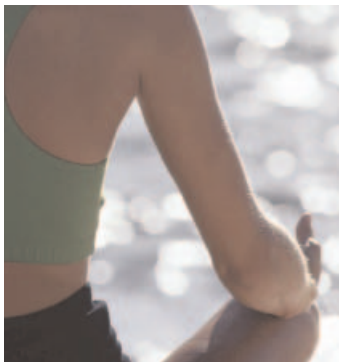
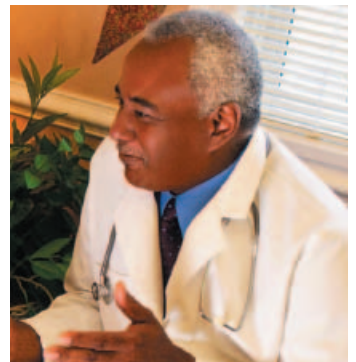


Consumer Reports BEST BUY DRUGS™

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Treating Migraine Headaches:
The Triptans
Comparing Effectiveness, Safety, and Price



Our Recommendations

Triptans are effective medicines used to treat migraine headaches. For about 60% of people who take one, a triptan reduces pain within two hours. While complete pain relief is not common, it can be enhanced if you take a triptan early in a migraine attack. The triptans also help relieve other migraine symptoms, such as nausea, vomiting, and sensitivity to light, noise, and motion.

If you have mild and less frequent migraine attacks, try other pain relievers first, including aspirin, an NSAID (such as ibuprofen), Excedrin Migraine or Excedrin Extra Strength. If your migraines are moderate to severe, frequent, and/or disrupt your life, you are likely to need a triptan.

However, the triptans should not be taken by people with certain conditions because of risks they pose to the heart. This includes people with coronary artery disease or angina (chest pain), those who have had a heart attack or stroke, and people who have peripheral vascular disease, uncontrolled high blood pressure, diabetes, or who smoke.

In addition, the triptans should be prescribed with caution for men over 40, women over 50, people who have high cholesterol, or diabetes, or who are significantly overweight, and those with a family history of early heart disease or stroke.

There are seven triptans and they differ in their effectiveness and the side effects they cause. They are expensive drugs (with none yet available as a generic) and tend to be priced about the same on a per pill basis (\$21-\$26). The nasal spray and injectable forms cost more. We have chosen three triptans as *Consumer Reports Best Buy Drugs*:

- *Sumatriptan (Imitrex)* – for people with moderate to severe headache pain and symptoms
- *Rizatriptan (Maxalt)* – for people with moderate to severe headache pain and symptoms
- *Naratriptan (Amerge)* – for people with milder migraines who are sensitive to triptan side effects and/or have longer-duration migraines

Each of these three drugs has unique strengths, discussed in this report. They are chosen *Best Buys* largely on their clinical merits and not their cost. The cost for triptan treatment depends entirely on how often you have to take one, since triptans are only taken when a migraine occurs. Frequent use can be expensive.

Welcome

This report on a class of drugs known as triptans is part of a Consumers Union and *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.

The triptans are used to treat migraine headaches. Seven triptans are currently available. They are:

Generic Name	Brand Name(s)	Available as a Prescription Generic Drug?
Almotriptan	Axert	No
Eletriptan	Relpax	No
Frovatriptan	Frova	No
Naratriptan	Amerge	No
Rizatriptan	Maxalt, Maxalt MLT (dissolving tablet)	No
Sumatriptan	Imitrex, Imitrex Nasal Spray, Imitrex Statdose (injection)	No*
Zolmitriptan	Zomig, Zomig ZMT (dissolving tablet) Zomig Nasal Spray	No

* May become available as a generic in 2007

Migraine headaches are quite common, affecting about 18% of women and 6% of men. Children get them, too, but migraines more typically start in the teens, after puberty. Heredity plays a strong role. At least 70% of people who have migraines have a father, mother or sibling who also gets them. Migraine sufferers average about one attack per month, but some people get them more often.

Migraines are, of course, just one type of headache. And that can make the diagnoses of migraine difficult. Studies indicate that almost half the people who have migraines have not been diagnosed, or have been misdiagnosed. And that means they may not be getting any treatment or the right

treatment. In one key study, a third of people with migraines had never even consulted a doctor about them. In the next section, we present some simple information to help you assess whether you are having migraines.

The triptans are just one class of prescription medicine used to treat migraines. Other medicines (prescription and nonprescription) are also available to reduce migraine pain and symptoms. Among these are over-the-counter pain relievers and anti-inflammatory drugs, including acetaminophen (Panadol, Tylenol) aspirin, certain Excedrin combination products, ibuprofen (Advil, Motrin IB), naproxen (Aleve), and ketoprofen (Orudis KT). Prescription non-steroidal anti-inflammatory drugs (NSAIDs) are also used. In fact, as we discuss further below, treatment guidelines issued by several medical groups (such as the American Academy of Neurology and the American Academy of Family Physicians) recommend that you try a non-prescription or prescription NSAID first for mild to moderate migraine pain, and only consider a triptan if you have severe, disabling migraines or when acetaminophen and/or NSAIDs don't work for you. Several classes of drugs other than pain relievers are also used to prevent migraine attacks. These include some antidepressants, beta-blockers, and a few of the drugs used to treat seizures.

You also may want to talk to your doctor about the role that non-medication therapies can play in the management of migraine headaches. Such treatments are becoming more common, and include relaxation training, biofeedback, acupuncture, stress-management techniques, and physical therapy or massage.

This report and our *Best Buy* picks are based on a systematic analysis of the medical evidence on the triptans. Our advice on migraine diagnosis and treatment is based on an analysis of published reports. There's more information on page 15 and at www.CRBESTBUYDRUGS.org about how we conducted our evaluation.

This report was released and last updated in February 2006.



What Are Triptans and Who Needs Them?

No one knows exactly what causes migraines. There are probably several causes, and some of these are hereditary. As a result, no one knows exactly how the triptans work. What is known is that they reduce chemical signals to parts of the brain and nervous system that process pain and affect the dilation of blood vessels.

Triptans are used to treat, but not prevent, migraine headaches. Importantly, a fairly large segment of the population – including many people over age 50 – should not take a triptan or only take one following a medical evaluation to assure that they don't have coronary artery disease or risk factors for heart disease. The main reason for this is that the triptans can narrow your heart arteries. The box on this page presents a list of people who should not use triptans. *Most doctors will not and should not prescribe a triptan without screening you for heart disease risk if you are a male over 40 or a female over 50.*

People Who Should Not Take Triptans Or Take Them With Caution

Should not take if you have:

- Coronary artery disease (angina)
- Had a heart attack
- Had a stroke or transient ischemic attack (TIA)
- Peripheral vascular disease
- Uncontrolled high blood pressure

Take with caution if you:

- Have Diabetes
- Smoke
- Are pregnant
- Are a male over 40
- Are a women over 50
- Have high cholesterol
- Are obese
- Have a family history of early heart disease or stroke
- Take antidepressants (Talk with your doctor)

Almost everyone has headache once in a while. Tension-type headaches are the most common and are usually mild, transient, and easily treated with over-the-counter pain relievers. But cluster headaches and migraines are less common, can occur repeatedly, and generally involve more severe pain. Some people are incapacitated by a bad migraine; they cannot work and must lie down in a quiet, dark place until relief comes.

There are several simple criteria that distinguish between a "plain old, everyday" headache (often called a "tension-type" headache by doctors), other types of headache, and migraines. These are presented in Table 1 on the next page.

Once the diagnosis of migraine is made, doctors and medical organizations broadly agree on treatment and prevention options, and how to proceed. We advise you to see a doctor if you think you have migraines. Although you can self-medicate with nonprescription drugs, it's worthwhile to (1) get a proper diagnosis and (2) have the doctor's expertise and experience guiding your care. Also, you are very likely to need a prescription drug. Headache and pain clinics abound in the U.S., but most family doctors and internists have sufficient experience treating most people who have migraine headaches.

Generally, if you have non-disabling and mild migraines you should first try aspirin, an NSAID (such as ibuprofen), or Excedrin (which is a combination of acetaminophen, aspirin and caffeine) to relieve the pain. All are available nonprescription or by prescription as generics. Studies show these drugs are broadly effective for many people with mild migraine, especially if your attacks are not frequent.

Indeed, even if your migraine headaches are severe, your doctor may recommend that you try one of these low-cost drugs first. Some people with moderate to severe migraines respond well to these medicines.

But most people who have moderate to severe migraines will likely need a triptan (if taking one is not forbidden by their medical history). This is especially the case if your migraines are frequent and disrupt normal life.

Other drugs are available, but the triptans are considered superior to them. Opioid-based narcotic pain killers (such as hydrocodone or Vicodin) are sometimes used but rarely work well against migraine. These drugs can also lead to "rebound" or "medication overuse" headache. This syndrome involves even more intense, frequent, or longer-lasting headaches. The offending medication must be discontinued.

Another drug sometimes used to treat migraine is a nasal spray called dihydroergotamine (Migranal). The

Table 1. What Kind of Headache Do You Have?

Ordinary Periodic "tension- type"	Chronic Daily ¹	Cluster	Migraine
<ul style="list-style-type: none"> ■ Generally mild in intensity ■ Do not occur regularly, just every once in a while ■ Usually last 1/2 to 3 hours ■ Dull ache ■ Pain on both sides of head ■ Not throbbing ■ No nausea or vomiting ■ No visual disturbance or auras² ■ Mild sensitivity to light or noise, but only one and never both 	<ul style="list-style-type: none"> ■ Can be mild or severe in intensity ■ Occur at least 15 days per month for 3 months ■ Pain can be dull or stabbing and jolting (often described as ice pick like) ■ Last at least 4 hours if untreated ■ No nausea or vomiting ■ No visual disturbance or auras ■ Mild sensitivity to light and noise, if any ■ May result from overuse of pain relievers 	<ul style="list-style-type: none"> ■ Pain is usually severe and centered on one side behind the eye or temple ■ Pain is sharp, stabbing ■ Short attacks usually last 30 minutes to one hour but can be up to 3 hours if untreated ■ Can be more than one attack a day and usually up to three ■ Come in waves, with attacks daily or near-daily for 2 weeks to 3 months and then disappear for months or even years 	<ul style="list-style-type: none"> ■ Pain is moderate to severe and often located on one side ■ Often pulsating or throbbing ■ Periodic attacks (several a year to one or two a month) that last from 4 to 72 hours if untreated³ ■ Nausea with or without vomiting is quite common ■ Sensitivity to movement, light and/or noise common ■ May have auras or visual disturbances⁴

1. There are several types of chronic daily headache. Some may be the tension-type headaches that occur on 15 or more days a month. Others present with different symptoms, for example stabbing head pains that may come and go throughout the day. In the latter case, doctors will first try and rule out whether some other condition or disease is causing the headaches.
2. Auras are often visual disturbances but can also feel like numbness or weakness on one side of your body. For example, you may see dots or shapes or flickering lights. They can obscure your vision. Auras are associated with migraine and usually precede a migraine attack. See the migraine column.
3. Experience of at least five attacks that fit the criteria in this column lead to a diagnosis of migraine. Untreated, some attacks can last up to 72 hours. Migraine sufferers average about one attack a month but 10% of them will get an attack every week. And 20% have attacks that sometimes last 2 to 3 days.
4. About 1 in six migraine sufferers have auras. See note 2. Some migraine sufferers also have a sensation of numbness or a "pins and needles" feeling at various points on their body.

drug is quite effective – helping 60% or so who take it, studies show. But it can have nasty side effects since it causes blood vessels throughout the body to narrow. It can also cause nasal stuffiness. Dihydroergotamine is also available as an injection, which can be self-administered or given by a doctor as a shot.

Importantly, triptans do not prevent migraines. Other medicines and several non-drug approaches are used for that purpose, and this is an important part of the overall medical management of the frequent migraine sufferer. For example, many migraines are set off by triggers, some of which can be avoided or moderated. Typical triggers include menstruation, exercise, stress, getting too little sleep or too much, too much caffeine, chocolate, plane rides and jet lag, skipping meals, high altitude, and certain kinds of lights or loud noises.

It is beyond the scope of this report to discuss migraine prevention, but we list below a few criteria used to

assess whether you are a candidate for a migraine prevention drug. The most important thing to know about migraine prevention is that no drug results in a 100% avoidance of migraines. Most studies indicate that cutting the number of attacks in half is the most that you can hope for with the drugs currently available for this purpose, which include beta-blockers, antidepressants, and anti-seizure medicines. You are a candidate for use of preventive drugs if:

- You have frequent attacks (two or more a month) that disrupt your life for three or more days a month.
- Your pattern of migraines is predictable.
- You cannot use pain relievers or triptans
- Pain relievers or triptans provide insufficient relief of your attacks.
- You have unusual symptoms when you have a migraine attack, such as prolonged visual disturbances (called auras).

Choosing a Triptan – Our *Best Buy* Picks

To choose a triptan, you and your doctor should consider its cost under your insurance coverage, the evidence on effectiveness and side effects, how fast the medicine works and for how long, and what form – oral, nasal, or injection – best meets your needs.

All the triptans are available as pills. Two (sumatriptan and zolmitriptan) are also available as nasal sprays as an alternative for migraine sufferers who experience nausea and vomiting, or cannot swallow pills. Two (rizatriptan and zolmitriptan) are available as disintegrating tablets, another option that doesn't require fluid intake. Sumatriptan is the only triptan available in injectable form. This provides faster relief than

pills or nasal spray but has the highest incidence of side effects. While many people are squeamish about injecting themselves, the injectable form has an important clinical use among chronic migraine sufferers whose onset of pain tends to be quick and severe, who awaken with an advanced attack, or vomit early in an attack.

The triptans differ in how fast they act and other characteristics. Some triptan pills relieve migraine pain quickly while others relieve pain more slowly but have longer-lasting effects. And all triptans can cause varying side effects. Thus, there are several trade-offs in choosing a triptan.

Table 2. Effectiveness of the Triptans¹

Generic Name and Dose ²	Brand Name	Maximum Dose in 24 hours	Chances of experiencing:			
			Rapid relief by 1-hour	Pain relief at 2 hours	Complete relief at 2 hours	Complete relief for 24 hours
Almotriptan 12.5 mg	Axert	12.5mg	-	60 %	30%	-
Eletriptan 40 mg	Relpax	80mg	30% to 38%	62%	32%	24%
Frovatriptan 2.5 mg	Frova	7.5mg	-	42%	-	-
Naratriptan 2.5 mg	Amerge	5.0mg	25% to 30%	48%	19%	17%
Rizatriptan 10 mg	Maxalt	30mg	37% to 42%	66%	40%	25%
Sumatriptan 100 mg	Imitrex	200mg	20% to 35%	59%	29%	20%
Sumatriptan injection 6 mg	Imitrex	6mg	-	80%	60%	-
Sumatriptan nasal spray 20 mg	Imitrex	40mg	-	58%	-	-
Zolmitriptan 2.5 mg	Zomig	10mg	34% to 46%	63%	29%	19%
Zolmitriptan 5 mg	Zomig ZMT	10mg	-	63%	-	22%
Zolmitriptan nasal spray 5 mg	Zomig	10mg	-	59%	-	-

1. When taken at moderate to severe levels of migraine pain. A dash indicates no evidence exists for this measure. That's because no studies have been done or those that have were not definitive or conclusive.

2. Oral form unless otherwise noted.

We have gathered evidence on some of the most widely used doses of each of the triptans. This is presented in Table 2 on the previous page. For people who have moderate to severe migraines, triptans in general relieve some pain within one hour in about 1 out of 3 people and within two hours in about 60% of people. Complete pain relief is less common, however. Only about 30% of people are pain-free within 2 hours of taking a triptan pill. Between 17% and 25% are pain-free 24 hours after the attack started. Your chance of getting complete pain relief in the first two hours is significantly enhanced by taking the triptan early in a migraine attack.

The triptans also relieve other migraine symptoms – including nausea, vomiting, and sensitivity to light and noise. While fewer studies have examined how well and how consistently the triptans relieve these symptoms, most studies suggest the triptans do not differ markedly in this regard.

Using another measure, studies show the triptans permit from 20% to 40% of users to get back to normal life within 2 hours; the percentage is higher if a triptan is taken early in your attack.

The triptans can also cause unpleasant side effects. About 15% to 20% of people who take them experience side effects, and some stop taking a triptan as a result. But for most people, the side effects are mild

and usually ease over time. The risk of side effects varies among the triptans. The faster-acting triptans (sumatriptan, zolmitriptan, rizatriptan, almotriptan and eletriptan) are more likely to cause side effects than the slower-acting ones (naratriptan and frovatriptan). (See Table 3 below.)

The most common side effects are dizziness, numbness, tingling, flushing, sleepiness, and fatigue. But to many people, the most worrisome side effect is chest pain or pressure. That discomfort can occur in or spread to the jaw and neck area, too. Up to 7% of people who take a triptan experience this side effect. If have chest pain or tightness, you should contact your doctor immediately just to be on the safe side.

The triptans are very expensive on a per pill (or per dose) basis. A single dose, as you can see in Table 4 on page 8, costs from \$22 to \$79 if injectables are included (though the pills tend to cost around the same). For people with frequent migraines, the high cost can be a major obstacle and/or burden. For those with less frequent migraines, cost is of less concern. As explained earlier, the triptans are meant to be taken only when you have a migraine attack. So, if you have one or two attacks per month – or less – the cost is generally manageable even if you have to pay out of your own pocket. But if you have three or more attacks per month, triptan treatment becomes quite expensive even if you have insurance coverage.

Table 3. Triptan Side Effects*

Generic name and Dose*	Brand	Chest Pain/ Tightness	Dizziness	Numbness + Tingling	Sleepiness	Fatigue
Eletriptan 40 mg	Relpax	2%-7%	1.5% to 7%	2% to 8%	2% to 7%	3.7%
Naratriptan 2.5 mg	Amerge	2%	2.5% to 5%	-	1% to 4.5%	2% to 5%
Rizatriptan 10 mg	Maxalt	2% to 3.4%	5% to 8.5%	4.4%	5% to 9%	4% to 8%
Sumatriptan 100 mg	Imitrex	1% to 7%	4% to 9%	2.4% to 7%	3% to 7%	3% to 11%
Sumatriptan injection 6 mg	Imitrex	6.3%	2.5%	5.4%	-	-
Zolmitriptan 5 mg	Zomig	1% to 6.5%	6% to 9%	5% to 8%	5% to 8%	6.6% to 11%

* For selected common doses only. Smaller doses would be expected to cause fewer side effects. A dash means data not available. Ranges are given because study findings vary.

Most insurers routinely cover the cost for six to nine pills (or doses) per month. And they'll usually cover more if needed. But they can also pass significant costs to you. For example, you may have a sizable co-payment since no triptan is currently available as a generic. And some triptans may come with a "non-preferred" co-insurance payment – that is, you will have to pay a larger percent-

age of the cost (25% or even 50%) instead of a fixed amount. Thus, if your costs were \$300 a month, you'd have to pay \$75 or \$150. Many insurance plans have a "preferred" triptan or two, with lower co-pays.

The seven triptans in pill form differ only very slightly in price. The nasal sprays are more expensive and the

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Table 4. Triptan Costs

Generic Name and Dose	Brand Name	Maximum Allowed Dose Per 24 Hours	Price Per Dose ¹	Average Monthly Cost ¹ (If two migraines a month and take one pill or dose per attack)	Average Monthly Cost ¹ (If two migraines a month and take maximum allowed amount per attack, over 24 hours)
Almotriptan tablet 6.25 mg	Axert	12.5mg	\$22	\$44	\$88
Almotriptan tablet 12.5 mg	Axert	12.5mg	\$23	\$46	\$46
Eletriptan tablet 20 mg	Relpax	80mg	\$24	\$48	\$192
Eletriptan tablet 40 mg	Relpax	80mg	\$22	\$44	\$88
Frovatriptan tablet 2.5 mg	Frova	7.5mg	\$24	\$48	\$144
 Naratriptan tablet 1 mg	Amerge	5.0mg	\$26	\$52	\$260
 Naratriptan tablet 2.5 mg	Amerge	5.0mg	\$25	\$50	\$100
 Rizatriptan tablet 5 mg	Maxalt	30mg	\$22	\$44	\$264
 Rizatriptan tablet 10 mg	Maxalt	30mg	\$23	\$46	\$138
 Rizatriptan dissolvable tablet 5 mg	Maxalt MLT	30mg	\$23	\$46	\$276
 Rizatriptan dissolvable tablet 10 mg	Maxalt MLT	30mg	\$23	\$46	\$138
 Sumatriptan nasal 5 mg	Imitrex	40mg	\$33	\$66	\$528
 Sumatriptan nasal 20 mg	Imitrex	40mg	\$32	\$64	\$128
 Sumatriptan tablet 25 mg	Imitrex	200mg	\$25	\$50	\$400
 Sumatriptan tablet 50 mg	Imitrex	200mg	\$22	\$44	\$176
 Sumatriptan tablet 100 mg	Imitrex	200mg	\$21	\$42	\$84
 Sumatriptan injectables - 6 mg	Imitrex	6mg	\$79 ²	\$158	\$158
Zolmitriptan tablet 2.5 mg	Zomig	10mg	\$22	\$44	\$176
Zolmitriptan tablet 5 mg	Zomig	10mg	\$24	\$48	\$96
Zolmitriptan dissolvable tablet 2.5 mg	Zomig ZMT	10mg	\$22	\$44	\$176
Zolmitriptan dissolvable tablet 5 mg	Zomig ZMT	10mg	\$25	\$50	\$100
Zolmitriptan nasal 5 mg	Zomig	10mg	\$32	\$64	\$128

1. Prices per dose and monthly costs derive from national average retail costs for September 2005, rounded to the nearest dollar. Information derived by Consumer Reports Best Buy Drugs from data provided by Wolters Kluwer Health, Pharmaceutical Audit Suit

2. This price averaged over four injectable forms available.

injectable forms of sumatriptan (Imitrex) are quite expensive. In Table 4 on page 8, we have calculated the cost of triptan treatment for a hypothetical person who has two migraines a month and takes one pill per attack or takes up to the maximum dose allowed for each attack. This gives you a range of cost from low to high. We have also given you the price per dose in the table, so it's easy to calculate what you might spend based on the number of migraine attacks you have.

As you can see in Table 4, if you need a fairly high dose to relieve your symptoms, you should *not get a low-dose prescription. This will end up costing you much more.* The higher dose pills or nasal sprays cost about the same per dose as the lower-dose pills or sprays. So it pays to get the higher or recommended starting dose. If you need to take more pills to get relief, talk to your doctor about switching to a prescription for a higher dose, no matter what triptan you are taking. That will save you money.

Bear in mind that the prices we quote in Table 4 are average retail costs based on a nationwide database of sales. Online and at some large discount stores, you will likely find some of the triptans at lower prices (\$13 to \$20 a pill). It pays to comparison shop, especially if you have to pay all or a sizable portion of the cost out of your own pocket and you take a triptan frequently. You should also know that sumatriptan (Imitrex) is available as a generic in Canada for around \$10 to \$13 a pill.

Taking the evidence for effectiveness, safety, and side effects into account – as well as cost and choice of the form of drug, we have chosen the following triptans as *Consumer Reports Best Buy Drugs*:

- *Sumatriptan (Imitrex) – tablets, nasal spray and injectable forms, all doses – for people with moderate to severe headache pain and symptoms*
- *Rizatriptan (Maxalt) – regular and dissolving tablet, all doses – for people with moderate to severe headache pain and symptoms*
- *Naratriptan (Amerge) – both doses – for people with milder migraines who are sensitive to triptan side effects and/or have longer-duration migraines*

Each of these medicines has unique strengths that influenced our choice. Sumatriptan offers the widest

If you must repeat your triptan dose, do so with caution. Talk to your doctor about:

- The number of times you can safely repeat a triptan dose within a 24-hour period.
- The recommended amount of time to wait before you repeat a dose.
- The maximum daily dose restrictions of your triptan of choice.
- Whether another triptan might work better for you.

Don't

- Take more than one brand of triptan in the same 24-hour period unless your doctor specifically prescribes such combo treatment.

choice for mode of delivery. If you respond to this medicine, you have three ways to take it, and these can complement and supplement each other. That is a big advantage over the other triptans. The injectable form of sumatriptan (which can be provided with a disposable pen injector) is highly effective at reducing migraine symptoms quickly – more quickly than any other triptan. The nasal spray also sometimes yields faster relief than pills. But if pills are your preference (as they are for most people), sumatriptan tablets are available at three dose strengths, one more than many of the other triptans. This gives the medicine more flexibility of use. If you need a stronger dose, talk to your doctor about the 50mg or 100mg dose pill. It will save you money.

Sumatriptan has the added attraction of likely being the first triptan that will become available as a generic in the U.S. If that happens in 2007, and the drug works for you, you can shift to using the generic and save money. In the meantime, you could also shop online. While it is technically illegal to buy a drug from a Canadian pharmacy – where sumatriptan is available as a generic – the government does not strictly enforce this law for individual purchases for personal medical use.

Our second *Best Buy*, Rizatriptan (Maxalt), is available as a regular tablet and a dissolvable tablet (Maxalt MLT). Studies indicate that this triptan pill may be superior on several measures of effectiveness. At 10mg, it is more likely to relieve pain within one hour, get rid of pain completely by two hours, and provide sustained pain relief for 24 hours than any of the other triptan pills. (See Table 2 on page 6.)

Both Imitrex and Maxalt are potent fast-acting triptans. Their faster action brings a somewhat higher risk of side effects, however. (See Table 3.) For people whose migraine pain is severe, the trade-off appears well worth it, studies show. For those who have mild migraine pain and/or have a tendency to experience side effects, a "gentler" longer-acting triptan may be a better choice.

Naratriptan (Amerge) is such a medicine. It is less likely than other triptans to relieve moderate to severe pain, but it's also substantially less likely to cause side effects, including chest pain and tightness. In addition, some studies show that fewer people who take Amerge have recurrent headache pain within the first 24 of a migraine

attack. That's important since recurrent pain can require taking another pill or dose. Amerge may also be a good choice for people with longer-duration migraines or people who take a faster acting triptan first and then Amerge if their pain returns after 24 hours.

Amerge is slightly more expensive but the cost may be worth it for patients prone to side effects who do not need as much pain relief or fast-acting triptan .

It's very important for you to know that people respond differently to the various triptans. You may get little or no relief from one and respond much better to another. Our *Best Buy* picks are chosen for the reasons given – which probably apply to the majority of people with migraines. But it's possible that you would not be helped by one of the three triptans. In that case, you should try one of the others. Doctors are very used to trying another triptan if the first one they prescribe for you does not seem to be working.

Some people are not helped by *any triptan*, or do not tolerate them well. In that case your doctor and you will have to turn to other medicines.



The Evidence

This section presents more information on the effectiveness and safety of the triptans

This report is based on an analysis of the scientific evidence on triptans. More than 1,400 studies were identified that were published in the peer-reviewed medical literature between 1988 and 2005. From these, the analysis focused on 121 studies that directly compared one triptan to another or to other migraine medications or a placebo (sugar pill).

Effectiveness

The triptans vary in effectiveness. For those who want to take pills or capsules, all the triptans are more effective than placebo. Two – frovatriptan (Frova) and naratriptan (Amerge) are less likely than others to relieve pain within two hours. The other five relieve pain within 2 hours in approximately 60% of people.

Evidence now shows that lower doses of some triptan tablets relieve migraine headaches as well as higher doses, when administered later in an attack. Sumatriptan 50mg, rizatriptan 5mg, and zolmitriptan 2.5mg, for example, have been shown to be nearly as effective as sumatriptan 100mg, rizatriptan 10mg, and zolmitriptan 5mg. The other triptans may also work as well at lower doses, but studies have not proven this yet. Dosing is important because lower doses pose less risk of side effects.

Higher doses tend to work better early in an attack, and may enhance complete pain relief. But this may also raise the risk of side effects. The important thing is, through experience, to find the dose that works best for you.

The triptans' effectiveness has largely been judged by pain ratings at one and two hours; this has in effect become a standard measurement. That's largely because surveys have found that people with migraines care most about relieving their pain quickly. (Unfortunately, as reported above, fewer than half of all patients can expect to experience pain relief or complete freedom from pain within the first hour after taking a triptan.) Far fewer studies have examined pain relief over 24 hours, and

relief from other symptoms such as sensitivity to noise or light.

Even fewer studies have examined headache recurrence after the effects of a triptan has worn off. This is despite the fact that pain recurrence is a common complaint of migraine patients. Some people must take second and third doses of their triptan and/or other types of migraine medications to "rescue" themselves from headache pain that returns within 24 hours of the initial relief.

Safety

The triptans are generally safe medications when used appropriately and prescribed for the correct patients. But they are "contraindicated" – that is, should not be taken – by people with certain conditions and risk factors for heart disease and stroke. The burden is on both you and your doctor to screen for heart disease or stroke that could prohibit you from taking a triptan.

The most important risk factors for heart disease and stroke are high blood pressure, elevated LDL cholesterol and smoking cigarettes. Millions of Americans have high blood pressure or diabetes and don't know it. You should not take a triptan if your blood pressure and blood sugar have not been checked. You should not embark on triptan therapy if you are at risk for heart attack or stroke or if you are already under treatment for those disorders.

We have discussed the side effects of triptans earlier. But we would repeat here that if you have chest pain or tightness while taking a triptan, you should contact your doctor immediately. Up to 7% of people who take triptans experience chest pain and/or tightness. This side effect has not been linked to heart disease. However, because on rare occasions people taking triptans have had heart attacks, it is better to be safe than sorry.

Drug Interactions

All the triptans interact adversely with ergotamine or dihydroergotamine (Migranal Nasal Spray) and a triptan should not be taken with 72 hours of using

ergotamine. One triptan – Eletriptan (Relpax) – should not be taken within 72 hours of taking the following medicines:

- Ketoconazole (Nizoral) and itraconazole (Sporanox), which are antifungals.
- Nefazodone (Serzone) for depression
- Clarithromycin (Biaxin) for bacterial infections
- Trileandomycin (Tao) for pneumonia
- Ritonavir (Norvir) and Nelfinavir (Lexiva) for HIV/AIDS

The physical effects of some triptans can be enhanced when taken with the blood pressure medicine propranolol (Inderal) or antidepressants called

monoamine oxidase inhibitors (MAOI), such as phenelzine (Nardil), tranylcypromine (Parnate), and isocarboxazid (Marplan). You should talk to your doctor about how to adjust your triptan dosage in these cases.

Age, Race, and Gender Differences

There is no evidence that any triptan is more or less effective or safe in any particular population subgroup based on age, gender, or race/ethnicity. In general, studies of triptans involved mostly white women who were around 40 years of age and were in otherwise good health. Trials of triptans have also generally excluded patients who have cardiovascular disease, uncontrolled hypertension, liver disease, and several other conditions for the reasons discussed above.



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 your doctor and you arrive at a decision about which triptan is best for you, and which is the *Best Buy* Drug for you.

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

Many people (including many physicians) also believe that newer drugs are always or almost always better. While that's a natural assumption to make, the fact is that it's not true. Studies consistently show 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 the pluses and minuses of newer versus older medicines, 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 almost always 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 today about half of all prescriptions in the U.S. are 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, they may not always tell each other which drugs have been prescribed for you.
- Second, it is very common for doctors today to prescribe several medicines for you before finding one that works well or best, mostly because people vary in their response to prescription drugs.
- Third, more and more people today take several prescription medications, nonprescription drugs and supplements all at the same time. Many of these interact in ways that can be very 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 list of the drugs you are taking, both prescription and nonprescription and including dietary supplements.

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 the pharmacy, or if you get it by mail, you may want to check to see that the dose and the number of pills per day on the pill bottle match the amounts that your doctor told you.

How We Picked the *Best Buy* Triptans

Our evaluation is primarily based on an independent scientific review of the evidence on the effectiveness, safety and adverse effects of the Triptans. A team of physicians and researchers at Oregon Health & Science University Evidence-based Practice Center conducted the analysis as part of the Drug Effectiveness Review Project, or DERP. DERP is a first-of-its-kind 14-state initiative to evaluate the comparative effectiveness and safety of hundreds of prescription drugs.

A synopsis of DERP's analysis of the Triptans 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 Triptans is available at <http://www.ohsu.edu/drugeffectiveness/reports/final.cf>. (This is a long and technical document written for physicians.)

Our general advice on migraine diagnosis and treatment is based on recent published reports and reputable online sources, including www.ConsumerReportsMedicalGuide.org, a new subscription Web site sponsored by Consumers Union and *Consumer Reports*.

The drug costs we cite were obtained from a healthcare information company which 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 cash price paid for a month's supply of each drug in September 2005.

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

- Be approved by the FDA for treating migraine headaches.
- Be as effective or more effective than other triptans.
- Have a safety record equal to or better than other triptans.

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

About Us

Consumers Union, publisher of *Consumer Reports* magazine, is an independent and non-profit organization whose mission since 1936 has been to provide consumers with unbiased information on goods and services and to create a fair marketplace. It is solely responsible for the content of this report. Its main Web sites are www.consumersunion.org and www.consumerreports.org.

Consumer Reports Best Buy Drugs is a public education project administered by Consumers Union. Two outside sources of generous funding made the project possible. They are a major grant from the Engelberg Foundation, a private philanthropy, and a supporting grant 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* Web site is accurate and describes generally accepted clinical practices. If we find, or are alerted to, an error we will correct this as soon as possible. However, *Consumer Reports* and its authors, editors, publishers, licensors 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 www.CRBestBuyDrugs.org for further information.

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References

1. Tepper, Steward J. *Understanding Migraine and Other Headaches*, University Press of Mississippi, Jackson (2004)
2. Dodick, David W., "Chronic Daily Headache," *New Eng. J. Med.* (Jan. 12, 2006): 354, No 2, pages 158-165
3. Adelman, James U. et al, "Cost Considerations of Acute Migraine Treatment," *Headache* (March 2004) 44:271-285
4. Modi, Seema and Lowder, Dionne, "Medications for Migraine Prophylaxis" *Am. Family Phys.* (January 1, 2006) 73:71-78
5. Anon. "Migraine Special Issue," *Bandolier* (January 2002) and "Making Sense of Migraine" www.ebandolier.com. Accessed January 30, 2006.
6. Dodick, DW. "Introduction: Cardiovascular Safety and Triptans in the Acute Treatment of Migraine." *Headache: The Journal of Head & Face Pain* (May 2004) Vol. 44, Supplement.
7. Ferrari MD, et al., Oral triptans (serotonin 5-HT_{1B/1D} agonists) in acute migraine treatment: a meta-analysis of 53 trials. *Lancet*. 2001; 358(9294):1668-1675.
8. Ferrari MD et al, Goadsby PJ, Roon KI, Lipton RB. Triptans (serotonin, 5-HT_{1B/1D} agonists) in migraine: detailed results and methods of a meta-analysis of 53 trials. *Cephalalgia*. 2002;22:633-658.
9. Helfand, M. and Peterson, K., Drug Class Review on Triptans. Updated Nov, 2005. <http://www.ohsu.edu/drugeffectiveness/reports/documents/Triptans%20Final%20Report%20Update%2034.pdf>
10. Lipton, RB and Stewart, WF. Acute migraine therapy: do doctors understand what patients with migraine want from therapy? *Headache* 1999 39: S20-S26.
11. McCrory DC and Gray RN. Oral sumatriptan for acute migraine. *The Cochrane Database of Systematic Reviews* 2003, Issue 3. Art. No.: CD002915.