

# Evidence-Based Pain Management Techniques for Chronic Pain Relief

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## What Is Chronic Pain

Pain is one way our bodies let us know that something is wrong. It alerts us if we have been injured, or if our bodies need care. Most pain is short-lived or “acute,” and subsides as soon as we take care of it—but pain that lasts longer or doesn’t go away as quickly is known as “chronic” pain and it can persist for months or even years. Sometimes the pain of a past injury can remain, but other times, pain can persist even without prior injury (National Institute of Neurological Disorders and Stroke Chronic Pain Information Page, 2019). If you or a loved one experiences chronic pain, there are many options available that can lead to lasting relief. This fact sheet will review and explain some of the most successful evidence-based, non-opioid methods to manage chronic pain as identified through rigorous research (e.g., Turk et al., 2011).

## Opioids for Pain Management

Opioids are a common type of drug prescribed by providers for pain management. They are a synthetic drug made or derived from the opium plant and are a central nervous system depressant, which can reduce the perception of pain and cause drowsiness (Centers for Disease Control and Prevention [CDC], 2018; Nabipour et al., 2014). See Figure 1 displays quick facts about opioids.



Figure 1. *Opioid Quick Facts*

### Facts

Side-effects are common with pharmaceutical-based treatments. According to Ramsin et al. (2008), in some cases, opioids can generate:

- Immunosuppression (weakened immune system).
- Change in hormones (i.e., testosterone, estrogen, and others).
- Depression symptoms.
- Hyperalgesia (increasing pain sensitivity).
- Sedation and/or abnormal sleep habits.
- Bladder dysfunction and constipation.
- In rare cases, cardiac issues or death.

As such, opioids may not be the best option for patients seeking cost-effective, long-term treatment (Gatchel et al., 2014). Opioids, including prescriptions, are extremely addictive in nature. If opioids are not used as prescribed, they could lead to a dangerous overdose. According to the CDC, over 70,000 people died in 2017 in the United States, and almost 70% of these overdoses involved an opioid (Scholl et al., 2019). In addition, these commonly prescribed opioid medications alone are generally not enough to impact or improve the physical and emotional function of most patients suffering from chronic pain (Turk et al., 2011). Figure 2 summarizes the pros and cons of opioids and why they are likely not the best choice for long-term pain management.



Figure 2. *Pros and Cons of Using Opioids for Pain*

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## The Evidence for Alternative Pain Management

With these concerns in mind, many have wondered if there are any other effective options for pain management. For years, medical options like surgery or opioid medications seemed to be the only options, but steady research has uncovered many alternative techniques that can effectively relieve pain. Alternative techniques for pain management are highly sought after—but not all are evidence-based. To be considered evidence-based, the practice must be rooted in the best current evidence and demonstrate improvement in the care quality of individual patients (Sackett et al., 1996). Although we will not address all evidence-based and emerging methods in this fact sheet, we will discuss the options that have been identified by researchers at the Mayo Clinic (Hooten, 2016; Nahin et al., 2016) as being generally effective and widely available:

1. Cognitive behavioral therapy (CBT) for chronic pain
2. Acceptance and commitment therapy (ACT)
3. Yoga/Tai chi
4. Mindfulness

For the purposes of this fact sheet, we focus on the four options listed. Other evidence-based options include physical therapy, acupuncture, and some minimally-invasive medical procedures, which can be explored outside of this sheet (Anesthesiologists Task Force on Chronic Pain, 2010).

### ***Cognitive Behavioral Therapy***

Cognitive behavioral therapy (CBT) is a structured approach delivered by a licensed mental health professional (e.g., psychologist, social worker, etc.) to help patients understand the thoughts, feelings, and impulses that lead to their behaviors—and restructure or replace them as needed to improve thinking or behavior patterns (Gatchel et al., 2014). CBT for chronic pain improves overall daily functioning and quality of life for a variety of chronic pain conditions (Morley et al., 1999). If CBT-CP training isn't locally available, technology-based delivery of this type of self-management therapy for chronic pain has been proven effective (Guarino et al., 2018). Even online CBT, when combined with standard medical/medication treatment, improves pain management significantly (Guarino et al., 2018).

Though CBT does not reduce overall pain severity, pain reduces more quickly than with standard treatment. CBT has been shown to lower distressing thoughts about pain,

decrease negative substance-related behaviors, and even lower pain-related emergency department visits (Guarino et al., 2018). With these evidence-based impacts in mind, persons undergoing pain treatment may consider CBT for their chronic pain.

### ***Acceptance and Commitment Therapy***

Acceptance and commitment therapy (ACT) is a form of therapy that seeks to help individuals live a meaningful life—all while accepting the inevitable pains of life (Harris, 2006). Unlike CBT that strives to change thought patterns as needed, mindfulness-based practices like ACT aim to establish acceptance of one's thoughts and feelings as a health tool (Pollak et al., 2014). Notably, this approach can be beneficial for acute and even chronic pain management (Vowles et al., 2019). In a recent study, researchers noted that participants who were given a one-day ACT workshop post-surgery were able to stop taking their opioids and feel pain relief sooner than participants who received treatment as normal (Dindo et al., 2018). ACT for chronic pain is based on the idea that by learning to live with and accept chronic pain, one can control the grasp that pain has over their life (Foreman & Kaye, 2016). It is possible that in using ACT and its tools to cope with pain, one may lead a more fulfilling life.

### ***Yoga and Tai Chi***

Yoga is a type of mind–body meditation practice that began centuries ago in India (Basavaraddi, 2015). It has been shown to reduce perceived anxiety and stress while also improving mental and physical health (Saoji, 2016). Yoga focuses on breathing, poses, personal discipline, concentration, mindful awareness, meditation, and stillness (Chang et al., 2016). In one of the earliest studies conducted about the impacts of yoga on chronic pain, Williams and colleagues (2005) first evaluated clinical pain levels of participants, along with their pain-related fears and beliefs about pain. They then introduced yoga to these participants, and the yoga intervention showed an overall reduction in pain medication usage. Their study showed that the pain reduction with yoga was 2 times greater than the educational control group (Williams et al., 2005).

Similar to yoga in some ways, tai chi originated in China, with an emphasis on movement and fluidity of mind/body connections (Lam, 2018). After comparing Tai Chi to other traditional interventions, tai chi demonstrated some of the highest gains in relieving chronic pain (Kong et al., 2016). Though more research is needed about the definitive place of yoga and tai chi in pain management, they are emerging as evidence-based techniques to aid in pain relief.

Yoga and tai chi should be considered in pain management as they require little to no equipment and are generally more cost-effective treatments than other medical interventions. Though it is best to seek classes taught locally (so proper instruction can be given), yoga/tai chi can be done in the comfort of your own home with the help of pre-recorded videos and online-streaming.\*

### Mindfulness

Another technique that is emerging as an evidence-based technique is mindfulness (Voss et al., 2019). Mindfulness emphasizes conscious awareness of the here-and-now (Harris, 2006). Mindfulness is central to ACT, and is often practiced with yoga and tai chi, but can be practiced alone through mindfulness meditation techniques. In combination with other forms of alternative pain management and even by itself, mindfulness can have a positive impact on reducing chronic pain (Veehof et al., 2016). Recent studies have shown that mindfulness may reduce pain intensity, resulting from the way mindfulness skills influence the brain. Some individuals may even find that their pain experiences become more tolerable as a result of developing mindfulness skills and applying them over the long-term (Veehof et al., 2016). More research is needed on the effectiveness of mindfulness, but it is a technique that can be considered by those looking to improve their pain management.

### Summary

There are many available therapies for pain relief. Pain management is not a one-size-fits-all solution. It is unique—just like we are! We have highlighted a few options in Figure 3 as a starting place to find what works for you.

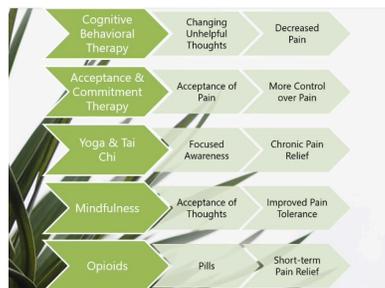


Figure 3. Four Alternative Pain Management Techniques and Resulting Effects as Compared to Opioids

## Where Can I Learn More? \*\*

### Websites and Resources

- American Pain Society
- American Psychological Association
- National Center for Complementary and Integrative Health
- USU Extension fact sheet “Mindfulness for Chronic Pain Management”

### Books

- *The Mindfulness Solution to Pain: Step-by-Step Techniques for Chronic Pain Management* by Jackie Gardner-Nix
- *Living Beyond Your Pain: Using Acceptance and Commitment Therapy to Ease Chronic Pain* by JoAnne Dahl and Tobias Lundgren
- *Yoga for Pain Relief: A New Approach to an Old Practice* by Lee Albert

### Programs

- [Living Well with Chronic Pain](#) – Find a program near you.

### Disclaimers

\* Please consult with your physician prior to making any changes to medication or exercise routine. It may also be helpful to discuss specific exercises with an expert or medical provider (e.g., medical doctor, physical therapist) to help make positive changes to your routine that will help with pain reduction or to help you feel healthier.

\*\* Please note that all of the resources provided are for educational purposes and USU does not specifically endorse their services. The above resources are intended to provide information, not to treat chronic pain or other mental health concerns. USU does not control the websites or books referenced above.

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