

Voltaren® Gel Review

A useful rub-on anti-inflammatory medication for arthritis, tendonitis, bursitis, runner's knee, and muscle strain

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SUMMARY

Voltaren® Gel (topical diclofenac) is a particularly safe and useful medicine. It's an anti-inflammatory cream, so it can be applied only where you need it, instead of soaking your entire system with a medication, avoiding or dramatically reducing common side effects like indigestion, as well as some serious safety concerns associated with oral diclofenac. In the US, this drug is FDA-approved to treat osteoarthritis in “joints amenable to topical treatment, such as the knees and those of the hands,” but it probably also works for some other painful problems, such as some repetitive strain injuries and back pain. The evidence shows that it “provides clinically meaningful analgesia.” So this product actually works *and* gets a pass from skeptics and critics — a rare thing in the world of pain treatments!

[full article 3250 words](#)

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Think of [Voltaren® Gel](#) as “ibuprofen in a gel.” (It's actually diclofenac, but ibuprofen is a much more familiar drug name in North America, where the product is still fairly new, and available only with a prescription in the US.) It's a topical anti-inflammatory medication, [NSAID](#) and FDA-approved to treat osteoarthritis in “joints amenable to topical treatment, such as the knees and those of the hands.” The evidence shows that it “provides clinically meaningful analgesia.”¹ This is an appealing treatment idea that actually works reasonably well: what a pleasure to be able to say that!²

Funny how things like this slip through the cracks. I communicate with patients and professionals locally and abroad more or less all day every day, study and research musculoskeletal pain problems obsessively, and am more or less constantly immersed in answering the question, “What can you do for body parts that hurt?” And yet I didn't hear about this stuff for a good year after it had already hit the shelves.

Although it's been available in Europe for many years, it was only approved for use in the United States in 2007. Also, other topical treatments (*salicylates* and *capsaicin*) have shown little potential in the past. And *Arnica montana* creams (Traumeel, for example) are extremely popular, but it's unlikely that even full-strength arnica is medically potent, let alone when it is diluted down to traces.³

So, a rub-on pain killer that is actually promising is a pretty new idea!

The first *generic* (cheaper) equivalent of Voltaren® Gel entered the marketplace in 2016, produced by Amneal Pharmaceutical. It should be widely available now. Both products are still prescription-only in the US, but

fortunately they are over-the-counter almost everywhere else (there's a rack of tubes of Voltaren by the till at my neighbourhood drugstore).

So, what is a joint that's "amenable" to treatment with Voltaren® Gel?

What makes a joint "amenable"? Is it mellow and easy-going? No, just *accessible*: a pain-killing gel is useful only for joints that aren't covered by a thick layer of muscle (like the shoulder). The medication gets diluted as it penetrates deeper into tissue, and a meaningful amount can only get into joints if the joint is just under the surface of the skin.

For those amenable joints, though, Voltaren® Gel delivers a good dose of medication directly to the joint, while sparing the gastrointestinal tract from the harshness of NSAIDs — which are actually known as "gut burners," and many people just can't stomach ibuprofen. A gel almost completely eliminates the risks associated with digesting the stuff.⁴

There are probably some good uses for Voltaren® Gel above and beyond what it's already been specifically approved for ("off-label" uses). Here are some of the common conditions I think it might be most useful for:

- [iliotibial band syndrome](#)
- [plantar fasciitis](#)
- [shin splints](#) (particularly medial tibial stress syndrome)
- most common tendinitises,⁵ especially where the tendon is just under the skin, such as ...
 - [tennis elbow](#) (lateral epicondylitis)
 - Achilles tendinitis
 - patellar tendinitis
 - carpal tunnel syndrome
 - ligament sprains
- acute [muscle strains](#)
- bursitis

In summer 2018 I had my first personal experience with dramatic relief from Voltaren Gel (topical diclofenac). It's not the first time I have found it useful, but it was the first time it was amazing. I'd been having some unexplained knee pain intermittently for several weeks when it kicked up a notch or two and became constant and even started waking me up at night. When I finally remembered to try Voltaren Gel — I'm not sure what took me so long — things were bad enough that it was going to be obvious if it worked. And it was! After many days of constant discomfort ranging from 3-6 on a 10-scale, it just ended: half an hour after applying the stuff, I simply didn't have that problem anymore. Hallelujah! It's been weeks since then with no relapse. Although the pain was not terrible, this is actually one of the clearest examples of pain relief from any treatment that I've ever enjoyed.

Voltaren for back pain too? Maybe



Surprisingly, Voltaren may even help some kinds of deep back pain.

I've just emphasized that Voltaren is mainly appropriate for *shallow* inflammation, but there is some evidence that Voltaren might be able to “reach deeper.” This is hardly the stuff of medical certainty yet, but researchers Huang *et al* found that Voltaren treated pain coming from *deep* inside the spine, right in the centre.⁶ They concluded that it could be a “convenient and safe clinical intervention” for a few types of back pain. An anti-inflammatory gel will likely fail with many kinds of back pain, but there's also virtually no down-side to trying. See my [low back pain tutorial](#) for extremely detailed information about medications for back pain.

However, it probably does not work well for deeper tissues in most cases. For instance, there's evidence that it doesn't work at all for the muscle soreness that follows unfamiliar exercise intensity,⁷ probably because it can't be absorbed far enough into thick muscle tissue — but oral NSAIDs do have a modest effect on that kind of pain⁸⁹ (one of the only things that does).

Voltaren® Gel is probably better than ice!

Ice is nice. I have some really thorough icing advice on this website.¹⁰ But Voltaren® Gel strikes me as being, well, *better* — definitely more evidence based.¹¹ Or at least more convenient.

Obviously icing has some advantages. Other than the cost of running your freezer, it's free. And extremely safe. And “natural.”¹² But Vitamin I (for “ibuprofen”) in a gel? C'mon! That's just awesome! Medication delivered straight to the inflamed tissues, and only the inflamed tissues ... it's kind of futuristic.

There's no reason not to use both, of course. But Voltaren® Gel has the potential to make ice nearly obsolete as a treatment choice, except for situations where you don't have any Voltaren® Gel handy.

On the other hand, there *are* some risks ...

What do the skeptics say?

Many readers assume that “skeptics” will always favour mainstream and pharmaceutical treatments like Voltaren, but nothing could be further from the truth. Indeed, some skeptics are leading the charge *against* bad pharmaceutical industry science and practices (and a great example is Ben Goldacre's new book, [Bad Pharma: How drug companies mislead doctors and harm patients](#)). Pharmacist Scott Gavura of [Science-Based Pharmacy](#) was certainly skeptical about topical NSAIDs like Voltaren when he first tackled the topic early in 2011.¹³ “When I recently noticed a topical NSAID appear for sale as an over-the-counter treatment for muscle aches and pains ... I was confident it would make a good case study in bad science.”

He was surprised, however, and he changed his mind when he read the evidence. Having worked with Scott as an editor, I know he can't be persuaded by anything less than robust evidence. On a few occasions, Scott has proven himself to be even harder to impress than I am (which is really saying something). He concludes:

Over the past two decades, evidence has emerged to demonstrate that topical versions of NSAIDs are well absorbed through the skin and reach therapeutic levels in synovial fluid, muscle, and fascia. ... *For chronic conditions like osteoarthritis, the data are of fair quality and are persuasive.* On balance, there's good evidence to show that topical NSAIDs are clinically- and cost-effective for short term (< 4 weeks) use, especially when pain is localized.

Nothing's perfect, however, and some concerns about Voltaren are covered below.

Where's the fire?

Are you sure that you're actually inflamed? Don't answer too quickly.

One concern about the use of products like Voltaren is that several conditions are less inflammatory in nature than they feel like. Patients usually assume that the "burning" pain of repetitive strain injuries like tendinitis is caused by inflammation, but in fact classic inflammation is largely absent, especially after initial flare-ups have died down (but pain is still carrying on). While it is possible, even likely, that tendinitis is still inflamed *in some sense*, it's doubtful that they are inflamed in a way that NSAIDs are actually good for. The biochemistry of cranky tendons is rather complex and largely unknown. There's probably some overlap between the biology of acute, classic inflammation and the subtler biology of chronic tendinitis, but no one really knows. So the value of Voltaren for tendinitis is unclear.

You can read about this in much greater detail in my RSI article:

[Repetitive Strain Injuries Tutorial](#) Five surprising and important facts about repetitive strain injuries like carpal tunnel syndrome, tendinitis, or iliotibial band syndrome ~ 13,000 words

More about safety

Long term and/or large *oral* doses of NSAIDs can be extremely dangerous, even lethal. They "nuke" your entire system with much more active ingredient than you really need, all of it absorbed through the digestive tract and distributed through your entire circulatory system. These drugs can and do cause complications at any dose, and are linked to heart attacks and strokes and ulcerations of the GI tract. For example, Diclofenac ...

Diclofenac is an extremely popular drug — again, we're talking *oral* here — and it is associated with serious cardiovascular risks: "There is increasing regulatory concern about diclofenac. ... Diclofenac has no advantage in terms of gastrointestinal safety and it has a clear cardiovascular disadvantage."¹⁴ This has been in the news quite a bit, and NPR had a hit in 2013 with this headline: "[World's Most Popular Painkiller Raises Heart Attack Risk.](#)"

And it's not *wrong*, that headline. It's not hype and alarmism — there is a real problem.

But the difference between oral and topical is extremely important.

Topical diclofenac is a completely different

Spreading a medication on your skin is *not* the same thing as swallowing it. Because Voltaren Gel is applied to the skin, *dramatically* less medication reaches the bloodstream — only a tiny fraction of what you would get from oral usage.[1516](#) It is safe to assume that cardiovascular risks of moderate topical use are negligible compared to oral diclofenac, because so much less medication is actually getting into general circulation, and that is what the evidence now shows.[17](#) Multiple studies have concluded that topical NSAIDs are both effective and safe.[181920](#)

At correct dosages for limited time periods, I think Voltaren Gel is probably very safe: the worst side effect is probably the chance of irritated skin. ScienceBasedMedicine.org agrees:[21](#)

The main advantage of topical NSAIDs is the reduced exposure of the rest of the body to the product, which reduces the side effect profile. Given the toxicity of NSAIDs is related in part to the dose, it follows that topical treatments should have a better toxicity profile. Consequently, the cardiovascular risks of topical diclofenac, even in those with a high baseline risk of disease, should be negligible with the topical forms.

Some mild adverse effects on skin for some people

I am definitely *not* saying Voltaren is completely safe or risk free. No drug is! The drug is still being absorbed, but instead of being a “gut burner” it can be a “skin burner.” From the Voltaren® Gel website ...

The most common adverse reactions reported in Voltaren Gel clinical trials were application site reactions in 7% of treated patients. With all NSAIDs there may be an increased risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke, which can be fatal.

Sounds bad, doesn't it? But those warnings are primarily there in an abundance of legal and medical caution provoked by the problems with *oral* NSAIDs. For short-term, moderate topical use, I believe the benefits clearly outweigh the minor risks.

What about long-term use?

This drug was basically invented as an arthritis treatment. Those patients may be interested in using topical diclofenac regularly and indefinitely. Is that kind of long term usage safe? Is regular use of *any* medication a good idea?

There is no good data on long term safety that I'm aware of. It probably doesn't exist yet.

In principle, long-term use of *any* medication should be minimized as much as possible. The benefits of topical diclofenac aren't so great that they justify the risks of frequent use indefinitely.

If I wished I could use it that way, I'd probably plan to take usage breaks: just stop using it for a while, a few times a year.

On the other hand, it's *probably* about as safe for regular use as any medication gets. But that's just an educated guess, extrapolating from the short term safety data.

Summary of over-the-counter pain-killers



The types and risks and benefits of common pain-killers are bewildering (although they are much safer than [opioids](#)). Here's a very carefully prepared summary of all of them:

Over-the-counter (OTC) pain medications are fairly safe and somewhat effective *in moderation* and work in different ways, so do experiment cautiously. There are four kinds: acetaminophen/paracetamol (Tylenol, Panadol), plus three non-steroidal anti-inflammatories (NSAIDs): aspirin (Bayer, Bufferin), ibuprofen (Advil, Motrin), and naproxen (Aleve, Naprosyn). Don't take any of them chronically — risks go up over time, and they can even backfire and cause nasty [rebound headaches](#). They are all probably equally effective for acute injuries ([Hung](#)), but benefits vary with people and issues (chronic pain, headache, arthritis, etc). Acetaminophen is good for both fever and pain, and is one of the safest of all drugs *at recommended dosages*, but it may not work well for musculoskeletal pain ([at all?](#)) and [overdose can badly hurt livers](#). The NSAIDs all reduce inflammation as well as pain and fever, but at any dose they can [cause heart attacks and strokes](#) and they are “gut burners” (they irritate the GI tract, even taken with food). Aspirin may be best for joint and muscle pain, but it's the most gut-burning of them all. [Voltaren® Gel Review](#) is an ointment NSAID, effective for superficial pain and safer ([Derry](#)). Athletes, *puh-lease* don't take “Vitamin I” to prevent soreness — [it doesn't work!](#)

What about other common pain problems? Could it help low back pain, neck pain, and muscle pain?

A lot of people who read this are going to want to try it on their low back pain, neck pain, and/or other kinds of muscle pain. Will it work? The only honest answer is, “Who knows?” I have no clinical experience with this yet, and certainly it's unstudied. It might be worth trying, in moderation, with the full awareness that there's every possibility that it could be a waste of time and money.

Here's why it probably won't work ...

Low back pain and neck pain often involve a substantial amount of muscle pain,²² and muscle pain is not particularly inflammatory by nature. Muscle knots (trigger points) are more like *poisoned* muscle than *injured* muscle. Although there's some anecdotal evidence that taking an anti-inflammatory medication reduces muscle pain, mostly it doesn't seem to work very well. One of the classic signs of low back pain powered by muscle, for instance, is that ibuprofen doesn't have much effect!

A topical NSAID gel isn't likely to either.

Also, many painful factors in neck, back and muscle pain are deep inside the body — probably much deeper than Voltaren® Gel can “reach.” For instance, if your low back pain is coming from the facet joints — small joints deep in the spine, under a thick layer of muscle — chances are that a topical treatment simply doesn't stand a chance of having an effect.

That said, why not try it? It's almost certainly *safer* than popping ibuprofen! Although not tested and approved for reckless experimentation on any pain problem, obviously the entire point of Voltaren® Gel is to *limit* exposure to the active ingredient. So you might choose to experiment — taking full responsibility for your actions, of course, and not suing me if something goes horribly wrong, because of course I'm not actually *recommending it*. 😊 Seriously: just run it by your doctor.



About Paul Ingraham



I am a science writer, former massage therapist, and I was the assistant editor at ScienceBasedMedicine.org for several years. I have had my share of injuries and pain challenges as a runner and [ultimate](#) player. My wife and I live in downtown Vancouver, Canada. See my [full bio and qualifications](#), or my blog, [Writerly](#). You might run into me on [Facebook](#) or [Twitter](#).