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HISTAMINE INTOLERANCE



Healthy Gut

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Why?

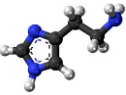
- This is a gut health course
- We want to get clients eating fermented foods
- Some clients can't
- It may be due to histamine intolerance
- Many foods can increase histamine levels if the person has an issue breaking down histamine



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Histamine

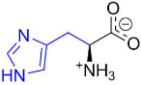
- Found in the skin, lungs, stomach, brain and heart
- It is made and stored in white blood cells (mast cells) so it can act as a "first defender" and inflammatory mediator
- It is an important chemical that helps many body systems
- A neurotransmitter that helps regulate communication between cells
- Regulates gastric function
- Helps with the permeability of blood vessels
- Helps with brain function
- Aids muscle contractions



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Histamine

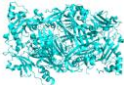
- Normal levels: .3 -1.0 nanograms per millilitre (ng/ml)
- Exceeding this level may cause symptoms
- Level of symptoms can depend on genetics, hormones and enzyme deficiency
- Enzyme histidine decarboxylase (B6) can convert the amino acid histidine to histamine
- Certain strains of bacteria convert histadine (in foods) to histamine
- Other strains helps break down histamine

[NH3+]CC1=CN=CN=C1C(=O)[O-]

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Breaking Down Histamine

- Two enzymes in particular:
- N-methyl transferase (HNMT) – primarily from the liver and kidneys
- Diamine oxidase (DAO) – made in the intestines
- In an animal (pigs) study – when DAO was blocked, histamine level rose to 160 ng/ml when administered 60 mg histamine where as the control's levels did not rise



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Symptoms

- Itching eyes, ears, skin and nose
- Hives (urticaria)
- Low blood pressure
- Tissue swelling - facial, oral and a feeling of tightening in the throat
- Increased pulse rate – racing heart
- Symptoms like anxiety and panic attacks
- Nasal congestion and runny nose
- Itchy, watery, red eyes
- Headaches, fatigue, confusion, irritability
- Digestive upset, reflux, heartburn

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Symptoms

- Possible loss of consciousness - lasts for one - two seconds
- Eczema will be worse
- Histamine levels fluctuate during hormonal cycles so symptoms can occur during ovulation and just before onset of the period
- Drugs such as aspirin, ibuprophen, NSAIDs, some diuretics, antibiotics, and antidepressants depletes DAO
- Chloroquine (for malaria) and muscle-relaxing drugs such as alcuronium and pancuronium interferes with HNMT
- Google a drug and DAO or HNMT



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Strains

Strains capable of degrading histamine:
Lactobacillus curvatus Lactobacillus sakei Lactobacillus sp.
Weisella hellenica **Leuconostoc mesenteroides**
Leuconostoc sp. Escherichia faecium sp.group Sarcina lutea
B. infantis, B.longum, L. rhamnosus, L. salivarius, L. sporogenes, L. plantarum and L. gasseri break down histamine
B. infantis could be very important to those not breast fed
L. casei and L. bulgaricus increase histamine
<http://www.allergynutrition.com/wp-content/uploads/2014/05/Histamine-DAO-and-Probiotics-Revised.pdf>

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Liver

- Having sufficient HNMT requires good liver function
- Glutathione is needed for both Phase I and Phase II and is associated with HNMT
- Methylation in phase II are important for having sufficient HNMT and plays a role in having sufficient glutathione
- Antibiotics, GMO-foods, infections, stress, artificial sweeteners, environmental toxins may deplete glutathione
- B vitamins - B3, B6, B2, folic acid and biotin help methylation
- Vitamins C, E and selenium
- N-acetyl cysteine (NAC)



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Glutathione Foods

- Sulfur foods – garlic and onions
- Watercress
- Beef liver
- Glutathione-containing foods spinach, asparagus, avocado, squash, zucchini, potatoes, melons, grapefruit, strawberries, and peaches



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Foods

[illegible]

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Foods The Counter Histamine

Quercetin-rich foods:

- Apples.
 - Peppers.
 - Red wine.
 - Dark cherries and berries (blueberries, bilberries, blackberries and others)
 - Tomatoes.
 - Cruciferous veggies, including broccoli, cabbage and sprouts.
 - Leafy green veggies, including spinach, kale.
 - Citrus fruits.
- 
- A single, ripe red apple with a small green leaf attached to its stem, positioned in the top right corner of the slide.



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Other Histamine Lowering Foods

- Ginger, thyme, turmeric (not curcumin), holy basil, tarragon, peppermint, nettle, chamomile
- Garlic, onions
- Watercress
- Pea sprouts and mung bean sprouts
- Moringa
- Black cumin seed oil
- Pomegranate
- Capers
- Peaches
- Black rice bran



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Protocol

- DAO supplement such as Xymogen HistDAO
- Multi containing copper or copper supplement (no more than 1 mg)
- Probiotic that does not contain L. casei or L. bulgaricus such as Xymogen ProbiMax Plus DF or ProbiMax DF
- Liver support – milk thistle, glutathione (NAC) B vitamins (may want chose one with folate as calcium L-5-methyltetrahydrofolate)
- High antioxidants
- Quercetin (reduces mast cell activity and therefore histamine)



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Should You Remove Foods?

- Using the DAO enzyme is the first step – client should keep a food journal – if due to DAO deficiency
- Add other recommended supplements
- Counter histamine foods with quercetin foods and histamine lowering foods (start with these first)
- Since some fermented foods may cause a reaction (because of histamine) – the goal is to find a way to get them into the diet
- So a histamine balancing diet is best



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And finally...

- The DAO enzyme should help immediately
- The issue with glutathione, methylation and HNMT will take time
- If you can balance their foods and use the appropriate supplements can hopefully allow for clients to consume some fermented foods as they try to repair their gut
- The key is to make it liveable and make sure they do not blame the food