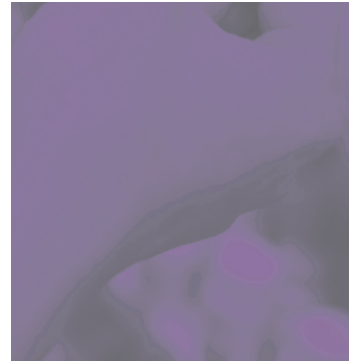


# BEST BUY DRUGS<sup>™</sup>

Using Opioids to Treat:

## Chronic Pain

Comparing Effectiveness, Safety, and Price



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# Our Recommendations

Don't take an opioid painkiller to treat chronic pain until you have tried other, less risky, pain relievers – such as acetaminophen (Tylenol and generic), or a nonsteroidal anti-inflammatory drug (NSAID), such as ibuprofen (Advil, Motrin, and generic) or naproxen (Aleve and generic).

Some kinds of chronic or periodic pain in particular – such as nerve pain, migraines, or fibromyalgia – are best treated with other types of drugs, not opioids. Talk with your doctor about nondrug measures, too. Studies show they can ease chronic pain, either alone or in combination with drugs. These include cognitive behavioral therapy, exercise, spinal manipulation, and physical rehab programs.

The weight of medical evidence indicates that while opioids are highly effective – and usually the drugs of choice – in relieving acute severe pain, they are only moderately effective in treating long-term chronic pain, and their effectiveness can diminish over time.

In addition, while the long-term use of opioids has not been well studied, it has been linked to: (1) a decrease in sex hormones leading to both a loss of interest in sex and impaired sexual function; (2) a decline in immune function; and (3) an increase in the body's sensitivity to pain.

Opioids can also be addictive and are prone to abuse and misuse. Even when used to treat pain, they can result in addiction.

If other options fail, your doctor may consider an opioid since controlling pain is always a medical priority. Taking effectiveness, safety and side effects, dosing flexibility and convenience, and cost into account, we have chosen the following opioid as our *Best Buy* for people with moderate to severe chronic pain when other pain relievers fail to bring adequate relief:

## ■ *Generic morphine extended-release*

This medicine has a long track record and provides good value. It ranges widely in monthly cost, depending on dosing regimen. But most low-dose regimens will run you \$101 or less per month.

High doses of this medicine can be quite expensive. If you need to take a high dose, we advise speaking with your doctor or pharmacist about which opioid has the lowest cost under your insurance plan. If you have to pay out-of-pocket, take care to avoid the high-cost versions of our *Best Buy* medicine, if possible.

*This report was released and last updated in July 2012.*

# Welcome

There is arguably nothing worse than pain. Uncontrolled pain can take over your life. You just want it to stop. Fortunately, there are several types of effective pain relieving medicines.

This report evaluates and compares 9 of those painkillers from a class of drugs called opioids. These drugs are the strongest pain medicines available. At comparable doses they are substantially stronger than other pain relieving medicines, such as aspirin, acetaminophen (Tylenol and generic), and NSAIDs (nonsteroidal anti-inflammatory drugs), which include ibuprofen (Advil, Motrin, and generic) and naproxen (Aleve, Naprosyn, and generic).

Opioids are used to treat both acute and chronic pain. Acute pain occurs suddenly, often as a result of an illness (appendicitis, for example), injury (such as a fractured or broken bone), or surgery. Acute pain can be short-term but may also last a few days or even weeks. For example, following major surgery, you may need strong pain relief for a week or two until your body heals. Indeed, one hallmark of acute pain is that once the injury is healed, the pain usually goes away.

In contrast, chronic pain often persists long after an injury has healed. Put another way, it's pain that continues when it seemingly should not. Chronic pain can also mysteriously occur when no specific injury, wound, illness, or disease is identified; such cases can often be traced to nervous system injury or problems. Chronic pain is often defined another way as well: as any pain that lasts longer than three to six months. Thus, acute pain can become chronic just by virtue of how long it lasts.

Chronic pain is common among people who have osteoarthritis, rheumatoid arthritis, fibromyalgia, injuries to their back, injuries to their limbs and muscles, and damage to their nerves or nervous system from diseases (like diabetes or after an episode of shingles).

*If you have pain that has lasted months, even at a low level, you should not continue to treat it yourself with over-the-counter pain relievers. See a doctor.* The pain might be due to an underlying disease. And nonprescription pain drugs pose risks, especially at high doses, and can cause serious problems when taken daily or regularly over long periods.

Opioids are also used to treat pain associated with terminal or very serious illnesses, such as cancer. This is called palliative care, but this report does not cover that use of these painkillers.

While there are many issues surrounding the appropriate use of opioids to treat acute pain and pain at the end of life, the use of these potent drugs to ease pain in these circumstances is generally well accepted.

In contrast, the use of opioids to treat chronic pain raises several concerns. Five problems loom large: (1) there are no hard and fast medical rules about the appropriate use of opioids in treating chronic pain; (2) opioids are potentially addictive and can be abused as “recreational” drugs, which causes its own set of medical and social problems; (3) the body can build up tolerance to opioids which can make higher doses necessary for some people; (4) fatal overdoses (unintentional and intentional) can occur; and (5) opioids can cause serious and dangerous side effects.

Yet, at the same time, most doctors agree that opioids can play a critical role in helping people who are in chronic pain. Indeed, the “under-use” of these medicines is discussed and debated as vigorously these days as their overuse and abuse. This debate emerges from agreement that, in the past, doctors were often reluctant to use opioids to treat non-cancer chronic pain, and recent evidence showing that, even today, too many people with chronic pain don’t get adequate pain control.

## Other Medicines

Contrary to popular belief, doctors don’t view opioids as the only drugs for chronic pain, even if it is moderate to severe. Many people believe that non-opioid pain relievers such as aspirin, acetaminophen, and NSAIDs are only for mild or “everyday” pain and head or muscle aches, and that a “strong drug” such as an opioid is what’s needed for more severe pain. But studies show quite conclusively that the readily available and inexpensive nonprescription pain drugs can provide meaningful (if not always complete) relief when used at medium to high doses. This is discussed in more detail in the next section.

In addition, other kinds of drugs are often used to treat chronic pain. These include antidepressants, muscle relaxants, a group of drugs called triptans (for migraines), certain anticonvulsants (used to treat nerve pain, fibromyalgia, and migraines) and skin patches and creams containing pain relievers, such as lidocaine. Also, several U.S. states have legalized medical marijuana, which is sometimes used to treat chronic pain.

For some patients, non-opioid drugs do much more to relieve pain than opioids do. They also have drawbacks, however, when used daily or regularly over long periods.

It’s also common for doctors to prescribe several types of drugs for people with chronic pain. Indeed, many pain pills contain combinations of drugs, and many of the most popular combination products contain a non-opioid pain reliever, such as acetaminophen, along with an opioid.

In addition, doctors commonly prescribe other, nondrug treatments for people with chronic pain – often in the context of “pain management” programs. Indeed, pain specialists agree that drugs alone are rarely enough

to manage chronic pain over the long-term. Among other treatments are: operations and injections; behavioral interventions, such as biofeedback, relaxation therapy, yoga, and psychotherapy; complementary and alternative treatments, such as acupuncture; and physical medicine treatments, such as massage and occupational therapy. This report does not evaluate these treatments or compare them to drugs, but recent studies indicate that such treatments often help people cope with chronic pain and can reduce the amount of pain experienced. (See the back pain sidebar on page 13.)

Opioids are a diverse group of drugs. Some, such as morphine and codeine, are derived from poppy plants. Others are partly synthetic, and still others are totally synthetic – which means they are chemically manufactured. Some are available primarily in combination with other pain relievers (usually aspirin or acetaminophen); this allows the opioid to be used at a lower dose, with fewer risks. Other opioids are usually prescribed as single ingredient products. One drug, tramadol (Ultram), is considered “atypical” because it works in a slightly different way than other opioids. For that reason, it was not included in the analysis that forms the basis for this report, so we do not evaluate how it compares with other opioid medications. But it does have some unique safety concerns.

Tramadol increases the risk of seizures in people with epilepsy, people who take certain antidepressant or antipsychotic medications, and people with an increased risk for seizure, such as those with head injuries or metabolic disorders. Also, due to suicide risk, tramadol products should not be taken by people who are suicidal or who suffer from depression or other mental health problems.

Because of their potential for abuse as recreational drugs and because they can be addictive, opioids are classified by the federal government as controlled substances. This means that pharmacies and government agencies monitor opioid prescriptions quite closely.

Opioids differ in their rate of action in the body. Also, they are available in short-acting, long-acting, and fast-acting forms. These distinctions are quite important. They have to do with how many times a day you take a pill, and also the success of your pain control. Long-acting opioids are generally taken one to three times in 24 hours while short-acting opioids are to be taken more frequently – as often as every three to four hours (even at night). The so-called fast-acting formulations are newer and all contain the drug fentanyl; they act in minutes and are designed to treat breakthrough pain. In this report, we only consider the long-acting opioids.

The nine opioid drugs evaluated in this report vary greatly in price. But the dose you need to take will dictate the cost to a large extent. The costs of opioid drugs are presented in the table beginning on page 17. The long-acting opioid drugs evaluated in this report are listed on the next page.

Opioid Drugs		
Generic Name(s)	Brand Name(s) Long-acting forms	Available as a Generic?
Buprenorphine	Butrans transdermal film	No
Fentanyl	Duragesic (patch)	Yes
Hydromorphone	Exalgo	No
Levorphanol	Generic only	Yes
Methadone	Dolophine, Methadose	Yes
Morphine	Avinza, Kadian, MS Contin CR, OraMorph SR	Yes
Morphine plus naltrexone	Embeda	No
Oxycodone	OxyContin	No
Oxymorphone	Opana ER	Yes

CR=controlled release; SR=sustained release; ER=extended release

As you can see, most of the opioids are available in generic form. In many cases, the difference in price between the brand-name and generic is considerable. In other cases, the difference is relatively small.

This report 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](http://www.CRBESTBUYDRUGS.org).

You can also get a copy of three other reports on our Web site that deal with treating pain. One compares NSAIDs. A second compares anticonvulsant (anti-seizure) drugs. And the third evaluates triptans in the treatment of migraine headaches. This report and the others should help you talk with your doctor about how best to manage your pain.

*This report was updated in July 2012.*

## What Are Opioids and Who Needs Them?

Opioids work by changing the way pain is experienced and “felt.” They literally block pain signals to and in the brain. They also have sedative effects which can improve rest and sleep.

If you have been diagnosed with chronic pain, you have several treatment options. Your first decision is whether to take any pain medicines at all. That decision almost always revolves around how severe your pain is, and whether you are able to work and live fairly normally with the pain. Since pain is an entirely subjective experience, only you and your doctor can reach this decision.

But pain specialists now emphasize that some people with mild and even moderate chronic pain can manage well without taking any pain medicines regularly – and may experience significant improvements in pain and ability to function with other nondrug treatments, including exercise, lifestyle adjustments, behavioral therapy, acupuncture, and massage.

Many people, however, cannot tolerate persistent or intermittent pain – even if it is mild – and they choose to take a drug to help manage it. If that describes you, an opioid should not be your or your doctor’s first choice of pain reliever.

Instead, we recommend trying acetaminophen first. This pain reliever has a long safety track record, is available without a prescription, and is inexpensive. Even at moderate doses, it can be quite effective. If you need higher doses, or if you find that you need to take it everyday for pain, consult with your doctor about acetaminophen’s link to liver damage. Though rare, this can be serious. The risk is greater at higher doses and also in people who drink heavily, or have existing liver damage or disease.

Therefore, we urge you to keep close track (write it down) of the amount of acetaminophen (or any pain reliever) you take. For adults, the maximum recommended dose is 4 grams in 24 hours. That’s eight extra-strength (500 mg) tablets. Acetaminophen should not be used by people who drink heavily.

### When an NSAID May Be Better

If your mild chronic pain is not sufficiently controlled by acetaminophen, or involves inflammation (see the box on page 12), talk with your doctor about trying an NSAID. For reasons still unclear, some people respond better to one NSAID over another. There’s no way to know besides trying them out. We advise starting with naproxen (Aleve and generic) or ibuprofen (Advil, Motrin, and generic).

Both of these drugs have anti-inflammatory effects, are inexpensive, and are available without a prescription (though higher dose pills require a prescription). Aspirin is not the best choice in treating chronic pain since the larger doses typically needed for pain relief and easing inflammation may pose a higher risk of stomach bleeding and upset compared to naproxen, ibuprofen, or other NSAIDs.

As mentioned in the Welcome section, studies show that non-opioid drugs can provide potent pain relief that rivals opioids for people with mild to moderate pain. There are, however, very few studies comparing non-opioids with opioids, and none that compare the two over a long period of time.

### An NSAID Caution

The *Consumer Reports Best Buy Drugs* report on NSAIDs (available at [www.CRBESTBUYDRUGS.org](http://www.CRBESTBUYDRUGS.org)) discusses the trade-offs with these anti-inflammatory and painkilling drugs. But we’d include one important note here: the available evidence suggests that for most people, the well-publicized heart and stroke risk posed by NSAIDs is small. And periodic short-term use of relatively low doses probably does not add to risk at all.

But for people who already have heart disease or heart disease risk factors, such as high blood pressure, diabetes, or high cholesterol, the risk is much greater. Thus, before you start taking an NSAID on a regular basis for chronic pain, and particularly if you are taking high doses, you should be fully evaluated for heart disease and your risk of heart disease and stroke. This is especially advisable for older people



who are both more prone to chronic pain, and more likely to be at higher risk of heart attack and stroke.

If your chronic pain, whether mild or severe, is related to nerve damage or a disease that has damaged nerves, talk to your doctor about antidepressant and anticonvulsant drugs. Many people with chronic “nerve pain” – such as the pain associated with shingles or diabetes – get significantly more relief from anticonvulsants than from acetaminophen or an NSAID. For example, one of the anticonvulsants, gabapentin, is often prescribed for nerve pain associated with diabetes or shingles as well as for fibromyalgia, a condition characterized primarily by chronic pain.

### When an Opioid May be Needed

If none of the options discussed above provide enough relief, or if your chronic pain is truly severe and debilitating, opioids are an option your doctor will consider. But before prescribing one, he or she may require some information and simple tests.

For example, you may be asked to keep a pain diary for a few weeks (using a frequency chart and pain severity scale of zero to 10 where zero is no pain and 10 is the worst pain you can imagine). Keeping track will give your doctor more detailed information on your pain “patterns.” He or she may also give you one or more pain/quality-of-life scale tests. This helps clarify how pain is affecting your life. Your doctor is also likely to ask you about past and present drug or alcohol use, and may ask you to submit a urine specimen to test for drug abuse.

Your doctor is trying to determine whether the benefits of an opioid outweigh the risks. In fact, it’s your doctor’s responsibility to determine if you are at high risk of abusing opioids before prescribing them.

Your doctor is also likely to follow the general dictum that surrounds the use of opioids, at least for the initial prescription: prescribe the lowest possible dose for the shortest possible time.

### How Effective Are Opioids?

Unfortunately, while opioids are highly effective in relieving acute pain, they are only moderately

effective in treating long-term chronic pain, and their effectiveness may diminish over time. What does this mean?

- First, some people find that opioids don’t relieve all of their pain. For example, a person who had a pain score of 7 on a zero-to-10 scale could have a score of, say, 4 to 5 after taking an opioid. Improvement, to be sure, but not a complete elimination of pain. This can be disappointing.
- Second, some people may have to take doses so large to get adequate pain relief that side effects become a problem and outweigh the benefit.
- Third, some people are so bothered by the side effects, even at lower doses, that they stop taking the drug.
- Fourth, over time, some people with chronic pain build up a “tolerance” to an opioid. That means they have to take more of it to get the same pain relief. Most doctors are uncomfortable increasing doses past a certain point because the risks of side effects and other problems increase with higher doses.
- Fifth, long-term opioid use can cause what doctors call “opioid-induced hyperalgesia”. This is when opioid use over months or even years actually increases the body’s sensitivity to pain. This well-documented but still poorly understood problem worries many doctors.

Tolerance and/or pain sensitivity do not develop in all chronic pain patients. Both are risks. Indeed, common practice these days is to try and stabilize you on an optimal dose of an opioid and then not increase the dose even if full pain relief is not achieved.

When tolerance does occur, many doctors believe that switching you to another opioid is an option. There’s little hard evidence on this, unfortunately, but clinical experience over many years suggests that it works for some patients.

Also, even when tolerance is not a factor, if you are not responding well to one opioid and a dosage increase fails to control your pain, your doctor may

choose to try another opioid. The rationale for that approach is that some people simply respond better to one opioid than another. And trial and error is the only way to find that out.

So, summing up, three big challenges exist when you start taking an opioid. One is to find the right drug. The second is to find the right dose. And the third is to monitor and minimize side effects. There's more about side effects below and in the box on page 11.

## How Long Can You Take an Opioid?

For many of the reasons mentioned above, many doctors are not comfortable treating chronic pain with opioids over very long periods – months or years on end.

The main reason is that, despite the widespread use of opioids for decades, there is little evidence about their long-term safety. The vast majority of studies on the drugs have lasted less than a year. And while there is no evidence that opioids adversely affect the brain, kidneys, liver or other organs when taken long-term, there is strong and troubling evidence that they do affect the production of certain hormones, including testosterone, and can lead to impaired sexual function. This effect is not permanent. Opioids have also been shown to adversely affect the immune system in people with HIV infection and AIDS.

So, doctors treating people with chronic pain face a dilemma. Uncontrolled pain takes a terrible toll on both the body and mind and many doctors are willing to prescribe opioids for longer periods to relieve pain despite the problems cited above and the lack of evidence of long-term safety.

## Side Effects – How Bad?

All of the opioids can cause side effects. One recent review of studies found that about 50 percent of people taking an opioid to treat chronic pain experienced at least one adverse event or problem. Among “common” side effects, nausea was the most prevalent (21%), followed by constipation (15%), dizziness (14%), and excessive sedation (14%) (some sedation is experienced by almost all people taking opioids). Itching and vomiting were also fairly common.

In studies, one in five people stopped taking an opioid because of side effects.

Side effects are much more common when opioids are combined with alcohol. Studies and common practice also tell us that some opioid side effects can be worsened by other drugs, especially tranquilizers, such as diazepam, sedatives (barbituates), and antihistamines.

Some side effects ease over time – nausea, for example. And others, such as constipation, can be reduced with other drugs (such as laxatives and stool softeners). But many are simply a part of taking an opioid and you have to adapt to them. For example, drowsiness and sedation can make many daily activities difficult, especially if you take larger doses. You cannot drive, and concentration on work can be difficult.

That's why many chronic pain patients complain that while opioids help them cope with the pain, they do not always improve quality of life. Indeed, it's why opioids can become “part of the problem” for many people in chronic pain who previously led, or want to lead, active lives. They are already more likely to be unemployed or find it difficult to sustain a career, so opioids can add to the problem.

As mentioned above, opioids affect hormone levels and immune function. Sexual problems resulting from reduced testosterone are of particular concern. This includes decreased sex drive and difficulty achieving orgasm. There is little evidence on the variability of this side effect. Some people are more affected than others, and some care about the effect more than others. Long-term use of an opioid raises the risk of experiencing decreased sexual desire.

The box on the next page listing side effects does not mention tolerance, abuse, physical dependence, or addiction. These are indeed possible adverse events that can happen when you take opioids. But we view them differently. See the discussion in the sidebar on page 15.

## Choosing an Opioid — Our *Best Buy* Pick

Unfortunately, the research comparing opioids to each other in the treatment of people who have chronic pain is quite limited. That means that, in terms of effectiveness, one opioid may be better than another — either overall or in treating certain types of pain or certain people — but the medical evidence just does not exist to prove it.

That said, the evidence that does exist suggests strongly that when comparable doses of any of the opioids are used, the relief from pain is about the same. Opioids also seem to produce similar results when quality of life is the main outcome measured.

Thus, there is not enough evidence from the research to say that one opioid is more effective or better than any other in treating people who have chronic pain.

There is also little hard evidence about just how the opioids compare to each other in terms of long-term safety and side effects when used to treat people with chronic pain.

### Long-Acting, Short-Acting, and Fast-Acting

Studies also indicate no difference between similar doses of long-acting opioids and short-acting opioids in pain relief achieved. This report focuses on long-acting opioids, but here's an overview of the differences between these formulations.

The short-acting formulations present some problems in the treatment of chronic pain. First, you'll have to take more pills per day. Thus, you may be more likely to miss a dose. This, in turn, puts you at higher risk of pain resurgence or "breakthrough" pain when the effect of the last pill wears off.

Second, there is suggestive but inconclusive evidence (and many doctors believe) that the long-acting drugs create less euphoria and thus pose less risk of addiction.

That's why, in practice, most doctors today primarily prescribe long-acting (extended-release) opioids for people with chronic pain. They are more

convenient, avoid pain breakthroughs, and might have less addiction potential.

But it's important for you to know that studies which directly compared some of the long-acting drugs to the short-acting ones found no difference in pain relief. For example, people with chronic pain got no more relief when they took long-acting oxycodone (OxyContin) compared to short-acting oxycodone combined with acetaminophen (Percocet).

Studies comparing long-acting morphine to short-acting oxycodone, long-acting dihydrocodeine to dextropropoxyphene (no longer available due to safety concerns), and long-acting codeine to short-acting codeine plus acetaminophen found the long-acting drug somewhat better, but in all of these studies the dose of the long-acting drug was higher than the dose of the short-acting drug. As a result, it's not clear whether the better pain control was because the drug was more effective or because the dose was higher.

In other studies, long-acting oxymorphone (Opana ER), which is very expensive even as a generic drug, was similar to long-acting oxycodone (OxyContin) on measures of both pain and function.

### Adverse Effects of Opioids

Many decline over time and/or can be alleviated with other drugs.

- |  |  |
|--|--|
| ■ Adverse effect on the immune system              | ■ Drowsiness, sedation                 |
| ■ Agitation  | ■ Increased pain sensitivity           |
| ■ Constipation                                     | ■ Irregular menstruation               |
| ■ Decreased sex drive and impaired sexual function | ■ Itching                              |
| ■ Decreased testosterone levels                    | ■ Memory impairment                    |
| ■ Depression                                       | ■ Nausea and vomiting                  |
| ■ Dizziness  | ■ Possible increased risk of fractures |
|  | ■ Slowed breathing                     |

## Pain and Inflammation: What's the Link?

Inflammation is intertwined with pain. It can occur at the site of an injury, such as when you suffer a blunt force trauma, sprain, or fracture, and the local tissues swell up. But inflammation can also occur as the result of a disease process. This occurs in joints if you have an attack of gout, or in the stomach if you have gastritis or colitis. It can also accompany infection. Inflammation is usually present if you have redness, swelling, or tenderness.

The best initial treatment of acute swelling and tissue inflammation is something called RICE. This stands for Rest, Ice, Compression, and Elevation. Along with that, we advise taking a nonsteroidal anti-inflammatory drug, or NSAID. NSAIDs target inflammation and act to reduce or control it, while acetaminophen does not. But NSAIDs do not relieve the pain that accompanies inflammation any better than acetaminophen.

Since acetaminophen is a safer drug to start with, this presents a choice dilemma. If your pain involves inflammation, should you take an NSAID instead of acetaminophen? Unfortunately, there is little research on this issue. All we can offer is this rule of thumb: if the injury or other cause of your pain is mild and does not involve visible inflammation or swelling, or that swelling is minor, try acetaminophen first. If the cause of your pain involves visible inflammation and swelling, you may want to take an NSAID initially. You can then switch to acetaminophen if you still need a painkiller after a few days.

Opioids are not anti-inflammatory. They are pure painkillers. Apart from all their other downsides, that limits their use in treating conditions like osteoarthritis which involve the interplay of inflammation and pain. That said, when pain involving inflammation is severe, pain control trumps treating the inflammation — and an opioid may be just what is needed for a short period to help your body recover.

One opioid — fentanyl — is available in formulations that are custom-made to be very fast acting. It's formulated as a lollipop and as a tablet that dissolves in your mouth. Both provide very potent relief that lasts for about an hour.

These medicines were originally approved in the 1990s to treat breakthrough cancer pain. But doctors now prescribe them often to treat people with other kinds of acute breakthrough pain, including that which is associated with chronic pain.

The medicines — Actiq, Fentora, and generic fentanyl — are very expensive. They are also highly amenable to addiction and recreational drug abuse. Indeed, there's been widespread concern that they are overprescribed and inappropriately prescribed — to patients who don't really need a fast-acting opioid.

Given their expense and potential for abuse, and the risk of respiratory depression they pose, we'd recommend a careful discussion with your doctor if he or she prescribes Actiq, Fentora, or generic fentanyl.

### Patch vs. Pill

Several studies have compared the fentanyl patch with long-acting morphine. The fentanyl patch is expensive while long-acting morphine is available as an inexpensive generic. Importantly, the studies have found no differences between the two in pain control or measures of function. In addition, while fewer people using the patch developed constipation, more stopped using the patch because of side effects than stopped taking long-acting morphine pills.

Another long-acting opioid patch, buprenorphine (Butrans), was approved more recently. Although it has been shown to be effective for treating chronic pain when compared to placebo, it has not been compared directly to other opioids in studies. It is designed to be worn continuously for 72 hours. The FDA issued a safety warning about the importance of proper patient selection for the buprenorphine patch because it has a high potential for abuse.

## Back Pain: Be Wary of Opioids

Back pain is very common. At some point, almost everyone has back pain that is intense enough to interfere with work or daily activities. Back pain is the most common cause of job-related disability and is second only to headaches as the most common neurological problem in the United States, according to the National Institute of Neurological Disorders and Stroke.

Opioids are usually not a good first option for low-back pain, but the results of a survey done by the Consumer Reports Health Ratings Center indicate they are prescribed more often than they should be. Of the 14,000 people surveyed who experienced low-back pain in the past year, more than half who were given a prescription drug received an opioid. This is despite the fact that there is very little research to support the use of opioids for acute low-back pain. Opioids might reduce the pain but given their serious side effects, the risks are usually not worth the pain reduction when other options are available.

Better first options for treating low-back pain include exercise, formal rehabilitation programs, and cognitive behavioral therapy. Other options that might help reduce the pain include acupuncture, massage, or yoga.

If those nondrug strategies fail to relieve your pain, then it might be time to consider medications. The best first-line options for most people are acetaminophen or NSAIDs, such as ibuprofen or naproxen. Depending on the circumstances, second-line medications, including muscle relaxants, tricyclic antidepressants, and antiseizure drugs, can help. For more on back pain management, see our free overview: <http://www.consumerreports.org/health/conditions-and-treatments/back-pain/overview/back-pain.htm>.

### Safety

As mentioned previously, a substantial gap in the research on opioids exists around their safe use over the long-term. In addition, there are very few studies comparing the drugs on long-term use, to see if one or more might be safer than another.

For example, while evidence indicates that medical emergencies related to opioids (misuse, overdoses, and suicide attempts) are on the rise in the last decade, studies do not clearly show that this is due more to one opioid than any other. In addition, there is no information about whether opioids differ in terms of the risk of addiction they pose. As a result, you should make the assumption that they don't differ in this regard.

A special note about methadone. This drug is very inexpensive, but it is not a good choice for long-term use because it can build-up unpredictably in the body, resulting in dangerously high blood levels, and potentially deadly slowed breathing. That said, it can be a useful opioid in certain circumstances, provided the patient understands the risks and they are under the supervision of a doctor who is familiar with the extra care and monitoring necessary to reduce the risk of side effects.

### Age, Race, and Gender Differences

Another gap in our knowledge about opioids is that there is no evidence about whether one opioid is more effective or safer than any other among different age or race groups, in women versus men, or when patients have other medical conditions in addition to their chronic pain.

Most doctors are extra cautious in prescribing opioids for chronic pain in people over age 65 or so. They worry that older people will be more vulnerable to the side effects of opioids, particularly the risk of falls and slowed respiration. However, there is no conclusive evidence of these effects, and pain groups urge doctors not to stint on using opioids when appropriate for older people in chronic pain.

### Our Picks

Our final criterion for comparing the opioids is cost. The table on page 17 presents the monthly cost of long-acting opioids, at many different (but not all) dosing regimens. As you can see, equivalent doses of different opioids, as well as different brands of the same opioid, vary substantially in price. Generic versions are available for all but four of the opioids, but some are substantially less

expensive while others cost only marginally less than the original brand.

Taking effectiveness, safety and side effects, dosing flexibility and convenience, and cost into account, we have chosen the following opioid as our *Best Buy* drug for people with moderate to severe chronic pain when other pain relievers fail to bring adequate relief.

■ *Generic morphine extended-release*

This medicine has a long track record, provides good value, and its use is well understood by most doctors. It ranges widely in monthly cost, depending on dosing regimen. But most low-dose regimens will run you \$101 or less per month.

High doses of this medicine can be quite expensive. If you need to take a high dose, we'd advise speaking with your doctor or pharmacist about which opioid has the lowest cost under your insurance plan. If you have to pay out-of-pocket, you have a large motivation to avoid the high-cost versions of the option we have chosen, if possible.

Our *Best Buy* pick is a long-acting opioid. As we previously noted, your doctor is more likely to prescribe a long-acting rather than a short-acting opioid, if you truly need this type of potent medication for long-term chronic pain control.

We don't choose a *Best Buy* patch. Some people with chronic pain may benefit from a patch, but neither the evidence nor their cost permits a choice of a *Best Buy* among the options available.

## Will I Become Addicted?

Opioids have long sparked fears of addiction among both patients and doctors. Indeed, studies found that fear of addiction led both to be leery of these strong pain relievers.

It is now clear that the risk of addiction when opioids are used as directed to treat true pain is very low. That does not mean the risk is zero, though. But most addiction cases are associated with poorly monitored opioid use, and people who have a previous history of drug abuse.

Understanding the risk of opioid addiction requires knowing the distinction between addiction, physical dependence, psychological dependence, and tolerance. If you are prescribed an opioid, we urge you to educate yourself about these issues and discuss them with your doctor. We give you a capsule briefing here:

*Physical dependence* is when the body becomes accustomed to a drug. Another word for it is habituation. This happens with all opioids and to all people who take them for more than a week or so. It does not mean you are "addicted." In practical terms, it means when you stop taking the drug, your body will have to adjust. You may have some "withdrawal" symptoms, such as sweating, shakiness, irritability, restlessness, feeling jittery, insomnia, cold flashes, and involuntary muscle movements.

People differ in the degree to which they experience these symptoms. A lot depends on the dose you have been taking and for how long. Withdrawal can be significantly eased by gradually lowering the dose over time until you stop.

*Addiction* is when you become psychologically dependent on a drug. It involves elements of physical dependence, but goes beyond that. You lose the ability to control the amount of drug you take, and your ability to make judgments about that. For example, you'll take the drug independent of your level of your pain.

Who becomes addicted? Experts believe some people are genetically susceptible to becoming addicted to opioids. But there's no test for this — yet. People who have a history of drug or alcohol abuse are at much greater risk of addiction.

In general, if your pain is severe and treated over a relatively short time (weeks or a few months), you are less likely to become addicted or feel any euphoria when you take an opioid (though you may enjoy the sedation and calming effect). About 5 percent of people who take opioids for one year will develop an addiction, according to the National Institutes of Health.

*Tolerance* is the term used to describe the fact that many drugs have decreasing affects over time. With opioids, this is both good and bad. Good because you may have fewer side effects as your body adjusts to the drug; bad because the pain relief declines, too. To sustain the pain relief, a higher dose is needed. So you can see, tolerance complicates both physical dependence and the risk of addiction. Higher doses lead to more physical dependence, tougher withdrawal, and a greater risk of addiction.

All these problems make it essential to take opioids with care and under the watchful eye of a doctor who knows how to tell when you may be getting addicted. Family and friends should also be on alert. Tell-tale signs of addiction: craving the drug, asking for more of it than you really need for pain relief, running out of a month's supply in two to three weeks, not being able to function well, and increased sedation and sleepiness.

## Common Types of Pain and Drugs to Treat Them\*




Type of Pain	Best Initial Treatment	If That Doesn't Work + Comments
Headache	Acetaminophen, or an NSAID <sup>1</sup> if that does not work	See a doctor if headaches are severe, persistent, or accompanied by fever or vomiting, or you have difficulty with speech or balance. Don't self-medicate for more than two weeks.
Migraines	Acetaminophen, NSAIDs, Excedrin, Triptans	A triptan is needed if the others don't work, especially if migraines are frequent and/or severe.
Menstrual cramps	NSAIDs	Several are marketed for cramps but any NSAID will probably work.
Pain due to minor trauma (bruises, scrapes, minor sprains)	Acetaminophen, NSAIDs	Opioids are not recommended.
Pain due to moderate or severe trauma (wounds, burns, fractures, severe sprains)	Opioids	Typically short-term, up to two weeks.
Post-surgical pain – minor	Acetaminophen, NSAIDs	Opioids rarely needed.
Post-surgical pain – moderate to severe	Opioids	Combinations of opioids may be prescribed if pain is severe.
Muscle aches	Acetaminophen, NSAIDs	If inflammation involved, NSAIDs may work better.
Muscle pulls	NSAIDs, muscle relaxants	If inflammation involved, NSAIDs may work better. Short-term use only.
Pain due to osteoarthritis	Acetaminophen, NSAIDs	See a doctor if pain persists.
Sprains	NSAIDs	Opioids may be needed for severe sprains.
Toothaches and pain following dental procedures	Acetaminophen, NSAIDs	Opioids may be needed if pain is severe; short-term use.
Pain due to heartburn or GERD <sup>2</sup>	Antacids, H2 Blockers (e.g. Tagamet, Zantac), Proton Pump Inhibitors (e.g. Prilosec OTC)	Heartburn that lasts more than a week needs medical attention. Aspirin and NSAIDs should be avoided.
Chronic back pain	Acetaminophen, NSAIDs	Opioids may be necessary if other drugs do not control pain and pain is persistent. (See sidebar on page 13)
Pain from a kidney stone	Acetaminophen, NSAIDs, Opioids	Opioids usually needed if pain is severe.
Nerve pain <sup>3</sup>	Acetaminophen, NSAIDs, Anticonvulsants	Opioids are sometimes used, but only if anticonvulsants have been tried and don't work. Antidepressants are another option.
Pain due to fibromyalgia <sup>4</sup>	Antidepressants, Anticonvulsants	Opioids have not proved effective in treating fibromyalgia.

\* Important Note: *The information in this table is not comprehensive. It is meant as general guidance and reflects typical medical practice. It should not substitute for a doctor's advice. If you have pain that lasts for more than 10 days, see a doctor. The table is based on numerous sources and does not reflect analysis or input from the Drug Effectiveness Review Project. Always follow the labeling or package insert information on nonprescription and prescription drugs you use to treat pain.*

1. Includes aspirin and aspirin-like drugs such as ibuprofen (Advil, Motrin, and generic) and naproxen (Aleve and generic).
2. GERD=Gastroesophageal Reflux Disease, also referred to as stomach acid reflux.
3. Associated with diabetic neuropathy, shingles, injury-related nerve damage, compression of nerves in the spine, and nerve damage associated with cancer or HIV infection.
4. Fibromyalgia is a condition marked by muscle and joint tenderness and pain. Fatigue can also be present. The cause is unknown. The symptoms it produces and their severity vary widely from person to person.



## Long-acting Opioids — Dosing and Costs\*

Generic Name and Strength	Brand Name(s) <sup>1</sup>	Frequency of Use Per Day <sup>2</sup>	Total Daily Dose <sup>3</sup>	Average Monthly Cost <sup>4</sup>
<b><i>Buprenorphine patches</i></b>				
Buprenorphine patch 5 mcg/hour	Butrans	One patch every 72 hours	120 mcg	\$189
Buprenorphine patch 10 mcg/hour	Butrans	One patch every 72 hours	240 mcg	\$276
Buprenorphine patch 20 mcg/hour	Butrans	One patch every 72 hours	480 mcg	\$495
<b><i>Fentanyl patches</i></b>				
Fentanyl extended-release 25 mcg/hour	Duragesic	One patch every 72 hours	600 mcg	\$303
Fentanyl extended-release 25 mcg/hour	Generic	One patch every 72 hours	600 mcg	\$126
Fentanyl extended-release 50 mcg/hour	Duragesic	One patch every 72 hours	1200 mcg	\$666
Fentanyl extended-release 50 mcg/hour	Generic	One patch every 72 hours	1200 mcg	\$205
<b><i>Hydromorphone pills</i></b>				
Hydromorphone sustained-release 8 mg	Exalgo	1	8 mg	\$349
Hydromorphone sustained-release 12 mg	Exalgo	1	12 mg	\$520
Hydromorphone sustained-release 16 mg	Exalgo	1	16 mg	\$738
<b><i>Methadone pills</i></b>				
Methadone 5 mg	Generic	3	15 mg	\$17
Methadone 10 mg	Generic	3	30 mg	\$20
<b><i>Morphine pills</i></b>				
 Morphine extended-release 15 mg	Generic	2	30 mg	\$48
Morphine extended-release 30 mg	Avinza	1	30 mg	\$177
Morphine extended-release 30 mg	Kadian	1	30 mg	\$247
Morphine extended-release 30 mg	MS-Contin	2	60 mg	\$270
 Morphine extended-release 30 mg	Generic	2	30 mg	\$72
Morphine extended-release 60 mg	Avinza	1	60 mg	\$313
Morphine extended-release 60 mg	Kadian	1	60 mg	\$433
 Morphine extended-release 60 mg	Generic	2	120 mg	\$101
Morphine extended-release 90 mg	Avinza	1	90 mg	\$456
Morphine extended-release 100 mg	Kadian	1	100 mg	\$692

## Long-acting Opioids – Dosing and Costs\*

Generic Name and Strength	Brand Name(s) <sup>1</sup>	Frequency of Use Per Day <sup>2</sup>	Total Daily Dose <sup>3</sup>	Average Monthly Cost <sup>4</sup>
<b><i>Oxymorphone pills</i></b>				
Oxymorphone sustained-release 10 mg	Opana ER	2	20 mg	\$290
Oxymorphone sustained-release 15 mg	Opana ER	2	30 mg	\$343
Oxymorphone sustained-release 15 mg	Generic	2	30 mg	\$319
Oxymorphone sustained-release 20 mg	Opana ER	2	40 mg	\$509
Oxymorphone sustained-release 40 mg	Opana ER	2	80 mg	\$955
<b><i>Oxycodone pills</i></b>				
Oxycodone sustained-release 10 mg	OxyContin	2	20 mg	\$164
Oxycodone sustained-release 20 mg	OxyContin	2	40 mg	\$306
Oxycodone sustained-release 40 mg	OxyContin	2	80 mg	\$529
Oxycodone sustained-release 80 mg	OxyContin	2	160 mg	\$1,031

\* Selected doses. There are dozens of pill strengths for most of the medicines listed in this table. For space reasons, we have limited our list to selected strengths of both brand and generics.

1. "Generic" indicates it's the generic version of this drug.

2. As typically and generally prescribed. Means number of pills unless otherwise noted.

3. Total daily dose of opioid only.

4. Prices reflect nationwide retail average for July 2012, rounded to the nearest dollar. They are derived by *Consumer Reports Best Buy Drugs* from data provided by Wolters Kluwer Pharma Solutions, which is not involved in our analysis or recommendations.

## Talking With Your Doctor

It's important for you to know that the information we present in this report 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 whether you need an opioid, and, if so, which one and what dose may be best for you.

Bear in mind that many people are reluctant to discuss the cost of medicines with their doctors. Also, studies have found that doctors don't routinely take price into account when prescribing medicines. So unless you bring it up, your doctor might 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 not necessarily true. Studies consistently find that many older medicines are as good as—and in some cases better than—newer medicines. Certain older drugs can be thought of 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 drugs are indeed more effective and safer. Talk with your doctor about the pluses and minuses of newer vs. older medicines, including generic drugs.

Prescription medicines go "generic" when a company's patents on them 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're not lesser quality drugs. Indeed, most generics remain useful even many years after first being marketed. That is why more than 60 percent of all prescriptions in the U.S. today 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 might not be aware of medications the others have prescribed for you.
- Second, since people differ in their response to medications, it's very common for doctors today to prescribe several for a person 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 drugs or be dangerous.
- Fourth, the names of prescription drugs—both generic and brand—are often difficult 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.

And 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 get it by mail, make sure the dose and the number of pills per day on the container match the amount your doctor told you to take.

## How We Picked the *Best Buy* Drugs

Our evaluation is based on an independent scientific review of the evidence on the effectiveness, safety, and adverse effects of opioids. A team of physicians and researchers at the 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 multi-state initiative to evaluate the comparative effectiveness and safety of hundreds of prescription drugs.

A synopsis of DERP's analysis of opioids 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 opioid drugs is available at <http://www.ohsu.edu/drugeffectiveness/reports/final.cfm>. (Note: this a long and technical document written for physicians.)

The prescription 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 cash price paid for a month's supply of each drug in July 2012.

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

- Be as effective or more effective than other long-acting opioids
- Have a safety record equal to or better than other long-acting opioids
- Be priced reasonably relative to other long-acting opioids

The *Consumers Reports Best Buy Drugs* methodology is described in more detail in the methods section at [www.CRBestBuyDrugs.org](http://www.CRBestBuyDrugs.org).

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## About Us

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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](http://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 an error or are alerted to one, 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](http://www.CRBestBuyDrugs.org) for further information.

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The Drug Effectiveness Review Project report on opioid drugs was the main resource for our analysis. We refer you to that report for a comprehensive list of studies and medical literature citations (<http://www.ohsu.edu/drugeffectiveness/reports/final.cfm>). The other references we list here are the principle sources of information used to produce this Consumer Reports Best Buy Drugs analysis of opioids.

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