Consumer Reports Health.org

BEST BUY DRUGS

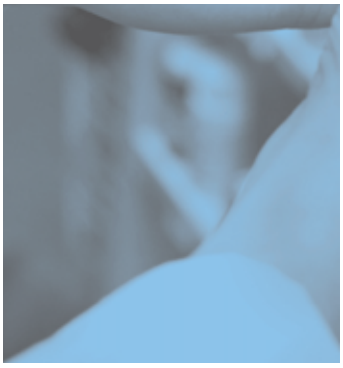
Drugs to Treat Heartburn and Stomach Acid Reflux:

The Proton Pump Inhibitors

Comparing Effectiveness, Safety, and Price











Our Recommendations

Proton pump inhibitors (PPIs) are a class of very effective and generally safe medicines used to treat heartburn, gastroesophageal reflux disease (GERD), and gastric ulcers.

But not everyone who experiences heartburn needs one. Several of the PPIs have been widely advertised to consumers and heavily promoted to physicians, and this has led to an overuse of the drugs in the treatment of garden-variety heartburn. PPIs are the third highest-selling class of drugs in the U.S., and one of them, Nexium, has the second highest retail sales among all drugs—$4.8 billion in 2008.

If you suffer from occasional heartburn and have *not* been diagnosed with GERD, nonprescription antacids such as Maalox, Mylanta, Rolaids, and Tums, or acid-reducing drugs known as H2 blockers, such as cimetidine (Tagamet), famotidine (Pepcid), nizatidine (Axid), and ranitidine (Zantac) will very likely provide relief. All of those products are available without a prescription as low-cost generics.

Talk with your doctor about the role that dietary and lifestyle changes can play in alleviating heartburn, too, such as eating smaller meals and not lying down for at least three hours after eating, losing weight if you need to, and avoiding alcohol. If, however, you experience heartburn twice a week or more for weeks or months on end, have frequent regurgitation of food into your throat or mouth (with or without heartburn), or if your heartburn is not relieved by the drugs mentioned above, you may have GERD and may need a PPI. GERD is a condition that makes you prone to acid reflux and, over time, can cause damage to your esophagus.

The seven available PPI medicines are roughly equal in effectiveness and safety but differ in cost. Three—omeprazole (Prilosec, Prilosec OTC), lansoprazole (Prevacid, Prevacid 24HR), and omeprazole/sodium bicarbonate (Zegerid, Zegerid OTC)—are available as both a prescription and a nonprescription drug. Two—omeprazole and pantoprazole (Protonix)—are available as a brand-name drug and a generic, which contains the same active ingredient but costs significantly less.

Taking the evidence for effectiveness, safety, cost, and other factors into account, if you need a PPI, we have chosen the following as *Consumer Reports Health Best Buy Drugs*:

- Prilosec OTC
- Generic omeprazole OTC
- Prevacid 24HR

All three of these drugs are available without a prescription. You could save about $200 a month or more by choosing one of these medicines over more expensive prescription PPIs. If you have health insurance, find out if your plan will help pay for Prilosec OTC, generic omeprazole OTC, or Prevacid 24HR. If not, talk with your doctor about taking the PPI with the lowest out-of-pocket cost to you.

Safety note: Several studies have now linked PPIs to a higher risk of pneumonia and infection with a bacterium called *Clostridium difficile*, and other studies have found that long-term use of PPIs may be associated with an increased risk of fractures. Talk with your doctor about those risks, especially if you must take a PPI over a long period of time. People ages 65 and over and those with chronic medical conditions should be vaccinated against pneumonia and get a flu shot every year and we emphasize this recommendation for people in those categories who are also taking a PPI.

In addition, anyone taking clopidogrel (Plavix), a blood thinner used to prevent clots after heart attacks and stent placement, should be especially cautious with PPIs. Some studies indicate that PPIs may reduce clopidogrel's effectiveness, which could increase the risk of another heart attack. Our medical advisers recommend that people taking clopidogrel should not take PPIs unless other remedies have not been adequate.

This report was updated in May 2010.

Welcome

Proton pump inhibitors (PPIs) are a class of drugs used to treat heartburn, gastroesophageal reflux disease (GERD), and gastric ulcers.

Heartburn and GERD are quite common. Heartburn is the main symptom of GERD but does not always signal it (see below for a more complete explanation). Between a quarter and a third of adults in the U.S. will have GERD symptoms at some point. It is most common among people ages 50 and older but can strike at any age. Pregnant women are also highly prone to GERD.

This evaluation of PPIs is part of a Consumers Union and *Consumer Reports* project to help guide you to medicines that are most effective and safe, and give you the best value for your health-care dollar. To learn more about the project and the other classes of drugs we examine, go to ConsumerReportsHealth.org/BestBuyDrugs.

Six PPIs and one combination drug are currently available. They are:

Generic	Name Brand	Available as a Prescription Generic Drug?
Esomeprazole	Nexium	No
Dexlansoprazole	Kapidex	No
Lansoprazole	Prevacid, Prevacid 24HR (a non-prescription version)	No
Omeprazole	Prilosec, Prilosec OTC	Yes
Omeprazole/ Sodium Bicarbonate	Zegerid, Zegerid OTC	No
Pantoprazole	Protonix	Yes
Rabeprazole	AcipHex	No

Dexlansoprazole (Kapidex) was approved by the FDA in January 2009. It was not included in the most recent analysis conducted by the Oregon Health & Science University Drug Effectiveness Review Project, which forms the basis of this *Best Buy Drug* report. Few studies pertaining to Kapidex are available, so at this point we can't draw any conclusions about how its effectiveness might compare with other PPIs. In addition, its safety profile is not fully established yet. For those reasons, we recommend sticking with the other PPIs, especially our *Best Buy* picks, until more is known about this drug.

Two PPIs—omeprazole (Prilosec) and pantoprazole (Protonix)—are available as generic prescription drugs. A lower-dosage form of omeprazole is now available as a nonprescription medicine called Prilosec OTC (over-the-counter) and is also sold as a generic drug. You can obtain these without a prescription, and their cost is significantly lower than the prescription versions. In addition, lansoprazole (Prevacid) is available as a nonprescription medicine called Prevacid 24HR, and omeprazole/sodium bicarbonate (Zegerid) is available as a nonprescription medicine called Zegerid OTC. Prevacid 24HR costs about the same as Prilosec OTC and generic omeprazole OTC. Zegerid OTC also costs about the same as those over-the-counter medicines. None of the available studies on Zegerid met the criteria for inclusion in the scientific analysis that forms the basis of this *Best Buy Drugs* report.

Other prescription and nonprescription medicines are available (brand name and generics) to treat heartburn and acid reflux. Among them are the over-the-counter antacids Maalox, Mylanta, Rolaids, and Tums. These medicines work within minutes to relieve heartburn and "acid indigestion." But their effect lasts only a few hours.

Another class of drugs, the H2 blockers, is also available over-the-counter to treat mild, occasional heartburn and excess stomach acidity. The nonprescription versions of drugs in this class include cimetidine (Tagamet OTC), famotidine (Pepcid AC), nizatidine (Axid AR), and ranitidine (Zantac 75, Zantac 150). H2 blockers take longer to work than antacids—30 minutes to an hour—but they provide heartburn relief for up to 12 hours. All are now available as low-cost generics.

Stronger doses of H2 blockers are also available by prescription, and all are also available as lower-cost generics. Studies have found that PPIs reduce stomach acid more over time than antacids or H2 blockers. But PPIs are not intended for the *immediate* relief of heartburn. Antacids and H2 blockers actually do a *better* job at that. The main advantage of treatment with PPIs, in addition to reducing stomach acid for longer periods of time, is that they treat people diagnosed with GERD or ulcers.

This report evaluates only PPIs, which have become the most widely prescribed medicines in the U.S. to treat heartburn and GERD when symptoms persist, are chronic or severe, or are unrelieved by antacids or H2 blockers.

This report was last updated in May 2010.

What Are PPIs and Who Needs Them?

PPIs work by blocking an enzyme that is necessary for making acid in the stomach. When this enzyme is blocked, acid production decreases.

PPIs are very effective and relatively safe. But not everyone needs one. Several of them are widely advertised to the public and promoted to physicians—especially Nexium (the "purple pill"), which has been the second best-selling prescription drug in the U.S. since 2005. In 2008, retail sales for it totaled $4.8 billion. Many physicians think the heavy promotion has led to an overuse of PPIs in the treatment of occasional heartburn. According to IMS Health, the number of prescriptions written in the U.S. for PPIs in 2008 topped 113 million, making them the third highest-selling class of drugs.

Before you go on a PPI, we advise talking with your doctor about other medicines that may be useful if you have only occasional heartburn (once a week or less) and have *not* been diagnosed with GERD. Also, talk with your doctor about the role that dietary and lifestyle changes can play in alleviating heartburn, such as eating smaller meals and not lying down for at least three hours after eating, losing weight if you need to, and avoiding alcohol.

Almost everyone has heartburn once in a while—for example, after a heavy or spicy meal, or after drinking alcohol. Heartburn is an uncomfortable sensation that usually starts just below your breastbone and can radiate into your throat. You may also get a sour or bitter taste of acidic stomach contents in your mouth or throat.

Occasional heartburn is not worrisome or dangerous, and can be largely relieved by taking over-the-counter antacids or H2 blockers. Even if you have a period of time—say a couple of weeks—in which you get heartburn fairly regularly, you may not need anything stronger than those drugs.

However, if you have heartburn at least twice a week for weeks or months on end, have frequent regurgitation of food into your throat or mouth (with or without heartburn), or if your heartburn is not relieved by antacids or H2 blockers, you may have GERD.

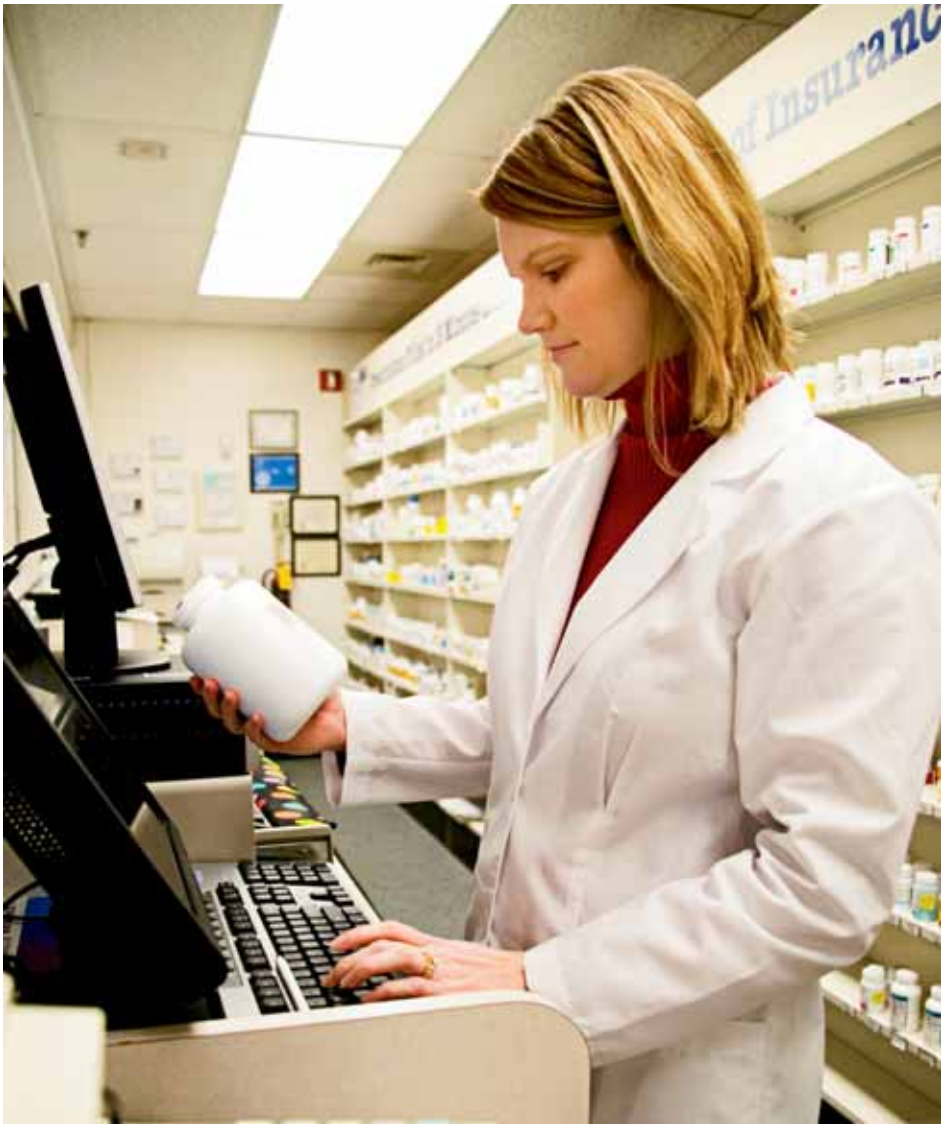
GERD (gastroesophageal reflux disease) is not just the result of frequent heartburn or excessive eating, as commonly thought. It's caused by a physical condition that many people appear prone to, when the ring of muscle between the esophagus and stomach doesn't work properly. The muscle usually opens when food is passing through on its way to the stomach. In people with GERD, however, the muscle seems to open at other times. Or it stays open too long after food has passed through. When either happens, acid from the stomach can flow back up into the esophagus. This is called acid reflux.

There are no definitive studies of how many Americans actually have GERD. By some estimates, more than 60 million experience heartburn at least once a month and 15 million suffer from it daily. So it is possible that tens of millions of people may have the condition. The bottom line is that if you have heartburn twice a week or more you could meet the criteria for GERD and should see a doctor if your symptoms are not controlled by lifestyle changes, over-the-counter antacids or H2 blockers.

In contrast to occasional heartburn, GERD can be dangerous. If it isn't treated, over time, the acid reflux can cause inflammation or erosions to the lining of the esophagus, what doctors call esophagitis. You may sense it as a chronic soreness in your lower throat and/or chest. Most cases of esophagitis are relatively mild. But if left untreated, it can result in bleeding, scarring, and a narrowing of the esophagus. This can make eating and swallowing foods painful and difficult. People who have uncontrolled GERD for years also have a higher risk of cancer of the esophagus, though this cancer is rare.

Between a third and half of the people with GERD will have some damage to their esophagus, although it's usually mild. But doctors can't tell who is going to develop that damage and who will not, or how severe it might be. As a result, if you are diagnosed with GERD, your doctor will almost certainly prescribe a PPI. All of these drugs greatly reduce the amount of acid your stomach produces, making the refluxing stomach contents less erosive. That allows the esophagus to heal.

If you are diagnosed with GERD, your doctor may also recommend that you undergo a procedure called an upper endoscopy. The procedure uses a lighted flexible tube, put down the throat, to look inside the esophagus. Your doctor will then look for damage to your esophagus. He or she may also take a sample of tissue to test for cancer.



PPIs don't cure GERD; they treat the symptoms. Not a lot is known about how people with GERD do over the long-term. But it appears that some have GERD for life while for most, the condition occurs only sometimes or resolves on its own.

If you are diagnosed with GERD and are given a prescription for a PPI, talk with your doctor about how long you should take the medicine. After a few months, you may be able to stop taking it without any problems. If your symptoms return, you can often start taking the medicine again. Many doctors and pharmacists think that PPIs are overused to treat people who have heartburn but do not have signs of esophagitis.

A small number of people who have severe symptoms and/or are prone to severe damage to their esophagus may need to take a PPI every day for years. Everyone diagnosed with GERD should have dietary counseling to determine which foods may exacerbate their symptoms. Quitting smoking is also recommended. And if you are overweight, losing weight has been clearly associated with a reduction in heartburn and GERD.

PPIs are used to treat peptic ulcers, too, which are erosions in the lining of the stomach or upper intestinal tract. These ulcers are caused primarily by a bacterial infection with an organism called *Helicobacter pylori*.

PPI drug treatment alone does not eliminate the infection; you need antibiotics for that. The benefit of using PPIs is that they enable the ulcers to heal by reducing stomach acid. That treatment has virtually eliminated the need for ulcer surgery except for those in whom bleeding is unstoppable.

PPIs are also now commonly prescribed to help prevent or treat erosions in the stomach lining in people who take nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Advil and generics) or naproxen (Aleve and generics), or corticosteroids such as prednisone to treat arthritis or pain. Studies have found that they help by reducing stomach acid and allowing the ulcers to heal. People who take NSAIDs regularly for pain, arthritis or other reasons should talk with their doctor about taking a PPI as well to protect their stomach.

In this report, we only evaluate PPIs for treating heartburn and GERD.

Choosing a PPI – Our *Best Buy* Picks

All PPIs are highly effective at reducing stomach acid, relieving heartburn, and thereby helping to heal damage to the esophagus caused by GERD. The overall evidence from research that compared the drugs with each other shows them to be very similar, with no PPI any better than any other. Some studies have indicated that esomeprazole (Nexium) may have a slight advantage, but the drug was administered at a higher dose in these trials (we discuss this in more detail on page 12).

As you can see in Table 1, below, if you take a PPI you have a 65 percent to 77 percent chance of complete symptom relief after four weeks. You have a 77 percent to 90 percent chance that any damage that occurred to your esophagus will be healed after eight weeks. And the majority of people who are advised to remain on a PPI to prevent relapses don't usually experience one.

The figures in Table 1 are compiled from many studies, so they do not reflect a direct comparison of the PPI drugs as if the drugs were evaluated against each other in a single study. The figures are presented here to illustrate the general effectiveness of the class of PPIs. The differences between the drugs should not be taken as an indication that one drug is stronger or weaker, or better or worse, than any other. That is one reason we give you the ranges of response as well as the averages.

Also, doctors have no way of gauging how a person will respond to a PPI or if they will respond to one better than another. The figures we present indicate that most people can expect to get relief from taking any PPI. But it's not uncommon for some people to respond better to one PPI than another.

Table 1. General Effectiveness of PPIs[1]

Generic Name And Dose Per Day	Brand Name	Symptom Relief at 4 Weeks, Average Percentage of Patients (Range)	Esophageal Healing at 8 Weeks, Average Percentage of Patients (Range)	Relapse Prevention
Esomeprazole 20 mg	Nexium	NA[2]	87% (84%-91%)	87%
Esomeprazole 40 mg	Nexium	73% (65%-82%)	90 (88-92)	93
Lansoprazole 30 mg	Prevacid	70 (61-80)	86 (83-90)	91
Omeprazole 20 mg	Prilosec	65 (54-76)	85 (81-88)	86-92
Pantoprazole 20 mg	Protonix	77 (70-84)	77 (65-88)	55-86
Pantoprazole 40 mg	Protonix	72 (62-83)	89 (86 to 92)	78
Rabeprazole 20 mg	AcipHex	69 (52-86)	82 (76-89)	89

1. Effectiveness data presented for PPI dosage strengths that have been studied to date. Data are from individual studies included in DERP's analysis of the PPIs. Ranges given reflect findings from multiple studies.

2. NA=Data not available.

As a result, your doctor may recommend that you try another PPI if the one you try initially does not appear to work after about six weeks. Or your doctor may prescribe a higher dose of the PPI before switching you to another one.

PPIs—Side Effects and Safety

PPI drugs appear to be relatively safe, but few studies have rigorously evaluated their safety when taken every day for a year or longer. Even so, doctors have not reported serious side effects, and PPIs have been in wide use for many years.

Studies have not found any significant differences among PPIs in terms of the side effects they cause or their safety. The drugs do cause some minor side effects, such as headache and diarrhea. About 1 percent to 3 percent of people stop taking a PPI because they cannot tolerate the side effects.

There are several important safety issues to consider. First, taking PPIs may increase your susceptibility to certain infections by decreasing stomach acid. Normal stomach acidity helps protect against infections by killing bacteria and viruses. Specifically, taking PPIs can increase the risk of community acquired pneumonia, particularly within the first month of use. There is also an increased risk of infection with a bacterium called *Clostridium difficile*, which can cause disabling diarrhea and high fever.

Secondly, several studies have found that people who took PPIs every day for at least a year had a higher risk of bone fractures, including hip fractures. While another study found no risk of hip fracture, there was an increased risk of wrist and forearm fractures. This risk appears to stem from the potential for the drugs to decrease the body's absorption of calcium, which can result in weakened bones. How higher doses or the length of time PPIs are taken affect these risks is not yet clear.

While the evidence to date is only observational, there is also no consensus on how much of a risk PPIs present when compared with their benefit. There is agreement, however, that given the potential risks, you and your doctor should be certain when taking a PPI that it is appropriate for your condition, especially if it is for the long-term.

To date, there is no consensus on how much of a risk these links present when compared with the considerable benefit of appropriate PPI treatment. But there is agreement that in light of the potential risks both doctors and consumers should be certain that treatment with PPIs is appropriate, especially if treatment is long-term.

We also recommend that you talk with your doctor about the risk of infection if you have asthma, lung disease, decreased immunity (because of HIV or AIDS, for example), or are over age 65. People 65 and over are already advised to get vaccinated against pneumonia and to get a flu shot every year. Taking a PPI on a regular basis may be another important reason to get both vaccines.

Another concern is that PPIs are known to interact with other medicines and dietary supplements in ways that can be dangerous. In some cases, your doctor may recommend that you take a specific PPI because of evidence that it is less likely to interact with another drug you are taking.

There is some recent evidence that suggests that taking a PPI with a blood-thinning drug called clopidogrel (Plavix)—often prescribed for patients after heart attacks, strokes, stent placements and other heart problems—can reduce clopidogrel's ability to thin the blood. People often take a PPI to decrease stomach irritation and bleeding that can occur with clopidogrel. Some studies found that heart attack patients who took a PPI and clopidogrel could increase their risk of having another heart attack. However, other studies have not found an increased risk. So far, it is not clear if there are differences between the PPIs and how much, if at all, they affect clopidogrel. Our medical advisors recommend that people taking clopidogrel should not take PPIs unless other remedies have not been adequate. This issue is important to discuss with your doctor if you take these two drugs together. We are keeping a close eye on this issue as it further develops.

If you take clopidogrel and require a medication to treat your heartburn, GERD, or gastric ulcer and your symptoms aren't severe, another option may be an older class of drugs called H2 blockers, which includes nizatidine (Axid, Axid AR), famotidine (Pepcid, Pepcid AC), and ranitidine (Zantac, Zantac 75, Zantac 150). All are available as low-cost gener-

ics. You could also try an antacid. These drugs have not been associated with reducing the protective effects of Plavix. You should also talk to your doctor about having periodic blood counts or monitoring of your stools in order to detect gastrointestinal bleeding you may not be aware of (black, tarry stools can be a sign of this, for example).

The main drugs to be concerned about potentially interacting with PPIs are:

- Clopidogrel (Plavix), and potentially other anti-clotting medication, used to prevent clots after a heart attack, stroke and/or stent placement
- Blood thinners, such as warfarin (Coumadin and generics)
- Anti-anxiety drugs known as benzodiazepines, such as diazepam (Valium and generics)
- Antibiotics
- Phenytoin (Dilantin and generics), used to treat epilepsy
- Disulfuram (Antabuse), used to treat alcoholism
- Atazanavir (Reyataz) and nelfinavir (Viracept), used to treat HIV/AIDS

Another concern is whether PPIs are safe to take during pregnancy, because pregnant women are prone to heartburn and GERD. Unfortunately, there's not enough evidence to draw a firm conclusion about this. One study found no increased risk of rates of preterm birth, miscarriage, ectopic pregnancy, or stillbirth in moms who took PPIs while pregnant compared to those who did not. But this study had several limitations, so more studies would be needed to confirm there is no risk before a definitive conclusion can be made.

Finally, studies indicate that about 3 percent of Caucasians and African-Americans and 17 percent to 25 percent of Asian-Americans have less than average amounts of the enzymes that break down PPIs in the body. For these groups of people, less than the usual dose of a PPI might work just as well to relieve symptoms, though the usual doses are considered to be safe. Testing to determine a person's level of this enzyme is not necessary.

Cost and Our *Best Buy* Picks

While the six PPIs do not differ in effectiveness or safety, they do differ in price. The average monthly cost ranges from $24 to over $200. (See Table 2 on page 11.)

Taking effectiveness, safety, and cost into account, we have chosen **over-the-counter generic omeprazole**, the brand-name version **Prilosec OTC**, and **Prevacid 24HR** as *Consumer Reports Health Best Buy Drugs* if you need a PPI. These are proven medicines available without a prescription. For most people, they are as effective as the more expensive prescription alternatives. At less than $1 a day, generic omeprazole, Prilosec OTC, and Prevacid 24HR cost almost one-tenth the price of several of the prescription alternatives, a major savings for those who need a PPI.

Although Zegerid OTC also costs about the same as the other over-the-counter PPIs, we can't recommend it because the available studies on Zegerid did not meet the criteria for inclusion in the scientific analysis that forms the basis of this *Best Buy Drugs* report, so we don't know how it compares in terms of effectiveness and safety.

Our choice of these over-the-counter medicines presents two questions, however. The first is: Do you need

to visit a doctor if you start taking one of them for heartburn and think you may have GERD? The answer is yes. Buying these drugs to relieve occasional heartburn requires no initial physician visit, saving you that trouble and expense. But if you have persistent heartburn (twice a week for several weeks), or you have soreness in your throat or chest, you should see a doctor as soon as possible, even as you continue to take the over-the-counter PPIs or any other nonprescription acid reducer. Remember, GERD can be dangerous and you can't diagnose it yourself.

The second question involves your health insurance status. Insurers do not typically pay for nonprescription medicines. So if you have insurance and your doctor says you need a PPI, he or she may be inclined to prescribe one rather than tell you to buy one of the over-the-counter PPIs. Before that happens, you should find out from your health plan if it covers over-the-counter PPIs. Some insurers do, and others may provide coverage under certain circumstances. If this is the case, you'll save money by starting your treatment with one of the drugs that doesn't require a prescription.

If your health plan does not offer coverage of an over-the-counter PPI, you can:

- Consult with your doctor to choose the PPI that has the lowest out-of-pocket cost under your insurance plan. Generic prescription omeprazole, for example, may be available for a copayment of $5 to $10 a month.
- Choose to pay for an over-the-counter PPI instead of out of your own pocket.

Either way, your monthly cost will be relatively low, and the difference in cost between the two choices may be quite small. Choosing nonprescrip-

Table 2. PPI Cost Comparison

Generic Name	Brand Name[1]	Frequency of Use[2]	Average Monthly Cost[3]
Esomeprazole 20 mg capsules	Nexium	One per day	$248
Esomeprazole 40 mg capsules	Nexium	One per day	$239
Dexlansoprazole 30 mg sustained-release tablets	Kapidex	One per day	$174
Dexlansoprazole 60 mg sustained-release tablets	Kapidex	One per day	$170
CR BEST BUY Lansoprazole 20 mg delayed-release tablets (nonprescription)	Prevacid 24HR	One per day	$23[4]
Lansoprazole 15 mg delayed-release capsules	Prevacid	One per day	$267
Lansoprazole 15 mg delayed-release tablets	Prevacid	One per day	$242
Lansoprazole 30 mg delayed-release capsules	Prevacid	One per day	$253
Lansoprazole 30 mg delayed-release tablets	Prevacid	One per day	$237
CR BEST BUY Omeprazole 20 mg tablets (nonprescription)	Prilosec OTC	One per day	$24[4]
CR BEST BUY Omeprazole 20 mg tablets (nonprescription)	Generic	One per day	$19[4]
Omeprazole 10 mg delayed-release capsules	Prilosec	One per day	$192
Omeprazole 10 mg sustained-release capsules	Generic	One per day	$110

Table 2. PPI Cost Comparison (continued)			
Generic Name	**Brand Name[1]**	**Frequency of Use[2]**	**Average Monthly Cost[3]**
Omeprazole 20 mg delayed-release capsules	Prilosec	One per day	$220
Omeprazole 20 mg delayed-release capsules	Generic	One per day	$69
Omeprazole 40 mg sustained-release capsules	Prilosec	One per day	$378
Omeprazole 40 mg sustained-release capsules	Generic	One per day	$172
Omeprazole/Sodium Bicarbonate 20 mg/1,100 mg capsules	Zegerid	One per day	$245
Omeprazole/Sodium Bicarbonate 40 mg/1,100 mg capsules	Zegerid	One per day	$249
Omeprazole/Sodium Bicarbonate 20 mg/1,100 mg capsules	Zegerid OTC	One per day	$21[5]
Pantoprazole 20 mg delayed-release tablets	Protonix	One per day	$199
Pantoprazole 20 mg delayed-release tablets	Generic	One per day	$142
Pantoprazole 40 mg delayed-release tablets	Protonix	One per day	$192
Pantoprazole 40 mg delayed-release tablets	Generic	One per day	$137
Rabeprazole 20 mg tablets	AcipHex	One per day	$274

1. "Generic" indicates drug sold by generic name. Among PPIs, only omeprazole and pantoprazole are available as generic drugs.

2. As typically prescribed.

3. Monthly cost reflects nationwide retail average prices for March 2010, rounded to the nearest dollar. Information was derived by *Consumer Reports Best Buy Drugs* from data provided by Wolters Kluwer Health, Pharmaceutical Audit Suite®. Wolters Kluwer Health is not involved in our analysis or recommendations. Average monthly cost is based on recommended dosage of one pill daily.

4. Average prices obtained by *Consumer Reports* from nearly 100 chain and independent pharmacies in locations across the U.S.

5. Newly available medication; average price obtained from an online pharmacy source.

tion omeprazole or Prilosec OTC offers the convenience of purchasing more without a doctor's prescription. And if your symptoms ease or disappear, you may not need to visit the doctor again.

If you do not have health insurance or prescription drug coverage, or you must pay a sizable portion of drug costs out-of-pocket, nonprescription omeprazole, Prilosec OTC, or Prevacid 24HR are the clear drugs of choice. These will save you substantial amounts of money.

If you have GERD and moderate to severe symptoms or esophagitis, you may need a higher dose of a PPI. If you take nonprescription omeprazole, Prilosec OTC, or Prevacid 24HR, you could take one to two 20 mg tablets daily at a cost of around $24 to $48 a month.

In that context, the makers of Nexium have promoted it heavily as the superior drug to treat people with GERD and esophagitis. The figures we present in Table 1 show that, on average, Nexium may have a slight advantage over several of the other PPIs for such use. However, the justification for such a claim seems marginal at best. Nexium is usually prescribed at a dose of 40 mg, which studies have found to be more potent than, say, 20 mg of generic omeprazole or Prilosec OTC. Other studies have found Nexium 40 mg to be equivalent to Protonix at 40 mg and Prevacid 30 mg. In addition, one key study found that people with GERD without esophagitis did just as well with generic omeprazole at 20 mg as with Nexium at 20 mg or 40 mg.

Talking With Your Doctor

It's important for you to know that the information we present here is not meant to substitute for a doctor's judgment. But we hope it will help you and your doctor arrive at a decision about which PPI medication and dosage is best for you, and which will give you the most value for your health-care dollar.

Bear in mind that many people are reluctant to discuss the cost of medicine with their doctor and that studies have found that doctors do not routinely take price into account when prescribing medicine. Unless you bring it up, your doctor may assume that cost is not a factor for you.

Many people, including physicians, think that newer drugs are better. While that's a natural assumption to make, it's usually not true. Studies have consistently found that many older medicines are as good as, and in some cases better than, newer ones. Think of them as "tried and true," particularly when it comes to their safety record. Newer drugs have not yet met the test of time, and unexpected problems can and do crop up once they are available on the market.

Of course, some newer prescription drugs are indeed more effective and safer. Talk with your doctor about the pluses and minuses of newer vs. older medicine, including generic drugs.

Prescription medicines go "generic" when a company's patents on a drug lapse, usually after about 12 to 15 years. At that point, other companies can make and sell the drug.

Generics are much less expensive than newer brand name-medicine but they are not lesser-quality drugs. Indeed, most generics remain useful medicines even many years after first being marketed. That is why today more than 60 percent of all prescriptions in the U.S. are written for generics.

Another important issue to talk with your doctor about is keeping a record of the drugs you are taking. There are several reasons for this:

- First, if you see several doctors, each may not be aware of medicines the others have prescribed.
- Second, since people differ in their response to medications, it is very common for doctors today to prescribe several before finding one that works well or best.
- Third, many people take several prescription medications, nonprescription drugs, and dietary supplements at the same time. They can interact in ways that can either reduce the benefit you get from the drug or be dangerous.
- And fourth, the names of prescription drugs—both generic and brand—are often hard to pronounce and remember.

For all these reasons, it's important to keep a written list of all the drugs and supplements you are taking, and to periodically review it with your doctors.

Always be sure, too, that you understand the dose of the medicine being prescribed for you and how many pills you are expected to take each day. Your doctor should tell you this information. When you fill a prescription at a pharmacy, or if you get it by mail, check to see that the dose and the number of pills per day on the pill bottle match the amount that your doctor told you.

How We Picked the *Best Buy* PPIs

Our evaluation is based primarily on an independent scientific review of the studies and research literature on PPIs conducted by a team of physicians and researchers at the Oregon Health & Science University Evidence-Based Practice Center. This analysis, which reviewed hundreds of studies, was part of the Drug Effectiveness Review Project, or DERP. DERP is a first-of-its-kind, 11-state initiative to evaluate the comparative effectiveness and safety of hundreds of prescription drugs.

A synopsis of DERP's analysis of the PPIs is the basis for this report. The synopsis was written by a consultant to *Consumer Reports Health Best Buy Drugs* who is also a member of the Oregon-based research team.

The Oregon research team has no financial interest in any pharmaceutical company or product. The full DERP review of PPIs is available at www.ohsu.edu/drugeffectiveness/reports/final/cfm. (This is a long and technical document written for physicians.)

Treatment advice and basic information about heartburn and GERD was obtained, in part, from *Consumer Reports Health* (ConsumerReportsHealth.org), a Web site provided by Consumers Union, publisher of *Consumer Reports*, which has information about various conditions and Ratings of treatments. (Some of the rating information requires a subscription to access.)

The drug costs we cite were obtained from a healthcare information company that tracks the sales of prescription drugs in the U.S. Prices for a drug can vary quite widely, even within a single city or town.

All the prices in this report are national averages based on sales of prescription drugs in retail outlets. They reflect the retail price paid for a month's supply of each drug in March 2010.

Consumers Union and *Consumer Reports* selected the *Best Buy Drugs* using the following criteria. The drug (and dose) had to:

- Be in the top tier of effectiveness among the five PPIs.
- Have a safety record similar to or better than other PPIs.
- Have an average monthly cost lower than other PPIs.

The *Consumers Reports Health Best Buy Drugs* methodology is described in more detail in the methods section at ConsumerReportsHealth.org/BestBuyDrugs.

About Us

Consumers Union, publisher of *Consumer Reports* magazine, is an independent nonprofit organization whose mission since 1936 has been to provide consumers with unbiased information on goods and services and to create a fair marketplace. Its Web site is www.consumer.org. The magazine's Web site is www.consumerreports.org.

Consumer Reports Health Best Buy Drugs is a public-education project administered by Consumers Union. It is partially grant funded. Principle current outside funding comes from the state Attorney General Consumer and Prescriber Education Grant Program, which is funded by the multistate settlement of consumer fraud claims regarding the marketing of the prescription drug Neurontin. The Engelberg Foundation provided a major grant to fund the creation of the project from 2004 to 2007. Additional initial funding came from the National Library of Medicine, part of the National Institutes of Health. A more detailed explanation of the project is available at ConsumerReportsHealth.org/BestBuyDrugs.

We followed a rigorous editorial process to ensure that the information in this report and on the *Consumer Reports Health Best Buy Drugs* website is accurate and describes generally accepted clinical practices. If we find an error or are alerted to one we will correct it as quickly as possible. However, *Consumer Reports* and its authors, editors, publishers, licensers, and any suppliers cannot be responsible for medical errors or omissions, or any consequences from the use of the information on this site. Please refer to our user agreement at ConsumerReportsHealth.org/BestBuyDrugs for more information.

These materials are made possible from the state Attorney General Consumer and Prescriber Education Grant Program, which is funded by the multi-state settlement of consumer fraud claims regarding the marketing of the prescription drug Neurontin.

Consumer Reports Health Best Buy Drugs should not be viewed as a substitute for a consultation with a medical or health professional. This report and the information on ConsumerReportsHealth.org/BestBuyDrugs are provided to enhance your communication with your doctor rather than to replace it.

Sharing This Report

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