

# Leaky-gut—the cause of allergies, asthma, and auto-immune disease

by

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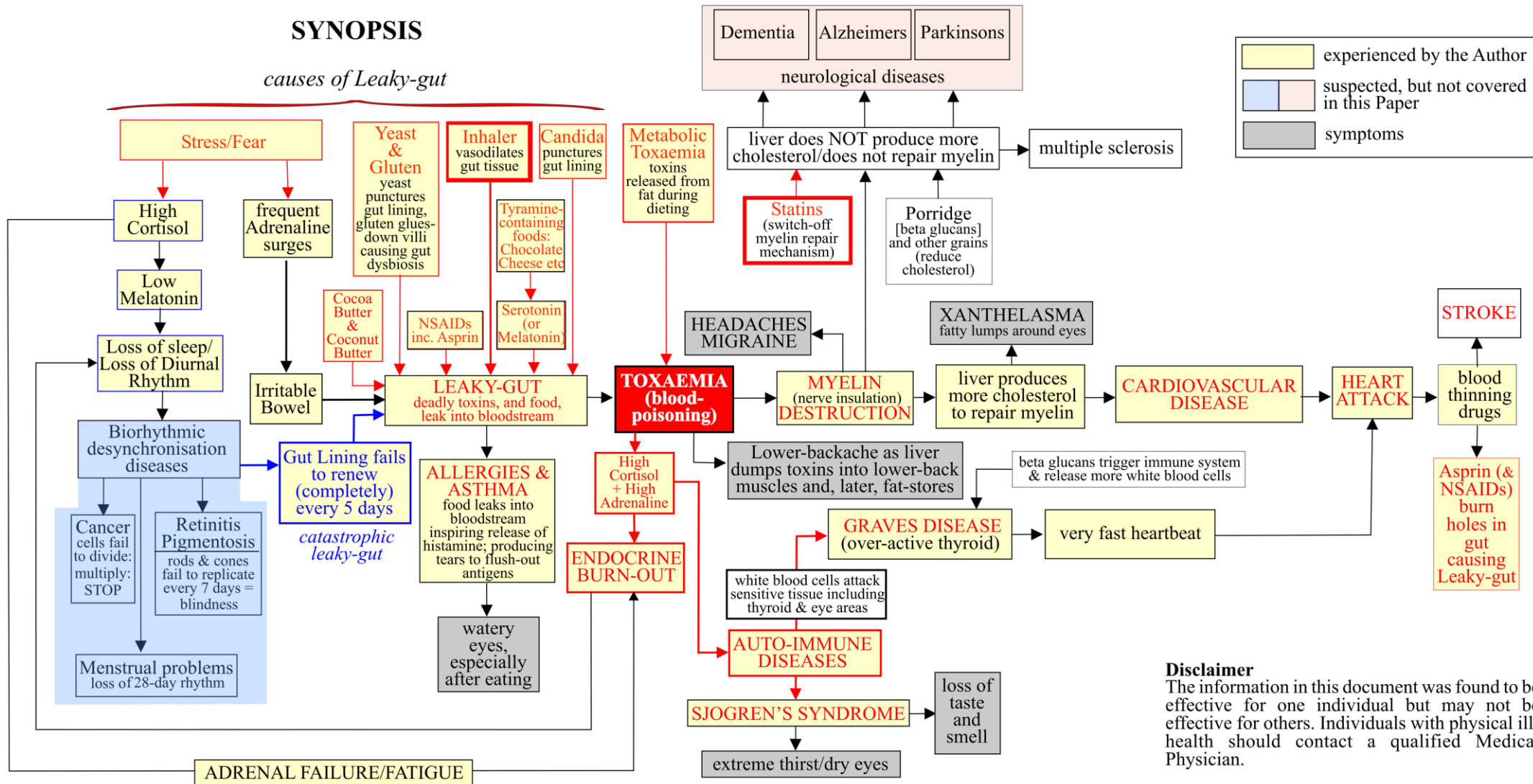
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## SYNOPSIS

causes of Leaky-gut



**Disclaimer**  
The information in this document was found to be effective for one individual but may not be effective for others. Individuals with physical ill-health should contact a qualified Medical Physician.

# Irritable Bowel Syndrome (IBS)

# Leaky Gut Disease

## Causes

### Alcohol

Kills friendly bacteria in gut leading to imbalance and inflammation in gut [avoid alcohol]

### Chlorine in Water

Kills friendly bacteria in gut leading to imbalance and inflammation in gut [boil water to destroy chlorine]

### Antacid tablets

Neutralises stomach acid allowing undigested food to enter gut where it rots, leading to imbalance and inflammation in gut. [Prevent indigestion through moderate eating/drinking]. Use baking soda [1/2-1 tsp in water] for indigestion

### Stress

Stress is fear. Fear stimulates production of adrenaline. Adrenaline irritates and inflames gut lining. Gut lining becomes diseased providing a haven for bad bacteria that release deadly toxins. Bad bacteria [and good bacteria] killed by antibiotics, or 1-2 raw garlic segments washed down with water [note: overdose of garlic will cause migraine-like headache for 2-3 days]. Repeat garlic treatment every 7 days.

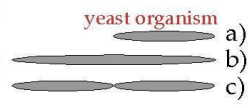
**Food Allergy [usually Yeast and/or Gluten in Grain (and fermented products)].** How the yeast organism causes leaky-gut: a) shows the single-celled yeast organism. b) In order to replicate it firstly grows twice as long. c) Then it divides into two, to become 2 yeast cells. Yeast organisms, glued to micro-villi [velvet-like hairs that line the small intestine] by the sticky protein gluten, found in wheat, puncture the gut wall as they double in length (b) and replicate, causing the gut to leak.

**Candida Fungus in gut** (spreads like dry-rot in an acidic gut, puncturing gut wall allowing gut toxins to leak into blood. Caused by compromised immune system and also by over-use of antibiotics (one symptom = white/yellow-coated tongue)). Thrives in acidic environment. Requires prescribed anti-fungal drug Diflucan, 200 - 400mg per day for 42 days. Killed (on tongue) by alkalai (e.g. Sodium Bicarbonate [baking soda]). Try to keep internal alkaline environment (vegetarian, and a low sugar/low carbohydrate diet. Very difficult to eliminate. More insidious than other causes of leaky-gut. No refuge from pain until gut fungus killed-off.

**Non-steroidal Anti Inflammatory tablets** (including Asprin-based pain killers)

Burn holes in the gut wall. [Use, instead, Paracetamol (although largely ineffective with severe toxaemia-type headache)]

Aftercare: Multiple attacks of Toxaemia cause permanent damage to lower-back muscles leaving less muscle in that area to soak-up and store new toxins ingested normally from food. Previously harmless foods now cause lower back pain. [note; cooking at boiling-point destroys chemical chains of many toxins]. Avoid the following: Raw kidney beans (contain phytohemagglutinin; 3 raw beans can kill). [note; canned beans have been soaked overnight and cooked for 2 hours at boiling point and are safe to eat]. Raw broad beans and other pulses (cook at boiling point for 10 minutes). Raw or green potatoes. Chillies (contain capsaicin). Dried fruit (sultanas, raisins, apricots, peaches etc). Grapes. Seeds of fruits (contain cyanide). Nuts. Cashews. Some artificial Sweeteners are pure poison. Dark chocolate (contains toxic theobromine). Mouthwash (contains toxic boric acid). Soft drinks (contain benzene). Tar based shampoos. Wood preservative, Turpentine etc. [on the skin]. Ingesting/absorbing very small quantities of these will cause lower back-pain.



**Irritable Bowel Syndrome**  
Treatment:  
SCENAR +  
rice-based diet (fig. 4)

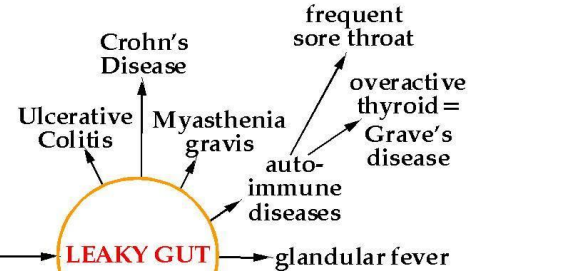
**Endocrine Burn-out**  
Damage to Pituitary, Hypothalamus, Pineal & Adrenal glands; loss of diurnal rhythm; reduction in Cortisol = thirst, joint pain and muscle twitching

**Bacterial toxaemia**  
Toxins from gut bacteria leak through gut into blood.  
Treatment: Antibiotics, or raw garlic, kill gut bacteria allowing liver to cleanse blood.

**TOXAEMIA**  
(blood-poisoning, organ failure, delirium, fever & death [figs. 1-6])  
first symptoms: severe lower-back (muscular) pain & severe headache

**Metabolic toxaemia**  
Dieting releases toxins (stored in fat) that re-circulate in blood. Long-term damage: toxins burn-off myelin insulation from nerves. Nerves short-circuit, causing extreme systemic pain and localised tremors (lips/eye-lids etc). Liver produces more cholesterol to repair myelin resulting in fatty-lump deposits over eye-lids. Treatment: Gain weight quickly to re-'store' toxins in new fat. Sweat and bath often.

## Effects



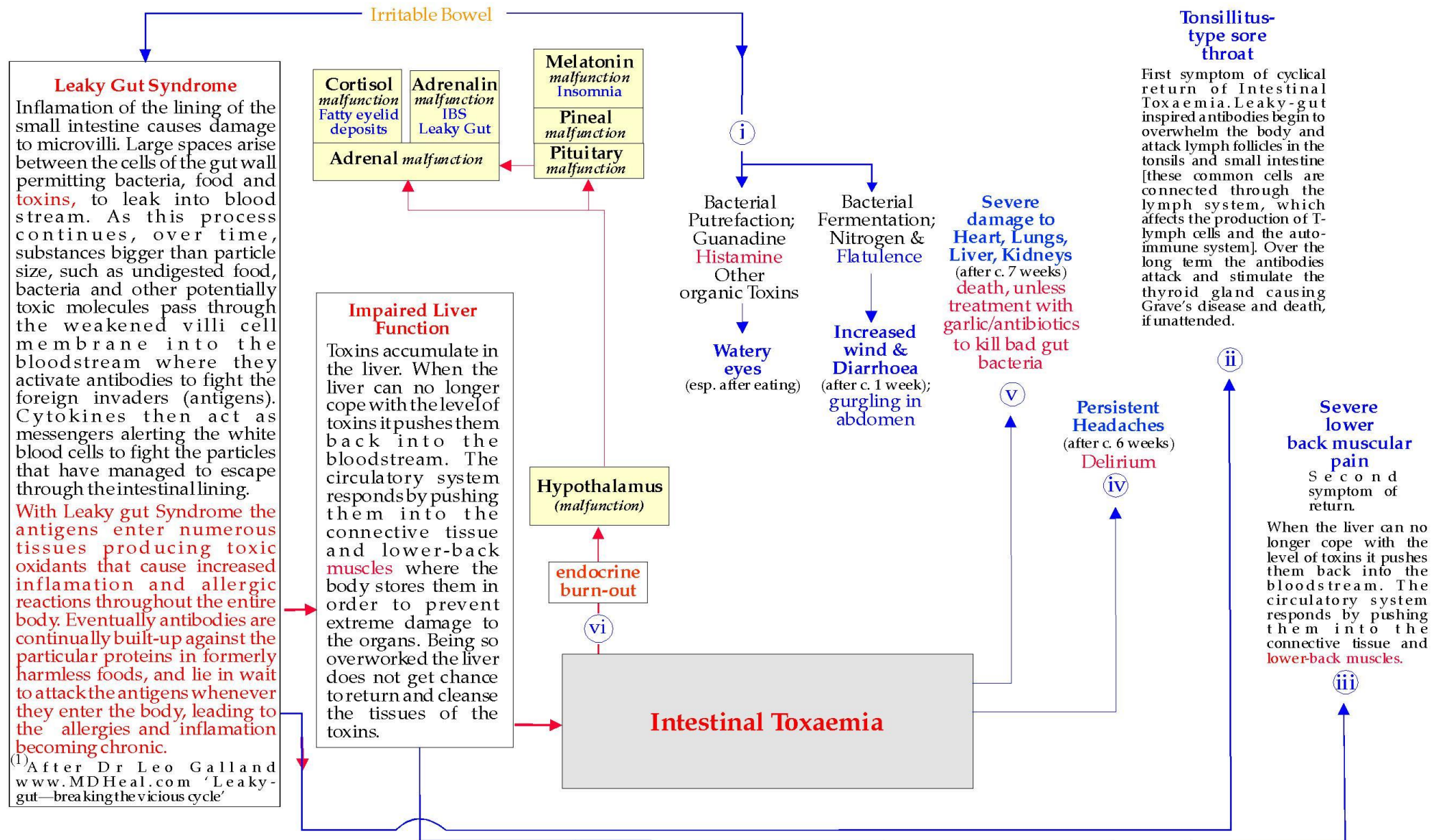
**food allergies**  
food from gut leaks into blood inspiring release of histamine causing watery eyes (worse after eating), more leaky-gut, and a runaway histamine/adrenaline cycle

**Candida-inspired toxaemia**  
Candida fungus punctures gut wall allowing toxins to leak from gut into bloodstream.  
Treatment: Diflucan antifungal drugs: 200mg per day for 42 days.

Figure 1.

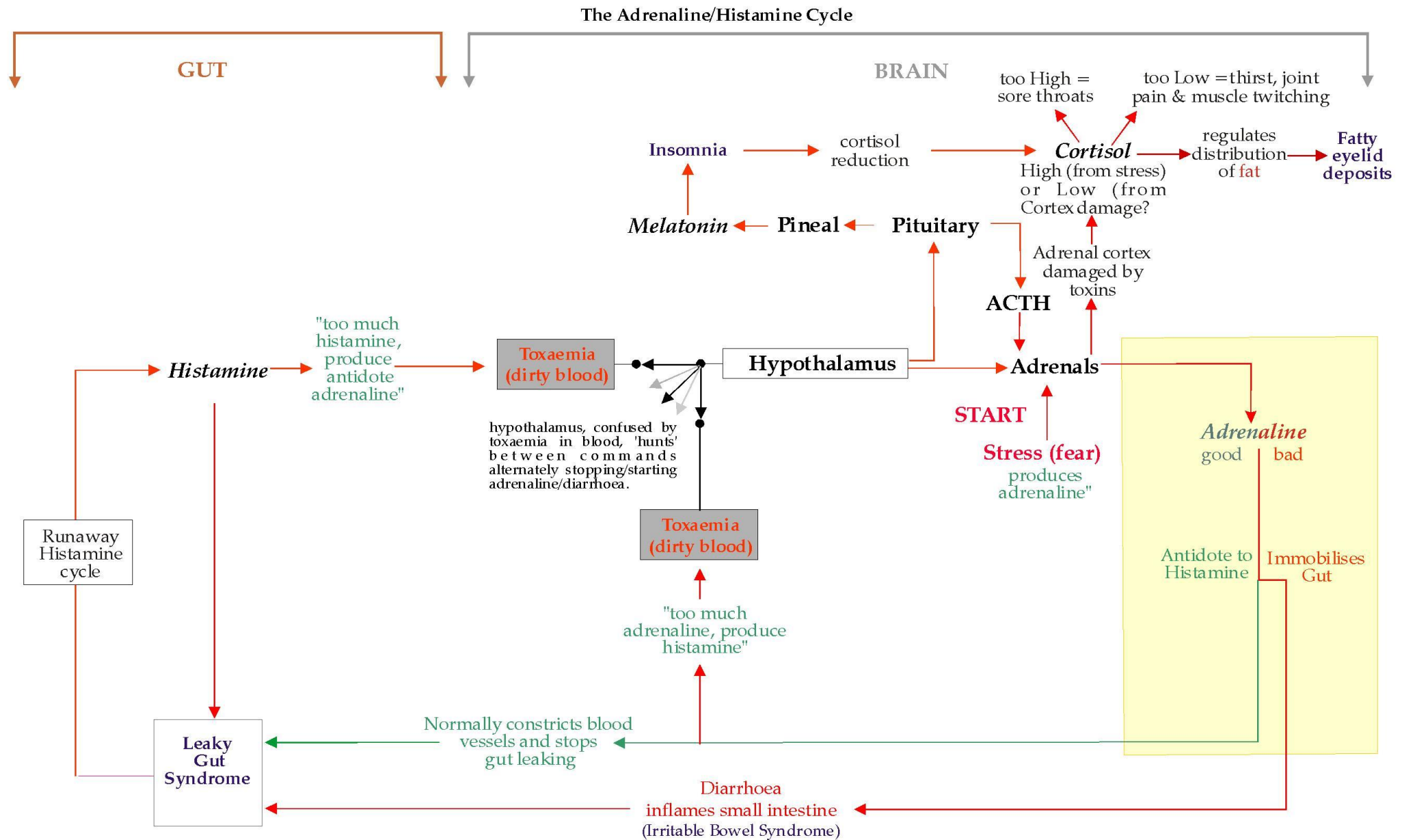


## Recurring bouts of Intestinal Toxaemia—caused by Leaky Gut Condition



Recovery Cycle; Raw garlic or antibiotics kill toxin-producing bacteria in gut. Toxins cease to be produced. Liver is then able to cope with the reduced level of toxins and begins to cleanse the blood of poisonous toxins (takes about 2-days). 'Time' [2+ days] also allows toxins to migrate to fat stores where they are stored painlessly [note; toxins are re-released, en-mass, during a diet, leading to 'metabolic (recirculating) toxaemia']. Hence, no *infection* (bacteria) found in bloodstream (i.e a blood test for bacteria is useless). Symptoms (blue) cease. Toxaemia will return approx. every 6 weeks unless cause of Leaky Gut ascertained and removed and then gut restored to balance by change of diet/vitamins and minerals + 1-hour walk/sweat daily followed, immediately, by bath—to wash-away toxins contained in the sweat from the skin.

Figure 2.



Stress (fear) inspires adrenaline. Adrenaline inflames intestine causing Irritable Bowel Syndrome which leads to Leaky Gut disease. Leaky gut produces histamine. **Histamine causes gut to leak more** leading to runaway histamine cycle. Leaking gut leads to intestinal toxaemia. Toxaemia interferes with Hypothalamus. Hypothalamus is unable to control adrenal gland and fails to regulate the production of Adrenaline causing bouts of diarrhoea and (in-between times) constipation. Irregular Cortisol production causes loss of control over fat distribution leading to unregulated distribution of fat (evident in eyelids). At the same time, the Hypothalamus fails to regulate the Pituitary and the Pituitary fails to control the Pineal, allowing variations in melatonin, consequential insomnia resulting in cortisol deficiency.



## Leaky Gut Disease —recovery cycle (I)

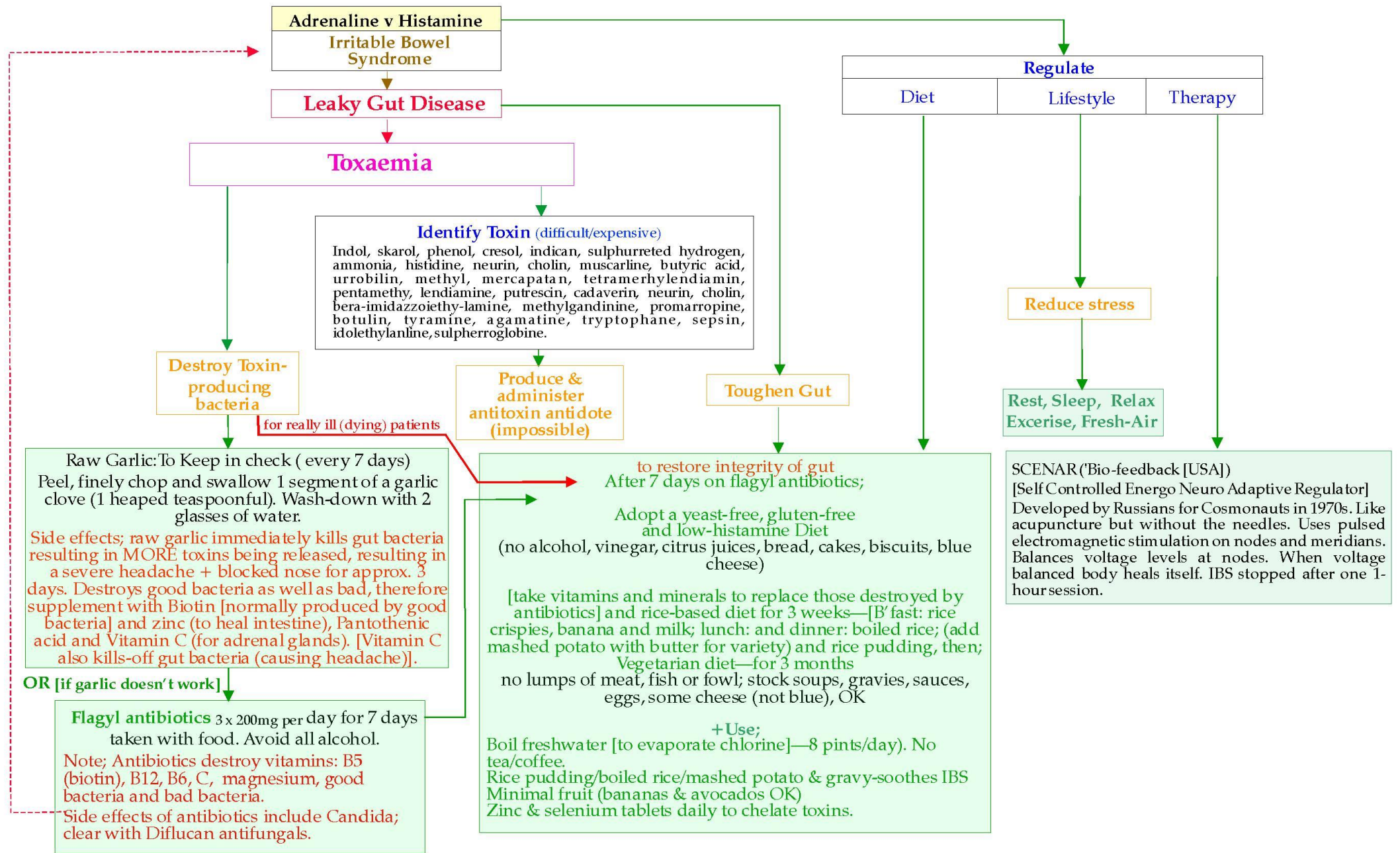


Figure 4.

## Metabolic (recirculating) Toxaemia

caused by consuming toxins stored in fat [when dieting]

Recirculating toxins attack Myelin [the fatty sheath that covers the nerves—an electrical insulator] resulting in acute systemic pain (severe [suicidal] headaches)

### repair Myelin sheathing

Myelin is made from: Cholesterol, Polyunsaturated fatty acids, phosphatidyl choline, [the lipid] sphingosine, and requires Vitamin B12 to synthesise

liver produces more and more **cholesterol** to make myelin to repair damaged nerves

excess cholesterol causes the build up of fatty deposits over eyelids and in cardiovascular system

Cholesterol makes;

**Hormones**  
inc Adrenaline & Cortisol  
Requires **Vitamin C** and **Pantothenic Acid (B5)**

**Bile Acid**  
makes mucus lining in gut = healthy gut

**Myelin**  
protects nerves  
**Vitamin B12 + Polyunsaturated fatty acids (PUFA)** essential for production

### reduce excess Cholesterol

#### Vitamin B12

but, for absorption, B12 requires **Calcium** [and **Calcium** destroys **Zinc** and **Magnesium**, see chart]. B12 also requires **Intrinsic factor** (made in stomach) for absorption.

**Vitamin C**  
reduces cholesterol, protects nerves  
**Porridge** for breakfast precludes high cholesterol foods (eggs, bacon, sausages, butter etc) & reduces cholesterol

**Lecithin** (contains **Choline**)  
reduces cholesterol, protects nerves

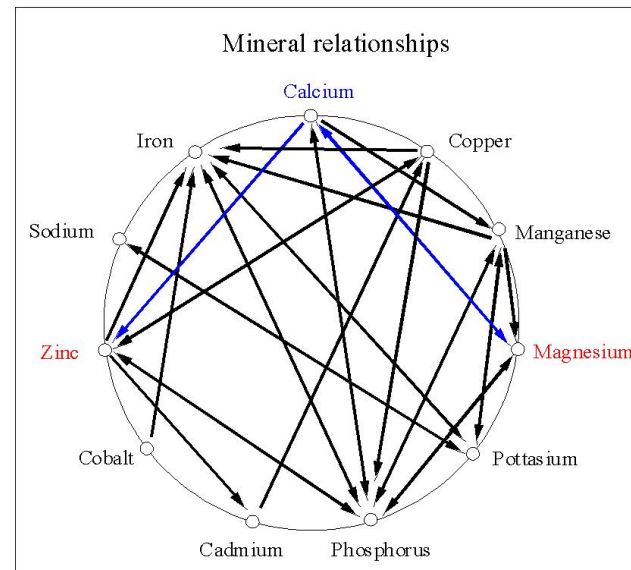
#### Zinc

protects nerves, aids gut regeneration, lowers blood fat

#### Magnesium

destroyed by antibiotics. Cofactor in many body processes inc energy production, cell replication. Cofactor for **Vitamins B1 and B6**

Toxins from each episode of intestinal toxaemia [assuming the patient survives] are relegated to the fatty tissue of the body where they are painlessly stored [because the fat contains no nerves]. However, if the patient diets, or loses weight, then the toxin-laden fat is consumed by the body and the toxins are once again released to re-circulate throughout the body. The liver attempts to cleanse them from the bloodstream and once again dumps the toxins in the muscles in the small of the back causing pain in that region. On previous occasions of intestinal toxaemia the toxins were then relegated to fatty tissue. But this time there is no fatty tissue [it having been consumed during the diet]. This time neither garlic or antibiotics can help the patient, because the problem is not arising from a flow of toxins from gut bacteria. The recirculating toxins then attack the myelin sheathing around nerve pathways causing **excruciating pain** from which there is no refuge. In an emergency, in the short term: Calcium bentonite clay [1 tsp in morning + 1 before bed] evacuates toxins rapidly [detoxes] reducing pain. Supplement with magnesium and zinc. The only way to remove the toxins in the medium term is for the patient to gain weight; produce more fatty tissue where the toxins can once again be stored. In the long term toxins removed by a detox using chelates (zinc, selenium, calcium bentonite) and/or a profuse sweating regime; 1-hour walk daily, to sweat, followed immediately by a hot long soak in the bath, or sauna therapy, to wash toxins from skin.



Note; Minerals affect each other as shown above. Antibiotics destroy some vitamins (B, C, and biotin), and magnesium. Magnesium affects calcium. Calcium requires vitamin D for absorption. Vitamin C increases take-up of iron (=bad). Vitamin B12 requires intrinsic factor (made in the stomach) for absorption.

Supplements for Myelin production: PUFA, Vitamin B12, Calcium, Zinc, Magnesium

Supplements for Adrenalin and Cortisol; Vitamin C, B5 Pantothenic Acid

Supplements to reduce excess Cholesterol; Vitamin B12, Calcium, Zinc, Magnesium, Vitamin C, Lecithin, Zinc, Magnesium

Supplements to detox Arsenic, Cadmium, Mercury; Selenium

Supplements to detox Lead, Mercury, Aluminium and Cadmium; Calcium, Zinc, Selenium

Hence supplement regime of: Vitamin C, Vitamin B5 (Pantothenic Acid), Vitamin B12 and Calcium (with Magnesium), Magnesium (for energy), Zinc (with copper), Selenium

Figure 5.



**Vitamin A** (Retinol) for mucous membranes and eyeball pain. Best source; fish oil, cheese, eggs.

**B1** (Thiamine) converts glucose into energy. Good for nerves and muscles, fatigue, digestion. Best source; yeast, grain, pork, [hence need supplement in form of 'B complex']. Destroyed by antacid tablets, alcohol.

**B2** (Riboflavin). Converts protein, fats and sugars to energy

**B3** Nicotinic Acid (Niacin). Co-enzyme. Produces energy from sugars, fats and proteins. Maintains healthy skin, nerves, brain, tongue, digestive system. Best source; yeast, bran, pig's liver, fish, cheese, eggs. [hence—when avoiding yeast— need to supplement in form of 'B complex']. Excess can cause pounding headaches.

**B5**. Pantothenic acid. Anti-stress vitamin. Good for hormones. Controls fat. Good for abdominal pain. Destroyed by antibiotics.

**B6** (Pyridoxine) For nerves (maintains myelin sheath), energy, reduce swollen abdomen, puffy fingers. Detoxes cyanide and tobacco smoke. Best source; yeast, [hence need supplement in form of 'B complex']. Destroyed by alcohol.

**B12** (Pernicious anaemia vitamin). Repairs myelin sheath in nerve pathways. Detoxes cyanide. Requires intrinsic factor and calcium for take-up.

**Bc** (Folic acid). For DNA/RNA, fatigue.

**Biotin**. For stress and energy and muscle pain. Manufactured only by good gut bacteria. Destroyed by antibiotics.

**C**. Good for cholesterol absorption. Anti-stress hormone. Good source potatoes [citrus contains histamine, which makes leaky-gut worse]. Destroyed by antibiotics and in cooking.

**D** (Sunshine vitamin) aids take-up of calcium for energy. Made from Sunshine on skin. High levels in oily fish.

**E**. (Tocopherol). Antioxidant. Aids malabsorption of fat. (Natural form from kippers/oily fish, vegetable oils). Most toxic of vitamins. Can cause headaches.

**Calcium** for nerve transmission, muscle function. Requires vitamin D and magnesium for take-up.

**Magnesium** aids take-up of B1 and B6. Good for nerves. Destroyed by antibiotics.

**Zinc**. Release vitamin A from liver to aid pituitary, adrenals, testes. Required for nervous system and brain. Reduces blood fat levels.

**Selenium**. Antioxidant. Detoxes arsenic cadmium and mercury.

**Lecithin**. Reduces cholesterol and high blood pressure. Mobilises fat. Repairs myelin sheath. Source of phosphorus. Source of phosphorus.

**Phosphorus**. Activates vitamin B complex. Involved in production of energy. Can prevent absorption of iron, calcium, magnesium and zinc. Can cause diarrhoea.

**Garlic**; natural gut cleansing-antibiotic—but kills good bacteria as well as bad

**Ginger**; natural gut cleansing-antibiotic—but kills good bacteria as well as bad

[Cold] New Zealand **Manuka honey** (UMF 25/30); natural gut cleansing-antibiotic [turns to hydrogen peroxide and cleanses gut]—but kills good bacteria as well as bad

**Bananas**. Good source of vitamins E, B vitamins, Good source of essential potassium, however, note;

**Potassium**. Good for nerve impulse transmission and intestinal tract but excess amounts are dangerous (depresses adrenalin and cortisol), causes ulceration of small intestine. Sources; dried fruit, bananas, chips, cereals.

**Adrenal gland** needs Vitamins C and B5 (Pantothenic acid) to make adrenalin and cortisol.

The chain of causation; from Irritable bowel to Adrenal failure

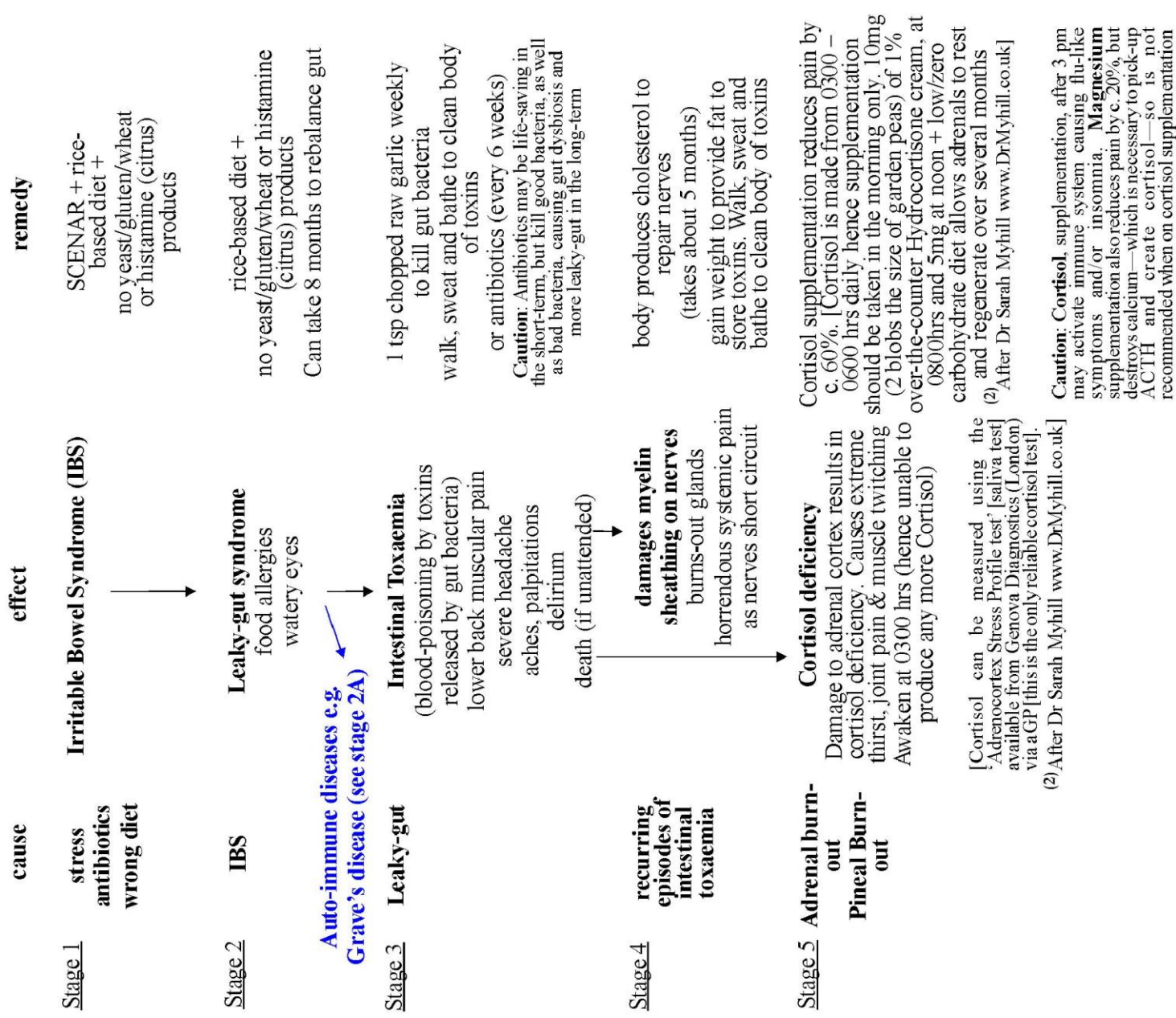
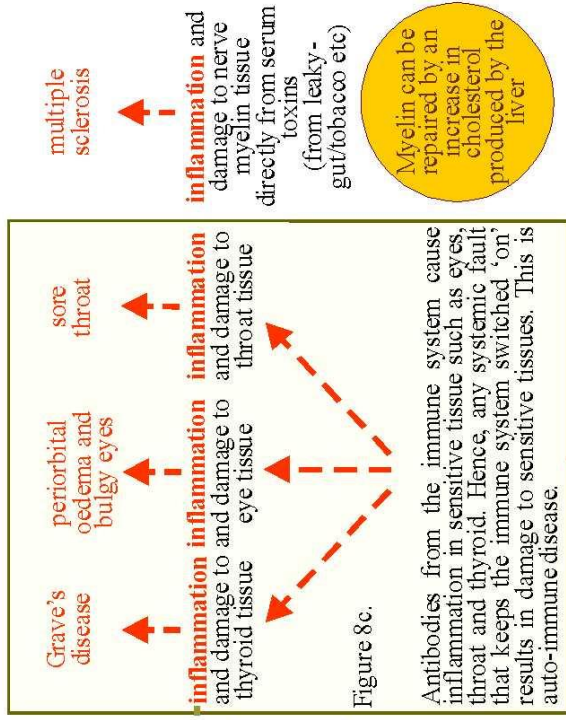
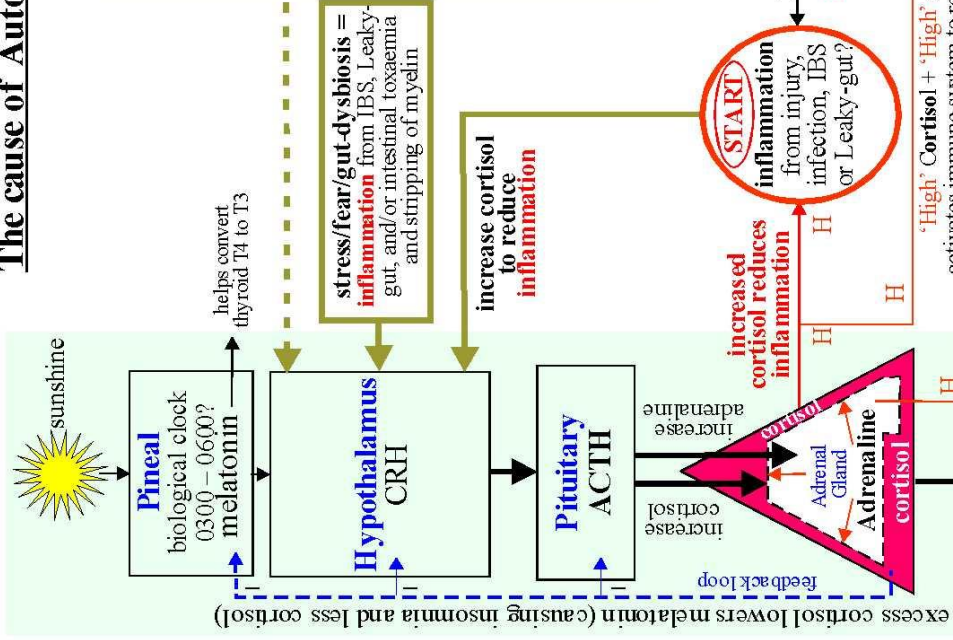


Figure 7.



# The cause of Auto-immune disease (I)



Short-term control of overactive thyroid:  
Use anti-thyroid drug Carbimazole  
Long-term solution of auto-immune disease:  
fix cause of HH

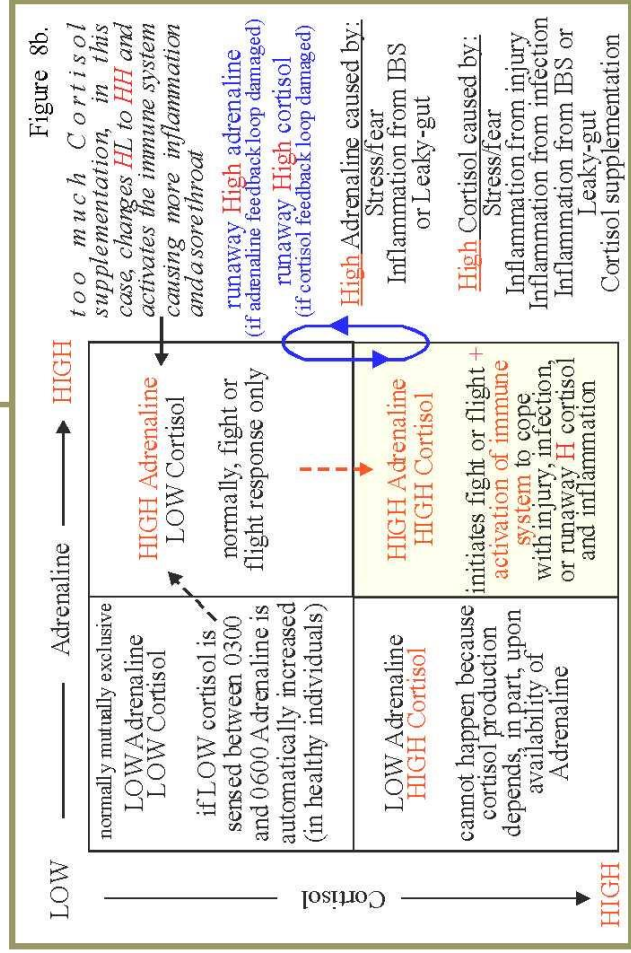


Figure 8.

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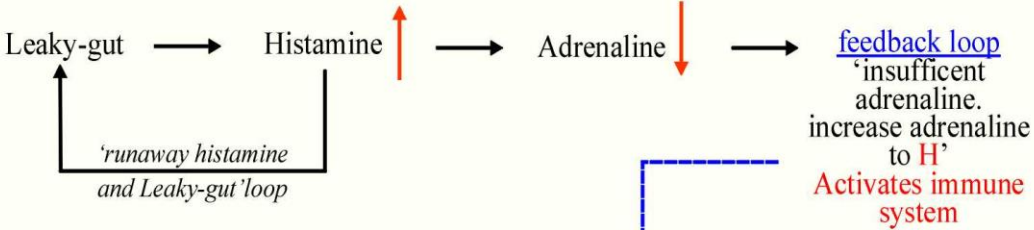
The endocrine system produces Cortisol to ameliorate inflammation and, together with Adrenaline, switches 'on' and 'off' the immune system, which produces antibodies to fight infections. Unfortunately, antibodies also cause inflammation to sensitive areas of tissue, like eyes, throat and thyroid. Endocrine dysfunction can occur in many ways: (i) Circulating blood-based toxins, from Leaky-gut, tobacco smoke etc. can damage the endocrine organs directly making them hypersensitive to activation from very minor inflammation caused by normal bodily wear and tear. (ii) Damaged organs may not detect feedback shut-off signals and remain 'on' continuously, keeping the immune system 'on' continuously. (iii) HIGH levels of adrenaline together with HIGH levels of cortisol [HH] are used to activate the immune system, and the HH combination can be caused by various malfunctions (see figure 8b.). Normally, the hypothalamus responds to 'significant' levels of inflammation, from injury or infection, and instructs the adrenal gland (via the pituitary) and adrenal cortex to produce more Adrenaline AND more Cortisol. Thus HH activates the immune system; antibodies are released to kill the infection. The increase in Cortisol negates the effects of the increased inflammation caused by the immune system and the original inflammation. When the inflammation falls, and the crisis is over, Adrenaline returns to normal, which switches-off the immune system and stops the release of antibodies, reducing inflammation further. The 'increase cortisol' signal, falls, switching-off the hypothalamus. Cortisol and Adrenaline return to normal. In auto-immune diseases the hypothalamus and/or pituitary send-out an 'increase cortisol' and 'increase adrenaline' signal continuously, which keeps the immune system activated continuously resulting in sustained tissue damage from antibodies.



**The cause of Allergies, Asthma and Auto-immune disease**

The body is precisely controlled by mechanisms designed to monitor and correct deviations of parameters from specific values. Deviation data is carried in the bloodstream to management systems located in the brain that are controlled by hormonal software. In order to detect parameter variance, the circulating blood must be kept clean and free from impurities. Foreign bodies entering the bloodstream must therefore be removed by the immune system. Normally, the brain detects the presence of bacteria in the blood and activates the immune system. Antibodies attack and kill the invading bacteria, rendering them harmless. The immune system remembers the type of antibody that was effective with a specific bacteria. Thus, a re-occurrence of infection from the same bacteria results in the rapid regeneration of those specific antibodies. This process is known as 'immunity' from a specific bacteria and explains how 'immunization' with a weakened vaccine occurs. Auto-immune disease is caused by a similar process; 'auto-immunization'. Leaky-gut disease allows antigens (as well as harmful toxins) to leak into the blood stream and activate antibodies to fight the foreign invaders. Cytokines then act as messengers alerting the white blood cells to fight the food, bacteria, dust and other particles that have managed to find their way into the bloodstream. At the same time, histamine is produced to flush-out the antigens. The vasodilation properties of histamine worsens the situation by allowing the gut to leak more and a runaway histamine/leaky-gut loop ensues. Antibodies are built-up against particular antigens through the process of auto-immunization and lie in wait to attack the invaders in the future, whenever they enter the body again. The increase in histamine depresses systemic adrenaline, which is detected by the adrenaline feedback loop in the pituitary, which reacts by sending-out an 'increase adrenaline to 'High'' signal. But the overwhelming production of histamine cancels-out any increase in adrenaline, so the 'adrenaline has been increased' signal is never received by the pituitary feedback loop, which continues to increase adrenaline beyond the limits of endocrine control, resulting in a permanent 'High' state of adrenaline. Activation of the immune system results in inflammation that increases cortisol to 'High', creating the HH condition to permanently activate the immune system.

**The cause of Auto immune disease (II)**



**The cause of Allergies**

antigens, such as food particles, dust, pollen and smoke, enter the bloodstream via the gut, nose, eyes lungs or hyperdermic needle...

and activate the immune system. Antibodies are prepared to recognise and kill the invaders, leading to 'auto immunization' by the body against those antigens. Later incursions of antigens are recognised by the immune system which releases previously prepared antibodies that rapidly attack them, causing inflammation and the release of histamine that causes runny eyes and more Leaky-gut, if antigens entered via the gut.

**The cause of Asthma**

antigens enter the bloodstream via the lungs

antigens such as dust and smoke enter the bloodstream via the lungs and activate the immune system to recognise and 'kill' them leading to 'auto immunization' by the body against those antigens. Later incursions of antigens are recognised by the immune system which releases previously prepared antibodies that rapidly attack them, causing inflammation in the lungs and constriction of airways. Breathlessness causes panic, and a surge of adrenaline suppresses any systemic histamine, hence the absence of runny eyes and nose.

**How Salbutamol can cause Allergies, Asthma and Auto Immune Disease**

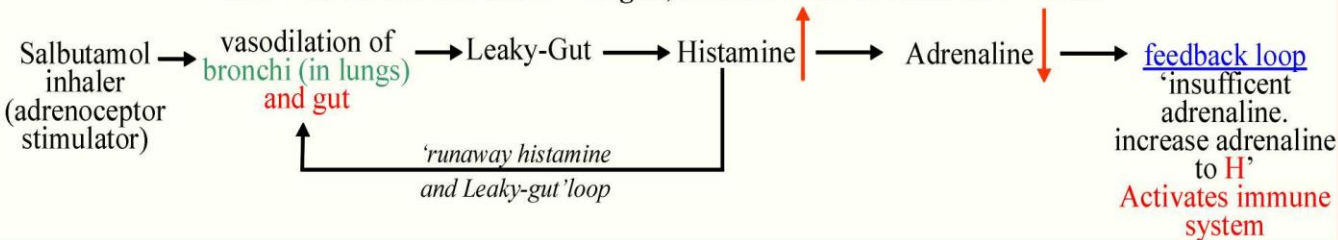


Figure 9. © Maurice Cotterell 2005 – 2013



**Conclusion**

Allergies, Asthma, and Auto-immune disease are caused by gut dysbiosis (IBS) that leads to 'Leaky-gut', which allows antigens to enter the bloodstream directly, resulting in 'auto-immunization' of the body against those substances. Diagnosis of Leaky-gut disease, that leads to these diseases, if unattended, can be easily diagnosed using a simple clinical test costing around 10 pence.

Leaky-gut leads to a runaway histamine cycle that reduces systemic adrenaline. The reduced level of adrenaline is sensed by the adrenaline feedback loop which sends-out an 'increase adrenaline' signal continuously, which activates the immune system continuously (if an increase cortisol signal is sensed at the same time).

Leaky-gut also leads to toxemia which, if unattended, causes death through blood-poisoning, in around 6 weeks. If the ingress of toxins is checked by the use of raw garlic, or antibiotics, the patient will survive to experience another episode within 6 weeks. [Note; antibiotics, although life-saving in the short-term, will exacerbate gut dysbiosis in the longer-term and therefore should be avoided if at all possible].

Long-term presence of toxins in the bloodstream can burn-out the endocrine system, in particular the adrenals, resulting in reduced levels of cortisol. This reduced level of cortisol is sensed by the cortisol feedback loop which sends out an 'increase cortisol' signal, continuously, activating the immune system (if an 'increase adrenaline' signal is sensed at the same time). Cortisol deficiency can cause thirst, severe muscle twitching, palpitations, sleeplessness, insomnia and a vicious cycle of further cortisol reduction and possibly death, if unattended. Adrenal function may be restored by using hydrocortisone supplementation and by adopting a low carbohydrate diet to allow the adrenals to recover.

Toxaemia [dirty blood], further, prevents the hypothalamus from monitoring and controlling physical parameters resulting in all kinds of symptoms, such as severe headache, severe lower back-ache, hot and cold sweats, delirium and flu-like symptoms, palpitations, and alternating bouts of diarrhoea and constipation.

The presence of circulating toxins, in the long-term, can also burn-off the myelin insulation from nerve pathways causing excruciating pain. The only refuge from this pain is for the patient to gain weight quickly, to re-store toxins in fatty tissue where there are no nerves, until the burden of toxins can be expelled in a controlled way, slowly. When nerve myelin is damaged the liver increases cholesterol production, in an attempt to repair the myelin. Excess cholesterol can lead to cardiovascular disease and heart attack. Damage to myelin insulation can result in multiple sclerosis if the body does not repair the myelin coating of its own accord.

Auto-immune disease ensues when the immune system senses a continuous demand for adrenaline and cortisol, as aforementioned.

Leaky-gut may also be caused by candida, in the gut, that punctures the gut-wall allowing the leaching of toxins into the bloodstream.

The chain of causation from IBS through Leaky-gut disease to the above-mentioned diseases may be checked at any stage by appropriate remedial action prior to escalation; IBS and Leaky-gut can be rectified by the removal of stress and/or dietary changes that remove inflammatory antagonists from the gut. Toxaemia can be managed through either antibiotics or garlic once per week, to keep bacterial endotoxins under control, plus exercise, followed by bathing, to remove toxins from skin. Rapid dieting should be avoided to preclude the en-masses release of toxins stored in fat deposits that can cause 'metabolic toxaemia', which, again, can be managed by gaining weight rapidly to enable the short-term re-storage of toxins, safely.

Continuous activation of the immune system will result in an overactive thyroid that leads to Graves' disease and symptoms of a very fast metabolic rate, and rapid weight loss that weakens the heart. This urgently needs to be brought under control with the use of thyroid controlling medication and beta-blockers. Corticosteroid-type anti-inflammatory eye drops should not be used on those with cortisol issues. The Antithyroid drug [Carbimazole] and blood thinning drug [Plavix] may depress white blood cells and seriously impair immunity.

**Epilogue**

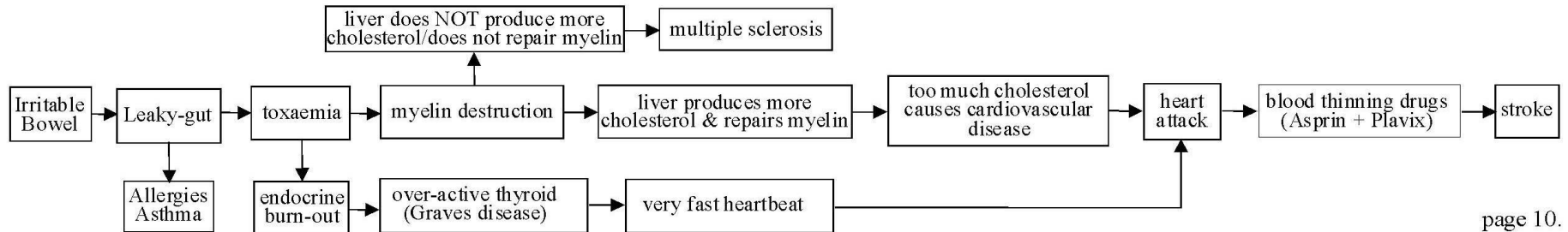


Figure 10b.

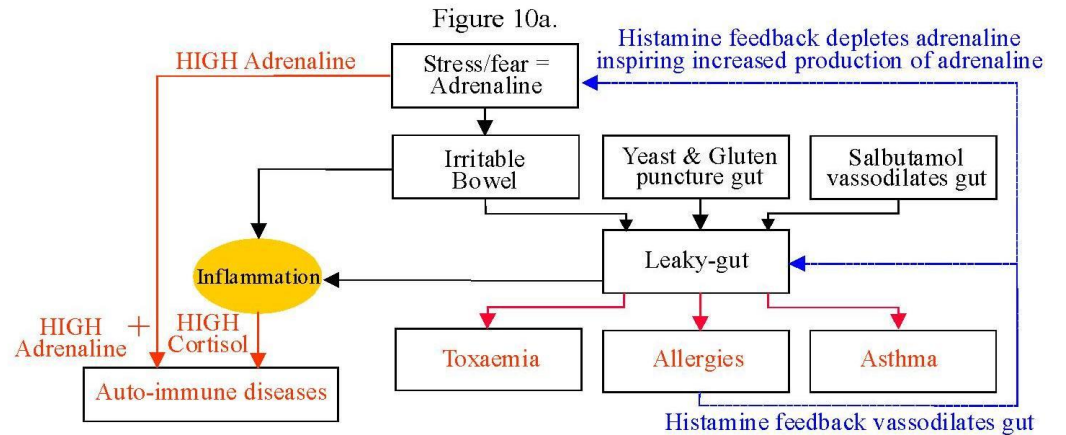
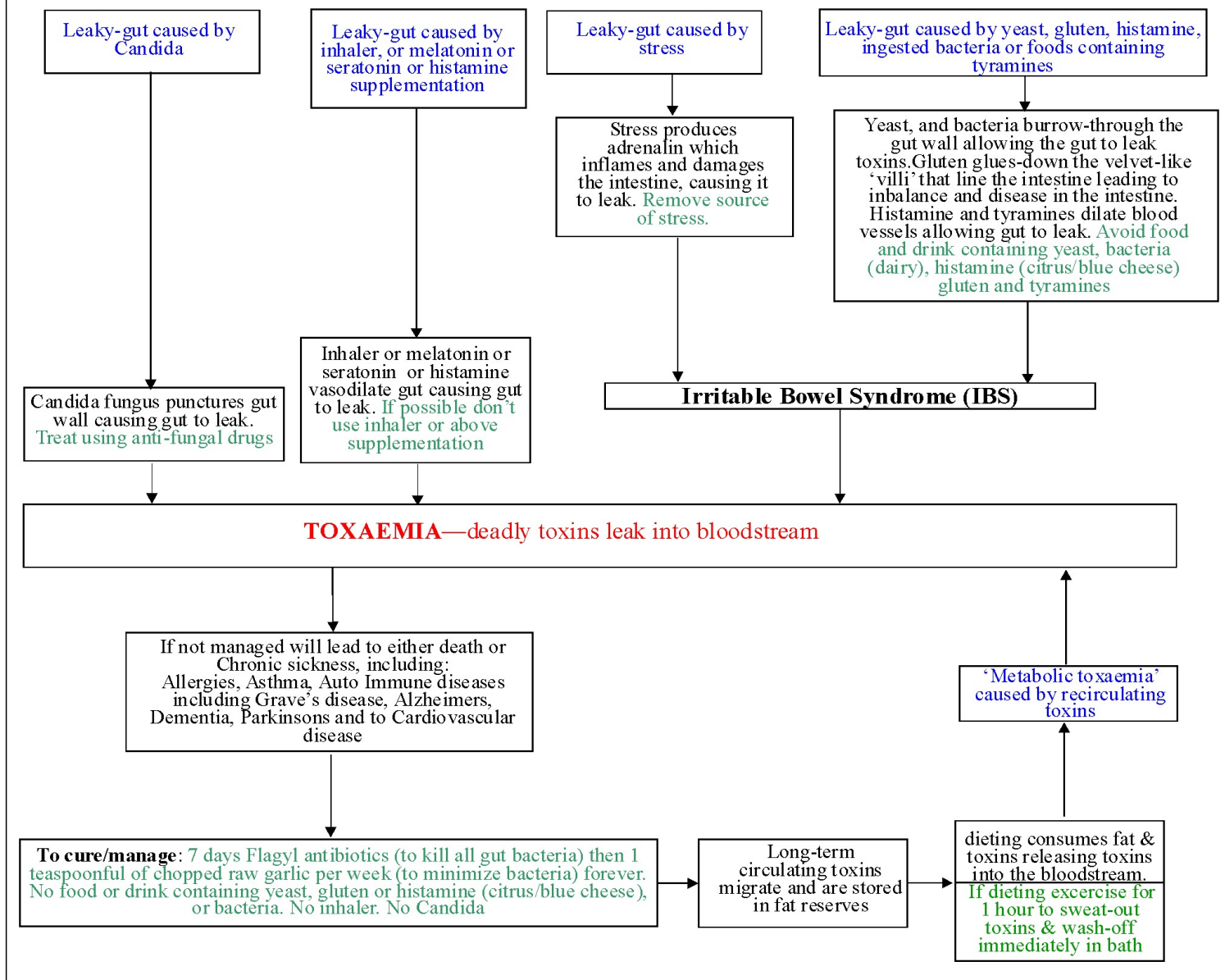


Figure 10a.

## EPILOGUE (II): How to manage Leaky Gut (Summary)



## EPILOGUE (III):

Normally, a healthy gut lining sheds, and is replaced by a new gut-lining, every 3 – 5 days. So, following our analysis, one question remains: If the source of the leaky-gut [Candida, Stress, Diet, Inhaler, or Metabolic toxaemia] has been addressed and ameliorated why does the new gut-lining leak?

A similar observation may be made in the case of the menstrual cycle, where the womb lining, which is designed to shed every 28 days, often malfunctions. In this case the medical approach calls for the surgical removal of the womb, a solution which is not available in the case of gut malfunction.

It is not known why a gut, without inducement, should leak in the long-term. Conjecturally; it could be that the new gut-lining is failing to fully mature within the 5-day cycle—which might, conceivably, be caused by a high haemoglobin—the blood may be too thick to flow through the very fine capillaries of the gut, resulting in poor nourishment and a failure of the new-lining to mature within the critical 5-day cycle window. Or, perhaps it is because the old gut-lining is shedding too early in the cycle, before a replacement lining is ready. Or, it may be because the endocrine system has suffered permanent damage, from toxins, so that it no longer performs as it should, in regard to the timing of gut-lining replacement. Or it may, simply, be due to a genetic defect. These and other possibilities require investigation.

Figure 12.



## The food:migraine mechanism—an alternative way to leaky-gut

Hormone levels are finely balanced: A *normal* amount of copper produces a *normal* amount of Monoamine Oxidates (MAOs) which produce a *normal* amount of the hormone precursor 'tyramines', which produce a *normal* amount of Thyroid Hormones (T4 and TSH) and a *normal* amount of the Catecholamine Hormones. MAOs regulate both tyramines and, hence, levels of *new* hormone production and also the levels of *old/used* circulating hormones. The system should stay in balance because an increase in copper, or MAOs, leads to an increase in production of new hormones and, at the same time, to an increase in the destruction of old hormones, and vice versa. However, certain foods contain natural tyramines that can lead to an increase in new hormones but not to the *increased destruction* of old hormones which then leads to an increase in hormone levels, hyperthyroidism, high blood pressure, headaches, stress, less breakdown of MAOs in the gut and increased leaky-gut.

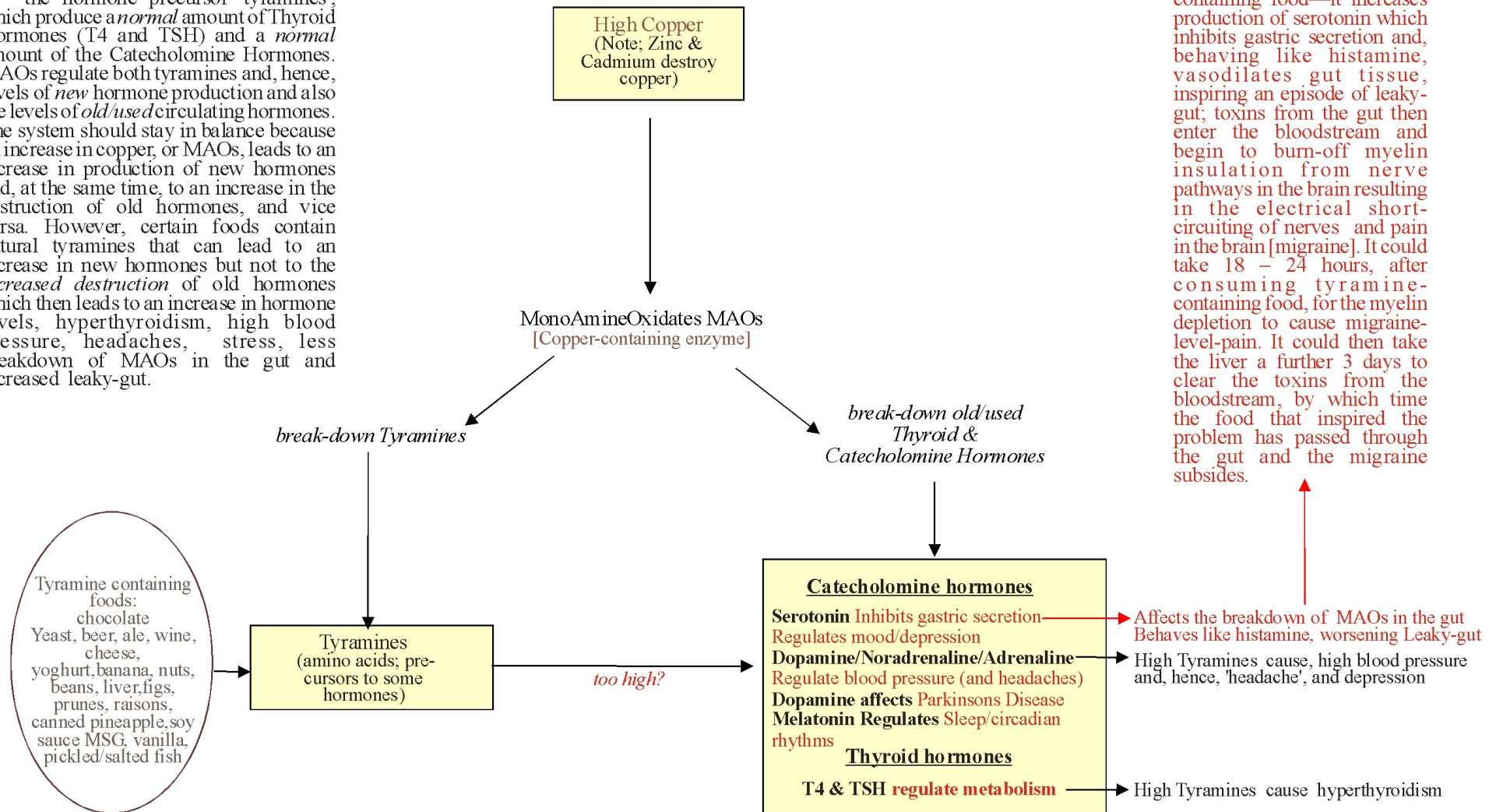


Figure 13.

APPENDIX

**Leaky-gut—overview** [2018] (including a serotonin/melatonin causal connection, and suggested ways to test the various leaky-gut hypotheses)

