

## Consumer Digest Magazine

### The Painful Truth

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*Chronic pain frustrates sufferers and physicians alike. Pain specialists are still few in number and concerns have been raised about certain prescription drugs. The good news is that a variety of treatments, both traditional and alternative, promise to help millions manage their pain.*

From the time she was 7, Cynthia Toussaint knew exactly what she wanted to be when she grew up: a dancer and performer. By age 21, she was living her dream, dancing four to five hours a day as a dance major at the University of California-Irvine and preparing to interview for the television program "Fame." Then she tore a hamstring, a seemingly minor injury that turned into a serious medical condition.

Abruptly, the dream ended. And the nightmare began.

Almost overnight, Toussaint joined an estimated 50 million Americans who suffer from chronic, debilitating pain. And, like many chronic pain sufferers, it took years and dozens of doctors before she received a diagnosis and treatment—years during which she thought often about killing herself, because no one seemed to believe her agony.

"Pain is a huge problem, just huge," says Sean Mackey, MD, PhD, an assistant professor of anesthesiology and pain medicine at Stanford University School of Medicine in California. "Chronic pain is one of the primary reasons patients go to see the doctor, and the number one reason people are out of work in our society."

Overall, notes Mackey, Americans spend an estimated \$100 to \$200 billion a

year on direct and indirect costs related to chronic pain.

Indeed, a 2005 nationwide survey sponsored by Stanford University Medical Center, ABC News and *USA Today* found that more than half of all Americans have either on-again, off-again pain or daily chronic pain, with about four in 10 saying their pain interfered with work, mood, day-to-day activities, sleep and their overall enjoyment of life.

Plus, studies find significantly higher rates of depression and anxiety in people with chronic pain, both of which, ironically, serve to make the pain worse.

Sometimes, the pain is so bad death seems like the only escape. In fact, one study found patients with chronic pain committed suicide at rates two to three times that of the general population.

Toussaint, now 44 and living in Los Angeles, nearly became a part of that statistic. For years, the only way she got through her painful days was knowing she had enough pills stashed to end her life. "Life was so dark," she recalls. "There just was no light at the end of the tunnel."

### **Seeking Alternatives**

Given how difficult it is to treat chronic pain, it's no wonder that millions of Americans turn to alternative therapies for relief. In fact, back/neck pain is the number-one condition for which Americans seek alternative or complementary medical care (CAM), with one-third of Americans with back problems visiting CAM practitioners in 1997, and about 22 percent of Americans who used CAM in 2002 using it for back or neck pain. There's actually pretty good evidence that alternative pain therapies can work.

For instance, an analysis of 22 studies on acupuncture found it relieved lower back pain better than a fake treatment (placebo) or no treatment at all, while other studies have found it also works well for osteoarthritis of the knee. In

fact, a 2005 Stanford/ABC/USA Today poll found 5 percent of American adults have turned to acupuncture for pain relief.

In addition, several studies found that spinal manipulation and massage can also relieve back pain, sometimes better than more traditional treatments.

Today, even rheumatologists recommend the nutritional supplements chondroitin and glucosamine to patients with osteoarthritis, while mind/body therapies like meditation, visual imagery and cognitive behavioral therapy are established treatments at many pain clinics.

Other alternative options for pain include:

Biofeedback. Often used for headache pain. You learn to gain control over certain automatic body functions, like muscle tension and heart rate, and use this control to change your response to pain.

Hypnosis. Thought to help with pain relief by acting on certain chemicals in the nervous system, slowing pain signals.

Exercise, including yoga, is also an important therapy for pain, with numerous studies finding it can help with lower back pain.

**Understanding Pain.** Ask someone to describe the worst pain they've ever had and chances are what they're describing will be *acute* pain, such as the pain of childbirth, passing a kidney stone, waking up after surgery or breaking your arm. In other words, acute pain is directly related to an underlying cause or event.

This kind of pain occurs when electrical signals from the damaged or stressed tissue travel to the brain in a process called *nociception*. The pain itself doesn't occur until those signals hit the brain. Or, as Mackey likes to say, "No brain, no pain."

Chronic pain, on the other hand, is any pain that persists longer than what you'd

expect after the injury or underlying cause has healed or ended. Doctors used to set time limits—any pain lasting longer than three months was considered chronic pain—"but we're moving away from that," Mackey says.

The perception of chronic pain exists without the electrical stimulus. For instance, let's say you hurt your neck in a car accident five years ago. Although doctors keep telling you the injury has healed, you still have the pain. That's because your nervous system is now generating its own electrical signals to the brain, so you continue to perceive pain. It's as if the feedback loop from the brain to the tissue and back again has become stuck in the "on" position.

What's interesting is which part of the brain is responsible for that perception; it's not just one, but two, says Mackey. One area of the brain handles the sensory aspect of the pain—how it feels, the location, its quality and character—while the other is involved with the emotional aspect of pain, i.e., how you perceive the suffering from the pain.

This latter area of the brain also processes basic emotions such as fear, hate, love and anxiety. "So when we're fearful or angry or stressed, these emotional areas of the brain get revved up and, lo and behold, they amplify the same areas of the brain involved with the processing of pain," he says. Ergo, the pain gets worse.

Also, Mackey explains, chronic pain actually rewires the circuits in the brain, causing brain abnormalities as a consequence of the pain itself. Treatment—even learning to reframe how you think about the pain and its effect on your life—can reverse some of those changes.

**Getting a Diagnosis.** Although doctors are getting better at diagnosing and treating chronic pain, "We have a tremendous way to go," says Mackey.

One reason is that, unlike diabetes or high blood pressure, there's no objective test for pain, leaving doctors frustrated and uncomfortable when it comes to

treatment, says Anita J. Tarzian, PhD, RN, a former hospice nurse who is now a healthcare ethics consultant and chronic-pain expert based in Baltimore.

"They can't see it, they can't confirm it, and they have to go by someone else's word," Tarzian explains. "[Medical professionals] like to have evidence to back up their decisions." That's especially important because many of the drugs available to control pain could be illegally diverted, sold and used by people to get high, possibly getting the physician in trouble.

Plus, pain is different for every individual. , says Mackey. For instance, how you perceive pain depends on your cultural upbringing, your personal circumstances and even your gender. Studies have found that women are more sensitive to pain and more likely to seek treatment than men. , So treating pain can be like trying to pin down a constantly moving target.

That's one reason chronic pain is significantly undertreated in the United States. The American Pain Foundation estimates that one in four patients in pain can't get treatment, while a 1999 Roper Starch survey, "Chronic Pain In America: Roadblocks To Relief" found just over one-half of chronic pain sufferers say their pain is pretty much under control. Those with the most severe pain, however, don't have it under control, the survey found. , The situation is even worse for racial and ethnic minorities, who are much less likely to receive treatment for pain than whites.

About 40 percent of chronic-pain sufferers don't even see a doctor for their pain, the Roper Starch survey found, because they feel doctors can't help. Others change doctors because they're still having pain after treatment, their pain isn't being taken seriously, or the doctor is unwilling to aggressively treat their pain or lack knowledge about it.

In fact, doctors get very little training in pain management, says Mackey. "We are still faced with the fact that there is not nearly enough education in our medical schools about either acute or chronic pain," he says. That means there are not

enough well-trained pain physicians to go around. Indeed, as of February 2005, the American Board of Pain Medicine had certified about 1,900 doctors as pain specialists—about one for every 20,000 people who need care.

For years, doctors told Toussaint she was crazy, that her pain, which eventually forced her into a wheelchair and onto disability, was all in her head. "It got to the point that I wouldn't go to the doctor because I didn't want the shame and guilt of being told I was crazy," she says.

Eventually, Toussaint was diagnosed with reflex sympathetic dystrophy syndrome (RSDS), also known as complex regional pain syndrome—a chronic pain condition marked by severe, burning pain and hypersensitivity to sensation—and finally received treatment that partially restored function.

Toussaint's experience is particularly common with women, says Tarzian, who co-authored a seminal review article that was published in the *Journal of Law and Medical Ethics* in the spring of 2001 on how the medical profession treats women with chronic pain. For instance, research finds that women in chronic pain experience "disbelief or other obstacles at their initial encounters with health-care providers," and that they're more likely than men to be given tranquilizers and antidepressants than pain medication.

Tarzian herself faced that kind of bias. When she began suffering a miscarriage two months into her pregnancy, her doctor told her it would feel like a heavy period and sent her home without any pain medication.

"It wasn't a heavy period, there was excruciating pain," she recalls. It was so bad she lay on the floor screaming. Finally her husband took her to the emergency room, where she practically had to beg for narcotic pain relief.

## **COX-2 Inhibitors: What Happened?**

Millions of Americans found themselves grappling for new pain-relief options in late 2004, when two major pain relievers, rofecoxib (Vioxx) and valdecoxib (Bextra) were abruptly pulled from the market after studies found they could significantly increase the risk of heart attack in regular users.

Rofecoxib and valdecoxib belonged to the blockbuster class of pain drugs known as COX-2 inhibitors, which are non-steroidal anti-inflammatories (NSAIDs). When first introduced in 1998, they were heralded as miraculous breakthroughs for their ability to provide pain relief without causing stomach irritation like aspirin and other NSAIDs.

However, these drugs also have certain cardiovascular risks that we're just now beginning to understand, says Steven Chen, PharmD, an assistant professor of clinical pharmacy at the University of Southern California School of Pharmacy in Los Angeles. Chen says they seem to contribute to the constriction of blood vessels, increasing blood pressure and making blood platelets stickier, all of which can increase the risk of heart attack.

Nonetheless, notes John Meyerhoff, MD, a rheumatologist and assistant professor of internal medicine at Johns Hopkins University in Baltimore, if you're under 60, don't have diabetes, high cholesterol, high blood pressure or previously diagnosed heart disease, your risk is minimal.

The enhanced scrutiny of COX-2 drugs has also sparked closer investigation of other NSAIDs, including common over-the-counter (OTC) medications like naproxen (Aleve) and ibuprofen (Motrin). The result? Significantly stronger warnings on most OTC and prescription non-narcotic painkillers, including aspirin.

All drugs have potential risks, says Chen. Even plain aspirin can cause stomach bleeding so severe that some experts doubt it would be approved as

a new drug in today's regulatory climate.

The key, he says, is to take the right level of pain relief for your condition. Chen recommends starting with acetaminophen (Tylenol), which is effective in managing osteoarthritis pain without the gastrointestinal bleeding risks of NSAIDs. A couple of caveats: Avoid acetaminophen if you have any liver damage or are a heavy drinker (three or more drinks a day), and watch out for kidney damage if you take it long-term.

Acetaminophen has one other drawback: it doesn't help with the pain of inflammation. For that, Chen recommends nonacetylated salicylates such as salsalate (Disalcid) or diflunisal (Dolobid) before making the leap to prescription NSAIDs. "Prescribers forget this class of drugs because of all the heavy advertising for the NSAIDs," he says, "but they're much safer than anything else out there." Not only do they help maintain the stomach's protective lining, but they show fewer signs of contributing to kidney problems. The only drawback is that there are no OTC versions.

Meanwhile, keep your eyes peeled for new drugs on the horizon, including 5-LOX/COX inhibitors, which work on two different pro-inflammatory pathways. With greater anti-inflammatory effects and fewer side effects, he says, "I think they will pan out to be quite successful."

**Treating Pain.** Thankfully, we've come a long way from the days when opium-and-hemlock soaked sponges were the primary means of pain relief. Today's pain specialists have an arsenal of treatments available, ranging from medications to mind/body therapies to surgical interventions that disrupt the pain signals themselves.

What specialists are learning is that no single approach works best. "Studies have shown pretty conclusively that it's the comprehensive, interdisciplinary pain



approaches that are the most effective in helping people get better," says Mackey.

Unfortunately, he notes, "We have a lot of people who can practice little bits and pieces" of these approaches, but few who know how to put them all together.

The most common treatment for pain is, of course, medication. New insights into the molecular and cellular mechanisms of pain mean specialists can target drugs for the specific underlying mechanism of the pain, says Mackey.

For instance, if you have diabetic neuropathy (nerve-related pain), your doctor might start with sodium channel blockers like lidocaine or ketamine, which block nerve conduction of pain signals. If more relief is needed, the doctor might add a drug that prevents pain signals from reaching the brain such as the antidepressant Cymbalta, the first drug specifically approved to treat diabetic neuropathy.

Other options include anti-convulsant drugs like gabapentin (Neurontin), often prescribed off label for neuropathic pain because they stabilize nerve cells, soothing their excitability so they aren't constantly firing, says Mark McLaughlin, MD, a neurosurgeon with Princeton Brain and Spine in Langhorne, Pa.

"In treating chronic pain," says Mackey, "we take our medications from almost every other field of medicine—neurology, cardiology, psychology—because they work on the central nervous system to reduce the abnormal signals that lead to pain."

Still, opiates (narcotics) such as codeine remain the first-line treatment for chronic pain. These drugs, most of which still rely on morphine or some version of it as their active ingredient, work by attaching to opioid receptors in the brain, preventing pain messages from getting through. They're best for unrelenting pain, says Steven Chen, PharmD, an assistant professor of clinical pharmacy at the University of Southern California School of Pharmacy in Los Angeles.

While opiates may have side effects such as nausea and dizziness, they don't damage the kidneys, liver or stomach and have few drug interactions. They don't work for everyone and can lead to dependence; however, Chen says there's no evidence that cancer patients, who are most likely to need this level of pain relief, ever become dependent.

Nonetheless, doctors are often loath to prescribe narcotics, worried about the potential for abuse and their own liability. In one survey of 897 cancer doctors, 61 percent named their own reluctance to prescribe opioids as the second most important barrier to providing pain relief to their patients. The first was their own inability to assess pain.

These days, however, doctors might want to worry about their liability if they *undertreat* patients' pain. Families are suing doctors who let their loved ones linger or die in pain, and state medical boards have begun cracking down, says Tarzian, developing guidelines to help physicians adequately prescribe pain medication. California, for instance, has made continuing-education credits in pain management mandatory for all physicians. And the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), which evaluates and accredits more than 15,000 health care organizations and programs in the U.S., now requires those organizations meet standards for the assessment and management of pain.

But you don't always need big-gun narcotics, says Chen. The most common forms of chronic pain, osteoarthritis and lower back pain, can usually be managed with analgesics: over-the-counter (OTC) and prescription pain relievers that include acetaminophen (Tylenol) and non-steroidal anti-inflammatories (NSAIDs) such as ibuprofen (Motrin), naproxen (Aleve), aspirin and COX-2 inhibitors like celecoxib (Celebrex). With the exception of acetaminophen, these pain relievers work best on pain resulting from inflammation, such as muscle and arthritic pain or pain from conditions like fibromyalgia and lupus.

And don't forget topical treatments, including heat and ice (either the old-

fashioned way with an ice bag or heating pad, or with the newer hot and cold patches and wraps) and analgesic creams and patches. One study found a continuous low-level heat wrap worked better at relieving low-back pain than either acetaminophen or ibuprofen.

Chen advises ice for acute musculoskeletal injuries such as ankle sprains, but warns against heat for inflammation-related pain. Heat can make inflammation worse by dilating blood vessels and increasing swelling.

**Blocking Pain Signals at the Source.** Sometimes, however, even the strongest drugs (think methadone) can't touch the pain. Or if they make the pain go away, they leave you so woozy and tired that you feel like you're moving through Jell-O.

That's what happened to Janine Willis, a 43-year-old mother of two who was incapacitated with chronic neck pain for years. "Your family falls apart, your house falls apart, I was in bed half the day," recalls Willis, who lives in Castro Valley, Calif.

At the Stanford Pain Management Center, however, she received a sophisticated test to see if opiates even worked for her. After more than 10 years going from one narcotic to another, she learned for sure what she'd always suspected: they didn't.

What *did* work was a relatively new device called a neurostimulator. The gadget, about the size of a stopwatch, is implanted under the skin, with electrodes positioned to deliver electrical stimulation to a specific area on the spinal cord to block pain signals from reaching the brain. The minute it was turned on, Willis' pain stopped.

"It's an amazing thing," says Willis, who has also regained function in her right hand, arm and shoulder, that had been lost to nerve damage from her injury. "I just turn it on and the pain stops immediately. No waiting 20 minutes for a pill to kick in."

Now, she says, she can make dinner for her family, travel long distances to her son's soccer games, work in her beloved garden and prune the 30-odd fruit trees in her backyard.

Willis was lucky; she found the Stanford Pain Management Center. Such comprehensive, interdisciplinary pain centers typically offer a variety of therapies ranging from medication to surgery to alternative options, and use a team approach to identify and treat your pain. The goal isn't just to eliminate your pain, warns Mackey, but to help you find ways to fully participate in your life despite the pain.

"Whenever a patient's pain has had a significant impact on their quality of life or function, and has not been responsive to treatment by their primary doctor or other subspecialists," it's time to consider a pain clinic, he says.

The National Institute of Neurological Disorders and Stroke estimates that more than 800 pain clinics operate throughout the country, although they differ in their approaches.

There are two main types of pain clinics, notes Mackey: modality-oriented clinics that focus on a specific treatment such as massage, acupuncture, or epidural steroids; and, the most in the United States: single discipline pain clinics, which focus on the diagnosis and management of patients with pain and may specialize in specific pain disorders (eg, back pain, headaches).

"The data is quite clear that centers that offer comprehensive integrated services are the most successful in helping improve patients' quality of life, functioning and pain" says Mackey.

Since there is no national accrediting organization for pain clinics, ask your doctor for a recommendation. In addition to the treatments already discussed, pain clinics and individual physicians may offer other procedures for pain management, including:

**Radiofrequency lesioning.** A needle with a thermal tip is inserted into the area of the nerve root serving the painful area. The needle's tip is heated and the nerve root destroyed.

**Epiduroscopy.** A small, flexible fiberoptic catheter is inserted into the spaces between the spinal vertebrae to remove scar tissue from the nerve roots and decrease pain.

**Transcutaneous electrical nerve stimulation (TENS).** TENS is sort of like an external version of neurostimulation. A mild electrical current is delivered to the painful area on the body, where it interferes with pain messages. The effect can last for hours or even days after the treatment.

**Oh, My Aching Back.** Back pain is the most common type of chronic pain. According to the North American Spine Society, an estimated one out of every 14 people will seek medical care for back or neck pain this year, leading to 14 million doctor visits. Overall, 80 percent of people over age 30 will experience back problems at some point in their lives, and one-third of will have recurring problems.

"It's an epidemic in the United States," says McLaughlin, particularly because obesity, which is also an epidemic, exacerbates back pain.

The most common cause of back pain, says McLaughlin, is muscular strain, usually from relatively minor trauma like lifting or gardening or doing some other activity you don't usually do, he says. Second is osteoarthritis of the spine caused by simple wear and tear on the joints in the spine. Third is bulging or herniated discs, in which the "shock absorbers" of the spinal cord become compacted under the weight of the vertebrae themselves and bulge out like underinflated tires. Those bulges can rub against nerves, triggering pain.

About 80 percent of the time, McLaughlin says, herniated discs improve without surgery, requiring only anti-inflammatories, physical therapy or, in some instances, injected steroids to relieve the inflammation and pain.

Sometimes, though, surgery is the answer. Three years ago, what used to be

bearable back pain became excruciating for William Scott, 40, a builder from Bricktown, N.J. It got so bad the father of two couldn't even walk. It turned out Scott had fractured two vertebrae in a car accident more than a decade before, crushing the discs. Now the crushed discs were impacting the nerves in his spine.

For six months, says Scott, "I couldn't sleep, I couldn't walk, I couldn't do anything. I just stayed on the couch. I wouldn't go to any family events; it's like my life changed dramatically."

But after McLaughlin performed spinal fusion surgery, in which the two damaged vertebrae were welded together so they no longer moved, the pain disappeared. The results were so spectacular that Scott, who coaches wrestling and also competes in ultimate fighting was able to go back into the arena with no negative repercussions.

Surgery isn't for everyone, warns McLaughlin, and recovery can be tough. However, new surgical techniques, even artificial discs, are making for less invasive surgeries and faster recoveries.

**Use Your Head.** Interestingly, some of the more powerful pain treatments don't come from a shot, a pill or a medical device. They come from your mind.

The power of the mind over pain is enormous.. Studies show, for instance, that listening to music can reduce the perception of pain in cancer patients and older adults with chronic osteoarthritis. When music is played during or after surgery or painful medical procedures, patients experience less pain and use less pain medication.

Mackey and his colleagues are training chronic-pain sufferers to reduce their perception of pain by showing them the pain signals in their brain during a functional MRI scan. Patients learn to relax, and as they relax, they can see the pain signals fade. Eventually, they learn to reduce the pain via relaxation

techniques without having to "see" it on the MRI.

Even changing your expectations can help, says Mackey. For instance, he spends a lot of time helping patients understand that his role isn't to eliminate their pain completely, but to help them live more productive, happier lives. "It's a reframing of their thoughts and the meaning of pain," he says. It also puts control back into their hands, and that, say people like Toussaint and Willis, is all any pain sufferer could ever want.

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