



Stomach acid testing (Hypochlorhydria)

Hydrochloric acid is important for digestion and absorption of many nutrients. When lacking, (a condition termed hypochlorhydria) malnutrition results. At the same time, one can develop multiple food sensitivities due to abnormally large, inadequately digested food particles being absorbed, triggering an immune response.

Because hydrochloric acid kills many bacteria, yeasts, and parasites, its insufficiency is associated with greater incidence of dysbiosis (imbalance in gut bacteria) and bacterial overgrowth of the small intestine (SIBO). This may lead to gastrointestinal symptoms including belching, gas, indigestion, poor appetite, prolonged fullness after meals, bloating, constipation, and diarrhoea.

Although hypochlorhydria can occur at any age, older individuals are especially effected. Some estimates suggest half of individuals over age 65 have inadequate stomach acid.

Home testing for low stomach acid can be done with Bicarbonate of soda (the 'burp' test), and may also be confirmed with a trial of Betaine Hcl.

The Burp Test:

The purpose of this test is to give us a rough indication as to whether your stomach is producing adequate amounts of hydrochloric acid:

Mix one quarter teaspoon of Bicarbonate of soda in a large glass of cold water, first thing in the morning, before eating or drinking anything. Drink the solution and time how long it takes to belch. Time up to five minutes. If you have not belched within five minutes stop timing anyway.

If your stomach is producing adequate amounts of hydrochloric acid, you should probably belch within two to three minutes. Early and repeated belching may be due to excessive stomach acid. Belching results from the acid and bicarb reacting to form carbon dioxide gas.

Therapeutic trial of Betaine Hcl:

If you take Betaine HCL after a meal and feel nothing, your stomach is probably not producing enough hydrochloric acid. A normal response to taking betaine HCL is a feeling of warmth in the stomach.

For an individual whose hydrochloric acid levels are lacking you can gradually work up to supplementing as many as 4 Betaine HCL capsules with meals. Although this may sound like a lot, in response to a very big meal, a healthy stomach produces the equivalent of at least 14 betaine HCL capsules. For optimal results, the protein digesting enzyme, pepsin, should be part of the betaine HCL formulation.

Correcting Low Stomach Acid

Hypochlorhydria, or the more severe achlorhydria (complete lack of hydrochloric acid), can result from several causes. One cause is use of acid blocking medications (PPIs and H2 receptor blockers such as omeprazole, lansoprazole and Ranitidine / Zantac). These are often prescribed for digestive symptoms that are actually due to lack of HCL.

Nutrient deficiencies can contribute to impaired HCL production. Histidine (an amino acid), zinc, and vitamin B1 are all needed for HCL production. If any of these are lacking in the diet or not absorbed properly, this can result in hypochlorhydria. Interestingly, the absorption of histidine and zinc are dependent upon the presence of adequate levels of Hcl.

Stress can also impair Hcl production. Various stress reduction techniques can be helpful.

Alcohol consumption can damage the HCL producing cells in the stomach. So can consumption of food allergens. Avoidance of both is important.

Infection with the bacteria helicobacter pylori can also impair HCL production. This organism appears to be spread, at least in some instances, by flies. People with type O blood are more susceptible to infection with helicobacter pylori, as are those with a weakened immune system. Again, stress plays a role here. Medication or herbs can be used to eradicate this bacterium.



Supplementing with glutamine, butyrate, deglycyrrhizinated liquorice, zinc, and vitamins A and B5 can help repair the acid secreting cells. Herbal bitters have also been shown to improve natural Hcl production.

Until the body can begin secreting adequate levels of Hcl on it's own, supplemental HCL should be used (some cases of hypochlorhydria are irreversible).

Important note:

Only use supplemental HCL under the supervision of a healthcare professional. Patients with IBD (Ulcerative colitis, Crohn's Disease and coeliac disease), those on Non-Steroidal Anti-inflammatory therapy (Ibuprofen or Naproxen), with a history of GU bleeding or ulcers or Barret's oesophagitis should avoid this therapy.