

BEST BUY DRUGS™

Using the Antihistamines to Treat:

Allergies, Hay Fever, & Hives

COMPARING EFFECTIVENESS, SAFETY, AND PRICE



Contents

- 2:** Our Recommendations
- 3:** Welcome
- 6:** What Are Antihistamines and Who Needs Them?
- 9:** Choosing an Antihistamine — Our *Best Buy* Picks
- 14:** The Evidence
- 17:** 5 Tips to Talking With Your Doctor
- 18:** How We Picked the *Best Buy* Antihistamines
- 19:** Sharing this Report
- 19:** About Us
- 20:** References

Our Recommendations

This report evaluates seven newer or “second-generation” antihistamine medications that are widely used to relieve the symptoms of hay fever (a type of allergic rhinitis), hives (urticaria), and other allergies. Studies have found these drugs to be equally effective and generally safe, but they can be misused.

Some people who take allergy medicines do not have allergies, so you should see your doctor for a diagnosis before taking antihistamines on a regular basis.

The newer antihistamines cause less drowsiness than the older ones, which include nonprescription drugs such as Benadryl Allergy, Chlor-Trimeton Allergy, and Dimetapp Allergy. But the newer drugs are no more effective than the older ones at relieving symptoms.

The monthly cost for the newer medicines varies from about \$8 to more than \$200, so price might be an important factor in your choice. This report shows how you could save hundreds of dollars a year or more if you currently take an expensive brand-name antihistamine. Taking dosing convenience, cost, and effectiveness and safety into account, we have selected the following as *Consumer Reports Best Buy Drugs*:

- Cetirizine 10 mg tablets
- Loratadine 10 mg tablets
- Loratadine dissolving 10 mg tablets
- Loratadine liquid 10 mg
- Alavert dissolving 10 mg tablets

All are low-cost generics available without a prescription in pharmacies and other stores that sell

medications. They have been shown to effectively relieve symptoms of hay fever, hives, and other allergies. Cetirizine is also available over-the-counter in soft gel capsule and liquid formulations for people who need those. You should also be aware that some people may respond well to one antihistamine while getting no benefit from another. So if our *Best Buy* picks do not work for you, then try one of the other antihistamines.

Your insurance might not fully cover antihistamines or might charge you a higher than usual co-payment. Check with your insurer or health-plan administrator about its policy on antihistamines.

Welcome

This report on a class of drugs to treat hay fever (a type of allergic rhinitis), hives (urticaria), and other upper-respiratory symptoms triggered by allergies is part of a Consumer Reports project to help you find safe, effective medicines that give you the most value for your health-care dollar. To learn more about the project and other drugs we've evaluated, go to www.CRBestBuyDrugs.org.

Hives are red welts on the surface of the skin that are often itchy. They are usually an allergic reaction to food or medicine, but other substances and factors, including stress, can trigger them too. About 20 percent of people will get hives at some point in their lives, according to UpToDate, a physician website. Hives are usually harmless and disappear on their own, but if they become severe, an antihistamine might be appropriate.

Hay fever is a type of allergic rhinitis, an allergic reaction triggered when a person breathes in something they are allergic to, such as dust, dander, or in the case of hay fever, pollen. About 20 percent of people of all ages suffer from hay fever, according to UpToDate.

The most common symptoms include nasal congestion, a runny nose, sneezing, and itchy and watery eyes. Nonprescription allergy medicine is available in drug and grocery stores. These come in a variety of forms, including pills, liquid solutions, nasal sprays, and skin creams. Most of the pills contain the active ingredients chlorpheniramine (e.g. Chlor-Trimeton Allergy); clemastine (Tavist); brompheniramine (Dimetapp); or diphenhydramine (Benadryl Allergy). Those drugs are considered “first-generation” antihistamines and have been available for decades.

This report focuses on “second-generation” antihistamines, which include five oral medicines and

two nasal sprays. All of the oral drugs are available as generics, and three are available as nonprescription over-the-counter (OTC) drugs. The nasal sprays are available as brand-name and generic prescription medicines. The drugs covered in this report are:

Generic Name	Brand Name(s)	Available as a Prescription Generic Drug?	Available as an OTC Drug?
Azelastine nasal spray/pump	Astelin, Astepro	Yes	No
Cetirizine	Zyrtec	Yes	Yes
Desloratadine	Clarinet	Yes	No
Fexofenadine	Allegra	Yes	Yes
Levocetirizine	Xyzal	Yes	No
Loratadine	Claritin, Alavert	Yes	Yes
Olopatadine nasal spray	Patanase	No	No

You might recognize the brand names of the oral medicines—Allegra, Claritin, Clarinet, Zyrtec, and Xyzal. All have been widely advertised. And their use has become widespread, exceeding (though not eliminating) the use of first-generation antihistamines.

The main reason for their popularity is that they cause less sedation and drowsiness. But those problems can still occur when taking the newer medications, especially at higher doses. The sedative effect of first-generation antihistamines isn't just annoying or inconvenient; it can be dangerous. Studies have consistently found that people taking the older antihistamines are at a higher risk for auto accidents and other incidents at home and work. Labels on these

Welcome

drugs warn people not to drive or operate machinery while using them. In addition, most of the newer antihistamines need to be taken just once a day while the older ones must be taken two or more times a day because their effect wears off more quickly.

Even so, there's been a long-standing debate about just how much better the newer drugs are and whether they're worth the extra cost. There's no easy answer. Most doctors advise their patients to use the newer pills, while others think their patients do just as well taking the older, nonprescription drugs. Some people respond better to the older antihistamines than the newer ones. In addition, a patient might get relief from an older drug without much sedation, especially if his or her symptoms are mild. Be aware, however, that studies have found a slowed reaction time among some people taking the older antihistamines even when they denied feeling drowsy.

You, too, might be susceptible to the sedative effect of older antihistamines and respond better to the newer drugs. You might also get better symptom relief from a newer antihistamine, though our analysis found they aren't any more effective than older antihistamines. And as we have previously noted, the newer medicines can still cause some drowsiness, especially when higher doses are taken.

The availability of loratadine (Alavert, Claritin, and generics), cetirizine (Zyrtec and generics), and fexofenadine (Allegra and generics) in low-cost, nonprescription formulations changes the cost and risk/benefit decision, as we discuss later in this report. In addition, some of those medications may cost as little as \$4 for a month's supply through generic drug programs run by major chain stores, such as Kroger, Sam's Club, Target, and Walmart. For an even better bargain if you are going to be on those drugs long-term, you may be able to get a three-month supply for

as little as \$10 through these programs. We note in the price chart starting on page 12 which antihistamines are available through these programs. Some stores, such as CVS and Walgreens, require a membership fee to participate and might charge higher prices. There might be other restrictions too, so check the details carefully to make sure your drug and dose are covered.

Most antihistamines, new and old, are also available in combination with a decongestant, such as pseudoephedrine. These combination products were not included in the analysis conducted by the Oregon Health & Science University's Drug Effectiveness Review Project, which forms the basis of this report, so we do not include them in our review.

Decongestant products should be used with caution by people with high blood pressure, heart conditions, diabetes, glaucoma, or prostate disease. Consult a doctor if you are not sure whether you should use a combination product.

If your symptoms are mild, an antihistamine might be all you need. A doctor can also evaluate whether you need other medicines, including prescription drugs, to relieve your symptoms. They include:

- A steroid or an antihistamine nasal spray
- A new kind of allergy drug called a leukotriene blocker. There are three: montelukast (Singulair and generic); zafirlukast (Accolate); and zileuton (Zyflo)
- Another type of immune-modifying drug called omalizumab (Xolair)
- Allergy shots (also known as immunotherapy)

Welcome

This report does not discuss those medications. If you are taking them or have questions, consult your doctor.

Having severe allergy symptoms could be a sign of asthma. Most people—but not all—who have asthma also have underlying allergies. Technically speaking, asthma is a separate condition where inflammation and constriction of the bronchial tubes makes it difficult to breathe. But the two conditions can go hand in hand, especially in children and teenagers. Asthma is more common among the young and usually develops in childhood. But it can also strike adults. See Table 2 on page 8 for a quick guide on how to tell the difference. Antihistamines are not a common treatment for chronic asthma.

Some antihistamines are occasionally used to treat other conditions, such as motion sickness or vertigo. In this report we focus on the use of second-generation antihistamines only for treating hay fever, chronic allergy symptoms, and hives.

This report was updated in July 2013.

What Are Antihistamines and Who Needs Them?

Antihistamines work by blocking the chemical messenger *histamine*, the main trigger of allergy symptoms in the nose, airways, and skin. Histamine is a part of the body's natural defense mechanisms. It works in part by widening blood vessels. That action causes congestion and sneezing, and is also what causes red, itchy hives on your skin after, say, a bug bite.

In people who have allergies and allergy-induced asthma (for reasons still not entirely clear), the body's immune system overreacts when exposed to otherwise harmless substances such as pollen, dust mites, mold spores, and animal dander—it's their skin primarily, but also saliva and urine, that triggers the allergic reaction. Excessive amounts of histamine are released, causing the symptoms of an allergic reaction (see Table 1 on page 7). Fortunately, most allergic reactions are mild, even in people who suffer them seasonally or have chronic allergies.

But severe allergic reactions do occur and can be life-threatening. They are mostly reactions to insect stings, drugs, or foods—not to mold, pollen, or other hay-fever triggers. You might have heard the term “anaphylactic shock.” This is a type of allergic reaction in which a large amount of histamine is released, causing the airways and blood vessels to constrict, which can make breathing difficult and cause a significant drop in blood pressure. Such reactions are medical emergencies that generally require treatment with adrenaline injections and intravenous corticosteroids.

The best way to prevent allergy symptoms, both mild and severe, is to avoid the offending substance. Skin tests can help identify what you are allergic to. But completely avoiding them is not always possible. The reality is that most allergy sufferers need to take medicine, including antihistamines. A 2010 Consumer Reports survey found that people who suffer from allergies use a variety of measures to get relief,

including avoiding the substance they're allergic to, and taking both nonprescription and prescription medications. You can read more about the survey results and the strategies that people said were most helpful at: <http://www.consumerreports.org/cro/2012/08/relief-from-springtime-allergies/index.htm>.

Studies have found that some people who get prescriptions for allergy medicine do not actually have allergies. If you are taking antihistamines or other allergy medicine regularly, you should consult a doctor to make sure that you do have allergies, and that the medication is appropriate for your condition.

If a doctor determines that you have an allergy, treatment is important. Mounting evidence has found that people with allergies are at much higher risk of developing asthma and sinus infections (*sinusitis*). And the inflammation that accompanies (and to some degree fosters) the allergic response can damage the respiratory system and make you more susceptible to lung infections like pneumonia.

So, one way to think about antihistamines, and other allergy medicine, is that they're not just for symptom relief but might help prevent the progression to more severe and potentially life-threatening problems.

If you know you have allergies, you're a strong candidate for antihistamines, and are probably already taking one. Your choices are a bit more complex if you are not sure whether your symptoms are due to an allergy. Tables 1 and 2 on pages 7 and 8 will help you sort out what could be causing your symptoms.

What Are Antihistamines and Who Needs Them?

Table 1. Do You Have Allergies or Something Else?

Location	Probably Allergies	Probably NOT Allergies
Nose and Eyes	<ul style="list-style-type: none"> ■ Sneezing ■ Teary eyes ■ Itchy nose and throat ■ Congestion, runny nose ■ Clear nasal discharge ■ Cough (sometimes) ■ Headache (sometimes) ■ Facial pain (sometimes) 	<ul style="list-style-type: none"> ■ Sore throat ■ Runny nose with colored, sometimes thick, mucus discharge ■ Fever (slight if a cold; higher if the flu) ■ Cough, chest congestion ■ Muscle aches, feeling achy all over
Skin	<ul style="list-style-type: none"> ■ Itchy, red, scaling patches, often on the face, elbows or knees (eczema) ■ Itchy, red, large map-like patches on the body (hives) 	<ul style="list-style-type: none"> ■ Painful, red blisters but not itchy rashes appearing soon after contact with offending substance (e.g. poison oak or ivy, or caustic substance) and only where contact occurred ■ Itchy, red rash in groin, underarms, on feet or under breast in women (likely fungal) ■ Silvery scaly patches that sometimes itch (may be psoriasis) ■ Itchy skin without rash (simple dry skin)

Source: Adapted from “Is it Just an Allergy?” *Consumer Reports on Health* newsletter, May 2005 (Vol. 15, No. 5), page 4.

The most common mistake is thinking you have allergies when you actually have a cold, bronchitis, a cough, or mild flu.

If you have one of those conditions, you might need more than an antihistamine for relief. Many nonprescription cold and flu medicines contain an antihistamine along with other drugs. They include fever reducers and pain relievers such as aspirin, acetaminophen, and ibuprofen.

You could also have a more serious condition. Some older people who have a persistent cough, trouble breathing, or both, might be in the early stages of heart failure or emphysema, for example.

You should see a doctor if your symptoms continue. Allergy-induced asthma or severe allergic reactions don't respond well to antihistamines alone and should be treated with other, more potent medicines. In particular, you should see a physician immediately if you have serious breathing problems associated with an allergic reaction.

What Are Antihistamines and Who Needs Them?

Table 2. Is it an Allergy or Asthma?

	Hay Fever or Allergies	Asthma
What is it?	<ul style="list-style-type: none"> ■ A bodily reaction to usually harmless substances in the environment— most often pollen, mold, and animal dander. 	<ul style="list-style-type: none"> ■ A condition in which the airways in the lungs become swollen and narrow, making it difficult to breathe and get enough oxygen in and out of your lungs. Can be triggered by pollen, mold, dander, smoke and air pollution, exercise, other illness, stress, and some drugs.
Why do some people get it?	<ul style="list-style-type: none"> ■ Genetic predisposition ■ Can strike people of all ages, but often shows up in childhood and teen years 	<ul style="list-style-type: none"> ■ Genetic predisposition ■ Infection can trigger asthma ■ Usually shows up in childhood; less commonly strikes over age 25
Main Symptoms	<ul style="list-style-type: none"> ■ Sneezing ■ Teary eyes ■ Itchy nose and throat ■ Congestion, runny nose ■ Clear nasal discharge ■ Cough (sometimes) ■ Difficulty breathing (sometimes) ■ Headache (sometimes) ■ Itchy red patches on skin (hives) 	<p>Mild attacks:</p> <ul style="list-style-type: none"> ■ Feeling out of breath ■ Tightness in chest ■ Wheezing ■ Coughing <p>Severe attacks:</p> <ul style="list-style-type: none"> ■ Very difficult to breath ■ Difficulty talking ■ Skin feels as if it's pulled tightly around ribs and neck ■ Rapid heartbeat ■ Must sit down, can't walk easily
Main Treatment Options	<ul style="list-style-type: none"> ■ Nasal sprays ■ Antihistamines ■ Decongestants ■ Allergy shots 	<ul style="list-style-type: none"> ■ Inhalers and nebulizers containing short-acting bronchodilators ■ Inhalers containing steroids ■ Leukotriene-blocker pills ■ Steroid pills or shots ■ Immune-system modifiers

Source: Adapted from "Is it Just an Allergy?" *Consumer Reports on Health* newsletter, May 2005 (Vol. 15, No. 5), page 4.

Choosing an Antihistamine — Our Best Buy Picks

Antihistamines are effective and generally safe. They lessen the symptoms of hay fever, hives, and other allergies in a majority of people, though they don't usually relieve symptoms entirely. And some people get more relief than others. Antihistamines can also become less effective with long-term use.

Our analysis indicates that the tablet and liquid forms of second-generation antihistamines—cetirizine, desloratadine, fexofenadine, levocetirizine, and loratadine—don't differ in any consistent way in terms of effectiveness, safety, or the side effects they cause.

They all generally bring some relief in one to three hours. And although responses vary, the drugs continue to work for 12 to 24 hours in most people. But the nasal sprays—azelastine and olopatadine—have been linked to changes in taste sensations, including bitterness and nasal discomfort. Olopatadine nasal spray has been linked to nose bleeding, sores in the nose, and holes in the nasal septum. Though human studies have not been performed in pregnant women, animal studies have found that both nasal sprays can cause birth defects, so they should not be used by women who are pregnant or breast-feeding.

Table 3. Summary of Evidence on Antihistamines

Generic Name (Brand names)	Usual Adult Dose	Proven Effective Against Hay Fever and Seasonal Allergies?	Proven Effective Against Chronic or Perennial Allergies?	Proven Effective Against Hives? (Urticaria)
Azelastine nasal spray/pump (Astelin, Astepro)	One or two sprays per nostril twice daily	Yes	Yes	NA ²
Cetirizine (Zyrtec)	10 mg once daily	Yes	Yes	Yes
Desloratadine (Clarinex)	5 mg once daily	Yes	Yes	Yes
Fexofenadine (Allegra)	60 mg once or twice daily, or 180 mg once daily	Yes	No ¹	Yes
Levocetirizine (Xyzal)	5 mg once daily	Yes	Yes	Yes
Loratadine (Alavert, Claritin)	10 mg once daily	Yes	Yes	Yes
Olopatadine nasal spray (Patanase)	Two sprays per nostril twice daily	Yes	No	NA ²

1. Sufficient evidence was not available for fexofenadine, although it is likely effective in treating perennial allergy symptoms.

2. NA = Not applicable; the nasal sprays are not used for treating hives.

Choosing an Antihistamine — Our Best Buy Picks

There is only limited research that has looked at the use of these antihistamines for treating hives. Loratadine appears better at reducing symptoms than cetirizine in two studies. Cetirizine was more effective than fexofenadine in one study. And levocetirizine provided better symptom relief than desloratadine, but there was no difference in improvements in quality-of-life.

All of the newer antihistamines cause less sedation and drowsiness than older antihistamines. Studies indicate that cetirizine and levocetirizine are more sedating than loratadine and desloratadine, and that cetirizine might be more sedating than fexofenadine. Cetirizine was associated with an increased risk of abnormal heart rhythm in one study, but other analyses, including a large safety analysis by the FDA, found no increased risk.

In studies comparing the newer medications, 15 to 25 percent of people reported at least one side effect, including drowsiness. (See Table 4 to the right.) But three percent or fewer stopped treatment because of side effects. Thus, as presented in Table 3 on page 9, the newer antihistamines are quite comparable, with none offering a distinct advantage over the others. But their cost differs significantly. As Table 5 starting on page 12 shows, they range from \$8 per month to more than \$200 per month.

Taking effectiveness, safety, cost, and dosing convenience into account, we have selected the following antihistamines as *Consumer Reports Best Buy Drugs*:

- Cetirizine 10 mg tablets
- Loratadine 10 mg tablets
- Loratadine dissolving 10 mg tablets
- Loratadine liquid 10 mg
- Alavert dissolving 10 mg tablets

Table 4. Antihistamine Side Effects

Relatively Minor (usually go away in time)

- | | |
|------------------------------|-------------|
| ■ Drowsiness | ■ Headache |
| ■ Dry mouth, nose, or throat | ■ Dizziness |
| ■ Hoarseness | ■ Nausea |

More serious (can be annoying or dangerous and should be reported to a health-care professional)

- | | |
|-------------------------------|-------------------------|
| ■ Rapid or pounding heartbeat | ■ Yellowing of the skin |
| ■ Unusual weakness | ■ Difficulty urinating |
| ■ Nervousness | ■ Vision problems |
| ■ Stomach pain | |

All are low-cost generic drugs available without a prescription in drug and food stores, and many small convenience stores. And all are as effective and safe as the other second-generation antihistamines.

Loratadine and cetirizine are made by several companies, and some pharmacy chains have their own version of it. Alavert is a “branded generic” form of loratadine. A branded generic is a copy of an original drug (in this case Claritin) given a special name by its manufacturer for marketing purposes.

Cetirizine is also available over-the-counter in soft gel capsule and liquid formulations for people who need those.

Choosing an Antihistamine — Our *Best Buy* Picks

You should also be aware that some people may respond well to one antihistamine while getting no benefit from another. So if loratadine or cetirizine does not work for you, then try one of the other antihistamines.

As you can see from Table 5 starting on page 12, the monthly costs for our *Best Buys* vary considerably. That's common for nonprescription drugs, so we urge you to shop around for the best price, especially if you need to take an antihistamine on a regular basis. You might want to check online as well to see which pharmacy chains offer the best prices on our *Best Buys*.

There is little research of good quality on the use of second-generation antihistamines by children. Because of this, there is insufficient evidence to determine if any of the second-generation antihistamines are more effective at relieving symptoms or pose greater safety concerns than the others. But overall, the medications are well-tolerated by them, with low rates of withdrawal due to adverse events.

If your child needs an antihistamine to treat hay fever or other respiratory symptoms due to allergies or hives, we advise trying one of our *Best Buy* loratadine picks first. The available evidence indicates loratadine is just as effective as the other over-the-counter option, cetirizine, but it is less likely to cause sedation. One study in children found cetirizine and loratadine to be just as effective as first-generation antihistamines for relieving allergic rhinitis symptoms, and loratadine has been found to provide symptom relief at 5 mg to 10 mg daily.

Our *Best Buy* nonprescription medicines are available in 10 mg doses. Should you need to take a larger dose to get symptom relief, try taking 20 mg of our *Best Buys* (two pills or portions). (Note that this increases your chances of having side effects, including feeling drowsy.) If that does not work, consult your doctor. You might need to try another class of medicine.

If you have insurance coverage for medicine, you should check your plan's policy on antihistamines to find out whether antihistamines are covered and how much you will have to pay out-of-pocket.

Choosing an Antihistamine — Our *Best Buy* Picks

Table 5. Antihistamine Cost Comparison

Note: If the price box contains a , that indicates the dose of that drug may be available for a low monthly cost through programs offered by large chain stores. For example, Kroger, Sam's Club, Target, and Walmart offer a month's supply of selected generic drugs for \$4 or a three-month supply for \$10. Other chain stores, such as Costco, CVS, Kmart, and Walgreens, offer similar programs. Some programs have restrictions or membership fees, so check the details carefully for restrictions and to make sure your drug is covered.

Generic Name and Dose	Brand Name ¹	Drug is a Generic? ²	Drug is OTC? ³	Usual Adult Dose ⁴	Average Monthly Cost ⁵
Azelastine nasal spray/pump 137 mcg	Azelastine	Yes	No	Two sprays per nostril, twice daily	\$100
Azelastine nasal spray/pump 137 mcg	Astelin	No	No	Two sprays per nostril, twice daily	\$203
Azelastine nasal spray/pump 205.5 mcg	Astepro	No	No	Two sprays per nostril, twice daily	\$180
Cetirizine tablet 10 mg	Zyrtec	No	Yes	One	\$19
Cetirizine tablet 10 mg	Generic	Yes	Yes	One	\$11 
Cetirizine liqui-gel capsule 10 mg	Zyrtec	No	Yes	One	\$23
Desloratadine dissolving tablet 2.5 mg	Clarinx Reditabs	No	No	One	\$237
Desloratadine dissolving tablet 5 mg	Clarinx Reditabs	No	No	One	\$239
Desloratadine tablet 5 mg	Clarinx	No	No	One	\$201
Desloratadine tablet 5 mg	Generic	Yes	No	One	\$97
Desloratadine liquid 2.5 mg/5 mL	Clarinx	No	No	2.5 mg per day	\$117
Fexofenadine tablet 60 mg	Allegra	No	Yes	Two	\$56
Fexofenadine tablet 180 mg	Allegra	No	Yes	One	\$24
Fexofenadine tablet 60 mg	Generic	Yes	Yes	Two	\$36
Fexofenadine tablet 180 mg	Generic	Yes	Yes	One	\$18
Fexofenadine dissolving tablet 30 mg	Allegra ODT	No	No	Two	\$128
Fexofenadine liquid 30 mg/5 mL	Allegra	No	Yes	30 mg twice per day	\$14
Levocetirizine tablet 5 mg	Xyzal	No	No	One	\$119
Levocetirizine liquid 2.5 mg/5 mL	Xyzal	No	No	5 mg per day	\$116

CR BEST BUY

Choosing an Antihistamine — Our *Best Buy* Picks

Table 5. Antihistamine Cost Comparison (continued)

Generic Name and Dose	Brand Name ¹	Drug is a Generic? ²	Drug is OTC? ³	Usual Adult Dose ⁴	Average Monthly Cost ⁵
Levocetirizine tablet 5 mg	Generic	Yes	No	One	\$59
Levocetirizine liquid 2.5 mg/5 mL	Generic	Yes	No	5 mg per day	\$87
 Loratadine dissolving tablet 10 mg	Alavert	BG	Yes	One	\$12
Loratadine dissolving tablet 10 mg	Claritin Reditabs	No	Yes	One	\$25
 Loratadine dissolving tablet 10 mg	Generic	Yes	Yes	One	\$13
Loratadine tablet 10 mg	Claritin	No	Yes	One	\$22
 Loratadine tablet 10 mg	Generic	Yes	Yes	One	\$8 
Loratadine liqui-gel capsules 10 mg	Claritin	No	Yes	One	\$26
Loratadine liquid 1 mg/5 mL	Claritin	No	Yes	5 mg per day	\$15
 Loratadine liquid 1 mg/5 mL	Generic	Yes	Yes	5 mg per day	\$8
Olopatadine nasal spray	Patanase	No	No	Two sprays per nostril, twice daily	\$153

1. “Generic” indicates that the drug is sold as a generic.
2. “Yes” means it is a generic, sold under the chemical or scientific name. “BG” means it is a branded generic, which is a generic copy of an original drug given a special name by its manufacturer. In this table, for example, Alavert is a branded generic. “No” means it is a brand-name drug.
3. OTC stands for over-the-counter; “yes” means it is a nonprescription OTC drug.
4. Frequency of use reflects recommendations on the package insert; some products can be used more or less frequently.
5. For drugs available by prescription only, monthly costs reflect nationwide retail average prices for February 2013, rounded to the nearest dollar. Data is provided by Source Healthcare Analytics, Inc., which is not involved in our analysis or recommendations. For drugs available OTC, prices were obtained by Consumer Reports secret shoppers from five major chain pharmacies (CVS, Rite Aid, Target, Walgreens, and Walmart) and local supermarkets across the U.S. in January 2013, and in some cases, prices were obtained by Consumer Reports in June 2013 at the online sites of those chain pharmacies. The prices from the various stores were averaged to yield per pill prices, which were then converted into a monthly price based on the maximum recommended number of pills per day.

The Evidence

This section presents more information on the effectiveness and safety of antihistamines.

This report is based on an analysis of the scientific evidence on second-generation antihistamines. Overall, 3,121 studies and research articles were identified and screened. From these, the analysis focused on 18 studies that provided direct evidence of comparative effectiveness or safety.

How Effective Are Antihistamines?

The scientific literature comparing antihistamines with each other is not extensive. Most of the studies are short-term, and only a few include large numbers of people. Taken as a whole, the evidence indicates that the available drugs do not differ substantially in effectiveness. With all, relief of symptoms usually begins in one to three hours and lasts 12 to 24 hours for most people.

The evidence is particularly weak comparing antihistamines in people who have chronic allergies and need to take the drugs from time-to-time all year long and over many years. And there's no evidence—because the studies have not been done—that fexofenadine (Allegra and generic) is effective in such people, though the assumption from other evidence and wide clinical use is that it is.

All the newer tablet antihistamines have been found to be effective against hives, but there is very little evidence comparing one newer antihistamine with another. In one study, loratadine produced a slower but slightly more complete relief of symptoms compared with cetirizine (Zyrtec) in the early stages. But at the end of the study, people treated with both drugs did not report significant differences in their responses. In another study, levocetirizine was better for relieving symptoms than desloratadine, but patients reported

that both drugs improved their quality of life to a similar degree.

How Safe Are Antihistamines?

The newer antihistamines appear to be quite safe. They cause less drowsiness than older first-generation antihistamines. But 15 to 25 percent of the people taking an antihistamine will experience a side effect, including drowsiness. Alcohol can exacerbate drowsiness, so you shouldn't drink while taking antihistamines. And you should use caution if driving or operating heavy or dangerous machinery while taking an antihistamine.

In a very small number of people, antihistamines can cause more serious reactions, such as rapid heartbeat or heart palpitations. See a doctor if you experience such symptoms.

The newer antihistamines cause drowsiness, but studies indicate they cause less drowsiness than two older antihistamines, diphenhydramine and chlorpheniramine.

Other research found that cetirizine and levocetirizine were more sedating than loratadine and desloratadine. There is some evidence that cetirizine is also more sedating than fexofenadine. One observational study found no difference in sedation between loratadine and fexofenadine.

Two second-generation antihistamines (terfenadine and astemizole) were removed from the market because they led to a higher risk of potentially serious heart problems. Some evidence suggests that there might be a very small risk of heart problems with

The Evidence

currently available antihistamines. A large study found that cetirizine was associated with an increased risk of heart arrhythmias. Other research, however, indicated that cetirizine, desloratadine, fexofenadine, and loratadine do not pose an increased risk of arrhythmias.

Antihistamines can interact with other medicine or dietary supplements in ways that can be dangerous. Be sure to tell your doctor about all other medication you take, even if you think it might not be important. The main drugs to be concerned about are:

- Antifungal medications, such as ketoconazole. They can increase the effect of some antihistamines.
- Aspirin, which in large doses can cause ringing in the ears (tinnitus), a danger sign sometimes masked by antihistamines.
- Certain types of fruit juice, such as grapefruit juice, apple juice, and orange juice. They might make some second-generation antihistamines less effective.
- Any drugs known to change the way the heart beats, such as droperidol. They should be used cautiously if you are taking antihistamines.
- Medications used to improve breathing, such as theophylline. They may raise the risk of antihistamines side effects.
- Certain antibiotics, such as erythromycin. They can increase the effects of antihistamines.
- Antacids that contain aluminum or magnesium. When taken within 15 minutes of fexofenadine, these antacids significantly decreased the effect of that antihistamine.
- The stomach acid reducer cimetidine, which increases the effect of azelastine nasal spray.

If you take an antihistamine combined with a decongestant called pseudoephedrine (look on the package where the active ingredients are listed), be aware that such products should be used with caution by people with high blood pressure, heart conditions, diabetes, glaucoma, or prostate disease.

People who take products that combine these drugs are more likely to have side effects, such as headaches and trouble sleeping.

Age, Race, and Gender Differences

People older than 65 and members of various ethnic groups have been under-represented in studies of antihistamines. The evidence is insufficient to determine if any of the newer antihistamines are safer or better than the others at relieving allergy symptoms among people of any particular racial group or age. There's also insufficient evidence to determine if men and women respond to the drugs differently.

But safety and side effects are a concern in different age groups. Desloratadine (Clarinet), levocetirizine (Xyzal), and cetirizine (Zyrtec) have been found to be safe and effective in children as young as six months old; evidence on the safety and efficacy of loratadine is limited to children two years or older. Evidence on fexofenadine, azelastine nasal spray, and olopatadine nasal spray is limited to children six years or older.

The Evidence

Children might experience drowsiness to varying degrees when taking antihistamines, and the adults responsible for them should be alert to this. This is especially important when it comes to teenagers who drive, because drowsiness can impede the ability to operate an automobile safely.

People age 60 and older are more susceptible to the side effects of antihistamines, especially drowsiness. People older than 70 or so are at greater risk of falls in general, and antihistamine-induced drowsiness can raise that risk. The dosage of some second-generation antihistamines (primarily Zyrtec) should be reduced in older age and for people with kidney or liver problems.

Pregnant or nursing women should only use the second-generation antihistamines if their doctor agrees it's absolutely necessary. And even then, it should be limited to the oral and liquid formulations—cetirizine, desloratadine, fexofenadine, levocetirizine, and loratadine. Animal studies indicate that those second-generation antihistamines don't increase the risk of birth defects. No clinical trials have been done in pregnant women to ascertain the birth defect risk. Azelastine nasal spray caused birth defects in mouse, rabbit, and rat studies, and olopatadine nasal spray has been associated with adverse effects on fetuses in animal studies.

5 Tips to 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 antihistamine and dose is best for you, if one is warranted at all, and which gives you the most value for your health-care dollar.

1. Mention cost to your doctor.

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

2. Ask about older medications.

Many people (including physicians) think that newer drugs are better. While that's a natural assumption to make, it's not always true. Studies consistently find that many older medicines are as good as, and in some cases better than, newer medicines. 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 hit the market. Of course, some newer prescription drugs are indeed more effective and safer. Talk with your doctor about newer vs. older medicines, including generic drugs.

3. Consider generic drugs.

Prescription medicines go "generic" when a company's patents on them have lapsed, usually after about 12 to 15 years. At that point, other companies can make and sell the drugs. Generics are much less

expensive than newer brand-name medicines, but they are not lesser quality drugs. Indeed, most generics remain useful medicines even many years after first being marketed. That is why more than 75 percent of all prescriptions in the U.S. today are written for generics.

4. Keep up-to-date records.

Another important issue to talk with your doctor about is keeping a record of the drugs you take. 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's common for doctors today to prescribe several medicines 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.
- 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 take and periodically review it with your doctors.

5. Know the facts.

Finally, always be sure that you understand the dose of the medicine being prescribed 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 bottle match the amounts your doctor told you.

How We Picked the *Best Buy* Antihistamines

Our evaluation is primarily based on an independent scientific review of the evidence on the effectiveness, safety, and adverse effects of second-generation antihistamines. Physicians and researchers at the Oregon Health & Science University Evidence-Based Practice Center did the analysis as part of the Drug Effectiveness Review Project, or DERP.

DERP is a first-of-its-kind, multi-state initiative to evaluate the comparative effectiveness and safety of hundreds of prescription drugs. A synopsis of DERP's analysis of the antihistamines forms the basis for this report. A consultant to *Consumer Reports Best Buy Drugs* is also a member of the Oregon-based research team, which has no financial interest in any pharmaceutical company or product.

The full DERP review of antihistamines is available at <http://derp.ohsu.edu/about/final-document-display.cfm> (This is a long and technical document written for physicians.)

Additional information was extracted from www.ConsumerReports.org, *Consumer Reports*, and an article in *Consumer Reports on Health*. *Consumer Reports on Health* is a subscription monthly newsletter published by Consumers Union.

The prescription drug costs we cite were obtained from a health-care 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. The prices for prescription drugs in this report are national averages based on sales of the drugs in retail outlets. They reflect the retail cash price that would be paid for a month's supply of each drug in February 2013. Prices for nonprescription drugs were obtained from several large drugstore chains. They reflect average prices in January 2013.

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

- Be approved by the FDA for treating allergic rhinitis
- Be as effective as any other second-generation antihistamine
- Have a safety record equal to or better than other second-generation antihistamines
- Have an average price for a 30-day supply that is substantially lower than the most costly second-generation antihistamine meeting the first two criteria

The *Consumer Reports Best Buy Drugs* methodology is described in more detail in the Methods section at www.CRBestBuyDrugs.org.

Sharing this Report

This copyrighted report can be freely downloaded, reprinted, and disseminated for individual noncommercial use without permission from Consumers Union as long as it clearly attributed to *Consumer Reports Best Buy Drugs*™. We encourage its wide dissemination as well for the purpose of informing consumers. However, Consumer Reports does not authorize the use of its name or materials

for commercial, marketing, or promotional purposes. Any organization interested in broader distribution of this report should contact us at wintwe@consumer.org. *Consumer Reports Best Buy Drugs*™ is a trademark of Consumers Reports. All quotes from the material should cite *Consumer Reports Best Buy Drugs*™ as the source.

©2013 Consumers Reports of United States, Inc.

About Us

Consumer Reports is an independent and 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 website is www.consumerreports.org.

Consumer Reports Best Buy Drugs is a public-education project administered by Consumers Union. These materials were made possible by the states Attorney General Consumer and Prescriber Education Grant Program, which is funded by a 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 www.CRBestBuyDrugs.org.

We followed a rigorous editorial process to ensure that the information in this report and on the *Consumer Reports Best Buy Drugs* website is accurate and describes generally accepted clinical practices. If we find, or are alerted to, an error, we will correct it as quickly as possible. But *Consumer Reports* and its authors, editors, publishers, licensors, and 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 www.CRBestBuyDrugs.org for further information.

Consumer Reports 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 www.CRBestBuyDrugs.org are provided to enhance your communication with your doctor rather than to replace it.

References

1. Berger W, Hampel F, Jr., Bernstein J, Shah S, Sacks H, Meltzer EO. Impact of azelastine nasal spray on symptoms and quality of life compared with cetirizine oral tablets in patients with seasonal allergic rhinitis. *Ann Allerg Asthma Im.* 2006;97(3):375-381.
2. Berger WE. Efficacy of azelastine nasal spray in patients with an unsatisfactory response to loratadine. *Ann Allerg Asthma Im.* 2003;91(2):205-211.
3. Berger WE, Lumry WR, Meltzer EO, Pearlman DS. Efficacy of desloratadine, 5 mg, compared with fexofenadine, 180 mg, in patients with symptomatic seasonal allergic rhinitis. *Allergy & Asthma Proceedings.* 2006;27(3):214-223.
4. Ciprandi G, Cirillo I, Vizzaccaro A, et al. Desloratadine and levocetirizine improve nasal symptoms, airflow, and allergic inflammation in patients with perennial allergic rhinitis: a pilot study. *International Immunopharmacology.* 2005;5(13-14):1800-1808.
5. Ciprandi G, Pronzato C, Ricca V, Passalacqua G, Danzig M, Canonica GW. Loratadine treatment of rhinitis due to pollen allergy reduces epithelial ICAM-1 expression. *Clin Exp Allergy.* 1997;27(10):1175-1183.
6. Corren J, Storms W, Bernstein J, Berger W, Nayak A, Sacks H. Effectiveness of azelastine nasal spray compared with oral cetirizine in patients with seasonal allergic rhinitis. *Clin Ther.* 2005;27(5):543-553.
7. Garg G, Thami GP. Comparative efficacy of cetirizine and levocetirizine in chronic idiopathic urticaria. *J Dermatol Treat.* 2007;18(1):23-24.
8. Guerra L, Vincenzi C, Marchesi E, et al. Loratadine and cetirizine in the treatment of chronic urticaria. *J Eur Acad Dermatol Venereol.* 1994;3(2):148-152.
9. Hampel F, Ratner P, Mansfield L, Meeves S, Liao Y, Georges G. Fexofenadine hydrochloride, 180 mg, exhibits equivalent efficacy to cetirizine, 10 mg, with less drowsiness in patients with moderate-to-severe seasonal allergic rhinitis. *Ann Allerg Asthma Im.* 2003;91(4):354-361.
10. Handa S, Dogra S, Kumar B. Comparative efficacy of cetirizine and fexofenadine in the treatment of chronic idiopathic urticaria. *J Dermatol Treat.* 2004;15(1):55-57.
11. Howarth PH, Stern MA, Roi L, Reynolds R, Bousquet J. Double-blind, placebo-controlled study comparing the efficacy and safety of fexofenadine hydrochloride (120 and 180 mg once daily) and cetirizine in seasonal allergic rhinitis. *J Allergy Clin Immunol.* 1999;104(5):927-933.
12. Potter PC, Kapp A, Maurer M, et al. Comparison of the efficacy of levocetirizine 5 mg and desloratadine 5 mg in chronic idiopathic urticaria patients. *Allergy.* 2009;64(4):596-604.
13. Prenner BM, Capano D, Harris AG. Efficacy and tolerability of loratadine versus Fexofenadine in the treatment of seasonal allergic rhinitis: a double-blind comparison with crossover treatment of nonresponders. *Clin Ther.* 2000;22(6):760-769.
14. Shah SR, Nayak A, Ratner P, Roland P, Michael Wall G. Effects of olopatadine hydrochloride nasal spray 0.6% in the treatment of seasonal allergic rhinitis: a phase III, multicenter, randomized, double-blind, active- and placebo-controlled study in adolescents and adults. *Clin Ther.* 2009;31(1):99-107.
15. Thomas J, Pandhi RK, Oberoi C, et al. A multicentric trial of loratadine and cetirizine in urticaria. *Indian Journal of Dermatology, Venerology and Leprology.* 1998;64:12-15.
16. UCB, Inc. A study evaluating the efficacy and safety of 5 mg levocetirizine oral tablets, once daily vs. 10 mg loratadine oral tablets, once daily for the treatment of perennial allergic rhinitis [completed]. NCT00524836.
17. UCB, Inc. Study evaluating the efficacy and safety of 5 mg levocetirizine oral tablets, once daily vs. 10 mg loratadine oral tablets, once daily for the treatment of seasonal allergic rhinitis (SAR) [completed]. NCT00525278.
18. Van Cauwenberge P, Juniper EF. Comparison of the efficacy, safety and quality of life provided by fexofenadine hydrochloride 120 mg, loratadine 10 mg and placebo administered once daily for the treatment of seasonal allergic rhinitis. *Clin Exp Allergy.* 2000;30(6):891-899.