

## Questionnaires for HCl & Digestive Enzymes

### Hydrochloric Acid (HCl)

HCl is the most acidic juice humans produce. Its main functions include:

- HCl secretion assists protein digestion by activating pepsinogen and turning it into pepsin
- HCl sterilizes the stomach against ingested pathogens (harmful bacteria, etc.)
- HCl prevents bacteria, yeast and fungi from growing in the small intestine
- HCl encourages the flow of bile
- HCl encourages the flow of pancreatic enzymes
- HCl facilitates the absorption of folic acid, vitamin B<sub>12</sub>, vitamins A and E, ascorbic acid, beta-carotene, non-heme iron and some forms of calcium, magnesium and zinc.

Your body makes about 2 litres of gastric juices a day. In turn, the parietal cells produce HCl acid. HCl is produced in minimal amounts when you are not eating, at about 10 per cent of maximal rate. The pH on an empty stomach should normally be about 1.8–2.0 (that is, not very acidic).

### HOW DOES A LOW LEVEL OF STOMACH ACID AFFECT ME?

Low levels of stomach acid can lead to maldigestion of proteins, fats and carbohydrates. Low HCl levels can lead to symptoms of indigestion: burping, abdominal bloating and excessive intestinal wind. It can lead to increased bacterial overgrowth in the small intestine as well as an increase in intestinal permeability (or leaky gut). Low HCl can also lead to the malabsorption of nutrients.

You should also be aware that the more protein you eat, the more HCl acid you need.

### A COMMON PROBLEM

Low HCl levels are very common. The older you are, the more likely you are to have low levels. About 30 per cent of the population over the age of 65 will be low in stomach acid (a condition known as hypochlorhydria).

There are a number of factors at work here, including stress and age. However, another is nutrient deficiency. Low levels of the mineral zinc and vitamins B<sub>1</sub> and B<sub>6</sub> can also play their part. Deficiencies in zinc and B vitamins are extremely common and are caused by not eating enough of the foods plentiful in these nutrients, to chronic stress (which increases our need for these nutrients) or to depleted levels caused by alcohol consumption or smoking.

HCl is responsible for vital digestive functions; if these cannot be carried out because your stomach acid levels are too low, you increase your risk of developing a food intolerance.

Your answers to the questionnaire will identify whether or not you should take what is known as a Gastro-Test. The results of a Gastro-Test would identify whether you should take HCl supplements.

A very small minority of people actually have high stomach acid levels, though their number is considerably lower than we are sometimes lead to believe.

### **BEWARE A BACTERIUM CALLED HELICOBACTER PYLORI**

If you do have low stomach acid levels, as proven by the Gastro-Test, then you should also look to test for the presence of a bacterium called Helicobacter pylori before you start taking HCl supplements.

H. pylori is the most common chronic bacterial pathogen in humans. It lowers stomach acid levels while damaging the mucosal protection within the stomach. It has therefore been attributed with causing stomach and duodenal ulcers. If you took supplemental HCl while having H. pylori you would experience unpleasant side-effects, usually of a painful nature (sore, burning intestinal lining), which is why it is so important to rule out its presence before taking HCl. Ask your doctor for a breath test for H. pylori, because the blood test available cannot tell you whether you have successfully eradicated the bacterium.

If you do have H. pylori then follow the Anti-H. pylori Plan, which lasts for six weeks. This is effective in about 80 to 90 per cent of cases, which is as good as any antibiotic therapy, and will improve your symptoms more effectively than antibiotics. Two weeks after that, re-test your stomach acid with the Gastro-Test to see if you still have low levels. If you have, then you should also re-test for H. pylori. Finally, when you have eradicated the H. pylori, if your stomach acid levels are still low you can begin the Digestive Support Plan 2.

### **Do I Have Low Stomach Acid?**

Have you any of these symptoms? Score 1 for each 'yes' answer.

- bloating, belching, burning or wind immediately after eating
- indigestion
- dilated blood vessels in the cheeks and nose
- diarrhoea or constipation
- iron deficiency
- itchy rectum
- nausea after taking supplements
- sense of fullness immediately after eating
- spots, acne
- undigested food in stool
- persistent mucus in throat
- excess wind
- weak, peeling or cracked fingernails

In addition:

- Do you always eat in a rush?
- Do you not chew your food properly?

Your score = /15

High Score = 5 (including two of the first three symptoms)  
or 7 (not including the first two)

If you scored 5 or more, or answered 'yes' to two of the first three questions, then you should take the Gastro-Test to verify your stomach acid status. If you scored 7 or more and this did not include a 'yes' to any of the first three questions, you should nevertheless take the Gastro-Test. If you lack stomach acid then you should also rule out the presence of *H. pylori* before following the Stomach Acid Support Programme. If you have *H. pylori*, you should follow the *H. pylori* Plan.

Relevant Test: Gastro-Test™

### **Digestive Enzymes, Yeasts and Parasites & Imbalanced Intestinal Ecology**

The common expression 'you are what you eat' should more accurately be 'you are what you digest and absorb.' Even the most healthy foods will become toxic if you can't break them down properly.

Your pancreas is the major producer of digestive enzymes in the body – this accounts for over 90 per cent of its function. Low levels of the pancreatic enzymes required to digest food are remarkably common, as identified by lab tests. However, this deficiency state does not mean that everyone has clinical signs of fat-malabsorption syndrome – the conventional assessment of pancreatic enzyme output. Rather, chronic pancreatic enzyme insufficiency (chronically low levels of pancreatic enzymes) may contribute to a wide variety of health problems well before this condition manifests.

The most likely causes of this are stress, eating too quickly and even low stomach acid levels. If you have a low output of pancreatic enzymes, then you may suffer from maldigestion with an increased risk of malabsorption. This means that improperly digested food can sit in the intestine and provide nourishment for unwanted bacteria. As they consume what you cannot digest, this caused increased fermentation of the food and, as gases are released, excess wind.

Whether or not you are inadvertently feeding unwelcome guests in your intestine, the incomplete breakdown of proteins in what you eat food is highly likely to increase inappropriate immunological activity in the intestine, with an increased risk of food intolerance. This also has the knock-on effect of increasing intestinal permeability which allows larger proteins to cross the intestinal lining and enter the bloodstream. There they act as antigens, to which the body makes antibodies, and this often causes symptoms. Even trace amounts of undigested protein absorbed into the blood can cause profound reactions.

### **Supplements**

Taking digestive enzymes in supplement form has been found to alleviate the symptoms of wheat sensitivity because they help the body digest the proteins in wheat (probably gliadin in the gluten fraction of wheat). Even as long ago as the 1940s, supplements of hydrochloric acid and pancreatic enzymes were used to treat digestive and allergic-type conditions such as asthma and eczema. This is why digestive enzymes, such as Bio 6 Plus, are to be recommended for anyone who wants to improve their digestive health and reduce the impact of food intolerances in their lives.

### **Do Supplemental Digestive Enzymes Survive Stomach Acid?**

The answer is Yes. In addition to much clinical evidence, there is much peer-reviewed evidence to support this. This is particularly true of animal-source enzymes chymotrypsin and trypsin, which have found to be more helpful in supporting digestion than plant enzymes such as bromelain and papain.

### **Should I Drink with Meals or Not?**

Fluids consumed with meals actually help to stimulate stomach acid and digestive enzymes in the small intestine. In fact, sufficient fluid with a meal is essential for an optimal response from your digestive system.

### **How Can I Tell If I Have Low Levels of Digestive Enzymes?**

The signs and symptoms of a lack of digestive enzymes present us with yet another list of overlapping symptoms which could ultimately relate to almost any condition in the body related to malnourishment or food intolerance. Therefore, only the major signs and symptoms are included in the questionnaire below. Since digestive enzymes are recommended to one and all. This next questionnaire should be used primarily as an aid to monitoring your improvement.

Score 1 point for each 'yes' answer.

### **Do you regularly suffer from any of the following?**

- abdominal bloating or swelling
- wind after meals
- undigested food in the stool
- signs of poor digestion of fatty foods
- weak, peeling or cracked fingernails
- any skin condition
- recurring headaches
- depression
- fatigue in spite of a good diet and regular sleep
- inability to gain muscle despite regular weight training

In addition:

- Do you always eat in a rush?
- Do you not chew your food properly?

Your score =           /12

High Score =           7 or more

If you scored 4 or more, then you should take Bio 6 Plus. If you scored 5 or 6, take two of Bio 6 Plus tablets with each meal, then review your score for stomach acid levels. If you scored 7 or more, take three Bio 6 tablets before or at each meal, review your need for stomach acid as outlined above, and observe whether this improves your symptoms.

### **Supplementing with Hydrochloric Acid**

1. Take one tab. of HCl Plus (115 mg betaine HCl) or Hydrozyme (150 mg betaine HCl) (Biotics Research) at your next meal, for the next 3 days. Then, increase the dose to 2 at each meal (not snacks) and ensure you take them with food not before or after. Do this for another 3 days. Then increase to 3 at each meal for the next 3 days.
2. Continue to increase the dose in this manner until have reached 5 tablets with each meal or until you experience a sensation of heaviness or a feeling of warmth in the stomach or lower sternum, whichever comes first. This is very easily noticed and is not usually subtle.
3. When taking several tablets, it is best if the dose is divided and taken at the beginning, middle and end of the meal, but not after the meal, nor before.
4. A sensation of heaviness or warmth probably indicates that you have supplemented with more HCl than you require to digest a meal. In this case, reduce the number of tablets by one at subsequent meals.
5. Once you have established a dose (either 5 tablets or less if warmth or heaviness occurs), continue this dose. This may mean that you take up to 15 tablets per day! However, there is a stronger formula called Betaine Plus HP (Biotics Research) which contains 700 mg betaine HCl per capsule which means that as soon as you reach 5 HCl Plus / Hydrozyme you can replace these with 1 capsule of the Betaine Plus HP.
6. It is common that, as your stomach regains the ability to produce an adequate concentration of HCl, you will require less HCl to properly digest your food. If, over time, you experience warmth or heaviness at a dose that previously did not cause these sensations, then this is an indication to reduce your dose.
7. With smaller meals, you may require less HCl so you may reduce the amount of tablets taken.
8. Individuals with very moderate HCl deficiency generally show rapid improvement in symptoms and have early signs of intolerance to the acid. This typically indicates a return to normal acid secretion.
9. Individuals with low HCl/Pepsin typically do not respond so well to botanicals and supplements. So, to maximise the absorption and benefits of the nutrients prescribed, it is important to be consistent with your HCl/Pepsin supplementation.
10. If, at any time, you experience a burning sensation, discontinue HCl supplementation and notify your practitioner.
11. Remember that your stomach is designed to accommodate an acid of pH of 1, which performs vital functions in digestion and digestive health.

Precaution: Administration of HCl/Pepsin is contra-indicated in peptic ulcer disease or gastritis.

N.B. - Perm A Vite (Allergy Research) & GastraZyme (Biotics) are supplements that support the mucosal barrier within the stomach and can be taken for a week or so prior to and during the supplementation of HCl Plus / Hydrozyme.