

I feel like I've been hinting at the acid reflux treatment section quite a bit throughout the book, so I will now give it its deserved time in the spotlight! We have already established the definition and symptoms of GERD and the fact that many people with and without gastroparesis do have this condition (see page 89). In addition to the typical experience of GERD, some of us with gastroparesis also have the experience of food coming back up into the mouth through vomiting and/or regurgitation. When the food that is vomited or regurgitated is acidic, it can cause significant discomfort in the same way that is experienced with acid reflux. This symptom also carries additional concerns, including damage to the mouth and teeth. For the purposes of this section, we will refer to any experience of acid moving into the esophagus or mouth as simply "acid reflux".

REFLUX VS. ACID REFLUX

Acid reflux: The movement of acid back into the esophagus or mouth. Acid reducers should be used to treat this.

Simple reflux: The movement of non-acidic stomach contents into the esophagus or mouth. There is no medication to treat this.

That leads me into what I believe is an incredibly important distinction that must be made and is very often ignored. There is a difference between simple reflux and acid reflux. As we just established, acid reflux involves the movement of acid back into the esophagus and, for some, into the mouth. Reflux, on the other hand, involves the movement of non-acidic stomach contents into the

esophagus or mouth. Now there may be some of you for which any food that is brought up is acidic. And for those of you with feeding tubes, stomach acid can reflux quite often (see page 160). But there may be some of you who, like me, bring up a lot of food that is not acidic at all.

This is an important distinction to make because reflux that is not acidic does not need to be treated with acid reducers. Doctors often jump to prescribing medications that reduce stomach acid for anyone with gastroparesis and any type of movement of stomach contents in the wrong direction. Unfortunately, this is not always an appropriate step. In fact, acid reducers are some of the most overprescribed medications in the world.

Stomach acid serves a very important role in the digestion of the food that we eat. It is a crucial component in chemical digestion, which is made even more important in the context of gastroparesis, when our mechanical digestion is severely lacking. Using an acid reducer when it is not needed may actually inhibit our digestion and emptying times further. Stomach acid is also very important in maintaining the bacterial balance within our GI tracts by killing off many of the bacteria that we consume. Another interesting finding has been that people with low levels of acid in the stomach can experience more indigestion while eating. Using an acid reducer when it is not actually needed could cause this to happen. As you can see, it is not always appropriate to throw an acid reducer at any problem that has been labeled as 'reflux'.

Acid reducers are sometimes thought of as medications that treat reflux. The truth is, when there is no acid in that reflux, they don't do any good! And they may actually cause issues where there weren't any.

STOMACH ACID VS. FOOD ACID

There is also a distinct difference between the types of acid that can cause acid reflux. Most chronic cases of acid reflux are caused by the stomach acid that is produced by our bodies. However, acid can also be produced by some of the foods that you have eaten. This is similar to the distinction between indigestion and GERD (see page 89). If a specific

food item is not being tolerated well, it may become very acidic in the stomach, and that acid may be pushed back up into the mouth or esophagus. This is an even more common occurrence for those with delayed emptying because food remains in the stomach for extended periods of time and begins to ferment and break down. This is likely the source of acid for people that only have acid reflux occur every now and then.

Identifying which of these is happening in your situation is important because it means that the medications you should be using to counteract it are different. Medications that are typically prescribed by the doctor and referred to as acid reducers will actually shut off the secretion of acid into the stomach by the body. This will have no impact whatsoever on the acid produced by a food that you have eaten.

Let's start by talking about which drugs are available to reduce acid, and then we can talk about when each medication should or should not be used.

PROTON PUMP INHIBITORS (PPIS)

PANTOPRAZOLE (PROTONIX), OMEPRAZOLE (PRILOSEC), LANSOPRAZOLE (PREVACID), RABEPRAZOLE (ACIPHEX), ESOMEPRAZOLE (NEXIUM)

PPIs are some of the most overprescribed drugs in the world, and their use has expanded even further in recent years now that many are also available over the counter (OTC). A large number of the people that currently take PPIs do not need to be on them, and long-term PPI use may not be as safe as was initially thought when they were first developed.

These medications work by blocking the proton pumps that are basically responsible for spitting hydrochloric acid into the stomach. These drugs

are very effective at what they do and lead to a huge reduction in stomach acid. They also maintain this effect for a long time. If you take the pill in the morning, it will block those proton pumps for the entire day. And, on that note, you should take the pill in the morning, at least 30 minutes before breakfast.

When PPIs were first being studied, the trials did not last longer than a couple of months. But now that they are readily available and widely used, people are remaining on these medications for years. We are now learning that long-term use of these medications can increase a person's risk for some different complications, including bone fracture. It also appears that PPIs may cause absorption issues, and the people that use them for extended periods of time can become deficient in vitamin B12 and magnesium. Another increased risk is for infection, specifically pneumonia and colitis, because the stomach acid is such an important barrier in eliminating unwanted bacteria. None of these are reasons not to take the medications if you need them, but they are definitely reasons to pause and reconsider if an acid reducer is truly necessary in your situation.

The most common short term side effects that have been seen with these medications are headache, dizziness, nausea, and diarrhea. Most PPIs are supplied as a tablet or capsule, but some can also be obtained in a powder form that can be mixed with water to make a liquid (be forewarned that these taste terrible!). Lansoprazole also comes as an orally-disintegrating tablet. Some of these drugs do interact with other medications, so you should speak with your pharmacist about anything else that you are currently taking.

PPIs are believed to be relatively safe in pregnancy, although there have not been any well-conducted studies that confirm this. Some studies have shown that there may be a small but increased risk for allergies and asthma in children that were exposed to PPIs in the womb, but these studies had flaws

PPI SNAPSHOT

What does it do?
Blocks secretion of acid into the stomach

How often do I take it?
30 minutes before breakfast

How soon will it start to work?
Within 1-2 weeks

What are the most common side effects?
Headache, dizziness, nausea, diarrhea

Are there drug interactions?
Multiple; consult a pharmacist

How does it come?
Tablet, capsule, orally-disintegrating tablet, powder for liquid

Is it safe in pregnancy?
Most likely, but should only be used if providing great benefit

Is it safe in breastfeeding? Yes

Special Concerns:
Side effects can occur from long-term use, so it should only be used if truly needed

and still need to be validated through additional research. Because our knowledge is still limited, a mother should be certain that she requires this medication for control of her symptoms before continuing it in pregnancy. PPIs are also transferred in very small amounts through breastmilk, although these small amounts should generally be safe for a baby.

The use of PPIs is not limited only to the treatment of GERD. They may sometimes be prescribed for people that have an active ulcer. Reducing the stomach acid in these situations will allow the body to heal itself. In these cases, a person will typically only take the medication for 1-2 months. This class of medications is also used in the treatment of H. Pylori (see page 38), which we will discuss in more detail in a later section.

HISTAMINE-2 RECEPTOR ANTAGONISTS (H2RAS)

H2RA SNAPSHOT

What does it do?

Blocks secretion of acid into the stomach

How often do I take it?

Twice daily

How soon will it start to work?

Within 1-2 weeks

What are the most common side effects?

These are unusual, but may include headache, dizziness, nausea, diarrhea, abdominal pain

Are there drug interactions?

Very few except with cimetidine

How does it come?

Tablet, liquid

Is it safe in pregnancy?

Most likely, but should only be used if providing great benefit

Is it safe in breastfeeding? Yes

Special Concerns:

It is often not necessary to take an H2RA in addition to a PPI

RANITIDINE (ZANTAC), FAMOTIDINE (PEPCID), CIMETIDINE (TAGAMET)

H2RAs used to be the drugs of choice for acid reduction before the PPIs that we just discussed hit the market. They are still used now, just less commonly. As with PPIs, they are also available either through a prescription or over the counter. Sometimes a doctor will place you on both a PPI and an H2RA. While this may be appropriate in a small number of cases, it is often unnecessary. If you are currently taking both, it would not hurt to have a conversation with your doctor about why and whether or not it is actually needed.

This group of medications works by stopping histamine from binding to histamine-2 receptors, which lowers the release of gastric acid into the stomach. These drugs are not as effective as the PPIs, so they don't lead to the same dramatic reduction in stomach acid. They also do not work

for the same length of time – they must be taken twice a day, and some people will experience acid reflux close to the time that the next dose is due.

Because these medications are not quite as great at blocking acid release, they do not have as many side effects associated with using them for the long-term. However, they have still been shown to increase the risk of respiratory infections like pneumonia. While ranitidine and famotidine have very few drug interactions to worry about, cimetidine has a large number of drug interactions, so it has largely fallen out of favor.

Side effects with H2RAs are actually relatively unusual, but they have been reported to cause some headaches, nausea, dizziness, abdominal pain, and diarrhea. These medications are available in both tablet and liquid forms. The use of H2RAs in pregnancy and during breastfeeding follows the same guidance as with PPIs.

ANTACIDS

CALCIUM CARBONATE (TUMS), ALUMINUM HYDROXIDE, MAGNESIUM HYDROXIDE (MILK OF MAGNESIA) OR SOME COMBINATION OF THESE PRODUCTS

Antacids are the acid reducers that have been around “forever” and are all available over the counter, without a prescription. What most people don't realize is that antacids are completely different than other acid reducers in the way that they work. This group of medications actually reduces acid simply by binding to the acid present in the stomach at the time that they are taken. They have no impact on the body's production of stomach acid and do not differentiate between acid from the stomach and acid produced from foods.

These medications are taken when they are needed, meaning that when you feel acid refluxing into your

ANTACID SNAPSHOT

What does it do?

Binds to any acid in the stomach

How often do I take it?

When you experience acid reflux

How soon will it start to work?

Immediately

What are the most common side effects?

Constipation (with calcium)

Diarrhea (with magnesium)

Are there drug interactions?

They may bind to drugs present in the stomach if not separated by about 2 hours

How does it come?

Chewable, liquid

Is it safe in pregnancy? Yes

Is it safe in breastfeeding? Yes

Special Concerns: None

esophagus, you can pop an antacid. They work pretty much immediately, because they just need to land in the stomach and start binding away. In fact, they are supplied as chewables and liquids for that exact reason. If you are already taking a PPI or an H2RA but are still experiencing some acid reflux every now and then, you can take one of these as well to help relieve that discomfort.

The side effects of these products are mostly limited to the GI tract and can actually be tailored to counteract some of the symptoms that you might have from your gastroparesis. For instance, calcium carbonate is well known for causing constipation. Magnesium hydroxide, on the other hand, is well known for causing diarrhea. So if you are prone to constipation, your antacid of choice may well be magnesium. If you are prone to diarrhea, your antacid of choice should probably be calcium carbonate. Similarly, if you have a deficiency in either of these nutrients, that should be taken into consideration when you are selecting an antacid. Aluminum hydroxide is not used as often because it is not safe for people with certain conditions, so I would generally recommend one of the other two options.

Just as these medications bind to stomach acid, they also have the potential to bind to some other drugs. However, this is a limited interaction that only lasts while the antacid is still in your stomach. So if you separate it from your medications by about 2 hours, there should be no concern for interaction. When used in moderation, calcium carbonate and magnesium hydroxide are also safe to use in pregnancy and while breastfeeding. Just keep in mind that you should not be downing excessive quantities, for both your sake and the baby's.

ACID REDUCER OR ANTACID

So now the obvious question is “Which one do I use?”. That depends on your situation. If you find that you are chronically experiencing acid reflux,

then you should be on a medication that blocks the secretion of acid into the stomach (PPI or H2RA). If you find that you do not experience acid reflux on a regular basis, then you should not be taking a medication regularly.

If you have acid that comes up periodically or only at certain points in time, an antacid might be the best option for you. Whether it is the food or the stomach producing this acid, the antacid will work for either (unlike an acid reducer). It works when you need it and does not need to be taken regularly. It has limited side effects and you do not have to worry about any long-term concerns. In the same way, if you need an acid reducer because you have chronic acid reflux, you can take an antacid whenever you experience ‘breakthrough’ acid reflux, which is most likely being caused by acid from your food.

Some of you might already be on a PPI or H2RA and are not certain if you need it. There is no harm in going off of one of these medications to see if it is actually beneficial for you. However, a unique consideration with PPIs and H2RAs is that when you miss a dose or stop using them abruptly, you may experience rebound acid reflux. This can be very uncomfortable and also very discouraging if you were testing to see if you could stop taking your medication. This rebound should only last for a couple of days, so you will need to push through it if you want to evaluate your symptoms without the medication. A good test to evaluate your symptoms should last for at least 2 weeks. If you're not sure if there is a difference, you can always try to take the medication again for about 2 weeks and compare.

I know that this covered a lot of information related to acid production, but I hope that it will prove helpful in allowing you to pick through your symptoms and medications to ensure that you are taking only what you need for your best quality of life.

Rebound acid reflux:

Occurs when a dose of PPI or H2RA is missed or stopped. Involves an increase in acid production that lasts for 2-3 days and then returns to normal.