

A Discussion on Pain with Dr. Michael Zitney



What is the purpose of pain?

Pain serves an important role in our bodies. Pain is like our house alarm, which tells us when there is damage or potential damage taking place in our bodies. Without an intact pain system, we would suffer many more injuries.

What are the components of the pain system?

Our pain generally starts in the periphery: skin, an internal organ, or other sites outside of the central nervous system and the brain. There, different nerve endings (nociceptors) respond specifically to pressure temperature and chemical damages. When triggered by changes that cause injury or inflammation in the part of the body they are in, they send electrical pain signals through nerves called C-fibres to the spinal cord.

In the spinal cord the signals are turned into chemical messages, go through a type of relay station, and then turned into electrical signals again before being sent to the brain.

Even though it seems as though the noiceptors are sensing the pain, they are actually only communicating the presence of potentially harmful stimuli. It is the brain that interprets the signals as pain and prompts us to respond. The brain is where we experience the pain.

Genetics, memories and emotions also influence the end result so that a specific signal may have different meanings to each of us. Pain is completely subjective, unique to the person experiencing it.

We have an equally complex, but as yet poorly understood built-in pain relief system. This begins in our brain and uses chemical messengers called neurotransmitters to trigger electrical signals in our body that fight pain.

Do different injuries give us different kinds of pain?

Because of the subjective nature of pain, it is difficult to give a precise interpretation of each person's description of their pain.

Generally, a sharp localized pain is caused by a specific site of injury like a cut in the skin (laceration), a crack in a bone, or a tear of a muscle, tendon or ligament.

A vague, spread out pain can come from a large injury of muscle, crushing of tissue or an injury to deeper structures.

Pain from internal organs (visceral pain) can be very vague, often giving pain signals that are felt far away from the actual source. This is known as referred pain.

An example of this is when a heart attack produces a feeling of pain down the left arm. Another example is the pain from a kidney stone that can sometimes be felt in the groin.

Injured bones are usually painful if you press somewhere else (in non-injured area) on the same bone (bony tenderness) and the pain is worse with movement, especially if it's weight-bearing.

Spasms of muscles give a particular "grabbing" sensation, like a charley horse for example.

Injuries to nerves also create a unique pain pattern. In this case, we get sensations like shooting, tingling, burning and "pins-and-needles" feeling.

However, most injuries produce damage in combination of tissues giving a cluster of different kinds of pain. For example, if you have been subjected to enough force to break a bone, you will almost certainly have torn muscles, deep tissue bruising, and may have irritated nerves as well. In addition, inflammation rapidly sets in, which causes a painful swelling in the area.

How can you help your doctor figure out what's wrong with you?

Use as precise a description of the pain as possible. Use your imagination. What would the pain be caused by if you were in a movie? Is like a giant belt around your waist? Or like someone pouring hot water down your leg? Or having an electric shock shooting down your arm? The more descriptive the better! Saying "I don't know, doc, it just hurts!" is not very helpful.

Make a note of the pattern of pain. Does it go away for a while by itself? If so, for how long? Does it stay the same intensity, or get better and worse? How long have you had it and what actions, activities, and positions etc. make it better or worse? Have you had it before, and what helped or didn't help last time?

What normally happens to pain?

The pain is only an alarm signal. When the original injury or problem heals, the pain should improve and finally stop. If working properly, our pain relief system can help "filter out" pain even while we heal.

Sometimes, the pain seems to increase with the resumption of activity. This often represents straining of our muscles which have weakened while waiting for the injury to heal. It is surprising how quickly our muscles lose their strength when we become inactive. This means more exercise or sometimes a more gradual return to exercise is required.

Occasionally, the original injury appears to have healed, but the pain continues. This may represent a malfunction of our pain detection and/or our pain relief systems.

Does that mean all pain is good for us?

No. sometimes the pain system breaks down. There may be persistent damage, which continues to trigger the pain system. There may be incorrect treatment, which triggers other pain signals. We may be in poor health, have poor diet, or under too much stress for our bodies to heal.

I've been told I have a high pain threshold. Is this a good thing to have?

Our pain threshold is another way of saying that each of us has a pain system that is unique to us. Having a high threshold means that a pain that someone else might find intolerable may not seem so bad to you. This may lead you to ignore it, work through it, and not get it treated or even assess in the first place.

In the North American culture, we have labeled high pain threshold as virtuous and praiseworthy. However, we need to remember that any pain, even the ones you can easily ignore, is your body's way of trying to tell you something.

What happens if the pain is not treated?

If you have a new or worsening pain in an area that has not been checked out, you may be missing an important warning about tissue damage that could best be treated while still fresh. If the pain is ignored, over time this may cause changes in our pain systems that are difficult to reverse.

When getting treatment for an injury, be sure to tell your doctor/therapist about your pain. They will also want to know how treatments have changed the pain over time. If you have pain when performing an exercise routine, they will need to know this as well. You may need different exercises while healing, or maybe doing them incorrectly.

When and how does pain become chronic?

Difficult to answer, I'm not sure we know the real story yet. Often we don't know why the pain system malfunctions. When it does, it tends to ramp up the pain signal so that the alarm bells in our brain are much louder than we would expect for any specific injury. And they may not stop ringing. Our built-in pain relief system rapidly gets overwhelmed, and then it may stop working. This leads to chronic pain.

A subtle but critical transformation can occur, in which the normal process of pain can become pathological i.e. an abnormal process, and then actually becomes a disease unto itself.

This is why many experts feel persistent pain should be treated aggressively and urgently before permanent changes to the pain can occur. Once these changes occur and the pain condition becomes chronic, it is much more difficult to treat.

When should we worry about the pain turning into chronic pain? Are there any warning signs? How long does "normal" pain usually last?

Some specialists make a diagnosis of chronic pain based on time. Six weeks to three months of persistent pain is the usual criteria. However, if you have any pain that is not improving despite what seems like proper treatment, this may be the start of a chronic pain condition, even after only a few weeks.