

## **CHAPTER 1 OF DR. EIMER'S HYPNOTIZE YOURSELF OUT OF PAIN NOW!**

Part One

### **Learn About Your Pain and How You Cope**

Now Jabez was more honorable than his brothers, and his mother called his name Jabez [literally meaning he will cause pain], saying, “Because I bore him in pain.” And Jabez called on the God of Israel saying, “Oh, that you would bless me indeed, and enlarge my territory, that Your hand would be with me, and that You would keep me from evil, that I may not cause pain!” So God granted him what he requested.

—Chronicles 4:9–10

## **CHAPTER 1**

### **Understand the Puzzle of Pain**

Pain is a warning signal; when everything that CAN be done and should be done has been done, there is no reason for it to continue. . . .

—Kay F. Thompson, D.D.S.

Hypnotizing Yourself Out of Pain Now! is about learning how to apply, and getting into the habit of applying, the appropriate counterstimulation and competing stimulation to subdue and tame your pain. As you will learn, this involves learning how to refocus your attention and your mental energies to become absorbed and engaged in comforting and pleasurable mental activities. It’s all about mentally shifting out of a state of discomfort into a state of comfort.

We will be talking about numerous ways to do this. This will help you regain greater control over your pain, your symptoms, and your experience. You will be presented with choices. By making these choices, you will become more successful at taking charge of your own experience and learning how to choose better.

### **Pain Is an Energy Drain**

Living life and coping with life’s demands requires a replenishing supply of energy. The more energy you have and the easier it is for you to renew your energy supply, the stronger you’re likely to feel. Living with unrelenting pain is a persistent drain on your physical and psychological energy supply. Persistent physical pain can feel like an angry force inside that just wants to keep punishing you. Being punished relentlessly can take a lot of the fight out of you.

Persistent pain saps your well-being and depletes your strength and resilience. Life is difficult and demanding enough as it is. Add the inescapable challenge of having to cope with continual or frequently recurring physical discomfort and the demands and difficulties that life brings can really feel overwhelming.

If you have chronic, persistent pain, this book is written with the goal of helping you discover ways to ease that pain so that life can once again be more pleasurable and enjoyable. Pleasure is the opposite of tension and pain. When you are enjoying yourself and feeling relaxed, you cannot be in pain or feel tense, pressured, or stressed at the same time. This is because the feeling states of pleasure and relaxation are the opposite of those other feeling states. So when you learn how to really relax and enjoy yourself, you will naturally feel more comfortable. You will be able to do this better and better as you learn and practice ways of Entering a Neutral, Joyful, Open, and Yes kind of mood. It is not unintentional that the first letters of each of these key words spell the acronym ENJOY.

This little book will teach you how to do this—and it's easier than you may think. Trust me. Now I know that at this point it may be hard to trust anyone who claims to be able to help you ease your pain. If you feel this way, you probably have been disappointed many times before. However, you really have nothing to lose by giving me a chance. Believe me, I do understand.

### A Definition of Pain

As a first step in being able to control something, especially a puzzling phenomenon such as pain that won't go away, it is often helpful to be able to define it or at least describe it in terms that make sense. Therefore, I think that we should start by defining pain. The definition that I use is one that enables me to help alleviate it using the psychological tool of self-hypnosis. This definition is an adaptation of one provided by Price (1999).

Pain is an unpleasant bodily experience that feels like something in the body has been or is being damaged or destroyed, that feels like a threat to or interference with one's ongoing functionality and health, and that is associated with negative emotions such as fear, anxiety, anger, or depression.

This definition acknowledges that pain contains several elements or components: 1. a bodily sensation with qualities like those experienced during or after tissue-damaging stimulation, 2. an experienced threat or interference with one's functionality associated with this sensation, and 3. an emotional feeling of unpleasantness or other negative emotions based on this experienced threat or interference.

So pain contains a sensory component and an emotional component. These two components are intertwined in the experience of pain. Yet one of the keys to relieving pain is to disentangle these two components, to separate the sensory or physical from the emotional or mental components of the experience.

All pain contains a physical or sensory component, and an emotional, mental, or psychological component. All pain is a very subjective, very individual, very personal experience. Nobody can feel your pain like you can, no matter how much it hurts or how well you describe it.

The definition of pain that I have adopted does not require you or anyone else to “objectively” demonstrate, as through CAT scans, or X rays, or MRI scans, or blood tests, actual or potential tissue damage. It does not require that an association even be made between the unpleasant sensation and actual tissue damage. However, it also does not eliminate the possibility that the pain is related to some sort of tissue damage. If there is such a relationship and the tissue damage can be arrested or repaired, then there is the possibility of pain relief. So, appropriate and competent medical and physical evaluation and treatment should always be undertaken.

What this definition of pain accomplishes is to place the most importance on the felt experience of the person in pain. If a person says that he or she is in pain, then he or she is in pain. This means that we must not ignore the psychological component of the pain experience when we focus on the physiological aspects.

Such a definition of pain allows for a balanced view. It does not overemphasize the importance of medical-physical factors at the expense of psychological ones. On the other hand, it does not compromise the importance of medical-physical factors and overemphasize psychological factors. Pain is neither all in one’s head, nor all in one’s body—it is contained and experienced in both places. The mind and the body both play an equally important role in initiating and perpetuating the experience of pain. This is a great advantage because it opens the door to the employment of psychological methods of intervention such as hypnosis for the alleviation and management of pain.

As David Spiegel, M.D., a noted Stanford University research psychiatrist and hypnosis researcher, has stated, “the strain in pain lies mainly in the brain.” To say “lies mainly in the brain” may be a bit misleading, however, because it can be taken to mean that pain is mostly a psychological matter. Things just aren’t that simple. However, the fact is that the negative experience of pain is perceived via the mental faculties of the mind. If something is wrong in the body tissue, that must not be ignored. However, if it cannot be corrected or completely repaired, it still can be accommodated and adjusted to. So, I would add further clarity to the puzzle of pain by stating that to tame pain, we must use our brain.

Just for the record, the formal definition of pain developed by the International Association for the Study of Pain (Merskey and Bogduk 1994, 210) states that Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. This definition also highlights that pain is an unpleasant experience with both sensory and emotional aspects, and that it is associated with perceived damage to the body.

## Types of Pain

All pain is not the same. First of all, an important distinction that needs to be made is between acute and chronic pain. Acute pain is pain that is of recent origin. For example, the immediate pain you feel when you stub your toe or burn yourself is acute. The new pain from a recent injury is also considered acute. With appropriate medical care and

treatment, acute pain is supposed to eventually subside. However, as anyone with persistent pain knows firsthand, pain doesn't always go away even when appropriate medical treatment is provided. When pain lasts beyond the point where it should have subsided or gone away, it may be considered chronic.

**Acute Pain.** Acute pain fulfills a necessary function—it keeps us from destroying ourselves. It serves as a highly useful signal that the body is in danger or under siege. It signals current or imminent harm to the tissues of the body. Without the capacity to feel pain, the world would be a much more dangerous place. For instance, you could burn yourself irreparably without even knowing it. You might not know in time that your collar was too tight, or that the zipper on your garment was pinching your skin, or that your finger was caught in the door. Obviously this is not a healthy way to go through life.

**Chronic Pain.** Chronic pain is another story. Chronic pain is persistent pain that often has outlived its usefulness. It's pain that has long since passed the time when it was necessary as a signal to alert you that there was something physically wrong in your body that needed to be tended to and corrected or escaped. It's pain that has not responded to appropriate medical or dental care and treatment, and the key word here is appropriate.

Chronic pain is unrelenting and unremitting. It is often pain that is way out of proportion in its intensity and the disruption it causes to its functions or usefulness as a signal of harm or potential harm to the body.

Some health professionals and pain scientists consider pain to be chronic if it lasts for three or more months without getting significantly better. Some require at least six months. However, it is my opinion that these time requirements are somewhat artificial standards, and that they can become misleading and counterproductive. I believe that the key factor in defining chronic pain is that the pain has not responded to appropriate and competent treatments beyond the period of time during which one would expect the pain to be alleviated and the body healed.

**Types of Chronic Pain.** All chronic pain is not the same. There are many different types, with some of the more common ones including: recurrent headaches (such as those of the migraine, cluster, tension, or sinus variety); continuous facial and jaw pain often associated with a condition called temporo-mandibular joint syndrome (TMJ); persistent neck and/or shoulder pain; low-back pain; arm, wrist, and hand pain associated with carpal tunnel syndrome or thoracic outlet syndrome; the continual, intense burning pain and hypersensitivity of the skin, muscle, and nerves associated with conditions such as reflex sympathetic dystrophy (RSD) and post-herpetic neuralgia (PHN); the burning, shooting leg pain associated with sciatica caused by lumbar disk disease; the aching, stiffness and soreness associated with osteoarthritis and rheumatoid arthritis; the multitude of symptoms, associated with fibromyalgia; the persistent uncomfortably loud ringing or buzzing in the ears associated with tinnitus; the cramping, stabbing, jabbing, piercing, knifing, shooting, or squeezing pains associated with irritable bowel syndrome (IBS) as well as inflammatory bowel disease; and the intense cramping, pressing, jabbing, and soreness associated with persistent, unexplained pelvic pain.

Pain May Be Mandatory, but Suffering Is Optional. I've referred to this crucial statement earlier in the book, and I emphasize it here because of the essential idea it represents. That is, if we can find a way to subtract the emotional suffering element, what would be left would not likely hurt as much! Pure pain as a pure sensation, by itself, is not as persistently wrathful, punishing, or extremely bothersome as pure pain plus emotional suffering.

The Puzzle of Pain. Pain is both a puzzle and a study in contrasts. That is because it can be both our greatest friend and ally or our greatest antagonist. As a friend, acute pain and even, to a degree, chronic pain helps us survive. Acute pain is a signal or warning of current or potential or imminent harm to the body. But chronic pain untamed and uncontrolled can become a fierce enemy that makes life feel unbearable. However, chronic pain can also function as a friend. That is because, when there is underlying physical disease or injury, chronic pain can remind us of our limits. When heeded, it can warn us not to overdo it, to pace ourselves, and let us know what activities are unsuitable for us. If we ignore this warning, we can stretch too far and too fast past our limits and cause further injury to occur. The key point is that chronic pain can perform this signaling function without having to cause undue suffering. Maximum discomfort is not necessary. The pain may be able to signal you and serve its protective function without having to be that intense.

So pain, both acute and chronic, must be tamed and managed to remain our friend and ally. I shall be using the concepts and tools of hypnosis to teach you to tame your pain enough to again make it your friend. These concepts and tools will be explained to you in enough detail so that you will be able to benefit from trying them out and using them on your own.

As I shall explain later, hypnosis is probably the most powerful nonnarcotic tool we have to help people move from a state of discomfort to a neutral state or state of comfort. That is what I mean when I say that you can learn how to hypnotize yourself out of pain now. Comfort has a way of spreading and generalizing, just as discomfort and pain does. Once you get the comfort ball rolling, so to speak, it builds momentum and keeps rolling. Self-hypnosis can serve as a very useful tool that you can learn to use to ease your chronic pain and manage and cope with it better. However, given all of the misconceptions and myths about hypnosis that abound, it is an underutilized tool. In chapter 3, I shall clarify these misguided notions so that nothing need stand in the way of your using this tool successfully. Amazingly, up until now, there has been no self-help book written for lay persons covering this topic in enough depth to help people with chronic pain. This book may just be the first!

Now, this book is no substitute for getting adequate medical attention and care. This bears repeating. Nobody should try to treat themselves. That would be foolhardy. It is essential that, before you seek to use the methods and techniques in this book to reduce your pain by yourself, you first seek appropriate and competent medical attention to evaluate and treat the source or cause of the pain.

Persistent pain demands an adequate medical workup before you start to rely on any psychological methods to mask, reduce, or cope with the pain. Not doing so would be like trying to ignore acute crushing pain in your chest radiating down your arm that could possibly be signaling a heart attack. To try to ignore or mask medically undiagnosed pain that could be signaling a correctable physical problem, or threat to the body's integrity, is very foolish.

The psychological and hypnotic methods discussed in this book can be useful once you know the source of the pain, or once you know that everything that can be done medically has been done. Some of the methods we shall discuss can also sometimes be useful in acute injury situations to keep you together psychologically until you can get adequate medical attention.

This book may also be used profitably if you are in therapy or counseling with a licensed counseling professional or psychotherapist, such as a clinical or counseling psychologist, clinical social worker, psychiatrist, pastoral counselor, psychiatric nurse, or mental-health counselor who uses hypnosis as a clinical tool. The ideas and exercises in this book can be worked through with the assistance of your psychotherapist or health professional.

However, this book is intended to be of help to you whether or not you are currently going for psychotherapy or counseling. It is just that, often, hypnosis has the most profound and lasting positive effects when it is experienced initially in a therapeutic situation. In such a situation, a licensed health professional first would help you to experience the hypnotic trance state. Then, he or she would administer to you appropriately individualized and therapeutic hypnotic suggestions, including instructions for entering the hypnotic state by yourself. That means that he or she would teach you how to do self-hypnosis. In chapter 10, I will tell you how to select a qualified clinical hypnosis practitioner.

I shall be teaching you how to use self-hypnosis in this book. But first we will need to cover some important preparatory issues before you are ready to learn self-hypnosis for pain management. In chapter 2, I will help you to evaluate your pain, its effect on your life, and how you cope. In chapter 3, I will help you understand what hypnosis is and what it's not, and I will guide you in exploring your hypnotic and imagination abilities. All of this information will help us to individualize your personal prescription for hypnotizing yourself out of pain in part 2 of the book. In part 2, you will be guided in choosing the right self-hypnosis induction methods and hypnotic coping strategies for you. Equipped with these powerful tools, you will be prepared to tame and manage your pain.

### The Physiology and Neurology of Pain

This section will summarize as simply as possible the medical understanding that we have to date of the physiology and neurology of pain. Gaining this understanding will help you to appreciate the key role that psychological methods such as hypnosis can play

in helping you control and diminish your chronic pain and suffering. You may wish to read this section over as many times as you need to so that you will understand the main ideas.

**The Brain Is Like a Computer.** The human brain can be thought of as a computer. Like a computer, it contains the equivalent of a central processing unit (CPU) or motherboard. It can also be thought of as a central control room that contains a central switchboard or control panel. The spinal cord can be thought of as a bundle of telecommunication wires that transmit sensory messages in an electrochemical form to and from the brain.

The control panel or motherboard in your brain controls the transmission of pain and other sensory messages via the nerve fibers that run in tracts or bundles up and down your spinal cord. It also makes sense of the nerve signals that arrive after they have traveled up your spinal cord, and it sends messages and commands back down the spinal cord to those parts of the body involved.

Self-hypnosis can enable you to gain control over the “switches,” or “chips,” that control pain sensations in different parts of your body. These switches can be turned on or off mentally when you learn specific skills for doing so. You will learn these necessary skills later.

**Pain Amplification Syndrome.** Pain researchers such as Ronald Melzack, Patrick Wall (Melzack and Wall 1982; Wall 2000), and Donald Price (Price 1999) are learning how continued pain actually can cause the brain and central nervous system to become hypersensitive to pain signals and other, nonpain signals from sensory receptors in the body. They believe that persistent pain causes a kind of “neurological matrix,” or vicious loop or cycle, to develop that keeps pain sensations going and going, so that the person in pain cannot get out of the loop. This can lead to the unfortunate emergence of what they call “pain amplification syndrome,” wherein a system is established in the nervous system that amplifies even the smallest pain sensations.

One example of this is “phantom limb pain.” Melzack and his associates have studied “phantom limb pain” (Melzack 1996) as one fascinating but unfortunate example of this phenomenon. This is a little-understood condition that affects some people who have had a limb amputated. Severe burning pain is felt in the area where the diseased or traumatized limb once was, but there are no longer any sensory nerve endings or receptors where the pain is felt because that portion of the limb is gone! So, if the nerves are gone, how can there be any pain?

According to Melzack, a neurological circuit or matrix somehow gets imprinted in the central nervous system. Apparently, nerve fiber tracts or bundles in the back of the spinal cord, where pain signals are normally transmitted, continue to fire in the absence of real sensory input from the severed limb. To complete the circle, the parts of the brain that interpret nerve signals as pain continue to interpret these false nerve signals and sensations as pain in the nonexistent limb. If the brains of people who have this condition are transforming false messages and sensations into very real pain perceptions, then we

know that pain definitely is much more than just a simple sensation on a neurological level. The pain amplification syndrome is also perpetuated in the muscles and soft tissues by muscle tension and spasm. For example, in chronic pain disorders such as fibromyalgia, myofascial pain syndrome, neuralgias, and reflex sympathetic dystrophy, both the nervous system and the muscular system are locked in a neuro-muscular pain matrix that amplifies or intensifies both painful and ordinarily nonpainful stimuli.

So, in this situation, the pain is really a memory that is experienced as very real, present pain. Is it all in the person's head? I don't think so. All in the person's central nervous system and autonomic nervous system (the part of the nervous system that controls physiological functions vital for survival)? I think partly. The pain amplification syndrome is also perpetuated in the muscles and soft tissues by muscle tension and spasm.

For example, in chronic pain disorders such as fibromyalgia, myofascial pain syndrome, neuralgias, and reflex sympathetic dystrophy, the nervous system and muscular system are locked in a neuro-muscular pain matrix that amplifies or intensifies both painful and ordinarily nonpainful stimuli.

Hypnosis Works in the Central Nervous System. This is a definite "green light" to proceed with full confidence in the value of pain relief methods such as hypnosis. That's because hypnosis produces its analgesic (pain relieving) effects by altering a person's brain state, and the brain is the computer that controls the nervous system and the muscles. Hypnosis also switches on that branch of the autonomic nervous system that restores rest and relaxation while switching off the branch that pumps you up when there is a perceived threat to your well-being.

So relieving or taming chronic pain involves breaking up the vicious cycle in the central nervous system that produces pain amplification syndrome. In order to do so, it is necessary to somehow retrain your central nervous system to be less sensitive to pain signals.

You will learn self-hypnosis methods for doing so later.

Psychological Factors. Psychological factors (such as thoughts, attitudes, beliefs, perceptions, emotions, behaviors, and habits) influence and regulate how your central nervous system processes pain sensations. They can cause your central nervous system to amplify pain sensations, or dampen them. Hypnosis and self-hypnosis are the best psychological tools we have available for altering our thoughts, attitudes, beliefs, emotions, behaviors, habits, perceptions, and experience.

Chronic Pain Is a Serious Medical Problem. Current research is beginning to prove scientifically that all types of chronic, persistent pain constitute serious medical problems (McCaffery and Pasero 1999). Unrelieved persistent pain causes physical and psychological stress due to the body's attempts to adjust to it. It can cause the heart to work harder and blood pressure to rise, as well as a host of other physical stress

responses. Having to deal everyday with unrelieved chronic pain is likely to cause anxiety and depression, both of which worsen pain. This means that relieving chronic pain requires that this “emotional overlay” be addressed effectively.

In summary, people with chronic pain, rather than becoming desensitized, habituated, and less sensitive to pain as a result of having it around so much, actually tend to become more sensitive to pain. This appears to result from the central nervous system’s attempts to adjust and adapt to the ongoing painful or noxious stimulation. Self-hypnosis can help you reverse or control this process.

### The Pain Gate Control Theory

Melzack and Wall (1965, 1982) have proposed the “Pain Gate Control Theory” that helps us understand how this pain amplification process can get started and imprinted in the central nervous system, and also, how this process gone awry may be stopped or remedied.

**Your Brain and Spinal Cord.** Nerve impulses are transmitted by bundles or tracts of specialized nerve fibers in your spinal cord from sensory receptors in your skin, muscles, and visceral organs to and from your brain. When nerve impulses reach your brain, they are processed and interpreted. Your brain then sends nerve signals down your spinal cord to instruct the appropriate parts of your body to respond to the original stimuli. If your brain interprets the signals it has processed as a threat or as pain, then the messages it sends back down to your peripheral nerves and muscles will direct them to act reflexively to protect you. Your first impulse will be to escape the perceived source of the pain or threat.

**The Pain Gate.** According to Melzack and Wall (1965, 1982), there exists a “pain gate” in the back of your spinal cord. This pain gate appears to control the transmission of nerve impulses to and from your brain by several types of specialized nerve fibers that run up and down your spinal cord. This pain gate is believed to be an actual neurological mechanism that can open or close the “nerve highway” in your spinal cord to the transmission of pain signals. So, when the gate is closed, nerve messages carrying pain signals are blocked. When it is open, pain signals travel unimpeded.

**Sub-Acute and Chronic Pain.** One type of pain-transmitting nerve fibers, called “C-fibers,” is believed to open the pain gate by permitting pain sensations to travel up the spinal cord to the brain. The nerve signals that these C-fibers transmit are in the form of heat or cold sensations, mechanical sensations (like throbbing, aching, stretching, pressure, shearing, rubbing, squeezing, gnawing), and chemical sensations (such as penetrating, burning, cold, hypersensitivity, soreness, itchiness, tingling, numbing). The pain sensations associated with the nerve impulses transmitted by the C-fibers are typically spread out and poorly localized.

This type of pain is not the kind of pain that occurs immediately after an injury, but rather some time after. It’s usually the kind of pain that continues after the acute phase of an

injury has passed (termed “sub-acute pain”). It is also the kind of pain that doesn’t respond to treatment and outlasts its usefulness as a messenger (termed “chronic pain”).

C-fibers are relatively slow transmitters of nerve signals and pain sensations. This means that other, faster-transmitting nerve fibers can be stimulated to send nerve signals up the spinal cord to the pain registration center in the brain before nerve signals from the C-fibers reach the brain. In effect, this can serve to block the messages from the slower-transmitting C-fibers from ever registering in the brain’s central computer. This is one way that the pain gate can be closed to chronic pain. So, think of the “C” in C-fibers as chronic or closed.

Acute Pain Transmitters. “A-fibers,” which are a group of nerve fibers that conduct nerve messages very quickly, are responsible for transmitting acute pain signals up the spinal cord to the brain. This is the sharp, well-localized pain that one feels right after an injury or tissue damage has occurred. Think of the “A” in A-fibers as acute or adaptive. That is why, if you have chronic pain and you sustain a new injury or additional tissue damage, the pain associated with the new injury is what gets your attention temporarily. It supersedes the type of chronic pain that has been there already. Of course this is advantageous to our survival and adaptive because it serves the function of notifying us that something new is going on that requires our immediate attention. This is also another way that the pain gate can be closed temporarily to chronic pain.

The Fastest Transmitting Fibers of All. There is a specialized type of A-fibers that send nerve impulses up to the brain the fastest of all. These special A-fibers transmit sensations of pressure, touch, and vibration. When you rub or massage an area of discomfort, for example, these are the fibers that fire. Their signals reach the brain first, before the messages from all of the other nerve fibers.

This is the neurological reason why rubbing or massaging an area of discomfort often provides temporary pain relief. The rubbing and massaging provide a form of competing counterstimulation, or distraction (to be discussed later in chapter 6 as a pain-coping strategy), that can block the painful stimulation from reaching and registering in the brain. This then is a third way that the pain gate can be closed temporarily to chronic pain.

Transmitting Messages from the Brain. There are still other types of A-fibers that, instead of sending nerve impulses up to the brain, send nerve messages from the brain down the spinal cord to activate peripheral nerves, which in turn activate muscle fibers. These nerve messages are responsible for causing muscle spasms, and muscle spasms can worsen pain.

Once again, these nerve fibers also serve an adaptive function because they are responsible, after an acute injury, for automatically causing your muscles to brace and guard so that they can support and protect the injured area. The problem is that when this muscle bracing and guarding continues for long periods and becomes habitual, it tends to cause muscle spasm and more pain.

## Closing the Pain Gate

The Gate Control Theory helps us understand how hypnosis can “close the gate” on pain. Hypnosis can direct attention away from pain sensations as well as transform your perception of the pain sensations. This can inhibit or slow the transmission of pain messages from the source of an injury or tissue damage to the brain.

At the most basic level, nonpainful stimulation of the peripheral nerves (like massage and rubbing) can stimulate the fastest A-fibers, which in turn can inhibit upward traveling pain impulses transmitted by the slower A-fibers and the slowest C-fibers. Remember that all of these fibers interact with each other in the back of your spinal cord.

If pain sensations are not blocked or inhibited before they travel up the spinal column, other mechanisms can still influence the final outcome; that is, how pain is perceived, and how much pain is perceived. One such mechanism is the intensity of arousal of the sympathetic branch of the autonomic nervous system. It is activated automatically when you encounter stress or threat. When it is activated, you go into “fight, flight, or freeze” mode.

This has been called the “fight-flight response.” The sympathetic nervous system causes the release of chemical neuro-transmitters such as adrenaline and other stress hormones such as cortisol that tend to pump up the activity of the nerve fibers that transmit pain messages to the brain.

Things that turn down or turn off the fight-flight response can also modulate or turn down pain, closing the pain gate. One such factor is relaxation. This is because relaxation is associated with the activation of the opposing branch of the autonomic nervous system, the branch that controls rest and restoration of body functions. It is called the parasympathetic branch of the autonomic nervous system.

A second pain-modulation factor that closes the pain gate is the stimulation of certain neurotransmitter pathways, specifically the ones that release and transmit the chemical neurotransmitters serotonin and noradrenaline. These internal chemicals dampen the upward transmission of pain impulses to the brain. They also inhibit the neural pathways that cause muscle spasm, which we know worsens pain.

It is because of this fact that certain antidepressant medications that make more serotonin and other neurotransmitters available help in controlling pain as well as depression. I am referring to the classes of drugs called serotonin re-uptake inhibitors (SRIs) and tricyclic antidepressants (TCAs). Some anti-anxiety medications also help in restoring the balance of helpful neurotransmitter chemicals.

A third pain-inhibitory mechanism that closes the pain gate is the stimulation of the body’s production of internal opioid-like chemicals. These are called endorphins (meaning endogenous or internal morphine) and enkephalins. These neurotransmitter

chemicals bond to the same opioid receptor sites in the central nervous system as do external opioid pain relievers that are ingested or injected, such as morphine, codeine, or methadone.

A fourth pain-inhibitory mechanism involves controlling and diminishing the negative emotional overlay associated with pain: a person's negative mood states, and negative thoughts, beliefs, and attitudes. Chronic pain associated with anxiety, depression, and anger hurts a lot more and causes a lot more suffering. That is because these uncomfortable emotions tend to be associated with the experience of helplessness, hopelessness, doom and gloom, and punishment.

### Pain Is a Complex Experience

The central concept in Melzack and Wall's Gate Control Theory is that pain is a complex experience that is mostly determined by what happens in the central nervous system as opposed to being determined solely by the stimulation of peripheral sensory nerves.

Additionally, messages sent down the spinal cord by the brain itself are also believed to diminish pain perception. The way this is believed to work is to slow or inhibit the ascent of pain impulses up the spinal cord to the brain in the first place.

Chronic pain is at least partially maintained by an abnormal excitability of the nerve fibers that send pain messages up to the brain and a lack of effective mechanisms in the brain for dampening the transmission of these messages. As a result, a low-intensity painful, or even nonpainful, stimulus can actually elicit or aggravate pain. This is the pain amplification syndrome mentioned earlier.

This phenomenon and its resulting conditions are very responsive to the use of hypnosis when the person affected is positively responsive to hypnosis. Apparently, hypnosis somehow closes the pain gate in the central nervous system in a way that is not as of yet fully understood. Hypnosis works on multiple levels simultaneously. It influences a person's cognitive responses (their beliefs, attitudes, and thinking processes), affective, emotional, and motivational responses, and sensory, perceptual, and motor responses to address the complex problem of pain in an effectively complex way.

### Cognitive Factors

A person's beliefs, attitudes, expectations, and learning history influence how that person perceives and interprets pain, and that perception affects how the person experiences the pain. These cognitive or "thinking" factors activate the spinal cord's descending nerve pathways. The types of thoughts a person has and continues to think actually influence whether these descending pathways inhibit the ascent of pain messages up the spinal cord to the brain or stimulate their ascent. Positive thoughts tend to inhibit and negative thoughts tend to stimulate the ascent of pain messages.

### Three Dimensions of Pain

Melzack and Wall were the first pain scientists to classify the perception of pain into three basic dimensions or components. These are: the sensory dimension, the cognitive dimension, and the motivational-emotional dimension.

**The Sensory Dimension.** The sensory dimension is the lens or portal through which you discriminate the specific sensory qualities of your pain; that is, what the pain sensations feel like to you (for instance, sharp-dull, hot-cold, deep-shallow).

**The Cognitive Dimension.** The cognitive dimension is the gauge that you employ to evaluate your pain (considering it harmful or harmless, tolerable or unbearable, annoying or awful).

**The Motivational-Emotional Dimension.** The motivational-emotional dimension is what gives your pain meaning. It sets the emotional tone. For example, if your pain resulted from an injury intentionally inflicted by another person or from another person's negligence, then your pain's meaning is likely to be tied up with emotional factors such as rage, suffering, and the desire to extract retribution. On the other hand, if your pain is associated with a progressively worsening condition or disease, it will have a different meaning. Alternatively, if your pain is associated with having successfully gotten out of harm's way and surviving, it's likely to have a still different meaning.

The physician Henry Beecher (Beecher 1946) commented on this dimension after World War II. His thoughts were based on his observations of wounded American soldiers on the Anzio beachhead in Italy whose injuries sent them out of the battle zone. He noted that the wounded soldiers did not report as much pain as did civilians with similar injuries who were awaiting surgery in the United States. For the soldiers he observed, their injuries were their ticket home and out of the danger zone. Their pain was a conscious as well as unconscious reminder of this fact. Such was not the case for the civilians.

Your experience of pain is affected by the interaction of these three dimensions—sensory, cognitive, and motivational. Your mood states affect your perceptions of your pain's qualities and severity. Depressive, anxious, or angry mood states typically exacerbate or intensify chronic pain. These negative mood states are also associated with negative and dysfunctional thoughts, self-talk, beliefs, and behaviors. This is another reason why certain antidepressant and anti-anxiety drugs can help in relieving pain.

On the other hand, positive emotional states can ward pain off, or decrease its felt intensity. This would encompass mood states associated with pleasant emotional involvement, absorption in an activity, the drive to accomplish something considered worthwhile and meaningful, satisfaction in an accomplishment, dedication and devotion to another person or cause, and the feeling of gratitude.

In the heat of the game, the trained athlete ignores or doesn't notice his pain. The pain sensations are swept aside by the drive to outperform the competition and win. In between games in a series, the athlete's burning desire to perform at his or her best at the

next event provides the motivation to consider the pain a distant second in level of concern and attention. It's not that the pain's signal is not heeded. It is just that the signal and the injury it heralds are considered part of the price that has to be paid to win. The pain signal is heeded with the goal of tending to the injury so that the athlete can stay in the game.

Of course, in most high-performance sports situations, the athlete views his or her pain as acute and temporary. There is usually an end in sight. While this is not the case with chronic pain, there is still something valuable to be learned from the professional athlete. The athlete's positive attitude and never-give-up spirit in the face of great physical pain associated with injury can be very inspiring (especially if the injured athlete is on your favorite team!). This highlights the fact that the meaning of pain is determined by, among other things, the context in which it is experienced.

### Solving the Puzzle of Pain

While we do not understand everything about the mechanisms of chronic pain, we do know about factors that can increase it and reduce it. We know that "the strain in pain" is influenced by the brain. We know that hypnosis reduces the strain of pain by inhibiting the ascent of pain messages to the brain, or changing the way they are interpreted. However, before you can use hypnosis effectively to reduce your pain, you need to evaluate and understand your particular type of pain, and your responses to it.