



## **Turmeric, Ginger & Cinnamon**

### *The Buzz Words of the Anti-Inflammatory Diet*

**Chef Lisa Fidler**  
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This article is from the MBG (mind/body/green) website. It talks a lot about the benefits of lowering inflammation in the body. Today we will focus on the 3 spices that are buzzing around the culinary world; Ginger, Turmeric & Cinnamon.

**By Dr. Gary Kaplan**

If you want to eat for long-term health, lowering inflammation is crucial.

Inflammation in the body causes or contributes too many debilitating, chronic illnesses — including osteoarthritis, rheumatoid arthritis, heart disease, Alzheimer's disease, Parkinson's disease, and even cancer.

That's why, as a doctor and founder of the Kaplan Center for Integrative Medicine, I recommend my patients eat a diet focused on anti-inflammatory principles.

Recent research finds that eating this way not only helps protect against certain diseases, but it also slows the aging process by stabilizing blood sugar and increasing metabolism.

Plus, although the goal is to optimize health, many people find they also lose weight by following an anti-inflammatory eating pattern.

Here, I'm sharing the 11 principles I recommend everyone incorporate into their diet for optimal health:



### **1. Consume at least 25 grams of fiber every day.**

A fiber-rich diet helps reduce inflammation by supplying naturally occurring anti-inflammatory phytonutrients found in fruits, vegetables, and other whole foods.

To get your fill of fiber, seek out whole grains, fruits, and vegetables. The best sources include whole grains such as barley and oatmeal; vegetables like okra, eggplant, and onions; and a variety of fruits like bananas (3 grams of fiber per banana) and blueberries (3.5 grams of fiber per cup).

### **2. Eat a minimum of nine servings of fruits and vegetables every day.**

One “serving” is half a cup of a cooked fruit or vegetable, or one cup of a raw leafy vegetable.

For an extra punch, add anti-inflammatory herbs and spices — such as turmeric and ginger — to your cooked fruits and vegetables to increase their antioxidant capacity.

### **3. Eat four servings of both alliums and crucifers every week.**

Alliums include garlic, scallions, onions, and leek, while crucifers refer to vegetables such as broccoli, cabbage, cauliflower, mustard greens, and Brussels sprouts.

Because of their powerful antioxidant properties, consuming a weekly average of four servings of each can help lower your risk of cancer.

If you like the taste, I recommend eating a clove of garlic a day!

### **4. Limit saturated fat to 10 percent of your daily calories.**

By keeping saturated fat low (that's about 20 grams per 2,000 calories), you'll help reduce the risk of heart disease.

You should also limit red meat to once per week and marinate it with herbs, spices, and tart, unsweetened fruit juices to reduce the toxic compounds formed during cooking.

## **5. Consume foods rich in omega-3 fatty acids.**

Research shows that omega-3 fatty acids reduce inflammation and may help lower risk of chronic diseases such as heart disease, cancer, and arthritis — conditions that often have a high inflammatory process at their root.

Aim to eat lots of foods high in omega-3 fatty acids like flax meal, walnuts, and beans such as navy, kidney and soy. I also recommend taking a good-quality omega-3 supplement.

And of course, consume cold-water fish such as salmon, oysters, herring, mackerel, trout, sardines, and anchovies. Speaking of which:

## **6. Eat fish at least three times a week.**

Choose both low-fat fish such as sole and flounder, and cold-water fish that contain healthy fats, like the ones mentioned above.

## **7. Use oils that contain healthy fats.**

The body requires fat, but choose the fats that provide you with benefits.

Virgin and extra-virgin olive oil and expeller-pressed canola are the best bets for anti-inflammatory benefits. Other options include high-oleic, expeller-pressed versions of sunflower and safflower oil.

## **8. Eat healthy snacks twice a day.**

If you're a snacker, aim for fruit, plain or unsweetened Greek-style yogurt (it contains more protein per serving), celery sticks, carrots, or nuts like pistachios, almonds, and walnut.

## **9. Avoid processed foods and refined sugars.**

This includes any food that contains high-fructose corn syrup or is high in sodium, which contribute to inflammation throughout the body.

Avoid refined sugars whenever possible and artificial sweeteners altogether. The dangers of excess fructose have been widely cited and include increased insulin resistance (which can lead to type-2 diabetes), raised uric acid levels, raised blood pressure, increased risk of fatty liver disease, and more.

## **10. Cut out trans fats.**

In 2006, the FDA required food manufacturers to identify trans fats on nutrition labels, and for good reason — studies show that people who eat foods high in trans fats have higher levels of C-reactive protein, a biomarker for inflammation in the body.

A good rule of thumb is to always read labels and steer clear of products that contain the words “hydrogenated” or “partially hydrogenated oils.” Vegetable shortenings, select margarines, crackers, and cookies are just a few examples of foods that might contain trans fats.

## **11. Sweeten meals with phytonutrient-rich fruits, and flavor foods with spices.**

Most fruits and vegetables are loaded with important phytonutrients. In order to naturally sweeten your meals, try adding apples, apricots, berries, and even carrots.

And for flavoring savory meals, go for spices that are known for their anti-inflammatory properties, including cloves, cinnamon, turmeric, rosemary, ginger, sage, and thyme.

# Turmeric

By Kris Gunnars, BSc

Turmeric may be the most effective nutritional supplement in existence. Many high quality studies show that it has major benefits for your body and brain.

Here are the top 10 evidence-based health benefits of turmeric.

## 1. Turmeric Contains Bioactive Compounds With Powerful Medicinal Properties

- Turmeric is the spice that gives curry its yellow color.
- It has been used in India for thousands of years as a spice and medicinal herb.
- Recently, science has started to back up what the Indians have known for a long time... it really does contain compounds with medicinal properties.
- These compounds are called curcuminoids, the most important of which is curcumin.
- Curcumin is the main active ingredient in turmeric. It has powerful anti-inflammatory effects and is a very strong antioxidant.
- However, the curcumin content of turmeric is not that high... it's around 3%, by weight.
- Most of the studies on this herb are using turmeric extracts that contain mostly curcumin itself, with dosages usually exceeding 1 gram per day. It would be very difficult to reach these levels just using the turmeric spice in your foods.
- Therefore, if you want to experience the full effects, then you need to take an extract that contains significant amounts of curcumin.
- Unfortunately, curcumin is poorly absorbed into the bloodstream. It helps to consume black pepper with it, which contains piperine... a natural substance that enhances the absorption of curcumin by 2000%.
- I personally prefer to swallow a few whole peppercorns along with my curcumin supplement, in order to enhance absorption.
- Curcumin is also fat soluble, so it may be a good idea to take it with a fatty meal.
- Bottom Line: Turmeric contains curcumin, a substance with powerful anti-inflammatory and antioxidant properties. Most studies used turmeric extracts that are standardized to include large amounts of curcumin.

## 2. Curcumin is a Natural Anti-Inflammatory Compound

- Inflammation is incredibly important.
- It helps the body fight foreign invaders and also has a role in repairing damage.
- Without inflammation, pathogens like bacteria could easily take over our bodies and kill us.
- Although acute (short-term) inflammation is beneficial, it can become a major problem when it is chronic (long-term) and inappropriately deployed against the body's own tissues.
- It is now believed that chronic, low-level inflammation plays a major role in almost every chronic, Western disease. This includes heart disease, cancer, metabolic syndrome, Alzheimer's and various degenerative conditions.
- Therefore, anything that can help fight chronic inflammation is of potential importance in preventing and even treating these diseases.
- It turns out that curcumin is strongly anti-inflammatory, it is so powerful that it matches the effectiveness of some anti-inflammatory drugs.
- Curcumin actually targets multiple steps in the inflammatory pathway, at the molecular level.

- Curcumin blocks NF-kB, a molecule that travels into the nuclei of cells and turns on genes related to inflammation. NF-kB is believed to play a major role in many chronic diseases.
- Without getting into the gory details (inflammation is extremely complicated), the key takeaway here is that curcumin is a bioactive substance that fights inflammation at the molecular level.
- In several studies, its potency has compared favorably to anti-inflammatory pharmaceutical drugs... except without the side effects.
- Bottom Line: Chronic inflammation is known to be a contributor to many common Western diseases. Curcumin can inhibit many molecules known to play major roles in inflammation.

### **3. Turmeric Dramatically Increases The Antioxidant Capacity of The Body**

- Oxidative damage is believed to be one of the mechanisms behind aging and many diseases.
- It involves free radicals, highly reactive molecules with unpaired electrons.
- Free radicals tend to react with important organic substances, such as fatty acids, proteins or DNA.
- The main reason antioxidants are so beneficial, is that they protect our bodies from free radicals.
- Curcumin happens to be a potent antioxidant that can neutralize free radicals due to its chemical structure.
- But curcumin also boosts the activity of the body's own antioxidant enzymes.
- In that way, curcumin delivers a one-two punch against free radicals. It blocks them directly, then stimulates the body's own antioxidant mechanisms.
- Bottom Line: Curcumin has powerful antioxidant effects. It neutralizes free radicals on its own, then stimulates the body's own antioxidant enzymes.

### **4. Curcumin Boosts Brain-Derived Neurotrophic Factor, Linked to Improved Brain Function and a Lower Risk of Brain Diseases**

- Back in the day, it was believed that neurons weren't able to divide and multiply after early childhood.
- However, it is now known that this does happen.
- The neurons are capable of forming new connections, but in certain areas of the brain, they can also multiply and increase in number.
- One of the main drivers of this process is Brain-Derived Neurotrophic Factor (BDNF), which is a type of growth hormone that functions in the brain.
- Many common brain disorders have been linked to decreased levels of this hormone. This includes depression and Alzheimer's disease.
- Interestingly, curcumin can increase brain levels of BDNF.
- By doing this, it may be effective at delaying or even reversing many brain diseases and age-related decreases in brain function.
- There is also the possibility that it could help improve memory and make you smarter. Makes sense given its effects on BDNF levels, but this definitely needs to be tested in human controlled trials (26).
- Bottom Line: Curcumin boosts levels of the brain hormone BDNF, which increases the growth of new neurons and fights various degenerative processes in the brain.

### **5. Curcumin Leads to Various Improvements That Should Lower Your Risk of Heart Disease**

- Heart disease is the biggest killer in the world.
- It has been studied for many decades and researchers have learned a lot about why it happens.
- It turns out that heart disease is incredibly complicated and there are various things that contribute to it.
- Curcumin may help reverse many steps in the heart disease process.
- Perhaps the main benefit of curcumin when it comes to heart disease, is improving the function of the endothelium, which is the lining of the blood vessels.
- It is well known that endothelial dysfunction is a major driver of heart disease and involves an inability of the endothelium to regulate blood pressure, blood clotting and various other factors.
- Several studies suggest that curcumin leads to improvements in endothelial function. One study shows that is as effective as exercise, another shows that it works as well as the drug Atorvastatin.
- But curcumin also reduces inflammation and oxidation (as discussed above), which are also important in heart disease.
- In one study, 121 patients who were undergoing coronary artery bypass surgery were randomized to either placebo or 4 grams of curcumin per day, a few days before and after the surgery.
- The curcumin group had a 65% decreased risk of experiencing a heart attack in the hospital.
- Bottom Line: Curcumin has beneficial effects on several factors known to play a role in heart disease. It improves the function of the endothelium and is a potent anti-inflammatory agent and antioxidant.

## **6. Turmeric Can Help Prevent (And Perhaps Even Treat) Cancer**

- Cancer is a terrible disease, characterized by uncontrolled growth of cells.
- There are many different forms of cancer, but they do have several commonalities, some of which appear to be affected by curcumin supplementation.
- Researchers have been studying curcumin as a beneficial herb in cancer treatment. It can affect cancer growth, development and spread at the molecular level.
- Studies have shown that it can reduce angiogenesis (growth of new blood vessels in tumors), metastasis (spread of cancer), as well as contributing to the death of cancerous cells.
- Multiple studies have shown that curcumin can reduce the growth of cancerous cells in the laboratory and inhibit the growth of tumors in test animals.
- Whether high-dose curcumin (preferably with an absorption enhancer like pepper) can help treat cancer in humans has yet to be tested properly.
- However, there is some evidence that it may help prevent cancer from occurring in the first place, especially cancers of the digestive system (like colorectal cancer).
- In one study in 44 men with lesions in the colon that sometimes turn cancerous, 4 grams of curcumin per day for 30 days reduced the number of lesions by 40%.
- Maybe curcumin will be used along with conventional cancer treatment one day. It's too early to say for sure, but it looks promising and this is being intensively studied as we speak.
- Bottom Line: Curcumin leads to several changes on the molecular level that may help prevent and perhaps even treat cancer.

## **7. Curcumin May be Useful in Preventing and Treating Alzheimer's Disease**

- Alzheimer's disease is the most common neurodegenerative disease in the world and a leading cause of dementia.
- Unfortunately, no good treatment is available for Alzheimer's yet.
- Therefore, preventing it from showing up in the first place is of utmost importance.
- There may be good news on the horizon, because curcumin has been shown to cross the blood-brain barrier.
- It is known that inflammation and oxidative damage play a role in Alzheimer's disease. As we know, curcumin has beneficial effects on both.
- But one key feature of Alzheimer's disease is a buildup of protein tangles called Amyloid plaques. Studies show that curcumin can help clear these plaques.
- Whether curcumin can really slow down or even reverse the progression of Alzheimer's disease needs to be studied properly.
- Bottom Line: Curcumin can cross the blood-brain barrier and has been shown to lead to various improvements in the pathological process of Alzheimer's disease.

## **8. Arthritis Patients Respond Very Well to Curcumin Supplementation**

- Arthritis is a common problem in Western countries.
- There are several different types, but most involve some sort of inflammation in the joints.
- Given that curcumin is a potent anti-inflammatory, it makes sense that it could help with arthritis. Several studies show this to be true.
- In a study of patients with rheumatoid arthritis, curcumin was even more effective than an anti-inflammatory drug.
- Many other studies have looked at the effects of curcumin on arthritis and noted improvements in various symptoms.
- Bottom Line: Arthritis is a common disorder characterized by joint inflammation. Many studies show that curcumin can help treat symptoms of arthritis and is in some cases more effective than anti-inflammatory drugs.

## **9. Studies Show That Curcumin Has Incredible Benefits Against Depression**

- Curcumin has shown some promise in treating depression.
- In a controlled trial, 60 patients were randomized into three groups.
- One group took Prozac, another group took a gram of curcumin and the third group took both Prozac and curcumin.
- After 6 weeks, curcumin had led to improvements that were similar to Prozac. The group that took both Prozac and curcumin fared best.
- According to this (small) study, curcumin is as effective as an antidepressant.
- Depression is also linked to reduced levels of brain-derived neurotrophic factor and a shrinking hippocampus, a brain area with a role in learning and memory.
- Curcumin boosts BDNF levels, potentially reversing some of these changes.



- There is also some evidence that curcumin can boost the brain neurotransmitters serotonin and dopamine.
- Bottom Line: A study in 60 depressed patients showed that curcumin was as effective as Prozac in alleviating the symptoms of depression.

#### **10. Curcumin May Help Delay Aging and Fight Age-Related Chronic Diseases**

- If curcumin can really help prevent heart disease, cancer and Alzheimer's... then this would have obvious benefits for longevity.
- For this reason, curcumin has become very popular as an anti-aging supplement.
- But given that oxidation and inflammation are believed to play a role in aging, curcumin may have effects that go way beyond just prevention of disease.

#### **11. Anything Else?**

- If you want to buy a turmeric/curcumin supplement, then you can get it online or from various health food and supplement stores.
- I recommend that you find one with bioperine (another name for piperine), which is the substance that enhances absorption of curcumin by 2000%.
- Without this substance, most of the curcumin just passes through your digestive tract.

# Ginger

Article from whfoods.org (Worlds Healthiest Foods)

Aromatic, pungent and spicy, ginger adds a special flavor and zest to Asian stir fries and many fruit and vegetable dishes. Fresh ginger root is available year round in the produce section of your local market.

Ginger is the underground rhizome of the ginger plant with a firm, striated texture. The flesh of the ginger rhizome can be yellow, white or red in color, depending upon the variety. It is covered with a brownish skin that may either be thick or thin, depending upon whether the plant was harvested when it was mature or young.

Historically, ginger has a long tradition of being very effective in alleviating symptoms of gastrointestinal distress. In herbal medicine, ginger is regarded as an excellent carminative (a substance which promotes the elimination of intestinal gas) and intestinal spasmolytic (a substance which relaxes and soothes the intestinal tract). Modern scientific research has revealed that ginger possesses numerous therapeutic properties including antioxidant effects, an ability to inhibit the formation of inflammatory compounds, and direct anti-inflammatory effects.

## **Gastrointestinal Relief**

A clue to ginger's success in eliminating gastrointestinal distress is offered by recent double-blind studies, which have demonstrated that ginger is very effective in preventing the symptoms of motion sickness, especially seasickness. In fact, in one study, ginger was shown to be far superior to Dramamine, a commonly used over-the-counter and prescription drug for motion sickness. Ginger reduces all symptoms associated with motion sickness including dizziness, nausea, vomiting, and cold sweating.

## **Safe and Effective Relief of Nausea and Vomiting During Pregnancy**

Ginger's anti-vomiting action has been shown to be very useful in reducing the nausea and vomiting of pregnancy, even the most severe form, hyperemesis gravidum, a condition which usually requires hospitalization. In a double-blind trial, ginger root brought about a significant reduction in both the severity of nausea and number of attacks of vomiting in 19 of 27 women in early pregnancy (less than 20 weeks). Unlike anti-vomiting drugs, which can cause severe birth defects, ginger is extremely safe, and only a small dose is required.

A review of six double-blind, randomized controlled trials with a total of 675 participants, published in the April 2005 issue of the journal, *Obstetrics and Gynecology*, has confirmed that ginger is effective in relieving the severity of nausea and vomiting during pregnancy. The review also confirmed the absence of significant side effects or adverse effects on pregnancy outcomes.

## **Anti-Inflammatory Effects**

Ginger contains very potent anti-inflammatory compounds called gingerols. These substances are believed to explain why so many people with osteoarthritis or rheumatoid arthritis experience reductions in their pain levels and improvements in their mobility when they consume ginger regularly. In two clinical studies involving



patients who responded to conventional drugs and those who didn't, physicians found that 75% of arthritis patients and 100% of patients with muscular discomfort experienced relief of pain and/or swelling.

Arthritis-related problems with your aging knees? Regularly spicing up your meals with fresh ginger may help, suggests a study published in a recent issue of *Osteoarthritis Cartilage*. In this twelve month study, 29 patients with painful arthritis in the knee (6 men and 23 women ranging in age from 42-85 years) participated in a placebo-controlled, double-blind, crossover study. Patients switched from placebo to ginger or visa-versa after 3 months. After six months, the double-blind code was broken and twenty of the patients who wished to continue were followed for an additional six months.

By the end of the first six month period, those given ginger were experiencing significantly less pain on movement and handicap than those given placebo. Pain on movement decreased from a score of 76.14 at baseline to 41.00, while handicap decreased from 73.47 to 46.08. In contrast, those who were switched from ginger to placebo experienced an increase in pain of movement (up to 82.10) and handicap (up to 80.80) from baseline. In the final phase of the study when all patients were getting ginger, pain remained low in those already taking ginger in phase 2, and decreased again in the group that had been on placebo.

Not only did participants' subjective experiences of pain lessen, but swelling in their knees, an objective measurement of lessened inflammation, dropped significantly in those treated with ginger. The mean target knee circumference in those taking ginger dropped from 43.25cm when the study began to 39.36cm by the 12th week. When this group was switched to placebo in the second phase of the study, their knee circumferences increased, while those who had been on placebo but were now switched to ginger experienced a decrease in knee circumference. In the final phase, when both groups were given ginger, mean knee circumference continued to drop, reaching lows of 38.78 and 36.38 in the two groups.

How does ginger work its anti-inflammatory magic? Two other recent studies provide possible reasons.

A study published in the November 2003 issue of *Life Sciences* suggests that at least one reason for ginger's beneficial effects is the free radical protection afforded by one of its active phenolic constituents, 6-gingerol. In this *in vitro* (test tube) study, 6-gingerol was shown to significantly inhibit the production of nitric oxide, a highly reactive nitrogen molecule that quickly forms a very damaging free radical called peroxynitrite. Another study appearing in the November 2003 issue of *Radiation Research* found that in mice, five days treatment with ginger (10 mg per kilogram of body weight) prior to exposure to radiation not only prevented an increase in free radical damage to lipids (fats found in numerous bodily components from cell membranes to cholesterol), but also greatly lessened depletion of the animals' stores of glutathione, one of the body's most important internally produced antioxidants.

A study published in the February 2005 issue of the *Journal of Alternative and Complementary Medicine* sheds further light on the mechanisms of action that underlie ginger's anti-inflammatory effectiveness. In this research, ginger was shown to suppress the pro-inflammatory compounds (cytokines and chemokines) produced by synoviocytes (cells comprising the synovial lining of the joints), chondrocytes (cells comprising joint cartilage) and leukocytes (immune cells).



## **Protection against Colorectal Cancer**

Gingerols, the main active components in ginger and the ones responsible for its distinctive flavor, may also inhibit the growth of human colorectal cancer cells, suggests research presented at the Frontiers in Cancer Prevention Research, a major meeting of cancer experts that took place in Phoenix, AZ, October 26-30, 2003.

In this study, researchers from the University of Minnesota's Hormel Institute fed mice specially bred to lack an immune system a half milligram of (6)-gingerol three times a week before and after injecting human colorectal cancer cells into their flanks. Control mice received no (6)-gingerol.

Tumors first appeared 15 days after the mice were injected, but only 4 tumors were found in the group of -gingerol-treated mice compared to 13 in the control mice, plus the tumors in the -gingerol group were smaller on average. Even by day 38, one mouse in the (6)-gingerol group still had no measurable tumors. By day 49, all the control mice had been euthanized since their tumors had grown to one cubic centimeter (0.06 cubic inch), while tumors in 12 of the (6)-gingerol treated mice still averaged 0.5 cubic centimeter—half the maximum tumor size allowed before euthanization.

Research associate professor Ann Bode noted, "These results strongly suggest that ginger compounds may be effective chemopreventive and/or chemotherapeutic agents for colorectal carcinomas."

In this first round of experiments, mice were fed ginger before and after tumor cells were injected. In the next round, researchers will feed the mice ginger only after their tumors have grown to a certain size. This will enable them to look at the question of whether a patient could eat ginger to slow the metastasis of a nonoperable tumor. Are they optimistic? The actions of the University of Minnesota strongly suggest they are. The University has already applied for a patent on the use of (6)-gingerol as an anti-cancer agent and has licensed the technology to Pediatric Pharmaceuticals (Iselin, N.J.).

## **Ginger Induces Cell Death in Ovarian Cancer Cells**

Lab experiments presented at the 97th Annual Meeting of the American Association for Cancer, by Dr Rebecca Lui and her colleagues from the University of Michigan, showed that gingerols, the active phytonutrients in ginger, kill ovarian cancer cells by inducing apoptosis (programmed cell death) and autophagocytosis (self-digestion).

Ginger extracts have been shown to have both antioxidant, anti-inflammatory and anti-tumor effects on cells. To investigate the latter, Dr Liu examined the effect of a whole ginger extract containing 5% gingerol on a number of different ovarian cancer cell lines.

Exposure to the ginger extract caused cell death in all the ovarian cancer lines studied.

A pro-inflammatory state is thought to be an important contributing factor in the development of ovarian cancer. In the presence of ginger, a number of key indicators of inflammation (vascular endothelial growth factor, interleukin-8 and prostaglandin E2) were also decreased in the ovarian cancer cells.



Conventional chemotherapeutic agents also suppress these inflammatory markers, but may cause cancer cells to become resistant to the action of the drugs. Liu and her colleagues believe that ginger may be of special benefit for ovarian cancer patients because cancer cells exposed to ginger do not become resistant to its cancer-destroying effects. In the case of ovarian cancer, an ounce of prevention—in the delicious form of liberal use of ginger—is an especially good idea. Ovarian cancer is often deadly since symptoms typically do not appear until late in the disease process, so by the time ovarian cancer is diagnosed, it has spread beyond the ovaries. More than 50% of women who develop ovarian cancer are diagnosed in the advanced stages of the disease.

### **Immune Boosting Action**

Ginger can not only be warming on a cold day, but can help promote healthy sweating, which is often helpful during colds and flus. A good sweat may do a lot more than simply assist detoxification. German researchers have recently found that sweat contains a potent germ-fighting agent that may help fight off infections. Investigators have isolated the gene responsible for the compound and the protein it produces, which they have named dermicidin. Dermicidin is manufactured in the body's sweat glands, secreted into the sweat, and transported to the skin's surface where it provides protection against invading microorganisms, including bacteria such as *E. coli* and *Staphylococcus aureus* (a common cause of skin infections), and fungi, including *Candida albicans*.

Ginger is so concentrated with active substances, you don't have to use very much to receive its beneficial effects. For nausea, ginger tea made by steeping one or two 1/2-inch slices (one 1/2-inch slice equals 2/3 of an ounce) of fresh ginger in a cup of hot water will likely be all you need to settle your stomach. For arthritis, some people have found relief consuming as little as a 1/4-inch slice of fresh ginger cooked in food, although in the studies noted above, patients who consumed more ginger reported quicker and better relief.

### **Description**

The spice ginger is the underground rhizome of the ginger plant, known botanically as *Zingiber officinale*. The plant's botanical name is thought to be derived from its Sanskrit name *singabera* which means "horn shaped," a physical characteristic that ginger reflects.

The flesh of the ginger rhizome can be yellow, white or red in color, depending upon the variety. It is covered with a brownish skin that may either be thick or thin, depending upon whether the plant was harvested when it was mature or young. The ginger rhizome has a firm, yet striated texture and a taste that is aromatic, pungent and hot.

### **History**

Native to southeastern Asia, a region whose cuisines still feature this wonderfully spicy herb, ginger has been renowned for millennia in many areas throughout the world. Ginger is mentioned in ancient Chinese, Indian and Middle Eastern writings, and has long been prized for its aromatic, culinary and medicinal properties. After the ancient Romans imported ginger from China almost two thousand years ago, its popularity in Europe remained centered in the Mediterranean region until the Middle Ages when its use spread throughout other countries. Although it was a very expensive spice, owing to the fact that it had to be imported from Asia, it was still in great demand. In an attempt to make it more available, Spanish explorers introduced ginger to the West Indies,

Mexico and South America, and in the 16th century, these areas began exporting the precious herb back to Europe.

Today, the top commercial producers of ginger include Jamaica, India, Fiji, Indonesia and Australia.

### **How to Select and Store**

Whenever possible, choose fresh ginger over the dried form of the spice since it is not only superior in flavor but contains higher levels of gingerol as well as ginger's active protease (it's anti-inflammatory compound). Fresh ginger root is sold in the produce section of markets. When purchasing fresh ginger root, make sure it is firm, smooth and free of mold. Ginger is generally available in two forms, either young or mature. Mature ginger, the more widely available type, has a tough skin that requires peeling while young ginger, usually only available in Asian markets, does not need to be peeled.

Even though dried herbs and spices like ginger powder are widely available in supermarkets, you may want to explore the local spice stores in your area. Oftentimes, these stores feature an expansive selection of dried herbs and spices that are of superior quality and freshness than those offered in regular markets. Just like with other dried spices, when purchasing dried ginger powder try to select organically grown ginger since this will give you more assurance that it has not been irradiated.

Ginger is also available in several other forms including crystallized, candied and pickled ginger.

Fresh ginger can be stored in the refrigerator for up to three weeks if it is left unpeeled. Stored unpeeled in the freezer, it will keep for up to six months.

Dried ginger powder should be kept in a tightly sealed glass container in a cool, dark and dry place. Alternatively, you can store it in the refrigerator where it will enjoy an extended shelf life of about one year.

### **Tips for Preparing Ginger**

To remove the skin from fresh mature ginger, peel with a paring knife. The ginger can then be sliced, minced or julienned. The taste that ginger imparts to a dish depends upon when it is added during the cooking process. Added at the beginning, it will lend a subtler flavor while added near the end, it will deliver a more pungent taste.

### **How to Enjoy**

A Few Quick Serving Ideas:

- Turn up the heat while cooling off by making ginger lemonade. Simply combine freshly grated ginger, lemon juice, cane juice or honey and water.
- Add extra inspiration to your rice side dishes by sprinkling grated ginger, sesame seeds and nori strips on top.
- Combine ginger, soy sauce, olive oil and garlic to make a wonderful salad dressing.
- Add ginger and orange juice to puréed sweet potatoes.



- Add grated ginger to your favorite stuffing for baked apples.
- Spice up your healthy sautéed vegetables by adding freshly minced ginger.