

## **The Tragedy of Needless Pain**

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"Pain" as Albert Schweitzer once said, "is a more terrible lord of mankind than even death itself." Prolonged pain destroys the quality of life. It can erode the will to live, at times driving people to suicide. The physical effects are equally profound. Severe, persistent pain can impair sleep and appetite, thereby producing fatigue and reducing the availability of nutrients to organs. It may thus impede recovery from illness or injury and, in weakened or elderly patients, may make the difference between life and death.

Sadly, there are some kinds of pain that existing treatments cannot ease. That care givers can do little in these cases is terribly distressing for everyone involved but is certainly understandable. What seems less understandable is that many people suffer not because their discomfort is untreatable but because physicians are often reluctant to prescribe morphine. Morphine is the safest, most effective analgesic (painkiller) known for constant, severe pain, but it is also addictive for some people. Consequently, it is typically meted out sparingly, if it is given at all.

Indeed, concern over addiction has led many nations in Europe and elsewhere to outlaw virtually any uses of morphine and related substances, including their medical applications. Ever where morphine is a legal medical therapy, as it is in Great Britain and the U.S., many care givers, afraid of turning patients into addicts, deliver amounts that are too small or spaced too widely to control pain.

Yet the fact is that when patients take morphine to combat pain, it is rare to see addiction-which is characterized by a psychological craving for a substance and, when the substance is suddenly removed, by the development of withdrawal symptoms (for example, sweating, aches and nausea). Addiction seems to arise only in some fraction of morphine users who take the drug for its psychological effects, such as its ability to produce euphoria and relieve tension.

Furthermore, patients who take morphine for pain do not develop the rapid physical tolerance to the drug that is often a sign of addiction. Many people who are prone to addiction quickly require markedly escalating doses to achieve a desired change of mood, but patients who take the drug to control pain do not need sharply rising doses for relief. They may develop some tolerance initially, but their required dose usually rises gradually and then stabilizes.

I do not suggest that morphine be prescribed indiscriminately. I do urge lawmakers, law-enforcement agencies and health-care workers to distinguish between the addict who craves morphine for its mood-altering properties and the psychologically healthy patient who takes the drug only to relieve pain.

Morphine is a constituent of opium, which has been a medical therapy for longer than 2,000 years, since at least ancient Roman times. Opium is made by extracting a milky juice from the unripe capsule, or seedpod, of the poppy *Papaver somniferum* (grown abundantly in many Middle Eastern countries) and then drying the exudate to form a gum. This gum-the opium-can be eaten as is or added to a beverage.

By the 16th century opium was being carried by traders to Europe and the Orient. At about that time an opium-containing mixture called laudanum became a popular remedy in Europe for virtually all ailments. Later, smoking opium and tobacco together became yet another popular way to obtain the drug's benefits.

Soon after the turn of the 19th century, a young German pharmacist named Friedrich W. A. Serttmer isolated morphine from opium and identified it as opium's major active ingredient. Morphine's production was followed in 1832 by the isolation of yet another opiate, or opium derivative: codeine.

In the mid-19th century the introduction of the hypodermic needle made it possible to administer large amounts of drugs by injection. The standard approach to morphine therapy for ongoing pain (left) calls for injections pro re nata (PRN), or "as needed." In practice this means injections are given only in response to pain; also, if the pain returns before four to six hours have passed the patient often has to wait for help. By the time the next injection is delivered, the pain may be so severe that quite a large dose is needed, leading to mental clouding and other side effects, such as nausea. A more enlightened approach (right) seeks the actual prevention of pain and thus helps ease the fear of recurring agony. The morphine is given orally (in a dose tailored to the patient's needs) every four hours or even more frequently if a shorter schedule prevents pain more effectively. Because the doses are frequent, they typically can be relatively low, which reduces the incidence of side effects.

Improved technology, which enabled a drug's effects to be felt quickly, led in many regions of the world to the ready prescription of injected morphine for severe pain. At the same time, more and more people began taking morphine for its emotional effects, and the number of addicts rose.

Eventually a search began for drugs that had morphine's analgesic properties but were not habit-forming. This quest resulted in the production of heroin, a synthetic compound similar in activity to morphine but soon found, disappointingly, to be quite as addictive. Various other opioids (chemicals with activity similar to that of opium) were then introduced, including methadone and meperidine (Demerol). Like the opiates, many of the opioids relieve pain, induce changes in mood and, unfortunately, are addictive to some extent.

Inevitably, the rising abuse of narcotics (by which I mean opiates and opioids) and of other mood-altering drugs spurred countries throughout the world to adopt antidrug regulations. At the same time, the extremely cautious administration of narcotics for pain became commonplace.

Today morphine therapy for pain is generally restricted to two groups of patients. It is prescribed over relatively short periods for hospitalized individuals who have discomfort caused by surgical incisions, and it is given over potentially longer periods to ameliorate the pain suffered by burn victims or people who have incurable cancer.

In many hospitals the standard prescription order says "PRN" (pro re nata, or "as needed"). This order essentially means that the drug is given orally after pain returns. Typically, it is delivered by injection into a muscle or under the skin.

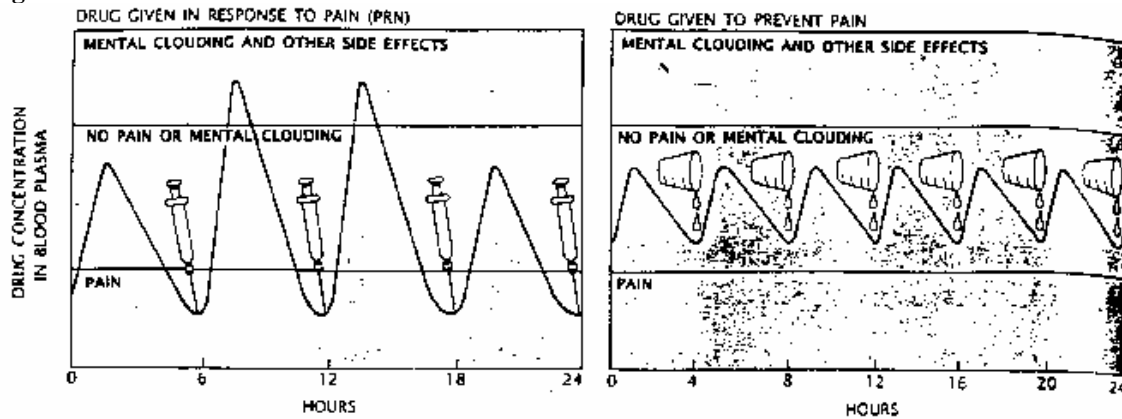
The result of the PRN approach is often a confrontation between the patient and the caregiver, who expects morphine analgesia to last for four to six hours. The patient, whose pain has returned earlier than expected, is in agony and pleads to have the next injection. The health-care worker, fearful of causing addiction, refuses to comply. When the pain is finally treated, it may be so severe that a large dose has to be given, which increases the likelihood of side effects, such as mental clouding and nausea. Particularly when a patient has a terminal illness, the issue of addiction is meaningless, and delaying relief is cruel.

There is another, more humane way to treat pain, one that is slowly gaining acceptance. In this approach doses are given regularly, according to a schedule that has been actually tailored to prevent recurrence of the individual's pain. Thus, pain is controlled continuously; a patient does not wait for discomfort to return before receiving the next dose.

This enlightened, preventive approach evolved from pioneering work first undertaken some 20 years ago by Cicely M. Saunders, an English physician who established the first modern center devoted to caring for people who are dying of cancer or other diseases: St. Christopher's Hospice in London. Saunders urged physicians caring for terminally ill patients to face reality and palliate—to relieve pain, nausea and other discomforts instead of making futile attempts to cure disease. The final days or weeks of a person's life, she believed, should be a time of peace and comfort, spent as pleasantly as possible in the company of family and friends.

To achieve this aim, Saunders prescribed the Brompton mixture, a version of a liquid analgesic that had been used for advanced cancer by several London hospitals, including the Brompton Chest Hospital, since the late 19th century. The mixture (made of morphine, cocaine, chloroform water, alcohol and flavoring syrup) had been eclipsed by injectable morphine, but Saunders realized that an orally delivered compound would allow many patients to spend a number of their last days at home; a visiting nurse would simply monitor them, making sure their pain was controlled.

Figure 1



Morphine has since been found to be the only important ingredient in the Brompton mixture, and so today patients who are treated with the preventive approach to pain take morphine alone, either as a tablet or mixed into a beverage. An initial dose of 10 milligrams is typically given and repeated every four hours. Then, over the course of perhaps several days or weeks, the dose and timing are adjusted until a maintenance regimen is established that controls pain around the clock without producing mental clouding and other side effects.

For patients who have cancer, an approach emphasizing pain prevention is particularly wise. Pain and the fear of pain are perhaps their greatest source of suffering. In the early stages of the disease, some 80 percent of people have pain resulting from the cancer itself or from the procedures designed to arrest its spread. By the time the cancer has reached its final stages, about 70 percent of people report pain, which tends to be intense and persistent.

About 80 to 90 percent of cancer patients treated with the preventive approach obtain satisfactory relief, reporting that their discomfort is consistently bearable or, more frequently, gone. Roughly half of the remainder obtain relief with the addition of other therapies. This success rate is remarkable in view of the destructiveness of cancer and the severity of the pain associated with it.

Treatments continue to improve. There are now special capsules that release morphine slowly and so need to be taken only a few times a day. Also available are electronically controlled, portable pumps that deliver a steady infusion of medication under the skin.

Enough evidence has now been collected to demonstrate that the traditional, PRN approach, based as it is on the fear of addiction makes little sense. Study after study of patients whose pain is most often treated with narcotics—namely, cancer patients, burn victims and those hospitalized for surgery—has shown that the patients who develop rapid and marked tolerance to, and dependence on, the narcotics are usually those who already have a history of psychological disturbance or substance abuse.

Let us first consider the problem of marked tolerance, which not only is a sign of possible addiction but is also a medical concern in its own right because the risk of side effects increases as the dose increases. For instance, delivery of extremely large amounts of morphine can induce coma and seriously impair respiration.

Robert G. Twycross, now at the Churchill Hospital in Oxford, England, has shown that relatively little tolerance develops in patients with cancer who take individually adjusted doses of heroin several times a day over long periods. The patients developed some tolerance to the drug initially, so that the doses had to be gradually raised over the first 12 weeks, but pain relief was achieved without producing serious side effects. Then the doses held fairly stable for months.

Balfour M. Mount, one of my colleagues at McGill University, and I recently found similar results when we studied tolerance to morphine in patients who spent more than a month in the Palliative Care Unit at the Royal Victoria Hospital in Montreal. (This unit, established by Mount, was the first service for palliative care at a large general hospital.) The patients in our study, who took the drug by mouth answered a pain-evaluating questionnaire that I developed with Warren S. Torgerson of Johns Hopkins University. The overall intensity of the pain was ranked on a scale ranging from no pain (0) to pain that is mild (1). Discomfort (2). distressing (3), horrible (4) or excruciating (5).

About 5 percent of the patients had persistently high pain levels (3 or higher). The remaining 95 percent had excellent pain control without requiring rapidly escalating amounts of morphine. Increase in pain, usually a sign of disease progression after a maintenance program has been established, was the most common reason for a rise in dose. Patients who found that their discomfort had decreased either spontaneously or because of treatment, such as reduction of a tumor by radiation-usually required less medication

John F. Scott of the Elizabeth Bruyere Health Center in Ottawa also uncovered little evidence of addiction when he analyzed many studies examining withdrawal symptoms in patients at cancer-treatment clinics. He reports that "if a cancer patient no longer requires a narcotic for pain control, a gradual reduction in dose will prevent any withdrawal symptoms, although these are usually mild or absent even after abrupt discontinuance." Any physical dependence is generally overcome without difficulty when doses are reduced over a period of days.

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FORMALIN TEST measures the analgesic (painkilling) effects of medications on so-called tonic, or persistent pain. A dilute solution of formaldehyde and saline is injected under the skin of a rat's paw, inducing pain that lasts for about 90 minutes. The rat licks its paw repeatedly, which is a sign of moderate pain (a pain rating of 3). Then, after a while, the animal holds the paw in the air (a rating of 2), steps on it gingerly (a rating of 1) and finally walks normally (a rating of 0). In this test, rats treated with morphine develop little tolerance to the drug's analgesic effect; that is, they do not require ever-

increasing doses to obtain relief. This finding is consistent with the results of clinical studies showing that patients who take morphine for persistent pain do not acquire marked tolerance and do not become addicted.

Figure 2



Studies of patients who received narcotics while they were hospitalized have also uncovered little evidence of addiction. In an extensive study Jane B. Porter and Hershel Jick of the Boston University Medical Center followed up on 11,882 patients who were given narcotics to relieve pain stemming from various medical problems; none of the subjects had a history of drug dependence. The team found that only four of the patients subsequently abused drugs, and in only one case was the abuse considered major.

Equally persuasive are the results of a survey of more than 10,000 burn victims. These individuals, who were studied by Samuel W. Perry of New York Hospital and George Heidrich of the University of Wisconsin at Madison underwent debridement, an extremely painful procedure in which the dead tissue is removed from burned skin. Most of the patients received injections of narcotics for weeks or even months. Yet not a single case of later addiction could be attributed to the narcotics given for pain relief during the hospital stay. Although 22 patients abused drugs after they were discharged, all of them had a history of drug abuse.

Further evidence that narcotic drugs can be administered for pain without causing addiction comes from studies of "patient-controlled analgesia" in surgical patients and

those hospitalized for burns. In such studies patients push a button on an electronically controlled pump at the bedside to give themselves small doses of morphine (through an intravenous tube). When these devices were introduced, there was considerable fear that patients would abuse the drug. Instead it soon became clear that patients maintain their doses at a reasonable level and decrease them when their pain diminishes.

Studies that explore how morphine produces analgesia are helping to explain why patients who take the drug solely to relieve pain are unlikely to develop rapid tolerance and become addicted. On the basis of such studies, my former student Frances V. Abbott and I proposed in 1981 that morphine probably has an effect on two distinct pain-signaling systems in the central nervous system and that one of these—which gives rise to the kind of pain typically treated with morphine—does not develop much tolerance to the drug.

Our proposal grew out of my efforts to develop a test in animals that would accurately determine the effectiveness of analgesic drugs on the kind of pain most often requiring narcotics in human patients: the prolonged, or "tonic," kind that persists long after an injury is suffered. This is the sort of pain that chronically bedevils cancer patients. When an injury first occurs, it gives rise to what is called phasic pain, which is brief and rapidly rises and falls in intensity. (The pain felt the instant a finger is cut would be called phasic.) Such phasic pain is usually followed by the tonic kind.

For many years investigators interested in measuring the analgesic effects of drugs subjected rats to what is called the tail-flick test. After a rat is injected with a test drug, its tail is immersed in hot water; the time between immersion and when the rat flicks its tail out of the water is measured as an index of pain. When morphine's effectiveness was examined with this test, investigators repeatedly found evidence of marked tolerance: the animals required ever-increasing doses in order to keep the tail in the water for a given time. Such results were interpreted to mean that human patients in pain would readily become tolerant to morphine and so would become addicted to the drug.

There is a major problem with the tail-flick test, however. It gives rise to suddenly rising, phasic pain, which is not the kind for which morphine is usually prescribed. To gain more information about the effects of analgesics on persistent, tonic pain in humans, John O'Keefe, David Dubuisson and Stephen G. Dennis, who were then my students, developed what is called the formalin test. A small amount of formalin-formaldehyde diluted in saline is injected under the skin of a rat's forepaw. When the animal is not given an analgesic, the formalin produces moderate pain that lasts for about 90 minutes, as evinced by the animal's tendency to lick the paw and a reluctance to put weight on it. If a drug soothes the hurt, the animal puts weight on the paw more quickly.

With the formalin (tonic-pain) test, Abbott and I (later joined at McGill by our colleague Keith B. J. Franklin) discovered that rats developed relatively little tolerance to the analgesia produced by successive injections of morphine. The most logical explanation for the different degrees of tolerance found in the tail-flick and formalin tests was that

phasic and tonic pain are invoked by two distinct neural systems that have differing tolerance to morphine.

Other lines of evidence added support to this idea. For instance, Dennis and I examined the effect on pain of several drugs that interact with morphine (or that alter pain in their own right) in both the tail-flick and the formalin tests. The results were striking. Drug effects that we found in One test were absent or even reversed in the other. For example, drugs that reduced morphine analgesia in one test either had no effect or enhanced the analgesic effect in the other test. If the neural systems that respond to phasic and tonic pain were one and the same, the effects of the drugs on morphine's activity should have been identical in both tests.

My colleagues and I think we now know which of the many neural pathways in the spinal cord and brain constitute the two pain-signaling systems that are sensitive to morphine. We also know something about their functioning and how they are affected by morphine. In both systems, information about pain is delivered to the dorsal horns (wing-shaped regions) of the spinal cord by peripheral neurons emanating from the skin and other body tissues [see *illustration on opposite page*]. Ascending neurons originating in the dorsal horns then relay the pain signals upward through the spinal cord to various parts of the brain.

The pain-signaling system that my colleague and I think is most associated with sudden, phasic pain is called the lateral system. The name derives from the simple fact that the system's tracts, which project to the sensory cortex, pass through the brain stem at a position to the side of the brain stem's central core. The system that is probably responsible for persistent, tonic pain is called the medial system; its tracts pass through the central core of the brain stem.

Among the more salient properties of the lateral system are the rapid conduction of impulses and an organization that maps the relative position of body sites. These properties would enable the system to give rise to sudden, sharp pain in a readily identified spot in the body. Kenneth L. Casey of the University of Michigan at Ann Arbor and I have proposed that the lateral tracts also account to a great extent for the sensory qualities of pains, such as throbbing or burning.

The activity of the lateral system is apparently dampened rather quickly, which would explain why phasic pain often subsides promptly. The inhibition is accomplished by a system of neurons that originates in what is called the periaqueductal gray matter in the part of the brain stem known as the midbrain. This descending system sends signals downward to the dorsal horns, where it inhibits the transmission of pain signals from the peripheral nerves to ascending tracts. After an injury, it is apparently activated by the body's own opioids (enkephalins and endorphins). If, as we suggest, the lateral system carries the signals that give rise to sudden phasic pain, then it is not surprising that the system is naturally subject to powerful inhibition. Sudden pain from a newly acquired injury could well overwhelm an animal, preventing it from fighting, running for cover or burrowing to escape a predator during an emergency.

The other pain-signaling system the medial system-differs from the lateral system in many ways. For example, a number of its tracts send impulses to the limbic system which comprises the subcortical regions of the brain involved in motivation and affect. Hence, we think the medial system controls the emotional component of pain, producing qualities one might describe as wretched, terrifying, vicious and the like. The system also influences the actions one takes in response to such feelings.

Because the medial system conducts signals relatively slowly through many small neurons, it is not well suited for providing precise information during emergencies. Instead it is more suited for producing diffuse, unpleasant feelings for some time after an injury has occurred. Such feelings would help ensure that, having survived an immediate threat, a wounded individual would feel miserable and so remain inactive long enough to heal.

Where does morphine exert its effects? In both the lateral (phasic-pain) and the medial (tonic-pain) systems, morphine clearly has some direct effect at the dorsal horns. It is also well known that morphine can activate the descending inhibitory system originating in the periaqueductal gray matter. Abbott and others in my laboratory have found that this descending system has a greater impact on the lateral system than on the medial system, which suggests that much of morphine's power over sudden, phasic pain is mediated by the descending neural tracts.

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TWO SYSTEMS of neurons evoke pain: a medial system (pink), which passes through the central core of the brain stem, and a lateral system (*orange*). Both are bilateral, consist of several tracts and relay to higher centers the pain signals that come into the dorsal horns of the spinal cord. The medial system is thought to be most responsible for persistent (tonic) pain. Because it sends signals to the limbic system of the brain, which influences emotions, it is also believed to give rise to the affective component of pain (reflected by such descriptions as "frightful" or "cruel"). The lateral system is thought to be most active during phasic pain, which is sudden and sharp. Because it sends signals to the sensory cortex, it probably gives rise to such sensations as cramping or stinging. Morphine can inhibit both systems, but the medial (tonic-pain) system develops much less tolerance to the drug's analgesic effects than does the lateral (phasic-pain) system-which may explain why patients who take morphine for persistent (tonic) pain do not develop great tolerance to it. Morphine produces analgesia in part by inhibiting the flow of pain signals from the peripheral nerves to the ascending pathways; it acts directly at the dorsal horns and also activates a descending inhibitory system (blue) that originates in the midbrain. Morphine also acts at sites above the periaqueductal gray matter of the midbrain, including the limbic system and the habenula, which has strong links to both the medial and limbic systems. Such activity apparently contributes to the drug's analgesic effect on persistent pain.

Figure 3

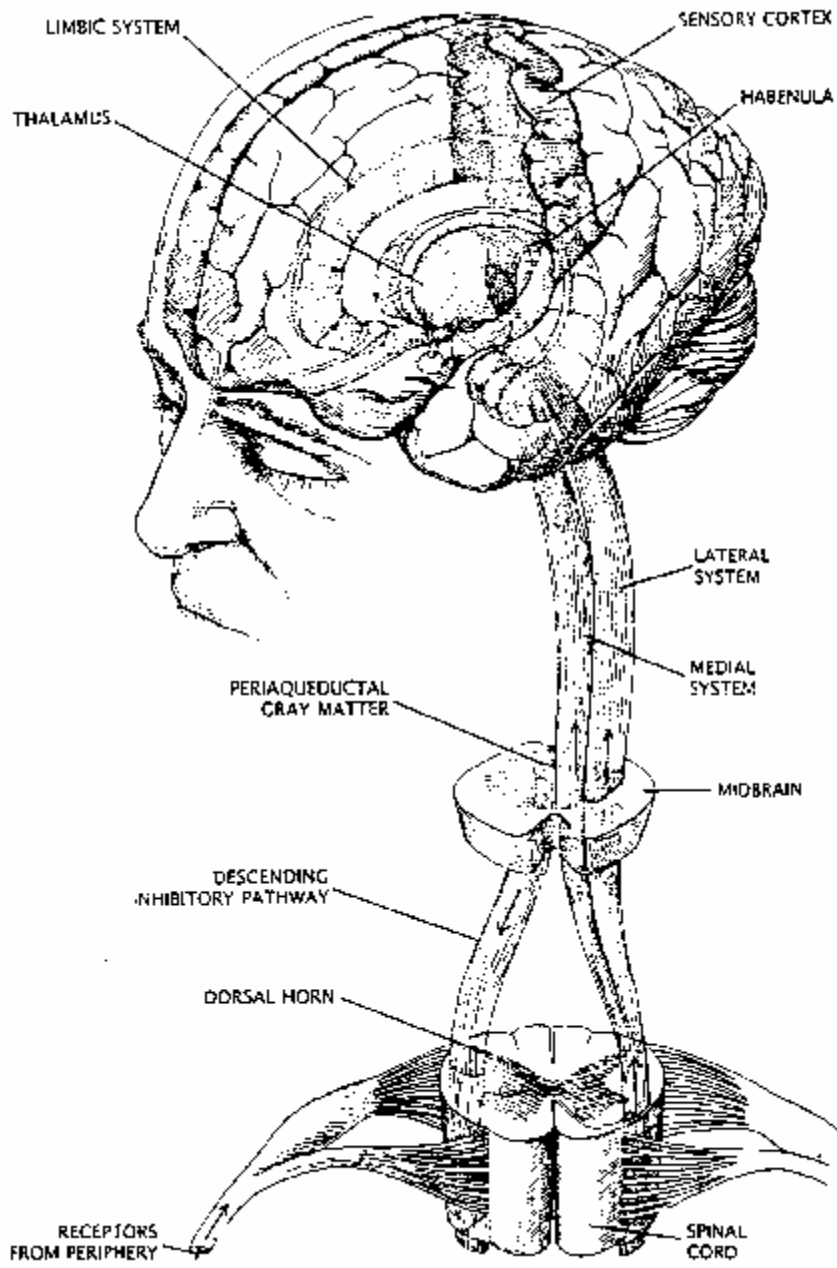
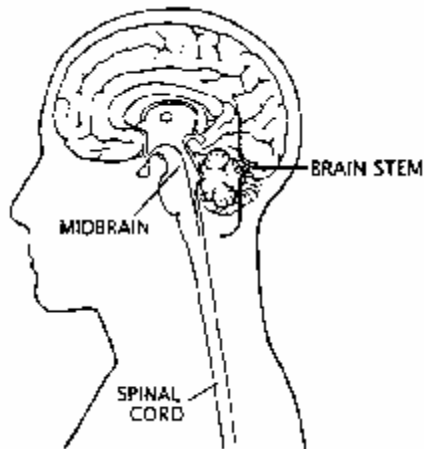


Figure 4



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Morphine's analgesic activity certainly is not confined to the dorsal horns and the midbrain. For instance, strong evidence indicates that morphine acts on the limbic system, which is known to play a major role in both pain and pleasure. Such activity could well dampen the pain sensations produced by the medial (tonic-pain) system, which sends a great many impulses to the limbic system.

A recent study by S. Robin Cohen, my student, and myself lends additional support to the idea that morphine's influence over the medial system derives in part from activity above the midbrain. We injected morphine into the habenula, a small region of the brain (just behind the thalamus) that has strong links with the limbic system and a part of the medial system in the midbrain. The injections produced analgesia in the formalin test but not in the foot-flick test (similar to the tail-flick test), which suggests that morphine acts at the habenula and that, when it does, it inhibits the medial but not the lateral system.

This finding and others indicate that more research should be devoted to areas above the midbrain if investigators are to gain a fuller understanding of how morphine eases persistent, tonic pain without inducing tolerance to repeated doses of the drug.

In view of the complexity of the neural mechanisms of pain, it is not surprising that morphine's ability to produce analgesia has been found to vary greatly from person to person. An important message emerging from studies of such variation is that the need for a high dose is not necessarily a sign of addiction.

In one such study involving cancer patients, Robert Kaiko, now at the Purdue Frederick Company in Norwalk, Conn., and his colleagues at the Memorial Sloan-Kettering Cancer Center found that to achieve a given level of analgesia, less morphine was needed by older patients than by younger patients, and less was needed by blacks than by whites. Similarly, patients with dull pain needed less morphine than did those with sharp pain, and patients with stomach pain needed less morphine than did patients with pain in the chest or arm.

Genetic factors might also influence an individual's response to the analgesic power of narcotics, as Anthony L. Vaccarino (my student), R. Andrew R. Tasker, now at the University of Prince Edward Island, and I learned recently when we examined the effects of morphine and its antagonist naloxone in a strain of mice specially bred for studies of immunologic function we unexpectedly found that the "antagonist" actually enhanced morphine analgesia and produced analgesia on its own in rats subjected to the formahn test. These surprising findings, which so far have been documented only for this strain of mice, are clearly the result of a genetic anomaly.

The discovery of a genetic influence on morphine's actions raises the possibility that susceptibility to addiction might also have a genetic component in some people. Evidence collected by other groups is consistent with that idea, although little work addresses the problem directly.

There is no way to identify patients who might be genetically predisposed to morphine addiction, but I must emphasize again that a person's psychological history is indicative of risk. More than 50 percent of narcotics abusers have had bouts of major depression, and 87 percent have a history of psychiatric disorder.

Society's failure to distinguish between the emotionally impaired addict and the psychologically healthy pain sufferer has affected every segment of the population. Perhaps the most distressing example is unnecessary pain in children. Many health-care workers undertreat pain in youngsters, not only because of fear of addiction but also because of the mistaken belief that young children do not feel pain as intensely as adults. In a classic study, Joann M. Eland and Jane E. Anderson of the University of Iowa found in 1977 that more than half of the children from four to eight years old who underwent major surgery-including limb amputation, excision of a cancerous neck mass and heart repair-were given no medication for relief of their postoperative pain; the remainder received inadequate doses. When 18 of the children were matched with adults who underwent similar procedures, the children as a group were found to have been given a total of 24 doses of analgesic drugs, whereas the adults were given a total of 671 doses.

The elderly also pay the penalty of ignorance. In a study of postsurgical pain my colleagues and I found that surgical wards contain two basic populations: a young and middle-aged group that recovers quickly and an older group whose pain remains severe and lingers for many days beyond the normal three- to four-day recovery period. Despite the persistent, high level of pain in these older patients (presumably because of complications that arise after surgery) and despite the longer recovery period, they do not receive larger doses or a higher daily amount of medication. About 30 Percent of the patients on a surgical ward at any time fall into this older category; they thus represent a substantial number of people who suffer needlessly high levels of pain.

The pain suffered by burn victims is known to be agonizing, and yet it too, tends to be poorly controlled. Manon Choiniare of the burn Center at the Hotel Dieu in Montreal and I found that even in the best burn facilities-those with highly capable, compassionate physicians, nurses, physiotherapists and others-pain levels are high. Our study of 30

consecutive patients who underwent debridement and physiotherapy (exercise to prevent loss of joint flexibility) classified the severity of pain on the basis of the Pain questionnaire I developed with Torgerson. We discovered that during treatment in the first two weeks, 23 Percent had severe ("horrible") pain, and 30 percent had extremely severe ("excruciating") pain. Even when the Patients were at rest, 13 percent of them reported having severe pain, and another 20 percent said they had extremely severe pain. These data, by the way, were obtained from patients who were already medicated according to standard textbook recommendations (that is, the drug order said "PRN").

For many patients who are hospitalized for surgery or burns or who have terminal cancer, the prescription is clear: a preventive approach to pain should be instituted to maximize the effectiveness of narcotics therapy. What, though, should be done for people who suffer from debilitating chronic pain but who do not have a fatal illness? These people have traditionally been excluded from longterm therapy with narcotics, again for fear they would become addicts.

Consider the case of a 26-year-old athlete who sustained a major spinal injury that caused him to suffer from excruciating pain in the back and legs. The pain rendered him unable to work, and he became a burden to himself, his family and society, which pays his medical bills. His physician discovered that small doses of morphine taken orally each day (the way cancer patients receive them) obliterated the pain. With the help of the medication, the young man resumed working and made plans to marry his childhood sweetheart, who was accepting of his injury.

One day, however, the physician was accused by his regional medical association of prescribing narcotics for a purpose unapproved by the association and of turning the patient into an addict. Fearful of losing his medical license, the physician stopped prescribing the drug. (Where morphine administration is allowed by law, physicians can technically prescribe it at will, but they are in fact restricted by the regulations of medical societies, which control licensing.)

Of course, the young man's pain returned. In desperation, he turned to other physicians and was rebuffed. He then sank rapidly into depression and again became mired in helplessness and hopelessness.

It was once unthinkable to give narcotics indefinitely to patients who were not terminally ill. Yet studies designed to examine addiction specifically in such patients are beginning to show that for them, as for the standard candidates for narcotics therapy, these drugs can be helpful without producing addiction.

In one recent study Russell K. Portenoy and Kathleen M. Foley of SloanKettering maintained 38 patients on narcotics for severe, chronic noncancer pain; half of the patients received opioids for four or more years, and six of these were treated for more than seven years. About 60 percent of the 38 patients reported that their pain was eliminated or at least reduced to a tolerable level. The therapy became problematic in only two patients, both of whom had a history of drug abuse.

With cautious optimism, Portenoy and Foley suggest that morphine might be a reasonable treatment for chronic pain in many patients who are not terminally ill. They point out the problems that may accompany narcotics maintenance therapy, and they provide careful guidelines for monitoring patients. Studies such as theirs are doing something in medicine that is akin in aeronautics to breaking the sound barrier. They represent a breakthrough to a reasoned, unbiased examination of the effectiveness of narcotics in patients who have rarely been considered for such therapy.

Among the critics of long-term narcotics therapy for such patients are physicians and others who fear that people will simply be given a prescription for a drug and will never receive the advantages of a multidisciplinary approach to the care of pain. Yet both approaches are compatible; in fact, they complement each other.

For the future, many more well-controlled studies are needed to provide data on the long-term effects of narcotics on chronic noncancer pain. At the same time, medical and government agencies must provide the authorization and funds for such studies to take place. The goal is nothing short of rescuing people whose lives are now being ruined by pain.

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## **FURTHER READING**

**NARCOTIC ANALGESICS IN CLINICAL PRACTICE.** R. G. Twycross in *Advances in Pain Research and Therapy*, Vol. 5. Edited by John I. Bonica et al. Raven Press, 1983.

**CHRONIC USE OF OPIOID ANALGESICS IN NON-MALIGNANT PAIN: REPORT OF 38 CASES.** R. K. Portenoy and K. M. Foley in *Pain*, Vol. 25, pages 171-186; 1986.

**THE CHALLENGE OF PAIN.** Revised edition. Ronald Melzack and Patrick Wall. Penguin USA, 1989.

**TEXTBOOK OF PAIN.** Second edition. Edited by Patrick D. Wall and Ronald Melzack. Churchill Livingstone, Inc., 1989.

**INFLUENCE OF THE PAIN AND SYMPTOM CONTROL TEAM (PSCT) ON THE PATTERNS OF TREATMENT OF PAIN AND OTHER SYMPTOMS IN A CANCER CENTER.** Eduardo Bruera, Carleen Brenneis, Mary Michaud and R. Neil MacDonald in *Journal of Pain and Symptom Management*, Vol. 4, No. 3, pages 112-116; September, 1989.

