



2019

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### Recommended Citation

Hettinger, Katie (2019) "Prescribing Exercise for Chronic Pain Management," *BU Well*: Vol. 4 , Article 4.  
Retrieved from: <https://digitalcommons.butler.edu/buwell/vol4/iss1/4>

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# Prescribing Exercise for Chronic Pain Management

Katie Hettinger

**Abstract:** In light of the opioid crisis, practitioners are looking for alternative ways to effectively treat pain. Utilizing exercise modalities as a method of pain management is becoming increasingly popular and more research is being done in this area than ever before. This article analyzes different research regarding exercise therapy for pain management, as well as what type of exercise has been found to be most beneficial for patients in pain.

Roughly 100 million Americans currently suffer from chronic pain.<sup>1,2</sup> In 2010 alone, chronic pain led to over 500 billion US dollars in lost earnings, productivity, and medical expenses.<sup>1</sup> Due to increased diagnoses in the past few years, this number is growing. In order to relieve symptoms of chronic pain, opioids, a form of narcotics, are commonly prescribed. As a consequence of increased chronic pain diagnoses, the number of opioid users has also increased. In fact, opioid analgesics are currently the most prescribed class of medications in the United States. The widespread and improper use of opioids has led to a national epidemic of opioid associated addictions and deaths.<sup>3</sup> Consequently, the Centers for Disease Control and Prevention (CDC) has focused primarily on decreasing diversion of medications used to treat pain.<sup>2</sup> In 2016 alone, 42,000 people died due to an opioid overdose. Over 17,000 deaths were related to usage of opioids obtained via prescription in a community pharmacy.<sup>4</sup> Now more than ever we should be asking ourselves: is medication always the right option for pain management? Have we explored other alternatives, or are we treating medication as the only option for managing pain?

The current norm for pain management is through a variety of pain medications, either over-the-counter or prescription. The more pain medication a patient receives, the more adverse effects they may potentially experience. Opioid medications have serious side effects that become more dangerous with higher doses. These include respiratory depression and sedation risks.<sup>1,5</sup> As patients gradually develop tolerance to these medications, they are often prescribed higher doses to continue controlling their pain. Currently, 3 to 4 percent of the United States population is prescribed long-term opioid therapy, which is defined as over a year of opioid treatment.<sup>6</sup> To counteract over prescription, in 2016, the CDC released an updated guideline on prescribing opioids for chronic pain. This guideline suggests that non-opioid therapy, including non-pharmacological therapy, is favored before starting a patient on opioids.<sup>6</sup> Although opioids are currently prescribed at an alarmingly high rate, the benefits are short term, and generally classified as 3 months or less.

Prescribing patterns for long-term opioid treatments have become commonplace even though there has been little evidence to conclude that the benefits outweigh the risks in this treatment population.<sup>1</sup> Non-opioid therapy has generally been referred to as non-opioid medications, including nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen. These

medications have proven to be beneficial in chronic pain patients. For example, acetaminophen or NSAIDs are considered first-line agents in lower back pain and osteoarthritis treatment.<sup>6</sup> These medications also present with their own risks and have dosing limitations. As such, more attention needs to be placed on what recommendations and treatments exist for chronic pain that do not involve medication.

With the increased popularity of nonpharmacological methods for pain management, exploring exercise as a treatment option has become even more important. Exercise and other non-pharmacological therapies are cited as potential treatment strategies to help decrease pain medication use in chronic conditions such as lower back pain, osteoarthritis, rheumatoid arthritis and fibromyalgia.<sup>1</sup> Studies have shown that aerobic exercise alone is as beneficial, if not more beneficial, than over-the-counter use of nonsteroidal anti-inflammatory drugs, such as ibuprofen or naproxen.<sup>5</sup> For example, perhaps innovative practitioners can even utilize prescription pads from the *Exercise is Medicine* campaign to “prescribe exercise” for patients as part of their holistic health regimen.

Employing exercise as an adjunct therapy for pain management can decrease medication side effects, pill burden, and helps patients become stronger. Past research establishes that chronic pain is managed best with multimodal treatment regimens. Essentially, this includes a combination of both non-pharmacological and pharmacological treatments.<sup>1,5</sup> Additionally, regular physical exercise is also recommended in the prevention of chronic disease progression. Moreover, many patients experience pain secondary to a separate chronic condition. As a treatment option for this, exercise helps alleviate symptoms associated with pain and chronic disease states.<sup>1</sup> Furthermore, consistent movement also improves physical function over sedentary behavior. In particular, knee osteoarthritis patients were found to have improved physical function after decreased sedentary behavior patterns.<sup>7</sup> In another study observing the effects of physical activity, researchers compiled a systematic review on improving outcomes in chronic low back pain by comparing pain scores in patients undergoing exercise therapy versus patients who were not. In 32 of the 34 studies compared, patients had reduced pain scores in the exercise therapy group.<sup>8</sup> As a consequence, we can see that exercise is a viable and effective option for pain management.

Exercise intervention seems to be effective in managing various types of chronic pain. For instance, improved function and reduced pain scores have been reported by chronic low back pain patients, as well as knee and hip osteoarthritis patients.<sup>1</sup> In addition, exercise therapy improves physical function and symptoms in patients experiencing pain secondary to fibromyalgia.<sup>5</sup> Moreover, exercise regimens combining stretching and muscle strengthening are linked to relieving chronic lower back pain.<sup>8</sup> Specifically, stretching for longer durations has been proven to be the most influential exercise for improvement in pain outcomes. Similarly, muscle-strengthening exercises are the most influential in increasing functionality in pain patients.<sup>8</sup> As a consequence, since patients receive the most benefit from multi-modal treatment regimens, physical activity can be utilized as an adjunct to other pain management treatments.<sup>1,9</sup> Utilizing multimodal regimens may also allow prescribers to decrease the amount of opioid medications patients need to alleviate their pain, thus, decreasing harmful side effects and diversion or abuse risks.

Exercise is associated with a decrease in pain scores, improvement of function, and assistance with disease prevention. As such, the natural question becomes: why is exercise not more popular in chronic pain management?<sup>1,7</sup> There are resources available to help encourage practitioners to consider exercise as a viable treatment option. One of these resources is prescription pads for exercise called *Exercise Is Medicine*. However, the intensity of the stretching and strength training tolerated by each patient is vastly different. Because of this and the specialization required in exercise therapy, it has been difficult to generate standard guidelines for practitioners to use.<sup>1,7</sup> Patients are most likely to achieve pain relief when utilizing exercise regimens that are specifically tailored to their needs and condition. To ensure this, exercise programs should also provide modifications and progressions that can be self-selected for patients.<sup>1,9</sup>

Utilizing exercise as a mechanism for pain management has become increasingly popular. As more research is conducted, it will likely become an even more popular strategy in pain management. However, exercise is not always a viable option for pain management due to a disparity in exercise specialty training. As so, more training should be offered to help patients and practitioners better understand the implications of exercise. With a standard recommendation of daily exercise, patients can be left unmotivated and unlikely to adhere to the regimen. Ultimately, more research needs to be done on exercise for pain management to generate guidelines in recommending specialized stretching and strengthening exercises for patients experiencing chronic pain.

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