



SIGHI-Leaflet **Histamine Elimination Diet**

Simplified histamine elimination diet for histamine intolerance (DAO degradation disorder)

For people with a **DAO degradation disorder** who have to avoid **histamine, other biogenic amines and DAO inhibitors**.

In case of histamine sensitivity due to mast cell activation disorders (MCAD) this dietary guideline **is not sufficient!** If no permanent symptom relief can be achieved and maintained with this diet, please follow the **detailed list**, which additionally takes **histamine liberators** into consideration as completely as possible. It is available here:

www.mastzellaktivierung.info

Mast cell activation disorders are often mistaken for histamine intolerance.

The **compatibility** is highly dependent on the individual sensitivity and the **amount** consumed. Furthermore, it is temporarily affected by stress, hormones and many other factors. **First and foremost, the freshness is an important criterion.** Everybody has to find out by trial and error what he/she can tolerate in what quantities. In the first line, the diet should be orientated to the individual experiences of the person concerned instead of strictly following any compatibility list.

Always read the list of ingredients to find out whether a food contains incompatible ingredients.

References:

- Experience reports from among our members and readers
- Various patient leaflets from doctors, clinics and hospitals
- Experience of other patient organizations, bloggers, forum threads etc.
- Scientific publications
- Textbooks and cookbooks about histamine intolerance

	 To avoid:	 Risky:	 Well tolerated:
General	Fermented or microbially ripened products (e.g. alcoholic products, vinegar, yeast, bacteria) Perishable fresh produce with inadequate / uncertain freshness or interrupted cooling chain. Canned, finished or semi-finished products. Kept warm or reheated food (especially fish, meat and mushroom dishes), products with a long storage time.	Meals from restaurants, canteens, snack bars, etc. are often badly tolerated for various reasons.	Prefer fresh, unprocessed or little processed basic foods. The more perishable and protein-rich it is, the more important is freshness! It has to be refrigerated uninterruptedly from the producer to the consumer! Perishables never leave unrefrigerated, not even for a few minutes. Let leftovers cool down for a moment and then freeze. Thaw quickly and consume immediately. Prefer vitamin-preserving methods.

	 To avoid:	 Risky:	 Well tolerated:
Meat, eggs	Canned meat, cured, dried, marinated, smoked or otherwise preserved meat (-preparations): dry-cured ham, bacon, ... Bone-matured or dry aged meat, long hung meat (mainly certain pieces of beef; ask your butcher!) Finely chopped / pureed meat (meatloaf, spreads, cold cuts,...). Histamine content tends to rise with the degree of comminution. Almost all sausages (e.g. salami, liverwurst) Offal, innards (especially liver)	Fresh meat sold over the counter (no date on it) Prepacked minced meat Pre-cooked sausages Venison, game (ripening of meat)	Natural fresh meat (poultry, sheep, goats, cattle, pork, wild boar), as fresh as possible, packaged and dated: e.g. cutlet, fillet, chicken legs, turkey breast, ... Frozen meat, thawed rapidly Cooked ham (in slices, without yeast extract or glutamate) Eggs (chicken, quail, etc.)
Fish, seafood, crustaceans, shellfish	Canned fish, marinated, salted, dried, smoked or pickled fish and seafood. Certain fish species (in particular the Scombroidae family): Tuna, mackerel, herring, sardines, anchovies, mahi mahi. Fish sauces Shellfish (mussels, lobsters, crabs, shrimps, prawns)	"Fresh Fish" (from the shop shelf, over the counter, from fish markets or in restaurants). Seafood	Absolutely freshly caught fish (anglers, fishermen, fish farm) Frozen fish (No long-time storage. Thaw quickly and use immediately! Do not allow to thaw slowly in the refrigerator!) E.g. pollock, cod, trout, whitefish, perch, organic pangasius
Dairy products	Matured cheese: hard cheese, semi-hard cheese, soft cheese, processed cheese (also known as prepared cheese, cheese product, plastic cheese), blue cheese, mold cheese, fondue, aged Gouda	Raw milk, yogurt, kefir, sour milk products: acidified buttermilk, sour cream, crème fraîche Feta cheese	Fresh dairy products: raw milk directly from cow, UHT-milk, pasteurized milk, butter, cream, whey. Cream cheese (mozzarella, curd cheese, cottage cheese, mascarpone, ricotta, goat cream cheese), young Gouda, Butterkäse, Schichtkäse
Cereals, pastry	(Possibly yeast and sourdough bakery produce with extra long proving of the dough?) (Possibly very fresh, still almost warm pastries?)	Malt, wheat germ Canned corn? Buckwheat unpeeled?	Potatoes, corn, rice, any kind of grain in different forms: granules, flakes, semolina, middlings, flour, pasta, bakery products, sauces, ...)
Vegetables, mushrooms	Sauerkraut, spinach, tomatoes (including ketchup, tomato juice, etc.), eggplant, avocado, olives Legumes (lentils, beans, soy, soy products such as tofu) Pickled vegetables Ceps, morels, agaricus	Possibly green bush beans, peas? Unfermented olives Mushrooms	All vegetables except the left called (fresh or frozen).

	 To avoid:	 Risky:	 Well tolerated:
Fruits, nuts, seeds	Strawberries, raspberries, lemons, oranges and other citrus fruits, banana, pineapple, kiwi, pears, papaya, guava Nuts (especially walnuts, cashews, peanuts, exceptions see right)	Avoid overripe fruits and rotten parts.	All fruits except the ones listed on the left: e.g. apple, peach, apricot, melon, mango, persimmon, lychee, cherries, sour cherries, blackberries, blueberries, cranberries, currants, cassis, jostaberry, fresh, frozen or canned. Coconut, coconut milk, coconut water, macadamias, chestnuts
Fats, oils		Walnut oil?	Vegetable oils, vegetable fats, animal fat, fish oil
Spices, hydroly-sated proteins	Vinegar (especially wine vinegar, balsamic vinegar) Yeast extract, flavor enhancers (glutamate, sodium glutamate), bouillon, broth Soy sauce, hot spices		Table salt, garlic (fresh or powdered), culinary herbs, mild spices. spirit vinegar = distilled white vinegar, apple cider vinegar. Culinary herbs fresh or dried. Binder: starch, e.g. cornstarch = cornflour, potato starch
Sweets	Cocoa, cocoa mass, brown and dark chocolate, carob	White chocolate	Sugar, agave syrup, honey, stevia, jams from acceptable fruits. (Sweet is generally unhealthy.)
Beverages	Alcoholic beverages, soy milk, energy drinks (theobromine), juices and sodas with incompatible ingredients, nettle tea	Rice milk, oat milk, clear spirits, black tea, green tea	Water, herbal teas, coffee (moderately), rooibos nature, juices and sodas from acceptable ingredients, almond milk
Miscellaneous		Possibly additives according to mastzellaktivierung.info	

Modes of action to the histamine metabolism of foods and additives



It is important to understand what foods affect the histamine levels in which way. Besides food containing histamine directly, there are also those that indirectly influence the histamine levels (histamine liberators, diamine oxidase inhibitors, other biogenic amines and substances that affect the intestinal permeability). A histamine intoler-

ance can have various causes with different underlying pathogenetic mechanisms. This may be one of the reasons why not all those affected react equally to the same foods or categories of triggers respectively. This knowledge is also relevant for medical support therapy, because not every drug is appropriate in all the below mentioned groups.

Histamine-containing foods



Histamine is formed as a deterioration product in perishable food, in microbial fermentation and maturation processes and in the ripening of fruit. Even some vegetables are naturally histamine containing, although very fresh.

Medication: DAOSIN (works best if ingested 15-30 min before meal), H1 antihistamines, possibly H2 antihistamines.

- Fish, if not freshly caught or frozen
- Meat, if no longer fresh, sausages, dry-cured meats
- Matured cheese, processed cheese (histamine increases with maturity)
- Any fermented food, e.g. Sauerkraut
- Tomatoes, spinach, eggplant, avocado
- Alcoholic drinks, fermented fruit juices
- Vinegar, pickled vegetables
- Soy sauce, Worcestershire sauce
- Yeast extract

Other biogenic amines



Besides histamine, there are numerous other biogenic amines. Several amines share the same main degradation pathway with histamine: They are competing substrates, degraded by the same enzyme diamine oxidase (DAO). The DAO prefers other amines before it degrades histamine. While the DAO is busy with the breakdown of other biogenic amines, the breakdown of histamine is temporarily decreased or blocked.

Some of these biogenic amines have properties similar to those of histamine and can cause histamine-like symptoms directly.

Medication: H1 antihistamines, DAOSIN.

- Pineapple
- Banana
- Pears
- Peanuts
- Grapefruit
- Raspberries
- Legumes (lentils, beans, soy products)
- Kiwi
- Oranges
- Papaya
- Wheat germ

Histamine liberators



The foods and additives listed on the right have the property of releasing endogenous histamine from certain cell types (mainly from mast cells). This mechanism is independent from a lack of diamine oxidase (DAO). Histamine release is enhanced in persons with mast cell activation disease (MCAD) and to a lesser extent maybe also when the enzyme activity of histamine-N-methyltransferase (HNMT) is reduced. HNMT is an intracellular histamine degradation pathway. Even healthy people can react to liberators if the dose is strong enough.

Medication: H1 antihistamines, cromoglicic acid (or its salt sodium cromoglicate or cromolyn sodium), ibuprofen.

DAOSIN has no direct effect against histamine liberators!

- Alcohol (ethanol) and its degradation product acetaldehyde
- Strawberries
- Nuts (walnut, cashews)
- Seafood, shellfish, crustaceans: e.g. mussels, crayfish, crabs, ...)
- Chocolate, cocoa
- Tomatoes, ketchup, tomato juice
- Citrus fruits
- Certain active substances and additives in medicaments (see separate list)

Diamine oxidase inhibitors



The diamine oxidase is a sensitive molecule that can be inhibited in its activity by chemical influences. The foods and additives on the right are or contain DAO inhibitors that can block the breakdown of histamine by the DAO. It is still too little known about which substances can inhibit The activity of histamine N-methyltransferase (HNMT) can also be inhibited by chemicals, but it is little known about which substances are inhibitors.

Medication: H1 antihistamines. DAOSIN just supports the reduction of biogenic amines, but is ineffective against DAO inhibitors!

- Alcohol (ethanol) and its degradation product acetaldehyde
- Certain biogenic amines
- Certain medicaments (see separate list)
- Theobromine
- Mate tea

Increase in intestinal permeability

Certain substances affect the intestinal permeability ("Leaky Gut Syndrome"). They make the intestines to leak, so that macromolecules and other substances from the digestive tract can enter the body, which normally is not the case. This enhances the risk to develop an IgE or IgG food allergy or poisoning.

Medication: mast cell stabilizers with continuous application, H1 antihistamines. DAOSIN has no effect in this case!

- Alcohol may increase the uptake of allergens from the gastrointestinal tract. The alcohol may influence the tolerance threshold of food allergens in a negative way.
- Hot spices (pepper, chili, curry, etc.) are able to increase the intestinal permeability for histamine, which enhances histamine uptake.