histidine into histamine. At the same time, other bacteria can actively break down histamine. This balance of bacteria determines the histamine content of fermented foods, as well as impacting the amount of histamine produced when non-fermented foods are digested in your gut.

Eating foods high in histamine-producing bacteria can deal a double blow to those with histamine intolerance, both by supplying histamines, and by elevating the populations of these bacteria living in the gut, leading to even more internal histamine production. Even those without chronic histamine intolerance can out-eat their enzymes by overloading on high-histamine foods.

Unfortunately, it's not always possible to know what strains went into fermenting your foods, especially if those foods are homemade. If you're histamine-intolerant, you may find that fermented foods just don't work for you at all, and it's totally OK to avoid them.

You may also find that you tolerate certain foods or certain strains better than others. Avoiding histamine-producing bacteria and seeking out foods made with histamine-degraders might allow you to enjoy your kraut once more: [10-16]

- **Histamine producing bacteria:** *Lactobacillus casei*, *Lactobacillus reuteri*, and *Lactobacillus bulgaricus* (Found in a majority of yogurts and fermented foods).
- **Neutral bacteria:** *Streptococcus thermophilus* (also in yogurt) and *Lactobacillus rhamnosus* (down regulates histamine receptors and reduces inflammation)
- **Histamine degrading bacteria:** *Bifidobacterium infantis*, *Bifidobacterium longum*, *Lactobacillus plantarum*, and *Saccharomyces boulardii* (actually a yeast, but increases DAO activity)