

# The Most Effective Non-Surgical Treatments for Arthritis

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## Introduction

Arthritis is the inflammation of joints which can cause two bones to be in close contact without protective cartilage between them. The cartilage acts like a cushion between bones, and when lost, can lead to joint pain and damage. A word I have often heard used to describe arthritis is “undefeated” because no matter the treatments used, the protective cartilage between the bones cannot grow back. Although surgery is an option for some, most people have learned to live a healthy life with arthritis by combating it with treatments. The Mayo Clinic lists out treatments such as Nonsteroidal anti-inflammatory drugs (NSAIDs), counterirritants, and steroids as possible treatments, but also states that the key is choosing what works best for each individual. Meanwhile, an article by Healthline lists out natural solutions for the arthritis problem, which include acupuncture, hot and cold therapy, and weight loss. Although the science is not as strong in support of these natural solutions in comparison to others, this certainly indicates that everyone is different and responds differently to the plethora of available treatments. Because of this, I found it necessary to truly dive into what treatments were favored by those in my city and see what has worked best for the majority of people.

## Summary

The reason for conducting this study is to identify the treatment that has worked the best for arthritis relief without the need for surgery. As mentioned in articles by The Mayo Clinic and Healthline, there are a multitude of treatments for arthritis, including medication, counterirritants, weight loss, acupuncture, and more. With so many options available, I wanted to figure out which treatments the general public in my city gravitated toward as the most beneficial in treating arthritis. This study is unique in that, not only are there a numerous amount of options for those with arthritis to choose from in determining what was the most effective for them, but also the fact that even those who have never had arthritis can choose the treatment that they find the most intriguing and appealing. My hypothesis is that the most beneficial treatment among those who have had arthritis will be physical therapy and oral anti-inflammatory medication. I also believe the most appealing treatment for those who have never had arthritis will be steroid injections.

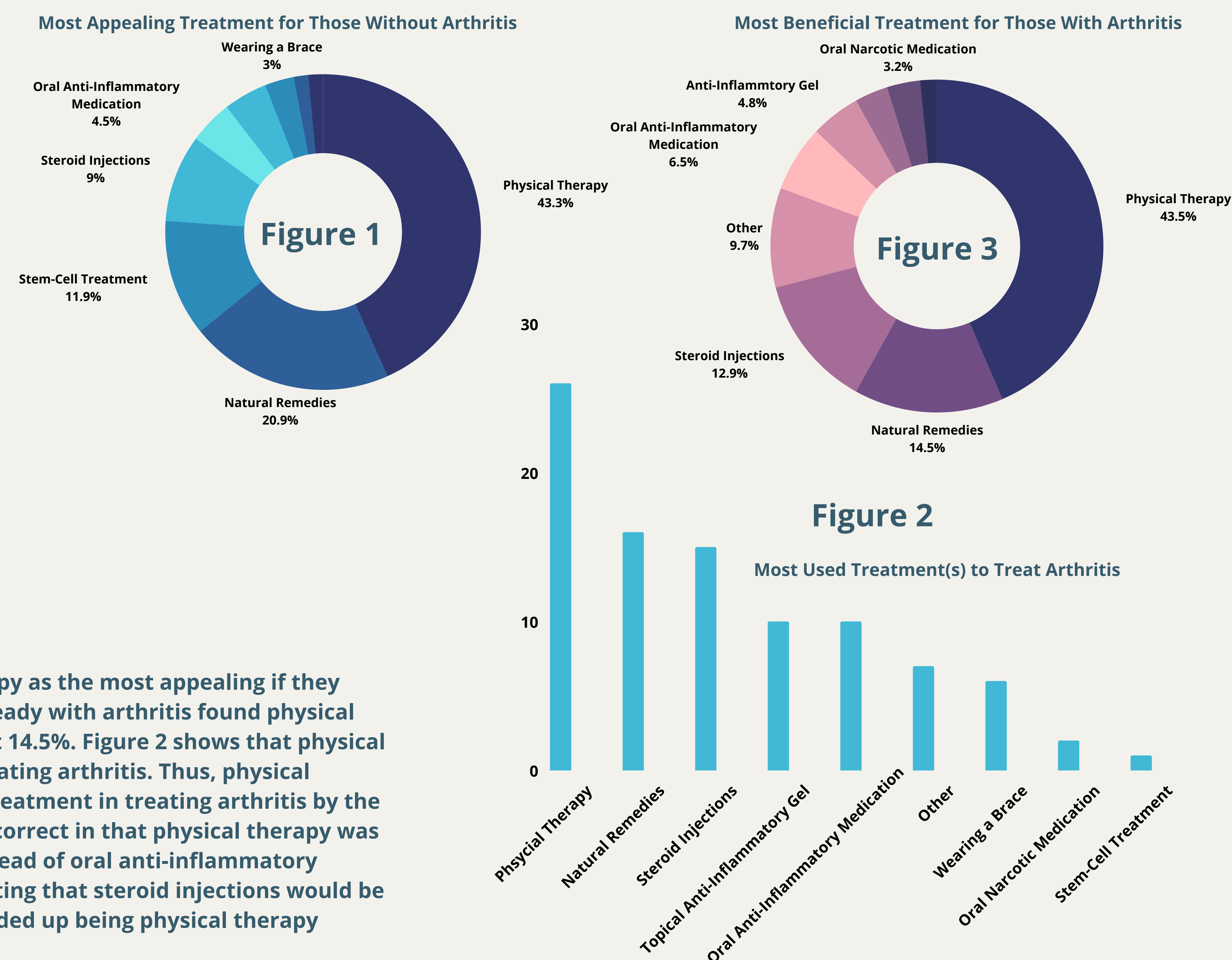
## Findings

The data in Figure 1 shows that 43.3% of individuals found physical therapy as the most appealing if they were diagnosed with arthritis and Figure 3 shows that 43.5% of those already with arthritis found physical therapy as the most effective, with natural remedies coming in second at 14.5%. Figure 2 shows that physical therapy and natural remedies were also the most used treatments in treating arthritis. Thus, physical therapy, followed by natural remedies, was deemed the most effective treatment in treating arthritis by the public in the Sugar Land-Missouri City area. My hypothesis was partially correct in that physical therapy was the most beneficial treatment but was followed by natural remedies instead of oral anti-inflammatory medication like I had predicted. Also, the hypothesis was incorrect in stating that steroid injections would be the most appealing for those without arthritis because the top choice ended up being physical therapy instead.

## Abstract

After observing numerous patients coming into Dr. Anderson’s clinic with arthritis-related problems that interfered with their daily lives and activities, I set out to identify what non-surgical solutions worked best in improving the wellbeing and alleviating the pain of arthritis patients. In order to determine the most effective treatment, I created and sent out a survey to the general population in the Sugar Land-Missouri City area which asked about the individual’s history with arthritis, what treatment(s) they used, and which they deemed the most effective. Additionally, if the individual, or someone they knew, did not have a history with arthritis, they were questioned upon which treatment appealed to them the most if they developed arthritis. Among 96 responses, the two most effective treatments were physical therapy and steroid injections, with 43.5% of those with arthritis stating that physical therapy was the most helpful and 12.9% stating that steroid injections were the most beneficial. Physical therapy was also the most appealing choice, at 43.3%, to those without arthritis. Thus, physical therapy was significantly the most effective treatment in the eyes of those with and without arthritis.

## Results



## Methodology

To conduct the research on this study, I sent out a survey to a random population of the public in the Sugar Land-Missouri City area and received 96 responses, with the first question asking if the individual or someone they knew had ever been diagnosed with arthritis. If the individual answered “no”, then they would only have to answer one more question, in which they were asked to select which treatment out of Physical Therapy, Steroid Injections, Topical Anti-Inflammatory Gel, Oral Narcotic Medication, Oral Anti-Inflammatory Medication, Wearing a Brace, Stem-Cell Treatment, "Natural Remedies" (i.e., capsaicin, flaxseed, etc.), or Other would be the most appealing to them if they were diagnosed with arthritis. If the person selected “yes” to the first question, they would then answer a question asking them to choose which of the following, out of the same treatments listed above, were used in treating their arthritis. After that, the same people who answered “yes” to the first question would have to choose, out of the same treatments listed above, the treatment they deemed as the most beneficial to improving their wellbeing and relieving the pain of their arthritis. At any point, if the person chose “Other”, there would be an immediate follow-up question asking them to explain what treatment was used. At the end, if they wanted to add any additional information, there was a space for them to do so. The only question that the individual could have given multiple answers to was the one about which treatment(s) were used in treating their arthritis. Three graphs were created, with two being donut charts and one being a bar graph. Figure 1 used a donut graph and shows the answers given to the question about the most appealing treatment among those without arthritis, Figure 2 shows a bar graph with the results of which treatment was deemed the most beneficial among those with arthritis. The survey is effective in that it allows me to reach a wider spectrum of people and can be answered by anyone of any age, regardless of if they even have arthritis or not, thus making it all-encompassing.

## Discussion

Some potential biases or influences could have included an individual taking the survey more than once or not understanding the terminology used, such as topical, narcotic, or anti-inflammatory. This may have caused more votes to have gone to a specific treatment even if it did not truly receive that amount. Also, an unexpected finding was that of natural remedies having the second most votes among those with and without arthritis, which highlights its significance in the modern world that cannot be overlooked by lab-made medical treatments. Overall, the successes of the experiment include the reach of the survey, which was answered by 96 people. Also, every single treatment received at least one vote in all three figures, which shows the variety of solutions that arthritis can be treated with. Some changes that could improve the study include conducting a similar survey for specific types of arthritis, such as rheumatoid, osteoarthritis, fibromyalgia, and more. This study can influence future research by highlighting the fact that many people see physical therapy as the best option for arthritis treatment, regardless of if they have it or not, which underscores its validity in medical research. Also, even with stem-cell treatment appealing to many without arthritis, it is not a treatment used as much as one might think, which shows that this type of treatment will have to be researched and expanded upon even more in the future in order for one to reap its benefits for as appealing as it is.