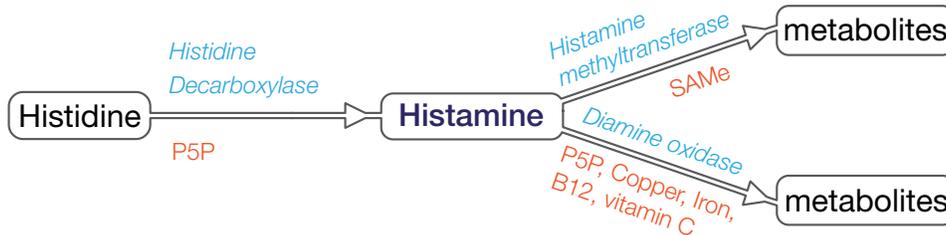




# Histamine

## Frequently Asked Questions



### What do elevations or depressions in urinary histamine indicate?

Urinary testing can give insight into the neurotransmitter functions of histamine. Histamine is an excitatory neurotransmitter involved in the sleep/wake cycle. Adequate levels promote wakefulness, circadian rhythms, learning and memory. Elevated histamine can interfere with sleep. Low histamine can result in drowsiness and may alter digestive function and appetite control, learning, memory and mood.

### Why does my patient with asthma/hives/allergy symptoms not have elevated urinary histamine?

Histamine levels in the urine do not reliably correlate with allergic or inflammatory response. Histamine release from basophilic and mastocytic cells is rapidly metabolized and excreted in other metabolic forms. Studies attempting to relate urinary histamine to allergy or inflammation symptoms have resulted in conflicting conclusions. During adverse reaction to foods, one study showed elevated urinary histamine, while another study did not. During asthma attack, one study found decreased histamine levels, while other studies showed increased levels. Different results may be due to proximity of testing following symptoms. However, there are currently no studies that investigated the best time to test urinary histamine following allergy or inflammatory symptoms. As of now, urinary histamine

can not be used to evaluate these types of symptoms and whole blood testing may be a better option for this purpose.

### Why did my patient have elevated whole blood histamine but normal urinary histamine even though they were tested on the same day?

It is normal to see differences in histamine levels when comparing different types of samples taken simultaneously. Most of the histamine released eventually gets methylated or deaminated, so only a small proportion of free histamine remains in the urine. Examples of the discrepancy between histamine tested from different fluids abound:

In one study, patients with asthma had normal blood and urine histamine but elevations in plasma. When given corticosteroids, the whole blood histamine was reduced and plasma levels normalized.

A research subject experiencing a severe allergic reaction to food had normal urine histamine and elevated plasma histamine.

If whole blood histamine was measured later in the day while the urinary histamine was measured in the morning prior to any food intake, that could alternatively explain different results. Mucosal histamine reflected in urine is often low in fasting states when HCl is low. Histamine levels increase as the day progresses and HCl increases.



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### ***Which foods might elevate histamine?***

The following foods have been shown to elevate urinary histamine:

Cheeses: parmesan, blue, Roquefort

Vegetables: spinach, eggplant

Red wines: Chianti, Burgundy

In general, foods containing high amounts of histamine include: alcohol, fermented beverages and foods, dried fruit, avocado, processed and smoked meat, aged cheeses. Additionally, DAO (one of the enzymes responsible for breaking down histamine) is inactivated by alcohol and black or green tea. Certain medications can alter DAO production including NSAIDs, anti-depressants, immune modulators, anti-arrhythmics, and H2 blockers.

### ***Can a specific disease or condition be responsible for elevated histamine in urine?***

Yes, the available research has revealed that the following diagnoses correlate with elevated histamine:

- Interstitial cystitis
- Urticarial pigmentosa
- Pre-eclampsia
- Hyperemesis gravidarum
- Hartnup Disease (a.k.a. pellagra-like dermatitis)

Elevated histamine is not diagnostic of any of these conditions, but having one of these diagnoses can explain an elevation.

### ***References***

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