

The New York Times article on January 12, 2025, reported: "Chronic Pain Is a Hidden Epidemic. It's Time for a Revolution." This article, from a journalist who suffers from chronic pain, outlines the frustration of patients who have been told that there's really nothing they can do to end their suffering.

Approximately 40 million American adults (~19%) suffer from chronic pain, defined as pain that persists for three months or more. As the baby boomer population ages, that number will continue to increase. For doctors, chronic pain is generally more challenging to treat than acute pain, as side effects from many prescription and over-the-counter (OTC) pain-relieving drugs pose serious health risks with long-term use.

The most common causes of chronic pain in Americans include:

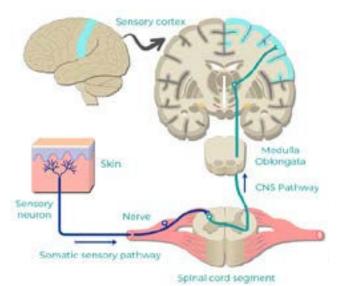
- Back aches (31 million)
- Migraines (28 million)
- Neuralgia (>10 million)

- Fibromyalgia (>10 million)
- Arthritis (all forms >46 million)
- Cancer and Repetitive Stress Injuries

The treatment for all of this pain comes with a hefty price tag. According to the American Pain Society, the estimated cost of pain to the U.S. economy is over \$100 billion, with \$20 billion being spent directly on analysics (pain-relieving drugs).

Pain can be a useful alarm system – designed to keep us safe. When we feel pain, something is wrong. The pain signal stops us from further injury and tells us to fix what's wrong. It usually accompanies inflammation, which can further force immobility so that tissue can regenerate. However, sometimes pain signals keep firing even after the body's tissues have healed. When pain continues for a long time – such as during a long illness or after a serious injury – it can cause changes to the nervous system, making you more sensitive to pain. This means that certain stimuli make you feel pain more quickly, and the pain can be more intense and last longer. This defines "chronic pain."

Pain signals need to move from the point of trauma (usually) through the nerve channel, through the spinal column, and eventually to the brain for processing. These routes can go through a variety



of receptors that are modulated by different ligands (specific activating molecules) or different ions (atoms that cause the signal to keep going). Some drugs affect the brain directly, like opiates. These drugs can override the pain signal but don't actually turn off pain or inflammation. Other drugs block specific channels along the way. For example, the newest approved drug for pain is a sodium channel blocker, which modulates pain signals that utilize these channels. While this has some utility, it won't work for all types of pain.

Neuroactive proteins (peptides) from venomous animals have been studied for over 100 years for their

ability to modulate pain and inflammation. A specific protein from cobra venom (alpha-cobrotoxin) has over 47 published human clinical studies showing its safety and efficacy. This peptide is the active ingredient in Avini's Plus Relief and has been shown to bind weakly to the alpha-7 subtype of the nicotinic acetylcholine receptor (nAChR), a universal receptor in the central nervous system. Because it binds weakly, it doesn't turn the receptor on (agonist) or turn it off (antagonist) – it modulates the signal. This has the amazing effect of turning down strong signals like pain.

That same receptor is also present on certain white blood cells responsible for inflammation. By modulating that receptor, Plus Relief also acts as a potent anti-inflammatory agent. By directly affecting nerve transmission and with the specificity of peptide binding, these compounds provide relief with very minimal potential for side effects. The binding potential of these peptides is very high, requiring only minute doses to be effective. Oral doses as low as 35 mcg/mL and topical doses as low as 20 mcg/mL have shown clinical efficacy. Additionally, the effects of these peptides can last up to six times longer than morphine.

Because the mechanism of Avini's Plus Relief is so different from all other pain relievers, it can safely be used with all of them. In fact, since these treatments work in different ways without overlap, all other pain relievers are actually synergistic with Plus Relief, making both products more effective. If you are already on a pain protocol, continue taking what you have been using when you introduce Plus Relief. Over time, as you experience the benefits of the cobra venom peptides, you may be able to reduce your reliance on other pain relievers.

Non-opiate. Non-narcotic. All-natural. Non-addictive. Long-lasting. Safe and effective relief from pain and inflammation.

Avini's Plus Relief.



