

RODALE'S
21st CENTURY HERBAL



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21st-CENTURY HERBAL

A PRACTICAL GUIDE
for HEALTHY LIVING USING NATURE'S
MOST POWERFUL PLANTS

MICHAEL J. BALICK, PhD

Foreword by ANDREW WEIL, MD ♦ *Edited by* VICKI MATTERN
and Featuring Top Healing Herbs from TIERAONA LOW DOG, MD

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For information, please write to:

Special Markets Department, Rodale, Inc., 733 Third Avenue, New York, NY 10017

Printed in the United States of America

Rodale Inc. makes every effort to use acid-free **a**, recycled paper **O**.

Illustrations by Lizzie Harper, www.lizzieharper.co.uk

Photography Credits can be found on page 474.

Book design by Christina Gaugler

Library of Congress Cataloging-in-Publication Data is on file with the publisher.

ISBN 978-1-60961-804-9 hardcover

Distributed to the trade by Macmillan

2 4 6 8 10 9 7 5 3 1 hardcover



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*In all that we do, it has been said
that we stand on the shoulders of the
giants who have come before us, building
on their accomplishments. It is in that
spirit that this book honors all of those
people from so many different walks of
life who have helped bring greater clarity
to our understanding of the relationship
between plants and people and the
usefulness of herbs.*



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FOREWORD

Herbs have not only made me a better doctor, but they have also enriched my life in general. I am an avid gardener and home cook, and I enjoy growing and using culinary herbs, both familiar and exotic. Herbs are diverse and fascinating, as are the ways that people interact with them. Whenever I travel, I'm always on the lookout for culturally specific uses of herbs that are new to me, and I'm as likely to find them in developed societies as in more traditional ones.

Dr. Michael Balick loves plants as much as I do. He is one of our foremost ethnobotanical researchers—the best expert I can think of to introduce readers to the world of herbs. Mike and I both had the good fortune to be students of the late Dr. Richard Evans Schultes, director of the Harvard Botanical Museum and the godfather of modern ethnobotany. Dick Schultes inspired in us a passion for understanding the usefulness of plants and teaching their uses to others. I completed my undergraduate studies in ethnobotany under his direction and then attended Harvard Medical School, gaining botanical knowledge and experience that have served me very well in my medical career; they are a foundation of the integrative medicine that I practice and teach.

While still in medical school, I began to travel throughout the world to learn about the medicinal plants used by indigenous peoples. Later, I joined the research faculty of the Harvard Botanical Museum and continued to work with Dick Schultes. I became proficient in botanical medicine and soon was relying more on



herbal remedies than on pharmaceutical drugs in my practice. Along the way, I also learned as much as I could about culinary and other uses of herbs.

I came to recognize profound differences between whole plants and chemicals isolated from them. The chemistry of plants is wonderfully complex, and the therapeutic actions of herbal remedies are shaped by that complexity, making them safer and often more effective than the highly purified compounds in pharmaceutical drugs. In many areas of contemporary science, theories and models based in complexity have proved very successful in describing and predicting diverse natural phenomena—from weather to the behavior of social insects. Oddly, medicine has made little use of complexity theory, even though doctors deal with the most complex production of nature, the human organism. Integrative medicine is attempting to remedy that by developing research models to evaluate complex treatment protocols, for example, and also by teaching physicians how natural remedies interact with the body in ways different from isolated chemical compounds. It's an exciting—and promising—new approach.

So, delve into the wonderful topics in *Rodale's 21st-Century Herbal*, and see for yourself the rich history and emerging understanding of herbs as ingredients in cuisine, as medicines, and as natural substances for cleaning and adding beauty to the home. I'm right there with you, expanding my knowledge and appreciation for the world's most powerful plants.

Andrew Weil, MD

INTRODUCTION

HISTORICALLY, THE PLANTS WE CALL HERBS have been a keystone of human civilization. They have nurtured, sustained, and healed us and have improved our quality of life in so many ways. The power of that bond between plants and people quickly becomes evident to an ethnobotanist—a scientist who studies the relationship between plants, people, and culture.

As an ethnobotanist, I have been privileged to learn about nature and how people use natural resources. Since the early 1970s, my work has taken me to many fascinating, complex, and distant locations—from deserts that receive less than 2 inches of rain each year to lush tropical rainforests that could receive that same amount of rain on any given day. The focus of my research is on gaining knowledge about botanical diversity and learning about the people who live in these wilderness habitats and depend on plants for their daily survival.

My fascination with the green world started early in life. My youngest memories are of wonderful times spent in my grandparents' garden, watching—with awe—the way seeds responded to a bit of moisture and soil and how vegetables such as cucumbers noticeably grew in size from one day to the next. I am fortunate to be able to continue this childhood interest as a botanist and horticulturist trained first at the University of Delaware and later as a graduate student at Harvard University.

Since 1980, my home has been The New York Botanical Garden (NYBG), acknowledged to be one of the world's premier horticultural, educational, and scientific institutions. Geographically, The New York Botanical Garden's research program spans the world, and through its sophisticated laboratories, collections, and international expeditions, NYBG scientists investigate plants, from the molecular level to whole



organisms, as well as study and conserve the habitats in which those plants are found. Being an ethnobotanist means living with the people you are working with, and for me this has involved lengthy stays in Central and South America, Oceania, Asia, and the Middle East. But I also believe you can do ethnobotanical research in your own backyard—in most places, including modern cities, you can find people knowledgeable about the historic or contemporary uses of plants. At NYBG we developed a field of study now known as “urban ethnobotany.” For 2 decades, we’ve investigated the ways people use plants in New York City—one of the world’s great urban centers (for me, it’s an urban laboratory)—where more than 800 different languages are spoken, representing a vast diversity of cultures.

Most of the cultures I’ve visited recognize hundreds of native and introduced plants used for healing, food, construction, and to improve their quality of life. Just as gardeners eagerly share their horticultural knowledge (and plant cuttings) with other gardeners, the people of the traditional, preindustrial cultures I’ve lived with have shared their plant knowledge with me. A common language seems to connect those interested in plants, sometimes to the exclusion of other distractions in life.

Many people today suffer a disconnection from nature. Plants offer a life-giving elixir that can sustain us physically, mentally, and spiritually. As an ethnobotanist, I’ve had many opportunities to learn about plants. Seeing, touching, smelling, harvesting, and discovering how to prepare and use them has resulted in what I would argue is a fuller life. My intention for this book, written with my friends at Rodale, was to produce a guide for healthy living, using nature’s most powerful plants: herbs. Getting to know and use

these amazing plants—for flavor, health, beauty, and much more—will not only enrich your life in unimaginable ways, but also bring you closer to nature.

Digging into the world of herbs can mean researching the diversity of species you want to grow; planning and planting your garden; nurturing your plants as they grow and mature; and harvesting your herbs and preparing delicious foods, healing teas and salves, fragrant soaps and shampoos, as well as natural products for your home. You'll enjoy the beauty of herbs in your garden and the tranquility you feel as you tend them. You'll value their culinary, aromatic, healing, and cleansing powers. And you'll love sharing your discoveries and accomplishments with a community of like-minded individuals.

Although people have used herbs for health and wellness for tens of thousands of years, the earliest known written instructions for using these powerful plants date back 5,000 years, when they were inscribed on clay tablets by Sumerian healers in the region known today as Iraq. In ancient Egypt, around that same time, medical practitioners wrote of their formulas on papyrus sheets; the most ancient of those documents is known as the Ebers Papyrus, thought to be written around 1500 BCE. In China, more than 4,000 years ago, healers also made careful notes of the plants and plant combinations they used.

Works known as “herbals” were first produced in ancient Greece, ca. 350 BCE. Herbals were medical textbooks of the day, containing descriptions and illustrations of plants, along with recipes and dosages for their use in treating diseases. They also contained information on the culinary uses of plants, as well as their uses as tonics, for cleansing, and in magic, plus information about their toxic qualities. Herbals continued to play an important role in the education of health-care providers and the public well into the 1600s, when the fields of botany and medicine, once allied, began to diverge. The 1800s saw a revival in popular interest in healing with plants and traditional remedies that continues today.

Rodale's 21st-Century Herbal is a celebration of the rich and magnificent history of herbals, providing both ancient wisdom and modern science about herbs and their uses. The book is divided into three sections. The first section discusses how people around the world have utilized herbs—from their uses for healing in prehistory through the development of our earliest medical systems and their use by billions of people today. This section also explores the botany and chemistry of herbs; how plants are classified; and the reasons why herbs can exert a powerful effect on your body, palate, mind, and desires.

The middle section is an encyclopedia of more than 180 of the world's most useful and interesting herbs. It describes their historical importance, healing properties, and culinary and ornamental uses. It

also tells how to grow and harvest many of them at home and what cautions to take with certain species.

The final section is a guide for using and enjoying herbs. This section offers dozens of recipes and step-by-step techniques to help you cook and heal with herbs, to make your own beauty-care products, and to make natural products for cleaning, scenting, and decorating your home. It also provides in-depth information on how to grow herbs organically—in gardens, on terraces and patios, and indoors—from planting seeds and cuttings to propagation and harvest. At the end of the book, you'll find a chapter on herb garden design with 12 illustrated sample designs and complete plant lists, followed by a section on herbal resources.

While I can't take you to the places I've seen through my studies or have you at my side as I learn from elders about a plant's use, I try to do just that in a small way by sharing some personal stories in many of the chapters. Far from being a profession filled with excitement, adventure, and life on the edge, as it is sometimes portrayed by the media, ethnobotanists spend a great deal of quiet time listening to the stories we are told, asking questions, and honoring the wisdom of others. Much of my work has been to record that wisdom, as it relates to plants and their uses, before it is lost—particularly among cultures that have never written down this knowledge and people who do not formally teach it to their children. Tragically, in some of our research studies, such as in the remote Pacific Ocean region, we've found that those who stray from a traditional lifestyle and adopt the Western way of life do not live as long as their ancestors and have more illnesses and an overall reduced quality of life.



In this book, I've tried to convey the excitement, joy, and purpose that can come from incorporating herbs more prominently into your life and to give you some of the tools and ideas to spark your own explorations. The statement that “education is the kindling of a flame, not the filling of a vessel,” attributed to Socrates, has been my approach to university teaching. I encourage students to experience ethnobotany firsthand by developing and implementing their own research projects, rather than by memorizing facts and training to become talented test takers. *Rodale's 21st-Century Herbal* follows that philosophy, and I hope you will use it to explore and learn about plants from around the world, to play in your own personal sandbox as excitedly as perhaps you once did, and to enjoy the plethora of benefits herbs can offer.

Michael J. Balick, PhD

brew 2 teaspoons of loose-leaf tea per 1 cup of liquid (water, stock, or milk). Steep the tea in below-boiling water for 20 to 30 minutes. Strain the mixture before using it in any recipe.

Tea is so versatile a culinary ingredient that you can enjoy its flavor and health benefits from breakfast through dinner. Begin your day with a green tea smoothie: Blend chilled green tea, plain yogurt, cubed mango, banana, and a few ice cubes until smooth. Top with a dash of freshly grated nutmeg. For lunch, top a spinach, cucumber, and flank steak salad with a dressing made from peanut butter,

cooled black tea, soy sauce, lime juice, and mint.

For dinner, make a flavorful rub for grilled salmon steaks using loose green tea leaves, green and black peppercorns, and cardamom. Use a mortar and pestle to grind the spices into a powder, lightly coat the salmon with oil, and then apply the rub. Tea leaves are the secret ingredient in many fabulous desserts, too. Add a teaspoon of smoky lapsang souchong leaves to a chocolate glaze for an out-of-this-world chocolate mousse cake. Or finish the evening with chocolate ice cream made with green tea-infused cream.

TEAS USED *in* COOKING

The flavorful world of tea goes well beyond the familiar black blends and varieties. Explore different teas to add subtle smoky, fruity, or spicy flavors to foods, including vegetables and grains, meats and fish, and desserts.

BLACK TEAS	FLAVOR	USES
Assam	Medium-bodied	Dessert infusions and sauces
Darjeeling	Full-bodied	Dessert and savory infusions; dry rubs; marinades; smoking poultry
Earl Grey	Astringent, fruity	Dessert infusions; chocolate desserts; marinades
Keemun	Smooth, spicy	Dessert bases, poaching liquids and sauces; savory infusions for poultry and shellfish
Lapsang souchong	Smoky, strong	Chocolate desserts; dry rubs; smoking poultry
Yunnan	Astringent, peppery	Savory infusions; poultry sauces
GREEN TEAS	FLAVOR	USES
Genmaicha	Smoky	Fish and rice infusions; smoking poultry, fish, and shellfish
Gunpowder	Fresh, grassy	Dessert bases and infusions; shellfish sauces, infusions, and broths
Matcha	Light, sweet	Dessert bases; vegetable infusions and sauces
Sencha	Astringent, sweet	Dessert bases; vegetable infusions and sauces

CHAPTER 5



HERBAL HEALTH
and HEALING

As early as 2500 BCE, physicians in Sumer (modern-day Iraq) recorded their use of herbal medicines and preparations on clay tablets using one of the earliest known forms of writing—cuneiform. Plants—including thyme, mustard, and willow—were prescribed for a wide range of conditions, administered as poultices or internal therapies.

Today, plants continue to play a vital role in everyday health care around the world. Several billion people use herbs for conditions ranging from bites,

stings, and skin irritations to life-threatening illnesses such as malaria. Some 30 to 40 percent of people in the United States use herbal remedies in some form, either directly or processed into supplements, tinctures, extracts, or creams. And interest in herbs as preventive medicines, self-care for minor health conditions, and low-cost, nontoxic

alternatives to standard treatments for common health problems continues to grow. Plants also play a critical role in the mainstream pharmaceutical industry. An estimated 25 percent of our prescription pharmaceuticals derive their molecules directly from plants, and many more drugs are based on compounds inspired by or derived from nature.

HERBS AS MEDICINE

Traditional healers use herbal medicines in myriad ways as part of an overall system or approach to wellness. Often, they rely on combinations of herbs called formulas, which they can tailor to the specific needs of a patient. Traditional health-care systems that rely on whole plant medicines—herbal remedies in their most natural forms—include traditional Chinese medicine (TCM), Ayurvedic medicine, Tibetan medicine, and the traditional medicines of Africa, South and Central America, the Pacific Islands, and Australia. Some of these healing systems have existed for millennia. Whole plant medicines are also used in Western herbalism, a system of herbal therapeutics that evolved in Europe and North America.

HERBS IN MODERN HEALTH CARE

Herbal medicine is finding its way into modern Western health care through the fields of integrative medicine (IM) and complementary and alternative medicine (CAM). Both IM and CAM combine mainstream medical practices with “complementary” approaches—including herbal remedies, when appropriate—that have some evidence of effectiveness. In some nations, such as China, traditional herbal medicine exists side by side with Western medicine, and many physicians are trained to use both traditional Chinese and con-

ventional (allopathic or “mainstream”) medical treatments. In the United States and Canada, most conventional physicians receive little, if any, training in the use of herbal medicines, and some are skeptical about their use. But this is beginning to change, as more than 50 academic institutions and affiliated centers now offer formal IM training programs.

In many European nations, health agencies have approved hundreds of herbs as official medicines. Conventional physicians there often receive training about botanicals in medical school, and they prescribe certain herbal medicines as low-cost, nontoxic alternatives to standard pharmaceutical treatments for common ailments. Saw palmetto (*Serenoa repens*), for instance, is now a preferred treatment in Europe for benign prostatic hyperplasia (enlarged prostate), a common health problem for men over the age of 50. European physicians also commonly prescribe black cohosh (*Actaea racemosa*) for symptoms of menopause, such as hot flashes.

Through global commerce, practitioners and consumers of conventional (Western) health care now have access to herbs from around the world. In Europe, physicians prescribe the Polynesian herb kava (*Piper methysticum*) for anxiety. Germany has approved the use of the Indian herb turmeric (*Curcuma longa*) for the treatment of indigestion. And physicians in the United States



Holistic healers use methods, such as massage therapy with herbal oils, that promote the wellness of the whole person.

are recommending the Chinese medicinal herbs astragalus (*Astragalus membranaceus*) and shiitake mushroom (*Lentinus edodes*) for patients undergoing chemotherapy.

People all over the world also use herbs to treat themselves for minor illnesses and injuries—a practice often called folk medicine (the everyday medicine of the people). Herbal medicines are affordable; people who live in rural areas can even gather their own wild herbs locally and prepare the remedies at home. Pacific Islanders, for instance, use freshly squeezed juice from the root of a banana plant to help stop bleeding from a cut. Even city dwellers use herbs this way. If you’ve ever used aloe vera from a potted houseplant to soothe a burned finger or calmed an upset stomach by drinking ginger ale or chamomile tea, you’ve practiced herbal folk medicine.

Understanding Holistic Medicine

Holistic medicine is another term for an integrative approach to healing: The health-care professional treats the entire person—body, mind, and spirit—not just the symptoms of his or her disease. According to this definition, most (if not all) systems of traditional medicine are holistic, or “whole body” healing systems. Traditional Chinese medicine, Ayurveda, and Western herbalism all fall under the umbrella of holistic therapies.

All whole body systems of healing encompass diet, lifestyle, emotional well-being, spiritual considerations, and physical activity, in addition to the use of herbs or other medicines. Holistic healers believe that health and disease are products of a complex interplay among mind, body, and spirit. Each patient is considered a unique individual with specific issues and health-care needs. In holistic healing, the patient is a partner in the treatment process, not a passive bystander. A holistic herbalist expects patients to play an active role by making lifestyle choices that foster health.

Holistic healers seek to stimulate the body’s own self-healing mechanism, or “vital force.” When presented with an illness by a patient or client, holistic herbalists often recommend tonic herbs that nourish specific body systems and gently correct long-standing imbalances that they believe are the root cause of a disorder or disease. Holistic healers recommend plant remedies not because they provide rapid relief of symptoms, but because these nourishing tonics support your body’s own efforts to heal itself. In contrast, conventional (Western) medicine adheres to what’s known as the biomedical model, which asserts that all diseases have physical causes and should be treated accordingly with specific pharmaceuticals or surgical procedures.

Another hallmark of holistic herbal medicine is its focus on practices and behaviors intended to support health and prevent disease, rather than

TIERAONA LOW DOG, MD

Helping to Chart the Course of Modern Health Care

Tieraona Low Dog, MD, has been described as a “modern Eclectic physician.” Eclectic medicine, which began in the United States in the early 1800s and was popular through the mid-1900s, focuses on the individual needs of the patient, using all therapies available—including, but not limited to, herbs.

Dr. Low Dog is trained as an herbalist, massage therapist, midwife, and medical doctor. An integrative physician with her own practice for many years, she now holds a faculty position at the Arizona Center for Integrative Medicine at the University of Arizona. Having lived and worked with many traditional cultures, she describes her practice as “a compilation of the wisdom and magic of many healers.”

Dr. Low Dog’s own journey as a

healer began during her childhood. She was influenced by her family’s belief that the body has “an amazing capacity for self-healing if we give it what it needs and don’t get in the way too much.” Early in life, Dr. Low Dog recognized the importance of a strong bond with nature, and she grew up spending long periods studying medicinal plants in the desert of the Southwest, as well as working with her grandmothers, who were very knowledgeable about healing and herbs.

Dr. Low Dog is a visionary who has labored tirelessly and effectively to improve health care in this country and internationally, and she has been recognized for her important contributions with dozens of awards and honors. She describes her role in life—a healer—as “the bridge

between the woman growing peppermint in her garden and the researcher isolating menthol and everything in between.” See pages 346–349 for 25 of her favorite healing herbs.



simply treating disease when it occurs. A holistic herbalist might advise a patient about the ways lifestyle can affect overall health—he or she would discuss not only herbs, but also dietary modifications, bodywork (such as massage or chiropractic), psychological counseling (to manage emotional issues and stress), and exercise (yoga, dance, tai chi, walking, or some other appropriate physical activity). Even conventional medicine can be part of holistic treatment, as long as the treatment considers the whole person: body, mind, and spirit.

Whole Plant Herbal Remedies and Phytomedicines

In the past, people used herbs only in their most naturally occurring form—as fresh or dried plants. They might have consumed the herb whole or made it into any of a variety of whole plant remedies—teas, tinctures (healing substances in an alcoholic solution), poultices, and many other traditional applications. Herbs are still used this way in traditional healing systems such as TCM and Ayurveda, as well as in folk medicine.

Holistic herbalists maintain that it’s impossible

to understand the uses of plant parts separated from the whole and that plants are most beneficial when taken in their whole, natural form. In fact, this is part of the meaning of the word “holistic” in the context of herbalism. On the other hand, whole plants contain many hundreds of different chemical compounds, as explained in Chapter 3, and some of these can work in opposition to, in support of, or through synergy with each other. Plants grown in different places or under different conditions can contain varying concentrations of key chemical compounds. This means that it can be difficult, at times, to make absolute generalizations about how a mixture made from a whole herb will act in your body.

To solve this problem, some researchers use a concept known as “reductionism,” which views a plant as a collection of individual compounds, one or some of which might be responsible for its overall effect. By isolating and concentrating the specific plant chemical they believe is responsible for the plant’s medicinal effects (the so-called “active ingredient”), researchers can create a kind of phytomedicine. This highly processed herbal medicine, also called a standardized extract, contains a specified amount of one or two chemicals called “marker compounds.” Having a product that contains verifiable quantities of the desired plant chemicals also makes it easier to ensure that future research on that species, for example studies with lab animals or humans, can be undertaken with herbal extracts that are consistent in their composition. The ability to replicate a scientific experiment and obtain identical results is an essential part of scientific methodology.

But isolating and increasing percentages of specific compounds can also have unintended consequences. The focus on one specific ingredient ignores many other chemical constituents that contribute to the whole plant’s activity, and in some cases, these compounds temper or balance the very potent effects



Meadowsweet (*Filipendula ulmaria*) was the original source for one of the world’s most important and widely used drugs: aspirin.

of the remedy. In rare cases, when the standardized compound is increased to a very high percentage of the product’s content—approaching the concentration of a pharmaceutical medicine—isolated constituents can be more likely to cause side effects that do not occur when the whole plant is used.

Modern Research on Herbs for Healing

Many people mistakenly believe that little or no scientific evidence exists to support the health benefits and safety of herbs. The truth is, thousands of scientific studies have been conducted on hundreds of herbs—from basic laboratory studies in test

tubes (known as in vitro studies, these are experiments with a portion of an organism isolated from its natural biological surroundings, such as cancer cells studied in a cell culture dish) to long-term clinical studies with humans.

The gold standard of medical research is the double-blind test—meaning that neither the study participants nor the researchers know which group is getting which substance, a practice intended to eliminate bias. Double-blind, placebo-controlled clinical studies are considered the most reliable for testing the medicinal uses of herbs. These studies compare the effects of herbal medicine on two groups of human volunteers—one group takes the herb while the other takes a placebo (an inactive

substance that resembles the test medicine). Studies in Europe (especially Germany) and Asia have begun to validate important traditional uses of some herbs and their clinical potential.

But more research is needed. Although many herbs have a long history of use, only a small fraction of them has been thoroughly evaluated for safety and effectiveness. Just as prescription pharmaceuticals can cause unexpected adverse effects among certain individuals, herbal remedies can also affect people in different ways. Whether your health-care professional is treating you with an herb or a pharmaceutical drug, be sure to work closely with him or her to understand the medicine’s properties and possible side effects.

HEALING THERAPIES

Plant remedies play an important role in traditional healing systems. Here are several major traditional healing systems and some of their most important herbs.

WESTERN HERBALISM

Western herbalism (the use of herbs by North American and European herbal healers) has roots not only in the works of the classical Greek and Arab physicians, but also in the folk-healing systems of Europe and North America. European settlers brought their favorite medicinal plants with them to the New World on the North American continent. But they also eagerly learned the uses of North American plants from Native American healers. European physicians readily adopted native North American plants, including echinacea (*Echinacea* spp.), saw palmetto (*Serenoa repens*), and black cohosh (*Actaea racemosa*). (See Chapter 1 for more about Western herbalism in Europe and the Americas.)

TRADITIONAL CHINESE MEDICINE

Traditional Chinese medicine (TCM) is an ancient healing system that originated in China but is used today to treat millions of people all around the world. TCM applies treatments including acupuncture and herbs according to a highly developed, holistic philosophy of health and disease. Treatment is based on balancing and regulating the flow of qi (pronounced “chee”)—the body’s life energy or vital force. Japan, Korea, and Vietnam have all developed traditional medicine systems of their own, based on concepts and practices begun in China at least 3,000 years ago.

Principles of TCM

The principles of traditional Chinese medicine are deeply rooted in the Chinese philosophy and way of seeing the universe. Some Westerners have difficulty fully understanding the concepts of TCM, which do not conform to conventional (Western) ideas about science and medicine. Traditional
(continued on page 350)

THE IMPORTANCE of HERBAL MEDICINE

“Integrative medicine just makes sense—each patient is a whole human being, a person with a rich story, a history and set of beliefs and a culture that must be considered in the co-creation [by physician and patient] of a treatment plan.”

As an herbalist and physician, I have long valued the role plants play in maintaining our health. Herbal medicine is ancient, and it gave birth to the modern sciences of botany, pharmacy, perfumery, and chemistry. Some of our most useful and beneficial medicines originate from plants, including aspirin (salicylic acid derivatives from willow bark and meadowsweet), quinine (from cinchona bark), digoxin (from foxglove), and morphine (from opium poppy). Just 100 years ago, the United States Pharmacopeia was filled with plant-based drugs, but today, few physicians are well versed in botany and few botanists deeply understand medicine.

This is unfortunate because there are times when an herbal remedy could offer a safer alternative. Take chamomile: The flowers have been used for centuries as a gentle calm-

ative for young and old alike. It is non-habit-forming and well tolerated. A study sponsored by the University of Michigan found that chamomile extract had roughly the same efficacy as many prescription sleeping medications when given to adults with insomnia. Peppermint oil has been shown to be as effective as pharmaceutical drugs for relieving irritable bowel syndrome, but without the oftentimes dangerous side effects. Clinical studies have shown that ginger relieves morning sickness, sage can relieve a sore throat, and hibiscus tea gently lowers blood pressure. I believe it’s better to use mild remedies for minor health problems and save the more potent, and risky, prescription medications for more serious conditions.

Sometimes an herb can fill a niche for which there is no pharmaceutical equivalent. Milk thistle is a classic example. Numerous scientific studies show that the extract can prevent liver damage caused by environmental toxins, alcohol, and medications like acetaminophen (Tylenol). A Columbia University study of children with acute lymphoblastic leukemia (ALL)

found that milk thistle could reverse the liver toxicity that resulted from chemotherapy, allowing children to receive their treatments on time. Milk thistle protects the liver without interfering with the effectiveness of medications—and nothing currently in our modern pharmacy can match it. Some herbal remedies (such as the antidepressant St. John’s wort), however, can interact with medications. So if you’re taking a prescription medication, talk to your pharmacist and/or health-care provider before you take any herbal remedy or dietary supplement.

Consumers want to know about alternatives to conventional approaches; health-care practitioners and pharmacists should be able to answer their questions and provide appropriate guidance. Centuries of use and human clinical studies confirm that herbal remedies can be safe, effective, and economical options for many common conditions. For me, herbal medicines unquestionably play a unique and important role in modern health care.

—Tieraona Low Dog, MD

DR. TIERAONA LOW DOG’S FAVORITE HEALING HERBS and THEIR USES

Tieraona Low Dog, MD, frequently prescribes these 25 herbs for common health conditions. All are effective, have few safety concerns, and have a long history of traditional use. The dose recommendations are for adults. Read more about these herbs in Part II, beginning on page 80. (For more about making healing herbal teas, see “Herbal Infusions and Decoctions” on page 365.)

HERB	USES	PREPARATIONS AND DOSES	CONCERNS
Ashwagandha (<i>Withania somnifera</i>)	Rejuvenating tonic, anti-inflammatory, reduces anxiety, boosts immune health.	Tea: Simmer 1 tsp dried and sliced root in 1 cup water or milk for 10 minutes. Strain. Drink one or two times per day. Standardized extract (2-5% withanolides): Take 500 mg two or three times per day.	Can cause mild sedation; potential to stimulate thyroid hormones.
Black Cohosh (<i>Actaea racemosa</i>)	Relieves menstrual cramps and arthritic pain; commonly used to ease menopausal symptoms.	Tincture: Take 1–2 ml three times per day. Standardized extract: Take 20–80 mg two times per day.	Very rare case reports of liver damage (likely due to misidentified herb); purchase only from reputable supplier.
Calendula (<i>Calendula officinalis</i>)	Flowers have long been used to relieve inflammation in the mouth, throat, and stomach; popular as a topical cream or ointment to relieve rashes and irritation and to help heal wounds.	Tea: Pour 1 cup boiling water over 2 tsp petals. Steep for 10 minutes. Strain. Use as needed as a mouthwash, gargle, or tea. Ointment: Apply to skin two or three times per day as needed.	None known.
Catnip (<i>Nepeta cataria</i>)	Soothes an upset stomach; reduces anxiety and tension.	Tea: Pour 1 cup boiling water over 4 or 5 fresh or 1 tsp dried leaves. Steep for 5 minutes. Strain and sweeten, if desired. Drink one or two times per day.	None known.
Chasteberry (<i>Vitex agnus-castus</i>)	Premiere herb for relieving PMS symptoms.	Capsules: Take 250–500 mg dried fruit once per day. Tincture: Take 2–3 ml each morning.	None known.
Cranberry (<i>Vaccinium macrocarpon</i>)	Well-established treatment for reducing the risk of bladder infection; could also be beneficial for chronic prostatitis.	Juice: Drink ½ to ¾ cup twice per day. Capsules: Take 300–500 mg concentrated juice extract two times per day.	None known.
Echinacea (<i>Echinacea</i> spp.)	Antiviral and immune-enhancing properties; popular for relieving colds and upper respiratory infections (approved in Europe for these uses).	Tea: Simmer 1 tsp dried and sliced root in 1 cup water for 10 minutes. Strain. Drink 1–3 cups per day. Tincture: Take 5 ml three to six times per day at onset of cold symptoms.	Rare allergic reactions.
Elderberry (<i>Sambucus nigra</i> , <i>S. canadensis</i>)	Flowers valued as a remedy for colds and fever for centuries; fruit extracts have been shown to have significant antiviral activity, especially against the flu.	Tea: Pour 1 cup boiling water over 1–2 tsp flowers. Steep for 10 minutes. Sweeten if desired and drink hot two or three times per day. Berry extracts: Use as directed.	None known.
Garlic (<i>Allium sativum</i>)	Potent antimicrobial; often used to combat colds, ease sinus congestion, and stave off traveler’s diarrhea. Studies show that regular use can help gently lower blood pressure.	Eat: Eat 1–2 cloves fresh daily. Capsules: Take 4–8 mg allicin per day; enteric-coated products may be superior if specifically treating diarrhea.	May interact with warfarin.
Ginger (<i>Zingiber officinale</i>)	Premiere remedy for easing nausea, vomiting, and upset stomach; fresh teas relieve cold and flu symptoms	Tea: Steep ¼–½ tsp dried ginger or simmer 1 tsp fresh ginger root in 1 cup hot water for 10 minutes. Strain and sweeten, if desired. Drink 1–2 cups per day. Capsules: Take 250–500 mg two times per day.	Very safe in small amounts; heartburn and stomach upset can occur with high doses. Pregnant women should not take more than 1,500 mg per day of dried ginger.
Ginseng (<i>Panax quinquefolius</i> ; <i>P. ginseng</i>)	Helps relieve and prevent mental and physical fatigue; shown to reduce the frequency and severity of colds; possibly beneficial for erectile dysfunction.	Tea: Simmer 1 tsp dried and sliced root in 1 cup water for 10 minutes. Strain. Drink 1–2 cups per day. Standardized extract (4–7% ginsenosides): 100–400 mg per day.	Purchase from a reputable manufacturer, as ginseng has often been adulterated in the past.
Hibiscus (<i>Hibiscus sabdariffa</i>)	Lowers blood pressure and has mild diuretic activity; traditionally used to ease sore throats and colds.	Tea: Pour 1 cup boiling water over 1–2 tsp dried flowers. Steep for 10 minutes. Strain and sweeten, if desired. Drink 2 cups per day. Capsules: Take 1,000 mg two times per day.	Talk to your health-care provider if you have high blood pressure.

HERB	USES	PREPARATIONS AND DOSES	CONCERNS
Hops (<i>Humulus lupulus</i>)	Excellent sleeping aid; smaller, daytime doses used to ease tension, restlessness, and anxiety; might help reduce hot flashes during menopause.	Capsules: Take 200–300 mg one to three times per day. Tincture: Take 2–4 ml before bed.	Can cause sedation.
Horse Chestnut (<i>Aesculus hippocastanum</i>)	Seed extracts shown to be highly effective for treatment of varicose veins and chronic venous insufficiency (blood pools in lower leg veins after standing or sitting); topical gels can reduce swelling and tenderness due to injury.	Seed extract (containing 100–150 mg aescin/escin): Take 600 mg per day in divided doses.	Unprocessed horse chestnut seeds can be toxic; use only appropriately prepared seed extracts.
Kava (<i>Piper methysticum</i>)	Clinical trials have shown kava to be highly effective for relieving anxiety. Also has significant muscle relaxing effects.	Tea: Simmer 1 tsp dried and sliced root in 1 cup water for 10 minutes. Strain. Drink 1–2 cups per day. Extract of root: Take 100–200 mg two or three times per day. (Do not exceed 210 mg per day of kavalactones.)	Rare cases of liver toxicity; do not use if you have liver disease, frequently drink alcohol, or are taking acetaminophen or prescription medications.
Lemon Balm (<i>Melissa officinalis</i>)	Gentle calmative; eases tension, digestive upset, and colic; topical creams used for fever blisters.	Tea: Pour 1 cup boiling water over 5 or 6 fresh or 1 tsp dried leaves. Steep for 5 minutes. Strain and sweeten, if desired. Drink several times per day.	None; suitable for all ages.
Licorice (<i>Glycyrrhiza glabra</i>)	Excellent anti-inflammatory; soothes mucous membranes; useful for sore throats and coughs; protects and heals gastrointestinal tract.	Tea: Simmer 1 tsp dried and sliced root in 1 cup water for 10 minutes. Strain. Drink two or three times per day for up to 7 days. Capsules: Take up to 3,000 mg per day for 7 days. Do not exceed 500 mg per day if taking for longer than 7 days.	Do not use high doses for longer than 1 week as it elevates blood pressure and causes potassium loss. (DGL, a special preparation commonly used for heartburn, is safe for prolonged use.)
Marshmallow (<i>Althaea officinalis</i>)	Root and leaf are rich in mucilage, a substance that coats the lining of the mouth and throat, as well as the tissue that lines the gastrointestinal tract. Used for sore throat, heartburn, and minor GI inflammation.	Tea: Pour 1 cup hot water over 1 tsp dried and sliced root or 2 tsp leaf. Steep for 2 hours. Strain and drink as desired.	Take other drugs 1 hour prior to or several hours after consuming marshmallow, as it could slow absorption of oral medications.
Milk Thistle (<i>Silybum marianum</i>)	Protects the liver from damage caused by environmental toxins, medications, and alcohol. Recent studies suggest it protects the kidneys similarly.	Extract (guaranteed minimum of 70% silymarin): Take 400–700 mg per day in divided doses.	None known.
Mullein (<i>Verbascum thapsus</i>)	Leaves commonly used to relieve coughs, sore throats, and chest congestion; steeped in oil, the flowers relieve earache.	Tea: Pour 1 cup boiling water over 1–2 tsp leaves. Steep for 10 minutes. Strain, sweeten, and drink as desired. Ear oil: Use as directed.	None known.
Nettle (<i>Urtica dioica</i>)	Fresh, freeze-dried leaves relieved seasonal allergy symptoms in one human trial. Impressive research supports use of the root for easing symptoms of enlarged prostate. Tea widely recommended for its nutritive value.	Tea: Pour 1 cup boiling water over 2 tsp leaves. Steep for 10 minutes. Strain. Sweeten if desired. Drink 1–3 cups per day. Freeze-dried nettle capsules: Take 300–500 mg two times per day. Nettle root: Take 250–400 mg two or three times per day.	Wear gloves when handling fresh nettles to avoid stinging and irritation (sting is lost with cooking or drying); very safe herb.
Sage (<i>Salvia officinalis</i>)	Excellent for sore throats, coughs, and colds; recognized in Germany as a treatment for excessive sweating; studies show it can help reduce menopausal hot flashes and night sweats.	Tea: Pour 1 cup boiling water over 1 tsp leaves. Steep for 10 minutes. Strain. Drink, or use as a sore throat gargle. Capsules: Take 500 mg dried leaf two times per day.	Do not use therapeutic doses during pregnancy; do not use sage essential oil internally.
Slippery Elm (<i>Ulmus rubra</i>)	FDA-approved as a safe, nonprescription remedy for minor throat irritation; also very useful for relieving coughs and occasional heartburn.	Lozenges: Take as directed. Tea: Pour 1 cup boiling water over 1–2 tsp powdered bark. Steep for 5 minutes. Drink two or three times per day.	Take other drugs 1 hour before or several hours after consuming, as it could slow absorption of oral medications.
St. John's Wort (<i>Hypericum perforatum</i>)	More than 40 studies have confirmed its effectiveness for relieving mild to moderate depression; may also relieve PMS symptoms and menopausal hot flashes, especially when combined with black cohosh.	Standardized extract (standardized to 0.3% hypericin and/or 3–5% hyperforin): Take 300–600 mg three times per day.	Talk to your physician or pharmacist before using if you are taking prescription medications; the chance for herb-drug interaction is high.
Thyme (<i>Thymus vulgaris</i>)	Highly regarded for relieving coughs, colds, and congestion; rich in volatile oils that have significant antimicrobial and antispasmodic activity.	Tea: Pour 1 cup boiling water over 1 Tbsp fresh or 1 tsp dried leaves. Steep for 10 minutes. Strain and sweeten, if desired. Drink ½ cup three times per day.	None known.

Chinese healers believe that human beings are subject to the same laws that govern nature and that disease results from imbalances or lack of harmony in forces that influence the workings of the body.

The concept of “complementary opposites,” known as yin and yang, is at the heart of Chinese philosophy and TCM. In extremely simplified terms, yin and yang are idealized polarities: yin represents dark and yang represents light; yin represents the female and yang the male; and so on. In the Chinese worldview, however, the concept is much more complex than this. Yin and yang are not at odds or in conflict with one another, but instead represent a constant flow and exchange of energy from one to the other. They exist only in relation to one another. But at the same time, they constantly blend with and become one another. In an idealized state, yin is the absence of yang—but in reality, there is always some yang in yin, and vice versa.

The original Chinese character for yang, which depicts the sun and a mountain, means “the light side of the mountain.” The original character for

yin depicts a cloud and a mountain and means “the dark side of the mountain.” So while the characters are opposites, they have the mountain in common. Each is incomplete without the other, and together they represent the “whole”—known in Chinese as the tao.

In traditional Chinese medicine, the body is divided into yin parts and yang parts. Herbs, foods, and even activities are classified along a spectrum from those that are most yin to those that are most yang. The attraction and tension between yin and yang creates qi, the body’s life force.

Yin elements are earth, moon, dark, female, expansive, passive, cold, night, slow, moist, and winter. The associated yang elements are the heavens, sun, light, male, contractive, aggressive, hot, day, fast, dry, and summer.

The Chinese Five Elements (*Wu Xing*), also known as Five Element Theory, is another governing concept in TCM. Each element—wood, fire, earth, metal, and water—is associated with specific body functions, organs, and senses, as well as emotions, activities, foods, flavors, and temperatures.

THE FIVE ELEMENTS of TRADITIONAL CHINESE MEDICINE and THEIR ASSOCIATIONS

The Five Elements represent fundamental relationships among the forces and cycles of nature and their effects upon the human body. Each element is associated with specific organs and emotions.

ELEMENT	SEASON	TASTE	EMOTION	BODY PARTS
Wood	Spring	Sour	Anger	Liver, gallbladder, eyes, tendons
Fire	Summer	Bitter	Joy	Heart, small intestine, tongue, blood vessels
Earth	Indian summer	Sweet	Worry	Spleen, stomach, mouth, muscles
Metal	Fall	Pungent	Grief	Lungs, large intestine, nose, skin
Water	Winter	Salty	Fear	Kidneys, bladder, ears, bones

The Practice of TCM

A TCM practitioner’s first step is to pinpoint imbalances that have resulted in a person’s physical problems. In TCM, all disease is viewed as the result of energetic imbalances (excess or deficiency) caused by a person’s way of life and relationship with the universe. The six external causes of disease are wind, cold, heat, dampness, dryness, and summer heat. The seven internal causes, or emotions, that contribute to physical manifestations of disharmony are joy, anger, sadness, pensiveness, grief, fear, and fright. So, for example, a TCM practitioner might conclude that a patient’s disease is caused by excessive “wind” in the body, too

much “heat” in a specific organ, or by “qi deficiency” or “deficient spleen yang.”

A traditional Chinese physician uses a unique array of diagnostic techniques. In addition to carefully questioning a patient about his health, lifestyle, and behavior, the doctor examines his tongue for signs of illness, observes all aspects of his appearance, palpates his abdomen, and analyzes his pulse. Chinese pulse diagnosis is a highly refined art that takes many years to master.

Acupuncture and herbs, often used in combination, are the two most important components of TCM practice. Other treatments include nutritional therapies, restorative physical exercises such

== IMPORTANT HERBS in TRADITIONAL CHINESE MEDICINE ==

These are only a few examples of the many thousands of different herbs that are important in traditional Chinese medicine (TCM). As in many traditional medical systems, combinations of herbs are also an integral part of the pharmacopoeia.

ASTRAGALUS (*Astragalus membranaceus*)

Astragalus root, called *huang qi* in Chinese, is an important qi tonic that is considered slightly warming and sweet. It is used to treat conditions characterized by deficient qi. These include frequent colds, general weakness and fatigue, weak digestion and lack of appetite, and chronic weakness of the lungs with shortness of breath. For use as a daily tonic, pieces of astragalus root can be cooked into soups or other foods. Healers often prescribe a combination of astragalus and ginseng roots

(called *bu zhong yi qi tang*) for debility and fatigue.

DONG QUAI (*Angelica sinensis*)

Practitioners of TCM consider dong quai root (also called *dang gui*, or Chinese angelica) warm, sweet, acrid, and bitter. It is the most important “blood tonic” in traditional Chinese medicine, and healers use it to invigorate blood and relieve blood stagnation. Dong quai is often called the female ginseng because in TCM, women’s health relates closely to blood. Practitioners prescribe it widely in combination with other herbs to treat women’s health conditions, such as irregular menstruation, menopausal symptoms, and postpartum debility (weakness after giving birth). Four Things Soup, a classical Chinese formula, is a women’s tonic widely prescribed throughout China.

This formula contains dong quai, Chinese peony (*Paeonia lactiflora*), rehmannia (*Rehmannia glutinosa*), and ligusticum (*Ligusticum sinense*) in equal parts, prepared by simmering the herbs.

GINSENG (*Panax ginseng*)

TCM classifies ginseng root, known as *ren shen* in Chinese, as a “superior” herb, or one of the most useful and safest remedies available. An important qi tonic, it is considered warming, sweet, and slightly bitter. Traditional healers use ginseng to treat extreme fatigue, debility caused by illness or old age, and heart and blood pressure problems. They generally prescribe it only for people over the age of 45 or 50 and treat young people with it only if they have severe qi deficiency.