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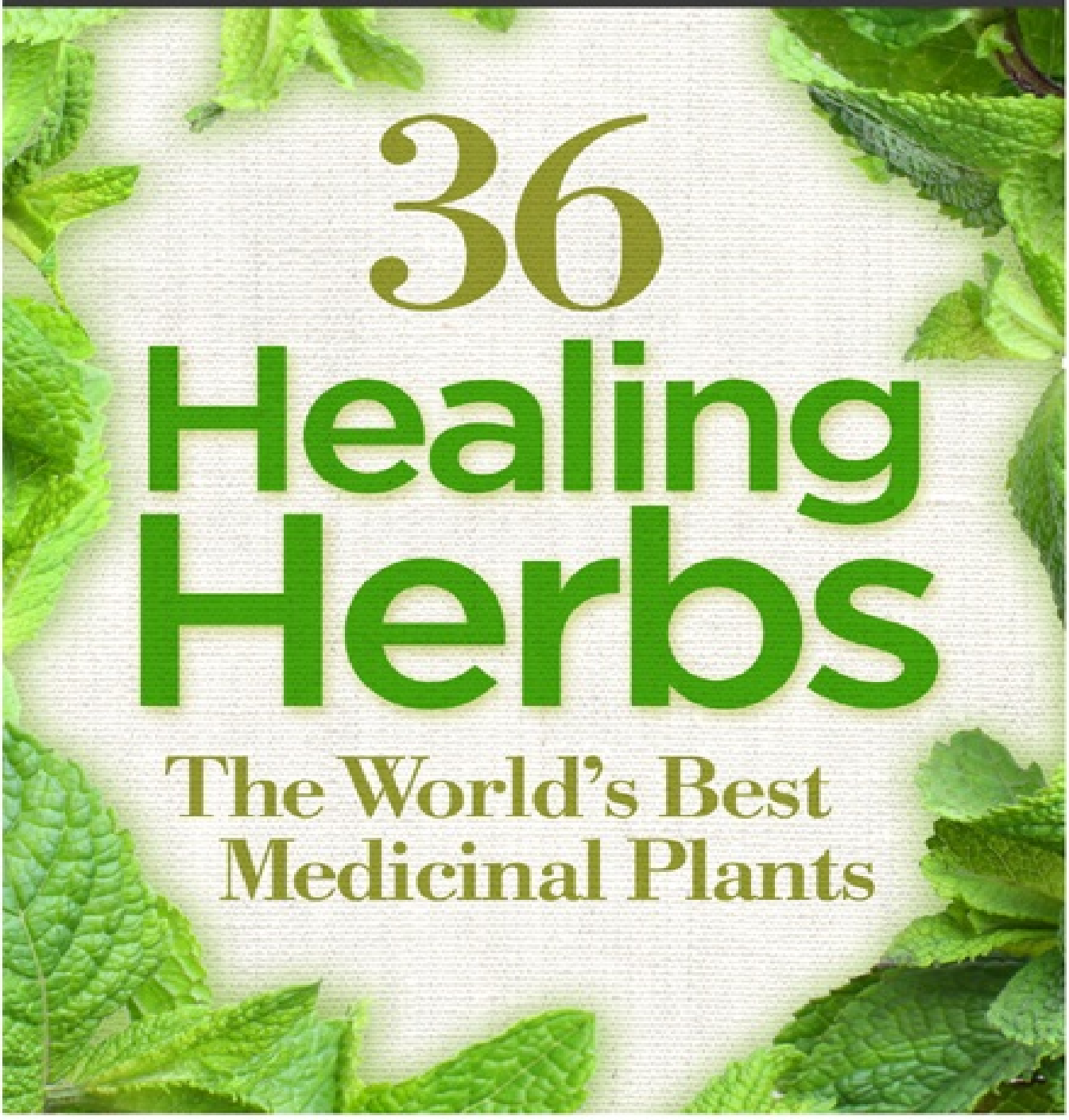

36 Healing Herbs

The World's Best Medicinal Plants

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The World's Best Medicinal Plants

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A NOTE TO READERS:

This book is meant to increase your knowledge about medicinal herbs and the latest developments in the use of plants and herbal dietary supplements for medicinal purposes, and to the best of our knowledge the information provided is accurate at the time of its publication. It is not intended as a medical manual, and neither the authors nor the publisher is engaged in rendering medical or other professional advice to the individual reader. You should not use the information contained in this book as a substitute for the advice of a licensed health-care professional. Because everyone is different, we urge you to see a licensed health-care professional to diagnose problems and supervise the use of herbs and dietary supplements to treat individual conditions. The authors and publisher disclaim any liability whatsoever with respect to any loss, injury, or damage arising directly or indirectly from the use of this book.

FOREWORD

Andrew Weil, M.D.

Herbal remedies have been the mainstay of folk medicine in many cultures throughout history and are still in common use by most people in less developed countries, where pharmaceutical drugs are unavailable or unaffordable. In recent years both the popularity and the use of medicinal herbs have increased greatly in developed nations. Why? The trend is part of a larger sociocultural change that is also responsible for growing interest in complementary and alternative medicine and integrative medicine.

In Europe and North America, more and more consumers question the safety and efficacy of synthetic drugs, prefer more "natural" therapies, and want to feel more empowered in managing their health. Because so little information about botanical medicine is included in the education and training of physicians and pharmacists, those professionals are rarely able to advise patients about the risks, benefits, and proper uses of medicinal herbs or to tell them how to find products of high quality. Another consequence of that educational deficiency is that physicians and medical scientists in the West tend to be biased against natural remedies, which are ranked less predictable and efficacious than purified compounds and more likely to cause harm than to promote healing.

I am trained as a botanist and physician and for many years have practiced and taught integrative medicine to physicians, nurse practitioners, and medical students. I have studied medicinal plants worldwide, and I recommend them to patients more frequently than I prescribe pharmaceutical drugs. In my experience, whole plant preparations are less toxic than their purified, concentrated derivatives and are often both effective and cost-effective for treating common health conditions. Some medicinal herbs have uses not obtainable from chemical drugs. For example, milk thistle *(Silybum marianum)* increases metabolism of liver cells and protects them from toxic injury (from excessive alcohol intake, fumes of volatile solvents, and drugs like acetaminophen and some chemotherapy agents). No available pharmaceutical products have those actions.

As consumer demand for herbal products has grown, the marketing of those products has become very big business. It is the manufacturers and distributors of medicinal herbs who provide most of the information that consumers read—in books, magazine articles, and advertisements, as well as on the Internet. I'm afraid that much of that information is inaccurate, particularly with regard to therapeutic claims that purport to be backed by scientific studies and the latest research but all too often are based on nothing more than testimonials.

Because I have long worked to make accurate information on botanical remedies available to consumers as well as to doctors, pharmacists, and allied health professionals, I am delighted to see the appearance of the National Geographic Society's *36 Healing Herbs*. This excellent guide is the work of a team of highly qualified botanical and medical experts, including two of my colleagues from the Arizona Center for Integrative Medicine. The book offers reliable, up-to-date, practical information on some of the most important healing plants and medicinal herbs on the market today.

One way to help lower our staggering health-care costs is to reduce dependence on costly,

technology-based interventions, including prescription drugs. There is growing recognition that medicinal herbs can play a useful role in the maintenance of health and the management of common health problems. I want to see their potential realized and welcome this book as a significant contribution toward making that happen.

The World of Medicinal Herbs

In our little sphere of modernity, the use of medicinal herbs may seem edgy and new, but the truth is that human beings have turned to the world of green for health and nurture from the beginning. The oldest known treatments for the ailments that still plague us today—from headaches to sore feet, from muscle cramps to melancholy—come from the world of plants. In becoming more knowledgeable about medicinal herbs, their powers, and their limitations, we join people who have harvested plant parts and prepared them according to their cultural traditions throughout history. Our advantage, in these days of modern medical science, is that in many cases we have the ability to learn how and why these plants can do what they do for our minds and bodies. That is the purpose of this book: to draw together the ancient and the modern, to recognize the remarkable healing properties of plants both familiar and rare, and to bring modern science to bear on understanding how the plant world interacts with the human.

Getting to Know Medicinal Plants

These days, healing herbs are never hard to find. Health food stores, organic food co-ops, and even mainstream groceries and drugstores offer prominent displays of capsules and tablets, tinctures and oils, labeled with the names of plants both familiar and exotic. Herbal teas sit side by side with familiar black teas and coffee. In the case of a few herbs—ginkgo, for example, as a memory aid—the claims have grown to the level of sensational, with promises far exceeding either traditional uses or scientific evidence. Herbal healing has become a commercial business, and in the process we risk forgetting what it is all about.

Indigenous healers had to identify, gather, and process the herbs that they found valuable. They knew the plants' growing cycles, and they knew which parts of the plants to harvest and how to harvest them. Those in the commercial herb business today are equally knowledgeable. Occasionally their products remind us of their earthy, botanical origins: Goldenseal powder gleams a mustard yellow; cayenne powder stings the tongue; aloe gel oozes as thick from the bottle as it does from the newly cut leaf. But herbal preparations today are often designed to deliver the remedy without any sensory overload: "Experience the miracle effects of garlic without any aftertaste!"

Knowledge of medicinal herbs and other healing plants can only make our use of them more valuable, effective, and long lasting as part of our culture in the future. By recognizing that a particular substance, whether delivered in a pill or a capsule, a tube or a bottle, derives from a plant with distinct growing habits and a native range somewhere specific on the globe, one discovers new levels on which herbal medicine can enrich our lives and culture as well as heal our bodies. The more knowledge we have, the more precisely and appropriately we use these amazing plants—and the healthier we stay.

Growing Your Own Medicine Garden

There are many ways to make medicinal herbs part of your everyday life, but none is more

satisfying than growing your own. If you are lucky enough to have a kitchen garden outdoors, designate one corner of it as your herbal pharmacy.

A number of medicinal herbs, some already familiar as culinary herbs, are easy to start from seed and grow year after year in temperate growing zones. Some are annuals or biennials, such as calendula and members of the carrot family—parsley or fennel, for example. Start these from seed and allow some seed to ripen and fall, and you may be able to nurture crops of these herbs year after year.

In establishing your own medicine garden, pay attention to the species and variety of plants you are growing. Always procure growing stock, whether roots, seeds, or whole plants, from reputable sources that clearly identify the plant variety. Some varieties developed for the garden differ from those with the most potential for healing. Compare the scientific species names, not just the common names, as you choose the ones to cultivate. Just as the vigor of flowers and vegetables depends on soil, climate, weather, and other growing conditions, so the effectiveness of medicinal herbs will vary from plant to plant, garden to garden, year to year. While we celebrate the impulse to use simple homegrown herbs for remedies, we also recognize the value of controlled harvests and measured dosages.

The Business of Medicinal Herbs

Today the medicinal herb industry is a 5-billion-dollar business in the United States alone—even larger if you factor in research funds sponsoring ongoing searches for traditional medicinals with promise for modern pharmaceutical research. And in many developed countries beyond the United States, herbal remedies are even more accepted as parts of a normal health regimen.

Debates continue as to how government regulators can interact with the medicinal herb trade, which accomplishes some measure of self-regulation through such organizations as the American Botanical Council and the American Herbal Products Association. Herbal remedies pose regulatory challenges different from those of pharmaceutical medicines. The World Health Organization is spearheading an effort to develop guidelines for good manufacturing practices (GMPs) of herbal products worldwide, and the U.S. Food and Drug Administration recently set rules for “dietary supplements”—a term that covers medicinal herbs as well as vitamins and minerals.

The Safe Use of Medicinal Herbs

Consumers of commercial herb preparations would do best to educate themselves about what they are buying and using medicinally. Herbs can be potent. Read labels, pay attention to recommended dosages, and avoid combining herbs on your own. Although in many cases this book identifies several herbs that may address the same health problem, in no way does it imply that a person should use all of them at one time. Many commercially available herbal teas contain blends of herbs to enhance flavor and benefit, but consumers should be cautious about mixing herbs on their own.

It is best to seek the advice of a health-care professional before beginning the use of herbal therapies. Especially if you use prescription drugs, seek advice before turning to

herbal remedies, because some combinations of herbs and pharmaceuticals can be dangerous or cause undesirable side effects. Pregnant and breast-feeding women should be especially careful about using herbal remedies, and parents should seek advice before giving herbal remedies to children.

The Many Ways of Using Herbs

Herbal remedies come in many forms, and each has a strict definition:

Infusion: A tea is prepared by pouring hot water over plant parts and letting it steep for a short time.
Decoction: A longer tea preparation: plant parts simmer in hot water for a longer time.
Syrup: Plant parts are added to a sugar-water or honey-water mixture.
Powder: Dried plant parts are pulverized, traditionally by mortar and pestle.
Tincture: Essential plant components are dissolved in a water and alcohol solution.
Essence: Essential plant fragrance is added to alcohol.
Ointment: Powdered or essential plant parts are added to an oily substance such as olive oil, petroleum jelly, or lard, and often mixed with beeswax.
Poultice: Fresh or dried plant parts are applied to skin with moist heat.

Today, with so many herbal preparations available commercially, it's important to read labels to confirm that the product contains a "standardized extract," which is the manufacturer's promise that from batch to batch a measure and control are placed on the levels of active herbal ingredients in the tea, tincture, salve, or other product. Standardization assures proper, consistent, and effective levels. This measure is especially important in capsules and tablets, the method of delivery most often chosen by consumers of commercial herbal medicine today. Mention of specific products, companies, or organizations in this book does not imply that the publisher or the authors endorse them.

For the sake of simplicity, and to match current practices, this broad array of delivery methods has been narrowed down in this book to the five most common: tea, tincture, capsule or tablet, topical application, and in or as food.

To those who wish to bring medicinal herbs into their daily lives, whether as part of a regular health regimen or as an alternative or supplement to modern medical treatments, we say: Read, learn, consider—and good health to you.

Aloe

Aloe vera

Native to North Africa and coastal areas surrounding the Mediterranean Sea, aloe is one of the most familiar of all herbal remedies. Pots of aloe grace many sunny kitchen windowsills, where the thick, fleshy leaves stand ready to become a quick and easy treatment for scalds and burns. A leaf plucked from the plant and sliced open shelters at its core a clear, mucilaginous gel that is remarkably effective for soothing wounds and burns, speeding healing, and reducing risk of infection. The bitter, yellowish sap that oozes from the leaf's skin—not to be confused with the gel—is dried to form aloe latex, a crystalline substance.

Therapeutic Uses

Burns (first- and second-degree)
Psoriasis
Colitis
Diabetes

Aloe is famous for soothing sunburn. Perhaps less well known is how broadly its healing properties extend—from soothing minor cuts and skin conditions to possibly lowering blood sugar levels in diabetics.

Aloe gel is the inner mucilaginous—or gooey—part of the leaf and is used topically for many skin conditions. Recent research shows that ingesting this gel confers benefits in lowering blood glucose in people with diabetes and easing symptoms in people with ulcerative colitis. Aloe gel contains polysaccharides, compounds that have a soothing effect on mucous membranes, and enzymes that coat irritated skin and ease pain. Aloe may also be antibacterial. For these reasons, aloe has been used for some skin conditions, such as first- and second-degree burns and psoriasis, and it sometimes shows better effects than more conventional therapies. In a study of 30 people with second-degree burns, aloe cream, containing 0.5 percent of the gel in powdered form, helped to heal the burns faster than sulfadiazine, a commonly used antibacterial cream. In addition, a study of 80 people with psoriasis showed that a 70 percent aloe cream worked as well as a 0.1 percent triamcinolone cream, often prescribed for psoriasis.

So-called aloe juice is made from aloe gel. The gel—either fresh or dried and powdered—is just one ingredient in aloe juice products. Marketed as aloe juice, these products may also contain water, citric acid, fruit juices, preservatives, and more. Aloe gel is also an ingredient in many cosmetic products, including topical creams, lotions, and shampoos.

How to Use

Aloe gel: Apply to the skin several times daily for burns and other skin conditions. For colitis, take 25 to 30 ml (about 2 tablespoons) twice daily; for diabetes, 10 to 20 ml (about 1 tablespoon) daily. Follow manufacturer's guidelines.

Precautions

Topically applied, aloe is safe. However, aloe may delay healing in deep, open wounds, as from surgery. Aloe gel should be free of anthraquinones and soothing to the gastrointestinal tract, but leaf extracts can contain all parts of the leaf, and thus both gel and latex. It is important to buy aloe gel that says it is made from the inner fillet and/or that is free of aloin. Aloe juice containing aloin can act as a laxative and can irritate the intestines. Prolonged use can lead to electrolyte loss and dependence on juice for normal bowel function. Those with acute or severe gastrointestinal symptoms should not take the juice. Children and pregnant or nursing women should not take aloe internally.

Bilberry

Vaccinium myrtillus

Cousin of the blueberry, the bilberry is the sweet, dark purple fruit of a branching shrub that seldom grows more than knee high. Ripe bilberries are a bonanza for birds and a heavenly treat for hikers to stumble upon in the forest. Most bilberries grow wild because the plants are difficult to cultivate. Given their wonderful flavor, it's no surprise that bilberries have found their way into almost every imaginable culinary delight, from jams, pies, and tarts to sorbets, liqueurs, and wines. One Irish name for bilberry is *fraughan*, from the Gaelic word *fraocháin*. Traditionally, the berries are picked on the first Sunday in August, called Fraughan Sunday, which corresponds to an ancient Celtic harvest festival. According to legend, the more bilberries people collect on that day, the better the harvest will be. As it is a medicinal herb, bilberry has been used for centuries to control diarrhea and to improve circulation.

Therapeutic Uses

Eye health
Antioxidant
Diarrhea

Bilberry has long been consumed as both food and medicine. The fruit is enjoyed for its sweet-sour taste and eaten fresh or cooked. Bilberry fruit is also made into syrup and used to treat diarrhea and other digestive problems. This is likely due to the presence of tannins, which have astringent and anti-inflammatory activity. Germany's health authorities still approve of the use of the dried, ripe fruit for the treatment of acute diarrhea. However, the majority of research today is focused on the potential use of bilberry fruit for the prevention of age-related diseases.

Bilberry fruit is rich in anthocyanosides, plant pigments that have been shown to act as powerful antioxidants in the body. Researchers have found that these powerhouse compounds may help protect the body from heart disease, oxidative stress, and inflammation and help preserve brain function and eye health. A growing body of evidence is linking oxidative stress, a condition associated with an increased level of free radicals and other oxidation-promoting molecules, to a number of age-related and degenerative diseases. Many fruits and vegetables help reduce oxidative stress, but it is bilberry—along with its American cousin, the blueberry—that is getting a lot of press. This berry's anthocyanosides seem to have a particular affinity for the eye. Animal studies show that bilberry extracts protect the retina from damage. Two small double-blind, placebo-controlled studies have shown improvement in patients with diabetes- and hypertension-related retinopathy, a group of serious retinal disorders that can lead to blindness.

Researchers are also looking at the potential protective effect that bilberry extract may have on colorectal cancer. In a study conducted at the University of Leicester in England, patients with colon cancer were given a bilberry extract for 7 days, and there was a 7

percent decrease in cell growth in the tumors when they were surgically removed. This may be due to the ability of the anthocyanosides to prevent the growth of blood vessels in the tissue surrounding a solid tumor. The blood vessels are, in part, what allow the cancer to grow and spread.

How to Use

Fresh berries: 1 cup per day of fresh fruit. American blueberries can be used if bilberries are not available.
Tea: Simmer 1 tablespoon dried berries in 2 cups water for 20 minutes. Strain. Drink ½ cup every 3 to 4 hours for diarrhea.
Extracts: Dosage range is usually 360 to 600 mg per day of an extract standardized to contain 25 percent anthocyanosides (also written as anthocyanins).

Precautions

There are no known adverse effects. Bilberry may be used as support for the eyes, heart, and gastrointestinal system but should not replace appropriate medical care.

Black Cohosh

Actaea racemosa

Native to eastern North America, black cohosh thrives in moist, shaded woodlands. Over time, it has also become a popular garden perennial that rarely goes unnoticed. Shortly after midsummer, black cohosh begins sending up tall flower stalks covered with tiny, pearl-shaped buds. As the buds open, the stalks take on the look of soft, white bottlebrushes towering above the dark green foliage. The fact that honeybees scorn the flowers but flies and beetles love them may be the source of at least two of black cohosh's other common names, bugbane and bugwort, respectively. Another is black snakeroot. To understand this nickname's source, dig around the base of the plant and expose its twisted rhizomes, which look like dark little snakes.

Therapeutic Uses

Menopause
Premenstrual syndrome
Menstrual cramps
Arthritis
Mild depression (melancholy)

The primary use for black cohosh is to treat menopause-related symptoms. Germany's health authorities recognize its use for menopausal symptoms (hot flashes, night sweats, and sleep disturbances), as well as for premenstrual syndrome and menstrual cramping. Early studies suggested that black cohosh acted like a natural estrogen, or phytoestrogen, gently reducing hot flashes and vaginal dryness. But newer research has found no hormonal effects of black cohosh in menopausal women.

More than 20 published clinical trials have evaluated the effectiveness of black cohosh for menopausal hot flashes. While some studies show a modest reduction in symptoms, not all clinical trials have been positive. There may be added benefit when black cohosh is combined with St. John's wort. One clinical trial of 301 women reported a 50 percent reduction in symptoms with the combination, compared with 19 percent reduction in the placebo group. Current research has not yet determined the effectiveness of black cohosh for hot flashes.

Scientists at the University of Illinois at Chicago have demonstrated that compounds in black cohosh act as antidepressants and reduce pain sensitivity, lending support to the traditional use of black cohosh as a treatment for melancholy, or depressed mood, as well as its widespread use as a remedy for arthritis and menstrual pain. No clinical trials have evaluated its effectiveness for these conditions.

How to Use

Tea: Simmer 2 teaspoons of chopped root and rhizome in 2 cups water for 10 minutes. Strain. Drink ¼ cup, 2 to 3 times per day.

Capsules: 40 to 200 mg of dried rhizome taken daily, in divided doses.
Tincture: Generally, 1 to 2 ml, 3 times per day.
Standardized extract: 20 to 40 mg black cohosh extract twice daily.
Products are often standardized to provide 1 to 2 mg of 27-deoxy-actein.

Precautions

Except for minor gastrointestinal upset, clinical trials have shown black cohosh to be free of side effects. A few reports have suggested black cohosh may, in rare cases, cause damage to the liver, prompting European, Australian, Canadian, and British health authorities to require product labels suggesting conferral with a health-care provider by anyone with any type of liver disease. Safety during pregnancy and breast-feeding is not known.

Calendula

Calendula officinalis

Nicknamed pot marigold, poet's marigold, or simply gold, calendula is not to be confused with the rather unpleasantly scented common garden marigold of the genus *Tagetes*.

Calendula flowers have little scent, and unlike *Tagetes* species, are edible. Decked out with single or multiple rows of petals in sunny yellow or bright orange, the flowers seem to hover above the plant's grayish green, slightly sticky stems and leaves. Calendula is a profuse bloomer. Its name is likely derived from the Latin *calendae*, meaning "little calendar" or "little clock." The reference could be to calendula's propensity for being in bloom during the new moon of summer months (in some climates, nearly every month) or to its habit of partially closing its petals along with the setting sun.

Therapeutic Uses

Dermatitis
Wounds

The warm gold blossoms of calendula have long been a signature remedy for skin ailments, from eczema and abscesses to acne and abrasions. The German health authority has approved calendula for treating wounds, based on research showing its anti-inflammatory effects and effectiveness in helping wounds seal over with new tissue. Calendula is thought to have two main medicinal actions on skin. The triterpenoid compounds, such as oleanolic acid, appear to inhibit a variety of bacteria. Calendula's anti-inflammatory effects may be the result of a triterpenoid compound acting as an antioxidant, to reduce damage from oxygen radicals in the healing process.

Calendula products have been developed and studied for a host of human ailments. For example, a calendula extract combined with green tea, tea tree oil, and manuka oil was developed into a mouth rinse—a spin-off of research showing that calendula rinses fight gum inflammation, or gingivitis. Another study randomized 254 breast cancer patients about to undergo radiation treatment to apply either a calendula ointment or a commonly used medicine, trolamine, twice daily. The calendula group exhibited less dermatitis from the radiation and also had fewer interruptions to their treatment.

One method for making a calendula ointment is to heat the plant in petroleum jelly, strain, and cool for use on the skin. Calendula's anti-inflammatory effects, and its effectiveness for various skin ailments, may be more pronounced when the flowers are first extracted with high-dose alcohol before being incorporated into creams or ointments.

How to Use

Topical preparations: Extracts are incorporated into many skin products: soaps, creams, ointments, salves, and lotions with various concentrations of calendula. Apply preparations 3 to 4 times daily to heal minor skin conditions.

Precautions

Those allergic to plants in the Asteraceae family can develop a sensitivity to topical use. Should a rash develop, discontinue use.

Cayenne

Capsicum annuum

The spicy cuisines of Mexico, Southeast Asia, China, southern Italy, many Caribbean islands, and North America's Cajun cultures share an ingredient: hot pepper. Not the tiny black peppercorns ground in pepper mills, but the fleshy fruits borne by plants belonging to the genus *Capsicum*. More than a thousand varieties of *Capsicum* are grown worldwide. They produce colorful fruits that vary considerably, not only in color, size, and shape, but also in the intensity of their heat. That heat comes from a plant chemical called capsaicin, which, in addition to adding zest to food, has pain-relieving properties.

Therapeutic Uses

Arthritis
Nerve pain

Despite its bite in spicy cuisines, purified cayenne pepper, yielding the essential compound capsaicin, is an effective topical pain reliever. Capsaicin is absorbed through the skin and binds to specific receptors that act to deplete a compound responsible for conveying pain sensations to the brain.

One category of conditions that cause pain originates from nerve damage resulting from diabetes or other nervous system problems. For this discomfort, creams containing at least 0.075 percent capsaicin applied to a painful area over 6 to 8 weeks have been shown to provide relief. In some cases, just one high-dose patch containing 8 percent capsaicin can be beneficial. A common pattern in the treatment is that the pain gets worse for a few days before it gradually gets better; benefits are often sustained even after treatment stops. Some studies have shown that preparations with a lower percentage of capsaicin, some of which are available over the counter, are less effective, either because of the lower dose or because of poorer absorption. These creams are also used by people who experience the lingering pain of shingles.

Osteoarthritis may also respond to capsaicin creams. Creams containing 0.025 percent capsaicin have been shown to help ease joint pain of adults suffering from osteoarthritis over a 6-week period; one study, in which subjects used the 0.075 percent cream for 4 weeks, resulted in decreased arthritis pain and tenderness in the hands.

How to Use

Cream: For nerve-related pain, apply cream containing 0.075 percent capsaicin 3 to 4 times daily. Lower-dose creams containing only 0.025 percent capsaicin applied 4 times daily may be effective for arthritis. For optimal benefit, treatment is usually recommended for 6 to 8 weeks; benefits for arthritis may occur before 8 weeks. Researchers also are developing other higher-dose forms of cayenne, including a patch and injections, which look promising for pain relief.

Precautions

Application of cayenne preparations to the skin can cause a rash as well as burning, stinging, and redness. The rash, often an irritation rather than an allergic reaction, is usually worse on first applications of the preparation and then gets better with repeated use. However, if the rash gets worse with time, treatment should be discontinued and improvement should occur quickly. Do not apply to broken skin. Occasionally, people will develop a cough after using higher strength preparations, presumably from the spicy substance that gets inhaled.

Chamomile

Matricaria recutita

After a rain, or when lightly bruised, chamomile's lacy green leaves and small, daisy-like flowers give off the distinct scent of apple. That may explain the Spanish name for this herb, *manzanilla*, which means "little apple," as well as the medieval habit of strewing chamomile stems and flowers across the floors to freshen the air indoors. Two very closely related species of chamomile have earned a time-honored place in herbal medicine. German chamomile *(Matricaria recutita)* has effects similar to those of Roman or English chamomile *(Chamaemelum nobile)* but a less pronounced aroma. Both varieties of this herb have been prized for many centuries—especially brewed as a pleasant-tasting tea—as a remedy for nervous tension, muscle cramps, skin conditions, and digestive upsets in babies, children, and adults. Chamomile is perhaps the most commonly used European herb in herbal medicine today.

Therapeutic Uses

Digestive aid
Colic
Mouth ulcers
Eczema

A treasured herbal medicine, chamomile has soothed digestive systems and calmed people of all ages for centuries. But not until the 1970s were scientists able to document and verify chamomile's healing and protective effects on the gastrointestinal mucosa (lining). Germany's health authorities recognize the effectiveness of chamomile for relieving digestive spasms and inflammation when taken internally. Chamomile eases bloating and indigestion when taken after meals and can soothe occasional heartburn. Many herbalists consider chamomile the premier children's herb for easing upset tummies and calming frayed nerves after an exhausting day. Remember Peter Rabbit? His mother gives him a dose of chamomile tea ("One tablespoonful to be taken at bed-time.") after his escapade sampling all the vegetables in Mr. McGregor's garden leaves him with a tummy that needs soothing. A study of colicky babies found that chamomile, in combination with other herbs, was highly effective in reducing crying times when the colicky babies were compared with those in the control group.

Chamomile is also popular for alleviating inflammation of the mouth and skin. In a study of patients with chronic mouth ulcers, a remarkable 82 percent rated chamomile extract as excellent for relieving pain. Compounds in chamomile have been shown to enhance skin healing and to help prevent infection.

Applied topically, a proprietary chamomile cream was shown to be as effective as low-dose, over-the-counter hydrocortisone cream for relieving eczema. Chamomile is also found in creams designed to soothe and heal diaper rash, skin irritations, and minor wounds. Germany's health commission also recognizes the effectiveness of using chamomile

externally for inflammation of the skin and mucous membranes, including those of the mouth and gums.

How to Use

Tea: Pour 1 cup boiling water over 1 teaspoon of herb. Steep for 5 to 7 minutes. The longer it steeps, the more powerful its calming effects.
Capsules: 500 to 1,000 mg dried chamomile flowers taken 2 to 3 times per day.
Tincture: 3 to 5 ml taken 2 to 3 times per day.
Topical: Creams are available. Use as directed.

Precautions

Chamomile is very safe. In rare cases, allergic reactions occur, especially in those with severe ragweed allergies.

Chaste Tree

Vitex agnus-castus

Chaste tree often suffers from mistaken identity. People may do a double take when they first glimpse the leaves of this small tree, as their resemblance to the leaves of marijuana *(Cannabis sativa)* is striking. A blooming chaste tree is also frequently thought to be a butterfly bush *(Buddleia)*, because both plants produce long clusters of violet flowers beloved by bees, butterflies, and hummingbirds. The flowers are followed by small, fleshy fruits that contain dark brown seeds easily mistaken for peppercorns in both appearance and taste. These seeds are chaste trees' link to chastity, forged more than 2,500 years ago. In ancient Greece, chaste tree was thought to calm sexual passion. It was an important component of festivals held to honor Demeter, the goddess of agriculture, fertility, and marriage. Women who remained chaste during the festival adorned themselves with the tree's fragrant blossoms. The vestal virgins of ancient Rome carried twigs of chaste tree. The Catholic Church in medieval Europe later adopted chaste tree as a symbol of purity. Novitiates entering a monastery followed a path strewn with chaste tree blossoms. Chaste tree seeds, believed to suppress sexual desire, were ground and served in monastery dining halls to encourage celibacy—thus the common name, monk's pepper.

Therapeutic Uses

Premenstrual syndrome
Breast tenderness (mastalgia)

Premenstrual syndrome (PMS) involves a number of physical, psychological, and emotional symptoms occurring 5 to 10 days before a woman's menstrual period. It is estimated that up to 90 percent of women experience occasional PMS. The dried fruits of the chaste tree have been shown repeatedly to dramatically improve the symptoms of PMS. Germany's health authorities recommend the herb for the treatment of PMS, menstrual irregularity, and mastalgia, or breast tenderness.

A 3-month study published in the *British Medical Journal* evaluated the effectiveness of chaste tree in 178 women with PMS. Chaste tree users showed a significant improvement in PMS symptoms such as irritability, moodiness, anger, headache, and breast fullness. Overall, the reduction in PMS symptoms was 52 percent for women taking chaste tree versus 24 percent for those taking placebo.

Another randomized, placebo-controlled study of chaste tree was conducted in Beijing, China. It involved 208 women with PMS. Women taking a 40-mg chaste tree extract had a significant reduction in PMS symptoms compared with those taking placebo.

When the psychological symptoms of PMS are more severe (premenstrual dysphoric disorder), the condition is typically treated with antidepressant medication. A randomized, controlled trial found that chaste tree was roughly equivalent to fluoxetine (Prozac) for improving psychological and physical symptoms.

Chaste tree is sometimes recommended for women having difficulty conceiving. Chaste

tree extracts, used daily for at least 3 months, have been shown to restore progesterone levels, which may improve female fertility. However, more investigation needs to be done before recommendations can be made.

How to Use

Tea: Steep ½ teaspoon of dried chaste tree fruit in 1 cup of hot water for 5 to 7 minutes. Strain. Drink 1 cup each morning. Note:
The tea is somewhat spicy and acrid in taste.
Capsules: 250 to 500 mg of dried chaste tree fruit taken once per day.
Tincture: 2 to 3 ml of tincture taken daily each morning.
Standardized extract: 20 to 40 mg of chaste tree extract taken once per day.

Precautions

Chaste tree appears to be extremely well tolerated in clinical trials. While no adverse effects have been reported in pregnancy, women should consult a health-care provider before using chaste tree for infertility.

Chocolate

Theobroma cacao

For many people around the world, life without chocolate would be dismal. Satiny dark or creamy, chocolate is a beloved food intimately linked with celebrations, comfort, indulgence, and extravagance. Its source is cacao, a small tree native to Central and South American forests that produces large pods packed with dark brown seeds. From the seeds come fragrant cocoa, luscious chocolate, and creamy cocoa butter. The cultivation of cacao may have originated with the Olmec culture of eastern Mexico more than 3,000 years ago. The Olmec, and later the Maya and Aztec, fermented, roasted, and then ground cacao seeds into a paste. Mixed with water, chili peppers, cornmeal, and other ingredients, it was whipped into a frothy, spicy chocolate drink. Both the drink and the seeds from which it was made were considered sacred. In ancient Mesoamerica, chocolate truly was "the food of the gods," which is what *Theobroma* means.

Therapeutic Uses

Antioxidant
Heart health (including blood pressure and cholesterol levels)
Anti-inflammatory

As more studies emerge linking chocolate consumption to improved cardiovascular health, it is clear that chocolate is both a food and a medicine—not only good but also good for you. Chocolate's main medicinal effects come from a group of compounds called polyphenols that are strongly antioxidant and anti-inflammatory; they also impart to chocolate its dark brown color. Similar compounds are found in green tea, red wine, and many fruits and vegetables. Interestingly, the polyphenols in chocolate seem to act as antioxidants that are stronger than antioxidants in other foods. In humans, these polyphenols are thought to act in several ways. They may stop one of the steps in the development of plaques in coronary arteries by decreasing the oxidation of low-density lipoprotein (LDL), or bad, cholesterol deposited there; hence, LDL plaque does not become as firmly established and is less likely to then rupture and clot, causing a heart attack. These polyphenols also increase the levels of high-density lipoprotein (HDL), or good, cholesterol protection against cardiovascular disease. These compounds also are mild inhibitors of platelet activity, thinning blood in an action similar to that of aspirin.

Another interesting component of chocolate is cocoa butter. By weight, much of chocolate is cocoa butter. Considered a "good" fat, cocoa butter contains oleic acid, a monounsaturated fat also found in olive oil; cocoa butter also contains stearic and palmitic acids, two saturated fats. In combination these fats seem to balance the benefit to the heart and cholesterol levels.

How to Use

Choose a dark chocolate of at least 70 percent cacao to maximize the polyphenol content—

and the medicinal benefits—of this tasty treat.

Precautions

Due to the small amount of caffeine it contains, along with a related compound, theobromine, chocolate can be stimulating, making it hard to fall asleep after a late-night snack. The fat content of chocolate carries a calorie-heavy punch, so eating too much chocolate can add up. Also, as the percentage of cacao in chocolate drops, it is replaced with milk fats that diminish the benefits of cacao butter and bind healthy polyphenols, making them less absorbable.

Cinnamon

Cinnamomum verum

The warm, sweet fragrance of cinnamon is unmistakable, evoking visions of hot cinnamon rolls and mulled cider. True cinnamon *(Cinnamomum verum)* is native to the island of Sri Lanka. Cassia, or Chinese cinnamon *(C. cassia)*, is a close relative cultivated in Vietnam, China, and Indonesia. Both varieties come from the fragrant inner bark of a tree belonging to the laurel family. Cinnamon was a precious commodity that was traded extensively throughout the ancient world. The Egyptians prized it as an essential ingredient in embalming mixtures used to perfume and preserve the dead. Moses of the Old Testament added it to a holy oil for anointing. In Rome during the first century A.D., cinnamon was at least 15 times more expensive than silver, and centuries later it was still costly. Only the very wealthy in medieval Europe could afford this expensive spice, for which demand was high and supply low. A desire to monopolize the cinnamon trade prompted European expansion into Asia in the 16th and 17th centuries. Eventually, cinnamon became more widely available and affordable.

Therapeutic Uses

Diabetes

Cinnamon may be especially important to people with diabetes. Mainly the bark is used medicinally. A polyphenol compound—with the tongue-twisting name methylhydroxychalcone—is found in cassia cinnamon. It is this compound that may be responsible for cinnamon's main medical benefit: lowering blood sugar in people with diabetes. The compound seems to affect insulin receptors and aid in the formation of glycogen, or stored sugar. Cinnamon also has antibacterial effects (from the essential oil) and antioxidant effects (from the polyphenols), the latter probably helping with some of the complications of diabetes.

Cassia cinnamon has been studied in clinical trials, primarily by looking at fasting blood sugar levels in people with diabetes. Although one study found improvements in fasting blood sugar (as much as 29 percent in some cases) and cholesterol levels in people with type 2 diabetes, other studies have found no effect. It may be that cinnamon works better in people whose diabetes is poorly controlled, but there may be other factors, such as genetics and medications, that explain why sometimes cinnamon helps and other times it doesn't.

How to Use

Powder: For diabetics, powdered cinnamon spice is an option—but for positive effects on blood sugar levels it is necessary to use approximately 1 teaspoon daily. The common spice purchased in grocery stores is not necessarily cassia cinnamon.

Capsule: Cinnamon capsules range in dose and suggested use; studies on type 1 and 2 diabetics used 1 to 6 g cinnamon a day, taken in divided doses.

Precautions

Cinnamon is well tolerated, though the volatile oil can cause a skin rash. Cassia and other cinnamons contain small amounts of coumarin; blood-thinning and liver problems generally occur with this compound only if large amounts are taken over long periods. To be safe, caution is advised for anyone with liver problems. Due to its blood-thinning effects, people should stop taking cinnamon in quantities greater than use as a spice at least one week prior to surgery. Medicinal doses are not recommended during pregnancy. Close monitoring of blood sugar levels in diabetics is warranted to avoid unsafe lowering of blood sugar.

Cranberry

Vaccinium macrocarpon

Ruby red and exceedingly tart, the American cranberry is native to the swamps and bogs of northeastern North America. It can still be found growing wild in parts of its native range, which extends from eastern Canada south to the mountains of Georgia and west as far as Minnesota. Most of the cranberries that now find their way into foods and drinks—and grace millions of Thanksgiving tables—are cultivated on large commercial farms. Cranberry shares the genus *Vaccinium* with a number of other popular berries, including blueberry, huckleberry, and bilberry. The word *cranberry* is probably derived from *crane berry*, a term coined by Dutch and German colonists either because the flowers looked to them like the head and neck of a crane or because cranes flocked to cranberry bogs when the fruit was ripe.

Therapeutic Uses

Bladder infections (prevention)

The herbal remedy most associated with maintaining a healthy urinary tract is the delicious, native North American cranberry. Originally it was thought that cranberry prevented urinary tract infections by acidifying the urine; however, scientists have shown that compounds known as proanthocyanidins prevent harmful bacteria such as *Escherichia coli* from adhering to the cells that line the bladder and urethra. This is good news, given that *E. coli* is responsible for 90 percent of all urinary tract infections.

In 2008, researchers reviewed 7 studies of cranberry juice along with 4 studies of cranberry extract tablets. They concluded that both modes of delivery reduced the risk of a urinary tract infection by 35 percent in people who had a history of frequent infections compared with control groups. This research is significant, especially given the statistic that roughly 25 percent of all women will have a recurrent urinary tract infection in their lifetimes.

While the evidence is very strong for the use of cranberry to prevent urinary tract infections, there is, on the other hand, very little evidence that it is an effective treatment once a urinary tract infection is contracted. The best treatment for an acute bladder infection is antibiotics. Cranberry juice or tablets can also be a very effective urinary deodorant for those who are incontinent.

How to Use

Juice: Cranberry juice is an easy and tasty way to prevent urinary tract infections. One well-designed study used 10 ounces per day of Ocean Spray cranberry juice.

Extract: Cranberry extract in tablet form has been shown to be as effective, better tolerated, less expensive, and lower in calories when compared with the juice. The dose of concentrated juice extract is 300 to 500 mg, taken twice a day.

Precautions

Given the widespread use of cranberry by the general public, it is safe to say that there are virtually no adverse effects associated with its use. Cranberry is safe during pregnancy and lactation, and it is safe for children. Although several case reports have indicated a concern for a potential interaction between cranberry juice and warfarin, used to prevent blood clots, studies in humans have documented no adverse interactions.

Dong Quai

Angelica sinensis

Dong quai, also called Chinese angelica, is a member of the celery family native to cold, mountainous regions of central China. It has been used in Chinese, Korean, and Japanese traditional medicine—as well as in cooking—for millennia. According to legend, dong quai made its medicinal debut as a result of a man's desire to prove himself. He sets out for the mountains, where he hopes his ability to survive in the wild will attest to his strength and resourcefulness. Before he leaves, the man tells his devoted wife that if he has not returned after three years, she should consider him dead and take another husband. And that is precisely what happens. Shortly after the wife remarries, however, the man returns. Heartbroken, she falls deathly ill. During his mountain pilgrimage, the man collected the root from a plant he'd never seen before. He prepares it as a medicine and gives it to his wife, and she is fully restored to health. The name *dong quai* is often translated as "return to order," because the herb is thought to help restore normal, healthy function to various body systems and to the body as a whole. Dong quai is one of the most widely prescribed herbs in Chinese medicine and is used—typically in combination with other herbs—primarily to treat health problems in women. For this reason, it is sometimes referred to as female ginseng.

Therapeutic Uses

Women's tonic
Premenstrual syndrome
Menstrual cramps
Kidney tonic

Dong quai root is still one of the most popular herbs used in traditional Chinese medicine. It is well known for treating women's health problems, such as painful menstruation and postpartum fatigue and weakness. It gained popularity in the West in the late 1800s when Merck introduced Eumenol, an extract of dong quai, to Europe to treat gynecological complaints.

Studies suggest that dong quai may have weak estrogenic activity, and it is often recommended for symptom relief in menopause. In a randomized, double-blind, placebo-controlled clinical trial of 71 postmenopausal women, however, dong quai was no better than placebo at reducing hot flashes. This study was widely criticized for using dong quai by itself instead of in combination with other herbs, which is how it is used in traditional Chinese medicine. When an herbal mixture containing *Angelica sinensis* root, *Paeonia lactiflora* root, *Ligusticum* rhizome, *Atractylodes* rhizome, *Alisma orientalis* rhizome, and *Wolfiporia cocos* was used in a study of menopausal women, it reportedly reduced hot flashes by 70 percent. Herbal combinations are the rule rather than the exception in many traditional systems of medicine, and clinical trials using just one herb may erroneously lead us to judge an herb as ineffective.

Dong quai has been used in combination with astragalus *(A. membranaceus)* to tone and strengthen the kidneys, as well as to enhance the immune system. In one study, this combination significantly reduced the deterioration of renal function and damage in animals with chronic kidney damage.

Dong quai and other *Angelica* species are known to contain psoralen, which is sometimes used in combination with ultraviolet therapy as a treatment for psoriasis. Studies have shown that this approach improves psoriasis in 40 to 66 percent of patients.

How to Use

Tea: Simmer 1 to 2 teaspoons root in 1 cup water for 5 to 7 minutes. Strain. Drink 1 cup, 2 to 3 times per day.
Capsules: 1 g, taken 2 to 3 times per day.
Tincture: 3 to 5 ml, taken 2 to 3 times per day.
[As stated above, consider dong quai as part of an herbal combination.]

Precautions

Those with bleeding disorders or taking anticoagulants should not use dong quai, as it may increase risk of bleeding. Use should be avoided during pregnancy. The psoralen in dong quai could, in theory, cause photosensitivity.

Echinacea

Echinacea purpurea, E. angustifolia, E. pallida

No sunny perennial border or herb garden is complete without echinacea, a robust and distinctive wildflower native exclusively to North America. Echinacea's flowers consist of prickly, domed centers encircled by a single layer of lavender-hued petals, which are the source of the herb's most common name, purple coneflower. The "cone" is the characteristic perfectly captured by the genus name, as *Echinacea* comes from the Greek *echinos*, meaning "hedgehog." Centuries before European settlers arrived in North America, native tribes were using at least three species of echinacea medicinally. The herb was something of a universal remedy to Indians of the Great Plains and neighboring regions. It was used for more therapeutic purposes than almost any other herb.

Therapeutic Uses

Colds and flu
Wounds

Echinacea is one of the best-studied herbs in herbal medicine today. It has gained a reputation for decreasing the severity and length of the common cold. It has been shown to have numerous effects on the immune system—from increased antibody responses to elevated interferon levels for fighting viruses to stimulation of white blood cells to work harder to fight infection. There are several chemical compounds in echinacea that vary among the three species of the plant, plant parts, and extraction techniques: Polysaccharides, glycoproteins, and alkylamides all have medicinal effects that boost the immune system and inhibit viruses and bacteria. Researchers continue to investigate how echinacea works.

Daily use of echinacea does not seem to protect against getting a cold; however, some studies point to an effect of reducing a cold's length by one to two days. In order to see benefits, take adequate doses of good product at the first sign of illness.

How to Use

Tea: Steep 1 to 2 teaspoons echinacea leaf/flower in 1 cup boiling water, or boil 1 teaspoon of root in 1 to 2 cups water for 10 minutes.
Tincture: When coming down with a cold, take either a tincture of echinacea root or the expressed juice from fresh *E. purpurea* aboveground parts stabilized in alcohol. Every 2 hours, take 1 to 2 ml directly or diluted in water.
Capsule: The dose varies with each echinacea product, depending on the plant part used and the species. Follow manufacturer's instructions.

Precautions

Anyone with an autoimmune condition must exercise caution in taking an immune-boosting

herb like echinacea. Echinacea may inhibit certain liver enzymes, theoretically increasing blood levels of medications such as itraconazole (for fungal infections), lovastatin (for lowering cholesterol), and fexofenadine (for allergies). Therefore, it is important to be careful when taking echinacea with these and other medications, including birth control pills. A rare allergic reaction can occur in people who are allergic to other plants in the Asteraceae (daisy) family. Some people experience very mild stomach upset or dizziness. High doses of echinacea can cause nausea.

Garlic

Allium sativum

Garlic's slender green leaves, bulbous white roots, and pungent flavor and aroma mark it as a member of the genus *Allium*, which also includes onions, leeks, and chives. Prized as a vegetable, a condiment, and a medicine, garlic has been part of human culture since ancient times in both the East and the West. First cultivated perhaps more than 7,000 years ago, this herb was long thought to impart strength and stamina. The legions of slaves who built Egypt's great pyramids were given garlic and onions as part of their daily diet. The original Olympic athletes in Greece ate garlic before competitions, possibly making it one of the earliest performance-enhancing substances. Widely used in spells and charms, garlic was believed to protect against all forms of evil, including witches and, more famously, vampires. Medicinally, garlic has long been revered for its powers, particularly in treating infections.

Therapeutic Uses

Diarrhea
Coughs and colds
Heart health

Garlic is a key ingredient in many ethnic cuisines and has a cherished history in herbal medicine. It also has a stunning reputation for fighting off infections, especially in the gut and lungs. With the growing problem of antibiotic resistance (which occurs when bacteria and parasites are no longer vulnerable to antibiotics), garlic could be critical.

Louis Pasteur first documented garlic's antibacterial activity in 1858. Albert Schweitzer relied on garlic to treat amoebic dysentery for years in Africa. Modern research has confirmed that garlic can kill a number of diarrhea-causing organisms, including *Salmonella, Escherichia coli, Entamoeba histolytica,* and *Giardia lamblia.* Fresh garlic also impairs many organisms that cause colds and pneumonia. In fact, a preliminary study indicated that taking a garlic supplement helped prevent the common cold.

Garlic not only helps fight infection but also may reduce the risk of some cancers. In 2002, the *Journal of the National Cancer Institute* reported results of a population-based study showing reduced risk of prostate cancer for men with a high dietary intake of garlic and scallions. Garlic also protects the gastrointestinal tract. In seven studies evaluating garlic consumption, those who ate the most raw and cooked garlic had the lowest risk of colorectal cancer. Multiple studies have found that aged garlic extracts prevent or reduce gastrointestinal toxicity resulting from methotrexate, a drug often prescribed for autoimmune conditions.

There are also good reasons to include garlic in a heart-healthy diet. It helps lower cholesterol and blood pressure, though its effects are mild. Garlic also makes platelets a little less sticky, thus reducing the risk of clots.

How to Use

Cooking deactivates some of garlic's activity, so one of the easiest ways to take garlic is simply to eat it! Raw garlic is probably the optimal form. Crush a couple cloves and put in olive oil, add a dash of lemon, and toss over a salad.

Capsules: If buying garlic in capsule form, look for products standardized to allicin, a key ingredient. Research suggests garlic products providing 4 to 8 mg allicin daily are optimal.

Precautions

Garlic is safe and well tolerated in the regular diet. There is a small risk that eating larger quantities of raw garlic (more than 4 cloves per day) can affect platelets' ability to form a clot, so it makes sense to reduce consumption 10 days before surgery and not to exceed this amount if taking anticoagulant medications. Garlic can also interfere with medications used to treat HIV infection.

Ginger

Zingiber officinale

Ginger is native to Asia, where it has been used as a spice for at least 4,400 years. Over the centuries, it has become one of the world's most popular culinary flavorings. Its intensely clean, slightly sweet, zesty heat is an essential element in everything from Indian curries and Thai stir-fries to gingerbread and ginger ale. Ginger's genus name, *Zingiber*, is derived from the Greek *zingiberis*, which, in turn, comes from the Sanskrit *sringabera*, meaning "horn shaped." The reference is to the knobby shape of the plant's roots, or, more accurately, rhizomes. Its tuberous underground stems are the part of ginger used in cooking and in herbal medicine, in which ginger is prized as an aid to digestion and a remedy for stomach upset, diarrhea, and nausea.

Therapeutic Uses

Motion sickness
Morning sickness
Nausea and vomiting
Inflammation
Coughs and colds

In herbal medicine, ginger is prized for treating indigestion and nausea. Scientific study has strongly confirmed this traditional use. Many studies in humans have shown that ginger eases nausea and reduces vomiting related to pregnancy, motion sickness, and chemotherapy. A National Cancer Institute study found that if patients took 0.5 to 1.0 g of ginger for three days before and after chemotherapy along with antinausea medications, nausea was reduced by an additional 40 percent. The way ginger relieves nausea is not completely understood, but current thinking is that compounds in ginger bind to receptors in the gastrointestinal tract that then act to reduce the sensation of nausea and to accelerate digestion, thus reducing the time food sits in the stomach.

Ginger is being investigated for reducing the inflammation and pain of arthritis. Studies in humans have shown that ginger relieves osteoarthritis pain in the knees better than placebo but not as well as ibuprofen.

Sip a cup of hot ginger tea on a cold winter night and you will appreciate the warming properties of ginger, as it improves circulation by gently opening blood vessels in the feet and hands. Ginger tea not only warms your toes but also may keep you from getting sick. Compounds in ginger have been shown to destroy many of the viruses that cause the common cold!

How to Use

Fresh ginger tea: Slice 1 inch of fresh ginger rhizome into small pieces. Simmer in 2 cups water on low heat for 15 minutes. Strain. Drink 1 to 3 cups per day for coughs and colds and to enhance circulation.

Dried ginger tea: Pour 1 cup boiling water over ¼ to ½ teaspoon ginger powder and steep for 10 minutes. Pour liquid tea off and discard powder. Drink 1 cup after meals for gas/bloating or to ease nausea.
Capsules: Take 250 to 500 mg 2 to 3 times per day.
Extracts: Concentrated extracts are typically used for osteoarthritis.
Use as directed.

Precautions

Adding ginger to the diet is safe for young and old. Ginger may cause mild heartburn in some. Pregnant women should not take more than 1 g of dried ginger per day. Do not combine high doses of ginger with anticoagulant drugs (blood thinners) without medical supervision.

Ginkgo

Ginkgo biloba

In rock layers some 270 million years old, scientists have unearthed fossils of ancient trees with delicately veined, fan-shaped leaves that are deeply notched to form two halves, or lobes. Some of these fossils are essentially identical to the leaves of a living tree known as *Ginkgo biloba*. It is the only surviving member of the *Ginkgo* genus, a sort of living fossil that survived into modern times in a remote corner of southeastern China. Buddhist monks began cultivating ginkgo there in the 11th century, when ginkgo was revered as a sacred plant and grown for its peculiar fleshy seeds.

The Chinese called these seeds *yinxing*, meaning "silver apricot." In Japan, where ginkgo was introduced, *yin-hsing* is thought to have become corrupted into *gingkyo*. Ginkgo leaves and seeds have been used in traditional Chinese medicine since the 15th century and probably were used much earlier in folk medicine.

Therapeutic Uses

Antioxidant
Mental health
Circulation

Perhaps our oldest known tree, ginkgo and its leaves have been an herbal remedy for many centuries. Ginkgo contains potent antioxidants called glycosides, which protect nerve cells, and terpene lactones, which reduce inflammation. Ginkgo is used for poor circulation and for reducing the pain of peripheral vascular disease. However, studies investigating these effects show only modest benefit over placebo.

Ginkgo is widely used in Europe, Canada, Australia, and the United States for the prevention and treatment of dementia. A number of studies have shown that *Ginkgo biloba* extract (GBE) improves symptoms and stabilizes or slows progression of dementia, including Alzheimer's disease. Studies also show that these extracts modestly improve age-related memory impairment (which is much less serious than dementia).

Newer studies published in the U.S. have not been as encouraging. A study published in the journal *Neurology* in 2008 did not show that GBE prevented cognitive decline in elderly people with normal cognitive function. However, among the people who actually took ginkgo as directed, memory loss was slowed. A much larger study published in the *Journal of the American Medical Association* in 2008 also failed to demonstrate that taking GBE (120 mg twice a day) prevented dementia in adults ranging in age from 72 to 96 with normal brain function or mild impairment. Likewise, a subsequent analysis published in the same journal in 2009 did not show a significant reduction in cognitive decline.

Nevertheless, studies do show that ginkgo improves arterial function. Several studies noted that extracts improve walking distance in patients with peripheral arterial occlusive disease, a condition in which arterial disease in the legs leads to pain with even minimal exertion.

How to Use

Tea: Steep 1 teaspoon ginkgo leaf in 1 cup water for 5 to 7 minutes. Strain. Drink 1 to 2 cups daily.
Tincture: Generally, take 3 to 5 ml twice a day, or follow manufacturer's directions.
Extract: Most research has been conducted on twice-daily doses of 120 mg of extracts standardized to 24 to 27 percent flavone glycosides and 6 to 7 percent triterpenes.

Precautions

Ginkgo leaf is considered safe, as shown in large clinical trials and wide use. But there may be effects on blood clotting. Those taking medications to prevent blood clots should consult a health-care professional before using. Stop taking ginkgo at least 3 days before surgery. Use in pregnancy is not recommended due to risk of increased bleeding.

Ginseng

Panax ginseng, P. quinquefolius

Ginseng has been called the king of herbs, the root of heaven, and a wonder of the world. Used in China, Korea, and India for several thousand years, *Panax ginseng* is probably the most famous medicinal herb to have come out of Asia. Its North American counterpart, *Panax quinquefolius*, was discovered later but has similar effects and is prized almost as highly. Ancient Indian texts speak of ginseng as a life-giving plant with magical powers. Centuries ago, Koreans believed that ginseng's leaves gave off a glow on moonlit nights. Ginseng hunters scanned the woods for the eerie radiance and shot arrows toward its source to mark the plant's location so its valuable roots could be collected the next day. Ginseng hunting was fraught with dangers, but the rewards were great. As a result, wild ginseng in China had been harvested nearly to extinction by the 1600s. The discovery of *Panax quinquefolius* in North America in the early 1700s set off a ginseng rush. Many pioneers made a living digging ginseng roots out of the damp soil of eastern woodlands. Several early American entrepreneurs and explorers, including John Jacob Astor and Daniel Boone, were involved in the profitable ginseng trade, in which countless tons of American ginseng were exported to Asia.

Therapeutic Uses

Tonic
Diabetes
Immune system function

Ginseng is perhaps the best known of the herbal tonics, or adaptogens, with possible benefits for many different medical conditions. Adaptogens are often used to help strengthen the body to resist disease or to recover from illness. Each *Panax* species is a bit different; extracts of roots of different ginsengs contain different phytochemicals and thus have different effects. Laboratory research shows that extracts of both the whole root and isolated compounds act as antioxidants, affect immune system function, and combat inflammation.

Clinical research has been done mostly on Asian ginseng. While Asian ginseng doesn't control symptoms such as hot flashes in menopausal women, preliminary results suggest that extracts may improve quality of life and lessen fatigue and psychological symptoms. For 36 people with type 2 non-insulin-dependent diabetes, both 100 and 200 mg of ginseng daily for 8 weeks helped with fasting glucose levels. Only those taking the larger dose had improvements in hemoglobin A1c tests, the standard tool for comparing blood sugar levels. Studies show that both ginseng species reduce blood sugar levels in people with type 2 diabetes.

Studies also show that American ginseng reduces blood glucose levels in type 1 diabetics. Both species of ginseng enhance immune function. In one study, a specific Asian ginseng extract boosted immune response to the flu vaccine and reduced the number of colds.

How to Use

Extract: Standardized extracts of Asian ginseng containing 4 to 7 percent ginsenosides, dosed 100 to 200 mg daily.
Tinctures: 1 to 2 ml, up to 3 times daily.
Tea: Simmer 3 to 6 teaspoons of the root for 45 minutes in 3 to 4 cups water. Strain, cool, and drink a cup 1 to 3 times daily.
Capsules: 500 to 1,000 mg dried powdered root, taken 1 to 2 times daily.

Precautions

Blood pressure should be monitored when taking ginseng. Caution is advised for diabetics because ginseng can lower blood sugar levels. Asian ginseng can act as a stimulant, causing insomnia or anxiety; some people experience mild stomach upset or headache.

Goldenseal

Hydrastis canadensis

An American native, goldenseal is a member of the buttercup family that once grew in great abundance in the eastern deciduous forests of the United States. The *golden* part of its common name comes from the bright yellow interior of the plant's fleshy rhizomes (underground stems). *Seal* is a reference to small, circular marks on the rhizome's twisted, wrinkled surface that were thought to resemble the decorative seals once used to stamp warm wax onto envelope flaps.

Native American tribes used goldenseal to produce a beautiful golden yellow dye. They also used the herb medicinally and introduced European settlers to its healing properties in the 1700s. A century later, goldenseal had gained such popularity that it was severely overharvested, an assault that continued into the 20th century, until wild stocks were legally protected. Now cultivated, but still scarce in the wild, goldenseal is a top-selling herbal supplement marketed to aid digestion, to treat infection, and to boost the immune system.

Therapeutic Uses

Digestive aid
Diarrhea
Antimicrobial

Woodland goldenseal is one of the best-known indigenous North American plants. It was widely used by eastern tribes. Goldenseal was an official drug in the United States almost continuously from 1830 to 1955. During the late 19th and early 20th centuries, a number of pharmaceutical companies, including Parke-Davis, Eli Lilly, and Squibb, manufactured and sold goldenseal products. Today, goldenseal remains a popular herbal remedy in the United States, particularly for the treatment of gastrointestinal complaints.

Looking to the past can often prove useful when researching medicinal plants. As a clear demonstration of that, scientists at the University of Chicago recently found, in test-tube studies, that goldenseal extracts are highly active against multiple strains of *Helicobacter pylori*, a bacterium that is responsible for the majority of peptic ulcers and gastric cancers. While there are many compounds that contribute to the overall medicinal effects of goldenseal, berberine, a yellow alkaloid, is the primary infection fighter. Berberine destroys many microorganisms that cause diarrhea, including *Giardia lamblia* and *Entamoeba histolytica*. These organisms cause chronic diarrhea and can lead to significant dehydration and weight loss. Goldenseal and other plants containing berberine could play an important public health role, given that approximately 20 percent of the world's population is chronically infected with *Giardia* and some 50 million people are infected with the amoeba *E. histolytica*.

Goldenseal can be found in salves and ointments designed to help heal skin infections. Research has shown that berberine is effective for the treatment of psoriasis and may also

be useful for minor fungal infections of the skin. While the taste of goldenseal is quite bitter, it can be very effective as a mouthwash and can also be used for treating canker sores and mouth ulcers.

How to Use

Tea: Due to its bitterness, goldenseal is quite unpalatable as a tea.
Capsule: Generally, 1 to 3 g per day.
Tincture: Take 2 to 4 ml, 2 to 3 times per day.
Topical: Salves and ointments are readily available. Use as directed.

Precautions

Goldenseal may stimulate uterine contractions and is therefore generally not recommended for use during pregnancy. Goldenseal can also interact with enzymes in the body that metabolize certain prescription medications. People taking other medications should check with their health-care professionals or pharmacists before taking goldenseal.

Grapes

Vitis vinifera

Grapes, and wine made from them, have been part of human culture for a remarkably long time. Archaeologists working at a site in the country of Georgia recently uncovered several pottery jars inside Neolithic ruins dating from around 6000 B.C. The jars contained a reddish residue—the remains of wine. This prehistoric wine was most likely made from wild grapes, as the domestication of grapevines didn't begin until around 5000 B.C. Sumerian texts from 3000 B.C. contain some of the first written accounts of both grapes and wine.

Colorful scenes of grape harvesting and wine making decorate the walls of many Egyptian tombs, revealing the importance of *Vitis vinifera* in ancient Egypt—and in the afterlife—by at least 2700 B.C. Seven hundred years later, Phoenician sailors were transporting grapevines across the Mediterranean to Greece. From there, grapes and grape growing spread to Europe and the rest of the world.

Therapeutic Uses

Heart health
Antioxidant

Scientists have looked at the juice, seed, and skin of grapes collectively and separately. While there are multiple health-enhancing compounds in grapes, it is the flavonoids, particularly resveratrol, that have gained international attention as powerhouse antioxidants. Resveratrol is concentrated in the skin, seeds, and stems of grapes and is an ingredient in dark purple grape juice and red wine that may help prevent damage to blood vessels, reduce bad cholesterol and inflammation, and prevent blood clots. In general, purple and other dark-colored grapes contain greater concentrations of flavonoid compounds than light-colored grapes do.

So is red wine better than white wine for your heart? Some studies do indeed show that red wine is superior to other types of alcohol, but others show that red wine isn't any better than beer, white wine, or liquor for heart health. Thus, it is good news that researchers at Georgetown University have shown that grape juice, similar to red wine, lowers the risk of developing blood clots that may lead to heart attacks. Further, grape juice is a good alternative for people who do not drink alcohol or want to limit their consumption. Another benefit to drinking grape juice is the antioxidant advantage. Researchers at the University of California, Davis, found that catechin, another key antioxidant in grapes, remains in the blood for more than 4 hours after grape juice is drunk, compared with only 3.2 hours for full-strength cabernet, suggesting that alcohol likely hastens the breakdown of catechin.

A growing body of research is showing that extracts from grape seeds are beneficial for our health. Grape seeds contain powerful antioxidants known as proanthocyanidins, which may help prevent heart disease, diabetes, and cataracts. Studies in humans have shown that grape-seed extract can lower blood pressure and cholesterol and reduce inflammation.

How to Use

Wine: 1 serving a day for women, 1 to 2 for men.
Grape juice: 4 to 6 ounces of dark purple grape juice per day.
Grape-seed extract: 300 to 600 mg per day.

Precautions

Grapes are one of the more pesticide-ridden fruits, so it may be advisable to purchase organic grapes when possible. Women should limit alcohol intake to one serving per day, as higher amounts can increase the risk of breast cancer. Alcohol should not be consumed during pregnancy.

Hops

Humulus lupulus

Hops are the pale green, cone-like fruits of a hardy, twining vine native to Europe, western Asia, and North America. They are probably best known by brewers—and beer drinkers—for giving aroma and flavor to beer. Interestingly enough, hops were originally added to beer for their natural preservative properties. Only later did they come to be valued for the bitter, but agreeable, taste they impart to the drink. The Romans ate the young shoots of the hops plant as if it were asparagus, a practice that continued in rural parts of the British Isles well into the 20th century. Roman physician Pliny the Elder named hops *Lupus salictarius*, which means "willow wolf" and refers to the vine's habit of twining around other plants and strangling them, like a wolf does to sheep. The plant's species name, *lupulus*, is Latin for "small wolf," a similar reference. Hops were used medicinally in Europe and by Native Americans in North America. Today, their greatest value in herbal medicine is as a calming, natural sedative.

Therapeutic Uses

Digestion
Nervousness
Insomnia
Menopause

Though most famous as an ingredient vital to brewing beer, hops have been used to improve appetite and digestion, to relieve toothache and nerve pain, and to treat insomnia around the world. It is said that Abraham Lincoln relied upon hops pillows to relax and to improve his sleep.

Today, Germany's health authorities continue to approve the use of hops for "discomfort due to restlessness or anxiety and sleep disturbances." Most of the scientific research evaluating the effectiveness of hops for anxiety and sleep has been conducted with a combination of hops and valerian, another popular sedative herb. Three controlled studies have shown that this combination is more effective than placebo and similar in effectiveness to benzodiazepines (sleep medications) for shortening the time it takes to fall asleep and for improving sleep quality. None of the studies reported excessive morning sleepiness or rebound insomnia when the participants stopped taking the herbs.

One area that is garnering attention is the potential use of hops for the relief of menopausal symptoms. Researchers have identified at least one key compound in hops, 8-prenylnaringenin, that is linked to significant hormonal activity. A 6-week study in menopausal women found that a standardized hops extract reduced hot flashes, night sweats, and insomnia. Another study found that a topically applied gel containing hyaluronic acid, vitamin E, and hops extract significantly improved vaginal dryness in postmenopausal women. Hops might prove to be an attractive alternative to conventional hormone therapy, but more research is needed to determine long-term safety.

How to Use

Tea: Steep 1 teaspoon hops strobiles (female flowers) in 1 cup water for 5 to 7 minutes. Add honey to taste. Drink 30 minutes before bed.
Capsules: 500 mg, 1 to 3 times daily; often taken in combination with valerian root.
Tincture: 2 ml tincture, 1 to 3 times daily.

Precautions

Given the potential for increased hormonal activity stimulated by hops, women who have had breast cancer or who are at risk for it should avoid hops until more is known. Safety in pregnancy is not known. Hops may have sedative effects, so driving or operating heavy machinery should not be attempted while using hops.

Licorice

Glycyrrhiza glabra

No one knows who first discovered that the tangled, fleshy rhizomes of licorice possess an intense sweetness. But evidence of licorice's use is widespread in ancient cultures.

Archaeologists found bundles of licorice root sealed inside the 3,000-year-old tomb of Tutankhamen, presumably so that in his afterlife the Egyptian king could brew *mai sus*, a sweet drink still enjoyed in Egypt today. The species known to both the ancient Egyptians and the ancient Greeks was *Glycyrrhiza glabra*, commonly called European licorice. The genus name comes from Greek words meaning "sweet root." But there was more to licorice's appeal than its sweetness. Licorice root was also prized medicinally, primarily as a remedy for digestive and respiratory ailments.

Therapeutic Uses

Sore throat
Cough
Heartburn
Gastritis

This plant, better known as a candy and candy flavoring, also has some medicinal properties. Thanks to its demulcent, or tissue-coating, properties, licorice root can coat sore throats and soothe coughs, heartburn, and gastritis. It is possible that the thick mucilage from licorice provides the coating, or alternatively the body may build up secretions in response to compounds in licorice. Scientists have conducted a few research trials looking at combination products in the treatment of indigestion and asthma and the topical treatment of canker sores. A group of compounds in licorice, the triterpene saponins, are responsible for the herb's sweetness and possibly also for its antiviral effects and its success in healing stomach ulcers.

How to Use

Lozenge: For sore throat, a licorice lozenge used every few hours for several days allows the coating properties of licorice to soothe inflamed tonsils and throats.
Tea: To soothe a nagging cough, especially one due to an upper respiratory infection causing nasal drip, try a decoction of licorice. Add 1 to 2 teaspoons chopped licorice root to 2 cups boiling water. Boil for 10 minutes. Strain, cool, and drink ½ cup 3 to 4 times a day for up to 1 week.
Tablets: Heartburn, gastritis, or related conditions requiring licorice treatment for more than a week respond well to deglycyrrhizinated licorice, or DGL, tablets, generally 1 to 2 380-mg tablets before meals and at bedtime.

Precautions

If taken for extended periods, a licorice compound called glycyrrhizin can deplete the body's potassium and raise blood pressure. Generally, licorice is safe if taken for less than a week at the doses listed above. For those with gastritis or heartburn needing extended treatment, concerns about potassium and blood pressure can be avoided by taking a DGL product. People taking blood thinners or blood pressure medicines, people with high blood pressure, and people with kidney or heart troubles should be cautious with any amount of licorice. Licorice is not recommended during pregnancy or lactation.

Parsley

Petroselinum crispum

With leaves either curly or flat, parsley is one of the world's most widely used herbs. It is an essential ingredient in many Middle Eastern, European, and American dishes.

Parsley also has become a nearly ubiquitous garnish, typically ignored, on plates of restaurant food. The ancient Greeks treated parsley with far more respect. Associating the herb with death and oblivion, they believed it to be sacred to the dead. Over the centuries, parsley attracted other superstitions. Pluck a sprig of parsley while chanting the name of an enemy, and you could bring about his or her demise. Transplant it, give it away, or pick it when in love, and disaster of some sort would inevitably follow. The Romans appear to have been the first to use parsley as a culinary herb, and its cultivation spread slowly north and east. By the Middle Ages, parsley had been elevated from an ingredient in sauces and salads to a respected medicinal herb. Today, parsley is still used for health problems, including urinary tract infections.

Therapeutic Uses

Kidney stones
Diuretic
Urinary tract infections
High blood pressure

This mild-tasting herb is the plant to turn to when suffering from one of the body's most excruciating conditions—kidney stones. The pain is relieved in various ways through parsley's medicinal effects. All parts of the parsley plant—leaf, root, and seeds—contain fragrant oils that have diuretic effects, may increase blood flow to the kidney, and reduce inflammation of the urinary tract. Only the root, however, has been approved for use as a diuretic by Germany's Commission E, which oversees the efficacy and effectiveness of medicinal herbs. With diuresis, and possibly through irritation of the inside of the urinary tract, the movement of kidney stones may be facilitated. Parsley's diuretic, circulatory, and anti-inflammatory effects also contribute to its ability to fight infections of the urinary tract, such as cystitis. In theory, parsley's diuretic properties might help in lowering blood pressure.

How to Use

Food: Parsley is first and foremost a food, a fresh or dried herb that is part of recipes in many cultures. It is possible that some of the medicinal effects are obtained in this way, though higher doses are usually recommended. Conditions of the urinary tract, for example, require approximately 6 g daily of parsley leaves or roots.
Tincture: Generally, alcohol extracts, or tinctures, of parsley are dosed at 1 to 2 ml, 3 times daily.
Capsules: 450 to 900 mg of parsley leaf, up to 3 times daily.

Tea: Pour 1 cup of boiling water over ¼ cup (or 2 to 3 tablespoons) fresh parsley leaves. Let stand for 5 minutes, strain, and drink, up to 3 times daily. Tea can be sweetened if desired.

Precautions

Parsley may stimulate both menstrual flow and the uterus, so it is not appropriate for pregnant women. Parsley may react with sunlight on the skin to cause a rash, particularly in lighter-skinned people. The varied effects that parsley has on the kidneys warrant caution in anyone with kidney disease. In order to prevent an unsafe drop in blood pressure, care also should be exercised if parsley is used with high-blood-pressure medications.

Peppermint

Mentha x piperita

Peppermint is the aromatic plant that gives the candy of the same name its cool, refreshing taste. It is one of more than two dozen species of mint that belong to the genus *Mentha*. The name comes from Minthe, a nymph in Greek mythology who has the misfortune to be loved by Hades, god of the underworld, and subsequently was turned into an insignificant little plant by Hades's jealous wife. According to the story, Hades tries to make it up to Minthe by sweetly scenting her small, green leaves. While several mints appear to have been cultivated since the time of the ancient Egyptians, peppermint is a relative newcomer. A natural hybrid of two other mint species, it was discovered in England in 1696. Cultivation of peppermint spread rapidly across Europe, and colonists transported the herb to the New World. Today, peppermint ranks near the top of the world's favorite flavorings. It is also a respected herbal remedy for upset stomach and other digestive issues.

Therapeutic Uses

Indigestion
Irritable bowel syndrome
Colds and coughs
Muscle aches
Tension headache

Peppermint is a long-standing digestive herbal remedy. This aromatic herb calms the muscles of the digestive tract and improves the flow of bile from the gallbladder, thus helping the body to digest fats. It is for these reasons that peppermint alleviates intestinal gas, reduces abdominal cramping, and can settle an upset stomach. Studies show that peppermint oil, especially when combined with caraway seed oil, is equal or superior to conventional treatments for indigestion.

Peppermint oil is the most widely studied herbal product for treating irritable bowel syndrome (IBS), characterized by recurring abdominal pain along with bouts of constipation, diarrhea, or both. IBS disproportionately affects women, and there are few effective treatments. The majority of clinical studies show that peppermint oil is superior to placebo and equivalent to prescription medications for improving IBS, especially when diarrhea is the predominant symptom. Peppermint oil is very well tolerated.

Peppermint and its active constituent, menthol, are good for the respiratory system. A cup of warm peppermint tea can thin mucus, help loosen phlegm, and relieve a stuffy nose. The Food and Drug Administration approves the use of mentholated ointments, lozenges, and steam inhalants for coughs. Applied to neck and chest, the vapors quickly relieve coughing. Applied topically in products such as BENGAY and Tiger Balm, peppermint also soothes the skin, reducing itching from bug bites or poison ivy and relieving arthritis and headache.

How to Use

Tea: Pour 1 cup boiling water over 1 teaspoon dried peppermint leaves, or 6 to 8 fresh leaves. Steep for 10 minutes. Strain and cool. Enjoy 2 to 3 times per day after meals.
Capsules: 500 to 1,000 mg dried peppermint leaf taken after meals. Sustained-release peppermint oil capsules are used for IBS. In studies, 0.2 ml peppermint oil was given 2 to 3 times a day with meals.
Lozenges: For sore throat and cough, lozenges should contain 5 to 10 mg menthol. Children under 2 should not be given menthol products.
Topical: Ointments and rubs are available. Apply 2 to 3 times daily, or as directed.

Precautions

Do not use peppermint if you have gastroesophageal reflux disease (GERD) or if you have a hiatal hernia, as peppermint can make heartburn worse. Note: Never apply peppermint oil to the face of an infant or small child under the age of 5, as it may cause spasms that inhibit breathing.

Pomegranate

Punica granatum

Steeped in history and romance, pomegranate is native to the mountainous region that includes northern Iraq and northwest Iran. Sumerian cuneiform records reveal that pomegranates have been cultivated in the Middle East since approximately 3000 B.C. For many centuries desert caravans carried the thick-walled fruits as a source of nutritious, thirst-quenching juice. In Egyptian art and mythology, the pomegranate symbolized abundance and unity. In early Christian, Jewish, and Islamic artistic traditions, the fruit represented blood, death, and the renewal of life. According to Greek mythology, Persephone, daughter of the goddess Demeter, makes the mistake of eating pomegranate seeds in the underworld, and so is eternally bound to that place for part of every year. The Romans named the fruit *Punica granatum*, or "seeds from Carthage," possibly because that Phoenician city in North Africa was a source of fine pomegranates in the ancient world.

Therapeutic Uses

Prostate health
Heart health
Antioxidant

The luscious pomegranate has been cherished as food and medicine for at least 4 millennia. Compared with other common fruit juices, pomegranate is one of the richest in antioxidant activity, with roughly 3 times that of red wine and green tea! Animal studies show that pomegranate juice and pomegranate flower extract offer strong protection against the progression of atherosclerosis. Studies on humans demonstrate a modest effect on blood pressure and inflammation reduction—reasons for adding pomegranate to a heart-healthy foods list.

One of the most interesting areas of pomegranate research is prostate health. Laboratory and animal studies have shown that the fruit's juice, peel, and oil all interfere with the spread of prostate cancer tumors. A 2-year study examined the effect of 8 ounces of pomegranate juice on prostate-specific antigen (PSA) levels in 46 men who had received surgery or radiation therapy for prostate cancer. PSA levels are used as a marker after cancer treatment to determine if the cancer has returned. Treatments are deemed effective if they reduce PSA levels in prostate cancer patients and/or prolong the time it takes for the PSA level to double (indicating that progression of the cancer is slowing). Sixteen of 46 patients (35 percent) exhibited a decline in their PSA levels during treatment, while 4 of the 46 patients (2 percent) achieved a PSA decline of more than 50 percent. Overall, PSA doubling time was significantly delayed in a majority of the men drinking the juice. After the 2-year study, those who continued to drink pomegranate juice had lower PSA levels than those who stopped. At the conclusion of the study, the mean PSA doubling time went from 15 to 54 months, with no adverse events reported.

In men, prostate cancer is the second leading cause of cancer-related death in the U.S.

Seven government-funded studies are currently evaluating pomegranate's role in treating prostate cancer.

How to Use

Juice: 8 ounces per day (the typical amount used in research studies).
Capsules: Generally, 2 to 3 g per day of powdered pomegranate capsules.

Precautions

There are no known safety issues with drinking pomegranate juice or with using pomegranate juice extracts.

Psyllium

Plantago ovata, P. afra

Native to India, Pakistan, Iran, and parts of the Mediterranean, psyllium—also called ispaghula or isphagula—is an annual with narrow, strap-like leaves that grows no more than knee high. Its small, white flowers give way to tiny, glossy seeds that have a slight reddish tint. Psyllium is prolific: Each plant can produce up to 15,000 seeds. The common name for *P. ovata* in India is *isabgol*, which comes from the Persian words *isap* and *ghol*, meaning "horse ear." The name aptly describes the peculiar shape of psyllium seeds. The word *psyllium* comes from the Greek word meaning "flea," also a reference to the tiny seeds. The husk of psyllium seed contains large amounts of soluble fiber; when wet, it becomes slippery and mucilaginous. Completely indigestible, the husks are used as a source of dietary fiber to relieve constipation and to maintain a healthy digestive tract.

Therapeutic Uses

Fiber
Bulk laxative
Heart health

Psyllium seed husks are an excellent source of soluble fiber. Every 100 g of psyllium provides 71 g of soluble fiber. A similar amount of oat bran contains only 5 g of soluble fiber! When psyllium combines with water, it swells up to 10 times its original volume, which explains why it has long been used as the primary ingredient in bulk laxatives such as Metamucil and Serutan. When taken over a period of weeks, psyllium can speed up the time that it takes for food to travel through the digestive tract. Interestingly, psyllium is also effective for the treatment of diarrhea and can be particularly useful for those with irritable bowel syndrome, as they experience periods of constipation interspersed with periods of diarrhea.

Soluble fiber has been associated with lowering both total and low-density lipoprotein (LDL), or bad cholesterol; controlling weight; lowering blood pressure; and improving insulin resistance to reduce the risk of diabetes. The U.S. Food and Drug Administration has formally recognized the role of psyllium in lowering blood cholesterol levels by allowing companies to make health claims about products containing its fiber. Several psyllium-containing cereals such as Kellogg's Heartwise and All-Bran Bran Buds have appeared in the marketplace and are promoted for their potential cholesterol-lowering and heart health–promoting effects. Due to the overwhelming evidence that high-fiber diets prevent many of the risks associated with heart disease, the National Cholesterol Education Program recommends 5 to 10 g of soluble fiber daily.

How to Use

Adults: Generally 2 to 3 tablespoons per day, taken in divided doses before breakfast and before dinner. Mix each dose in a tall glass of water, stir well, drink, and follow with

another glass of water.
Children (younger than 18 years): Generally from 1 teaspoon to 2 tablespoons, depending upon the age and size of the child.

Precautions

Psyllium fiber can reduce the absorption of certain drugs, so drugs should be taken either 1 hour before or a few hours after psyllium is taken. Obstruction of the gastrointestinal tract has happened in people taking psyllium fiber, particularly if they had undergone previous bowel surgery or if they took psyllium with inadequate amounts of water. Those who have difficulty swallowing should not take psyllium.

Rosemary

Rosmarinus officinalis

Native to sunny Mediterranean shores, rosemary is an evergreen member of the mint family. Its genus name, *Rosmarinus*, means "dew of the sea" in Latin, a reference to the plant's coastal habitat and delicate, pale blue, droplet-size flowers. Rosemary's piney aroma and bittersweet flavor work well in both sweet and savory foods, and it has been a staple in herb and kitchen gardens for many centuries. The herb also has a long history of use as a fragrance in soaps, lotions, and cosmetics. Since ancient times, rosemary has been a symbol of love, loyalty, and remembrance, often included in rituals and ceremonies associated with both marriage and death. Sprigs of the herb were entwined into bridal wreaths or tucked in to bridal bouquets. In some European countries, it is still customary for mourners to carry rosemary in funeral processions and to cast the herb into the grave during the burial.

Therapeutic Uses

Topical antioxidant
Antibacterial
Muscle and joint pain
Bronchitis
Circulation
Memory/cognition

One of those herbs that the nose knows, rosemary leaf produces extracts that are common ingredients in many hair and skin care products. They can combat dandruff and greasy hair and promote general hair health. Their most convincing use, however, is as an antiseptic and antioxidant. Preliminary research indicates that rosemary extracts can kill bacteria, fight skin inflammation relevant to many skin conditions, and even inhibit cancer in laboratory animals. They may also block the detrimental effect of sunlight on skin cells.

Applied topically, rosemary packs an antioxidant punch. One potential application is its topical use in antiaging skin care products.

To make the essential oil, rosemary leaves are distilled to yield a fragrant, concentrated oil containing compounds responsible for rosemary's medicinal effects. Rosemary essential oil is antimicrobial. One test-tube study found that rosemary essential oil had a synergistic action with the antibiotic ciprofloxacin against a bacterium that can cause pneumonia.

Ingested or inhaled, rosemary oil has been used for other conditions, such as muscle and joint pain, indigestion, bronchitis, and sinusitis, or to improve circulation. There is also some data supporting the use of rosemary aromatherapy for memory and mental function. When 40 people underwent rosemary aromatherapy for 3 minutes, changes in their brain tests indicated increased alertness, reduced anxiety, and improved ability to do mathematics.

How to Use

Essential oil: The essential oil is used in aromatherapy to enhance mental focus. To apply the oil topically, mix 10 drops in 1 ounce of carrier oil (olive, jojoba, almond, apricot).
Cream/ointment/salve: Topical products use various concentrations of rosemary's essential oil for skin conditions, such as minor bacterial or fungal infections. Apply daily to skin, joints, or muscles, as per manufacturer's directions.
Tea: Add 1 to 2 teaspoons dried rosemary leaves to 1 cup hot water.
Cover for 10 minutes. Strain. Drink 1 to 3 cups a day.
Capsules: Generally, 500 to 1,000 mg, once or twice daily; follow product instructions.

Precautions

Rosemary extracts with concentrated essential oils can cause a rash with sun exposure. If that happens, discontinue use. Using rosemary as a seasoning during pregnancy is fine, but medicinal doses are not recommended.

Sage

Salvia officinalis

A classic seasoning herb for poultry and many savory dishes, sage is a highly aromatic, shrubby perennial native to the northern Mediterranean coast. The genus name, *Salvia*, comes from the Latin *salvere*, meaning "to be saved" or "to be healed." Sage was sacred to the ancient Greeks and Romans; they believed it imparted wisdom and mental acuity. The Romans gathered the herb in a solemn ceremony that involved using a knife not made of iron, as sage reacts with iron salts. For many centuries, sage also has been linked with good health and long life. Eighteenth-century herbalist John Evelyn took that one step further, writing, " '[T]is a Plant endu'd with so many and wonderful Properties, as that the assiduous use of it is said to render Men Immortal."

Therapeutic Uses

Sore throat
Colds and coughs
Memory
Menopause
Excessive sweating

Sage is said to clear the mind and improve memory. In fact, there may be a link between the herb and the mind. Researchers have shown that the essential oil of *Salvia officinalis* inhibits acetylcholinesterase, an enzyme targeted by Alzheimer's drugs. Animal studies and trials on humans suggest sage may improve mood and cognition in both healthy adults and those with Alzheimer's dementia.

Sage tea has long been used as a remedy for sore throats—often in the form of a gargle—as well as a treatment for coughs and colds. Scientists have confirmed that sage is highly effective for relieving sore throat. One clinical trial of 286 people with acute sore throat found that a 15 percent sage spray given over a period of 3 days was superior to a placebo spray for relief of symptoms. In fact, symptom relief occurred within 2 hours of the first treatment. Similar results were found when an echinacea/sage spray was compared with a chlorhexidine/lidocaine spray in 154 patients with acute sore throat.

Based on traditional use and studies in humans, Germany's health authorities approve the use of sage as a treatment for excessive sweating. Sage may also have weak estrogenic properties, which may explain why it has been used to relieve night sweats associated with menopause. An 8-week study found that 1 gram of fresh sage was superior to placebo for relieving night sweats. Sage is often included in combination with other herbs designed to relieve hot flashes and night sweats, and to improve memory and mood.

Sage has been used to aid digestion, to stimulate digestive enzymes, and to alleviate intestinal cramping—hence its use with beans or other gas-producing foods. Sage exhibits antibacterial activity, which may explain its use for gastroenteritis or for other minor GI tract infections.

How to Use

Tea: Steep 1 teaspoon chopped sage in 1 cup water for 10 minutes. Strain. Drink or use as a gargle for sore throat.
Capsule: 500 mg sage leaf taken twice a day.
Tincture: Take 2 ml, twice a day, or follow manufacturer's recommendation. A tincture of 5 ml can be added to 1 cup water and used as a gargle 3 times per day.

Precautions

The amount of sage consumed as a culinary herb is safe, but avoid larger amounts because of thujones (chemical compounds with specific effects on the brain) present in the essential oil. Do not exceed recommended doses. Alcohol extracts of sage are higher in thujone than those made with water and should not be used internally for more than 1 to 2 weeks; a tincture diluted in water and used as a rinse or gargle is safe. Do not use sage internally during pregnancy.

Saw Palmetto

Serenoa repens

Native to the southeastern United States, saw palmetto is a low-growing palm with distinctive fan-shaped leaves. Vast, unbroken tracts of saw palmetto once covered hundreds of miles of coastal land in Florida, Georgia, and other parts of this region. The density of the plants, coupled with the sawlike edges of the leaf stalks, made the tracts almost impassable. The dark purple fruits of saw palmetto—about the size and shape of olives—were an indispensable dietary staple among Native American tribes for perhaps as much as 12,000 years before Europeans set foot in this part of North America. When settlers arrived, they added saw palmetto to their diet and fed the fruits to their livestock. They also observed native tribes using saw palmetto, particularly as a remedy for urinary tract complaints. By the late 1800s, the plant had found its way into conventional medicine in the U.S. Interest in saw palmetto waned for a time, but since the 1990s it has been the herb of choice among herbal practitioners for prostate problems.

Therapeutic Uses

Benign prostatic hyperplasia (BPH)

Saw palmetto's blue-black, single-seeded berries are used to make the premier herbal medicine for treating prostate problems. Extracts of the berries act to inhibit an enzyme, 5-alpha-reductase, that stops the formation of a potent, prostate growth–enhancing form of testosterone. Saw palmetto also may have effects on estrogen, progesterone, and testosterone and their receptors, which are other mechanisms for slowing the growth of the prostate. All of these effects translate into easing the symptoms of BPH by enhancing urinary flow rates, reducing pain with urination, and decreasing nighttime urination. In most clinical studies, saw palmetto, used as a standardized extract of 320 mg daily, relieves BPH symptoms as effectively as the pharmaceutical finasteride; however, finasteride more effectively decreases the size of the prostate. Whereas finasteride decreases testosterone levels in the blood, saw palmetto does not seem to affect blood test results for testosterone, other sex hormones, or prostate-specific antigen (PSA, a marker for prostate cancer and BPH).

Much research has been done on saw palmetto, and the research has undergone rigorous analysis in which researchers compiled results from many studies. The results have been mixed, probably due to flaws in research models, a range in the type of extracts used, and the length of time supplements were taken.

How to Use

Extract: Studies have used a specific extract, standardized at 80 to 90 percent fatty acids and sterols—the compounds most effective for BPH symptoms—and dosed at 160 mg, twice daily.

Tincture: 1 to 2 ml, 3 times a day.

Capsules: Follow manufacturer's guidelines.

Precautions

Saw palmetto can cause mild stomach upset, constipation, diarrhea, headache, high blood pressure, and itching. Rarely, saw palmetto can cause impotence or decreased sex drive. Due to its possible hormonal effects, saw palmetto is not recommended for people on hormone therapy or for pregnant women. However, women are unlikely to take this herb anyway.

Soy

Glycine max

Miso, soy sauce, tempeh, tofu—these and other foods derived from soybeans have been a cornerstone of Asian cuisine and nutrition for centuries. Native to central and eastern Asia, wild soybeans are thought to have been domesticated around the 11th century B.C. in northern China. By the first century A.D., soybeans were being cultivated throughout China, as well as in Korea, Japan, northern India, Nepal, and many countries in Southeast Asia. European traders and visitors to China and Japan in the 1500s encountered many foods and sauces made from soybeans and brought the news back to the West. Yet soybeans weren't planted in Europe until the 1730s. Even then, they were grown in greenhouses and botanic gardens for display and study. Several decades later, soybeans reached North America. They gradually gained acceptance as a forage crop for livestock and as a legume that improved agricultural soils. Not until World War II, however, were soybeans widely grown in the U.S. as a substitute for other protein-rich foods and as a source of edible oil. Since then, soybeans and soybean oil have become standard ingredients in many foods, and traditional Asian soy dishes are commonplace almost everywhere.

Therapeutic Uses

Protein source
Heart health

Soy is widely consumed in the Asian diet. Soybean contains a full complement of essential amino acids, making it a complete protein. Thus, it is a very useful part of any vegetarian or vegan diet. Of any plant, soy contains the highest concentration of isoflavones, a class of phytoestrogen compounds that are structurally similar to estrogen. Large epidemiological studies in Asian countries have shown that lifelong traditional consumption of soy may offer some protection against menopausal symptoms, breast cancer, and osteoporosis.

Studies in non-Asian populations have yielded conflicting results. There have been scores of studies on the health effects of soy, including more than 2 dozen on using soy to treat hot flashes. Some show an effect and others do not, making it difficult to arrive at any definitive conclusion. When looking at the totality of the evidence, most reviewers have concluded that the data are just too contradictory to come to any conclusion regarding the effectiveness of soy, or isoflavones, for relieving hot flashes, preventing bone loss, or protecting the heart.

In 2006, an American Heart Association review concluded that there is little evidence to support the use of soy to relieve hot flashes or to protect against cancer; however, the authors noted that "soy products such as tofu, soy butter, soy nuts, or some soy burgers should be beneficial to cardiovascular and overall health because of their high content of polyunsaturated fats, fiber, vitamins, and minerals and low content of saturated fat. Using these and other soy foods to replace foods high in animal protein, which contains saturated fat and cholesterol, may confer benefits to cardiovascular health."

One area of concern with soy is its safety in women with breast cancer, as it contains compounds that can mimic estrogen. Some studies in humans showing positive effects of soy indicate that early consumption of soy might be important for protection against breast cancer later in life. Less is known about soy consumption in women who are at high risk or who currently have breast cancer. Some studies indicate that it may prevent recurrence, while others suggest that it might increase risk or reduce the effectiveness of tamoxifen, used in treatment. Many oncologists recommend that women limit soy to 1 to 2 servings per day or limit intake to the amounts consumed in the Asian diet, which provides 50 to 90 mg of soy isoflavones per day.

How to Use

Soy foods should be part of a wholesome diet. Avoid processed soy "junk" food and focus on edamame, soy nuts, miso, and tempeh.
Extracts: 50 to 90 mg soy isoflavones daily.

Precautions

Soy is healthful when consumed as part of a varied, wholesome diet and is an excellent source of protein. Until more is known, breast cancer survivors should not combine soy extracts with tamoxifen (or should avoid therapeutic doses) because of possible plant-drug interactions.

St. John's Wort

Hypericum perforatum

The sunny yellow flowers of St. John's wort harbor a strange secret. Bruise the delicate petals and they seem to bleed. The blood-red liquid is an oil released from tiny, dark-colored glands scattered along the petal margins. In ancient times, a plant that "bled" was assumed to possess great powers. During the rise of Christianity, the herb came to be associated with John the Baptist (*wort* is the Old English word for "plant"). It was said to bloom on the saint's birthday, June 24, and to bleed on August 29, the anniversary of his beheading. The earliest use of the name may date to the 6th century, when the Irish missionary St. Columba carried the herb with him into northern Scotland. The genus name, *Hypericum*, is from the Greek and means "over a picture or icon"—a reference to the custom of draping the herb over religious images to strengthen their powers in banishing demons. For many centuries, St. John's wort was a symbol of protection against evil but also a prized medicinal herb, with the power to heal the body and to ease the troubled mind.

Therapeutic Uses

Minor depression
Muscle aches
Fever blisters

Modern scientists are confirming what the ancients knew. In 2009, researchers evaluated 29 clinical trials conducted on St. John's wort for mild to moderate depression and concluded that it is more effective than a placebo, as effective as standard prescription antidepressants, and associated with fewer adverse effects than prescription medications. St. John's wort has gained global recognition as an effective treatment for minor depression, with 2007 worldwide sales exceeding $100 million.

Antidepressant medications are also used to treat severe forms of premenstrual syndrome. A pilot trial using St. John's wort for PMS at the University of Exeter in England reported that a majority of women experienced a 50 percent reduction in symptoms, including anxiety and depression.

St. John's wort oil is highly regarded as a topical agent. When the flowering tops are infused in oil—olive oil is best—the oil turns ruby red after sitting in the sun for several weeks. It is massaged into the skin to relieve pain or made into an ointment for wounds, burns, and insect bites. Basic science and animal studies have confirmed that the oil eases inflammation of the skin and fights bacteria.

St. John's wort is being investigated for use in viral infections. Hypericin, one of its active constituents, has been shown to be highly active against the human immunodeficiency virus (HIV) and herpes simplex 1—the virus known to cause cold sores and fever blisters.

How to Use

Tea: Pour 1 cup boiling water over 1 teaspoon herb. Steep 5 to 10 minutes. Strain. Drink 1

to 3 times per day.
Tincture: Use 2 to 3 droppersful in 1 cup hot water or lemon balm tea.
Capsules/Tablets: Most research has been done on products guaranteed to contain specific levels of key ingredients. To find a supplement, look for one standardized to 0.3 percent hypericin or 3 to 5 percent hyperforin. The dose for these products is 900 to 1,500 mg per day.

Precautions

St. John's wort appears to be safe. The main risk is the potential for interaction with prescription medications. Safety during pregnancy has not been established.

Stevia

Stevia rebaudiana

Commonly known as sugar leaf, honey leaf, or sweet leaf of Paraguay, stevia is a small South American shrub whose narrow leaves are nearly 50 times as sweet as ordinary table sugar. The Guarani Indians of Paraguay called the herb *ka'a he'ê,* meaning "sweet herb." The Guarani used stevia leaves to sweeten bitter yerba maté and other beverages and to improve the taste of herbal medicines. They also employed the herb medicinally as a tonic for the heart, to help lower blood pressure, to relieve heartburn and kidney ailments, and to dull cravings for sweets.

Spanish explorers noted how indigenous tribes used stevia, and by the 1800s, European settlers in Paraguay, Brazil, and Argentina were also consuming the herb, primarily as a sweetener for tea. In 1899 Swiss botanist Moisés Bertoni, then director of an agriculture college in Asunción, Paraguay, published the first description of the plant. He named it *S. rebaudiana* to honor Paraguayan chemist Ovidio Rebaudi, who conducted the first analysis of stevia's chemical components. The genus name, *Stevia,* honors Peter James Esteve, a 16th-century Spanish professor of botany. Stevia is still called *estévia* in most Spanish-speaking countries.

Therapeutic Uses

Diabetes
Insulin resistance (prediabetes)
High blood pressure

Stevia could have a brilliant future. A powerful sweetener with no calories, stevia could be a dietary phenomenon, especially for people watching calories and carbs. If this noncaloric sweetener should take the place of high-glycemic white sugar, the quality of carbohydrates in the diet would improve—with benefits for teeth, blood sugar, and digestion. Further, stevia may directly affect the hormones and mechanisms involved with elevated blood sugar in diabetics, thus helping to lower sugar levels and to protect against the effects of high sugar levels.

Most of the benefits of stevia come from a compound called stevioside, which occurs primarily in the leaves, accounting for 4 to 20 percent of the weight of the dry leaves. A compound similar in structure to stevioside and thought to have some physiological effects is rebaudioside A. Some animal studies show that stevia does not affect glucose absorption, though it may promote insulin release from the pancreas, increase sensitivity to insulin throughout the body, and slow glucose production in the liver. In humans, one study involved 12 people with type 2 diabetes. Researchers examined the use of 1 g of an extract (consisting of 91 percent stevioside and 4 percent rebaudioside A) or placebo with a meal. After the meal, those receiving the stevia extract had a lower glucose level than the placebo group did, possibly as a result of increased insulin secretion (which brings down blood sugar).

The blood pressure–lowering effects of stevioside and rebaudioside A also have been studied, and results have been mixed. Some clinical trials demonstrated a decrease in both systolic and diastolic blood pressure with these compounds, while other trials contradicted these results. This effect needs further study.

How to Use

Powder: Stevia leaf, in powder form, can simply be used as a sugar substitute in various ways, such as sprinkling as a sweetener on food, in hot beverages, or in most recipes.
Liquid extract: Glycerin extracts are available, often standardized to the primary component of stevia leaf, stevioside. Several drops of these extracts can be added to food as a sweetener.

Precautions

The safety of the chemical compound stevioside and of whole stevia leaf has been evaluated extensively in laboratory tests looking at possible toxic, genetic, or cancer-causing effects. Both have been determined to be safe when used as a sweetener. Care should be taken when stevia is used in combination with medications that also lower blood sugar. Uncommonly, stevia can cause stomach upset.

Tea

Camellia sinensis

Tea is second only to water as the world's most popular beverage. Using the dried leaves of *Camellia sinensis* to brew a steaming, soothing drink is an activity that has been going on for thousands of years. Tea's species name, *sinensis*, is a reference to China, where both this bushy shrub and tea culture got their start. Precisely when that occurred, however, is unclear, as tea's historical origins are intertwined with considerable legend and myth. According to one of those legends, the fabled Chinese emperor Shen Nong took the first sip of tea by chance in 2737 B.C. when dried leaves of the tea bush accidentally fell into a pot of boiling water, tinting it a light brown and transforming it into a refreshing drink. By the 4th century Chinese texts consistently mentioned tea in their pages, and within several hundred years it had become the national drink. Tea spread from China to Japan in the 12th century. The Dutch East India Company took the first tea to Europe in the early 1600s. Tea drinking soon became firmly entrenched in England and its North American colonies, where struggles over tea's taxation and control of its trade helped ignite the American Revolution.

Therapeutic Uses

Heart health Cholesterol
Anti-inflammatory and antioxidant
Weight loss
Cancer prevention

There are numerous health benefits to drinking tea. Even though black and green tea come from the same plant, much of the current press revolves around green tea, mainly because it contains more of the polyphenol compounds credited with many medicinal benefits. Polyphenols are strongly antioxidant and anti-inflammatory and are thought to combat atherosclerosis, to increase HDL, or good, cholesterol, and to thin the blood slightly. Some research has shown a decrease in risk of stroke or heart attack in people who drink 5 or more cups of green tea daily.

Tea also contains small amounts of caffeine and theophylline, compounds with a stimulating effect. The combined effect of these and polyphenols may help people to lose weight by shifting metabolism and burning fat. One study in 240 overweight people in Japan showed that a green tea extract lowered body weight and fat mass over a 3-month period.

Green tea also is thought to be beneficial in cancer prevention. Those who regularly drink green tea may have lower rates of some cancers, such as breast or colorectal cancer.

How to Use

Infusion: Steep 1 teaspoon tea leaves in a cup of hot water (steeping time depends partly on

desired strength). For weight loss, weight-loss maintenance, and cancer and heart attack prevention, 4 to 6 cups daily may be necessary. Decaffeinated products are an option and provide most medicinal benefits; however, caffeine and theophylline are part of how tea helps with weight loss. Adding milk to tea may decrease the absorption of polyphenols; the most medicinally effective cup of tea is made with just water and tea leaf, perhaps with a bit of sweetener to taste.

Capsules: Capsules of dried tea leaves standardized to polyphenol content are available; generally, dosage is 500 mg once or twice daily.

Precautions

There are few problems with tea. Some people feel restless and anxious as a result of the caffeine. Green tea extracts have been associated with a few reports of liver toxicity.

Tea Tree

Melaleuca alternifolia

When Captain James Cook and the crew of the *Endeavour* arrived in southeastern Australia in 1770, they were surrounded by plants and animals completely foreign to them. The sailors noticed how local Aborigines crushed and boiled the narrow, lance-shaped leaves of a small, shrubby tree to brew a hot drink resembling tea. The tree from which the leaves came was dubbed tea tree by Cook and his crew. Tea tree belongs to the genus *Melaleuca*, which includes some 200 species of evergreen trees and shrubs, most of which are native to Australia. Tea tree oil, distilled from the leaves of *Melaleuca alternifolia*, is a fairly recent addition to Western herbal medicine.

Therapeutic Uses

Skin infections (fungal and bacterial)
Gingivitis
Dandruff
Acne

Sometimes called the wonder from down under, the oil of Australia's tea tree is unrivaled as an antiseptic. Two of tea tree oil's compounds have been shown to inhibit the growth of many bacteria and fungi that cause human infections. They act to kill bacteria and fungi by disrupting cell membrane permeability and hampering cell metabolism.

Tea tree oil also may act against viruses, such as herpes and yeast infections, but it hasn't been as well studied for these indications. It is being investigated for treating gingivitis (gum disease), for fighting halitosis (bad breath), and for reducing plaque in the mouth, presumably by altering the presence of certain bacteria. With the growth of virulent drug-resistant staphylococcus infections, such as methicillin-resistant *Staphylococcus aureus* (MRSA), researchers are turning to potent antibacterials such as tea tree oil for innovative treatments.

Tea tree oil has been studied extensively for its use in treating fungal infections. The formulation and concentration of the oil are important variables to consider when choosing the right product for a given use. For example, 25 percent tea tree oil in ethanol seems to work almost as well as pharmaceutical treatments for athlete's foot infections, and this formulation also seems to limit the occurrence of adverse reactions, such as dermatitis, which often occur with higher concentrations of tea tree oil. It is difficult to treat toenail fungus with creams, but the use of tea tree oil added to antifungal creams may increase the cure rate.

How to Use

Essential oil: Steam distillation of the leaves and small branches yields a potent essential oil containing germ-killing chemicals. Various concentrations of the oil are mixed with a base of desired consistency to create products for various conditions.

Cream or gel: Preparations of 5 percent tea tree oil control acne as effectively as a commonly used medication, benzoyl peroxide, and possibly with fewer side effects.

Precautions

Tea tree oil should never be taken internally; it can be toxic if ingested. Allergic reactions and contact dermatitis have also been documented. If redness, itching, or oozing develops after the topical application of tea tree oil, use should be discontinued and a health-care provider consulted.

Thyme

Thymus vulgaris

Common thyme is an uncommon herb. Its diminutive leaves give off an invigorating fragrance and impart an agreeable depth of flavor to almost any dish containing meat.

Thyme is traditionally bundled together with parsley and bay leaf to form the French bouquet garni and dropped into soups, stews, and other savory dishes while they simmer. Tiny thyme leaves also contain a volatile oil with remarkable antiseptic properties. The ancient Etruscans and Egyptians used thyme oil for embalming their dead. Many early cultures associated thyme with death, and the minute, pale purple flowers were thought to provide a resting place for the souls of those who had died. The ancient Greeks burned thyme as part of funeral rites, as incense in temples, and as a fumigant to chase insects from houses. But they also believed that the herb had the power to instill courage. Thyme's genus name may be derived from the Greek word for either "courage" or "to fumigate." The link to courage, however, followed thyme to England when the Romans introduced it there. During the Middle Ages, ladies of the court presented their brave knights with scarves embroidered with a sprig of thyme.

Therapeutic Uses

Coughs
Colds and flu

Thyme is one of several fragrant herbs that double as spices and medicines. The aromatic compounds, also called essential or volatile oils, are the important parts of thyme leaves and flowers. The volatile oils in thyme help to relieve coughs, probably in two different ways. Thyme is antispasmodic and an expectorant, meaning that it not only calms coughs but also helps clear bronchial mucus. It is also antibacterial and antiviral.

Several volatile oils in thyme, including thymol and carvacrol, account for its aroma. Much of the research on carvacrol comes from studies of oregano oil, which is also rich in carvacrol. Carvacrol and thymol are also the oils that account for thyme's expectorant effects and for its inhibition of bacteria, viruses, and fungi. Many bacteria and viruses shown in lab tests to be inhibited by thyme oil are the same ones that cause upper respiratory infections or colds—possible support for its long-standing traditional use.

Few clinical trials have examined the use of thyme for coughs or respiratory infections. One study used a product combining thyme with evening primrose oil in people suffering from bronchitis; the group taking the thyme product showed less coughing than those taking a placebo capsule. However, this study, which did not separate out the effects of thyme by itself or test it on other types of infections or coughs, does not offer conclusive results.

How to Use

Tea: Steep 1 to 2 teaspoons fresh or dried thyme leaves and flowers in 1 cup hot water and drink 3 times daily.

Capsules/syrup: Thyme extracts are available as capsules and syrups in a variety of doses and strengths. These products often combine thyme with other herbs thought useful for respiratory conditions; specific use depends on each product.

Precautions

Thyme is safe, especially when consumed as an infusion—made by steeping thyme in hot water. Stomach upsets are rare. Consumption of thyme essential oil—as with any essential oil—should be avoided in high doses or over long periods of time.

Turmeric

Curcuma longa

Turmeric is the source of the brilliant golden-orange spice that gives many curries their peppery, somewhat musky flavor and ballpark mustard its bright yellow hue. It comes from the rhizome of a stately, large-leafed perennial that belongs to the same family as ginger. The genus name of turmeric, *Curcuma*, comes from *korkum*, a word used in ancient Rome to mean "saffron," which is a much costlier, more subtly flavored spice. Turmeric is mentioned in the Vedas, the oldest sacred texts of Hinduism, as being associated with purity and cleansing. Even today, orthodox Hindu brides and bridegrooms take part in a ceremony called *haldi*—the Hindi word for "turmeric"—in which their faces and hands are coated with turmeric paste before they take their vows. As a healing herb, turmeric has its roots deep in the medicinal traditions of India, China, and several Southeast Asian cultures. In Western herbal medicine, it has recently gained popularity as a potent but safe anti-inflammatory treatment for a host of digestive ailments and other conditions.

Therapeutic Uses

Inflammatory bowel disease
Rheumatoid arthritis (joint pain)

This ancient spice is one of the most intensely researched herbs in the marketplace. Interestingly, studies in animals suggest turmeric may offer protection from Alzheimer's disease. Scientists have discovered that curcumin, a group of highly active, yellow-colored compounds in turmeric, stops the accumulation of plaque in the brain. Destructive protein fragments known as beta amyloid plaques build up in the brains of people with Alzheimer's and lead to memory loss. Studies in humans are currently under way to confirm this preliminary finding.

Turmeric seems to have a special affinity for reducing inflammation in the body, particularly in the gastrointestinal tract. Curcumin has been shown to be beneficial for reducing symptoms in patients with Crohn's disease and ulcerative colitis. These conditions are collectively referred to as inflammatory bowel disease. In studies, patients given doses of 1 to 2 g per day of curcumin experienced fewer symptoms and less systemic inflammation.

Curcumin may protect against colon cancer. A small pilot study in patients with familial adenomatous polyposis (FAP) disorder—characterized by the development of hundreds of benign tumors in the colon, eventually leading to colorectal cancer—garnered positive results. A combination of 480 mg of curcumin and 20 mg of quercetin taken orally 3 times a day reduced the number and size of tumors in patients by roughly 60 percent over a 6-month period. A larger study is currently under way at Johns Hopkins University.

Researchers around the world are showing a tremendous interest in turmeric. In the United States alone, the National Institutes of Health is currently funding studies on turmeric and curcumin for a variety of conditions, including colorectal cancer, pancreatic

cancer, Alzheimer's disease, psoriasis, inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), and rheumatoid arthritis.

How to Use

Tea: Pour 2 cups boiling water over 1 teaspoon turmeric and steep for 10 minutes. Strain. Add honey and/or lemon if desired.
Capsules: 2 to 3 g turmeric per day provides 60 to 100 mg curcumin, the daily amount typically consumed in the diet in India.
Standardized extract: To replicate the levels of curcumin used in the clinical trials on turmeric, purchase an extract that guarantees a specific level of curcumin (sometimes written as curcuminoid on the label). Most studies used turmeric extracts providing 1 to 2 g per day of curcumin, taken in 2 to 3 divided doses.

Precautions

Eating turmeric is very safe. Scientists have shown that taking curcumin at doses of up to 12 g per day is also very well tolerated, though there is little reason to take that much. Some people may get indigestion when taking high amounts of turmeric/curcumin.

Valerian

Valeriana officinalis

It is common knowledge that cats are attracted to catnip. Some even go crazy over it. It's less well known that valerian has much the same effect. Something in the scent of valerian sends cats—and, strangely enough, rats—into an intoxicated frenzy. Most people, however, find the musky odor of valerian offensive. The ancient Greeks certainly did. Their name for valerian was *phu*, a word that aptly communicates people's typical reaction to smelling the plant's leaves or roots. Unpleasant smell aside, the Greeks valued valerian greatly as a medicinal herb. They used it to cure a variety of ills, notably insomnia. Some 2,000 years later, valerian is one of the best sleep-inducing sedatives in the modern herbal medicine chest.

Therapeutic Uses

Nervousness
Insomnia
Anxiety

Valerian is the most widely used sedative in Europe, where more than a hundred preparations are sold in pharmacies across Germany, Belgium, France, Switzerland, and Italy. Now researchers are getting closer to understanding the compounds in valerian, as well as the mechanism responsible for its sedative effect. GABA is one of the major inhibitory neurotransmitters in the central nervous system, and its receptor, $GABA_A$, is the target of many drugs used to reduce anxiety or aid sleep, such as benzodiazepines. Valerenic acid and valerenol are two compounds in valerian root that have been shown to strongly bind $GABA_A$ receptors and are likely to be key players in its therapeutic effect.

There have been numerous clinical trials studying the effect of valerian on insomnia. Two studies administering valerian every night for 2 to 4 weeks found that those taking it had significant improvement in sleep and sleep quality compared with a placebo. Other studies yielded contradictory results, especially studies that tested valerian for shorter periods for acute insomnia. It appears that if valerian does improve sleep, it must be taken for at least 2 weeks to achieve a benefit.

The majority of valerian preparations sold in Europe contain other sedative herbs such as hops, lemon balm, or passionflower. The combination of valerian and hops is popular in Europe and has been shown in several studies to shorten the time it takes to fall asleep and to reduce waking up during the night. A clinical trial of valerian and lemon balm was shown to improve sleep in children 12 years of age and under. It appears that valerian is a safe herbal choice for treating mild insomnia. Valerian in combination with hops and/or lemon balm may be more effective than valerian alone.

How to Use

Tea: Steep 1 teaspoon dried valerian root in 1 cup water for 10 minutes. Strain. Drink 30 to 60 minutes before bed.
Capsules: Take 2 to 3 g of dried valerian root 30 to 60 minutes before bed.
Extract: Doses of 300 to 900 mg of valerian extract standardized to valerenic acid were used in clinical trials.
Tincture: Generally, 5 to 10 ml, 30 to 60 minutes before bed.

Precautions

The American Herbal Products Association gives valerian a class 1 safety rating, indicating that it is a very safe herb with a wide dosage range. Valerian does not appear to be habit-forming, which is an important advantage over many other sleeping medications. A small number of people may experience adverse reactions to valerian, such as restlessness. This is believed to be an idiosyncratic reaction, however, that is limited to individual hypersensitivities.

Witch Hazel

Hamamelis virginiana, H. vernalis

For most of the year, witch hazel might easily be missed amid the pines, oaks, hickories, and maples of its native eastern North American woodlands. But come November, when these larger trees have lost their leaves and gone to seed, smaller, shrubbier witch hazel bursts into bloom. Explosions of pale yellow flowers, each composed of four streamerlike petals, crowd the trees' slender branches and often last well into December. Despite its common name, the plant has little to do with witches. The *witch* of witch hazel is likely derived from the Anglo-Saxon *wych*, meaning "pliant" or "bendable." It refers to *H. virginiana*'s traditional use as a source of forked branches used as divining rods, or witching sticks, to locate underground sources of water or precious minerals. Witch hazel's real magic, however, lies in its mild astringent and antiseptic properties, useful primarily for treating inflamed or irritated skin.

Therapeutic Uses

Minor cuts
Hemorrhoids
Varicose veins
Eczema

Household first-aid kits have long held distilled witch hazel water, one of the few widely available commercial medicines made from a wild native plant. The reason for its wide distribution? Witch hazel is one of the classic astringents. The tannins in its leaves, bark, and twigs help to heal a variety of skin conditions. Various preparations of witch hazel are used topically to stop bleeding from minor cuts and abrasions; to calm inflamed mucous membranes and skin, such as those affected by eczema; and to decrease the size and symptoms of varicose veins and hemorrhoids.

There are many different types of tannins in witch hazel, including catechins (also present in green tea and chocolate), which have antioxidant properties. These compounds may be antivirals, anti-inflammatories, and cancer preventives. Witch hazel also might counteract the harmful effects of enzymes that damage connective tissue in skin or blood vessels.

In a clinical study, researchers used a witch hazel ointment on 231 children with diaper rash, skin inflammation, and minor skin injuries and a pharmaceutical ointment on 78 children with similar conditions. The dose and duration of treatment were left to the discretion of the primary care physician for each child, and symptoms were rated over the course of 7 to 10 days. Both the witch hazel and the pharmaceutical ointment improved skin appearance and symptoms over the treatment period.

Another study of 72 people with moderate to severe eczema compared the use of a cream containing witch hazel distillate with that of a 0.5 percent hydrocortisone cream. Findings showed that both treatments relieved eczema symptoms, but the hydrocortisone worked much better.

How to Use

Extract: Many different forms of witch hazel begin with a distillation of the leaves, bark, and/or twigs. This liquid is added to ointment or creams and then applied to the skin.
Liquid: Witch hazel water is made by soaking plant parts in water and distilling the mixture. Alcohol is added to keep the distillate from spoiling (for example, 86 percent witch hazel distillate and 14 percent alcohol). The tinctures and other preparations commonly used by herbal medicine practitioners are usually stronger than distilled witch hazel water.

Precautions

Although witch hazel preparations can be consumed orally, there is some concern about ingesting the tannin compounds in any appreciable quantity; they can cause stomach troubles and kidney or liver damage, and they can interfere with the absorption of vitamins and minerals. There are very rare reports of allergic reactions to topical witch hazel products, and some people develop redness and a burning sensation when witch hazel is applied to the skin.

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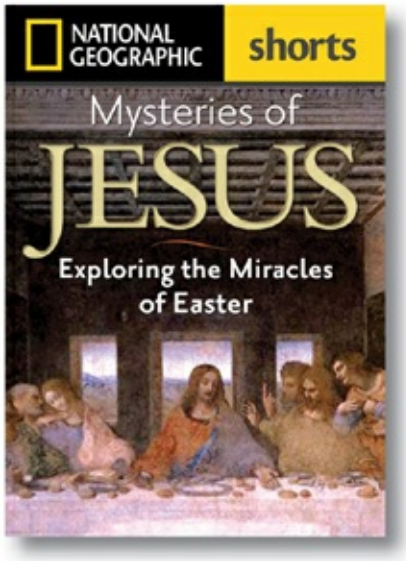

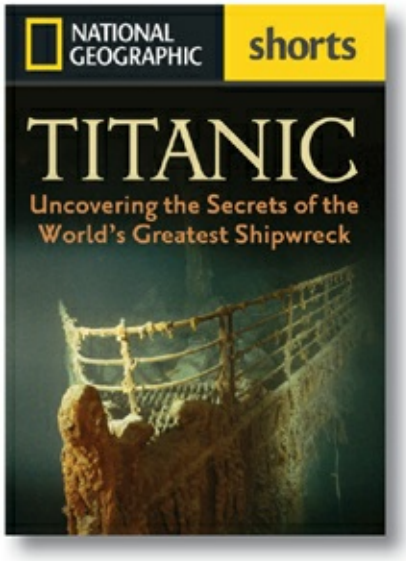

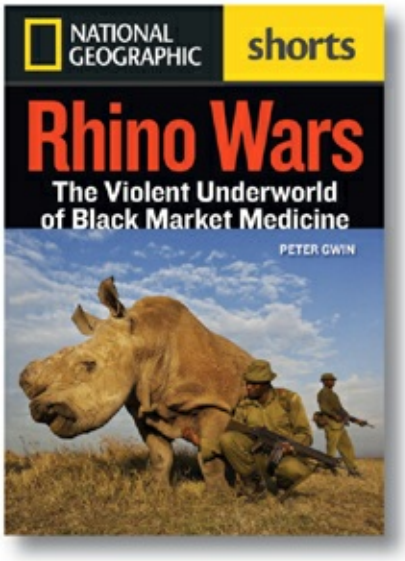

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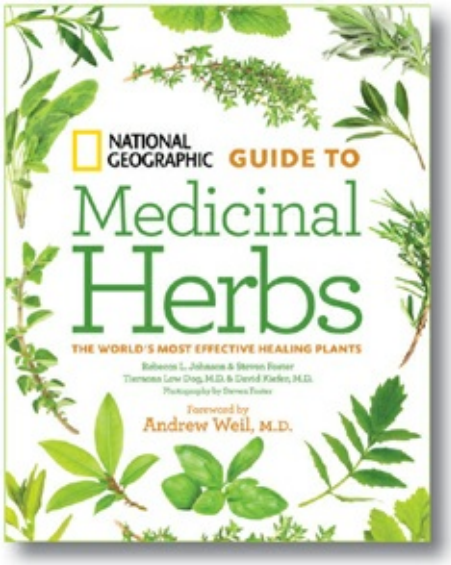

Got a headache? Sip chamomile. Indigestion? Chew ginger. Can't sleep? Drink catnip tea. Trouble remembering? Take ginkgo.

In the *National Geographic Guide to Medicinal Herbs*, renowned botanists and medical experts explore the healing properties of herbs and other plants to reveal how they've been used in the past and how they can be used just as effectively today. Extensive and enlightening, authoritative and beautiful, useful and readable, the *Guide to Medicinal Herbs* is the must-have book for the health food devotee and those seeking how- to advice about natural healing and herbal remedies.

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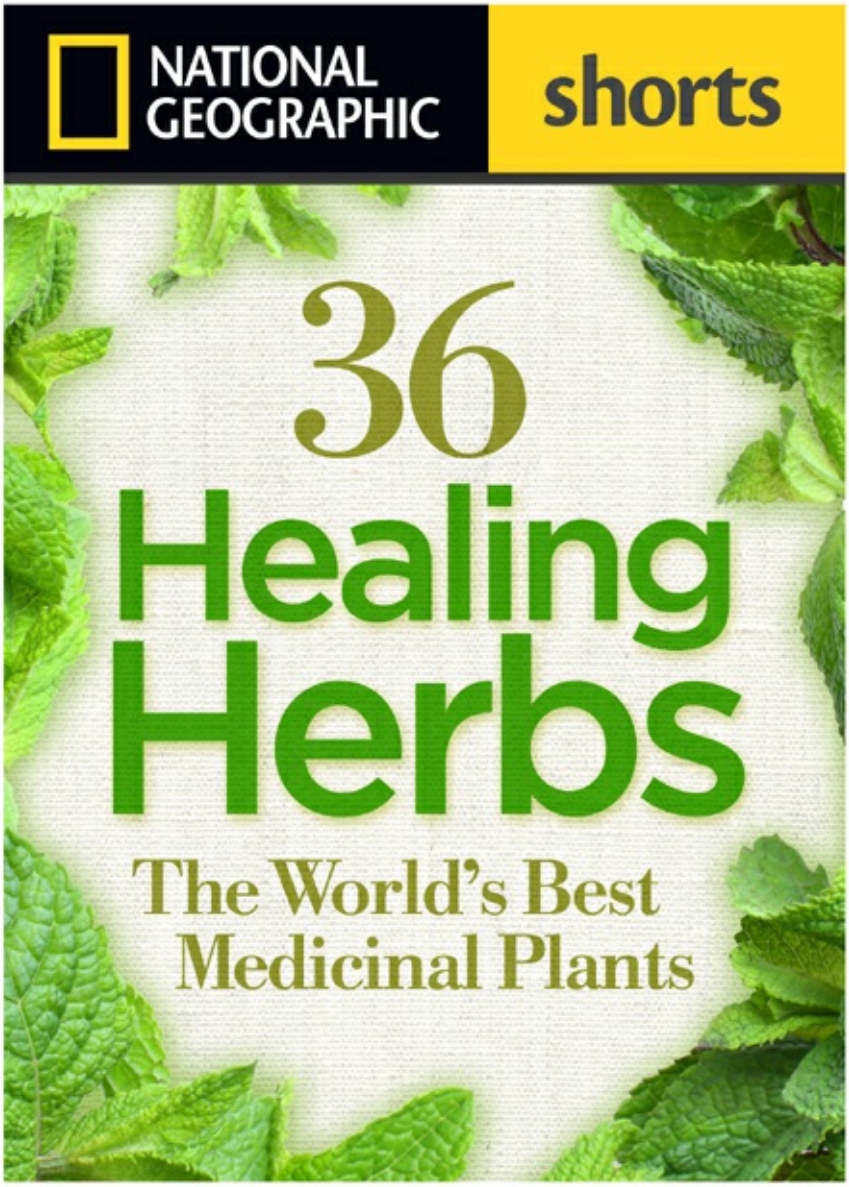
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