Pain touches human life. Universal in reach, pain shapes our behavior while teaching us about danger. Whether it is brief and fleeting in duration or unrelenting in nature to the point of being crippling, pain gets our attention. (If it doesn’t get our attention, then it isn’t pain at all.) It is estimated by the National Institutes of Neurological Disorders that in the United States alone, we make 70 million physician visits and spend $50 billion every year trying to rid ourselves of pain.

By no means do we always succeed. Pain remains with us. And soft-tissue pain is one of the most elusive symptoms that we try to eradicate.

Pain puts clients on our tables seeking relief through our touch. As therapists, on a daily basis, we find ourselves involved with clients who suffer from a variety of painful syndromes. Migraine, fibromyalgia, cervical sprain, frozen shoulder and low-back pain are some of the frequent diagnoses that result in physician referrals for soft-tissue therapy.

Pain drives people to seek out our skills. Increased understanding of this phenomenon can help us to be more effective and more compassionate in our work. Studying pain is a step toward understanding human consciousness, because exploring pain is an exploration of the intricate relationship between the physical body and the mind.
Physical pain

Pain hurts. We want pain to stop. If it hurts enough, our awareness will be focused only on the pain, and we may do nothing else but try to stop it. On that much we can agree. Yet, no two people have the exact same tolerance for pain or the same threshold for what is painful. Pain is the most individual and subjective sensation that human beings experience.

For more than 20 years, one of the tasks of the International Association for the Study of Pain (IASP) has been to define and refine pain terminology in an effort to provide clinicians, researchers and therapists with a common language that can be used to describe the various aspects of experiencing pain.

From this resource, we get a definition of pain as "An unpleasant sensation and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." Pain is unpleasant. Therefore, pain is an emotional experience. If a sensation isn’t unpleasant, it isn’t painful. Because pain is emotional, it helps to explain why it is so personal and completely subjective. As therapists, we may frequently check in with our clients to see if the pressure we are using during therapy is too great. What one person considers a good pressure could be very painful to the next. Another client replies that the pressure hurts but that it is a good pain that they want to work through. Sometimes a seemingly light touch can evoke a painful response in a client—the client says that our pressure is unbearable, yet we may think that we didn’t cause any pain.

Our perception of someone else’s pain doesn’t negate their pain. Finding or not finding the cause of pain may make no difference to the sufferer, because there is no direct relationship between physical pathology and the intensity of pain. The sufferer’s response is the only way that we can know that they are in pain. No instrument or imaging device exists to measure pain objectively. If pain is felt, then the pain is real.

If a client tells us that she hurts, we must accept her experience as real and painful. If our pain is denied by someone else, the pain is not reduced in any degree. Rather, our anxiety, anger, frustration and pain may actually increase. Being told that "the pain is just in your head" doesn’t help. The fact is, all pain is just in your head, since it is through our brains that we sense pain. Accept that the client’s pain is real. Acceptance is a positive and essential step toward helping them to manage their pain.

Learning through pain

Through life, we learn about pain. Through pain, we learn about life. Experience teaches us what hurts. Falling down; burning or cutting oneself; banging your head or biting your tongue, life teaches what hurts. These are what John Nolte, Ph.D., calls "unintentional experiments upon ourselves." When we hurt ourselves, we may blurt out expletives, words that are not socially acceptable. This spontaneous activation of the speech centers of the brain illustrates how pain is processed throughout the structures of the brain. Also, we use very graphic words for pain, describing it in terms that sound like something very bad is happening to our body, such as burning, tearing, stabbing or shooting. If we can move away from the source of these painful sensations, then we do. In terms of evolution, that’s the function of pain: It is a powerful self-protection mechanism that keeps us alive and out of harm’s way.

Previous experiences with pain help to shape our future reactions to the same painful stimuli. Through pain, we learn to avoid danger and minimize future painful experiences. Continuing sensations of pain following an injury force us to rest so that an injured body part can heal. This process of acute pain is a very good thing. Our associations with pain become an integral part of our emotional response to pain.

Family, friends and our social-support system help us to cope with pain while we heal. Our personal beliefs and philosophy help to determine the way that we perceive pain and may give us strength.

Historic theories of pain

We say "ouch" when we get hurt. Expressing the sudden onset of pain with our vocal chords appears to be hard wired into our make-up. We can assume that, before the development of spoken language, humans cried, moaned, bellowed and shouted in response to pain. Across a broad spectrum of species, we can hear vocalized responses to pain in the animal kingdom.

Development of language and society gave rise to language to describe pain. Religious beliefs evolved that attempted to explain pain and suffering. Priestess, shaman and healer were roles that meant caring for the physical, emotional and spiritual aspects of those seeking relief. Rituals of healing and death are preserved in ancient burial artifacts and rock paintings the world over. Often we are left to speculate on the specific words and ideas that were used to express pain and suffering in the distant past. By exception, some of the written words of ancient cultures survive to this day, and we can consider their theories and explanations of the phenomenon of pain.

China: In early Eastern thought, Chinese medical theories described a variety of kinds of pain caused by blockage, stagnation, deficiency or excess of vital energy, or qi, in the sufferer’s body.

Living in a manner that is at odds with the natural world or harboring negative emotions disrupts the flow of energy within the body. Resulting disharmony gives rise to
symptomatic complaints, including pain. Excess qi, stuck in one spot of the body, is believed to be the cause of redness, swelling, inflammation and increasing degrees of discomfort. Balancing and harmonizing the flow of the vital energy by removing blockages is the solution to decreasing pain. Chinese medicine relies on herbs, massage techniques, needling, low-impact exercises, such as qigong, as well as meditation practice to harmonize the qi.

**Greece:** Western thought has its roots in the philosophy of the ancient Greeks. Their powerful influence on art, culture and science continued for 1,500 years, through the Renaissance. Their influence still impacts our culture today. The word "pain" comes from the name of the mythological Greek goddess Poena. A consort of Nemesis, Poena brought suffering to those who angered the gods. Her son, Eros, represents an unquenchable desire for pleasure.

Plato (428-347 B.C.E.) considered pain a truly visceral experience. He believed that the heart and liver were the organs that sensed pain. His student, Aristotle (384-322 B.C.E.) later theorized that the brain played no role whatsoever in sensing pain.

To the Greeks, pain was just an emotion or a thought to be controlled, not a physical reality. Zeno of Citium (336-264 B.C.E.) developed the philosophy of Stoicism, which greatly influenced Greek, Roman and early Christian thinking about the roles of pain, suffering and redemption. Stoicism considered pain to be an emotional reaction to stimulation. The greater the degree of painful response, the more emotional (or weaker) the sufferer. Total control of the emotions could result in total control over pain. Courage and calmness should always be shown in the face of adversity. Similar to Chinese thought, Stoicism states that living in harmony with nature is a virtuous and desirable lifestyle, and pain and suffering are the result of opposing nature. Develop the calm demeanor of a sage, and one comes to realize that the mind is not subject to the body. While mind and body coexist, they are separate entities. These early writings make a clear distinction between the mind and the body. Their influence would persist through Christian times and result in the idea that suffering is virtuous; that pain is the will of heaven and attempting to cure pain is against the will of God.

**Europe:** From believing that pain and suffering are virtues, it was a short step to indicting all persons who tried to relieve pain. Healers, herbalists, priestesses and shamans were often condemned as witches and sentenced to every manner of punishment, including peine mortis, from Latin, meaning pain of death. From peine, the Romans gave us the words penance, penal, penitent and penitentiary. Pain and suffering became linked with the ideas of justice, punishment and redemption.

In the 1600s, in France, the concept of mind/body dualism was elaborated upon by René Descartes (1596-1650), the philosopher, mathematician and physiologist. Descartes, like Plato and Aristotle before him, believed that the mind has an independent, separate and distinct existence from the physical body. Pain does not take place in the mind, because the mind, like the spirit, is independent of the body. Rather, Descartes reasoned that the mind senses pain in the body like one might hear a bell ringing in a watchtower. He compared the transmission of pain to a thin thread. This thin thread leads up to the brain like a rope leads up to the bell in a watchtower. Pulling the thread, the pain rings like a bell in the brain, warning that danger threatens. Descartes called the thin threads that stimulate the brain nerve fibrils. He theorized that nerve fibrils respond to external stimuli by rearranging themselves to permit "animal spirits" to flow upwards to the pineal gland, where they could be sensed by the mind.

At this same time in Italy, Galileo was being hounded by the Catholic Church for agreeing with Copernicus that the Earth was not the center of the universe. Fearing retribution, Descartes decided against publishing his early work, De Homine (Essay on Man, 1633), since the Church claimed that pain and suffering was the will of the Almighty. In 1633, 14 years after his death, this early work on physiological psychology was finally published. While Descartes was mistaken in the role that the pineal gland and "animal spirits" played in human physiology, he is credited with first describing neural reflex theory and the role of nerve fibrils.

Descartes is remembered for his statement, "I think, therefore, I am." It may be just as accurate to say, "I hurt, therefore, I am." In retrospect, we know that both the early Eastern and Western theories had part of the pain puzzle right. Nerve fibers do carry stimuli to the brain. And we know that the sensations of pain travel by means of energy. Once these energetic stimuli reach the brain, emotions play a primary role in their interpretation as pain.

**Modern times**

During various wars the of the 19th century, battlefield
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Surgeons learned about previously undescribed types of pain. Soldiers who had limbs severed or amputated often adjusted rapidly to seemingly intolerable levels of pain. Yet, in many cases, a wound that appeared to be only superficial caused unbearable, continuing and burning agony for the victim. Long after the wound healed, the pain persisted. This phenomenon is referred to as causalgia.

In World War II, during the Allied invasion of Anzio, Italy, Henry K. Beecher, M.D., was a field-hospital surgeon. Beecher repeatedly noted soldiers who were seriously wounded yet reported little or no pain, while other soldiers, with lesser wounds, seemed to be in agony. Beecher questioned the wounded and noted their responses. After the war, Beecher continued his research with comparable young men who were elective surgery patients. The surgical patients reported significantly higher levels of pain than the seriously wounded soldiers.

Beecher came to the important conclusion that wounded troops knew they would be sent to hospital for recovery, which guaranteed their safety. This knowledge, Beecher theorized, allowed the central nervous system (in particular, the cerebrum) to modulate pain sensations.

In the 1950s Beecher further developed his theories,
which emphasized the importance of the psychological aspects of pain and suffering. Beecher’s work challenged the notion that pain was a simple response to a stimulus, like pressing a button to ring a doorbell. The role of the cerebrum (or thinking part of the brain) led Beecher to first describe the “placebo effect” or the power of belief to affect the patient’s perception of pain. The use of placebos is now a recognized standard in conducting pain research.

**Gate-Control Theory**

In 1965 Canadian psychologist Ronald Melzack and British physiologist Patrick Wall created the most important and influential modern theory on the subject of pain. Writing for the journal *Science*, Melzack and Wall put forth the idea that the brain and spinal cord contain a “gate mechanism” that can close in response to the stimulation of touch but which opens to allow pain signals to pass on to the brain. With the proper stimulation of the peripheral nerves, the gate can be closed again, effectively blocking the transmission of pain signals. With an insect bite, for example, we feel a stinging, burning sensation and scratch the affected area to reduce the pain of the bite, as scratching stimulates the peripheral sensory nerves. The presence of additional signals closes the gate and prevents the sensation of the sting from traveling up to the brain.

The Gate-Control Theory created a great deal of discussion and controversy, as well as new interest in pain research. Although the theory has been modified and refined since its creation, the important central idea remains: the central nervous system can modulate pain. This idea remains important to all pain research. Gate-Control Theory helps us, as therapists, understand how massage can directly reduce pain.

In Part Two of this series, we’ll look at how acute pain is generated and sensed in the body. We’ll also consider how pain is reduced through natural means, including touch. Part Three will ponder the riddle of chronic pain and its often debilitating effects.

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