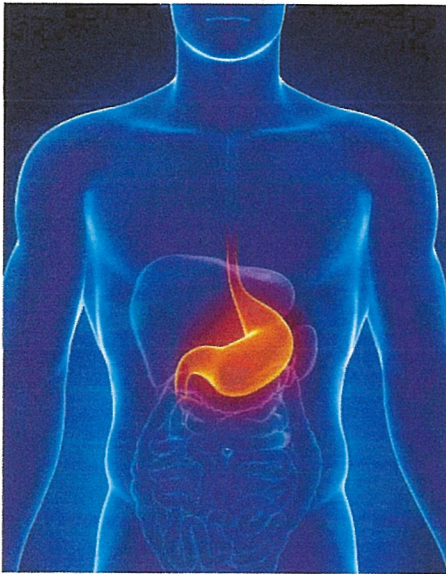


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Histamine Intolerance

Histamine is a very important chemical messenger in the body. It is a neurotransmitter messenger within the brain and nervous system. It is involved in controlling the permeability of blood vessels, muscle contraction, and stomach acid. The highest concentration of histamine is found in the skin, lung, stomach, brain and heart.

Histamine is made and stored in white blood cells called mast cells and basophils. Histamine is part of the body's defense system and is always present when inflammation occurs. It is

our body's way of attacking allergen, both airborne and in food. Allergens may be plant pollens, mold spores, animal dander dust mites or other "harmless foreign substances ". When histamine reactions are out of control we have allergy like symptoms.

Histamine is produced by bacteria that break down protein such as histidine (an amino acid found in meat and food) into smaller components called amines. Histidine in food is found in products like:

Fish	anchovy, mackeral, tuna, shellfish
Cheese	swiss, parmigiano reggiano, cottage cheese, yoghurt, kefir
Pickles and relishes	
Wine	all red wine
Vegetables	onions
Meats	Salami bologna, frankfurters
Fermented food	Sauerkraut, vinegar
Tamari	Soy sauce
Tempeh	
Citrus fruits	Also-Raspberry, tomatoes, berries
Food additives	Azo-dyes, sorbates, sulphites

Histamine is produced from histidine by bacteria. Chopped food (such as minced meat) has a greater surface area and degrades faster, making more histamine. The lower the temperature of stored food, the less the histamine. **Histamine is not destroyed during storage or cooking.** Histamine dissolves in water. Histamine does not smell, but other amines do. For example, certain fish, like

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tuna, have a naturally high histamine content. Fresh fish does not smell. But if fish kept in the refrigerator begins to smell, it signals a higher bacteria degradation of the fish and a much higher histamine content.

Excess histamine is degraded in the body by:

Diamine oxidase- (DAO) outside the cells in the gut and tissues

Histamine-N-methyltransferase (HNMT) inside the cell

Many people have a genetic defect that prevents them from making sufficient HNMT. Some food and medicines inhibit either or both HNMT and DAO. A great example is aspirin, which liberates the release of histamine. Others include:

- NSAIDS—like ibuprofen
- Diuretics
- Antibiotics
- Antidepressants (some)

Histamine intolerance is commonly found in patients that are diagnosed with IBD (irritable bowel disease) like Crohn's disease and Ulcerative colitis, and Celiac disease.

When histamine concentration becomes too high, the blood pressure may quickly drop and lead to anaphylactic shock.

There are a large number of bacteria that increase the amount of histamine. So when there is bacterial overgrowth of unwanted bacteria, histamine may be overproduced in the bowel, leading to a reaction.

Symptoms of Histamine Excess:

- Hives
- Tissue swelling- "throat tightening"
- Low blood pressure (hypotension)
- Racing heart—pulse rate increase (tachycardia)
- Symptoms of panic attack, anxiety—especially at night
- Chest pain
- Nasal congestion and runny nose
- Dysmenorrhea—painful periods
- Swelling and water retention