Stomach Acid Titration

If this protocol helps you digest your food - you have low stomach acid likely due to inhibited blood flow in the stomach lining.

See: Digest O2 Protocol

Stomach acid is the critical second step in digestion after chewing:

- Why is stomach acid important?
- What happens when you have low stomach acid?
- Functional Malnutrition occurs with poor digestion — regardless of food intake?
- Acid Reflux Drugs — that reduce stomach acid make a bad problem worse?

See Also

- Digest O2 Protocol

Betaine-HCL Digestion Protocol

It is impossible to predict how much Betaine-HCL will be required. This method determines the number of capsules to aid digestion. Gradually increasing stomach acid to a point of a warming sensation enables determination of the amount which will typically be required for improved digestion.

You will only need to use this method at the first meal**.** After you know how many Betaine-HCL you need, you can just take them at the middle or end of each meal.

Betaine Test Meal Instructions:

1. Eat ½ of meal
2. Take 2 capsules
3. Wait 1 minutes
4. Is stomach Warm?
5. If Yes, remember number, this is your standard dose. Eat rest of meal
6. If No Take another capsule, wait 2 minutes, and so on

7. Stop at 10 capsules unless otherwise directed

If 10 capsules does not produce a warming sensation, then you are very acid deficient or lack the ability to produce Hydrogen. Ask your doctor to test if you have H-Pylori. H-Pylori consumes hydrogen and likewise limits creation of stomach acid.

Even if 10 capsules do not produce warming, they will be of big benefit improving food absorption and digestion — Continue taking them.

If you reach 10 Betaine, you likely have significant stress toxins.

Betaine-HCL Nausea Protocol

For Nausea:

1. Score the Nausea on a Scale of 1–10
2. Take One Capsule if under 60 lbs, two if 60–120 lbs, three if 120 lbs+
3. Wait 2 minutes
4. Score Nausea again
5. Stop if:
    - Nausea gets worse
    - Nausea stops getting better
    - You've hit 6/12/15 capsules (Increase if tolerance last time was good)
6. Continue if:
    - Nausea is better
    - There is no change and less than 4+ capsules. [4+ means that you can increase the ceiling each time you use the protocol. I've used 10 with my kids without ill effect.]

If the program does not work, it means that the issue is probably more liver related than stomach.

Overshooting Betaine-HCL

Do not take Betaine with carbohydrate only meals. Use Betaine only with meals having protein.

If you take too much, it may cause discomfort.

- Take 1/2 tsp of baking soda in water.
- Add ½ teaspoon of baking soda to a short glass of water and drink.

It is also possible for the stomach to be too acidic. This is very rare. In this case, Betaine will cause excess discomfort. The baking soda, sodium bicarbonate, will quench the stomach acid very quickly and eliminate acidic stomach pain.

Causes of Low Stomach Acid

In simple terms, ***any form of biological stress***. Medically this is called hypochlorhydria.

Did you ever notice:

- Digestion stalls immediately with emotional or physical challenge?
- Nausea often accompanies prolonged stress?
- Severe illness that rendered you weak?

The mechanism of injury is low oxygen to the stomach which causes a durable loss of blood flow.

Chloride serves many roles in the body:

- Primary agent for Hydrochloric Acid, HCL, in the stomach to digest food;
- Secondary oxidation agent as a backup to oxygen to burn off (oxidize) toxins;
- Cellular Neutralization of persistent toxins;
- General electrolyte.

Dr. Emmanuel Revici documented that most, *if not all*, pathogenic cells absorb chloride into the double bonds of unsaturated fatty acids.
Revici correlated chloride stress physiology to both:

- Systemic chloride depletion resulting in insufficient stomach acid;

- Appearance of chlorine oxidized lipids on the surface of the intestine resulting in bowel dysfunction, often diagnosed as diverticulitis and Chron's disease;
- Medical Shock, resulting in reduced blood flow, and dysfunction in the upper small intestine which
- As a result of stress.

For the purposes of this paper, stress results in a sequence of digestive dysfunctions which worsen depending on both severity and duration of the stress:

- Phase 1 – Loss of stomach acid (Depletion of chloride available to the stomach for digestion);
- Phase 2 – Intestinal inflammation (Accumulation of chloride oxidized lipoids on the surface of the intestines).

Betaine-HCl is a combination of HCl, or Hydrochloric Acid and trymethylglycine, TMG, from beets. In the stomach, the molecules split, and the HCl becomes available for digestion. The increased quantity of HCL improves ionization and breakdown of protein and foods, resulting in improved digestion. TMG is used by the body's master detoxification process, methylation.

Stomach acid enables breakdown of food. Stomach acid is the second stage of digestion, after chewing. Very high levels of acid, pH 1-2, are very important for this process. Strong stomach acids:

- Ionize minerals to supply mineral and primitive amino acids;
- Kill bacteria, parasites and organisms in food to protect the body from invasion;
- Supplies acid enable the liver to dump toxins.

Insufficient stomach acid, hypochlorhydria, enables bacteria, and other organisms to survive. During digestion, these organisms ferment food and create carbon dioxide. This flow carries or percolates, gastric acid and food back up the esophagus which causes discomfort, and eventually damages tissues in and near the upper digestive tract.

Symptoms and effects:

- Weak, but still caustic, stomach acid irritates the esophagus causing heartburn;
- Cases excessive burping or belching;
- Acid Reflux or GERD, or Gastroesophogeal reflux disease;
- Chronic esophogeal irritation results in weakened tissue, resulting in structural dysfunction or hiatus hernia;
- Persistent irritation can result in malignancy or esophogeal cancer.

Persistent, chronic, weak stomach acid leads to often serious health consequences resulting from chronic stress metabolism which diverts chorides needed for digestion to other metabolic roles.

Low Stomach Acid Symptoms

When stomach acid is deplete, there are three unfortunate results:

1. Nutrients are not absorbed;
2. Unfriendly organisms flourish in the gut further disrupting digestive health;
3. The liver refrains from releasing alkali bile to avoid burning the gut.

Indicators for inadequate stomach acid are:

- Belching;
- Digestion which stalls in the stomach;
- Heartburn;
- Gut or stomach bloating;
- Chronic diarrhea when the body senses partially digested food is toxic;
- Chronic constipation when the gut contents are retained and compacted.

Over time, the combined absence of digestion bile release causes liver toxins to accumulate, and finally health degenerates due to both malnutrition and toxins. Chronic esophagus irritation can leads to many medical conditions including hiatal hermia, Gastroesophogeal Reflux Disease (GERD), and even esophageal cancer.

Acid Reflux and Heartburn

Increasing stomach acidity kills the bacteria and stop the percolating bubbles hence the discomfort.

Use of insufficient amounts of stomach acid cause upper and lower digestive discomfort:

1. Heartburn results from fermenting organisms which create gas bubbles;
2. Which carry weak acid up into the esophagus;
3. Causing discomfort because the acid irritates the esophagus;
4. Betaine-HCL increases stomach acid levels;
5. So Stronger stomach acid can increase esophageal discomfort;
6. Unless it is strong enough to disable fermenting organisms from producing gas;
7. Enough acid stops the bubbles;
8. Which carry the stomach acid into the esophagus.

To resolve heartburn, take 4 Betaine, preferably 600 mg. **Use of a single Betaine usually increases discomfort** because it makes the stomach acid strong enough to hurt more, but not enough to disable the microorganisms causing the gas bubbles.

More capsules, ***usually 4***, increase the stomach acid enough to disable the organisms. This stops the gas and resolves the heartburn. A small increase in most cases only increases the discomfort by making the acid which hurts the esophagus stronger.

Poor Connective Tissue

This a test to determine if improvement in protein assimilation will improve connective tissue quality. The test requires about 30 days to see if supported protein digestion will improve connective tissue quality.

This test presumes:

1. Exercise tolerance will increase with connective tissue quality over 30 days;
2. Supported digestion with HCL (stomach acid) + Collagen Substrates (gelatin &

Vitamin C) will provide building materials
3. Daily Exercise will stress tissues enough to stimulate strengthening

This test has three parts:

1. Take a before test-hike to evaluate connective tissue durability
2. Daily Routine to evaluate if tissue quality improves with protein assimilation support
3. Take an after test-hike to evaluate connective tissue durability

What is Betaine-HCL?

Betaine-HCL is stomach acid in a pill. Chemically it is Hydrochloric Acid, HCl, combined with Trimethyl-Glycene, TMG. In the stomach, TMG and HCL break apart. The HCl becomes stomach acid while the TMG helps your body detoxify.
See methylation for more information on TMG.

What does Betaine-HCl have to do with stress?

Everybody knows what stress is, but almost nobody knows what it does to your body. In the primitive human terms, stress puts your body into emergency mode.

Emergency mode turns off/down non-essential body processes, (healing, digestion, etc.) to save energy an anticipated emergency. This anticipatory mode, readiness for flight-or-fight, in principle, puts us in readiness to survive, attack or flee, and anticipates injury. There are many different stages, and causes of stress:

- Injury or trauma
- Fear – triggering fight or flight defenses
- Toxins/poisons
- Infections
- Anxiety
- Many others…

Did you ever notice that your digestion stalls when you're scared, angry, or injured?

This is because digestion is less important than panic and escape. The "scare" or "stress" response causes your body to shift priorities. It's simple. Escaping a

predator is more important than digesting your lunch. Fright, stress, or trauma stop digestion because free chloride ions, are a powerful oxidizing agents that produce energy, and neutralize toxins likely critical during emergency. The three best known energy substrates are:

- Oxygen – used in all aerobic respiration respiration processes
- Glucose – Can produce energy without oxygen 2 ATP/Glucose
- Chlorine – There is lots in the blood, and it readily oxidizes toxins, and is critical first-stage trauma/shock mechanisms.

Your body frees up ready energy substrates because they are critical to survival because they make energy for physical survival. Your stomach stops so your body has more chlorine available emergency use. Oxygen is a very special topic here . We've dedicated an entire website to it because it is so important. Stress causes your body to prepares to survive WITHOUT oxygen.

Are you stuck in stress?

Stress isn't just about your stomach and digestion – although this is probably what most notice first. Prolonged stress limits cell oxygen delivery. The body is compensates by redirecting chloride ions, to your cells. Chloride ions are the main ingredient in stomach acid. Chloride loss is caused by long term cellular oxygen delivery failure. Prolonged stress causes a breakdown in critical systems:

- **Oxygen Delivery** decreases as as your body stays in a prolonged panic. Did you ever notice your first reflex upon being startled is to stop breathing? Count your breaths over 5 minutes – optimal is about 16 per minute. If you breathe 14 or less times per minute, stress has shifted your metabolism enough to chage your respiratory pattern. You are not producing enough CO2 to trigger respiration – and your body is running on more glucose and less oxygen than optimal. Cellular Hypoxia Page.
- **Antagonistic Lipids** are built to resist toxins. Cells consume huge amounts chloride ions (Revici), to construct anti-toxins that resist recurring cellular toxins;
- **Digestion Decreases** because extra chloride ions are used when the body cells don't have enough oxygen. Chloride ion loss reduces digestive performance from decreased stomach acid. Over time chloride loss causes clinical malnutrition, regardless of diet – because nutrients cannot be absorbed properly.

Digestion

When you get stuck in emergency physical mode, there never seems to be enough HCL for your digestion. This causes several symptom patterns:

Do you burp/belch or do you have GERD?	Weak stomach acid fails to kill the microorganisms in your food. These microorganisms ferment your stomach contents, and make Carbon Dioxide that inflates the stomach with gas, and comes out as a burps.
Heartburn	Weak stomach acid fails to kill the microorganisms in your food. These microorganisms ferment stomach contents, and make Carbon Dioxide, CO2. These bubbles percolate up and carry weak stomach acid into the esophagus. The weak acid irritates the esophagus causing “heartburn” discomfort. Notice that people treat “heartburn” by reducing stomach acid, when the cause of heartburn is usually stomach acid that is too weak!
Diarrhea	Food sits in the stomach without ionization that it becomes toxic. The body eleiminates it by dumping it into the gut. Toxins cause the gut to rapidly move the toxins to avoid absorption. Do your stool contents look and smell like previous meals?
Does food “sit” in your stomach?	Then you don’t have enough HCL to ionize food so the food remains in the stomach and you feel bloated with sluggish digestion.

Oxygen Delivery

When your digestion weakens, you will probably notice that stress causes other unexplainable problems:

- Joints and muscles are more sore;
- You feel more tired – Fatigue Information;
- Injuries don’t heal as fast;
- Your immune system doesn’t work as well;
- Your feet develop cracks;
- Your eyesight decreases;
- Your voice sounds rough;
- You develop varicose veins.

When you ask your doctor about what causes these things – you get the standard “We don’t know” answer, followed by a discussion of some drug that sometimes

seems to help these particular symptoms. It is important to recognize that digestive malfunction occurs because the body is losing the long-term ability to deliver oxygen to cells. This results in escalating use of chlorine to for cellular oxidation. This is where the chlorine – that your body ***used to use*** for digestion decreases.

The Glucose Connection and Acidic Metabolism

This condition also disrupts glucose metabolism. Glucose use goes up because cells that don't have enough oxygen use up to 19 times more glucose. This causes anaerobic lock. Disruption appears appears as either hypoglycemia or hyperglycemia, depending on how strong your liver is. If it goes on a long time, as hyperglycemia, other organisms, yeast and fungi bloom in body fluids, and further disrupt glucose metabolism. Diabetes Model Here . Did you ever wonder why you crave carbohydrates under stess? Stress reduces oxygen delivery and forces more cells to run on glucose. You compensate by consuming more sugar, or making more in the glucagon cycle in the liver. If you can't get 19 times more glucose to make up the energy difference – then you get fatigue. This presents as a matrix of problems:

- Excessive reliance on glycolysis creates lactic acid which accumulates and causes soreness;
- Tissues are weak because – Mitochondrial energy production drops 19:1
- The system pH becomes unstable from excess lactic acids, and reduced Carbon Dioxide (reduced breath rate). See pH Dysregulation;
- Prolonged stress can cause a permanent decrease in metabolism – See Stable Physiological Equilibrium.

These symptoms indicate that stress has reduced your body's soluble oxygen supply. Very Important: This is NOT medical oxygen saturation measured by hemoglobin binding to red blood cells.

Fishbowl Cells

Stress affects Fishbowl Cells first. We call them fishbowl cells because they are like a fish in a fishbowl and must live on the oxygen dissolved in the fluid that surrounds them. These cells are ***not connected*** to the vascular system:

- White Blood Cells – reside in lymph and travel throughout the body
- Lens of the eye – capillaries would prevent vision

- Connective Tissue, ligaments, tendonons, cartilage – Stress would destroy capillaries
- Artery, capillary and Vein Cells – Even though these cells carry oxygenated blood, they cannot use it. Blood flies by so fast that hemoglobin bound oxygen cannot be delivered. Vascular cells They must use oxygen dissolved in blood plasma.
- Larynx / Voice Box – voice becomes rough (remember knowing someone was stressed or sick by their voice? This is why.)

Stress causes hypoxia in fishbowl tissues first. This is what causes the other symptoms that occur when you have stress episodes. Long term stress precedes serious health issues that result from tissues made of fishbowl cells:

- Connective Tissue Diseases– arthritis, etc.
- Autoimmune Disease – Low energy in immune system causes ecauses poor descrimination and over-allocation of immune system resources;
- Vascular Disease – where prolonged inflamammation in vascular tissue results in athersclerotic lesions, which collect fatty deposits;
- Aneurysm – where prolonged vascular hypoxia causes eventual weakening of the artery structures muscles and connective tissues in arteries.

This medically unnoticed factor is why “stress” seems to cause so many health problems. Fishbowl cells are more vulnerable to stress because they their oxygen supply is slightly less durable than cells supplied by the vascular system… But only slightly. Overtraining and exertion cause stress. This is an explanation of how these factors affect athletes.

Downstream Tissues

It’s not just about the fishbowl cells. Since the pipes that deliver oxygen, the vascular system, is made of fishbowl cells, every cell in the body is indirectly vulnerable to stress. Here is how downstream tissues are affected by stress:

- A stress event reduces soluble oxygen;
- This causes temporary hypoxia in the the vascular system;
- Which triggers inflammation in the endothelium as sodium accumulates in endothelial cells;
- The swelling limits blood flow to plasma (stops red blood cells) and reduces oxygen delivery;

- Plasma carrying glucose is still delivered, so cells switch to anaerobic energy production;
- They start producing lactic acid;
- Reduced capillary flow limits tissue drainage and the tissue region becomes acidic;
- Energy production drops proportionate to available glucose & oxygen;
- CO2 production drops;
- Tissue operates at a low energy state, with limited performance and reduced resistance to pathogens;
- Tissue utilizes chloride ions to partially compensate for oxygen deficiency;
- Eventually disease and degeneration occur.

This capillary choke mechanism limits these capillary chokes. They inhibit blood flow to virutally any tissue, anywhere, and anytime. Capillary chokes cause two different problems:

- First they cause many medically unexplainable conditions degeneration, soreness, degeneration, and eventually tissue diseases;
- Second, these tissues over-consume chloride ions, which reduces chloride available to the stomach for digestion.

This is one reason chloride depletion gets worse with time. As more of the body locks into a stress pattern, the more glucose and chloride drain from the system. Oxygen Multistep Therapy reverses capillary chokes. These effects can happen anywhere, but cells that lack a “regular” blood supply from the vascular system are affected first. These cells are most easily identified by the absence of oxygen supplied by capillaries.

How do I fix it?

Many of these conditions can be stabilized – when oxygen is restored early. Prolonged oxygen depletion often results in permanent tissue degeneration. This degeneration is often erroneously blamed on “age”. Degeneration occurs because cells have lost something they they need to remain healthy. If your degeneration is because of stress it’s probably because new stress has reduced your body’s oxygen delivery. Visit our www.liveO2.com for more information on how these degenerative mechanisms work, and how to resist and often reverse them.

Poor digestion is caused by chronic stress

If you want to fix your digestion, you will need to fix damage caused by stress. It is critical to restore your oxgyen levels – otherwise you cannot stop the loss that creates the chloride deficiency which limits digestion. Betaine-HCL is a very effective way to temporarily restore stomach acid. For permanent repair, you must stop the chloride leaks caused by accumulated tissue stress. This usually means you will have to fix your oxygen metabolism.

Who Are We?

Whole Health Network supplies integrated systems that reverse the effects of stress effects including:

- Visit our Oxygen Metabolism Website
- How to use Betaine-HCL to restore stomach acid during meals
- Cellular Fatigue Website
- Antagonstic lipids resulting from persistent toxins (opiates, nicotine, etc.)

Go To Forum For Discussion