**Title: Infectious diseases.**

**Claim**: Natural remedies are an effective way to treat diseases

**Research Question:** How does ginger help in reducing pain and joint inflammation in adults with osteoarthritis?

**Rationale**

From the existence of human beings, threats to human life have been posed by infectious diseases. Despite the tremendous progress in medicine all over the globe, infectious diseases are still considered the leading factor of death in human beings. There is an increasing demand for creating novel and efficient chemotherapeutic agents to treat viral diseases due to the absence of effective medicines and/or vaccines for a number of viral infections and the rapid appearance of new drug-resistant viruses.

Through the discovery of antiviral and antibiotics, numerous infectious diseases have been conquered. Natural remedies are now employed against clinical disorders just as frequently as chemical medications. All over the globe, as a part of complementary and alternative medicine, the use of herbal medicine is expanding. Natural products will continue to be crucial raw materials for the development of new pharmaceuticals because the majority of chemical drugs that are currently used widely were extracted from them.

Bakhru (1992) in Herb that Heal: Natural remedies for good health claims that natural remedies are an effective way to treat disease. The book discusses comprehensive information about herbs and their uses in the treatment of various diseases. It also states that there is evidence of herbs have been used to treat diseases in almost all ancient civilizations.

Correspondingly, a separate article communicates those chines civilizations practice herbal medicines dating as far back as 8,000 years ago (Pan & Litscher, 2014).

The traditional system of Chinese medicine is a crucial illustration of how collected, old knowledge is used in modern healthcare with a systematic perspective. TCM has more than three thousand years of history [1]. *The Devine Farmer's Classic of Herbalism*, which was composed in China some 2000 years ago, is the world's oldest herbal manuscript. There are many herbal pharmacopoeias and monographs on particular herbs that have been developed from the accumulated and meticulously gathered material on herbs.

Natural remedies are plants used as medicine. They are herbal remedies used to help with the treatment of diseases. These remedies have a number of properties that are believed to be great substitute for medicine. Due to the Analgesic, the anti-inflammatory, immunomodulatory, anti-microbial, and anti-oxidant potential of natural medicine, it is considered the best choice to combat infectious diseases.

This paper will focus on ginger’s effectiveness to reduce the pain of osteoarthritis. However, how does ginger help in reducing pain and joint inflammation in adults with osteoarthritis? Ginger contains a chemical constituent that possesses medicinal activity in the same ways as COX2 inhibitor. Cyclooxygenase 2 has anti-inflammatory and analgesic activity. In addition to this, Ginger also has anti-oxidant, and anti-cancer properties and boost immunity.

**Background**

Osteoarthritis is one of the common types of arthritis & leading factor to disability in elders. This is also named as degenerative joint disease or “wear and tear” arthritis. It is associated with joint disease and the common symptoms associated with this disease are joint pain, stiffness, swelling, and cracking sounds of affected joints.

The ginger rhizome belonging to zingiberaceae family is used for the treatment of severaldiseases such as throat pain, musculoskeletal pain, and arthritis due to its anti-inflammatory, analgesic, antioxidant, and immunomodulatory potential. Ginger contains numerous phytochemical constituents gingerol, caffeic acid, capsaicin, beta carotene, and curcumin.

Both in vivo and in vitro animal studies documented the anti-inflammat0ry activity of ginger and its phytochemical constituents [Srinivasan K., 2017]. From the experimental studies, it has been demonstrated that the phytochemical constituents of ginger by inhibiting arachidonic acid inhibit the inflammatory process. Phytochemical constituents of ginger inhibit both lipoxygenase and cyclooxygenase and play important role in leukotriene synthesis. Advance studies have supported the role of ginger for the prevention and treatment of osteoarthritis on the basis of these findings [Van Breemen RB;2011, Paramdeep G; 2013, Altman RD & Marcussen KC;2001, Van Breemen RB;2011].

Bartels et al [Bartels EM; 2013] stated on the basis of experimental findings that ginger play important role in the treatment of hip & knee osteoarthritis.

For osteoarthritis, the use of ginger internally and externally has its origin in past decades. In China and India, externally ginger has been applied for the relief of pain for over 1000 of years with the combination of other herbs [Xinangcai, 1998]. In traditional Chinese hospital the slices of ginger with combined herbs have been applied for the removal of blockage in flow and to reduce the swelling of joints [Therkleson, 2009]. In Europe, In external therapies ginger has been applied in the Anthroposophical hospital for decades. The ginger footbath has recently been discovered to be a successful adjuvant therapy for sore, achy muscles and joints, based on anecdotal experiences among groups of nurses. Recent studies reveal that ginger extract taken orally is useful for treating osteoarthritis symptoms [Marcus & Suarez-Almazor, 2001, Altman & Marcussen, 2001; Haghighi, Khalvat et al., 2005, Bliddal, Rosetzsky et al., 2000]. These studies suggest, however, that gastrointestinal issues frequently result from the high doses of ginger extract needed to treat symptoms. Dry ginger extracts from solutions and plasters appear to have promising external topical anti-inflammatory properties, with ginger's active component gingerol penetrating the epidermis (Minghetti, Sosa et al., 2007). Transdermal ginger administration is thought to be just as efficient as ginger extracts taken internally in reducing inflammation.

Salicylates can be found in the plant Zingiber officinale commonly known as ginger. Which is then transformed by the human body into a chemical substance called salicylic acid. Salicylic acid, much like Acetylsalicylic eases pain and discomfort by reducing the creation of specific prostaglandins in your nerves, which are hormone-like compounds that regulate your immune system and fight joint inflammation.

**Evidence**

**Osteoarthritis**

Joseph E. Pizzorno ND, ... Herb Joiner-Bey ND, in The Clinician's Handbook of Natural Medicine (Third Edition), 2016

“Americans spend more on natural remedies for OA than for any other medical condition.”

<https://www.sciencedirect.com/topics/medicine-and-dentistry/natural-remedy#:~:text=The%20natural%20remedy%20has%20to,used%20herbs%20for%20medicinal%20purposes>.

**Treatment of Osteoarthritis**

Carlos J. Lozada, in Kelley's Textbook of Rheumatology (Ninth Edition), 2013

Ginger extracts have been popular “natural” remedies for OA for some time.124

Ginger actually contains small amounts of salicylate.125

One study with 247 evaluable patients revealed a small but statistically significant reduction in knee pain on standing (63% vs. 50%; P = .048) after taking ginger.127

<https://www.sciencedirect.com/topics/medicine-and-dentistry/natural-remedy#:~:text=The%20natural%20remedy%20has%20to,used%20herbs%20for%20medicinal%20purposes>

**Osteoarthritis**

The clinical effectiveness of Ginger (Zingiber officinale) in adults with osteoarthritis.

[Matthew J Leach](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorRaw=Leach%2C+Matthew+J),[Saravana Kumar](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorRaw=Kumar%2C+Saravana)

Results: 3 out of 5 randomized controlled trial met the criterion.

When compared to ibuprofen, ginger was safer and better tolerated, with only sporadic reports of mild, mostly gastrointestinal side effects.

<https://onlinelibrary.wiley.com/doi/full/10.1111/j.1744-1609.2008.00106.x?casa_token=VKjRnH3oOj8AAAAA%3A8SNir3BR_fKYUmyReGROLboYKn5UBYcJRahu-JmZ54X5ay3llCONYxGi5HZCpTim37IZeQOyC1mFKdQr>

**Ginger and osteoarthritis**

Tessa Therkleson

Ginger for osteoarthritis

<https://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1043&context=ecuworks2012>

**Clinical trial**

The Use of Ginger (Zingiber officinale) for the Treatment of Pain: A Systematic Review of Clinical Trials

Rohini Terry, PhD, Paul Posadzki, PhD, Leala K. Watson, BSc (Hons), Edzard Ernst, MD, PhD

Conclusion: The existing evidence suggests that Z. officinale components have anti-inflammatory properties, which may lessen the subjective perception of pain in some disorders including osteoarthritis.

<https://academic.oup.com/painmedicine/article/12/12/1808/1846834?login=false>

**Effective of massage of ginger**

# An experimental study on the effectiveness of massage with aromatic ginger and orange essential oil for moderate-to-severe knee pain among the elderly in Hong Kong

# [Yin BingYip](https://www.sciencedirect.com/science/article/abs/pii/S0965229908000034?casa_token=WJegoFUBJDMAAAAA:8SnFDa4X-tsh3oHrxTfPUM8o3FcCSUZ_2yx_s8SKCek4JRXsY54JPliSgzjWEhjqN8DkOJHFL7M" \l "!)[a](https://www.sciencedirect.com/science/article/abs/pii/S0965229908000034?casa_token=WJegoFUBJDMAAAAA:8SnFDa4X-tsh3oHrxTfPUM8o3FcCSUZ_2yx_s8SKCek4JRXsY54JPliSgzjWEhjqN8DkOJHFL7M" \l "!)[Ada Chung YingTam](https://www.sciencedirect.com/science/article/abs/pii/S0965229908000034?casa_token=WJegoFUBJDMAAAAA:8SnFDa4X-tsh3oHrxTfPUM8o3FcCSUZ_2yx_s8SKCek4JRXsY54JPliSgzjWEhjqN8DkOJHFL7M" \l "!)[b](https://www.sciencedirect.com/science/article/abs/pii/S0965229908000034?casa_token=WJegoFUBJDMAAAAA:8SnFDa4X-tsh3oHrxTfPUM8o3FcCSUZ_2yx_s8SKCek4JRXsY54JPliSgzjWEhjqN8DkOJHFL7M" \l "!)

## [Complementary Therapies in Medicine](https://www.sciencedirect.com/journal/complementary-therapies-in-medicine)

[Volume 16, Issue 3](https://www.sciencedirect.com/journal/complementary-therapies-in-medicine/vol/16/issue/3), June 2008, Pages 131-138

Result; The use of aromatherapy as a substitute treatment for momentary knee discomfort appears to have promise.

<https://www.sciencedirect.com/science/article/abs/pii/S0965229908000034?casa_token=WJegoFUBJDMAAAAA:8SnFDa4X-tsh3oHrxTfPUM8o3FcCSUZ_2yx_s8SKCek4JRXsY54JPliSgzjWEhjqN8DkOJHFL7M>

**Ginger oil**

# Effects of Self-Knee Massage With Ginger Oil in Patients With Osteoarthritis: An Experimental Study

Tosun, Betul, PhD, RN | Unal, Nursemin, MSN, RN | Yigit, Deniz, MSN, RN | Can, Nuray, MD | Aslan, Ozlem, PhD, RN | Tunay, Servet, MD

**Results:** The mean VAS Pain scores of the intervention group were significantly lower at the end of the first and fifth weeks (*p* < .05). The mean total scores and mean Function subscale scores of the WOMAC were significantly lower in massage group in the first- and fifth-week assessments (*p* < .05).

<https://connect.springerpub.com/content/sgrrtnp/31/4/379.abstract>

**Red ginger massage**

Red Ginger (Zingiber officinale var. rubrum) Massage Reduces Stiffness and Functional Disability in Elderly with Osteoarthritis

Putu Indraswari Aryanti1, Joni Haryanto2 and Elida Ulfiana2

Results: In addition to using normal pharmacological therapy for osteoarthritis, red ginger massage can be used as a supplemental treatment to assist reduce joint stiffness and functional impairment.

<https://pdfs.semanticscholar.org/3161/606cb5834f95151c42890d8e2798ed2c1088.pdf>

**Ginger extract**

# Effects of a ginger extract on knee pain in patients with osteoarthritis

[R. D. Altman](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorRaw=Altman%2C+R+D),[K. C. Marcussen](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorRaw=Marcussen%2C+K+C)

Results

A highly pure and refined ginger extract significantly lessened knee OA symptoms on a statistically significant basis. This result was only average. The ginger extract group had an excellent safety profile, with the majority of the GI side effects being minor.

[https://onlinelibrary.wiley.com/doi/abs/10.1002/1529-0131(200111)44:11%3C2531::AID-ART433%3E3.0.CO;2-J?casa\_token=ReEHZ0nL5EQAAAAA:-4cB087dsagJSXWh\_InDDQrWhjMhF4FkICC5ErBsL4sg4mGEAyXLkEc57ee3ChN-N-oX-i1vYTvtkT5P](https://onlinelibrary.wiley.com/doi/abs/10.1002/1529-0131%28200111%2944%3A11%3C2531%3A%3AAID-ART433%3E3.0.CO;2-J?casa_token=ReEHZ0nL5EQAAAAA:-4cB087dsagJSXWh_InDDQrWhjMhF4FkICC5ErBsL4sg4mGEAyXLkEc57ee3ChN-N-oX-i1vYTvtkT5P)

**Evaluation**

Some issues are associated with the presented evidences. There are very few published studies about this herb's effectiveness. Though a number of studies suggested the positive response of ginger for the treatment oof osteoarthritis and joint pain in oral or internal use but some studies show the limited response toward the topical use of ginger for the treatment. Topical ginger's noninvasive nature avoids the dangers of traditional medicine and surgery and may delay or even prevent the need for these more intrusive therapies. By utilizing short and straightforward SRQs, this study builds upon earlier qualitative & quantitative research on topical use of ginger for osteoarthritis.

Topical ginger is used to treat osteoarthritis patients whose present treatments are ineffective because of personal preference, complicated comorbidities, or preexisting prescription regimens. People with osteoarthritis are frequently willing to examine a variety of options, including alternative methods, due to the vast variety of symptoms, continued detrimental effect, & lack of a curative measures. Consideration should be given to topical ginger therapies as a practical, easy-to-use, and affordable option for the management of elderly people with osteoarthritis.

Some studies' support for the use of ginger in people with hip and/or knee osteoarthritis is insufficient. Significant study heterogeneity is mostly to blame for this. It may be possible to show that ginger can be used safely and effectively in osteoarthritis patients with the support of advancements in research design, apparatus, and dosage that more closely match current clinical practice. In order to assess the safety and effectiveness of ginger in osteoarthritis, this experimental study was proposed. To enhance the body of information and make ginger therapy available to more osteoarthritis patients, more study on bigger populations of persons who receive it is required. Consideration should be given to ginger therapy as a practical, non-invasive medical care alternative for those with the symptoms of osteoarthritis. A reduction in drug use, surgical operations, and lost earning potential could all result in significant socioeconomic gains as well as an improvement in independence and quality of life.

**Conclusion**

This study's findings led to the conclusions that for the treatment of mild to moderate diseases natural medicines are used predominately for all age groups. For the treatment of osteoarthritis and joints pain zinger play important role by inhibiting the inflammatory mechanism via inhibiting the cyclooxygenase, lipoxygenase and leukotriene synthesis with no adverse effects. A number of experimental studies demonstrated that the ginger oil, ginger extract and phytochemical constituents of ginger by possessing the anti—inflammatory, analgesic, immunomodulatory, antioxidant and anti-microbial activities have crucial role in the treatment of joint pains and osteoarthritis. Ginger can used externally and internally for its effective results and it can be used for promising therapeutic potential for several other diseases.

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