

# WHY STOMACH ACID IS GOOD FOR YOU

Natural Relief  
from Heartburn,  
Indigestion,  
Reflux & GERD

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## **PREFACE Whistling Past the Graveyard**

Stomach acid has little or no value to our health. We may not even need it for digestion. Therefore, what's the harm in turning off the acid pumps when our gastric juices start erupting into heartburn and acid indigestion? If it gets rid of the pain and discomfort, why not turn them off for the rest of our lives? Stomach acid? Who needs it?

If this sounds silly, try not to laugh too hard, because it's what most doctors in this country believe. The conventional medical establishment in the United States, thanks in large part to hundreds of millions of advertising, research, and "educational" dollars spent by the pharmaceutical industry each year, has learned to fear the evil stomach acid dragon. How else to explain their zeal for pushing dragon-slaying acid suppressors on a public convinced it is drowning in its own internally-produced acid bath?

Acid-suppressing drugs are a more than seven-billion-dollar-a-year industry in the United States. Yet, this unimaginably large franchise is built on a convenient deception: that virtually eliminating acid from the stomach can only be good for us, and that it will have no consequences today, or tomorrow, or twenty or thirty years from now, when we're still popping potent acid-suppressing pills to control our symptoms of "hyperacidity."

In this book, we emphasize some of the important—even essential—roles that stomach acid plays in digestion. We describe how hydrochloric acid, secreted by special cells in the stomach's lining in response to a meal, is a key upstream link in a complex chain of events that culminates in the absorption of vital nutrients that make a long, healthy life possible. Break that chain—by severing the acid link—and the downstream cascade of events required for proper digestion and the continuing health of the gastrointestinal (GI) system—as well as the rest of the body—will be severely impeded.

We also ask an important question: What diseases can emerge when stomach acid secretion is too low for too long? We wish the forces that control conventional medicine would ask this question, but for the most part, they seem uninterested. The fact is they don't really want to know the answer. There is simply too much invested in the myth of "acid indigestion."

Yet the consequences for our health of long-term acid reduction due to disease or aging (known as atrophic gastritis) have been well-known for the better part of a century. What about long-term drug-induced acid-suppression? Based on very limited FDA approved trials, conventional medicine's practitioners and promoters feel comfortable pretending that everything's going to be all right for people taking acid-quenching drugs like Prilosec, Prevacid, and their even more powerful successors for ten, twenty,

or thirty years or longer—if they live that long!

We think that those who choose to believe this myth have their heads buried firmly in the sand. These are powerful drugs that cause profound changes in the body's chemistry and physiology at a key juncture in the digestive process. They should not be taken casually. Yet the current trend, with the widespread promotion of acid-blocking drugs for ordinary heartburn, is promoting just that.

When it comes to acid blockers, the conventional medical establishment—including groups like the American Medical Association (AMA)—National Institutes of Health (NIH), the various specialty medical associations (e.g., American College of Gastroenterology, ACG) and disease advocacy groups (e.g., International Foundation for Functional Gastrointestinal Disorders (IFFGD)), not to mention the two most powerful groups of all, the global pharmaceutical industry and its “in-house” enforcement agency, the U.S. Food and Drug Administration (FDA)—are all whistling (in chorus) past the graveyard. At our peril, they ignore decades of research clearly demonstrating that low stomach acid, whether caused by disease or drugs, is linked to a wide range of serious, chronic, so-called incurable diseases, some of which can be fatal.

Just because “serious” problems have not appeared after only a few years of drug use, there's no guarantee we won't start seeing them—and experiencing them—in a few more years. “Natural” atrophic gastritis typically takes decades to progress to more serious conditions such as ulcer or stomach cancer. Why should we expect acid-blocking drugs to be any different?

If you or someone you love suffers from heartburn or other symptoms of gastric upset, we urge you to ignore the constant barrage of advertising that leads most people—including most doctors—to believe that the only way to treat these disorders is by suppressing acid secretion. More than a century's worth of scientific research confirms that this simply isn't so. What has come to be called—incorrectly—“acid indigestion” is almost always associated, not with too much stomach acid, but with too little.

In this book, we propose a natural program that in many cases can cure “acid indigestion.” Instead of drugs that merely suppress symptoms by disrupting normal GI function, we tell you how to use a variety of safe, natural, inexpensive substances that work with the body's physiology—not against it—to restore healthy gastric functioning, heal damaged tissues, prevent future disease, and perhaps extend your life.

## PROLOGUE The “Gray Man”

At Tahoma Clinic he was known as the “Gray Man”. He got the nickname after Sue, the receptionist, and Barbara, the nurse, agreed that they’d never seen anyone with his skin tones. Anyone could see it. Although he was Caucasian, his visible skin was devoid of any pink tones. He scarcely had any brown hue. Instead, he was a peculiar whitish gray. I’ve not seen anyone with the same pigmentation before or since.

The sixty-one-year-old Gray Man hadn’t come in because he was looking gray, although his wife had mentioned it to him “a time or two.” Actually, he explained, he didn’t have any symptoms or illnesses; he was just plain tired. Really tired. Further questioning turned up little but the fatigue. In the past, he’d had chronic indigestion and intermittent but persistent heartburn. He noted that both symptoms had gone on for over twenty years, and that he’d taken “plenty of those Turns and Roloids and other antacids” since his forties.

However, he reported he hadn’t had any indigestion or heartburn problem at all since he’d started taking that “new prescription acid-blocker stuff, Tagamet,” which he’d been taking every day since it came out in 1977. By the time he appeared at the clinic, he guessed he’d been taking the drug every day for seven years. “You know that stomachs are naturally designed to secrete enough acid to turn even large meals into the equivalent of soup?”

I asked. “Yeah, I know that, I guess, but all my doctors told me that my indigestion and heartburn were due to too much acid. It just made good sense to take something that would knock down the excess acid,” he replied. “Did anyone ever actually measure the amount of acid in your stomach?” “No.... but the symptoms sure have gone away since I started the Tagamet.” “And a river will dry up if we stop all the rain. Maybe that’s an advantage for a little while if the river has been flooding, but what happens if we stop the rain permanently?”

He thought for a moment. “Permanently?” “Well, seven years, at least.” “Quite a drought. Nothing’ll grow, for sure.” “Right. And if we shut off, or neutralize, our stomachs’ natural acidity for more than brief intervals, there’s bound to be consequences. First, we don’t break down foods as well, and many nutrients—especially essential amino acids, certain minerals, and at least two B vitamins—aren’t as available as they’re supposed to be. So they don’t get absorbed into our bloodstreams, and our cells don’t get the normal amounts of nutrients they need to keep them going.

“Second, when that ‘acidified soup’ empties out of our stomachs into the upper part of the small intestine—the duodenum—it triggers the secretion of hormones that in turn stimulate the pancreas and gallbladder to make, or

release, their own digestive secretions, including enzymes, bicarbonate, and bile. Without this 'acid trigger,' these hormones are underproduced, and the subsequent stages in digestion don't work as well as they're supposed to, either. This means that another whole group of nutrients becomes less available to our cells." "So it's like a cascade of events," said the Gray Man, starting to catch on. "If the acidity isn't there, then other parts of digestion aren't triggered properly, either."

"Exactly, and there may be many other 'cascades' in the digestive stream that we still don't know about that might be affected." "No wonder I'm tired," he said. "I've been literally drying up a lot of my digestion for years. Why didn't anyone tell me about this?" "Don't know. It's all right there in the basic textbooks for medical students. But that's not all. The same textbooks list a third consequence of low, or no, stomach acid production. Let's think about it this way: What happens if I add bacteria or parasites to an acid solution in a test tube?" "Not sure, but I'd guess a lot of them'll die."

"Right. They die. Textbooks of gastroenterology—the medical specialty that concentrates on the digestive system—actually refer to stomach acid as the 'acid barrier' to intestinal tract infection. Also, everyone knows that farther down, the intestines are home to a wide variety of microorganisms—sometimes called intestinal microflora (literally tiny plants)—which help with digestion, secrete a few important vitamins, and generally behave themselves. "But if the acid-alkaline balance—technically called the 'pH'—isn't just right, then many of these 'friendly' microorganisms literally die out and are replaced by not-so-friendly germs. At best, these unfriendly microorganisms aren't as helpful to us as the friendly ones. At worst, some of them may excrete substances that are toxic to our own body cells, which are absorbed and spread all around our bodies."

The Gray Man shifted uncomfortably in his chair. "So by keeping my stomach acid low to prevent heartburn, not only have I been semi-starving myself for the last seven years, but also I may be encouraging toxins from my gut to enter my system?" "Afraid so." "Could this be why I've been so tired all the time?" "Very likely. Let's work on restoring your normal digestion as much as possible. We'll try to make up for all those years of malnutrition, and if necessary we'll do something restore your normal gut flora. Then we'll see what happens with your fatigue."

"I guess the first thing is to stop this Tagamet. But then I'll have indigestion and heartburn all over again, won't I?" "There are natural ways we can try to stop indigestion and heartburn without blocking stomach acid." "How?" "First, we need to find out if your stomach really is making too much acid. Chances are very high—over 90 percent—that the real culprit is likely underproduction of stomach acid. Heartburn means that some of that small amount of acid is

turning up in the wrong place, causing the burning feeling. Let's wait until we do a test or two."

Like the overwhelming majority of people with indigestion and heartburn, the Gray Man soon found that although he had been suffering from heartburn for years, his stomach had actually been underproducing acid all that time. By replacing the missing stomach acid with capsules containing betaine hydrochloride (a safe, convenient, inexpensive source of stomach acid, or hydrochloric acid—HCl) and the digestive enzyme pepsin with every meal, he was soon able to eliminate his symptoms. His program also included replacement digestive enzymes, intestinal flora normalizers (also called probiotics), and supplements of various amino acids, vitamins, and minerals that he had not been absorbing properly due to his low acid condition.

Slowly but surely, his gray skin color returned to normal, healthy-looking brown and pink skin tones. His fatigue dissipated, too, replaced by increasing energy. His wife also noted an improvement in his mood and attitude. Six months later, he declared himself back to normal. The only thing entirely atypical about the Gray Man's—John's—case was his skin color. As noted above, I've never seen anything like it before or since. But the rest of his story—indigestion and heartburn caused by underproduction of normal stomach acid—is absolutely typical. Since the 1970s, I've worked with literally thousands of individuals with one or another variation of the same story—indigestion and heartburn, frequently accompanied by bloating, belching, gas, constipation, occasionally loose bowels—caused by a failure or partial failure of normal stomach function. (Stomach overfunction, or excess acid production, is actually quite rare.)

Most of these individuals had been compounding their health problems by taking antacids or acid-blocking drugs either on their own or on the advice of health care practitioners. In the pages that follow, Dr. Lenard and I explain normal stomach function and what it does for us, and describe some of the many manifestations of "stomach failure." We cover health problems commonly associated with poor stomach function. We describe conventional treatments for the mythical illness known as "acid indigestion," and then the preferred natural alternatives. As you'll soon find, this is more than just another book about indigestion.

For many of us, this is also a for-real guide to antiaging and longevity: How can we expect our cells and our whole bodies to "live long and well" if they're chronically malnourished? For others, we offer a little-known perspective on a variety of diseases, including depression, diabetes, osteoporosis, rheumatoid arthritis, lupus, ulcerative colitis, acne rosacea, multiple sclerosis, childhood asthma, and many others, that often improve once digestive function is normalized. So why haven't more of us heard about this before? Here's a

small clue: The market for antacids and acid-blocking drugs amounts to more than \$7 billion per year. The actual facts about digestive failure are literally drowned in the sea of advertising and patent medicine (pharmaceutical) industry-sponsored research designed to sustain the profits made from this superficial and profoundly misguided “treatment” of indigestion, heartburn, and accompanying symptoms. For the true story, we invite you to read on!

## **CHAPTER 1 The Myth of Acid**

Indigestion Heartburn, indigestion, dyspepsia, and “acid indigestion” are extremely common afflictions. Thanks mostly to diet and lifestyle, and sometimes because of genetics, pregnancy, anatomy, or simple aging, it seems that sooner or later, almost everybody gets an upset stomach in one form or another. Who hasn’t felt the acute burning in the back of the throat and upper chest after eating certain foods? Who hasn’t popped a Tums or gulped a “bicarb” to extinguish the acidic flames that seem to roar up from the stomach during a heartburn attack?

A Gallup Poll found that 44 percent of the U.S. population suffers from heartburn at least once a month, and 7 percent experience it weekly. According to the National Institute of Diabetes and Kidney Digestive Diseases, sixty million people experience heartburn at least once a month and twenty-five million feel the burn every day. If we are to believe what we see in the media, the American populace is awash in indigestion-causing stomach acid. We can’t watch TV (especially the evening newscasts) without seeing dozens of slick commercials for expensive, high-tech drugs like Prilosec, Prevacid, Tagamet, Zantac, Pepcid, Axid, and others, not to mention more traditional low-tech remedies like Turns, Roloids, Maalox, and Alka-Seltzer.

All of these products are designed to eliminate heartburn pain by reducing the amount of acid in the stomach. The old-fashioned antacid remedies simply neutralize any acid present in the stomach, taking the acidic “bite” out of it, thus rendering it temporarily harmless. (One popular neutralizing antacid used to advertise that it “soaked up 47 times its weight in excess stomach acid.”) The more advanced drugs work by squelching the production of acid at its source. The drug most commonly prescribed for heartburn today, Prilosec, virtually eliminates acid in the stomach around the clock, a fact that is proudly promoted in the drug’s widespread consumer-oriented advertising. Prevacid, Aciphex, Protonix, and Nexium do about the same thing.

The myth that underlies the conventional treatment of “acid indigestion,” and the implied message in all these commercials—although they rarely come right out and say it—is that heartburn happens because we’ve got too much acid in our stomachs. As a result, some of that acid flows back—or refluxes—

into the esophagus, the muscular tube that carries food from the back of the mouth into the stomach. Since acid does not belong in the esophagus, its presence irritates the delicate tissue that lines the inside of the tube.

Heartburn pain is a symptom of that irritation. If we've got heartburn or other symptoms of the more serious disorder, gastroesophageal reflux disease (GERD), the commercial message is clear: "The less acid we have in our stomachs, the better." To most physicians, it is "common knowledge" that heartburn and other symptoms of acid indigestion are signs of too much stomach acid. To relieve the pain, we need merely reduce the level of acid. If we believe this, it makes sense that we should all be using these powerful acid-reducing treatments to relieve our heartburn.

According to the manufacturers of these products, long-term acid suppression is an advantage, allowing us to control heartburn "around the clock," perhaps with a single pill. But as we explain in this book, this kind of extreme heartburn protection may come at a cost to health that is being ignored by the pharmaceutical companies that patent and profit from these drugs, and ignored by the Food and Drug Administration (FDA), which collects truly enormous sums of money to "approve" them. Most importantly, perhaps, the cost to health of these drugs is being ignored by the thousands of physicians who prescribe them. They fail to recognize that the acid-suppression theory, which currently governs the conventional medical therapy of "acid indigestion," is seriously flawed because it is based on the myth that "acid indigestion," heartburn, and its more serious consequence, GERD, are the result of too much stomach acid. The facts say otherwise.

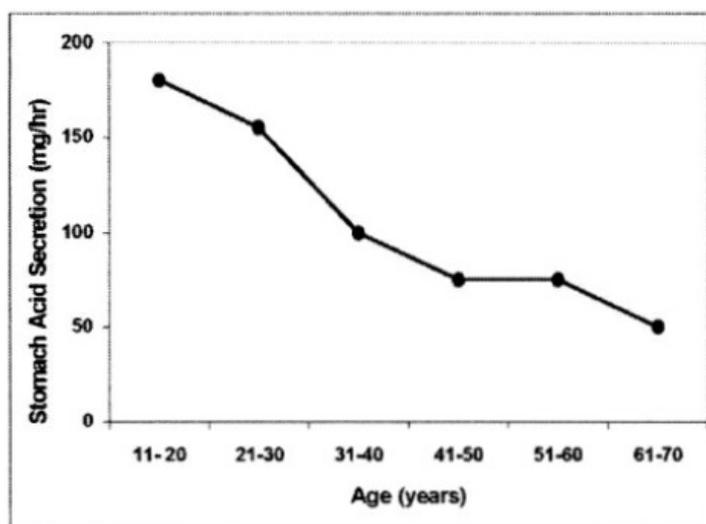


Figure 1-1. Contrary to popular belief, stomach acid secretion tends to decline with advancing age. This graph shows mean stomach acid secretion from the second decade to the eighth decade. Adapted from K. Krentz et al., 1984.

Consider this conveniently overlooked observation: The incidence of indigestion, “simple” heartburn, and GERD increases with age, while stomach acid levels generally decline with age (see Figure 1-1). If too much acid were causing these problems, teenagers should have frequent heartburn, while Grandma and Grandpa should have much less. Of course, as everyone knows, exactly the opposite is generally true. We are led to believe that if we simply have other feelings of indigestion, like “that overfull feeling,” with excess gas, bloating, or belching, but perhaps only a little heartburn, this is also due to “too much acid.” If this is true, then answer this question: Why is too much acid so efficient at refluxing back into the esophagus but so inefficient at actually digesting food? It is simply a matter of common sense.

How many of us can run faster at age forty than at age twenty? How many have better vision at fifty than at thirty? We all experience declining hormone levels as we grow older. We can think of literally dozens of examples of functions that decline naturally with age, so why should the output of acid by the stomach run in the opposite direction? Science has confirmed what common sense tells us. For most of this century, medical researchers have repeatedly and consistently documented an age-related decline in stomach acid. So, if we have less and less stomach acid as the years add up, why do we get more and more heartburn and indigestion?

And more importantly, why are we treating that heartburn and indigestion by taking drugs that wring the last few drops of acid out of our stomachs? What’s so bad about depleting stomach acid? Lots. Unfortunately, conventional medical wisdom refuses to recognize this, which suits the makers of acid-depleting drugs just fine. The problem is that many of the adverse effects associated with long-term suppression of stomach acid may take years or even decades to develop. At the same time, clinical trials of most drugs, which might expose these problems, generally last only a few months.

A year is a long time in the world of clinical trials, and the number of people who take these drugs during these trials is relatively small. Once clinical trials end and a drug is approved by the FDA, monitoring of adverse side effects tends to be relatively haphazard, usually depending on doctors taking the trouble to file reports to the FDA. If a side effect is not immediately and obviously linked to stomach or digestive function, it will probably never get reported. Regrettably, many of the potential accompaniments of long-term acid suppression, including asthma, allergies, skin disorders, rheumatoid arthritis, insomnia, osteoporosis, gastrointestinal (GI) infection, depression, and many, many others, can take years or even decades to develop. They would seem to have nothing to do with stomach acid and, therefore, would rarely, if ever, be reported.

## **GERD: The Serious Side of Heartburn**

It wasn't too long ago that heartburn was viewed as largely a nuisance, something we joked about, put up with, blamed on Mother's cooking. Today, heartburn is widely seen by the medical profession as the primary symptom of a potentially dangerous medical condition known as gastroesophageal reflux disease, or GERD. This shift in attitude has been driven in part by new research and partly by the availability (and marketing) of new drugs and surgical procedures. GERD is not really a disease, per se, but more like a syndrome consisting of one or more of these disorders:

- Damage to the esophageal lining that may or may not produce symptoms.
- Mild to severe inflammation of the delicate lining of the esophagus.
- Symptoms such as heartburn; belching; upset stomach, bloating/gas; sense of fullness, particularly when accompanied by chronic cough; regurgitation of stomach contents, hoarseness, wheezing or asthma, difficulty swallowing, or sore throat.

When heartburn occurs regularly for months or years, it is said to be chronic. People with chronic heartburn may have damage to their esophageal lining (especially the lower end of the esophagus) that begins as mild irritation but may end up with scarring, constriction, ulceration, and ultimately, in a very small percentage of people, cancer. This is why intermittent or minor heartburn should never be allowed to become chronic. Although GERD occurs only in a minority of people who have heartburn, given the potential danger of chronic heartburn, today's acid-trumping treatments would seem to be among modern medicine's more important, if underappreciated, marvels.

GERD appears to have met its match in these potent drugs that not only relieve heartburn, but promise to protect us against more serious, even life-threatening conditions. It's no wonder they have become among the best-selling drugs ever produced. Indigestion/heartburn/GERD is a multibillion-dollar cash cow for the pharmaceutical industry. In the United States alone, we spent more than \$7 billion on them in 1999. Prilosec alone accounted for more than half of that, \$4 billion, nearly doubling its sales from the previous year.

### **Indigestion and Heartburn Are Not Caused by Too Much Stomach Acid**

As you might have guessed, we think there's something dreadfully wrong with this rosy financial picture. We wonder why so much of humanity is going to such great lengths to rid itself of all that annoying stomach acid, when very few of us ever consistently has too much acid in our stomachs, and when (except for a few rare conditions) heartburn is hardly ever associated with too much stomach acid. Chronic heartburn sufferers often have their stomachs

and esophaguses examined via x-rays and gastroscopes (fiber optic tubes that allow the doctor to look inside the stomach and even take pictures), but in my thirty years of medical practice, not one person who's had these procedures done elsewhere has ever told me that they have also had careful measurements made of their stomach acid production! When we actually measure stomach acid output under careful, research-verified conditions, the overwhelming majority of heartburn sufferers are found to have too little stomach acid production.

Yes, you read that correctly. Heartburn almost never signals too much acid, and it may often be associated with too little! This is no secret. This is a well-documented, but little-appreciated, medical fact. It has been confirmed in the scientific literature repeatedly and frequently throughout the last one hundred years. The pharmaceutical companies, who make all those potent acid-suppressing antiheartburn medications, know that heartburn and GERD are not caused by too much acid. Their researchers are very smart, and they read the scientific literature.

They are well aware of the kinds of stomachs their drugs are going into. That's why their ads almost never actually come out and state that heartburn is a proven result of "too much acid." Still, the message comes through loud and clear: If stomach acid causes heartburn, then less acid must be better than more. Logical as this sounds, though, it simply isn't true! As we show in this book, for many people with heartburn and/or GERD, the best treatment may actually be more acid, not less. If this sounds like throwing gasoline on smoldering embers, that's right, it does sound like it, but in fact, it's not.

Paradoxical as it seems, for the better part of a century, knowledgeable physicians have successfully treated tens of thousands of people with indigestion, heartburn, and other diseases related to deficient stomach acid with natural, inexpensive acid supplements (along with various other natural remedies). Once the treatment is completed, indigestion becomes largely a thing of the past, and their patients no longer need to take powerful, expensive, and potentially dangerous (over the long term) acid-suppressing drugs.

Q: When Is a Cause not a Cause?

A: When It "Causes" Heartburn.

Well, one might ask, if heartburn isn't caused by too much acid, then what is it caused by, and why do those drugs seem to work so well? After all, it certainly appears that lowering stomach acid levels relieves heartburn and helps heal the esophageal damage associated with GERD. We do not deny that stomach acid causes the symptoms of heartburn (although not necessarily other forms of indigestion) and that it is responsible for much

GERD-related damage. We agree that exposure to acid causes the burning feeling of heartburn, and that chronic exposure to acid can cause more severe conditions such as reflux esophagitis and GERD. Our argument is with the mistaken concept that it takes “too much” stomach acid to do the damage.

Even a small amount of acid in the wrong place (such as the esophagus) can cause symptoms and ultimately tissue damage. (After all, we know that stomach acid must be strong stuff, if it can help reduce even a tough beefsteak into the equivalent of beef soup in an hour or so.) Nor can we disagree with the fact that lowering the acidity of the stomach often does help relieve the symptoms of heartburn and reduce the damage of GERD, albeit temporarily. And yet, we feel quite comfortable in turning around and stating—with absolutely no equivocation—that neither heartburn nor GERD is really caused by too much stomach acid.

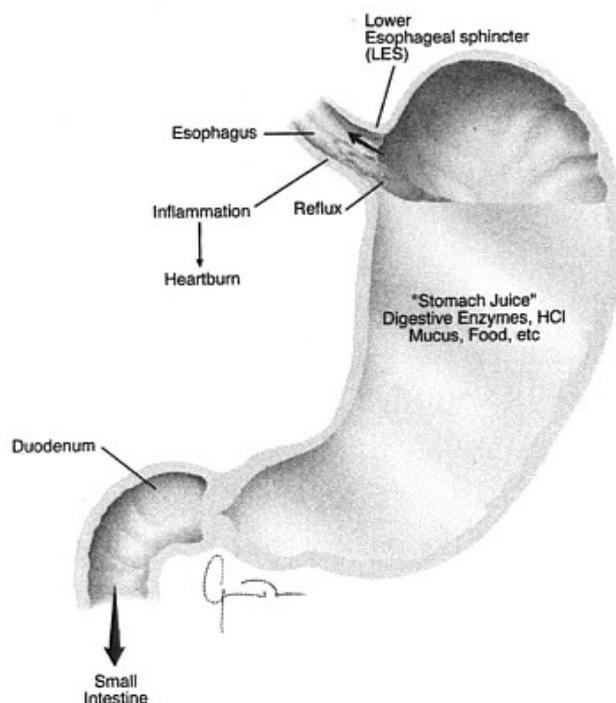


Figure 1-2. Heartburn happens when a small amount of stomach acid refluxes up through the lower esophageal sphincter (LES) valve, irritating and inflaming the delicate lining of the esophagus.

Confused? You're in good company. Most of the medical profession prefers to avoid dealing with this apparent paradox, as well. But is acid taking the heat for the “crime,” when its presence in the esophagus is really the result of other events? As anyone familiar with the relevant scientific literature will quickly agree, heart-burn and GERD (but not necessarily the Other symptoms of indigestion) are not primarily diseases of Stomach acid. Rather they are usually diseases of muscle, specifically the muscular valve (or sphincter) that guards the lower end of the esophagus.

Known as the lower esophageal sphincter (LES), it normally opens wide to permit swallowed food and liquids to pass easily into the stomach, but, except for belching and vomiting, this is the only time the LES is intended to open. It's supposed to shut down soon after the food has passed, blocking any acidic stomach juices from making the return trip up the esophagus. If the LES is working properly, it doesn't matter how much acid we have in our stomachs. It's not going to make it up into the esophagus. On the other hand, if the LES is asleep at the switch, even a small amount of acid could reflux into the esophagus under the right conditions.

Scientists have found that when we have heartburn or GERD, the LES opens briefly when it's not supposed to. If we've got acid—or anything else—in our stomachs, sometimes even a little bit, and it happens to be in the vicinity of the LES when the valve pops open inappropriately, we get reflux (see Figure 1-2). The primary symptom of reflux, of course, is heartburn. If reflux happens too frequently and exposes the esophageal lining to too much acid over too long a period, the lining can become irritated or inflamed, a condition known as reflux esophagitis.

Once an area has become inflamed or irritated, acid—any amount of acid—will tend to advance the destructive process, ultimately to GERD and the formation of ulcers or worse. Is an excess of stomach acid to blame in this scenario? Hardly. Acid, after all, is just a liquid, prey to gravity and the muscular contractions of the stomach and esophagus and destined to passively find its own level. It doesn't matter how much acid there is in the stomach. As long as the LES stays closed, we won't get heartburn or reflux. (Remember, stomachs are built for the very purpose of containing and working with very strong acid, acid that is one-hundred-thousand times stronger than the acidity of our blood.)

Instead of pointing the accusing finger at “excess” stomach acid, we should really be eye-balling that old, asleep-at-the-switch gatekeeper, LES.

### **Conventional Treatments for Heartburn and GERD**

Nearly all currently available conventional treatments for heartburn and GERD are designed to reduce the acidity of the gastric juice. Most of these products can be categorized as either acid neutralizers or acid suppressors/acid blockers.

#### **Acid Neutralizers**

These classic products, commonly referred to as alkalis, rely on the fundamental chemical fact of life that acids and alkalis (also called bases)

neutralize, or cancel each other out (see “Acids, Bases, and pH” on page 29). The active ingredients are typically calcium, sodium, aluminum, or magnesium salts that combine with stomach acid (hydrochloric acid, HCl), to form a “neutral” salt. Since antacids do not affect the secretion of stomach acid, their influence on the gastric acid-base balance (known as the pH) is transient, lasting only until all the antacid molecules are used up. In the meantime, the stomach continues to secrete HCl. Antacid products are easily available without a prescription and are widely regarded as extremely safe. For occasional use, they can be useful for reducing heartburn and, when used this way, probably will not cause any harm.

However, overuse, especially when prolonged, can result in serious problems. The most important adverse effect of acid neutralizers is known as the milk-alkali syndrome, which consists of excess calcium in the blood, an elevated blood pH (alkalosis), and, most importantly, kidney failure. Milk-alkali syndrome results most easily from the excessive consumption of milk (high calcium) plus an antacid over a long period of time, but it can also occur by taking excessive calcium-based acid neutralizers alone.

In the days before acid-blocking drugs, the combination of large amounts of milk and antacids was a very common conventional treatment for peptic ulcers. Unfortunately, many of the people who followed this dubious medical advice wound up with milk-alkali syndrome. The incidence of the syndrome dropped off sharply with the introduction of the acid blockers. However, it is starting to rise again as people, especially elderly women, take high doses of antacids made from calcium carbonate (e.g., Turns) as a means of supplementing their calcium intake in an attempt to prevent the bone-wasting disease osteoporosis.

(As we describe in chapter 4, calcium carbonate is one of the worst dietary sources of calcium, because the calcium is so poorly absorbed, especially when stomach acid secretion is low. Since calcium carbonate neutralizes HCl, it actually inhibits the absorption of calcium.) Other types of antacids contain the metal aluminum. Although the evidence is far from conclusive, it is possible that aluminum may be involved in the development of brain dementias, such as Alzheimer’s disease. For safety’s sake, it’s probably best to avoid the long-term use of these products for this reason alone. Commonly available neutralizing antacids include:

- Aluminum hydroxide + magnesium carbonate (Duracid)
- Aluminum hydroxide + magnesium hydroxide + calcium carbonate (Tempo)
- Aluminum hydroxide + magnesium hydroxide (Maalox, Mylanta, Gelusil, Gaviscon)

- Aluminum hydroxide (Amphojel)
- Aluminum magnesium hydroxide sulfate (Riopan)
- Calcium carbonate + magnesium carbonate (Mi-Acid Gelcaps, Mylanta Gelcaps, Mylagen Gelcaps)
- Calcium carbonate + magnesium hydroxide (Rolaids)
- Calcium carbonate (Turns)
- Magnesium hydroxide (milk of magnesia)
- Sodium bicarbonate (“bicarb,” baking soda, Alka Seltzer\*, Bromo Seltzer)

### **Acid-Suppressors**

Acid blocking drugs come in two basic varieties: histamine H2-receptor blockers and proton pump inhibitors.

**Histamine H2-receptor blockers.** These drugs (also called H2-blockers) reduce acid levels by throwing a roadblock right in the middle of the process that leads to acid secretion. As described in greater detail in chapter 3, most gastric acid secretion is the end result of a process that begins with the hormone gastrin stimulating histamine-producing cells, which in turn signal acid-producing cells to secrete HCl. By blocking the action of histamine, the message never gets to the acid-producing cells to secrete acid.

These drugs can be very effective in turning off most of the acid flow for hours at a time. Originally developed primarily to treat peptic ulcers, they came to be widely used for relieving heartburn/GERD once it became clear that peptic ulcers were actually caused by the bacteria *Helicobacter pylori*, not by excess acid. As their patents ran out, the respective pharmaceutical companies have all brought out low-dose versions of their drugs for nonprescription sales.

As we discuss throughout this book, the long-term, continuous suppression of gastric acid secretion may have important adverse consequences for our health, which are largely ignored by practitioners of conventional medicine. In addition to these effects, these drugs all have well-documented adverse side effects, most of which involve GI disturbances such as constipation, diarrhea, nausea, vomiting, and, yes, heartburn. Tagamet is particularly problematic because it interacts with so many other drugs, producing various adverse effects depending on the other drug.

One of the most disturbing of these side effects is an interference with the metabolism of the hormones estradiol (the most potent of the estrogens) and testosterone. In some men, this has resulted in breast enlargement and sexual dysfunction. Currently available H<sub>2</sub>-receptor blockers include:

- Cimetidine (Tagamet)
- Ranitidine (Zantac)
- Famotidine (Pepcid)
- Nitazidine (Axid)

**Proton Pump Inhibitors.** The mechanism inside certain cells in the stomach's lining that actually produces and secretes HCl is known as the proton pump. The most potent of the acid-suppressing drugs block the action of this pump mechanism, hence their name, proton pump inhibitors (PPIs). Just one of these pills is capable of reducing stomach acid secretion by 90 to 95 percent for the better part of a day. Taking higher and/or more frequent doses of PPIs, as is often recommended for "intractable" heartburn or for treating peptic ulcers, produces a state of achlorhydria (virtually no stomach acid). In addition to the consequences of chronic acid-suppression, there are many serious concerns associated with the use of PPIs.

The most common adverse effects include diarrhea, skin reactions, and headache, which can sometimes be severe.<sup>7–9</sup> Other adverse effects, which occur less frequently, include impotence, breast enlargement,<sup>10</sup> and gout.<sup>11</sup> As we discuss in subsequent chapters, these and other adverse effects directly related to profound suppression of gastric acid secretion by these drugs are a major concern that is being completely ignored by practitioners and supporters of conventional medicine. Currently available proton pump inhibitors include:

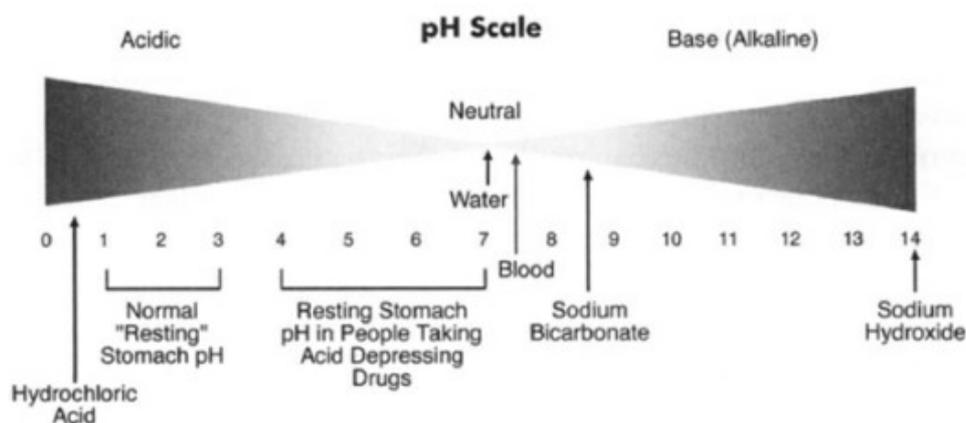
- Omeprazole (Prilosec)
- Lansoprazole (Prevacid)
- Rabeprazole (AcipHex)
- Esomeprazole (Nexium)
- Pantoprazole (Protonix)

**Motility Enhancers.** Drugs known as motility enhancers try to tighten up the LES and hustle food (and acid) out of the stomach faster. This would seem to

make a little more physiological sense in terms of the actual cause of heartburn, but these drugs have been limited by their unwanted side effects. The most advanced of these drugs, Propulsid, was pulled from the market by the FDA after a few years of widespread clinical use showed that it was causing an unacceptable number of potentially fatal heart failures. As happens all too frequently with new drugs, these problems were not apparent during clinical trials of the drug, but they showed up once the drug was released to the general public and millions of people started using it.

### Why Do Anti-Acid Drugs Seem to Work?

Instead of strengthening the LES “dam” and helping it to perform its normal function, conventional medicine treats heartburn/GERD primarily by mopping up as much of the acid “flood” as possible (with neutralizing antacids) or by drying up the river of acid itself (with drugs like Zantac and Prilosec). In so doing, the clinical effects of the malfunctioning LES are minimized.



### Acids, Bases, and pH

Acids and bases (or alkalis) [Pronounced, AL-KUH-LIES] are the yin and yang of the chemical world. Scientists measure the relative acidity-alkalinity of a substance by using a pH scale. The pH scale ranges from 0 (most acid) to 14 (most alkaline). A pH of 7 is considered neutral. A common way to measure pH is using strips of litmus or pH paper, which are treated with a chemical that changes color depending on the relative acidity/alkalinity of the substance it contacts. Electronic pH meters that give a numerical readout are typically used when a rapid, precise reading is required.

The HCl produced in the stomach has a pH of 0.8, which makes it an extremely potent acid. HCl is formed in the lining of the stomach by the combination of ions of hydrogen (H<sup>+</sup>) and chloride (Cl<sup>-</sup>). A similarly powerful alkaline substance, like sodium hydroxide (also known as lye, or NaOH), has a pH approaching 14. Get this stuff on your hands and you could get just as

bad a burn as if you'd handled pure HCl. Because NaOH is so corrosive, it is widely used to unclog bathroom and kitchen drains, selling as Drano and other brand names. Another familiar, but much more benign, alkaline substance is sodium bicarbonate, also known as baking soda. In general, our bodies tend to prefer chemicals more toward the neutral middle of the pH scale. Water, for example, has a pH of 7, squarely in the middle. Blood tends to be slightly alkaline (pH 7.4).

The pH of the "resting," or between-meal, stomach usually ranges from 1 to 3. When we mix chemical opposites like acids and bases, they tend to neutralize each other. Let's say we mix two powerful pH opposites like HCl and NaOH. [Please don't try this at home!] The resulting chemical reaction produces NaCl + H<sub>2</sub>O, better known as table salt + water, or saline, which has a pH of 7. One of the earliest means people came up with to relieve heartburn was to swallow an alkaline substance in order to neutralize the offending stomach acid. Of course, we wouldn't want to swallow lye, but sodium bicarbonate works very well, producing not only salt water, but also the gas carbon dioxide (CO<sub>2</sub>).

The CO<sub>2</sub> can make us feel bloated and cause burping, as it fills the stomach and escapes back up the esophagus. To the degree that they reduce the amount of acid available to reflux, these drugs can temporarily relieve the symptoms of heartburn and also prevent the damage associated with GERD. Neutralizing antacids reduce gastric (stomach) acidity only modestly, but usually enough to relieve heartburn discomfort for an hour or two. The more potent acid-suppressing drugs reduce the acid secretion by up to 90 percent or more, essentially eliminating acid from the stomach for up to twenty-four hours or longer.

### **If Symptoms Disappear, What's So Bad About Suppressing Stomach Acid?**

Acid-neutralizing agents and acid-suppressing drugs minimize heartburn symptoms, reduce the risks of GERD, can help heal ulcers, and are generally considered by conventional medicine to be safe. Does it really matter that they suppress stomach acid so much? What's the harm? We believe it does matter, for several important reasons:

- The drugs disrupt the natural gastrointestinal environment. Although widely believed to be safe and well tolerated, acid-blocking drugs, by their very nature, induce profound changes in the internal environment of the stomach and intestines. Decades of research have demonstrated that chronically low levels of stomach acid (not necessarily caused by drugs) can be harmful in the long run, leading to maldigestion, malabsorption, and malnutrition, which can predispose to a wide range of serious ailments.

- The relief anti-acid drugs offer is transient. Heartburn stays away only as long as acid levels stay suppressed, and acid levels stay suppressed only as long as we keep taking the drugs. If we stop taking them, we risk heartburn's return, sometimes with a vengeance. It's not uncommon for people to take acid blockers, and even acid neutralizes daily for years and years at a time in order to avoid a relapse.
- The drugs don't cure heartburn, they only temporarily relieve the symptoms. Like many of the "wonder drugs" that have become available in this age of pharmaceutical-dominated medicine, neither acid-blocking drugs nor traditional neutralizing antacid products do anything to cure heartburn or GERD. They only temporarily suppress the major symptom—heartburn. Symptom suppression is the standard treatment strategy for most diseases in conventional Western medicine today. With the possible exception of antibiotics, very few drugs being marketed today can actually cure anything.
- These drugs may be effective at removing the irritating agent, but as far as the cause is concerned, they completely miss the point. We can think of acid-blocking treatment like drying up the river after a flood but never repairing the faulty dam that's actually causing the flooding. Note how gingerly the American College of Gastroenterology (ACG) treats the issue of "cure" (see below). Although they use the "c-word" rather loosely, it's clear that, from their conventional perspective, the only "real" cure is not drugs but surgery.
- We can become dependent, or at least reliant, on anti-acid drugs. They work only as long as we keep taking them. Stopping treatment commonly triggers an acid "rebound," which can be quenched only by—you guessed it—taking more acid suppressing drugs. Although the rebound is typically short-lived, lasting a couple of days at most, how many people are willing to "tough it out" and endure the heartburn when they can quickly squelch it by getting back on their acid blocker? While this isn't exactly a true addiction, once this cycle gets going, we're almost as good as "hooked" on acid suppression.

### **Can Anything Actually Cure My Troubling Heartburn?**

What the American College of Gastroenterology says: "In patients with mild heartburn, simple lifestyle changes may improve symptoms. However, patients with more severe symptoms or esophageal damage usually need either long-term medications or surgery to cure their heartburn. Similar to the treatment of high blood pressure, medications for GERD control the disease, but are effective only when taken regularly. For those who cannot achieve adequate symptom relief and healing through medical therapy, anti-reflux surgery offers the only potential for cure by strengthening the lower esophageal sphincter." — Patient Information

This strategy leaves much to be desired for people with heartburn, but it works great for the pharmaceutical companies. If the drugs actually cured heartburn/GERD, the companies wouldn't make nearly as much money as they do by selling drugs that provide only temporary symptomatic relief.

### **Repairing the Cause of Indigestion and Heartburn, the Natural Way**

A much more sensible—but less profitable—tactic is to treat the root cause of the problem, repair it, and send us on our way, heartburn- and indigestion-free, and un beholden to the pharmaceutical gods Prilosec, Zantac, their cousins, and their descendants. Curing a disease means eliminating the cause of the problem. When a disease is cured, it does not return once the treatment is halted. Curing a disease means removing the reason we developed heartburn in the first place, not just suppressing its symptoms. With treatment that addresses the cause of the symptoms, indigestion can almost always be eliminated, and (as a consequence of addressing the cause), overall health improves.

Given the right environment and enough time to heal itself, an irritated or injured LES often returns to its normal, healthy state, eliminating heartburn. Even the more severe condition of GERD can often (but not always) be brought under control by this approach to treatment. All of this can be accomplished by proper diagnosis, elimination of offending agents, food allergies and sensitivities, toxins (including caffeine, nicotine, and alcohol), and then by taking a variety of natural substances, including (in almost all cases) supplements of stomach acid (HCl) itself. Applied judiciously at the appropriate times and accompanied by certain dietary and lifestyle modifications, these treatments can help return digestion to normal, restore the GI environment to near normal conditions, eliminating indigestion, heartburn, and even GERD for good.

If this sounds suspiciously like the “c-word,” for many people it is. Once their indigestion and/or heartburn/GERD is gone, it's gone. They may no longer need to take some of their natural treatments again, let alone their Prilosec or their Tums. However, people who are found by actual testing to have a stomach acid deficiency (remember, they're the overwhelming majority of those with indigestion) can benefit with better overall health by continuing to take acid supplements with their meals. This particular benign, natural solution involves replacing something the body is missing. It avoids using synthetic chemicals the body is ill-equipped to handle.