

Low histamine diet



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What is histamine

Histamine is a chemical compound, known as a biogenic amine, which is released by cells (mast cells and basophils) in response to injury and in allergic and inflammatory reactions.

It plays a role in several different bodily processes. It stimulates gastric acid secretion, plays a role in inflammation, dilates blood vessels, affects muscle contractions in the intestines and lungs and acts as a neurotransmitter.

Histamine can also be found naturally in certain foods or can develop while they age. Dried, aged, and fermented foods typically have the highest levels of histamine.

Histamine intolerance

Histamine intolerance (HIT) affects 3 – 6% of people and occurs when there is either an increased availability of histamine or impaired histamine degradation. In healthy people, histamine is rapidly eliminated from the body by two enzymes, diamine oxidase (DAO) and histamine n-methyltransferase (HNMT). However, a malfunction in these enzymes, mainly in DAO, can lead to an accumulation of histamine.

Factors causing overproduction of histamine

- Allergies (IgE reactions)
- Small intestinal bacterial overgrowth (SIBO)
- Gastrointestinal bleeding
- Histamine-rich foods
- Intestinal permeability (leaky gut)
- Mastocytosis (the presence of too many mast cells in the body)
- Mould toxicity
- SARS-CoV-2 infection

Factors causing low DAO/DAO malfunction

- Genetic predisposition
- Small intestinal bacterial overgrowth (SIBO)
- Foods that block the release of DAO
- Copper, vitamin C and B6 deficiency
- Interference by certain medications (e.g. non-steroidal anti-inflammatory drugs, antidepressants, antiarrhythmics, antihistamines, histamine (H2) blockers)
- Gastrointestinal disorders (e.g. inflammatory bowel disease)
- Intestinal permeability (leaky gut)

Symptoms of histamine intolerance

The symptoms of histamine intolerance are wide-ranging, due to the effects and functions of histamine in multiple organs and systems of the body. Symptoms can be acute or chronic and range from mild to severe. It is common for more than one symptom or disorder to occur simultaneously.

Histamine intolerance symptoms

Body system	Symptoms
Nervous system	Nervous system Headache migraine, dizziness, vertigo
Cardiovascular system	Tachycardia, hypotonia, hypotension, arrhythmias
Reproductive system	Menstrual cramps
Skin	Itching (pruritus), flushing, urticaria, dermatitis, swelling
Gastrointestinal system	Bloating, flatulence, postprandial fullness, diarrhoea, abdominal pain, constipation, nausea, vomiting
Respiratory system	Rhinorrhoea, rhinitis, nasal congestion, dyspnoea, sneezing, asthma

Holistic treatment aims

Short term

Following the low histamine diet (2 to 4 weeks) helps symptoms by:

- Minimising the overall amount of histamine provided by foods
- Eliminating foods that block the action of the DAO enzyme.

Long term

After eliminating or reducing histamine in the diet for 2 to 4 weeks, it may be possible to re-introduce histamine foods one at a time under the care of a health practitioner.

Long term goals include:

- Improving digestive health by addressing dysbiosis, inflammation and intestinal permeability



Low histamine list

Food group	Avoid - (histamine-releasing, high histamine, or DAO blocking)	Include + (low histamine)
Fruit	Strawberries, raspberries, lemons, oranges and other citrus fruits, banana, pineapple, kiwi fruit, pears, papaya, guava, fermented or dried fruits	All other fruits including blueberries, apricots, cranberries, apples, mango, peaches (fresh or frozen)
Vegetables	Spinach, tomatoes (including ketchup, tomato juice, etc.), eggplant, avocado, olives, pumpkin, fermented and pickled vegetables, mushrooms	All other vegetables (fresh or frozen)
Cereals, grains, legumes	Malt, wheat germ, wheat, foods with yeasts (fresh bread, sourdough), chickpeas, lentils, dried beans, soy, and soy products	Gluten free grains (e.g. buckwheat, brown rice and quinoa)
Nuts and seeds	Walnuts, cashews, peanuts, pistachios	Macadamias, chestnuts, hemp, chia, flax seeds, pumpkin, and sunflower seeds (sprouted is ideal)
Meat and poultry	Cured, canned, smoked, marinated, and processed meat, bone broths, sausages	Fresh or frozen meat (thawed rapidly)
Seafood	Canned fish, marinated, salted, dried, smoked, or pickled fish and seafood, fish sauces, tuna, mackerel, herring, sardines, anchovies, shellfish (mussels, lobsters, crabs, shrimps, prawns)	Fresh or frozen fish
Dairy products and eggs	Matured, aged and processed cheese, blue cheese	Fresh dairy products (goat and sheep) (pasteurised milk, butter, cream), nut milks. Eggs (yolks are safe; egg whites may release histamine)
Herbs and spices, sauces	Vinegar (wine vinegar and balsamic vinegar), yeast extract, broth, soy sauce, additives (colourants, stabilisers, taste enhancers such as MSG), bouillon, spices (cinnamon, cloves, chilli powder, curry powder, anise, nutmeg), vanilla	White vinegar, apple cider vinegar, fresh herbs, other spices, salt, garlic (fresh or powdered)
Oils and fats	Margarine, vegetable oil, walnut oil, peanut oil	Coconut oil, olive oil
Sweeteners	Cocoa, dark chocolate, carob	Agave syrup, honey, stevia, rice syrup
Beverages	Alcoholic beverages, black and green tea, coffee, kombucha, cocoa, soy milk, fruit juices, soft drinks, energy drinks, mate tea	Water, coconut water, herbal teas, almond milk, coconut milk



General tips for a low histamine diet

- Cook all your own meals
- Avoid processed foods and eat foods as close to their original form as possible
- Eat as fresh as possible – histamine accumulates in fruit and vegetables as they ripen
- Freeze raw meat or cook it – don't let raw meat sit on the counter or in the refrigerator (more than three hours)
- Eat foods as soon as possible after purchase
- Always read food labels to find out whether a food contains incompatible ingredients
- Keep a food journal to record symptoms and triggers
- Seek guidance from a health/medical practitioner to ensure adequate nutrient intake

Nutritional and herbal recommendations

*Combine supplementation with dietary changes for extended clinical benefits and increased treatment effectiveness.

Scutellaria baicalensis (Baical skullcap)

- Potent antiviral, anti-inflammatory, antimicrobial and anti-allergy herb
- May inhibit anaphylactic-like reactions, stabilise mast cells and inhibit plasma histamine release

Albizia lebbek (Albizia)

- Anti-inflammatory, anti-allergic and immune modulating herb
- Stabilises the mast cell membrane to slow the release of histamine

Nigella sativa seed (Nigella, black cumin)

- Anti-inflammatory, immunomodulatory, antihistamine, antioxidant, and antimicrobial herb
- Studies have shown beneficial effects of nigella seed oil for allergic asthma, allergic rhinitis, and other histamine-related conditions.

Urtica dioica (Stinging nettle)

- Mast cell receptor antagonist; prevents mast cell degranulation and release of histamine

Vitamin B6 and copper

- Required by DAO to function adequately and breakdown histamine.

Vitamin C

- Antioxidant and key nutrient for immune support
- Lowered vitamin C levels are associated with increased blood histamine levels
- Increasing vitamin C status decreases histamine levels; being a DAO cofactor, it enhances histamine degradation

Quercetin

- Anti-inflammatory and antioxidant bioflavonoid
- Inhibits histamine release by stabilising mast cells and blocking mast cell degranulation

Probiotics

- Some bacteria can produce histamine, while others can degrade it.
- *Lactobacillus rhamnosus* may help stabilise mast cells and reduce the sensitivity of histamine receptors
- Other beneficial bacteria to help break down histamine include *Bifidobacterium longum*, *Bifidobacterium lactis*, *Bifidobacterium bifidum*, *Bifidobacterium breve*, and *Lactobacillus plantarum*

Palmitoylethanolamide (PEA)

- Downregulates mast cell recruitment and degranulation, and therefore release of histamine
- Beneficial for mast cell related conditions including migraines, endometriosis, irritable bowel syndrome, and interstitial cystitis

S-adenosyl-Lmethionine (SAM-e)

- Naturally occurs in the body and donates methyl groups during methylation processes
- HMNT inactivates histamine by methylating it; SAM-e may assist HMNT to work more efficiently

Seek Medical Care

Treatment recommendations should not replace medical treatment. Following a low histamine diet may exclude essential nutrients. People should not follow long-term exclusion diets without seeking advice from a registered dietitian, nutritionist, naturopath or health professional.