

# Ginger as an external treatment for osteoarthritis

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### ■ Abstract

This paper introduces the phenomenon of a series of ginger kidney compresses for people with osteoarthritis by describing the conventional and anthroposophic pictures of osteoarthritis, the use of ginger for managing osteoarthritis symptoms, zingiber officinale, ginger kidney compress therapy, corresponding pictures of ginger, osteoarthritis and the experience of the ginger kidney compress and, finally, the typical characteristics to consider when deciding if the ginger kidney compress is the most appropriate treatment. People with OA experience their symptoms being managed positively and effectively, when warmth encompasses their sentient being—physical, mental and emotional, and the I-organisation is fanned into life to activate a sense of expansion and glowing in the world with others. Ginger kidney compress therapy is a treatment that offers warmth, relaxation, vitality and analgesia to the aging population with osteoarthritis.

### ■ Keywords

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## Introduction

This paper extends the ginger research as discussed previously in “Der Merkurstab”, (Therkleson 2006), through offering additional depth and anthroposophic perspective in relation to its use externally for people with osteoarthritis. Therkleson (2009) found the phenomenon of a series of ginger compresses for people with osteoarthritis was inner warmth, relaxation and vitality, which were typically lacking and, ginger’s combined qualities of heat, stimulation, anti-inflammation and analgesia helped to counteract both this insufficiency and the osteoarthritis symptoms of pain and immobility. Following is a background to this phenomenon presented under five headings: osteoarthritis, ginger for osteoarthritis, zingiber officinale, the ginger compress and finally corresponding pictures of ginger, osteoarthritis and the experience of ginger compresses.

## Osteoarthritis

Osteoarthritis (OA) is defined as a chronic degenerative disorder characterised by a loss and subsequent thinning of articular cartilage over the joint, which leads to joint pain especially following activity and prolonged inactivity (Grainger and Cicuttini 2004). OA predominantly affects the joints of the knees, hips, spine and hands, with often the joint bone under the cartilage becoming thickened and sclerotic and the soft tissue around the joint becoming inflamed and weakened (Felson et al. 2000 a). Healthy joint cartilage allows the bones to move comfortably, while damaged cartilage causes the bones to rub together, described as like sandpaper, resulting in pain and discomfort. *Fig. 1* shows a round, smooth healthy joint alongside an OA joint, with the disintegrating cartilage, narrowed joint space, inflamed synovium and wasted muscle evident. It is a comparative picture of young and aging joints.

OA, the most common muscular skeletal disorder in Western society, is most prevalent in people over the age of 65 years, with at least 80 % having radiographic evidence and less than 25 % being symptomatic (Rahman 2005, Felson et al. 2000 a). It is a complex condition and joint degeneration, as observed by X-ray, results in varying degrees of pain when mobilising, with factors such as life style and psychosocial issues being equally sig-

nificant in the overall experience (Rosemann et al. 2006). Management of this condition is ideally multidisciplinary with complementary alternative medicine often very effective.

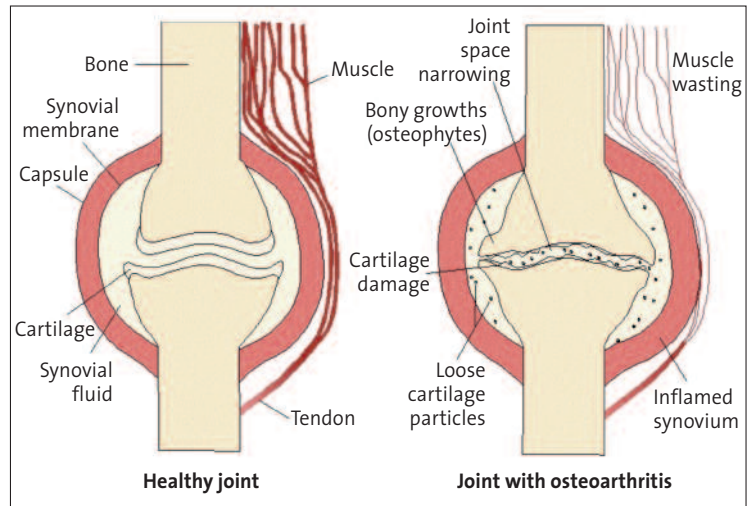
**The anthroposophical perspective**

OA results in a loss of vitality, fluidity, flexibility, mobility and warmth in the joints, with an overall tension and rigidity in movement, thoughts and feelings. The primary symptom of OA is pain on movement and anthroposophically this is treated by focusing on the metabolic system. Steiner (1924/1948) proposes physical movement originates in the muscular skeletal system, with a dynamic relationship to the emotional and physical environment. Steiner (1911/1979, 1947/1960) further posits that motor nerves perceive movement rather than activate it, with movement originating in the will forces of the body, understood to be the metabolic and muscular skeletal systems. Modern neurophysiologists concur with this proposition and question the assumption that spinal nerve activation of muscle stimulates movement. Research stimulating mammalian muscle and human touch fibres as well as axon excitability of human peripheral spinal nerves presents many questions and cautions relating to the activation of movement in humans (Allum and Hulliger 1989, Gandevia et al. 2002). Cowan et al (2004) and Dudney (2001) discuss the implications of an anthroposophic perspective in relation to muscular skeletal disorders describing them as disorders of the metabolism and inner willed activity.

In OA, the physical and etheric bodies weaken leading to the astral body becoming less effective and subsequently causing additional tension and pain of the affected joint. The individual inner organisation of the OA joint becomes subsequently compromised allowing excessive degeneration. The physical is associated with the mineralising processes of the bone, the etheric with the moving fluids that are most evident in the posture, the astral with nervous and sensory perception, and the individual inner organisation to the warm blood. OA is a degenerative, sclerotic joint disease, where there is a progressive deterioration of the cartilage accompanied by loss of fluidity, vitality and warmth. One of the most significant anti-sclerotic therapies in anthroposophic medicine is the use of sulphur; nature’s substance that most intensely internalises warmth (Husemann and Wolfe 2003). The warming of the lower metabolic region, with a hot ginger compress activates the individual inner organisation to arrest the progressive joint degeneration, to strengthen the posture, to manage the sense of pain on movement as well as strengthen the inner will to mobilise.

**Ginger for osteoarthritis**

The conventional management approach for osteoarthritis uses non-steroidal anti-inflammatory drugs, analgesics and invasive procedures, which are often unsatisfactory answers for people with osteoarthritis (Felson et al. 2000 b). Alternatively, ginger is found, when used both internally and externally, to be an effective



**Fig. 1**  
*Healthy & osteoarthritis joints*

approach to managing OA symptoms. Random controlled trials with humans have found that oral ginger extract has a statistically significant effect on reducing OA symptoms of pain and inflammation (Altman and Marcussen 2001, Bliddal et al. 2000, Haghghi et al. 2005). The active constituents of dried ginger, gingerols and shagaols, are found to have anti-inflammatory and analgesic qualities (Tjendraputra et al. 2001, Grzanna et al. 2005, Dedov et al. 2002). Studies use high doses of oral ginger extract, as required to achieve the desired result, often lead to gastrointestinal complaints (Marcus and Suarez-Almazor 2001). The external application of ginger avoids the gastrointestinal tract and has been used for centuries to relieve joint pain and discomfort in China (Xinangcai 1998). In a recent study evaluating the topical anti-inflammatory activity of dry ginger extracts from solutions and plasters, gingerols were found to permeate the epidermis (Minghetti et al. 2007). The use of ginger applied transdermally is largely unexplored and, with current interest in alternative ways of managing osteoarthritis, it offers hope to those with a condition that has hitherto led to declining health and quality of life. Therkleason (2010) is the first published study using ginger transdermally in the form of the ginger compress for people with OA. The following section considers the characteristics of ginger, the primary ingredient of the ginger compress.

**Zingiber officinale – ginger**

Zingiber officinale (ginger) comes from the zingiberaceae family, which has 1300 species, 80–90 comprise the zingiber species, with zingiber officinale the only medicinal plant in this species. Ginger is a tropical, cultivated, perennial, monocotyledon, in the lily family, which grows best in warmth, shaded light, moisture and well aerated soil. Historically ginger is found under the forest canopy in Southern Asia, Indonesia and Malaysia. Today the ginger rhizome is grown widely for commercial use in warm, moist, tropical areas of Africa, Australia, China, Fiji, India, Indonesia and Sri Lanka. Ginger likely came from the East to the West via the silk roads, with the name ginger being derived from “Gingi”, a district in southern India, where ginger is said to have originated.

**Fig. 2**

Ginger harvest

**Fig. 3**

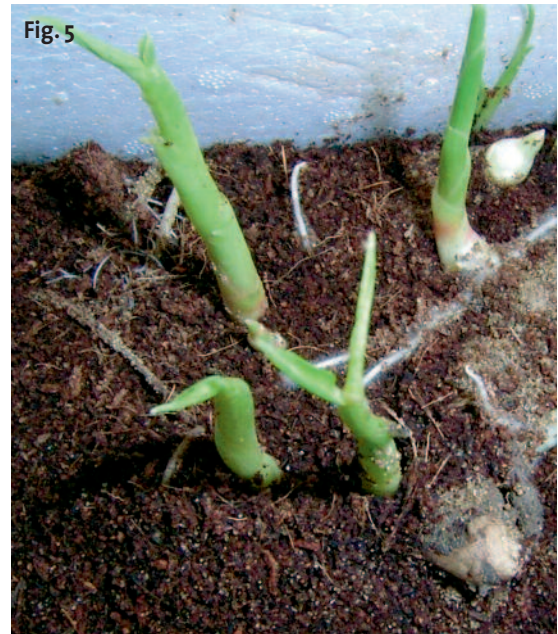
Fresh rhizome

**Fig. 4**

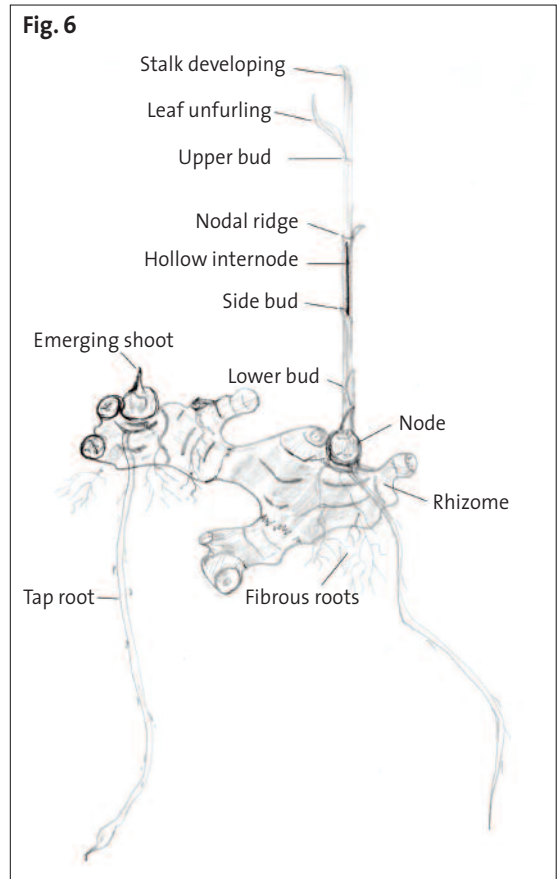
Ginger roots

**Fig. 5**

Ginger shoots

**Fig. 6**

Ginger structure



Ginger's rhizome has been used since ancient times as a food and a medicine; both internally and externally for a variety of effects. Ginger is valued as a warming, stimulating spice and flavouring in sweets, drinks and foods. "The yellow emperor's classic of internal medicine" was written about 1000 BC by a number of authors, referred to as Huangdi, and it gives the first description of ginger's medicinal use as a warming, stimulating agent. The qualities and characteristics of the plant ginger evolved over three years of studying ginger and are presented under the following: rhizome, root, leaf, flower and unique gesture. (Blumenthal 1998, Newall et al. 1996, Mindell 2000, Tyler 1987, Ferry-Swainson 2000)

### Rhizome

The ginger rhizome is an underground spreading bulbous, stem that lies horizontally close to the surface. It

bears regularly spaced node-carrying buds that develop to shoots or new rhizomes. The rounded fresh node buds are about the size of a knuckle, and soft lemon-green with a fleck of pink in colour. Each mother rhizome consists of thick rounded thumb-like protrusions, which are referred to as "hands" in herbal literature, and the outer layer of a dried rhizome has a texture reminiscent of human skin. The cut rhizome has a pungent aroma, smelling fresh and sweet, and when tasted it has a hot, sharp and awakening effect. Ginger is considered sterile

and is propagated vegetatively in spring from stored rhizome stock of the previous year, each weighing about 50gms and having at least two “budding nodes”. Rhizomes are ideally spaced 15 cms apart and lightly covered in loose soil and mulch. The plants grow most abundantly when the rhizomes are crowded together with plenty of root overlap; a social plant with its own kin. The rhizomes are harvested when the leaves start to dry and contract in the winter period. The rhizome contains: 4–7.5 % oleoresin such as gingerols and their related dehydration products known as shagaols, 1–3.5 % of volatile oils primarily sesquiterpenes such as bisabolene, zingiberene, camphene and acurcumene, 6–10 % lipids comprising triglycerides, phosphatidic acid, lecithins and free fatty acids, 9–10 % proteins and 40–60 % carbohydrates in the form of silicate starches (Chrubasik et al. 2005) (fig. 2 and 3).

**Root**

From the seams of the lower nodes grow long tap roots that anchor the plant deep in the earth. The tap roots stretch to about 80 cm and are milky-white, strong and juicy with few root hairs and no lateral roots. Thin, short fibrous roots also grow from the seams of the fresh nodes. These are coated in soil and micro-organisms suggesting life, strength and activity underground. Lovel (2008), a biodynamic farmer in Queensland, Australia, has tested the soil before and after ginger harvest and he reports that ginger raises the activ carbon and un-locks salts of silica, phosphate and nitrate (fig. 4).

**Leaf**

The emerging shoots are slow to protrude; about 28 days after planting of the rhizome. Each shoot is subtly different and there is the appearance of individual fingers that slowly and gracefully dance in the light, reminiscent of the delicate finger movement seen in a group of Thai dancers. The shoots are lime-green with the occasional drop of fluid forming on the tip (fig. 5 and 6).

As the shoots emerge from the nodes they are their full diameter and grow about 4cms a day until the stalk reaches full height at about 1.5 metres after 30 days. Each mother rhizome develops between 10–14 stalks that erupt consecutively and are reminiscent of soft green bamboo. The stalks reach towards the light, with side buds emerging at the nodal ridges. The nodal ridges are 3–7 cms apart with the inter-nodal area hollowed inside. The stalks are slender and erect with between 10 to 14 buds on each. The lower buds are arrested and appear as contracted leaves, while the upper buds develop single stems that slowly unfurl into large spreading leaves. About 8–10 leaves rhythmically alternate up the stems and only open once the stalks have reached full height. The lower contracted leaf buds are a dark emerald green, while the upper buds are a soft lemon green. There is a hint of red on the edges of the lower buds and yellow on the edges of the upper buds. The red warmth of the bulging rhizome reflects in the lower buds, while the light seems to shine yellow through the upper leaf



**Fig. 7**  
Ginger leaves

tips as they reach to the sun. The leaves are ovate, light and soft between 18–20 cm long and 3–4 cm wide. A central vein runs from the base to the leaf tip, with finer longitudinal veins either side (fig. 7).

**Flower**

In the plant’s autumn, the flowering nodes appear, each erupting fractionally higher from the rhizome than the stalk nodes and growing to only about 30 cms. Each rhizome may form between 4–6 flower stalks, which are dwarfed by the canopy of drying leaves. At the end of the flower stalk is a green, oval, cone-like form resting within a crucible of contracted leaves. In many of the large commercial farms flowers are rarely observed, which is a pity as the flowering stalks increase the size and vitality of the rhizome (fig. 8 and 9).

Daily the cones relax a petal to release a small delicate, cream coloured flower bud that opens at dusk and is spent by dawn. The flowers are released in an eerie, shaded atmosphere, where often bats and moths fly nearby. The flowers are delicate, 1 cm across, orchid-like, with a distinct maroon red tongue.

**Ginger’s unique gesture**

Ginger is nature’s analogy of health, with strong etheric forces that seem at odds with normal plant development. It bears its fruit below the ground in the form of a heat filled rhizome, its stalk erupts from the rhizome to grow at an exceptional rate and its long vertical tap roots anchor it deep in the earth. The flower emerges at dusk in an inconspicuous shell yet activates increased growth of the rhizome. Ginger as a plant takes little of the soil’s mineral content rather nourishing it by returning carbon and salts. Ginger is a soil improver that is strongly rooted in the earth yet is formed more out of the earth’s latent cosmic forces than the mineral content. Perhaps this explains the name Zingiber that comes from Indian sanskrit “singabera”, meaning body of a horn. While the horn of the animal grows to the cosmic light and supports the animal’s metabolic

**Fig. 8**  
Ginger flower cones



**Fig. 9**  
Ginger flower



processes, the ginger rhizome horn grows in the cosmically enlivened earth and therapeutically supports human metabolic processes. The sulphuric warmth of the rhizome activates both metabolic processes and the higher being of humans, enabling an awakening of inner physical and soul warmth. Ginger is a plant that provides nourishment and healing to both the earth and humans.

Ginger is rhythmically balanced holding a polarity between; earth and cosmos, horizontal and vertical, gravity and levity, dark and light, cold and warm, moist and dry, hard and soft, still and active. Ginger shows strong light, air, warmth and moisture qualities. There is the suggestion of light, open levity about the earth, with darkened gravity, stability, fluidity and warmth below the earth. Fresh leaves in open fashion rhythmical spiral up the stalk and unfold delicately in the sun. In the shaded evening light sap draws down from the leaves into the rhizome to rise back up into the flower stalks to allow the flowers to unfold. The flowering is a 24 hour rhythmic process from budding to spent flower and it is in moon light that one observes the small, complex opened flower. Ginger's warmth quality manifests in the rounded horizontal rhizome growing close to the surface from which reproduction occurs, in the soft red colour of the budding nodes and in the very hot taste of the rhizome juices. Light manifests in the strong silica tendency of the elongated, triangular-formed leaves, which are large, widely spaced and reflect a soft yellow at their tips. The upper leaves rise vertically towards the light, while the central leaves stretch out horizontally for maximum photosynthesis. Like a cross ginger rises vertically to the heavens and stabilises deep into the earth, with leaves and rhizome balancing as it stretches horizontally. It is the ideal plant to bring the

light, warmth, fluidity, balance and vitality needed by people with osteoarthritis. The final section considers the experience of ginger compress therapy alongside the characteristics of ginger and osteoarthritis.

#### Ginger compress

The ginger compress, when applied to the kidney region, is found to bring warmth and relaxation to the lower metabolic region and to stimulate a sense of awakening, with increased vitality (Schurholz et al. 1992/2002, Therklason and Sherwood 2004). Therklason (2010) reports a PhD study in which daily ginger kidney compresses were given for seven consecutive days to ten people with diagnosed osteoarthritis by anthroposophic nurses in five primary healthcare practices in New Zealand and Australia. The treatment involved a cotton cloth, soaked in a hot ginger infusion; applied for thirty minutes over the kidney region on the back and held in position by a thick cotton binder. The participants rested comfortably warm and quiet throughout the treatment, which included a 15–30 minute resting period. The experiences were explored phenomenologically to reveal seven significant themes, which are summarised in the table below alongside characteristics of the ginger plant and people with osteoarthritis.

The table (*tab. 1*) is a summary of the phenomenological study of ginger and the experience of a series of ginger kidney compresses for people with OA that is described in my PhD (Therklason, 2009). The phenomenological methodology used is described in detail in Therklason (2010 b). A creative, imaginative variation of thoughts allowed the seven themes to be considered alongside the characteristics of the ginger plant and those lacking in people with OA, who were found to respond positively to a series of ginger kidney compresses.

**Tab. 1: Corresponding pictures of osteoarthritis, ginger and the experience of the ginger kidney compress**

Ginger plant	Person with OA	Experience GKC's for persons with OA
<b>Rhizome:</b> Dense & encompassing Warmth Still & quiet Unseen potential	Sense inner cold Disturbed mental processes General agitation	Encompassing warmth in the body which initially spread from the midpoint of the back to the head activating a sense of meditative like stillness and relaxation of thoughts. This changed mental state allowed the opportunity to positively reconsider present challenges in life leading to an inner state of peace and calm.
<b>Rhizome &amp; Root:</b> Spicy & hot Spreading form Budding nodes Sensing roots Directive tap roots	Aversion to cold Cold extremities Cold, aching joints Inner body tension	Constant penetrating warmth, which gradually increased in intensity and radiated throughout the body, from the mid back up towards the neck and head then extending to the feet, hands and aching joints, activating an inner sense of warmth and relaxation.
<b>Rhizome:</b> Fresh, awakening & stimulating Social tendency Aroma	Repressed memories Negative thoughts Sense helplessness Sense frustration Sense social loss	A positive shift in thinking with a subsequent change in outlook. Past memories of family, friends and health were awoken and met with fresh insight and acceptance leading to renewed clarity in relation to life with others.
<b>Whole Plant:</b> Bulging energy, vitality & life force Light & warmth Rhythmic pulsing Harmonious balance	Inflexible thoughts Lack imagination Repetitive routines Thoughts scattered General anxiety Lack interest world	Thinking that was awake and alive arousing both a new and rejuvenated interest in worldly activities.
<b>Leaf:</b> Light silica quality Open & receptive to light & warmth Wings outstretched	Pain & tension on moving Pain unpredictable Lack coping skills Negative pain response in females Social restraint Burdened	A gradual shift of pain as the inner body progressively warmed and relaxed allowing a sense of emotional freedom which resulted in a new found willingness to share their private world with others.
<b>Stalk:</b> Varied unique forms Fluid forms Mobile Dancing Upward striving Rhythmic budding	Tired contracted muscles & joints Poor balance & mobility Tense breathing Independent self management OA Loss social opportunity	Increased suppleness within the body facilitating improvements in mobility, posture and breathing that continued from hours to a month after the treatment positively influencing social opportunities with others.
<b>Flower:</b> Rapid forming stalk Cone in leaf socket Protected, concealed 24 hr cycle Vibrant flow sap Opens dusk Cream & maroon	Inflexible joints Grating movement Lack energy Low vitality Withdrawal Avoidance behaviours	More comfortable and flexible joint mobility allowing increased physical energy and vitality which enabled renewed participation in worldly activities

Consideration of these thoughts enabled clarification of the ideal person with OA being considered for ginger kidney compress therapy. The ideal person was found to manifest all or a number of the following:

- aware that cold impacts negatively on their symptoms often failing to recognise and/or prevent it
- experience bodily tension that is accompanied by agitation and/or anxiety
- lack healthy coping skills during times of stress and/or loss
- tend to focus on intellectual pursuits and/or have fixed thought and behaviour patterns
- tend to be cautious and overly sensitive in relation to the world and others and may additionally live alone and/or be reluctant to participate in activities with others
- experience a general lack of body awareness, especially in relation to the lower metabolic limb system, and/or have digestive and/or excretory problems
- have a medical history of kidney, bladder, lung, ear and/or sinus problems
- have a reluctance or inability to accept invasive treatments and/or conventional medication

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