UNDERSTANDING HISTAMINE INTOLERANCE & MAST CELL ACTIVATION

Mariska de Wild-Scholten

histamine | biogenic amines
mast cell degranulators | fragrances
lectins | salicylates
Understanding Histamine Intolerance & Mast Cell Activation

By Mariska de Wild-Scholten

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The information in this book is provided to the best knowledge of the author. The reader should consult a health professional before taking health related actions.

Please send comments to: info@histamine-intolerance.info.
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1. INTRODUCTION

Histamine may provoke direct symptoms like asthma, eczema, acid reflux, diarrhea and low blood pressure. There is a sensitivity to develop low oxygen levels in the blood which could give complaints like shortness of breath, cold feet, hair loss, muscle cramps, tension-type headache, depression, loss of short-term-memory. The body will try to increase oxygen input by increasing the heart- and breathing rate through the production of adrenaline. Excess of adrenaline may give migraine, anxiety, panic attacks, sweating, constipation, high blood pressure, sleep disturbances (waking up too early, nightmares). Women complain about painful menses.

Well known causes of high levels of histamine are infections and allergic reactions resulting in mast cell degranulation. What many people are not aware of (including health professionals) is that also certain foods contain histamine or degranulate mast cells. There are enzymes that degrade histamine but there may be a lack of capacity or activity of these enzymes resulting in high histamine levels. Some people suffer from instable mast cells and degranulation can be triggers by food components, fragrances and physical triggers like heat, cold, friction (itch from coarse wool) and exercise. Mast cells not only contain histamine but also other mediators.

Chapter 2 describes the stories of a few patients. It shows the often difficult path they took before they understood the root cause of the symptoms after which they could implement change.

Chapter 3 helps to understand what histamine and biogenic amines are, why they are present in certain foods and explains the fate in the human body.

Chapter 4 discusses the diseases resulting from high levels of histamine and mast cell degranulation.

Chapter 5 describes the possible cascade of symptoms. An attempt is made to organize the huge amount of complaints which could occur.

Chapter 6 discusses a few of the symptoms in more detail.

Chapter 7 assists in diagnosis, which is not easy because of a lack of acceptance and knowledge by health professionals.

Chapter 8 describes the different possibilities for treatment of histamine intolerance and mast cell activation including diet, medicines and enzymes.

Chapter 9 deals with treatment of hypoxia which may or may not be present as well.

Chapter 10 deals with treatment of dysmenorrhoea.

Chapter 11 shows the App “Histamine Intolerance” which includes most of the medicine and food list from this book.

Chapter 12 gives suggestions for scientific research. Many open questions still exist!

The Appendix gives tables of medicines which are better to avoid, food lists with histamine, other biogenic amines, inhibitors of enzymes, mast cell degranulators, salicylates, foods with lectin activity etc.

At the end of this book, References to books and articles are listed.
1.1. Motivation to write this book

From my own experience I know that it can take many years to find out the root cause of health symptoms. Health professionals see patients coming back again and again because their symptoms persevere. High costs are involved for medicines to treat the symptoms without knowing the cause, for ambulances and electrocardiography because a heart attack is suspected and for loss of working days. The aim of this book is to provide practical knowledge and show to connection between all the symptoms to patients, health professionals, researchers and politicians and to increase the general awareness of histamine intolerance and mast cell activation.

For patients...
In the first place this book is written for patients. It is a practical fast and easy step-by-step guide for diagnosis and treatment. The patient’s only goal is to get rid of her / his symptoms. Existing food lists often do not provide the reason why certain food items are on the list. This book aims at providing a better understanding.

For health professionals...
Histamine intolerance and mast cell activation is often overlooked. A quicker diagnosis is needed. GPs (general practitioners) are the first health professionals consulted by patients so it is highly desirable that they have a general understanding of histamine intolerance and mast cell activation. Dieticians can help the patients with the elimination diet and do the interpretation of the patient’s diary. Good food lists are prerequisites. Allergists are familiar with allergy and mastocytosis. However the leaking of histamine and other mediators from a normal (!) amount of mast cells is possible and must be recognized as well.

For researchers...
The fact that histamine intolerance and mast cell activation with normal amount of mast cells is not widely accepted by the scientific community does not mean it does not exist! The abstracts of scientific literature are provided for reference.

For politicians...
A quick diagnosis of histamine intolerance and mast cell activation not only stops the suffering for patients, it also saves a lot of money! There is a clear need for labeling the food with the histamine content at the moment of packaging. More funds are needed for research.
1.2. **Step-by-Step Approach: CURER**

CURER is the fast and easy step-by-step approach to get rid of symptoms caused by histamine intolerance and/or mast cell activation:

Step 1: **Check** if you recognize the symptoms of histamine intolerance and/or mast cell activation (Figure 2). Yes, then go to step 2.

Step 2: **Understand** histamine intolerance and/or mast cell activation. Read, read, and read.

Step 3: **Register** in a diary what you eat, which medicines you take, other possible triggers and the symptoms you experience.

Step 4: **Eliminate** the suspicious food and other triggers.

Step 5: **Re-introduce** the food/trigger after a while, in order to find out, if this particular food/trigger does or does not provoke adverse reactions.

![Image of step-by-step approach]

*Figure 1 The CURER step-by-step approach to histamine intolerance and/or mast cell activation*
Figure 2: Histamine Intolerance and Mast Cell Activation cascade of symptoms

**Histamine Intolerance & Mast Cell Activation**

Legend: triggers | defect | symptoms: H1 & H2 receptors | top symptoms: mastocytosis patients

- **Histamine-rich food**
  - H. pylori
  - Antibiotics
  - Histidine-rich food
  - Wrong gut bacteria
  - L. casei - probiotic
- **Iron deficiency**
- **Vitamin B12 deficiency**
- **Menorrhagia**
- **Hemoglobin**
- **Anemia**

**Histamine**
- Itch/H1
- Skin redness/flushing
- Red spots
- Skin rash/Eczema
- Hives
- Diarrhea/H1
- Nausea/Vomiting H1 & 2
- Gastric acid/H2
- Runny nose
- Bronchoconstriction H1
- Vasodilation
- Edema
- Blood pressure
- Dizziness/Fainting
- Anaphylaxis

**Oxygen**
- Hypoxia
- Shortness of breath
- Chest pain
- Tension type headache
- Muscle pain/cramp
- Frozen shoulder
- Migraine aura
- Problems with speech
- Stuttering
- Hearing problems
- Tinnitus
- Hair loss
- Cold feet
- Tired eyes
- Vision/Focus problems
- Macula degeneration?
- Confusion
- Disorientation
- Hallucinations
- Noise, smell
- Brain white matter lesions
- Vascular dementia
- Sleep apnea
- Nose pain
- Coma
- Death
- Dysmenorrhea
- Miscarriage

**Adrenaline**
- Phaeochromocytoma?
- Rapid heart beat
- Rapid breathing
- Insomnia
- Fatigue
- Nightmares
- Migraine
- Anxiety
- Panic attacks
- Hyperactivity
- Sweating
- Urination
- Thirst
- Constipation
- Vasovasogulation
- Blood pressure

**Tyramine**
- MAO enzyme
- "Cheese effect"

**Sugar/Glucose**
- Hypoglycemia
- Fatigue
- Hunger

**Loopa**
- Dopamine
- in frontal cortex D1 & 4:
  - Cognition:
    - memory problems
    - attention/concentration problems
    - problem-solving
  - Motor control
  - D2 (Parkinsonism)
  - Unsteady gait
  - Prolactin secretion
  - Libido

**Chemoreceptor trigger zone D2:**
- Nausea
- Vomiting
- Lack of appetite (anorexia)

**Mood**
- Depression

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2. CASE HISTORIES

2.1. WOMAN, AGE 48, THE NETHERLANDS – THE AUTHOR

My monthly periods were always very painful (dysmenorrhoea) and this was associated with fainting. At the age of 19, on doctor’s advice, I started taking birth control “pill” to get rid of these period complaints.

At the age of 30 arthritis-type of complaints started with a lot of back pain. Rheumatologists could not find the underlying cause. Erythrocyte sedimentation rate (ESR) was normal so it was concluded that there was no inflammation. Because of the stiff spine I was thinking it could be ankylosing spondylitis but X-ray images of the sacroiliac joint and the spine were normal and no HLA-B27 (Human Leukocyte Antigen B27) was detected in the blood. Later, because of painful cartilage of the ear after sleeping, I was thinking it could be relapsing polychondritis but the medical specialist did not want to investigate because the ear was never very red.

To summarize, there was no reason to suspect something “serious”. However I was unable to continue my job.

The day after my first and last visit to a sauna the pain was much worse.

At age of 31 I had an episode of altitude sickness when arriving at Toubkal Refuge (Maroc) at a height of 3207 meter. Headache, diarrhea, vomiting, even unable to drink water. Fellow travelers had no or limited complaints whereas I had to descent in the middle of the night.

After a few years the arthritis was replaced by chronic headaches (bilaterial, no aura, worse when moving around).

Around age 36 I had short episodes of racing heart/irregular heartbeats. At other moments I had bowel cramps without knowing what the cause was.

At the age of 38, I stopped taking “the pill” because of headaches starting on the first day of the stop week. Since then I live on ibuprofen to get me through my period days. One day, after the Christmas week I was too late taking ibuprofen with heavy diarrhea as result.

Although my headaches decreased, they did not disappear after I stopped taking anti-conceptives. So I went to my GP because of the headache complaints and asked if the cause could be a high blood pressure. I had a low blood pressure.

At the age of 40 my office work was becoming more and more demanding. How to get rid of the chronic daily headache? I spent my Christmas holiday reading about headaches on the internet. I often came across anti-migraine diets. Although I did not consider myself to have migraine, but just a headache (bilaterial, no aura), I said to myself that I
should give it a try! What is there to lose? The food I decided to skip for some time was salami/chorizo sausages which I took often for lunch and orange juice.

During the same period, I went to a neurologist, specialized in headaches. His conclusion was that I suffered from 10% migraine and 90% tension-type headache. His advice was to take nortrilen (nortriptyline) for the tension-type headache. Furthermore, he recommended yoga and biofeedback therapy.

Surprisingly, after two weeks of my simple elimination diet the headaches were gone! Instead I became hyperactive, trembling fingers and unable to sleep and when sleeping I had nightmares, but the complaints slowly disappeared the following days. Bingo! So, I did not take the nortrilen and did not do any yoga/biofeedback because the problem was solved! Also I had the impression that I had less hair loss.

Then I started reading, reading, and reading. I asked the Dutch food information organization “Voedingscentrum” for a table with concentration of histamine in food (which they provided some years ago) but I found out that they have terminated this because they consider histamine intolerance scientifically unproven. Finally I found food lists in the book “Eetwaar = eetbaar?” by Dr. Kamsteeg and also I could get a copy of the Dutch ALBA list (1996) via a dietician.

The best information was only available in German language. I felt kind of lucky that I learned German at school! The book “Histamin-Intoleranz. Histamin und Seekrankheit” by Reinhart Jarisch (2004) really improved my understanding of the subject.

I was looking for a quick & easy test for diagnosis. Therefore, at age 41, I did a histamine blood test called “histamine in whole blood” in Dutch for 86 euro via the Klinisch Ecologisch Allergie Centrum (KEAC) in Weert/the Netherlands. The blood was taken when I was on low-histamine diet and without having health complaints but KEAC said that if I would have histamine intolerance this would be revealed in this blood test. The test result was that my histamine level was 37 μg/liter which is in the normal range of 28-51 μg/liter. The Dutch anti-quack society “Nederlandse Vereniging Tegen de Kwakzalverij” considers the KEAC to be quack. How reliable is this test?

I started keeping a diary for about 2½ years. The headache starts about 22 hours after the intake of suspicious food meaning at about 4 p.m. Eating the same meal for two days often gave no symptoms the second day. About one to two days after a an attack I was often suffering from sleep disturbances/hyperactivity.

At the age of 42 I went to an allergist and asked if he could prove my suspected histamine intolerance. He had to think about it. He is still thinking...
I suspected to have hay-fever because of **running nose, sneezing, red eyes** and headache but the blood test for inhalation allergy was negative.

At age of 47 I changed job and now work from home instead from an office. Very soon after this move I developed a **frozen shoulder** and **muscle cramps** in my upper arm. These cramps seemed to grow after eating oranges and disappear after taking Allerfre (loratadine: a H1 histamine antagonist drug).

At age of 48 I had **hallucinations** several times. The first one was in Beijing, in a badly ventilated room, the day before start of my period. Early in the morning I heared people in the corridor making terrible noise. Also there was a disgusting smell. I had to throw up and had diarrhea. First I thought it was the food but when the vomiting did not stop I had the luminous idea it could be the start of the menstrual cycle and took ibuprofen which stopped the suffering. The next day I considered it impossible that there has been such a terrible noise and disgusting smell. I thought it must have been a hallucination, but since I was half asleep I was not completely sure. The next day, exhausted, I had my flight back to Amsterdam.

Next time, at home, at night, I heard terrible noisy people outside our house which did not wake up my husband. Later I thought this could have been another hallucination.

Another incidence, when arriving in a hotel room (windows closed), I heard terrible noise from a vending machine in the corridor. Next day I could verify this noise was non-existing. It was the day before start of menstrual cycle.

One night I heard in the forest next to our house a sound like someone was hitting a metal bar.

My last hallucination was at the moment of waking up I felt a kind of small metal ball falling onto my body. I immediately recognized it as being a hallucination.

Other complains around that time were: **shortness of breath (dyspnea), pain in top of nose, sadness, emotional crying spells, short-term memory loss, difficulty understanding fast speech, balance problems when walking, very tired eyes, hair loss, very very cold feet, tiredness, waking up very early with rapid heart beat (tachycardia) and rapid breathing (tachypnea).** Symptoms were worse from ovulation to end of my period. I read about premenstrual dysphoric disorder (PMDD) but this seems to end when menses start.

Menopause is starting?

Then, from Stans van der Poel I received tools to measure continuously heart- and breathing rate and breathing volume and was interested how the values would be for someone with histamine intolerance. In her office breathing rate was normal. When she put me into stress certain values improved whereas for “normal” people values would become worse. At home I monitored during sleep and I was shocked when I look at the
resulting charts. It showed episodes of very high heart- and breathing rates and moments when I stopped breathing (apnea; later confirmed by my husband) (Figure 3, Figure 4). I concluded I had difficulty getting enough oxygen: hypoxia!

Figure 3 Somnograph of the author of this book
1:45-1.51 a.m. Recorded with a tool from Stans van der Poel: http://www.stansvanderpoel.nl/
Legend: Breath Sig = Breathing volume, HF = heart frequency (1/min), BF = breathing frequency (1/min).

Figure 4 Somnograph of the author of this book
2:49-2:51 a.m.
My haemoglobin blood level was measured and in normal range (sample after end of period, in follicular phase of menstrual cycle). I bought the Contec CMS50F finger pulse oximeter (110 euro) for continuous monitoring of blood oxygen saturation (SatO2) and heart beat (Figure 5, Figure 6). For different circumstances I can now check my oxygen saturation.

**Figure 5 Pulse oximeter Contec CMS-50-F.**

Blue: oxygen saturation (%), Green: pulse (beats/minute).

**Figure 6 Pulse oximetry of sleeping in a well ventilated room.**

Green: oxygen saturation (%), Blue: pulse (beats/minute)
In my office room at home there was no ventilation, except through the always-open door to the living room which has natural ventilation. But apparently that was not sufficient! From now on I tried to maximize fresh air 24 hours/day. It was absolutely amazing how fast my hypoxia symptoms disappeared. Only short-term-memory is improving very slowly. I take a one-hour walk every day.

A new natural ventilation grating (http://www.duco.eu/) was installed in the office room at home. Immediately I could measure an increased oxygen saturation when sitting in the living room and I can really feel the air flowing. Apparently you need two grating so the air can flow.

**Figure 7 Duco natural ventilation system**

A major defect was found in the **Histamine N-methyltransferase (HNMT) gene** (T105I) which codes for the enzyme Histamine N-methyltransferase resulting in a slower breakdown of histamine in the cells of my body (Figure 8). Bingo again! A saliva sample was analyzed by Novogenia GmbH (Mondsee, Austria) for 228 euro as part of their HNMT-study which investigates the relation between various defects in the HNMT-gene and histamine intolerance.

**Figure 8 Histamine N-methyltransferase gene test results by Novogenia.**

Yellow: important part of the gene, Grey: unimportant part of the gene.
Other symptoms:
- Terrible headache when I have a cold or flu.
- Don’t like the smell of perfumes. Headache from flowering Cyclames plants. The smell of flowering Hyacinths is untolerable.
- Terrible headache a few days in February from something (fragrance?) in the outside air.
- After the first swigs of red wine I start coughing for a few seconds.
- Drowsiness after meals (somnolence). Caused by lack of oxygen for digestion?
- Eczema from contact with Rosin (Colophony). Rosin is a solid form of resin obtained from pines and some other plants, mostly conifers (Leylandii). The main component is Abietic acid. Rosin is used for example in plasters.
- Itching after contact with wool with course fibres.
- Eczema on elbows at pressure points, sometimes.
- Ice-cream headache (a short sharp headache after eating something very cold).
- Headache and tiredness from heat.
- Solar allergy: eczema from too much sun.

Suspicious food (possible culprits):
- Salami, fresh hering (histamine; nitrate vasodilator)
- Red beets, endive (nitrate → vasodilator)
- Wine-based vinegar like balsamico (acetaldehyde → mast cell degranulator)
- Raisins (sulphite → mast cell degranulator). Organic raisins without sulphite are tolerated.
- Citrus fruit (fragrances → mast cell degranulator)
- Spices in “ontbijtkoek”, “speculaas”, Glühwein (spices → mast cell degranulator)
- Green tea

Family member with HNMT-gene defect is intolerant to:
- contrast media (anaphylaxis),
- coarse wool (itch),
- formaldehyde and formaldehyde liberating in cosmetics (itch),
- tomatoes.

She uses the mast cell stabilizer Nalcrom when going out for dinner and there is no control over the ingredients.
2.2. **Man, age 55, Germany**

Before he was affected by histamine intolerance himself, he knew the word “histamine” from a friend who told him, that in springtime (hay fever season) he avoided pork meat meals in order to lower his blood histamine level and thus decrease or even avoid the symptoms of his hay fever. Since he was affected by hay fever since the age of 19 too, he tried the same diet as his friend once, but without a convincing result. At an age of 50+ he encountered a couple of symptoms which could be avoided by low histamine food, as he learned later. For two years he was struggling with dizziness, “heart attacks”, high pulse, constant coughing and red spots on his skin. He also experienced a couple of unclear collapses at the age of 53 which never could be traced back to a root cause. Electrocardiography (ECG) and Electroencephalography (EEG) showed normal results. Just as a test he was convinced by the author of this book to reduce or avoid some food which was considered most likely to contain high levels of histamine: canned fish, especially tuna and mackerel, salami, old mountain cheese. He got rid of the coughing within three days, and the beneficial effects on skin and heart slowly appeared. In the beginning of the test he experienced two nights without sleep and then felt much better than before.

For the supply of sausages he found a butcher using meat from local production without long transport distance for the animals and without industrial slaughtering. This reduces the stress for the animals and lowers the histamine level in their body accordingly. Since this time his personal nutrition program consists of avoiding food having a strong negative effect, minimizing the food having unclear or weaker negative effects and concentrating on food having low or no effect as a basis for nutrition. Examples of these foods are given below.

By the way, his professional stress, has been at a high level since the age of 35, so there is no distinct difference in recent times which could explain an enhanced histamine level in his body. He ascribes his enhanced histamine level mainly to nutrition combined with the lowered efficiency of the diamine oxidase (DAO) enzyme because of his age.

**Strong negative effect**

- Gratinated cheese from convenience products, or in the restaurant, including (frozen) pizza dishes,
- Mozzarella,
- Smoked fish of any type, even fresh or high quality one,
- Canned fish, if more than 100 gram,
- Thai fish sauce,
- Cured ham, also as an ingredient in sausages or on sandwiches, one slice being sufficient for a negative effect, e.g. Wiener sausage or Bratwurst,
- Salami,
- Aceto balsamico of Italian type,
- Ice cream, UHT (Ultra-high temperature processing) milk or cream, also cream and tomato/cream sauces in restaurants,
- German Hefe-Weizenbier which is unfiltered white beer with yeast.

**Weak negative effect**
- Old mountain-type cheese, if more than 20 gram (there is a distinct difference between e.g. 6 months and 12 months old cheese from the same producer, the latter being more negative),
- Gratinated cheese homemade from freshly raped cheese, even Parmesan,
- White sheep cheese (greek type) if more than 100 gram at once,
- Large fish dishes (mediterranean type plates) with more than 250 gram of fresh fish,
- German type sausages,
- White wine vinegar,
- Mustard.

**Low negative effect**
- White cheese, fresh cheese especially from goat and sheep.
- Minced meat dishes, including burgers,
- Homemade lasagna,
- Dried mushrooms,
- Bread,
- Tomatoes, dried tomatoes,
- Homemade pasta Bolognese sauce,
- Potatoes,
- Chocolate.

**No negative effect**
- One glass (200 ml) of fresh milk has no effect, so there is no lactose intolerance.
- Salad and vegetables (including spinach) have no adverse effects.

Deviations from this diet have sudden effects, like strong coughing and/or diarrhea, three to five hours after ingestion. In addition, sometimes symptoms appear with a longer delay (heart, skin). So it is important to stick to the diet even after not recognizing an immediate effect.

At first, his general practitioner, taking care of his health since the age of 40, did not recognize this histamine intolerance when searching for the root cause for his dizziness and breakdowns at the age of 53. Remarkably, after telling that he had less symptoms with a low histamine diet, the GP commented that it appears "more often than expected" in his practice.

At age 55 a major defect (T105I) was found in the **Histamine N-methyltransferase (HNMT) gene** (Novogenia).
2.3. **Woman, age 57, the Netherlands**

Since her childhood she had very often metabolic disorders, related to food. She was fainting easily and had a low blood-pressure, all her life, up till the present day. Since the age of 29 she has **ulcerative colitis**. Since the age of 48 she has atrial fibrillation. At the age of 55 she was very ill, for over one year after a lung infection with asthma complaints. She discovered the relation between histamine and her health complaints. Because of the ulcerative colitis she had already stopped with alcohol, caffeine, meat and fish, during the last 20 years. Also, since many years, she often has an acid reflux stomach.

Now she follows a histamine-low diet, which relieves the abdominal pains and decreases the atrial fibrillation too. Sometimes, she is tired and she still has a low blood pressure. In addition, she also suffers from rheumatism during the last 10 years. Regrettably, a lot of physicians and nutritionists are unfamiliar with the histamine intolerance problems.

No defect HNMT-gene.

2.4. **Man age 52, France**

At age 51 (January, 2011), he began having some odd symptoms. He went out walking one day, and felt his hands and feet **swelling** a bit; not seriously, but enough to bother him. That evening, at home, he felt a more generalized swelling all over his body, along with **flushing**. He took an allergy pill and, while it helped a bit, it didn't stop the symptoms entirely.

The next morning, he went to his GP who assumed that he had an allergic reaction to something. He gave him some cortisone pills to take for a few days, and his symptoms went away. But this occurred two more times in the following months, until one day he had a full-blown **asthma** attack. He had never had asthma before this, so I was quite surprised and scared.

A couple of months later he got to the point where he was taking allergy pills daily, and he would get these flare-ups which didn't seem to correlate with eating any specific food or being exposed to specific plants. The internist in the hospital couldn't find anything, so he just went on taking his allergy pills and suffering from this odd swelling.

There was clearly something allergic going on. When someone would cut grass near his home, a village in the French Alps, surrounded by fields, he would swell up, and occasionally have trouble breathing. He was diagnosed as having allergic allergy and bronchial hyper-reactivity, and given an inhaler in case of problems. But all the allergy tests he had were negative, including those to grasses and standard pollens. He would often have reactions after meals - a half-hour to an hour after eating - and he started keeping a food diary, but was unable to find the food that bothered him.
At age 52 (January 2012), he moved to a large town an hour from where he had been living. He had hoped that some of his problems would subside being out of the country, but that wasn't the case. In addition to the problems that seemed related to allergies, he started having what he learned, from a gastroenterologist, was **irritable bowel syndrome**. He also suddenly became allergic to tomatoes, strawberries and red peppers; they *irritated his mouth, nose and eyes*. And red wine or sparkling wine would almost always lead to symptoms. He saw an allergy doctor in his new town who admitted that all this was beyond him, and he referred me to an allergy doctor at the hospital in Grenoble. Prior to this visit, he had the feelings that the doctors didn't take him seriously. He didn't have the usual allergy symptoms - massive edema (swelling) or *rashes*, but the doctor he saw seemed to immediately understand his problem. She asked him a number of questions about whether he was bothered by smells and perfumes (yes), whether he had a family history of allergies (yes, his mother), and scratched my arm with a pen. She then said that it was likely that he had histamine intolerance, and went on to explain a bit about it, and the elements that suggested this. Other than his physical symptoms, she said that people with pale skin (like him) were more likely to have it, and that they have rapid dermatographism (swelling on the skin where she scratched me with the pen). As for the tomatoes, strawberries and red peppers, she explained that these are mast cell degranulators and that, when he ate them, the histamine liberated in my mouth attacked my mucous membranes. She asked which meds he take, and for most of them, just noted them, but when he said he is taking *diazepam (Valium)*, she said, "You take Valium?" with a tone of surprise. He does not take it often, mainly for the **dizziness caused by cavernous angioma in his brainstem** near the vestibular nerve, which was diagnosed in 2005, with symptoms from around 1982. He gets dizzy when walking more than about ten minutes and only takes small doses, 1 or 2 mg, because he is very sensitive to many drugs. He can't take more without getting sleepy. But Valium has a very long half-life, and that may have a long term effect. Also it's a DAO blocker, so he is going to try and find something else that can help with the dizziness. His neurologist had given him that both for the dizziness and the muscle spasms, saying that as long as he take it irregularly and in small doses, he's not worried about long-term use. He does not take it daily; sometimes every other day or so, sometimes a few times a week, depending on how he feels.

He has had many of the symptoms that are common to histamine intolerance: **irritable bowel, bloating, acid reflux, hypertension** (taking rilmenidine and lercanidipine), **dizziness, often after eating, coughing and asthma, flushing and arthritis**. At times, after meals, he gets very strong reactions where he had a **headache, dizziness, palpitations and tremor**. He'd also long had serious **muscle spasms in his back and torso**, which he attributed to a compressed nerve. A few years ago, they led to a painful **capsulitis (frozen shoulder)**. Interestingly, since he started taking antihistamines, these spasms have
gone away. He has arthritis of the knees. The pain gets worse from time to time, but was pretty bad a few years ago. Since he has been taking antihistamines, it hasn't been too bad.

He is still in the testing stage, with a number of follow-up tests to be done very soon, so nothing is confirmed, but looking back at a food diary that he had been keeping for a year showed that the times when he had reactions after eating, there was at least one histamine-rich food in my meals. He ate a lot of fish, loved tomatoes, and often ate rice with soy sauce. But he had been looking for one single food that was causing his reactions; instead, it seems that dozens of foods were at cause.

Since then, he has managed to greatly reduce symptoms through changes in diet, eliminating all histamine-rich foods, and learning which foods cause symptoms. Avoiding fresh fish and meat, and only eating frozen, helps a great deal. A combination of two antihistamines daily, and low doses of prednisone when more acute symptoms appear, have turned this from a confusing situation into a minor annoyance.

2.5. **Man, United Kingdom**

His symptoms were wheezing after drinking coffee, nausea, fatigue, disrupted sleep, loose and frequent bowel movements and hives. He had been on a low histamine diet for 4 months, which was primarily poultry, vegetables and fats (also eating paleo diet). His health condition slowly worsened from day to day and things were getting pretty desperate. He also tried taking diamineoxidase (DAO) enzyme orally, which solved his gut symptoms, but did nothing for the other symptoms. Then he started working with a new dietary practitioner who asked him to do a stool sample which showed high levels of the bacteria *Helicobacter Pylori*. He started taking mastic gum to kill the bacteria at 1000 mg per day, just before bed, and after about 3 weeks he found himself able to eat beef again, and fish. His clarity of mind returned and his energy levels increased.

He was intrigued to find out why this might have happened, and after a little research discovered that H Pylori need vitamin B6 to thrive (Grubman 2010, Vitamin B6 is required for full motility and virulence in *Helicobacter pylori*, MBio. 2010 Aug 17;1(3), [http://www.ncbi.nlm.nih.gov/pubmed/21151756](http://www.ncbi.nlm.nih.gov/pubmed/21151756)). Vitamin B6 is also required to the production of DAO enzyme, which the body uses to break down histamine. So he guessed that the H Pylori had been using up his supplies of B6, making it impossible for his body to make enough DAO. This tied in with a test he had a year earlier, showing him to be deficient in vitamin B6.

So far his theory, but whether it is right or not, there is no doubt his histamine tolerance is much better than it was before. He may not be 'cured' yet, but his health situation has improved dramatically.

Supplementing Vitamin B6 may have worsened the H. Pylori infection!