

Chronic Pain: FAQs

Is all pain the same?

What was the worst pain you can remember? Was it the time you scratched the cornea of your eye? Was it a kidney stone? Childbirth? Mercifully, relief finally came. Your eye healed, the stone was passed, the baby born. In each of those cases pain flared up in response to a known cause. With treatment, or with the body's healing powers alone, you got better and the pain went away. Doctors call that kind of pain *acute* pain. It is a normal sensation triggered in the nervous system to alert you to possible injury and the need to take care of yourself.

Chronic pain is different. Chronic pain persists. Fiendishly, uselessly, pain signals keep firing in the nervous system for weeks, months, even years. There may have been an initial mishap--a sprained back, a serious infection--from which you've long since recovered. There may be an ongoing cause of pain--arthritis, cancer, ear infection. But some people suffer chronic pain in the absence of any past injury or evidence of body damage. The varieties of misery are as many as its sufferers. Your pain is an interplay of your own particular biological, psychological and cultural makeup. Whatever the matter may be, chronic pain is real, unremitting, and demoralizing--the kind of pain New England poet Emily Dickinson had in mind when she wrote:

Pain--has an Element of Blank--

It cannot recollect

When it begun--or if there were

A time when it was not

What is the difference between acute and chronic pain?

Acute pain is temporary, related to the physical sensation of tissue damage. It can last from a few seconds to several months, but generally subsides as normal healing occurs. Examples include a burn, a fracture, an overused muscle, or pain after surgery. Cancer pain may be long-lasting but acute due to ongoing tissue damage.

Chronic pain lingers long beyond the time of normal healing. Some chronic pain is due to damage or injury to nerve fibers themselves (neuropathic pain). Although it may begin as acute pain, neuropathic pain often develops gradually and becomes chronic pain that's difficult to treat. Chronic pain can result from diseases, such as shingles and diabetes, or from trauma, surgery or amputation (phantom pain). It can also occur without a known injury or disease. Like a gate that's blocked open, nerves continue to send pain messages even though there is no continuing tissue damage.

Chronic pain ranges from mild to disabling and can last from a few months to many years. Significant emotional and psychological components may develop. The essential ingredient is that the chronic pain changes your behavior. For example: You experience the actual physical sensation of acute pain--the immediate, sharp stab in arthritic finger

joints as you try to open a lid. Next is the emotional response--your anger and frustration with fumbling fingers. Eventually, behavior changes may occur. You may avoid using aching fingers and hands. Your hands become weak from inactivity, and you depend on others for assistance. Chronic pain can result in lowered self-esteem, sadness, anger and depression. Over the long term, a sense of helplessness to control chronic pain can lead you to develop characteristic "pain behavior." Behavioral changes can become habitual--crutches that can undermine your ability to effectively manage your pain.

What can happen to a person who has chronic pain?

Pain of such proportions overwhelms all other symptoms and becomes the problem. People so afflicted often cannot work. Their appetite falls off. Physical activity of any kind is exhausting and may aggravate the pain. Soon the person becomes the victim of a vicious circle in which total preoccupation with pain leads to irritability and depression. The sufferer can't sleep at night and the next day's weariness compounds the problem--leading to more irritability, depression, and pain. Specialists call that unhappy state the "terrible triad" of suffering, sleeplessness, and sadness, a calamity that is as hard on the family as it is on the victim. The urge to do something--anything--to stop the pain makes some patients drug dependent, drives others to undergo repeated operations or worse, resort to questionable practitioners who promise quick and permanent "cures."

What kind of pain do Pain specialists treat?

- *Headache.* At least 40 million Americans suffer chronic recurrent headaches and spend \$4 billion a year on medications. Migraine sufferers alone account for 65 million workdays lost annually.
- *Low back pain.* Fifteen percent of the adult U.S. population have had persistent low back pain at some time in their lives. Five million Americans are partially disabled by back problems, and another 2 million are so severely disabled they cannot work. Low back pain accounts for 93 million workdays lost every year and costs over \$5 billion in health care.
- *Cancer pain.* The majority of patients in intermediate or advanced stages of cancer suffer moderate to severe pain. More than 800,000 new cases of cancer are diagnosed each year in the U.S., and some 430,000 people die.
- *Arthritis pain.* The great crippler affects 20 million Americans and costs over \$4 billion in lost income, productivity and health care.
- Other pain disorders like the neuralgias and neuropathies that affect nerves throughout the body, pain due to damage to the central nervous system (the brain and spinal cord), as well as pain where no physical cause can be found--psychogenic pain.

Why does it seem more people have pain today?

Many chronic pain conditions affect older adults. Arthritis, cancer, wear and tear--commonly take their greatest toll among the middle-aged and elderly. So the fact that Americans are living longer contributes to a widespread and growing concern about pain.

How do Doctors evaluate pain?

Pain is subjective, but there are ways to measure it. Doctors may use questionnaires, have you fill out a pain-rating scale, or have you select words that best describe your pain. When repeated attempts to find a cause fail, and treatments aren't effective, you may benefit from a team approach offered by a pain clinic. A thorough evaluation may involve specialists in anesthesiology, neurology, psychology and psychiatry, rheumatology, physiatry and physical therapy. The goal is to treat all facets of your pain. Specialized tests can evaluate how your body senses nerve impulses and how the impulses travel through your nervous system. Imaging techniques, such as X-rays, computed tomography (CT), magnetic resonance imaging (MRI), bone scans and ultrasound, may help detect problems in bones, muscles, joints and soft tissue.

Is it better to have pain and take less medication after surgery, or not?

Patients and their doctors may be unduly concerned about the use of narcotics in treating acute pain. But addiction is rare when narcotics are used for short-term relief of acute pain. It may become a problem when narcotics are inappropriately used for chronic pain relief. Adequate acute pain control following surgery is important because it can allow you to recover your strength faster and start walking earlier. This can help you avoid problems, such as pneumonia and blood clots, due to inactivity. Inadequately treated acute pain can prolong recovery and make you more susceptible to chronic pain. Continued pain messages enhance subsequent pain responses. Peripheral pain receptors become more sensitive. And continued pain may cause long-lasting modifications in nerve cells along spinal cord pain pathways. These changes make established pain harder to suppress. As pain persists, feelings of anxiety, stress, anger, helplessness and depression can worsen. Tension and pain may initiate a downward pain spiral that's difficult to break. Early, aggressive treatment, and working with your doctor to prepare a pain plan, can help prevent this.

If I have a physical problem, why do I hurt more when I'm stressed?

Pain is not simply a matter of passing messages up and down your spinal cord. When a pain signal reaches your brain, it passes through a filter of your personal experience. Your emotional and psychological state at the moment, memory of past pain experiences, outlook and stress level all affect how you interpret a pain message and your ability to tolerate it. Your upbringing and cultural attitude toward pain also play a role. And your age, level of information about your pain, and even lack of sleep may have an impact.

The emotional responses of shock, fear and anxiety can increase your perception of pain. For example, a minor pain sensation, such as a dentist's probe, combined with anxiety can cause undue pain.

But your emotional state can also diminish major pain messages. One pain study compared survivors of a major battle in World War II with men in the general population of a major U.S. city, matched injury for injury. The combat veterans required less pain relief than those in the general population.

People who learn from upbringing and cultural background that the normal response to pain is great suffering and distress actually experience more pain than people who grow

up in an environment where pain is often ignored. The common expressions "suffer in silence," "bite the bullet," "grin and bear it," and "no pain, no gain" point to American cultural patterns that discourage acknowledgment of pain.

I've heard that endorphins are natural painkillers. Why don't they work for me?

Clinical investigators have tested chronic pain patients and found that they often have lower-than-normal levels of endorphins in their spinal fluid. If you could just boost their stores with man-made endorphins, perhaps the problems of chronic pain patients could be solved.

Not so easy. Some endorphins are quickly broken down after release from nerve cells. Other endorphins are longer lasting, but there are problems in manufacturing the compounds in quantity and getting them into the right places in the brain or spinal cord. In a few promising studies, clinical investigators have injected an endorphin called beta-endorphin under the membranes surrounding the spinal cord. Patients reported excellent pain relief lasting for many hours. Morphine compounds injected in the same area are similarly effective in producing long-lasting pain relief.

But spinal cord injections or other techniques designed to raise the level of endorphins circulating in the brain require surgery and hospitalization. And even if less drastic means of getting endorphins into the nervous system could be found, they are probably not the ideal answer to chronic pain. Endorphins are also involved in other nervous system activities such as controlling blood flow. Increasing the amount of endorphins might have undesirable effects on these other body activities. Endorphins also appear to share with morphine a potential for addiction or tolerance.

How does electrical stimulation work?

Applying brief pulses of electricity to nerve endings under the skin, a procedure called transcutaneous electrical nerve stimulation (TENS), yields excellent pain relief in some chronic pain patients. The stimulation works best when applied to the skin near where the pain is felt and where other sensibilities like touch or pressure have not been damaged. Both the frequency and voltage of the electrical stimulation are important in obtaining pain relief.

Brain stimulation. Another electrical method for controlling pain, especially the widespread and severe pain of advanced cancer, is through surgically implanted electrodes in the brain. The patient determines when and how much stimulation is needed by operating an external transmitter that beams electronic signals to a receiver under the skin that is connected to the electrodes. The brain sites where the electrodes are placed are areas known to be rich in opiate receptors and in endorphin-containing cells or fibers. Stimulation-produced analgesia (SPA) is a costly procedure that involves the risk of brain surgery. However, patients who have used this technique report that their pain "seems to melt away." The pain relief is also remarkably specific: The other senses remain intact, and there is no mental confusion or cloudiness as with opiate drugs. While SPA works, there is a problem: the pain may return after repeated stimulation.

What is the placebo effect?

For years doctors have known that a harmless sugar pill or an injection of salt water can make many a patient feel better--even after major surgery. The placebo effect, as it has been called, has been thought to be due to suggestion, distraction, the patient's optimism that something is being done, or the desire to please the doctor (*placebo* means "I will please" in Latin).

Now experiments suggest that the placebo effect may be neurochemical, and that people who respond to a placebo for pain relief--a remarkably consistent 35 percent in any experiment using placebos--are able to tap into their brains' endorphin systems. To evaluate it, two NINDS- and NIDR-supported investigators at the University of California at San Francisco designed an ingenious experiment. They asked adults scheduled for wisdom teeth removal to volunteer in a pain experiment. Following surgery, some patients were given morphine, some naloxone, and some a placebo. As expected, about a third of those given the placebo reported pain relief. The investigators then gave these people naloxone. All reported a return of pain.

How people who benefit from placebos gain access to pain control systems in the brain is not known. Scientists cannot even predict whether someone who responds to a placebo in one situation will respond in another. The San Francisco investigators suspect that stress may be a factor. Patients who are very anxious or under stress are more likely to react to a placebo for pain than those who are more calm, cool, and collected. But dental surgery itself may be sufficiently stressful to trigger the release of endorphins--with or without the effects of placebo. For that reason, many specialists believe further studies are indicated to analyze the placebo effect.

How does acupuncture work?

Probably no therapy for pain has stirred more controversy in recent years than acupuncture, the 2,000-year-old Chinese technique of inserting fine needles under the skin at selected points in the body. {PRIVATE "TYPE=PICT;ALT=Acupuncture points"}The needles are agitated by the practitioner to produce pain relief which some individuals report lasts for hours, or even days. Does acupuncture really work? Opinion is divided. Many specialists agree that patients report benefit when the needles are placed near where it hurts, not at the body points indicated on traditional Chinese acupuncture charts. The case for acupuncture has been made by investigators who argue that local needling of the skin excites endorphin systems of pain control. Wiring the needles to stimulate nerve endings electrically (electroacupuncture) also activates endorphin systems, they believe. Further, some experiments have shown that there are higher levels of endorphins in cerebrospinal fluid following acupuncture.

Those same investigators note that naloxone injections can block pain relief produced by acupuncture. Others have not been able to repeat those findings. Skeptics also cite long-term studies of chronic pain patients that showed no lasting benefit from acupuncture treatments. Current opinion is that more controlled trials are needed to

define which pain conditions might be helped by acupuncture and which patients are most likely to benefit. {PRIVATE "TYPE=PICT;ALT=electrostimulator used by patient"}

Are there any new drugs being developed?

Chemists are synthesizing new analgesics and discovering painkilling virtues in drugs not normally prescribed for pain. Much of the drug research is aimed at developing nonnarcotic painkillers. The motivation for the research is not only to avoid introducing potentially addictive drugs on the market, but is based on the observation that narcotic drugs are simply not effective in treating a variety of chronic pain conditions.

Developments in nondrug treatments are also progressing, ranging from new surgical techniques to physical and psychological therapies like exercise, hypnosis, and biofeedback.

I have such bad pain, and my pain specialist insists I take an anti-inflammatory. Why?

When you complain of headache or low back pain and the doctor says take two aspirins every 4 hours and stay in bed, you may think your pain is being dismissed lightly. Not at all. Aspirin, one of the most universally used medications is an excellent painkiller. Scientists still cannot explain all the ways aspirin works, but they do know that it interferes with pain signals where they usually originate, at the nociceptive nerve endings outside the brain and spinal cord: peripheral nerves. Aspirin also inhibits the production of chemicals manufactured in the blood to promote blood clotting and wound healing: Prostaglandins. Unfortunately, prostaglandins, released from cells at the site of injury, are pain-*causing* substances. They actually sensitize nerve endings, making them--and you--feel more pain. Along with increasing the blood supply to the area, the chemicals contribute to inflammation--the pain, heat, redness and swelling of tissue damage.

{PRIVATE "TYPE=PICT;ALT=The Opium Poppy"}

Some investigators now think that the continued release of pain-causing substances in chronic pain conditions may lead to long-term nervous system changes in some patients that make them hypersensitive to pain. People suffering such *hyperalgesia* can cry out in pain at the gentlest touch, or even when a soft breeze blows over the affected area. In addition to the prostaglandins, blister fluid and certain insect and snake venoms also contain pain-causing substances. Presumably these chemicals alert you to the need for care--a fine reaction in an emergency, but not in chronic pain.

How do antidepressants work on pain?

Interestingly, pain patients who benefit from anti-depressants report pain relief before any uplift in mood. Pain specialists think that the antidepressant works because it increases the supply of a naturally produced neurotransmitter, serotonin. (Doctors have long associated decreased amounts of serotonin with severe depression.) But now scientists have evidence that cells using serotonin are also an integral part of a pain-controlling pathway that starts with endorphin-rich nerve cells high up in the brain and ends with inhibition of pain-conducting nerve cells lower in the brain or spinal cord.

Antidepressant drugs have been used successfully in treating the excruciating pain that can follow an attack of shingles.

My Doctor said an epilepsy drug can help my pain, how can this be?

Antiepileptic drugs have been used successfully in treating nerve pain such as tic douloureux, the riveting attacks of facial pain that affect older adults. The rationale for the use of the antiepileptic drugs does not involve the endorphin system. It is based on the theory that a healthy nervous system depends on a proper balance of incoming and outgoing nerve signals. Tic and other facial pains or neuralgias are thought to result from damage to facial nerves. That means that the normal flow of messages to and from the brain is disturbed. The nervous system may react by becoming hypersensitive: It may create its own powerful discharge of nerve signals, as though screaming to the outside world "Why aren't you contacting me?" Antiepileptic drugs--used to quiet the excessive brain discharges associated with epileptic seizures--quiet the distress signals associated with tic and may relieve pain that way.

What is tramadol?

Tramadol (Ultram) is a synthetic analgesic used primarily for chronic pain, but is also prescribed for acute pain. Side effects may include dizziness, drowsiness, nausea, constipation and sweating.

What is Imitrex?

Sumatriptan (Imitrex), available in many forms, may reduce pain from migraine headache by constricting blood vessels in your brain. Because the drug may increase blood pressure and constrict arteries to your heart, it's not used for people with uncontrolled high blood pressure or heart disease.

How does capsaicin work?

Capsaicin (Zostrix), a topical cream made from an extract of red peppers, can help relieve skin sensitivity resulting from shingles. It's also used to treat pain from arthritis, cluster headaches, diabetic neuropathy and pain after mastectomy. You may have an initial burning sensation where the cream is applied. Benefits are temporary so you'll need repeated application. Capsaicin probably relieves pain by interrupting transmission of pain messages from nociceptors.

What Psychological methods are effective for pain treatment?

Psychological treatment for pain can range from psychoanalysis and other forms of psychotherapy to relaxation training, meditation, hypnosis, biofeedback, or behavior modification. The philosophy common to all these varied approaches is the belief that patients can do something on their own to control their pain. That something may mean changing attitudes, feelings, or behaviors associated with pain, or understanding how unconscious forces and past events have contributed to the present painful predicament.

- *Psychotherapy.* Freud was celebrated for demonstrating that for some individuals physical pain symbolizes real or imagined emotional hurts. He also noted that some individuals develop pain or paralysis as a form of self-punishment for what

they consider to be past sins or bad behavior. Sometimes, too, pain may be a way of punishing others. This doesn't mean that the pain is any less real; it does mean that some pain patients may benefit from psychoanalysis or individual or group psychotherapy to gain insights into the meaning of their pain.

- *Relaxation and meditation therapies.* Stress increases muscle tension and worsens pain. These forms of training enable people to relax tense muscles, reduce anxiety, and alter mental state. Both physical and mental tension can make any pain worse, and in conditions such as headache or back pain, tension may be at the root of the problem. Meditation and yoga, which aims at producing a state of relaxed but alert awareness, is sometimes combined with therapies that encourage people to think of pain as something remote and apart from them. Listening to music, visualizing a relaxing scene, trying a new hobby or visiting a friend may also help. The methods promote a sense of detachment so that the patient thinks of the pain as confined to a particular body part over which he or she has marvelous control. The approach may be particularly helpful when pain is associated with fear and dread, as in cancer.
- *Family therapy*--Chronic pain can change personalities and unravel relationships. The person with pain feels guilt and family members become stressed taking over additional responsibilities and new roles. The key is to maintain your normal responsibilities and roles as much as possible.
- *Hypnosis.* No longer considered magic, hypnosis is a technique in which an individual's susceptibility to suggestion is heightened. Normal volunteers who prove to be excellent subjects for hypnosis often report a marked reduction or obliteration of experimentally induced pain, such as that produced by a mild electric shock. The hypnotic state does not lower the volunteer's heart rate, respiration, or other autonomic responses. These physical reactions show the expected increases normally associated with painful stimulation. The role of hypnosis in treating chronic pain patients is uncertain. Some studies have shown that 15 to 20 percent of hypnotizable patients with moderate to severe pain can achieve total relief with hypnosis. Other studies report that hypnosis reduces anxiety and depression. By lowering the burden of emotional suffering, pain may become more bearable.
- *Biofeedback.* Some individuals can learn voluntary control over certain body activities if they are provided with information about how the system is working--how fast their heart is beating, how tense are their head or neck muscles, how cold are their hands. The information is usually supplied through visual or auditory cues that code the body activity in some obvious way--a louder sound meaning an increase in muscle tension, for example. How people use this "biofeedback" to learn control is not understood, but some masters of the art report that imagery helps: They may think of a warm tropical beach, for example, when they want to raise the temperature of their hands. Biofeedback may be a logical approach in pain conditions that involve tense muscles, like tension headache or low back pain. But results are mixed. Ask your doctor about where to find help in learning biofeedback techniques.
- *Behavior modification.* This psychological technique (sometimes called operant conditioning) is aimed at changing habits, behaviors, and attitudes that can

develop in chronic pain patients. Some patients become dependent, anxious, and homebound--if not bedridden. For some, too, chronic pain may be a welcome friend, relieving them of the boredom of a dull job or the burden of family responsibilities. These psychological rewards--sometimes combined with financial gains from compensation payments or insurance--work against improvements in the patient's condition, and can encourage increased drug dependency, repeated surgery, and multiple doctor and clinic visits. There is no question that the patient feels pain. The hope of behavior modification is that pain relief can be obtained from a program aimed at changing the individual's lifestyle. The program begins with a complete assessment of the painful condition and a thorough explanation of how the program works. It is essential to enlist the full cooperation of both the patient and family members. The treatment is aimed at reducing pain medication and increasing mobility and independence through a graduated program of exercise, diet, and other activities. The patient is rewarded for positive efforts with praise and attention. Rewards are withheld when the patient retreats into negative attitudes or demanding and dependent behavior.

How effective are any of these psychological treatments?

The answers are not yet in hand for any one individual. Patient selection and patient cooperation are all-important. Analysis of individuals who have improved dramatically with one or another of these approaches is helping to pinpoint what factors are likely to lead to successful treatment. However, we do know that persistent pain can lead to depression, inactivity, deconditioning and increased dependence on others. Chronic pain can interfere with sleep and eating habits, exercise, social activity and work. Breaking this cycle usually requires a coordinated approach offered in a pain rehabilitation program. Physical, occupational and behavioral therapies, and assistance with the psychological components of chronic pain, are the cornerstones of successful treatment.

Can physical therapy help?

You may fear exercise will increase pain, but if you start gently and increase gradually, exercise usually doesn't cause injury or additional pain. A regular program should include stretching, strengthening activities and aerobic exercise, such as walking, swimming or cycling. Slow stretching can relax muscles and release tension. If you have chronic back pain, you may get enough relief from muscle-strengthening exercises alone, thereby avoiding surgery.

Occupational therapy can also help you return to ordinary tasks around your home and work. Focusing on home responsibilities, work or volunteer activities--perhaps for limited hours at first--is a first step in pain rehabilitation.

Can surgery help?

Surgery is often considered the court of last resort for pain: When all else fails, cut the nerve endings. Surgery can bring about instant, almost magical release from pain. But

surgery may also destroy other sensations as well, or, inadvertently, become the source of new pain. Further, relief is not necessarily permanent. After 6 months or a year, pain may return. For all those reasons, the decision for surgery must always involve a careful weighing of the patient's condition and the outlook for the future. If surgery can mean the difference between a pain-wracked existence ending in death, versus a pain-free time in which to compose one's life and see friends and family, then surgery is clearly a humane and compassionate choice.

{PRIVATE "TYPE=PICT;ALT=Spinal Cord Diagram"}

There are a variety of operations to relieve pain. The most common is cordotomy: severing the nerve fibers on one or both sides of the spinal cord that travel the express routes to the brain. Cordotomy affects the sense of temperature as well as pain, since the fibers travel together in the express route.

Besides cordotomy, surgery within the brain or spinal cord to relieve pain includes severing connections at major junctions in pain pathways, such as at the places where pain fibers cross from one side of the cord to the other, or destroying parts of important relay stations in the brain like the thalamus, an egg-shaped cluster of nerve cells near the center of the brain. {PRIVATE "TYPE=PICT;ALT=Descending Spinal Tracts"}

In addition, surgeons sometimes can relieve pain by destroying nerve fibers or their parent cell bodies outside the brain or spinal cord. A case in point is the destruction of sympathetic nerves (a part of the autonomic nervous system) to relieve the severe pain that sometimes follows a penetrating wound from a sharp instrument or bullet. When pain affects the upper extremities, or is widespread, the surgeon has fewer options and surgery may not be as effective. Still, skilled neurosurgeons have achieved excellent results with upper spinal cord or brain surgery to treat severe intractable pain. These procedures may employ chemicals or use heat or freezing treatments to destroy tissue, as well as the more traditional use of the scalpel.

Harvard Medical School surgeons reported success with a brain operation called cingulotomy to relieve intractable pain in patients with severe psychiatric problems. The nerve fibers destroyed are part of a pathway important in emotions and motivation. The surgery appears to eliminate the discomfort and suffering the patient feels, but does not interfere with other mental faculties such as thinking and memory.

Prior to operating, physicians can often test the effectiveness of surgery by using anesthetic drugs to block nerves temporarily. In some chronic pain conditions-- like the pain from a penetrating wound--these temporary blocks can in themselves be beneficial, promoting repair of nerve damage.

How do these current treatments apply to the more common chronic pain conditions?

What follows is a brief survey of major pain disorders and the treatments most in use today.

The major pains

- *Headache.* Tension headache, involving continued contractions of head and neck muscles, is one of the most common forms of headache. The other common variety is the vascular headache involving changes in the pressure of blood vessels serving the head. Migraine headaches are of the vascular type, associated with throbbing pain on one side of the head. Genetic factors play a role in determining who will be a victim of migraine, but many other factors are important as well. A major difficulty in treating migraine headache is that changes occur throughout the course of the headache. Blood vessels may first constrict and then dilate. Changing levels of neurotransmitters have also been noted. While a number of drugs can relieve migraine pain, their usefulness often depends on when they are taken. Some are only effective if taken at the onset. Drugs are also the most common treatment for tension headache, although attempts to use biofeedback to control muscle tension have had some success. Physical methods such as heat or cold applications often provide additional if only temporary relief.
- *Low back pain.* The combination of aspirin, bed rest, and modest amounts of a muscle relaxant are usually prescribed for the first-time low back pain patient. At the initial examination, the physician will also note if the patient is overweight or works at an occupation such as truck-driving or a desk job that offers little opportunity for exercise. Some authorities believe that low back pain is particularly prevalent in Western society because of the combination of overweight, bad posture (made worse if there is added weight up front), and infrequent exercise. Not surprisingly, then, when the patient begins to feel better, the suggestion is made to take off pounds and take on physical exercise. In some cases, a full neurological examination may be necessary, including an x-ray of the spinal cord called a myelogram, to see if there may be a ruptured disc or other source of pressure on the cord or nerve roots.

Sometimes x-rays will show a disc problem which can be helped by surgery. But neither the myelogram nor disc surgery is foolproof. Milder analgesics (aspirin or stronger nonnarcotic medications) and electrical stimulation--using TENS or implanted brain electrodes--can be very effective. What is *not* effective is long-term use of the muscle-relaxant tranquilizers. Many specialists are convinced that chronic use of these drugs is detrimental to the back patient, adding to depression and increasing pain. Massage or manipulative therapy are used by some clinicians but other than individual patient reports their usefulness is still undocumented.

- *Cancer pain.* The pain of cancer can result from the pressure of a growing tumor or the infiltration of tumor cells into other organs. Or the pain can come about as the result of radiation or chemotherapy. These treatments can cause fluid accumulation and swelling (edema), irritate or destroy healthy tissue causing pain and inflammation, and possibly sensitize nerve endings. Ideally, the treatment for cancer pain is to remove the cancerous tissue. When that is not

possible, pain can be treated by any or all of the currently available therapies: electrical stimulation, psychological methods, surgery, and strong painkillers.

- *Arthritis pain.* Arthritis is a general descriptive term meaning an affliction of the joints. The two most common forms are *osteoarthritis* that typically affects the fingers and may spread to important weight-bearing joints in the spine or hips, and *rheumatoid arthritis*, an inflammatory joint disease associated with swelling, congestion, and thickening of the soft tissue around joints. Recently, a distinguished panel of pain experts commenting on arthritis reported that "in all probability aspirin remains the most widely used ... and important drug ... although it may cause serious side effects." In the 1950's the steroid drugs were introduced and hailed as lifesavers--important anti-inflammatory agents modeled after the body's own chemicals produced in the adrenal glands. But the long-term use of steroids has serious consequences, among them the lowering of resistance to infection, hemorrhaging, and facial puffiness--producing the so-called "moonface." Besides aspirin, current treatments for arthritis include several nonsteroidal anti-inflammatory drugs like meloxicam, celecoxib, naproxen, and ibuprofen. But these drugs, too, may have serious side effects. TENS and acupuncture have been tried with mixed results. In cases where tissue has been destroyed, surgery to replace a diseased joint with an artificial part has been very successful. The "total hip replacement" operation is an example. Arthritis is best treated early, say the experts. A modest program of drugs combined with exercise can do much to restore full function and forestall long-term degenerative changes. Exercise in warm water is especially good since the water is both relaxing and provides buoyancy that makes exercises easier to perform. Physical treatments with warm or cold compresses are helpful sources of temporary pain relief.
- *Neurogenic pain.* The most difficult pains to treat are those that result from damage to the peripheral nerves or to the central nervous system itself. We have mentioned tic douloureux and shingles as examples of extraordinarily searing pain, along with several drugs that can help. In addition, tic sufferers can benefit from surgery to destroy the nerve cells that supply pain-sensation fibers to the face. "Thermocoagulation"--which uses heat supplied by an electrical current to destroy nerve cells--has the advantage that pain fibers are more sensitive to the treatment resulting in less destruction of other sensations (touch and temperature). Sometimes specialists treating tic find that certain blood vessels in the brain lie near the group of nerve cells supplying sensory fibers to the face, exerting pressure that causes pain. The surgical insertion of a small sponge between the blood vessels and the nerve cells can relieve the pressure and eliminate pain. Among other notoriously painful neurogenic disorders is pain from an amputated or paralyzed limb--so called "phantom" pain--that affects up to 10 percent of amputees and paraplegia patients. Various combinations of antidepressants, epilepsy drugs and weak narcotics like tramadol are sometimes effective. Surgery, too, is occasionally successful. Many experts now think that the

electrical stimulating techniques hold the greatest promise for relieving these pains.

What can I do to help the Doctor?

Pain treatments work differently for different people. Even when pain doctor uses the right medicines and treatments in the right way, you may not get the pain relief you need. While you are being treated for your pain, tell your doctor or nurse how you feel and if the treatments help. The information you give them will help them to help you get the best pain relief.

Your pain doctor will work to find the right pain medicine and treatments for you. You can help by talking with them about:

- Pain medicines you have taken in the past and how well they have worked for you.
- Medicines and other treatments (including health foods, vitamins, and other "non-medical" treatments) you are taking now. Your doctor or nurse needs to know about other treatments you are trying and other medicines you take. This is important because some treatments and medicines do not work well together. Your doctor or nurse can find medicines that can be taken together.
- Allergies that you have, including allergies to medicines.
- Fears and concerns that you have about the medicine or the treatment. Talk to your doctor or nurse about your fears and concerns. They can answer your questions and help you to understand your pain treatment.
- Any previous health problems. Bring in records, x-rays, or reports from your other Doctors will help speed the process. Your pain Doctor will want to make sure he is not causing a conflict with other therapy or aggravating an existing condition.

What is the bottom line?

Pain may be universal--perhaps even unavoidable. But it doesn't have to control your life. The keys to successful pain control are early treatment, ongoing assessment, and clear communication between you and your doctor.

For more information about pain management, go to www.newportpain.com or call Newport Pain Management at 949—759-8400 for an appointment. {PRIVATE "TYPE=PICT;ALT=NINDS-supported pain clinic"}

Reference:

National Institute of Neurological Disorders and Stroke, *Chronic Pain: Hope Through Research* Originally published November 1989 (NIH Publication No. 90-2406)