Integrative Practitioner

An Introductory Guide to

Herbal Medicine

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Introduction to Herbal Medicine

HERBAL MEDICINE HAS EXISTED for centuries and evolved alongside human civilization. A 1975 article published in the journal Science confirmed archaeological evidence dating the use of herbs for medicinal purposes to the Paleolithic era. Herbal medicine practices have developed amongst different cultures and encompass diverse medical systems around the world, including Ayurveda, Unani Tibb, Traditional Chinese Medicine (TCM), Native American herbalism, and the more recent Western herbal medicine eclectic tradition in the United States.

Medicinal preparations were all derived from natural sources until the 19th century. A 2016 article published in the journal Molecules discusses the importance of traditional medicine systems and natural product, particularly as the advent of chemically synthesized drugs in the last one hundred years has led to a medical climate dominated by pharmaceutical medications and medical treatments.

There has recently been a resurgence of interest in herbal medicine, not only in the development of new drugs from natural products, but also in traditional systems of medicine, as a growing number of practitioners and patients alike are exploring alternatives to conventional medicine and a more personalized and preventative approach to health and wellness, particularly in the face of increasing health insurance costs. In addition, as antibiotic resistance increases, and healthcare providers are challenged by new and unrecognized deadly pathogens and pandemics, the industry will likely take a more ethnobotanical approach towards the discovery of new medications.

Historically, the biggest challenges herbalists faced when working with patients is the lack of education and understanding about herbal medicine products, particularly

with regards to difference in the mechanisms of action of a whole plant in comparison to an isolated compound, how and when an interaction may occur, and how herbal medicine may enhance, rather than imperil, a patient's treatment plan.

My own training began in my Greek-Cypriot grandmother's kitchen. I had a keen interest in the traditional ethnobotanical practices of the countries in which I grew up in South America, Africa, Australasia, and Asia in my formative years. After leaving an unfulfilling career in finance, I gained my naturopathic qualifications, mastered herbal medicine, Ayurveda, and Traditional Chinese Medicine (TCM) in the United Kingdom, and went on to study endobiogenic medicine in the United States and France. When used properly, herbs are extremely safe, have far fewer side-effects, and can be used to strategically enhance the activity of other compounds in food, nutraceuticals, and medications.

This resource is not intended to replace comprehensive education and knowledge a practitioner must obtain to practice herbal medicine, but rather will demonstrate how herbal medicine practices have developed, provide guidance on basic herbal medicine concepts, and familiarize clinicians with herbal terminology. This guide will provide basic and practical guidance on different herbal formulations and when to use them, as well as define how herbs are categorized based on their useful phytochemical constituents and the myriad of ways integrative practitioners can use plant medicine with their patients safely.

While this guide may be of interest for those clinicians who are already interested in herbal medicine and using supplemental herbal products, I encourage integrative practitioners to work collaboratively with a trained herbal medicine professional when necessary to achieve the best outcomes for patients, particularly where there is polypharmacy or a multi-layered and complex case. ●

History and Background of Herbal Medicine

The great anthropologist Margaret Mead, PhD, considered the archeological discovery of a 15,000-year-old human femur with a healed fracture as the first evidence of civilization. Her reasoning was that for an individual to survive long enough for the fracture to heal, others must have provided protection, shelter, food, and water. This find, paired with consistent evidence of the medicinal use of plants, highlights how intrinsic the study of plants and their healing therapeutic qualities have been to the evolution of civilization and the development of the modern world, as well as the expansion of knowledge and wisdom.

The following timeline demonstrates key milestones in the evolution of medicine and how the use of plants has played a significant role in human development.

Herbal Medicine Timeline

58000-78000 B.C.

- Neanderthal burial site in Israel, body was found buried with eight species of medicinal plants.

13000-25000 B.C.

- First pictorial evidence of herbal medicine on the walls of caves in Lascaux, France.

3350-3100 B.C.

- Otzi the Iceman, the oldest preserved human being ever found, was buried alongside approximately 75 species of plants. Birch polypore and ferns were found in his digestive system.

3000 B.C.

- Oldest written evidence of the usage of medicinal plants written on a Sumerian clay slab, referring to recipes for the preparation of over 250 plants.

2500 B.C.

- The rishis ancient seers of India received knowledge of Ayurvedic medicine from Hindu gods. The Vedas mentions treatments with plants abundant in India, including peppers, clove, and nutmeg.
- *Shen Nong Ben Cao Jing,* the classic herbal written by Emperor Shen Nong, discusses 365 dried parts of medicinal plants, including ginseng, cinnamon bark, and ephedra.

2550 B.C.

- *The Ebers* papyrus from Egypt, the oldest complete medical document discovered contained information of the treatment of diseases, 800 prescriptions, and 700 plant species.

800 B.C.

- *The Iliad* and *The Odyssey* written by Homer referred to sixty-three species from the Egyptian Assyrian, Minoan, and Mycenaean pharmacotherapies.

500 B.C.

- A ceremonial cup was found in Ecuador containing traces of ayahuasca, early evidence of shamanic traditions in the Amazon region.

460 B.C.

- Hippocrates, the father of modern medicine and naturopathy, developed a system of humoral medicine, which stated disease was due to imbalance in the four humors, blood, black bile, yellow bile, and phlegm.

317 B.C.

- Theophrastus, the father of botany, classified over 500 medicinal plants, highlighted the importance of increasing dosages gradually due to some toxic actions of plant constituents, and founded botanical science with *De Causis Plantarium* and *De Historia Plantarium.*

300 B.C.

- *Yellow Emperor's Classic of Internal Medicine* written, which introduced the five-element theory and the concepts of Yin and Yang, the foundations of Traditional Chinese Medicine (TCM).

40 A.D.

- *Dioscorides* wrote *De Materia Medica,* bringing together all known medical information and systematically recording the use of herbs used by Greeks and Romans in monograph form, which we still use today.

131 A.D.

- Galen revived Hippocratic humoral medicine, carried out surgical procedures, emphasized the importance of clinical observation. His writings were used in medical schools until the 17th century.

400 A.D.

- Monks and monasteries had a major impact on herbal medicine until the sixteenth century, translating Greek, Latin, Persian, and Arab texts, establishing schools, and influencing the naming, growing, and use of herbal medicines.

Herbal Medicine Timeline

1025 A.D.
- Avicenna completed the *Canon of Medicine.* This encyclopedia was used for nearly a thousand years, was the standard text in European universities up to the 17th century, and is still studied in the East today.

1491 A.D.
- Paracelsus, the father of chemical medicine, believed all substances are poison, but in small doses could heal. He believed the best herbs grew locally to their users and devised the *Doctrine of Signatures.*

1542 A.D.
- Henry VII of England, a keen herbalist, issued a charter in Great Britain, allowing all to practice herbal medicine as a fundamental right.

1616 A.D.
- Nicholas Culpeper, an English botanist, herbalist, physician, and astrologer, made medicine accessible to all by translating medical texts from Latin to English and classified herbs using different degrees of hot and cold.

1617 A.D.
- The Worshipful Society of Apothecaries was formed in Great Britain, allowing the Royal College of Medicine to establish an official pharmacopeia, which restricted apothecaries to selling only what was approved by physicians.

1753 A.D.
- Carl Linnaeus, a Swedish botanist, developed a modern method of taxonomy using the Latin binomial method of dividing plants into families, to represent the genus and the species in the *Species Plantarium.*

1769 A.D.
- Samuel Thomson, an American herbalist, formed the alternative system of medicine known as Thomsonian Medicine, incorporating native American customs with settler herbal folklore, the Hippocratic approach, and humoral language.

1825 A.D.
- The Eclectic tradition was born, in reaction to orthodox medicine, which involved finding herbs that were an exact fit and blended scientific and traditional knowledge.

1853 A.D.
- King's *American Dispensatory* was published, defining the *American Materia* medica and championing the use of tinctures.

1910 A.D.
- The *Flexner Report* initiated a reform that lead to the shutdown of naturopathic medicine schools and clinics and standardized the system of medical training still in place today.

1931 A.D.
- Maud Grieve and Hilda Leyel, who founded the Society of Herbalists to support the practice of herbal medicine in Great Britain, wrote *A Modern Herbal.*

1982 A.D.
- The American Herbal Products Association (AHPA) was formed as the national trade association of the herbal products industry, to educate the public and advocate regulation around responsible commerce.

1989 A.D.
- The American Herbalist Guild (AHG) was formed to promote and set the standard for education and professional practice in therapeutic herbalism.

Current Use of Herbal Medicine

The demand for traditional medicine is increasing across the globe. Many countries are beginning to recognize the need for a more comprehensive approach to healthcare and a more cohesive strategy to ensure quality, safety, and efficacy of integrative healthcare services.

Today, herbal medicine is the primary system of medicine in an **estimated 80 percent of the global population**, according to a 2013 article in Frontiers in Pharmacology, although it is estimated at 95 percent in developing nations. An **2005 article** in the New England Journal of Medicine states that in 2003, German health insurance reimbursed $283 million for prescription herbal products, while in France in 2002, herbal medicine-based prescriptions totaled $196 million. According to the authors, approximately 80 percent German doctors regularly prescribe herbal medicine.

The World Health Organization (WHO) **2019 Global Report on Traditional and Complementary Medicine** considers herbal medicine as uniquely qualified to support global health challenges, as it emphasizes prevention and management of lifestyle-related chronic diseases. The WHO's **Traditional Medicine Strategy: 2014-2023** recognizes the growing global use of traditional medicine systems and the advantages it confers on reducing the burden of healthcare costs by encouraging disease prevention and self-care, particularly of chronic conditions. The report also outlines the need to develop policies around safety, efficacy, quality, and consistency of products and educational standards of practitioners, and to support the integration of traditional medicine within national healthcare systems.

Unlike antibiotics, which when overused can lead to resistance, medicinal plants and their metabolites may help combat multi-drug resistance, according to **a 2017 article** in Journal of Ayurveda and Integrative Medicine.

Although there are many herbal medicine products available on the global market, there is little international standardization or quality control for herbal products. However, several member states of the WHO are working to establish and implement good manufacturing practices (GMPs), codes of practice designed to reduce problems that may adversely affect the quality of a manufactured product. Requirements include correct identification of plant species and ensuring appropriate storage and sanitation methods.

The number of WHO member states implementing some form of regulation for herbal medicine has doubled in the last 20 years, with many countries including Switzerland using the same regulatory requirements for the manufacturing of herbal medicines as for conventional pharmaceutical medications, and giving herbal medicine products the same regulatory status as prescription medicines, over-the-counter medication, dietary supplements, and health foods.

In the United States, botanical products are classified as pharmaceutical drugs, foods, or dietary supplements by the U.S. Food and Drug Administration (FDA) based on end use or claims. If a product is used to prevent, diagnose, treat, mitigate, or cure a disease, the product falls under the pharmaceutical drug category. If a botanical product is used to affect structure or function of the human body, then it would be classified as either a dietary supplement or pharmaceutical drug.

Many countries include herbal medicine information in a pharmacopeia. The U.S. Pharmacopeial Convention (USP), an independent scientific non-profit organization dedicated to setting public standards to ensure quality of medicines, published its **Herbal Medicine Compendium** (HMC), a freely available online resource that provides standards for herbal ingredients used in herbal medicines expressed in monographs.

Monograph use is common internationally, and these official documents provide information required for the use of an herbal product, including nomenclature, parts used, constituents, range of application, usage, herbal actions and properties, safety considerations, and dosage information. Monographs are often contained within a Materia Medica, which translated from Latin means "medical material." A Materia Medica in the context of herbal medicine is a body of knowledge describing plant use.

Practitioners should base their advice on empirical and evidence-based learnings. However, the scientific validity of herbal medicine used in research is often challenged. Studies on isolated compounds are common, but there are few on whole plants and certain population groups, such as pregnant woman and children. There is also a big difference in how a plant will act in vivo versus in vitro, as well as when a plant is used on its own versus when its used synergistically with other plants.

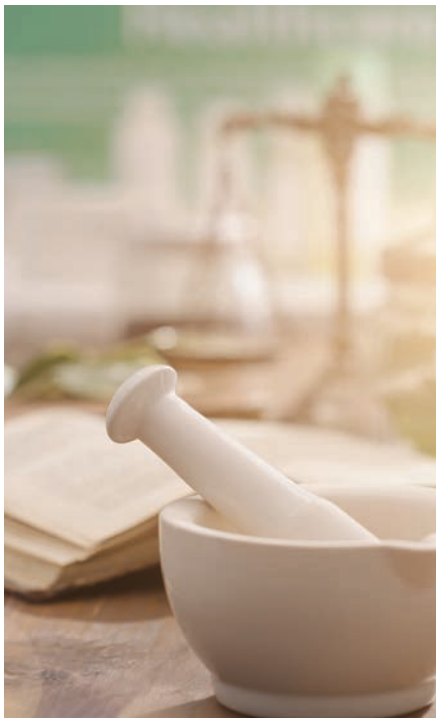
Legal and Regulatory Considerations for Practice

In the U.S., certain states define herbal remedies within the scope of a licensed practitioner, such as a naturopathic doctors (ND) or licensed acupuncturist (LAc). Currently. the only state-level licensing for herbalists is linked to an acupuncture license, and the American Herbalists Guild (AHG) designates peer-reviewed Registered Herbalists. Legislation differs internationally.

Product Restrictions and Regulations

If a practitioner is selling herbal medicine products, they should familiarize themselves with state laws pertaining to their business, particularly if there are laws restricting the use of certain words. For example, in California, state law prohibits the use of words such as "pharmacy," "apothecary," "remedies," and "medicine," as well as pharmacy symbols or signs, unless the business involves a board-licensed pharmacist.

Dietary and herbal supplements are regulated under the 1994 Dietary Supplement Health and Education Act and do not require application before being brought to market. The legal definition of a dietary supplement, considered a subcategory of food, includes herbal and other botanical products, in a variety of forms such as tablets, capsules, liquids, and powders. The marketer is responsible for ensuring the safety and labeling of products in compliance with FDA-issued regulatory guidelines. Labeling and advertising need to comply with the FDA and Federal Trade Commission (FTC) regulations.



Practitioners should be wary of making medicinal claims on products. Intended use of an herbal product determines its regulatory category. If a claim is implied to treat, cure, mitigate, or prevent disease, the FDA and FTC may consider this and any accompanying literature as an unapproved drug claim, which could result in the agencies issuing joint warning letters or pursuing legal action.

Teas that are drunk and considered food, such as ginger, may not make a medicinal claim, and would not be subject to dietary supplement Good Manufacturing Practices (GMPs), but rather food-related regulations. Products intended for topical use may fall under cosmetic regulations.

Manufacturing, Processing, and Storage Methods

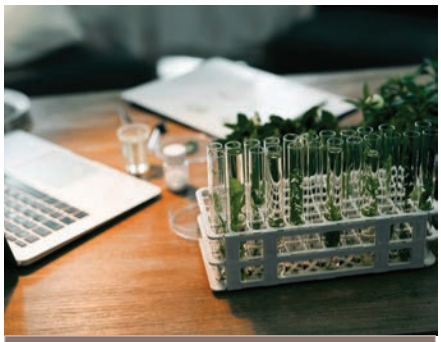
Manufacturers of herbal products must comply with the **GMPs set by the FDA**, which ensures the tracking of source materials, purity via appropriate testing methods including microscopy, thin layer, and high-pressure liquid chromatography, and positive identification of the plants in an herbal product. The GMPs also require good hygiene practices and the provision of correct documentation and training. All manufacturers of herbal products selling to the public must comply with these GMPs, but if supplemental herbal products or compounded formulas are sold as part of a personalized consultation, the FDA may use its discretion.

Always verify that suppliers are following GMP procedures. Consider toxic exposures of plants from pollution, pesticides, sewage, plastics, radiation, organochlorine compounds, heavy metals, and mycotoxins. Contamination may be area-specific. Ensure plants are correctly identified.

Additionally, practitioners should check that herbs are being harvested and dried correctly by the supplier as this will affect how long they last if not stored properly.

Ethical Considerations

Climate change and its impact on the growing conditions of herbal crops has led to, and will continue to lead to, fluctuating availability and prices, while a long-term risk of unregulated overharvesting of wildcrafted crops in developing countries may well lead to loss of certain species. Changes in growing conditions, especially temperature stress, can cause changes in the production of active constituents.



Practitioners stocking herbs should keep a detailed inventory including the following information:
Name of plant
Weight/quantity
Type of preparation/plant (menstruum ratio)
Strength (if relevant)
Date of opening
Batch number
When a practitioner is selling a product, recording the following information:
Name of plant
Weight or quantity of contents
Ingredient list in descending order of predominance or statement of identity
Type of preparation
Strength (if relevant)
Directions of use
Cautions
Contact information

The impact of biodiversity loss is not only contributing to the loss of plant species, but important habitats are being destroyed and ecosystems destabilized through climate change, pollution, and industrialization. The International Union for Conservation of Nature (IUCN) Red List provides information on vulnerable and endangered species, including a large proportion of medicinal plants and those of potential interest.

Choose botanical products that are ethically harvested and organically and sustainably grown where possible to ensure quality. Wildcrafted plants are regulated by the Organic Foods Production of 1990, which requires the harvested area to be designated as such, and a three-year history of the area must demonstrate that no prohibited substances have been applied by processors. Further, the plan must show that the harvest will not damage the environment and will sustain the growth of the wild crop.

In many countries outside the U.S. where herbs are harvested, the practice of wildcrafting is unmonitored, plants are overharvested, endangered herbs are collected, and harvesters may be poorly paid and treated. Practitioners should consider the carbon footprint of what they are buying as well as global warming and the impact of client change on growing conditions.

Shrinking oil reserves, harvest and manufacturing disruptions, and increases in fuel prices have already had a significant impact on the herbal medicine industry. The growing and harvesting of herbs and transportation of plants grown in various geographic locations to manufacturers for processing, worldwide suppliers, clinics, and retail outlets has been affected. Providers may want to increase the variety of local and native herbs used in their practices.

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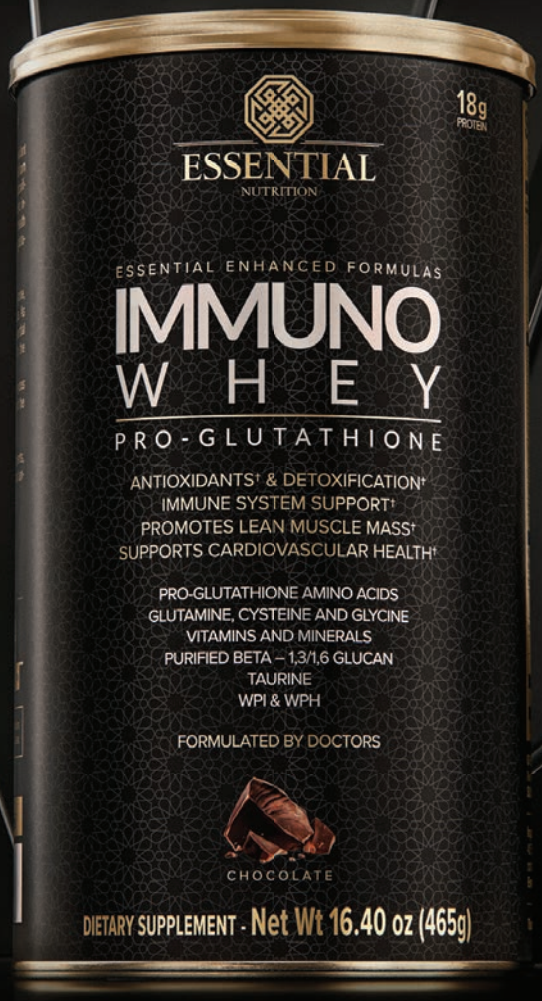

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Fundamentals of Herbal Medicine

While herbal medicine is a vast subject, to grasp the more complex aspects of herbal medicine, it is important to start with a definition of what an herb is, plant nomenclature, an understanding of herbal actions, organ and system affinities of different plants, and the concepts of herbal energetics and herbal classifications.

What is an Herb?

To understand herbal medicine terminology, it is important to understand the definition of an herb from botanical and non-botanical perspectives. The botanical definition of an herb is an herbaceous plant, a seed-producing annual, biennial, or perennial plant with a flexible stem that dies down at the end of a growing season and will grow back again. In contrast, a woody plant develops persistent, woody, structural tissue, which allows the plant to continue to grow instead of dying down at the end of the growing season.

In the non-botanical sense, an herb is a plant, or part of a plant. valued for its medicinal or aromatic qualities, high in phytochemicals, which are plant compounds that have a pharmacological effect on the body at appropriate doses.

The phytochemicals we value for their medicinal properties are produced by the plant in response to their environment. These plant compounds form the basis of many well-known pharmaceutical medications, including morphine, first pioneered and marketed by The Merck Group, a German pharmaceutical company in 1826, and a semi-synthetic aspirin based on salicin, isolated at the German dye manufacturer Bayer's pharmaceutical division in 1899 from *white willow* (Salix alba). Additionally, artemisin is a compound from *Sweet Annie* (Artemisia annua) and is used to treat multidrug resistant malaria and today in integrative cancer therapy.

Plant Names and Herbal Medicine

The first Latin name represents the genus or subdivision of a plant family, which is comprised of different species. The second Latin name reflects the species of the plant and may ascribe a unique characteristic of the plant, such as the shape of the leaf or color, or it may confer the geographical location.

The Latin word officinalis refers to the historical knowledge of the plant in question being collected and categorized by European monks who kept their research in storerooms known as *officinale*. Plants can sometimes have two Latin names, as the rules of naming a plant often change and names get revised.

When referring collectively to some or all the species within a genus, the generic name is followed by *"spp.,"* which stands for several species.

There is no international convention governing the way a plant's common names can be written or used. A plant's common name can vary depending on the region, which is why, in some cases, there may be more than one common name.

Herbal Classifications, Properties, and Actions

Herbal publications will use specific terminology to define the properties of plants to convey an understanding of how a plant works, how to use herbs properly, and in what conditions they will be helpful. Herbs usually fall into more than one category. Below you will find a comprehensive list of herbal actions and examples of herbs that fall within that category.

Herbs may:

- **Be organ specific, meaning the plant has an affinity for a particular organ**
- **Be function specific, meaning that it addresses a particular physiologic action**
- **Have a specific action on tissues**
- **Herbal classifications and actions**

Herbal Classifications and Actions

Classification or Property	Mode of Action	Herb Examples – Latin Names (Common Names)
Acrid	Bitter, burning taste due to alkaloids and resins. These herbs are antispasmodic and open the flow of blood, energy and lymph, and may be relaxing. When taken in large doses, may induce vomiting.	*Coriandrum sativum* (coriander) *Lobelia inflata* (lobelia) *Piper methysticum* (kava) *Zingiber officinalis* (ginger) *Zanthoxylum clava-herculis* (prickly ash)
Adaptogen	Modulates stress response and help support the hypothalamic-pituitary-adrenal axis and immune system, especially the adrenal response. They can help minimize and mitigate damage of prolonged stress and regulate the body's adaptive response during chronic stress.	*Asparagus racemosa* (shatavari) *Astragalus membranaceus* (astragalus) *Eleutherococcus senticosus* (eleuthero, Siberian ginseng) *Glycyrrhiza glabra* (liquorice) *Ocimum sanctum* (tulsi, holy basil) *Panax ginseng* (Korean ginseng) *Rhodiola rosea* (rhodiola, golden root) *Withania somnifera* (ashwagandha, winter cherry)
Analgesic	Reduces intensity of pain. Some analgesics can relieve muscle tension while others block pain sensations by acting upon the nervous system.	*Arnica montana* (arnica) *Filipendula ulmaria* (meadowsweet) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Viola tricolor* (heartsease)
Anodyne	Reduces sensitivity of the nervous system to provide pain relief.	*Capsicum minimum* (cayenne) *Eschscholzia californica* (California poppy) *Hypericum perforatum* (St. John's wort) *Passiflora incarnata* (passionflower) *Rosmarinus officinalis* (rosemary) *Scutellaria lateriflora* (skullcap)
Anthelminthic/ antiparasitic	Removes worms and parasites from the body. May be toxic in high doses. Usually have antimicrobial activity.	*Allium sativum* (garlic) *Artemisia absinthium* (wormwood) *Coptis trifolia* (goldenthread) *Juglans nigra* (black walnut) *Szygium aromaticum* (clove)
Anticatarrhal	Helps to remove excess mucus from the body and useful primarily for ear, nose, and throat infections and sinus congestion.	*Baptisia tinctoria* (wild indigo) *Capsicum minimum* (cayenne) *Echinacea spp.* (echinacea) *Euphrasia spp.* (eyebright) *Hydrastis canadensis* (goldenseal) *Sambucus nigra* (elderberry and flower)
Antidepressant, Thymolyptic	Has an anti-depressant effect.	*Bacopa monnieri* (bacopa, brahmi) *Centella asiatica, Hydrocotyl asiatica* (gotu kola, brahmi) *Hypericum perforatum* (St. John's wort) *Lavandula spp.* (lavender) *Matricaria recutita* (German chamomile) *Mucuna pruriens* (kapikachu, cowage, velvet bean) *Rosmarinus officinalis* (rosemary)
Antiemetic	Reduces feelings of nausea and can help prevent vomiting.	*Filipendula ulmaria* (meadowsweet) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Mentha piperita* (peppermint) *Zingiber officinalis* (ginger)
Anti-inflammatory	Helps to modulate and control inflammation. Phytochemical constituents that play a role include sulfur compounds, resins, salicylates, steroidal and triterpenoid saponins, essential fatty acids, flavonoids, and volatile oils.	*Allium sativum* (garlic) *Betula alba* (silver birch) *Boswellia serrata* (frankincense) *Curcuma longa* (turmeric) *Filipendula ulmaria* (meadowsweet) *Harpagophytum procumbens* (devil's claw) *Matricaria recutita* (German chamomile) *Oenothera biennis* (evening primrose) *Salix alba* (willow) *Uncaria tomentosa* (cat's claw) *Vaccinium myrtillis* (bilberry) *Viburnum opulus* (cramp bark) *Zingiber officinalis* (ginger)

Classification or Property	Mode of Action	Herb Examples – Latin Names (Common Names)
Antiecchymotic	Prevents or alleviates bruising.	*Aesculus hippocastanum* (horse chestnut) *Arnica montana* (arnica) *Primula veris* (cowslip)
Antiedematous	Alleviates fluid retention and edema.	*Agrimonia eupatorium* (agrimony) *Aesculus hippocastanum* (horse chestnut) *Aralia hispida* (bristly sarsaparilla) *Taraxacum officinalis* (dandelion)
Antifungal	Helps the body destroy and resist pathogenic fungal organisms.	*Allium sativum* (garlic) *Calendula officinalis* (marigold) *Cinnamonum zeylanicum* (cinnamon) *Origanum vulgare* (oregano) *Sida acuta* (wireweed) *Szygium aromaticum* (clove) *Tabebuia impetiginosa* (lapacho)
Antihidrotic	Helps to reduce excess sweating.	*Astragalus membranaceus* (astragalus) *Salvia officinalis* (sage)
Antimicrobial	Helps the body destroy pathogenic microorganisms, inhibit the growth of pathogenic organisms, and supports the body's natural immune process.	*Allium sativum* (garlic) *Berberis vulgaris* (barberry) *Commiphora molmol* (myrrh) *Coptis trifolia* (goldenthread) *Echinacea spp.* (echinacea) *Hydrastis canadensis* (goldenseal) *Lavandula spp.* (lavender) *Origanum vulgare* (oregano) *Pistacia lentiscus* (mastic) *Rosmarinus officinalis* (rosemary) *Thymus vulgaris* (thyme)
Antifibrotic	Helps to inhibit or break down fibrosis and scarring.	*Astragalus membranaceus* (astragalus) *Centella asiatica, Hydrocotyl asiatica* (gotu kola, brahmi) *Salvia militorrhiza* (red sage) *Silybum marianum, Carduus marianus* (milk thistle)
Antilithic	Helps to reduce the formation of stones in the urinary tract.	*Agropyron repens* (couchgrass) *Apium graveolens* (celery) *Barosma betulina* (buchu) *Betula alba* (silver birch) *Eupatorium purpureum* (gravel root)
Antipruritic	Helps to relieve or prevent itching of the skin.	*Avena sativa* (oat straw) *Calendula officialis* (marigold) *Mentha arvensis* (menthol) *Juniperus spp.* (juniper) *Stellaria media* (chickweed)
Antipyretic/ Febrifuge	Reduces fever by aiding the body's natural recuperative process not just dropping temperature.	*Filipendula ulmaria* (meadowsweet) *Mentha piperita* (peppermint) *Salvia alba* (willow) *Sambucus nigra* (elderberry and elderflower)
Antispasmodic/ Spasmolytic	Reduces or relives smooth muscle contractions. These herbs are usually high in volatile oils.	*Achillea millefolium* (yarrow) *Dioscorea villosa* (wild yam) *Lavandula spp.* (lavender) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Mentha piperita* (peppermint) *Petroselinum crispum* (parsley) *Thymus vulgaris* (thyme) *Zingiber officinalis* (ginger)
Antitumor/ Antimutagenic	Has anti-malignant activity.	*Allium sativum* (garlic) *Artemisia annua* (sweet Annie) *Camellia sinensis* (green tea) *Curcuma longa* (turmeric) *Echinacea spp.* (echinacea) *Silybum marianum, Carduus marianus* (milk thistle)

Classification or Property	Mode of Action	Herb Examples – Latin Names (Common Names)
Antitussive	Helps to reduce and stop coughing. Some are expectorants to relieve congestion, demulcents that moisten a dry cough, and others act as antispasmodics.	*Glycyrrhiza glabra* (liquorice) *Hyssopus officinalis* (hyssop) *Inula helenium* (elecampane) *Marrubium vulgarize* (white horehound) *Thymus vulgaris* (thyme) *Tussilago farfara* (coltsfoot) *Verbascum thaspus* (mullein)
Anxiolytic	Help to relieve anxiety.	*Hydrocotyl asiatica. Centella asiatica* (gotu kola, brahmi) *Lavandula spp.* (lavender) *Leonorus cardiaca* (motherwort) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Nepeta catita* (catnip) *Piper methysticum* (kava) *Scutellaria lateriflora* (skullcap) *Stachys officinalis, Betonica officinalis,* (wood betony, bishopswort) *Verbena officinalis* (vervain)
Aphrodisiac	Stimulates libido or sexual desire.	*Angelica sinensis* (dong quai) *Asparagus racemosa* (shatavari) *Epimedium grandiflorum* (horny goat weed) *Eurycoma longifolia* (tongkat ali, long jack) *Ginkgo biloba* (ginkgo) *Lepidium meyenii* (maca) *Monarda fistulosa* (wild bergamot) *Panax ginseng* (Korean ginseng) *Pollen pini* (pine pollen) *Turnera diffusa* (damiana) *Withania somnifera* (ashwagandha, winter cherry)
Aromatic	Contains volatile oils and are warming and drying. Often have a calming or stimulating effect on the nervous system due to their strong volatile oil content. May induce perspiration and circulation, although not necessarily to the extent of pungent herbs Useful for Spleen qi deficiency in Traditional Chinese Medicine.	*Anethum graveolens* (dill) *Angelica archangelica* (angelica) *Artemisia dracunculus* (tarragon) *Carum carvum* (caraway) *Cinnamonum zeylanicum* (cinnamon) *Melissa officinalis* (lemon balm) *Mentha piperita* (peppermint) *Mentha spicata* (spearmint) *Rosmarinus officinalis* (rosemary)
Astringent/ Hemostatic/ Styptic/Anti-Hemorrhagic	Contains tannins, which dry mucus membranes and reduce irritation on tissue surfaces. Tightens and tones flaccid tissues and prevent excess discharges and inflammation. Reduce swelling and help blood to coagulate and stop bleeding. Create a barrier to infection to heal wounds and burns. Large doses may cause constipation.	*Agrimonia eupatoria* (agrimony) *Alchemilla vulgaris* (lady's mantle) *Betula alba* (white birch) *Camellia sinensis* (green tea) *Capsella bursa-pastoris* (shepherd's purse) *Hamamelis virginiana* (witch hazel) *Quercus spp.* (oak) *Ribes nigrum* (astringent) *Rosa spp.* (rose) *Rubus idaeus* (red raspberry)
Bitters	Herbs that have a bitter flavor. Stimulates appetite, digestive function, and liver activity. Regulates pancreatic activity. Aids digestion, promotes bile flow, and assists with fat absorption. Simple bitters, nonalkaloidal, are mostly cooling and drying, and may have anodyne action to relieve pain. Some are sedative. Alkaloidal bitters contain alkaloids. Some bitters are classified as fragrant and contain some aromatic elements. Care when used in excess as can deplete digestion over time.	*Achillea millefolium* (yarrow) *Angelica archangelica* (angelica) *Artemisia absinthium* (wormwood) *Berberis aquifolium* (Mahonia aquifolium, Oregon grape) *Berberis vulgaris* (barberry) *Coptis trifolia* (goldenthread) *Cynara scolymus* (artichoke) *Eschscholzia californica* (California poppy) *Gentiana lutea* (gentian) *Humulus lupulus* (hops) *Hydrastis canadensis* (goldenseal) *Juglans nigra* (black walnut) *Lactuca virosa* (wild lettuce) *Matricaria recutita* (German chamomile) *Rumex crispus* (yellow dock) *Taraxacum officinalis* (dandelion)

Classification or Property	Mode of Action	Herb Examples – Latin Names (Common Names)
Cardiotonic	Herbs that have a beneficial effect on the heart and cardiovascular system. Powerful cardioactive agents with a narrow therapeutic window are included in this list.	*Capsicum minimum* (cayenne) *Convallaria majalis* (lily of the valley) *Crataegus spp.* (hawthorn) *Digitalis purpurea* (foxglove) *Leonorus cardiaca* (leonorus) *Rosa spp.* (rose)
Carminative	Herbs rich in volatile oils that help to regulate gut contractions to reduce pain and dispel gas from the digestive tract. Helps relieve bronchial spasm. Aromatic herbs have carminative activity due to their high volatile oil content.	*Cinnamonum zeylanicum* (cinnamon) *Coriandrum sativum* (coriander) *Elettaria cardamomum* (cardamom) *Foeniculum vulgare* (fennel) *Matricaria recutita* (German chamomile) *Mentha piperita* (peppermint) *Melissa officinalis* (lemon balm) *Petroselinum crispus* (parsley) *Pimpinella anisum* (anise) *Rosmarinus officinalis* (rosemary) *Zingiber officinalis* (ginger)
Cholagogue	Stimulates bile flow from the liver to facilitate fat digestion and liver function. Avoid if there is a known gallbladder obstruction and severe hepatic disease.	*Agrimonia eupatoria* (agrimony) *Arctium lappa* (burdock) *Berberis aquifolium, Mahonia aquifolium* (Oregon grape) *Chionanthus virginicus* (fringe tree) *Cynara scolymus* (artichoke) *Taraxacum officinalis* (dandelion)
Choleretic	Increases the flow of bile being released by the gallbladder and the volume of bile being produced by the liver. Avoid if there is a known gallbladder obstruction and severe hepatic disease.	*Berberis vulgaris* (barberry) *Chelidonium majus* (greater celandine) *Cynara scolymus* (artichoke) *Hydrastis canadensis* (goldenseal) *Silybum marianum, Carduus marianus* (milk thistle) *Taraxacum officinalis* (dandelion)
Demulcent	Mucilaginous herbs that coat, soothe, and protect the mucus membranes. Contain polysaccharides and mucopolysaccharides, such as gums and pectin. Useful in the gut or urinary tract, may act as laxatives depending on other constituents within the herb, and sooth and heal irritated mucosa.	*Aloe barbadensis.* (aloe) *Althaea officinalis* (marshmallow) *Avena sativa* (oat) *Glycyrrhiza glabra* (liquorice) *Plantago major* (plantain) *Pulmonaria officinalis* (lungwort) *Ulmus fulva* (slippery elm)
Depurative, Alterative	Improves the body's ability to eliminate waste and support detoxification without harsh laxative effects. Known as blood cleansers. Supports assimilation of nutrients in cases of hypochlorhydria, malabsorption and malnutrition. Useful when fat absorption is poor and for blood sugar imbalances due to liver involvement.	*Allium sativum* (garlic) *Arctium lappa* (burdock) *Berberis aquifolium, Mahonia aquifolium* (Oregon grape) *Echinacea angustifolia* (echinacea) *Plantago major* (plantain) *Rumex crispus* (yellow dock) *Taraxacum officinalis* (dandelion) *Trifolium pretense* (red clover)
Diaphoretic	Opens the pores of the skin to induce sweating and toxin release from the skin. Support the fever process, raise the body temperature to stimulate circulation and induce sweating (stimulating diaphoretics), and cool the body through increased sweating (relaxing diaphoretics).	*Achillea millefolium* (yarrow) *Capsicum minimum* (cayenne) *Eupatorium perfoliatum* (boneset) *Sambucus nigra* (elderflower) *Tilia spp.* (linden, common lime) *Thymus officinalis* (thyme) *Zingiber officinalis* (ginger)
Diuretic	Increases secretion and elimination of urine by stimulating glomerular filtration and increasing the amount of urine produced. They also help to release excess fluid from the body. Reduces edema.	*Agrimonia eupatoria (agrimony)* *Apium graveolens* (celery) *Betula alba* (silver birch) *Cucurbita citrullus* (watermelon) *Juiperus communis* (juniper) *Petroselinum crispus* (parsley) *Taraxacum officinalis* (dandelion) *Urtica dioica* (nettle) *Zea mays* (cornsilk)

Classification or Property	Mode of Action	Herb Examples – Latin Names (Common Names)
Emetic	Herbs which induce vomiting by irritating the gastrointestinal tract or nervous system. Many expectorants are emetics in high doses.	*Eupatorium perfoliatum* (boneset) *Cephaelis ipecacuanha* (ipecac) *Lobelia inflata* (lobelia) *Quassia amara* (quassia) *Sambucus nigra* (elder leaf)
Emmenagogue	Stimulates and help to regulate uterine blood flow.	*Artemisia vulgaris* (mugwort) *Achillea millefolium* (yarrow) *Caulophyllum thractiloides* (blue cohosh) *Cimicifuga racemosa* (black cohosh) *Mitchella repens* (partridge berry, squaw vine)
Emollient	Moistens, soothes, and protects the skin. Cools heat, usually through mucilage or oil component.	*Aloe barbadensis* (aloe) *Althaea officinalis* (marshmallow) *Plantago major* (plantain) *Stellaria media* (chickweed) *Symphytum officinalis* (comfrey) *Ulmus fulva* (slippery elm)
Expectorant	Removes excess catarrh and mucus from the body and improves tone of the respiratory system. Stimulating expectorants are spicy and help to thin the mucus to remove it from the body. Relaxing expectorants moisten dried and stuck mucus to facilitate elimination.	*Althaea officinalis* (marshmallow) *Brassica nigra* (mustard) *Glycyrrhiza glabra* (liquorice) *Hyssopus officinalis* (hyssop) *Inula helenium* (elecampane) *Lobelia inflata* (lobelia) *Plantago major* (plantain) *Prunus serotina* (wild cherry) *Sanguinaria canadensis* (bloodroot) *Thymus vulgaris* (thyme) *Zingiber officinalis* (ginger)
Galactagogue	Increases the flow of breast milk in lactating women.	*Asparagus racemosa* (shatavari) *Cnicus benedictus* (blessed thistle) *Foeniculum vulgare* (fennel) *Galega officinalis* (goat's rue) *Medicago sativa* (alfalfa) *Silybum marianum, Carduus marianus* (milk thistle) *Trigonella foenum-graecum* (fenugreek)
Hepatic	Supports and tones the liver and increase the flow of bile to the liver.	*Agrimonia eupatoria* (agrimony) *Berberis aquifolium, Mahonia aquifolium* (Oregon grape) *Berberis vulgaris* (barberry) *Chionanthus virginicus* (fringe tree) *Hydrastis canadensis* (goldenseal) *Rumex crispus* (yellow dock) *Schisandra chinensis* (Schisandra) *Taraxacum officinalis* (dandelion) *Verbena officinalis* (vervain)
Hepatoprotective	Protects the liver.	*Eleutherococcus senticosus* (eleuthero, Siberian ginseng) *Schisandra chinensis* (Schisandra) *Silybum marianum, Carduus marianus* (milk thistle)
Hormone-balancing	Affects hormone balance within the body due to constituents, including steroidal and triterpenoid saponins, lignans, and isoflavones. Modulates and competitively binds where necessary.	*Cimicifuga racemosa* (black cohosh) *Dioscorea villosa* (wild yam) *Paeonia lactiflora* (white peony) *Salvia officinalis* (sage) *Smilax officinalis* (sarsaparilla) *Trifolium pratense* (red clover) *Vitex agnus-castus* (chaste tree)
Hypoglycemic	Protects the liver.	*Berberis aquifolium, Mahonia aquifolium* (Oregon grape) *Berberis vulgaris* (barberry) *Cinnamonum zeylanicum* (cinnamon) *Coptis trifolia* (goldenthread) *Eleutherococcus senticosus* (eleuthero, Siberian ginseng) *Galega officinalis* (goat's rue) *Gymnema sylvestre* (gymnema) *Momordia charantia* (bitter melon)

Classification or Property	Mode of Action	Herb Examples – Latin Names (Common Names)
Hypolipidemic	Lowers blood fats by reducing formation of cholesterol in the liver and increasing removal of lipids in bowel movements.	*Allium sativum* (garlic) *Berberis vulgaris* (barberry) *Curcuma longa* (turmeric) *Cynara scolymus* (artichoke) *Taraxacum officinalis* (dandelion)
Immunomodulator	Supports the immune system, modulates and balances its activity.	*Astragalus membranaceus* (astragalus) *Codonopsis pilosula* (codonopsis) *Echinacea spp.* (echinacea) *Eleutherococcus senticosus* (eleuthero, Siberian ginseng) *Panax ginseng* (Korean ginseng) *Withania somnifera* (ashwagandha, winter cherry)
Laxative/ Cathartic/ Purgative/ Aperient	Opens eliminative channels to expel material and assists bowel function. Cathartics have strong laxative action. Aperients have mild laxative action. Bulk laxatives provide fiber, which bulk up the stool, calm an irritated bowel, and ease constipation.	*Aloe barbadensis* (aloe) *Arctium lappa* (burdock) *Cassia angustifolia* (senna) *Glycyrrhiza glabra* (liquorice) *Linum usitatissimum* (flaxseed) *Plantago psyllium* (psyllium) *Rhamnus purshiana* (cascara) *Rheum palmatum* (turkey rhubarb) *Rumex crispus* (yellow dock) *Taraxacum officinalis* (dandelion)
Lymphatic	Helps move and drain the lymphatic system.	*Ceonanthus americanus* (red root) *Calendula officinalis* (marigold) *Echinacea spp.* (echinacea) *Galium aparine* (cleavers) *Phytolacca decandra* (poke root) *Scrophularia nodosa* (figwort) *Trifolium pretense* (red clover)
Nervine Relaxing	Supports the nervous system, relaxes tissues where nervous tension is affecting function. Calms the nervous system and are used to reduce anxiety and stress.	*Agrimonia eupatoria* (agrimony) *Avena sativa* (oat) *Eschscholzia californica* (California poppy) *Lavandula spp.* (lavender) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Passiflora incarnata* (passionflower) *Piper methysticum* (kava) *Scutellaria lateriflora* (skullcap) *Tilia spp.* (linden) *Verbena officinalis* (vervain)
Nervine Stimulating	Stimulates the nervous system.	*Camellia sinensis* (green tea) *Coffea arabica* (coffee) *Cola nitida* (Kola nut)
Neuroprotective	Protects against damage to the brain or spinal cord from trauma, stroke, ischemia, or convulsions.	*Crocus sativus* (saffron) *Curcuma longa* (turmeric) *Panax ginseng* (Korean ginseng) *Phyllanthus emblica* (amla) *Polygonum cuspidatum* (Japanese knotweed) *Salvia militorrhiza* (red sage) *Scutellaria baicalensis* (Baikal skullcap)
Nootropic	Facilitates cognitive function, learning, concentration, and memory.	*Bacopa monnieri* (bacopa or brahmi) *Centella asiatica, Hydrocotyl asiatica* (gotu kola, brahmi) *Ginkgo biloba* (ginkgo) *Melissa officinalis* (lemon balm) *Rhodiola rosea* (rhodiola) *Rosmarinus officinalis* (rosemary)
Nutritive	High in nutrients such as vitamins and minerals, and useful for depleted states. Safe to take long-term to strengthen body systems.	*Astragalus membranaceus* (astragalus) *Avena sativa* (oat) *Medicago sativa* (alfalfa) *Urtica dioica* (nettle)
Oily	Contains fatty acids for nervous system, endocrine, and immune system support, and lubrication of joints and tissues.	*Borago officinalis* (borage) *Oenothera biennis* (evening primrose)
Pungent	Helps to induce perspiration and stimulate circulation. Excessive use may irritate the digestive tract.	*Armoracia Rusticana* (horseradish) *Brassica nigra* (mustard) *Capsicum minimum* (cayenne) *Zingiber officinalis* (ginger)

Classification or Property	Mode of Action	Herb Examples – *Latin Names* (Common Names)
Rubefacient	Causes gentle and localized surface vasodilation, causing increased blood flow.	*Allium sativa* (garlic) *Armoracia Rusticana* (horseradish) *Brassica nigra* (mustard) *Capsicum minimum* (cayenne) *Ricinis communis* (castor) *Mentha piperita* (peppermint) *Szygium aromaticum* (clove) *Rosmarinus officinalis* (rosemary) *Zingiber officinalis* (ginger)
Salty	Rich in mineral salts, balancing, nourishing and nutritive. Often gentle diuretics that support kidney function.	*Apium graveolens* (celery) *Fucus vesiculosus* (bladderwrack)
Sedative/ Hypnotic	Calms the nervous system and reduces anxiety and stress. Induces deep sleep.	*Eschscholzia californica* (California poppy) *Lactuca virosa* (wild lettuce) *Matricaria recutita* (German chamomile) *Passiflora incarnata* (passionflower) *Piscidia erythrina* (Jamaican dogwood) *Piper methysticum* (kava) *Valeriana officinalis* (valerian)
Sour	Contains fruit acids and flavonoids, which have antioxidant properties. Cooling, strengthens capillaries, and tones tissues.	*Ribes nigrum* (blackcurrant) *Rubus fructicosus* (blackberry) *Rubus idaeus* (red raspberry) *Schisandra chinensis* (schisandra) *Vaccinium myrtillis* (bilberry)
Stimulant	Improves circulatory flow, usually circulatory stimulants, cerebral circulatory, or nervine stimulants. Other types of stimulant activity include immune and glandular stimulants. Digestive stimulants are useful for those with sluggish bowel function ad poor circulation in the intestines.	*Allium sativa* (garlic) *Armoracia Rusticana* (horseradish) *Brassica nigra* (mustard) *Capsicum minimum* (cayenne) *Piper nigrum* (black pepper) *Ricinis communis* (castor) *Mentha piperita* (peppermint) *Szygium aromaticum* (clove) *Rosmarinus officinalis* (rosemary) *Zingiber officinalis* (ginger)
Sweet	Herbs containing polysaccharides or saponins. Moistening, neutral, and tonics to build and nourish. Often suitable for long-term use and better synergistically than as simples, Large doses may be overstimulating.	*Astragalus membranaceus* (astragalus) *Codonopsis pilosula* (codonopsis) *Glycyrrhiza glabra* (liquorice) *Panax ginseng* (Korean ginseng)
Tonic	Strengthens and tones a specific organ or the entire body to stimulate a healing response. Bitter tonics improve digestive function and nutritive flow to tissues to function effectively. Tonics can be organ or system specific. Adrenal tonics are herbs which improve the tone and function of the adrenal glands. Venotonics improve function and tone of the venous system. Tonics are often used with an adaptogen.	***Adrenal*** *Rehmannia glutinosa* (rehmannia) *Rhodiola rosea* (rhodiola) *Withania somnifera* (ashwagandha, winter cherry) ***Cardiovascular tonic*** *Crataegus spp.* (hawthorn) *Tilia spp.* (linden) ***Immune tonic*** *Astragalus membranaceus* (astragalus) ***Liver and gall bladder tonic*** *Curcuma longa* (turmeric) *Cynara scolymus* (artichoke) *Silybum marianum* (Carduus marianum, milk thistle) ***Mucus membrane tonic*** *Echinacea spp.* (echinacea) *Filipendula ulmaria* (meadowsweet) ***Venotonic*** *Aesculus hippocastanum* (horse chestnut) *Ruscus aculeatus* (butcher's broom)
Trophorestorative	Help to restore normal function of organs due to its high nutritive qualities.	*Avena sativa* (oat) *Crataegus spp.* (hawthorn)
Vulnerary	Wound healing.	*Aloe barbadensis* (aloe) *Centella asiatica, Hydrocotyl asiatica* (gotu kola, brahmi) *Hamamelis virginiana* (witch hazel) *Plantago* (plantain)

Energetic Classifications

Looking at any dispensary guide or Materia Medica, one will most likely see a section about energetics. Energetics gives us a common language to categorize herbs based on temperature, taste, their constituents, and when looking at organ affinities, how they might affect the body.

The most commonly referenced traditional medicine systems and terminology are explained below briefly to provide context and some level of understanding when looking up and choosing the right herbs for patients and their health conditions.

1. Temperature and Metabolism

Herbs can be described as warm, hot, or warming, which refers to herbs that stimulate metabolism, increase blood flow, and increase energy production. Warming herbs include *Zingiber officinalis* (ginger), *Cinnamonum zeylanicum* (cinnamon), or *Angelica sinensis* (dong quai).

Herbs that are described as cool, cold, cooling slow down metabolism, reduce issues of a hypermetabolic nature, and reduce inflammation and irritation. Cooling herbs include *Mentha piperita* (peppermint), and bitters such as *Matricaria recutita* (German chamomile) and *Leonorus cardiaca* (motherwort).

Herbs that are described as neutral have little impact on the metabolism or our circulation. Neutral herbs include *Ceanothus americanus* (red root), *Avena sativa* (oat), and *Urtica dioica* (nettle).

2. The Six Tissue States

The six tissue states, irritation, constriction, atrophy, depression, relaxation, and stagnation, were defined by the physiomedicalists of the 1900s to assess patients more effectively, better guide their therapeutics, and represent excesses or deficiencies in three physiological factors, metabolic rate, density, and tension.

Metabolic rate describes how fast or slow tissues are functioning and subject to heat or irritation and cold or depression. Density describes the mixture of solids and liquids, or when liquid exceed solids, stagnation, and when solids are not balanced with fluids and there is hardening and drying of tissue, atrophy). Lastly, tension describes tissue tone. Excess tone is considered constriction and lack of tone and atony is considered relaxation or dampness. Irritation and depression represent imbalances in rate of function, constriction and relaxation describe imbalances in tissue tension, and atrophy and relaxation represent changes in tissue density.

1. **Irritation.** Inflammation, redness, sensitivity, restlessness, irritability, hyperactivity, allergy. For this tissue state, we would use herbs that cool and reduce heat and irritation such as *Rosa canina* (rosehip), *Crataegus spp.* (hawthorn), or *Rumex Crispus* (yellow dock).
2. **Constriction.** Spasm and neuromuscular contraction, constriction of blood and lymph, stress, and tension. For this tissue state, we would use antispasmodics such as *Matricaria recutita* (German chamomile), *Mentha piperita* (peppermint), or *Valeria officinalis* (valerian).
3. **Atrophy.** Also known as dryness. Loss of function or trophism and malnourishment, weakness, and deficiency. Tonic herbs or trophorestoratives are used to treat this tissue states, including herbs such as *Panax ginseng* (Korean ginseng), *Cordyceps sinensis* (cordyceps), and *Glycyrrhiza glabra* (liquorice).
4. **Depression.** Also known as cold. Refers to hypofunction, lowered resistance and increased susceptibility to infection, circulatory insufficiency, low blood pressure, retention of toxins in the tissues. Warming herbs are used to treat this tissue state, including *Rosmarinus officinalis* (rosemary), *Thymus vulgaris* (thyme), and *Armoracia rusticana* (horseradish).
5. **Relaxation.** Also known as damp. Refers to involves discharges such as diarrhea, phlegm, weeping ulcers, describes atrophic tissues, lack of tone, edema, and congestion. Astringent herbs such as *Quercus spp.* (oak), *Ribes nigrum* (blackcurrant), and *Hamamelis virginiana* (witch hazel) treat this tissue state.
6. **Stagnation.** Also known as torpor. Inability to break down toxins leading to loss of function especially in the liver, kidneys, and lymph. Alternatives are the main category of herbs that treat this tissue state, including *Trifolium pretense* (red clover), and bitter herbs such as *Hydrastis canadensis* (goldenseal) and *Berberis vulgaris* (barberry).

3. Flavor

The five flavors of herbs referred to for energetic classification are:

1. **Sour:** Constricting and promotes digestion and assimilation.
2. **Sweet:** Warming, soothing, building, and nourishing.
3. **Bitter:** Cooling and detoxifying.
4. **Spicy:** Warming, drying, and dispersing.
5. **Salty:** Cooling and moistening.

4. Ancient Greek Humorism

Hippocrates developed a system of humoral medicine, which aimed to understand how the vital force was manifesting in the way the body fluids circulated and how they linked to the four elements known as earth, water, fire, and air. He believed that disease was due to imbalance in the four humors, blood, black bile, yellow bile, and phlegm. The humors are associated with a season, a body site or seat, and characters.

The humoral concept allows practitioners to understand the basis of how Hippocrates approached illness and the need to address the humoral disturbances or underlying factors contributing to the disease state by choosing herbs based on taste, temperature, and energetics. Galen then took the humoral system further by assigning four degrees, or levels of potency, which English botanist, herbalist, physician, and astrologer Nicholas Culpeper used in Complete Herbal, his book written 350 ago and still referenced by many practicing herbalists today.

The Four Humors

Humor/Fluid	Blood	Black Bile	Yellow Bile	Phlegm
Character	Sanguine	Melancholic	Choleretic	Phlegmatic
Quality	Hot and moist	Cold and dry	Warm and dry	Cold and Moist
Season	Spring	Autumn	Summer	Winter
Taste	Sour and pungent	Sweet	Bitter	Salty
Emotion	Grief	Worry	Anger	Fear and Apprehension
Element	Air	Earth	Fire	Water
Planet	Jupiter	Saturn	Mars	Moon and Venus
Organ	Liver	Spleen	Gall bladder	Brain and lungs
Personality traits	Confident, joyful, sociable, expressive, courageous	Sensitive, creative, irritable, despondent	Passionate, easily angered, bad tempered	Deep thinkers, fair, calm, flexible, unemotional

5. Culpeper's Herbal Classifications

Culpeper used Galenic attributions of temperature and classified herbs using different degrees of hot and cold. Heat and moisture promoted life and vitality and cold and dry promoted disuse and death.

Temperate meant no overall heat or cold, while the qualities of heat, cold, moist, and damp were classified from the first to the fourth degree, with the fourth being the hottest, coldest, moistest, or most astringent.

6. Traditional Chinese Medicine

Traditional Chinese Medicine (TCM) is a whole system of medicine that can be traced back over 3,500 years. All forms of life are animated by Qi, also known as vital force. We breath in Qi from the air, transform food Qi via digestion, and pass it around the body via the meridians. Wind, damp, dryness, heat, and cold can disturb the internal balance of Qi and inhibit or obstruct movement, leading to stagnation, deficiencies, and excesses of Qi, which cause illness.

TCM is supported by the fundamental concepts of Yin-Yang and the Five Elements, concepts that provide the foundation for understanding health, diagnosing illness, and choosing correct herbs.

7. Ayurveda

The Ayurvedic system uses the three doshas, vata, pitta, and kapha, and the five elements, wind, water, fire, earth, and ether. It is the balance of doshas that promotes health and wellbeing. The doshas are the three basic types of energy present in all beings and things. We all have qualities of each, but one or two are dominant. All three doshas should be kept in balance as an excess or deficiency of any dosha will create an imbalance or *tundoskopa*, or disease state. The presence of toxins or *ama* can also create a disease state.

Herbs in Ayurveda are classified according to their taste (rasa), their energetic effect (virya), special properties (prabhava) and post-digestive effect (vipaka), all of which define the herb's dosha.

Organ and System Affinities

Beyond classifying herbs according to their actions and their energetics, the Eclectic herbal medicine tradition offers us an understanding of tropisms of herbs for specific tissues and organs.

Knowledge of organ affinity was originally based on the doctrine of signatures, which is when the plant's features correlate with the organ or system it treats. For example, *Pulmonaria officinalis* (Lungwort) was named due to the leaf resembling a diseased lung, or the colors blue and violet, such as those seen on *Lavandula spp.* (lavender) and *Nymphaea caerulea* (blue lotus), which considered to have an affinity to the nervous system.

Later, organ and system affinities were decided based upon anatomical observation. If a plant is documented to have an affinity for a specific organ or body system, it allows us to then identify the most appropriate plants to use in an individual case, especially considering secondary organs, tissues, or body systems that are affected, improving clinical results.

Examples of Organ and System Affinities

Organ or System	Herb	Action
Brain	*Ginkgo biloba* (ginkgo)	Cerebral circulatory stimulant
Cardiovascular system	*Crataegus spp.* (hawthorn) *Aesculus hippocastanum*	Cardiovascular tonic Venous tonic
Digestive system	*Ulmus fulva* (slippery elm)	Demulcent, anti-ulcerogenic
Gall bladder	*Cynara scolymus*	Cholagogue and choleretic
Liver	*Silybum marianus* (Carduus marianus, milk thistle)	Hepatoprotective
Lymphatic system	*Galium aparine* (cleaves) *Phytolacca decandra* (poke root)	Lymphatic Lymphatic decongestant
Mucus membranes	*Hydrastis canadensis* (golden seal) *Myrica cerifera* (bayberry)	Tonic Astringent
Respiratory system	*Asclepias tuberosa* (pleurisy root) *Inula helenium* (elecampane)	Expectorant Pulmonary tonic
Skin	*Arctium lappa* (burdock) *Scrophularia nodosa* (figwort)	Depurative (alterative) Eliminative
Urinary system	*Arctostaphylos uva-ursi* (bearberry) *Eupatorium purpureum* *Zea mays* (cornsilk)	Antimicrobial and diuretic Antilithic Demulcent
Uterus	*Capsella bursa-pastoris* (shepherd's purse) *Rubus idaeus* (raspberry) *Viburnum prunifolium* (black haw)	Antihemorrhagic Tonic Sedative

Phytochemical Constituents

Phytochemical constituents are bioactive compounds found in plants which give the plant its therapeutic actions, and in understanding these constituents and how they may affect the body, practitioners gain a much more comprehensive of a plant's actions, as well as possible interactions with other herbs, supplements, and medications.

Biosynthetic pathways in plants are responsible for the creation of primary and secondary metabolites. Primary metabolites include amino acids, fatty acids, sugars, polymers, and nucleotides. These are compounds which play a crucial role in the survival of an organism as they are responsible for essential functions and primary life processes.

Secondary metabolites are derived from primary metabolites, using different metabolic pathways, with the most common being:

- **Shikimic acid pathway:** Producing phenols, tannins, aromatic alkaloids
- **Mevalonic acid pathway:** Producing terpenes, steroids and alkaloids
- **Acetate-malonate pathway:** Producing phenols and alkaloids
- **Pentose pathway:** Producing glycosides and polysaccharides

Common Phytochemical Constituents and Therapeutic Benefits

Phytochemical Constituent	Example	Therapeutic Benefit	Herb Examples – Latin Names (Common Names)
Alkaloids	Berberine *isoquinolone alkaloid*	Antimicrobial Bitter Digestive stimulant	*Berberis vulgaris* (barberry)
	Theobromine *purine alkaloid*	Antioxidant Bitter Stimulant	*Theobroma cacao* (cacao)
Amino acids	L-Dopa	Dopaminergic	*Mucuna pruriens* (velvet bean, cowage)
Fatty acids	Lipids *Gamma linoleic acid*	Regulation of cholesterol metabolism and metabolic processes	*Borago officinalis* (borage) *Oenothera biennis* (evening primrose) *Ribes nigrum* (blackcurrant seed)
Phenols	Salicylic acid	Anti-inflammatory Antimicrobial	*Salix alba* (willow) *Filipendula ulmaria* (meadowsweet)
	Stilbenes		*Vitis venifera* (grape)
	Coumarins *glycosides*	Antiedematous Anti-inflammatory Blood thinning Vascular tonic	*Aesculus hippocastanum* (horse chestnut) *Agrimonia eupatoria* (agrimony) *Apium graveolens* (celery)
	Anthraquinones *glycosides*	Laxative	*Rumex crispus* (yellow dock)
	Tannins *glycosides*	Anti-inflammatory Antioxidant Astringent	*Phyllanthus emblica* (amla) *Schisandra chinensis* (schisandra)
	Flavonols *Quercetin* Flavones *Apigenin* Flavonolignans *silymarin* Anthocyanins Isoflavones *genistein*	Anti-inflammatory Antioxidant	*Silybum marianum, Carduus marianus* (milk thistle) *Sambucus nigra* (elder berry) *Trifolium pratense* (red clover)
Polysaccharides	Beta-glucans	Immunomodulatory Anti-inflammatory	*Avena sativa* (oat)
	Mucilage	Anti-inflammatory Heals mucosal lining Soothes	*Filipendula ulmaria* (meadowsweet) *Plantago major* (plantain)
Terpenes	Monoterpenes, Sesquiterpenes *Volatile oils*	Steroidal structure Immunomodulatory Anti-inflammatory	*Panax ginseng* (Korean ginseng) *Glycyrrhiza glabra* (liquorice)
	Phytosterols *Beta-sitosterol*	Regulate cholesterol, binds to prostate	*Prunus africana* (pygeum africanum) *Serenoa repens* (saw palmetto)
	Saponins *Steroidal saponins*	Adaptogens Hormone-modulating	*Glycyrrhiza glabra* (liquorice) *Panax ginseng* (Korean ginseng) *Tribulus terrestris* (Tribulus)

Navigating a Materia Medica

When using a Materia Medica, the reader may find information about nomenclature, including the common names used for the plant and its Latin name, indicating its taxonomic classification.

The Materia Medica a practitioner chooses may also give information about the plant's habitat, harvest information, and the parts used medicinally. The text will usually contain a list of the main phytochemical constituents present in that plant. This will help the reader understand the benefits of this plant, what parts will be most effective for the condition or conditions the reader hopes to treat, and what form and dose it would be best to use to maximize extraction of key phytochemicals. The energetics information will help the reader ascertain if the herb is the most appropriate fit for the patient's constitution and the disease state.

The section on plant actions and energetics which will help to guide the practitioner to choose the right herbs more accurately for the patient's constitution and health complaints. Some Materia Medica also provide a list of organ affinities and conditions where that plant might be useful.

Herbal Preparations and Prescribing

To prescribe effectively, it's important to choose the most appropriate formulation based on the patient's biochemical individuality and energetics, preferences, and motivations. From an herbal perspective, select formulations based on what the treatment priorities are and what the best type of preparation will be for the patient and their treatment.

Choosing the Right Formulation

When choosing the most appropriate formulation, consider several points, including the patient's age, preference, individual variability, tolerances and sensitivities, acute or chronic conditions, medications and supplements, energetics, and likelihood of compliance.

Patient age

Although tinctures can be used with children in small doses, consider palatability and compliance.

Patient preference

It's advisable to ask the patient if they have restrictions around using alcohol-based tinctures. Tinctures should be avoided where there is an history of alcoholism, and if there are religious restrictions. It is easy to reduce the alcohol content by adding tincture to hot water and allowing the alcohol to evaporate.

Individual variability

Practitioners must not only consider individual variation in pharmacokinetics and pharmacodynamics, but also the intestinal microbiota, which play a role in mediating and potentially enhancing activity of plant medicine compounds. If the patient's digestion or liver function isn't optimal, practitioners should enhance their formula or herbal prescription with herbs that support detoxification function.

Differences in patient tolerance and sensitivity

Some patients experience strong effects at subtherapeutic doses, and others require extremely large doses to experience a positive benefit. Age, weight, build, and health history are some of the factors that may have an impact.

Speed of desired effect

Tinctures are the most effective route of administration for speed of achieving desired outcome, and as such are often preferred for acute conditions. Infusions and decoctions are faster than powders and capsules, which tend to work better for chronic conditions where the desired shift is slower, or the patient is more reactive, and the practitioner needs to start with a small dose and gradually increase.

Bioavailability of phytoconstituents in form used

Different phytoconstituents are better extracted in alcohol than in water. If a patient has cystitis, a cold infusion would be the preferred formulation, as the mucilaginous components are better extracted in water than alcohol.

Herbs must work directly on the affected area versus systemically

For example, a pain formula for a shoulder injury. A topical balm or oil would work well directly on the affected area. If the patient also wanted to work systemically on immune function and modulating the inflammatory response, the practitioner might also want to make a tincture to work synergistically alongside the topical product.

Medications, supplements, or other herbs

Consider the most appropriate formulation and how to time it effectively around medications, supplements, and other herbal products where there may be risk of potential interactions with medications, supplements or other herbs.

Energetics considerations

For example, different topical preparations would be used for red, inflamed, and cracking eczema over weeping and dry eczema.

Compliance and dosing frequency

How committed is the patient to their protocol? Will they do what it takes, even if it means taking something unpalatable? Are they good at following routine? Will work and travel commitments impede their ability to take their herbal medicine prescription and, if so, how can the practitioner mitigate that?

Different Types of Herbal Products

Herbs come in many different dispensing forms or preparations and it's important to understand the differences and terminology. These are the most common forms that practitioners may come across.

Aromatic Waters

Aromatic waters are also known as hydrosols or hydrolats. Aromatic waters are non-alcoholic, are produced through a prolonged water distillation process, and contain essential oils dispersed throughout the liquid, water-soluble volatile components. The essential oils are dispersed through the aromatic water at low concentration, giving each aromatic water its individual smell. The dispersed oil contains a higher ratio of gentle-acting hydrophilic components like alcohols and a lower concentration of harsher, hydrophobic components such as ketones, which end up floating.

Aromatic waters are commonly used topically for skin conditions. They are a safe and effective method of delivery for prescribing the both water and fat-soluble volatile compounds within a plant, particularly for children. They can be drunk, or added to skincare products, and are best stored in a cool, dark place. Commonly used aromatic waters include *Rosa spp.* (rose), *Citrus aurantium* (neroli), *Calendula officinalis* (marigold), and *Lavandula spp.* (lavender).

Decoction

Decoctions are prepared by simmering herbs for 10-15 minutes. They are generally good for restorative or tonic medicines and are primarily used for woodier and tougher parts of plants from which the phytoconstituents need to be extracted more efficiently. Common herbs used for decoction are *Glycyrrhiza glabra* (liquorice) and *Althaea officinalis* (marshmallow) root. The prolonged boiling of a decoction breaks down mucilage and other polysaccharides for better absorption, but it also causes a loss of volatile constituents.

Electuary

An electuary is an herbal powder mixed with honey or another sweet substance. It's preferable to use a local honey for local pollen exposure. This usually reduces the severity of seasonal allergy symptoms, or manuka honey for its antimicrobial properties. Electuaries are a great method of delivery for immune herbs such as *Sambucus nigra* (elderberry) and *Echinacea spp.* (echinacea) and are particularly palatable for children. Electuaries have a long shelf life.

Glycerite

A glycerite is made by soaking herbs in glycerine and distilled water, and macerating for four to six weeks. Glycerine does not easily extract phytoconstituents from dried plants, so glycerites are best made with fresh plants.

Glycerites are sweet, palatable, non-alcoholic, and are often used for children's medicine and for people who are sensitive to alcohol. The disadvantages of glycerites are that they are not as strong as tinctures, have a shorter shelf life, and need to be stored in the refrigerator. A favorite recipe for glycerite is a digestive formula for children, including *Foeniculum vulgare* (fennel), *Zingiber officinalis* (ginger), *Ellataria cardamomum* (cardamom), *Cinnamonum zeylanicum* (cinnamon).

Herbal Baths

Herbal baths are used for transdermal application and direct action of herbs. Herbal baths are particularly good for skin conditions and inflammation. Sitz baths are used to stimulate blood and lymph flow to the pelvic region. Examples include *Avena sativa* (oat) baths for eczema or herbs such as *Symphytum officinalis* (comfrey), *Calendula officinalis* (marigold) and *Lavandula spp.* (lavender), which are useful combined with sea salt for a post-partum repair sitz bath.

Herbal Compresses

An herbal compress is a combination of herbs tightly bound in muslin cloth and steamed before being applied topically. Herbal compresses provide topical relief for pain, muscle aches, inflammation. *Euphrasia officinalis* (eyebright) is commonly used as compresses for dealing with eye sties.

Herbal Infusion

Herbal infusions are also known as tisanes or teas and are made by pouring boiled water over dry or fresh plant matter for ten to fifteen minutes. Infusions are best made using delicate plant parts, flowers, leaves, and fruit where the phytoconstituents are present and easily extracted.

Herbal infusions fit easily into a routine and can easily become a part of a patient's lifestyle as they see this as a drink, rather than a medicine. Infusions are easy to prepare and relatively inexpensive.

Some herbs become safe to take internally when extracted in water rather than alcohol for tincture. Infusions are the best choice for children, pregnant patients, individuals with gastric irritation, or patients who cannot have alcohol.

Water is an efficient solvent, and is particularly efficient for gums, mucilage, and other carbohydrates, glycosides including saponins, anthraquinone glycosides, tannins, and flavonoid glycosides, and some other alkaloids in salt form. Hot water is a good enough solvent for volatile oils at the concentration found in many commonly used herbs, such as *Origanum vulgare* (oregano), *Rosmarinus officinalis* (rosemary), and *Mentha piperita* (peppermint). Infusions do not preserve constituents, and heat could potentially destroy some constituents present in herbs.

An infusion is the best choice for mucosal irritation to reach the area quickly as demulcents extract well in water. Practitioners may advise patients to take cold infusions for urinary tract infections as the mucilage from herbs such as *Zea mays* (cornsilk) extracts more effectively in cold water. To make an infusion, it is best to cover the cup or pot with a lid so that the volatile oils are not all lost.

Herbal Juice

This is a fresh extraction of a plant, rich in vitamins and minerals but must be drunk quickly to avoid nutrient deterioration. Fresh juices to recommend patients make at home are *Zingiber officinalis* (ginger) or *Galium aparine* (cleavers).

Herbal Powder

Herbal powders can either be made from dried herbs, milled into fine powder, or by soaking dried herb in a solvent that is later evaporated to create extracts. Herbal extracts are often made to standardized extracts to achieve a level of potency and consistency. Whole dried herbs provide total constituents presented in pure, whole form to the gastrointestinal tract, rather than constituents that dissolve in alcohol or water.

Roots, mucilage-containing herbs, adaptogens, and medicinal mushrooms are best taken as powders, as well as herbal prescriptions designed for chronic problem and prevention strategies. Powders are easy to assimilate, as they can be swallowed directly with liquid off the spoon or added to a drink or food. Powders may have reduced shelf life if they are exposed to heat repeatedly, and efficacy of the prescription is subject to the patient compliance due to taste, as well as digestive capacity of the patient. Practitioners may recommend adaptogen herbal blends for patients, including herbs such as *Polygonum multiflorum* (Ho shu wu) to support hair growth, or *Astragalus membrenaceus* (astragalus) as an immune tonic, particularly as these can be added to smoothies or mixed with hot drinks.

Herbal Syrup

This is made like a glycerite but using sugar syrup instead. It goes off very quickly if no alcohol is used to preserve it, but is palatable to children. A traditional syrup blend used as a bronchial tonic made of *Glycyrrhiza glabra* (liquorice), and *Thymus vulgaris* (thyme).

Infused Honey

Herbs are soaked in honey for two weeks minimum to extract constituents. Herbal honeys are palatable for children, and beneficial for coughs and other respiratory symptoms. Examples include *Salvia officinalis* (sage) or *Thymus vulgaris* (thyme) for irritating dry coughs. If practitioners make their own herbal infused honey, be aware that using fresh herbs will add water, shorten the shelf life, and the product will require refrigeration.

Macerated or Infused Oil

To make a macerated or infused oil, herbs are soaked in a carrier oil such as olive oil, almond, or sesame oil to extract the herb's therapeutic properties. These macerated oils can mix easily into base cream or can be used directly on the skin or depending on the herbs, ingested either on food or on a spoon.

The advantages of creating a macerated oil is that the carrier oil can be adjusted for the patient based on their energetics. Macerated oils are easy to use and are warming, so they are great for cold and dry conditions, however they retain heat so many aggravate some skin conditions. Consider making a blend of macerated oils including *Boswellia serrata* (frankincense), *Capsicum minimum* (cayenne), and *Arnica montana* (arnica) for joint inflammation and pain. For nerve pain, *Hypericum perforatum* (St. John's Wort) is a great addition.

Oxymel

Oxymels are herbal extractions in vinegar and honey. Oxymels mask the taste of strong herbs and as the honey and vinegar have preservative qualities, are unlikely to go off. Oxymels are easy to make at home. A good example that practitioners can give to patients is a recipe for Fire Cider to make at home, so they can have a tablespoon a day during winter months for immune support as a general immune tonic. My recipe includes fresh *Allium sativum* (garlic), *Allium cepa* (onion), *Armoracia rusticiana* (horseradish), *Zingiber officinalis* (ginger), *Curcuma longa* (turmeric), and dry *Cinnamonum zeylanicum* (cinnamon), *Rosemarinus officinalis* (rosemary), *Thymus vulgaris* (thyme), *Echinacea spp.* (echinacea), *Illicium verum* (star anise), *Rosa canina* (rosehips), and *Coriandrum sativum* (coriander). Oxymels and vinegar extracts are not as strong as alcohol extractions.

Poultice

Poultices are made by finely chopping wet plant material, either bruised, fresh herbs or rehydrated dry herbs, which are then made into a paste with water and wrapped in a cloth bandage. The bandage can be used topically, and held in place over bits, stings, burns, rashes, sprains, boils, and inflamed areas. My favorite herbs to use in poultices with patient include *Plantago major* (plantain) for insect bites, or *Brassica oleracea* (cabbage) for mastitis. Poultices work directly on the affected area but are messy and, as a result, patient compliance can be poor.

Salve

Salves are made by infusing herbal oil in a solid fat such as beeswax, shea butter, or coconut oil to use topically. The thick consistency helps to keep the herbs on the skin longer and penetrate deeper. Salves may deteriorate unless they are kept refrigerated and a preservative is used. I often make salves for patients to use for oral herpes outbreaks including *Hypericum perforatum* (St. John's Wort) as it is an anti-viral and effective against nerve pain, alongside *Melissa officinalis* (lemon balm) for its specific action against the herpes virus.

Standardized Extracts

Standardized extracts are manufactured to contain consistent level of one or more plant constituents, with the desired compound being at much higher levels than found in the plant. Using a standardized extract helps to achieve consistent results, but there is a risk that synergistic compounds found in a whole plant product will be lost, and there is an increased risk of side-effects than with a whole plant product due to higher than normal levels of specific compound. Popular standardized extracts include standardized silymarin extracts from *Carduus marianus* (milk thistle) and standardized curcuminoids *from Curcuma longa* (turmeric).

Steam Inhalation

Steam inhalations involve either placing hot water and herbs or essential oils in a bowl, placing a towel over one's head, and inhaling the steam, or using a nebulizer. This allows for direct action on the mucosa for aromatic herb constituents, promotes blood flow to the skin, but could potentially cause mucosal irritation. Popular herbs for steam inhalation include *Lavandula spp.* (lavender), *Eucalyptus globulus* (eucalyptus), and *Origanum vulgare* (oregano).

Suppositories and Pessaries

These can be made with cocoa butter or coconut oil and plant extracts with powdered herbs, infused oils, and essential oils. This is an excellent delivery method for resinous herbs not easily extracted in water, and herbs are delivered straight to the area that requires support. Suppositories and pessaries are messy and require refrigeration Commonly used herbs for suppositories include *Ranunculus ficaria* (pilewort) and for pessaries, *Melaleuca alternifolia* (tea tree) and *Olea europea* (olive leaf).

Tinctures and Extracts

These are plant extracts made from soaking herbs in an alcohol water blend. Tinctures are made by a process known as maceration, the process of submerging and steeping herbal material in solvent liquid at room temperature over a prescribed period. A tincture bottle will be marked with a strength and alcohol content. For example, 25 percent means 250 milliliters alcohol and 750 milliliters water. The herb to menstruum ratio is written to indicate the concentration of tincture expressed as a weight to volume ratio. This gives an indication of the theoretical strength of the extract.

Active constituents give an indication of most suitable menstruum as this will maximize extraction of some constituents at the expense of others. For example, extraction of resins and volatile oils in herbs is effective at a higher ratio of alcohol to water (90 percent), but at the expense of mucilages and saponins, which are better extracted at a 25 percent ratio of alcohol to water. A fluid extract is a strong tincture written as one-to-one herb to menstruum ratio, indicates a kilo of herb per liter of substrate.

There are many benefits to using tinctures. Alcohol stabilizes and preserves many constituents, makes it bacteriostatic, and increases the shelf-life of the herbal product. Alcohol breaks down plant cells to release contents and most constituents are efficiently extracted with minimal processing. Tincture is the better choice for tonics, carminatives, circulatory stimulants where warming and energizing preparations are appropriate.

Tinctures work fast and treat acute problems much quicker than powders. Fluid extracts are stronger so you may need a lower dose than a tincture. Tinctures are concentrated depending on strength of finished product. However, the alcohol content adds a heating action to the tincture, and the alcohol content may be unsuitable for patients due to health, sensitivity, religion, pregnancy, severe liver damage, or age. Hot water can be added to evaporate alcohol if necessary.

Vinegar Extract

This is a plant extract made from soaking herbs in vinegar. It is usually macerated for 30 days before it is ready for use. Vinegar extracts absorb rapidly, like tinctures, although are not as efficient as alcohol at drawing out constituents. They have a broad range of use, such as for cooking or drunk diluted in water. *Sambucus nigra flos* (elderflower) can be picked fresh and extracted in vinegar

Volatile Oil

Also known as essential oil, this is a concentrated hydrophobic liquid containing volatile aromatic compounds extracted by steam distillation. Volatile oils are strong in smell and action and are suitable for use in topical herbal preparations, although they should not be used directly on the skin without a carrier oil as they may cause irritation. Many essential oils contain toxic compounds and must not be ingested internally without proper supervision, and many essential oils are toxic to animals. Potential adverse effects from use include asthma attacks and headaches.

Patient Compliance

Poor patient compliance is one of the principle reasons why a therapy might not work effectively. A patient's ability to adhere to correct implementation of the correct dose, taken at the right time for the prescribed duration.

Factors which might influence compliance are the patient's understanding of the benefits of herbal medicine and how this will help them to achieve their outcomes, familial support, budget, confidence, motivation, and how well a patient is able to cope with situations involving change, such as stressful situations, holidays, or acute illnesses.

Before prescribing herbal products, make sure that you ask the patient about their goals, their potential lifestyle constraints, and how committed they are to achieve their health outcomes. Ask the patient about potential work and travel commitments which might interfere with their ability to follow a regular schedule, and ensure that the most appropriate form of herbal medicine is used. For example, a patient working in an office or at home will find it easy to implement herbal infusions into their daily routine, but this might not be so easy for a patient who travels regularly and is staying in hotels, and they might do better with capsules or a small, portable bottle of a tincture blend.

Building an Herbal Prescription

There are numerous publications that provide suggestions for ready-made tincture formulations, and although these are useful to provide guidance on how to build an herbal formulation, one condition can have many underlying causes or different presentations, particularly as every person has their own unique underlying health history.

It is not possible to provide an encyclopedic knowledge of herbs and provide instructions on how to combine them within in the scope of this publication, but there are numerous Materia Medica and herb formularies available that can help you to build the right prescriptions for your patients.

The best place to start is with acute conditions that require short-term relief as you build your confidence before looking at providing support for more complex or chronic underlying issues.

Herbs are not a magic bullet. They work best in conjunction with a foundational nutritional plan and lifestyle strategies to support optimal health. The terrain is key and understanding the adaptive response of the individual.

If dealing with a pathogenic infection, it is important not just to consider what herbs might act against a pathogen, but more importantly what herbs can support the body in creating an environment that is less favorable to the pathogen. As such, the emunctories or detoxification pathways play a key role and supporting detoxification pathways and stabilizing immune response is crucial before attempting to aggressively eliminate pathogens.

Primary Methods of Herbal Diagnosis

During the consultation, take a comprehensive and relevant case history and ask the patient about their symptoms. Observe the patient's behavior, manner, physical appearance, and tone of voice. I perform clinical diagnostics where relevant, including cardiac auscultation, tongue and pulse diagnosis, and a nutrition-focused physical examination to assess potential deficiencies or toxicities.

Building a Formula

Herbs should be chosen based on actions of herbs, energetics, tissue or organ affinity, and the patient's underlying health concerns. A formula requires herbs which fall into the following categories:

Foundational Herbs	Emunctory or Detoxification Pathway	Supportive Herbs	Synergistic Herbs	Symptomatic Relief
These are often restorative, adaptogenic, nutritive, and ideally tissue-specific or have an affinity to specific organs.	Support to minimize the risk of sensitivity or Herxheimer reactions.	Supportive herbs for underlying health issues.	Synergistic herbs which address the energetics of the person and the condition, which work well with the foundational herbs in the formula to balance or drive it to the tissues.	Symptomatic relief if relevant.

Once a practitioners selects the appropriate herbs, consider what proportion of each herb should be in the formula, and what a good starting dose will be for the blend based on dosage guidelines in the chosen Materia Medica or formulary.

Points to Consider when Choosing Herbal Combinations

When selecting an herbal formula or herbal combination, consider the following questions:

- **What is the patient's age? What is their life stage?**
- **What is their underlying heath history?**
- **Ask them to describe their condition. Are they noticing a feeling of heat, cold, is there pain? Is it sharp, or dull?**
- **What have you observed from the patient regarding energetics?**
- **How do their symptoms present?**
- **Is the formulation primarily addressing acute or chronic health concerns?**
- **What is the duration of this issue? How has it developed over time and has it changed since it initially manifested?**
- **Does anything improve or worsen their condition? Does it worsen at a particular point in the day, or month?**
- **How severe is their health concern? Is it interfering with sleep, exercise or work?**
- **Does this health condition affect their confidence?**
- **Is this a recurrent pathology?**
- **Are there any underlying emotional factors or stressors, or significant life events happening concurrently, or which may be influencing the presenting health concern?**
- **Does the patient have a preference for type of formulation?**
- **Is the patient on any medications, supplements or other herbal formulations which may interfere with your proposed treatment?**
- **Assess the patient's natural tolerance - are they normally very sensitive?**
- **Consider individual variability – how is their digestion and liver function?**
- **Have they been exposed to toxins or do they have other immune challenges?**
- **Are you going to use a simple herbal preparation (one herb only) or a blend?**
- **In what type of formulation are the most important phytochemicals more readily available?**
- **Is it preferable to use herbs systemically or will the herbs work better when used directly on the affected area?**
- **How fast does the herbal prescription need to work?**
- **How frequently should it be administered? Can this work around lifestyle constraints?**
- **Do any interactions with supplements, foods, other herbs or medications need to be considered?**
- **Consider possible challenges with patient compliance with frequency of dosing and taste.**
- **Are they using social toxins such as alcohol, cigarettes, or recreational drugs?**
- **How is their diet?**
- **Consider the patient's commitment to getting better.**

It is important to gather detailed information so the practitioner can be respectful of the patient's preferences and sensitivities, work safely, and ensure they are using the right herbs, in the correct forms, to help the patient achieve their health goals.

Dosing and Duration of Use

The most important aspects to consider are the patient's age, weight, and sensitivity. Are you aware of any allergies or adverse reactions that the patient has had against any foods or plants, and if so, make sure you are potential herbs to avoid in case of sensitivity to a plant family? This is common with the ragweed and daisy families. It's important to explain to patients that they need to start with herbs slowly, but be specific around how to incrementally increase the dose until they get to their full dose. Explain that they might notice some initial changes in energy or symptoms, but warn them to discontinue if they feel any significant adverse side effects at any point.

If a patient is on medications or supplements, the timing of their herbal dosages needs to be considered in order to avoid potential interactions. If the patient has assimilation issues, consider what form would be best to use.

Factors which affect dosage including ascertaining whether you are using an herb for nutritional or tonic purposes on an ongoing basis, rather than medicinal purposes which tend to have a shorter duration. If the herbal medicine is being used for an acute situation, the dosing will be smaller and more frequent.

The patient needs to be made aware of the need to use herbs in their recommended dosages and for the recommended duration in order to achieve results, and fully resolve infection. If the herbs being used are stimulating or energizing and might affect sleep, ensure you write on the label when the last dose needs to be taken by.

In my practice, I primarily use powders, tinctures, and infusions or decoctions. I have listed my own dosing practices below:

Dosing Powders

For powders, I usually recommend 1-2 teaspoons daily in plant milk for chronic conditions, as the extracts are usually better absorbed with fat. This is based on a whole herb powder. If I am using a powder extract, I use a smaller amount as the phytoconstituents will be at higher levels and the product more concentrated.

Dosing Tinctures

For tinctures, I have always found the simplest way to dose a patient is on a basis of 1 teaspoon three times a day, or 2 teaspoons twice a day. For acute conditions, I often dose 1 or 2 teaspoons between 6-8 times a day. For sleep formulas, depending on whether I am including restricted herbs, I may recommend 1 to 4 teaspoons at night. My dosing schedule is based on a formula containing primarily fluid extracts, and herbs made on a 1:2 or 1:3 herb-to-menstruum ratio.

I always recommend starting with a drop dose of ¼ teaspoon daily or a dropper if I am dispensing in a dropper bottle, and gradually increasing the dose to monitor for any reactions. This is particularly important for sensitive patients.

Depending on the herb to menstruum ratio, your herb supplier in many cases should be able to advise you on the suggested weekly dose range for the herbs you want to include in a blend, otherwise you can check your Materia Medica.

Dosing Infusions and Decoctions

I usually recommend 1-2 tablespoons of crude herb per pot or 1-2 teabags taken three times a day for a medicinal dose. As fresh plants contain a higher water content, 3 tablespoons of fresh herb can be substituted for 1 tablespoon of dried herb.

Dosing for Children

In the Principles and Practice of Phytotherapy: Modern Herbal Medicine, author Kerry Bone recommends using Fried's Rule to establish the dose for children under 2 years old. This is calculated as follows:

(age in months/150) x adult dose = child dose)

For children over 2 years old, the Salisbury Rule is used to provide the child's dose as a percentage of the adult dose and is calculated as follows:

weight in kilograms x 2 if the child's weight is less than 30 kilograms

or

weight in kilograms + 30 if the child's weight is over 30 kilograms.

Labeling the Bottle and Maintaining Clinical Records

Ensuring correct labeling of an herbal product is crucial for safety and to adhere to applicable state and federal law, as well as recording this information for the clinic, to ensure correct records and kept.

Personalized herb blends should always include a description of the product, the name of the patient, the date, a full ingredient list in Latin, the amount dispensed and compounded, the duration of the prescription, dosage instructions, storage instructions, and warnings to keep out of reach of children or if there any potential medication interactions relevant to the patient. If the formula contains alcohol, ensure the patient is aware of the percentage.

It is advisable to include additional documentation on potential allergens, for example, plants in the *Apiaceae* family, which includes carrots, celery, and fennel, as well as potential side-effects which might occur. The practitioner or clinic's contact details should also be included.

Dosing instructions should be very clear, such as with food or away from food, and to not exceed dosage recommendations on the label. If there are any specific instructions around dosage timetable, they should also be included, for example, a blend containing energizing or stimulating herbs might not be dosed at night, or a sleep mix will not want to be used during the day.

Preparation and Storage of Herbal Products and Materials

If practitioners are not keeping herbal materials onsite, they can use a dispensary to formulate products for them, otherwise they can follow the preparation and storage guidelines below.

How herbs are stored very much depends on their susceptibility to factors which encourage microbial growth such as warmth, moisture, pH (Potential of Hydrogen), and oxygen exposure and levels. This will dictate how herbal materials are stored.

Once practitioners have chosen the type of formulation is most appropriate for the patient's needs, and chosen the herbs for their formulation, they can either dispense these themselves, or send these to a dispensary, provided they accept the practitioner's qualifications to do so.

The **American Herbal Products Association** has outlined best practice for compounding and dispensing herbal products, involving guidance around hygiene and avoidance of contamination, facilities and equipment, quality standards for ingredients, and requirements for labeling, packaging, storage, and maintaining records. The organization also provides recommendations for complaint and recall procedures.

Correct Labeling in the Dispensary

A labeling protocol should be established to ensure uniformity of information provided to the patient and recorded by the practitioner to ensure full records are kept for compounding and dispensing practices. Ensure the label is correctly filled in. The information on the label needs to include the following:

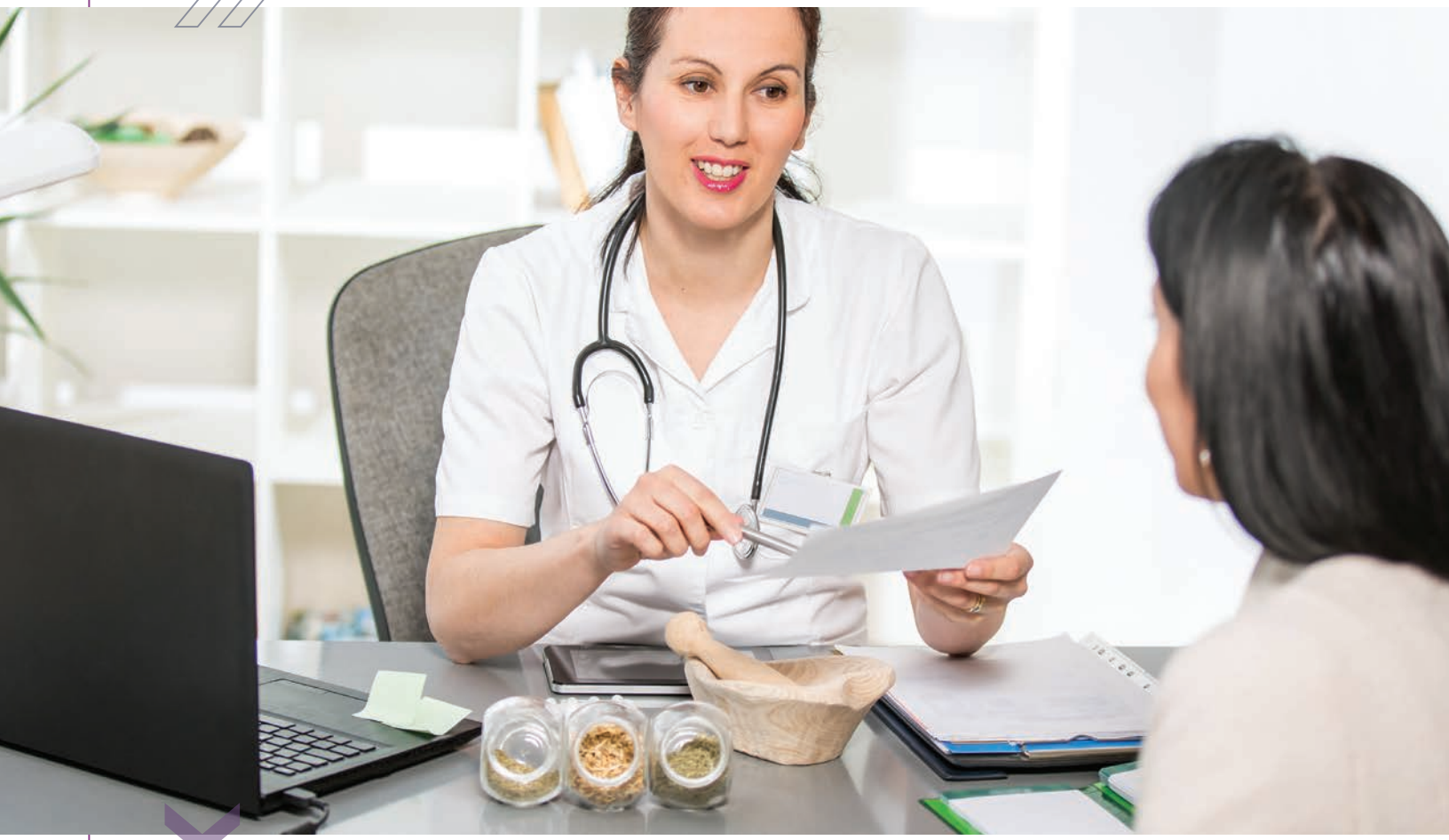
- **Name of plant, ingredient list in descending order of predominance, or statement of identity**
- **Weight or quantity of contents**
- **Type of preparation**
- **Date of preparation**
- **Directions of use**
- **Safety instructions**
- **Storage instructions**

Shelf Lives of Herbal Products

A manufacturing date or best-before date should be provided on the container of purchased products.

Herbal Product	Storage Instructions	Shelf Life
Dry herbs	Store in airtight containers. Dark glass is preferable, or clear glass in a cool dark place.	6 months
Alcohol-based tincture	Store in glass or plastic bottles in a cool dark place. Chemicals in tinctures may cause changes over time if shelf life is extended beyond recommended duration and change consistency or quality of tincture.	3 years once opened
Glycerin-based tincture	Store in glass bottles in a cool dark place.	6 months
Capsules or tablets	Store in an airtight container or moisture may cause changes.	3-6 months of opening. Within 1 year of manufacture.
Salves and oils	Store in the refrigerator in a tightly sealed container.	6 months-1 year.

Safety Considerations



For practitioners, it is extremely important to consider educating patients around the potential for experiencing side-effects and adverse reactions, and understand the risk of allergic or sensitivity reactions, potential interactions with medications, and the importance of having a procedure in place for the reporting of serious adverse events.

Understanding Potential Side Effects, Adverse Reactions, and Interactions

As the use of natural products increases, especially alongside medications, it is important for practitioners in all areas to be informed as to the importance of educating their patients around the possibility of potential harmful interactions. Always ask the patient if they are taking any sort of natural remedies alongside their current medication, nutraceutical and herbal protocols. People often pick up products from their local health store or pharmacy and see no harm in self-herbing.

There is a misconception that because plants are natural, they are safe. However, many herbs may demonstrate pharmacological effects, and many plants contain compounds that may cause toxic reactions when taken in excessive quantities. However, there are significant differences with the actions of an intact plant versus what sort of effect an isolated plant compound or concentrated extract will have.

In addition, animal studies may use exaggerated doses to produce a more significant observable or measurable effect, and as such, advice based on clinical studies may not correlate with effects that become only theoretical with regards real ingestion or human consumption, particularly given bioavailability of the herbal product and individual variability of pharmacokinetics and pharmacotherapeutics.

However, we err on the side of caution and we use research data to make clinical decisions around contraindications and interactions that may occur. Check the data and consider the herbal preparation and the constituents that are extracted more easily in that preparation, such as potentially toxic alkaloids being more easily extracted in alcohol. Powders will take longer to be metabolized than liquid extracts, and some plants contain tannins or fibers, which may interfere with absorption of medications when taken in their whole plant or powdered form.

To add to the confusion, a small dose of an herb, or an herb taken for a short duration that is considered contraindicated, may be acceptable when the patient is under the care of a trained herbal practitioner who is able to make appropriate clinical judgement.

There has been a push for more stringent regulation and clearer product classification to ensure safety and quality of herbal medicines, and a need for a more defined structure to allow for monitoring of adverse reactions and ensuring adequate education around the risks associated with use of these products.

Risk of Allergic and Hypersensitivity Reactions to Herbs

Practitioners should ensure they are aware of any allergies the patient may have experienced historically. If they have an allergy to a plant family, consider avoiding the use of herbs within that plant family. The most common allergies and reactions are to birch *(Betulaceae),* rose *(Rosacea),* celery *(Apiaceae),* legume *(Fabeaceae),* daisy *(Asteraceae),* and latex in plants (multiple plant families).

Some people experience hypersensitive reactions to plants, due to liver enzyme activity, nervous system response, immune response or histamine response or immune regulation issues, and dysbiosis and systemic or intestinal inflammation. Some herbs may cause abdominal discomfort and symptoms such as nausea and diarrhea. To counteract these, advise patients introduce herbal products at a small dose and slowly. If an adverse reaction does occur, ask the patient to discontinue their herbs.

Risk of Drug Interactions

Consider the likelihood that herbs may be metabolized by the same pathways as medications and as such, may inhibit or enhance absorption of medications. The most common example of this is St. John's Wort *(Hypericum perforatum).* Grapefruit juice contains bergamottin which inactivates the liver enzyme Cytochrome P450 3A4, which means that the effects of many prescription drugs and herbs can be potentiated and reach toxic levels. Herbs containing large amounts of mucilage or fiber may also inhibit absorption of medications.

If a patient is on a medication with a narrow therapeutic index, such as anticoagulants, cardiac glycosides, and antiepileptics, refer to a trained and qualified herbalist who can support you in using herbs safely as doses of herbs must be adjusted and timed safely.

If a patient is on blood pressure medication, liquorice *(Glycyrrhiza glabra)* may increase blood pressure readings. I have seen this clinically even with herbal teas. Check ingredients of shop-bought tea blends and advise patients accordingly.

There are also herbs which may interfere with monoamine oxidase inhibitors (MAOIs) and selective serotonin reuptake inhibitors (SSRIs). Consult the literature and refer to a qualified herbal professional.

Examples of Drug Classes

- Antidepressants
- Blood pressure medications
- Blood thinners
- Cardiac glycosides
- Diuretics
- Hypoglycemic medications
- Laxatives
- Thyroid function modifying medications
- Tranquilizers

Examples of Contraindications for Specific Phytochemicals

- Avoid bulk laxatives where there is chronic malnutrition.
- Avoid saponins with malabsorption issues and in upper digestive irritations.
- Avoid tannins in constipation, with malnutrition, or iron deficiency anemia.
- Avoid heating constituents in hyperacidity, chronic nephritis or hepatitis.

Serious Adverse Events

Serious adverse events are events which result in death, in-patient hospitalization, a congenital anomaly or birth defect, a life-threatening experience, a persistent or significant incapacity or disability, or requiring medical or surgical intervention to prevent such an outcome.

Serious adverse events require reporting to the U.S. Food and Drug Administration (FDA), healthcare practitioner, and vendor who supplied the herbal formula for product recall. It is necessary to have a procedure in place in case a serious adverse event occurs.

Pregnancy and Lactation

Traditionally, plant medicine has been used for centuries for nutritive support, ailments, and difficulties that occur during pregnancy. The prevalence of plant medicine use during pregnancy ranged in different epidemiologic studies has ranged from 10 percent to 96 percent, the latter looking specifically at nausea.

The issue in this modern age is that we do not have huge amounts of clinical research to validate herbal use during this life stage, so we err on the side of caution and advise against the use of most herbs. To put this in context, a 2011 review looked at 468 pharmaceutical medications approved by the FDA between 1980 to 2010 to determine risk during pregnancy. There remains insufficient guidance on the use of medications during pregnancy.

The risks of inappropriate training may lead to the recommendation of contraindicated herbs, inappropriate and unsafe dosing, and the inability to accurately identify good quality herbal products and raw materials. If you wish to recommend herbal medicines during pregnancy, this does require a higher level of specialist knowledge and caution, thus it would be advisable to refer to a qualified professional.

If a patient finds out they are pregnant, advise the cessation of all herbal products in the first trimester. Do not prescribe herbal medicine products in the first trimester, unless it is an herbal tea or culinary herb used in moderate amounts. It's important to use only organic teas to avoid potential heavy metal or pesticide contamination.

Risks Associated with Use of Herbs During Pregnancy and Lactation

There is a risk of toxicity to the mother, which might also indirectly impair the health or development of the child in utero due to constituents passing through the placenta. This increases potential risk of teratogenesis or implantation interference. If uterine or bowel-stimulating herbs are used this may increase risk of miscarriage.

If a patient is using herbs during pregnancy or trying to conceive, consider the safety of herbs in one preparation over another, for example, using infusions over tincture to minimize extraction of compounds such as alkaloids.

An herb may be considered safe when used for a short period under the guidance of a Registered Herbalist, but unsafe when taken a long-term basis, and there are many herbs that are considered safe in the final trimester, but not in other trimesters. This is particularly true of the risky stage that is the first trimester as the early stages of pregnancy. In the early stages of pregnancy, the fetus is susceptible to adverse pregnancy outcomes.

There is a lack of information around the safety of many herbs during lactation, again due to the lack of clinical studies in this area and lack of clarity around whether specific potentially toxic compounds pass into breast milk. For safety, refer to a registered herbalist or use only the recognized list below. Herbs which contain high levels of volatile oils should not be used in quantity, and all herbs with potentially hepatotoxic or neurotoxic activity must be avoided.

Having a trusted supplier of quality herbal materials is essential, as misidentified or contaminated products may contain compounds which risk the health of mother and child.

Herbs Considered Safe During Pregnancy

Consider referral to a trained and qualified herbal professional.

- *Asparagus racemosa* (shatavari): From second trimester.
- *Avena sativa* (oat).
- *Capsicum minimum* (cayenne): Topically or in small amounts in food.
- *Chamaelirium luteum* (false unicorn): Endangered species.
- *Coriandrum sativum* (coriander): Normal culinary use.
- *Curcuma longa* (turmeric): Normal culinary use.
- *Echinacea spp.* (echinacea).
- *Glycyrrhiza glabra* (licorice): Medically indicated, short-term use, low dose.
- *Matricaria recutita* (German chamomile).
- *Mentha piperita* (peppermint): Small quantities only.
- *Mitchella repens* (partridge berry, squaw vine): Traditional use to prevent threatened miscarriage.
- *Ocimum basilicum* (basil): Safe for culinary use, not in large quantities.
- *Petroselinum crispum* (parsley): Normal culinary use.
- *Rosmarinus officinalis* (rosemary): Normal culinary use.
- *Rubia cordifolia* (Indian madder, manjista): Traditional use to prevent threatened miscarriage, not for use with patients on cardiac glycoside medication.
- *Rubus idaeus* (red raspberry leaf): From second trimester.
- *Taraxacum officinalis* (dandelion): A high dose can have a laxative effect.
- *Urtica dioica* (nettle).
- *Vaccinium macrocarpon* (cranberry).
- *Viburnum opulus* (cramp bark, guelder rose).
- *Viburnum prunifolium* (black haw).
- *Ulmus fulva* (slippery elm, inner bark).
- *Zingiber officinalis* (ginger).

Safe Commonly Used Galactagogue Herbs

Galactagogues are used to promote or increase the flow of breastmilk. Note that many of the galactagogue herbs are not considered safe during pregnancy as they may have oxytocic properties:

- *Althaea officinalis* (marshmallow)
- *Asparagus racemosa* (shatavari)
- *Avena sativa* (oat)
- *Carduus marianus* (milk thistle)
- *Foeniculum vulgare* (fennel)
- *Matricaria recutita* (German chamomile)
- *Pimpinella anisum* (anise)
- *Trigonella foenum-graecum* (fenugreek)

Herbs Contraindicated During Pregnancy and Lactation

The herb classes with common herbal examples listed below are contraindicated during pregnancy and lactation.

Abortifacients and Emmenagogues

Achillea millefolium (yarrow), *Alchemilla vulgaris* (lady's mantle), *Angelica sinensis* (dong quai), *Artemisia vulgaris* (mugwort), *Artemisia absinthium* (wormwood), *Glycyrrhiza glabra* in higher doses (liquorice), *Matricaria recutita* in higher dose (chamomile), *Ruta graveolens* (common rue), *Tanacetum parthenium* (feverfew), *Tanacetum vulgaris* (tansy), *Thuja occidentalis* (northern white cedar), and *Uncaria tomentosa* (cat's claw).

Alkaloid-containing herbs

Berberis aquifolium (Oregon grape), *Berberis vulgaris* (barberry), *Borago officinalis* (borage), *Coptis trifolia* (goldenthread), *Euphrasia officinalis* (eyebright), *Hydrastis canadensis* (goldenthread), *Petasites hybridus* (butterbur), and *Symphytum officinalis* (comfrey).

Essential oils

Artemisia dracunculus (tarragon), *Betula alba* (silver birch), *Carum carvi* (caraway), *Cinnamonum camphora* (camphor), *Cinnamonum zeylanicum* (cinnamon), *Foeniculum vulgare* (fennel), *Gaultheria procumbens* (evergreen), *Hyssopus officinalis* (hyssop), *Mentha piperita* (peppermint), *Mentha pulegium* (pennyroyal), *Ocimum basilicum* (basil), *Origanum marjorana* (marjoram), *Origanum vulgaris* (oregano), *Petroselinum crispum* (parsley), *Pimpinella anisum* (anise), *Salvia officinalis* (sage), *Salvea sclarea* (clary sage), *Tanacetum vulgare* (tansy), *Thuja occidentalis (Northern white cedar,* and *Thymus vulgaris* (thyme).

Laxatives

Aloe barbadensis (aloe), *Carica papaya* (papaya), *Cassia officinalis* (cassia), *Hippophae rhamnoides* (sea buckthorn), *Ricinus communis* (castor), and *Rheum palmatum* (Chinese rhubarb).

Nervines - Calming

Alibizzia lebek (mimosa), *Humulus lupulus* (hops), *Hypericum perforatum* (St. John's wort), *Leonorus cardiaca* (motherwort), *Passiflora incarnata* (passionflower), and *Piper methysticum* (kava).

Nervines – Stimulating

Coffea arabica (coffee), *Ephedra sinica* (ephedra), and *Kola nitida* (kola).

Oxytocic

Caulophyllum thractiloides (blue cohosh), *Cimicifuga racemosa* (black cohosh), *Hydrastis canadensis* (goldenseal), *Inula helenium* (elecampane), *Marrubium vulgare* (white horehound), *Trigonella foenum-graecum* (fenugreek), and *Vitex agnus-castus* (chaste tree).

Phytoestrogens and Hormonal Activity

Humulus lupulus (hops), *Serenoa repens* (saw palmetto), and *Trifolium pretense* (red clover).

Teratogens

Banisteriopsis caapi (ayuhuasca), *Conium maculatum* (hemlock), *Datura stramonium* (jimson weed), *Mentha pulegium* (pennyroyal), *Nicotiana spp.* (tobacco), and *Prunus amygdalus* (bitter almond).

Supporting Detox Pathways and Managing Herxheimer Reactions

In naturopathic medicine, we often discuss the concept of the "Healing Crisis", otherwise known as a Herxheimer reaction or die off. This is often viewed as the body's attempt to heal itself and should not be suppressed. Examples include fevers, which should be allowed to run their course, and in cases involving skin manifestations, which can often worsen before they get better. By ensuring emunctories are supported appropriately, we can try to mitigate the severity and hopefully any sort of die off reaction. Allopathic medicine strategies often revolve around the suppression of symptoms. This is why, for example, patients who are given medications to use topically for the management of severe atopic conditions, such as corticosteroids or calcineurin inhibitors, may notice a withdrawal rebound flare.

Strategies to mitigate or reduce severity of Herxheimer reactions include starting herbs slowly with food at a very low drop dose and if they are on supplements, to start their protocol slowly, and introduce each item one by one. Make sure you reiterate this to patients, by discussing this with them in their session and writing it on patient notes to highlight the importance of this message. Ensure there is appropriate support for detox pathways or emunctories to keep the bowels moving, immune and adaptogenic support, and include a good binder and digestive enzymes.

If the patient does experience a Herxheimer reaction, stop the herbs, remove for a few days, and reintroduce at a very low dose. Hydrate appropriately and increase sweating through Epsom salt baths and increase movement. Assess additional appropriate supplementation and ask the patient to prioritize sleep.

Timings

Clinicians are always looking to maximize efficacy of their treatment protocols. The time the herbal preparation is taken may have an impact on its efficacy, or timing around specific factors such as mealtimes may impede or enhance absorption.

Chronobiology and Chronotherapy

Several studies have looked the impact of chronotherapy on anti-neoplastic therapy. Changes were made to diet and lifestyle, and tailored nutraceuticals and botanicals strategies were implemented alongside chronomodulated chemotherapy. The results demonstrated increased efficacy upon administration based on circadian rhythms.

Chronobiology looks at variations in physiology across time. Daytime favors a higher dose, and a more stimulating treatment, while adaptogenic treatments at a regulating dose, and stimulating treatments at a lower dose are better in the afternoon. A moderating dose of a relaxing treatment should be considered in the evening, and a calming herbal blend should be given in a higher dose at night.

Other Considerations with Dosing

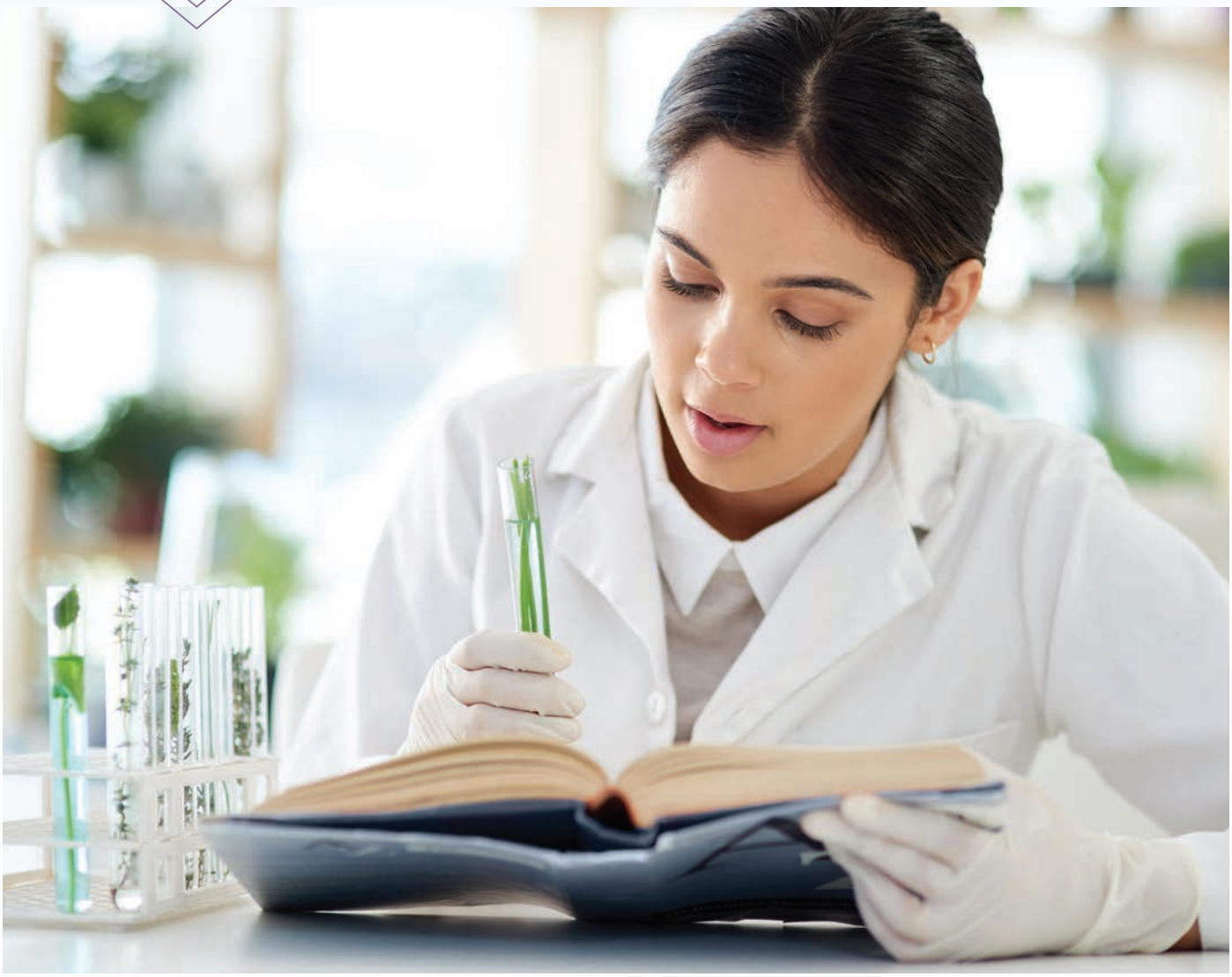
When giving guidance on taking an herbal product, consider maximizing absorption around medications, supplements, and foods.

Before Meals	Herbs best taken before meals are those containing bitter constituents, herbs that stimulate digestion, demulcents that coat the mucus membranes. Examples include *Glycyrrhiza glabra* (liquorice), *Echinacea angustifolia* (echinacea) *Zingiber officinalis* (ginger), and *Gentiana lutea* (gentian).
After Meals	Herbs that could potentially induce nausea are often better taken after a meal. Examples include *Rhodiola rosea* (rhodiola), and *Lobelia inflata* (lobelia).
Avoiding Drug or Supplement Interactions	It's important to look at pharmacokinetics and pharmacodynamics of herbs and medications. For example, *Turnera diffusa* (damiana) may potentiate hypoglycemic effects when taken alongside anti-diabetic medications. Damiana is best not take with food or iron supplements as these may interfere with absorption when taken alongside medications.

Avoiding Drug or Supplement Interactions

It's important to look at pharmacokinetics and pharmacodynamics of herbs and medications. For example, Turnera diffusa (damiana) may potentiate hypoglycemic effects when taken alongside anti-diabetic medications. Damiana is best not take with food or iron supplements as these may interfere with absorption when taken alongside medications.

CASE CONSIDERATIONS:
Applying Herbs to Specific Conditions



Although it's wise to start using herbs for acute situations, rarely does a patient come to clinic who does not have a host of underlying issues to address. The cases discussed here are examples of real cases and offer a step-by-step approach for clinical applications examples of how herbal knowledge can be applied in practice to enhance and expedite patient health outcomes.

Stress, Menopause, Dementia, and Cardiovascular Risk

Valerie is a 51-year-old menopausal lady suffering severe fatigue, insomnia, palpitations, and hot flushes. She was concerned about her sleep, and fatigue, which was affecting her work. She also wanted to look further at her risk for dementia and cardiovascular events, and mitigate those as best she could, as one parent had recently suffered a stroke, and the other had been diagnosed with moderate Alzheimer's disease.

Having recently been offered statins by her primary care practitioner, she wanted to try and improve things naturally and avoid medications where possible, and so she has recently switched to a clean, gluten and dairy-free whole food primarily plant-based diet, low in grains, rich in omega-3 fatty acids and had recently given up alcohol. She had been experiencing recurrent palpitations triggered by stress and worsened by insomnia episodes and cold weather.

Upon physical exam, I noticed her skin and hair were dry and flaky, circulation was poor as her hands were extremely cold, although body temperature was warm and clammy. She had difficulty finding words, and tongue indicated poor assimilation of nutrients and underlying anxiety. Valerie had no issues going to sleep, but often found she woke up early and felt unrefreshed.

The key organs and systems to address were here hypothalamic-pituitary-adrenal axis and her nervous system. Peripheral circulation was poor, contributing to poorly nourished tissues.

Herb Formula Recommendations

Aside from recommending suitable lifestyle and dietary adjustments, we looked at lifestyle constraints and decided to create the following prescription:

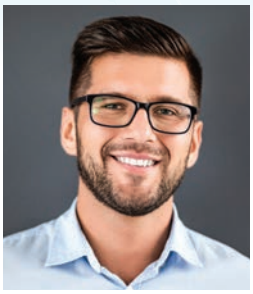
1. **Powder blend** to be taken 1 tbsp in morning smoothie or hot milk containing fat (starting with ¼ tsp daily and increasing dose).
2. **Day infusion blend** to drink throughout the day, 1 tablespoon per pot (starting with 1 cup daily and increasing dose).
3. **Sleep formula tincture** – to take 10-15ml diluted and evaporated in a small amount of hot water before bed to promote restful sleep. (starting with 5ml nightly and increasing dose if needed.

Prescriptions

Valerie tolerated all three formulae well and noticed a significant improvement in symptoms within the first month. This allowed her to make further dietary and lifestyle changes, including the implementation of a regular meditation practice.

Prescription	Rationale	Herb Prescription
Powder Blend	Adaptogens are best taken in powders for chronic long-term issues. Adrenals need to be supported due to life stage. *Astragalus membranaceus* is antihidrotic and a good immune tonic. *Ginkgo biloba* is a key adaptogenic herb for cerebral circulation. *Bacopa monnieri* supports cognitive function. *Urtica dioica* is included for emunctory support and as a nutritive herb. I have clarified that I am using leaf here as the root and seed have different herbal properties.	Per 100 grams 30 | *Asparagus racemosa* (shatavari) 20 | *Astragalus membranaceus* (astragalus) 10 | *Bacopa monnieri* (bacopa, brahmi) 30 | *Ginkgo biloba* (ginkgo) 10 | *Urtica dioica folia* (nettle leaf)
Daytime Infusion Blend	These herbs regulate menopausal symptoms, contain phytoestrogenic compounds, support cognitive function and the cardiovascular system. If hot flushes persist, advice patient to infuse and refrigerate, drinking it cold.	Per 100 grams 10 | *Cinnamonum zeylanicum* (cinnamon) 30 | *Cimicifuga racemosa* (black cohosh) 20 | *Crataegus spp.* (hawthorn) 10 | *Rosmarinus officinalis* (rosemary) 30 | *Trifolium pratense* (red clover)
Night Tincture Blend	*Leonorus cardiaca* is a calming nervine with an affinity for women, and the cardiovascular system, coupled with relaxing hypnotics to facilitate deep sleep. Many of these herbs contain bitter compounds and provide liver and gall bladder support. *Withania somnifera* is a nourishing adaptogen taken to help regulate the hypothalamic-pituitary-adrenal (HPA) axis and promote healthy circadian rhythm.	Per 100 milliliters 10 | *Eschscholzia californic*a (California poppy) 10 | *Lactuca virosa* (wild lettuce) 30 | *Leonorus cardiaca* (motherwort) 20 | *Melissa officinalis* (lemon balm) 10 | *Passiflora incarnata* (passionflower) 20 | *Withania somnifera* (ashwagandha, winter cherry)

Psoriasis and Digestive Issues



James is a 33-year-old male suffering repeated psoriasis flares and recently suffering digestive issues since a period of long-term antibiotics. He had recently stopped using corticosteroid cream. He had recently broken up with his partner, culminating in a stressful house move. As he was living with friends, his diet was extremely poor, with lots of processed foods and high sugar, and he was experiencing bloating upon waking, worsening throughout the day and regular constipation. He also complained that he often felt intoxicated or woozy after meals, particularly after alcohol, which he reacted poorly to. He said he felt better when he fasted.

His tongue had a sticky thick white coating; pulse was slippery and faint. Skin was dry, and scaly, with inflamed joints. Recent bloodwork had indicated severe vitamin D deficiency. An organic acids test indicated significant fungal overgrowth and dysbiosis in the gut.

Initial Herbal Strategy

James started by addressing his poor diet, and followed a diet low in fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAPs). He eliminated alcohol completely. His first herbal formula was geared around getting the bowels moving regularly to open up elimination pathways, stabilizing immune function and modulating inflammatory response, plus supporting detoxification pathways.

I decided to use a powder blend in this case due to his reactivity to alcohol, even though plant. I recommended starting with ½ teaspoon and increasing dose to 2 tablespoons daily at breakfast and lunch in nut milk.

Prescription	Rationale	Herb Prescription
Powder blend	*Arctium lappa* supports the liver, gall bladder, and kidneys, and is considered a depurative has an affinity for the skin. *Rumex crispus* also supports liver and gall bladder and acts as a mild laxative to prevent constipation. This herb also facilitates digestion where there are assimilation issues and hypochlorhydria. *Lavandula spp.* is rich in volatile oils, and supports digestion. *Curcuma longa* supports the gastrointestinal system, regulates immune function and is anti-inflammatory. *Smilax ornata* has been well studied as a natural remedy for psoriasis and is used frequently with excellent results.	Per 100 grams 30 | *Arctium lappa* (burdock) 20 | *Curcuma longa* (turmeric) 10 | *Lavandula spp.* (lavender) 20 | *Rumex crispus* (yellow dock) 10 | *Smilax ornata* (sarsaparilla)

Follow-Up Strategy

After four weeks, I introduced a tincture formula alongside the powder blend specifically to clear the yeast and bacterial overgrowths, a topical cream and a recommendation for an herbal bath.

1. **Tincture formula:** Start with a drop dose and increase to five milliliters three times a day before meals, diluted in a small amount of water.
2. **Powder blend:** Two teaspoons per day, morning and lunchtime.
3. **Topical cream:** Use twice a day.
4. **Herbal bath:** Aim to do at least three baths a week.

James did not listen to instructions to introduce the tincture slowly, and consequently experienced a psoriasis flare. He immediately removed the tincture, increased the powder blend, topical cream use and aimed for daily herbal baths. After one week, he gradually started to introduce the tincture at a low dose.

Two months later, his psoriasis had completely cleared, his gut symptoms were much improved, and he had more energy. James had started to open up his diet after two months but continued to avoid gluten, dairy, and all sugars. Digestive issues have also completely resolved.

Prescription	Rationale	Herb Prescription
Tincture formula	*Berberis aquifolium* and *Azadiracta indica* are bitters, antifungals, with an affinity for the skin and other emunctory channels. *Coleus* is specifically used for chronic psoriatic disorders, particularly where there is digestive compromise. *Eleutherococcus* provides *adaptogenic* support during ongoing period of uncertainty around living arrangements, stabilizes blood sugar and helps to regulate immune function. *Matricaria recutita* is a relaxing nervine, with anti-inflammatory, antimicrobial and antifungal activity to support nervous system response, and reduce potential irritation.	Per 100 grams 20 | *Azadiracta indica* (neem) 20 | *Berberis aquifolium* (Oregon grape) 20 | *Coleus forskhohlii* (coleus) 30 | *Eleutherococcus senticosus* (eleuthero, Siberian ginseng) 10 | *Matricaria recutita* (German chamomile)
Powder blend	As before except *Lavandula spp.* has been removed and replaced with Taraxacum officinalis as a nutritive to further support the liver and gall bladder.	Per 100 grams 30 | *Arctium lappa* (burdock) 20 | *Curcuma longa* (turmeric) 10 | *Taraxacum officinalis* (dandelion) 20 | *Rumex crispus* (yellow dock) 10 | *Smilax ornata* (sarsaparilla)
Topical cream	Herbal ingredients with a known effect on psoriasis, anti-inflammatory activity and an affinity for the skin. *Hydrocotyl asiatica* also helps to reduce scarring.	*Aloe barbadensis* (aloe vera gel) *Calendula officinalis* hydrosol *Hydrocotyl asiatica* (gotu kola, brahmi) *Glycyrrhiza glabra* (liquorice) *Indigo naturalis* (indigo, qing dai) *Lavandula spp.* Hydrosol (lavender) In base cream
Herbal bath	*Avena sativa* and *Lavandula spp.* placed in a muslin cloth in the bath to expedite healing and calm and soothe the skin.	*Avena sativa* (oat) *Lavandula spp.* (lavender)

Key Herbal Actions Chart

Herb Classification	Herb Examples
Adaptogen	*Asparagus racemosa* (shatavari) *Astragalus membranaceus* (astragalus) *Eleutherococcus senticosus* (eleuthero, Siberian ginseng) *Glycyrrhiza glabra* (liquorice) *Ocimum sanctum* (tulsi, holy basil) *Panax ginseng* (Korean ginseng) *Rhodiola rosea* (rhodiola, golden root) *Withania somnifera* (ashwagandha, winter cherry)
Analgesic, Anodyne	*Arnica montana* (arnica) *Capsicum minimum* (cayenne) *Filipendula ulmaria* (meadowsweet)
Anthelminthic/ Antiparasitic	*Allium sativum* (garlic) *Artemisia absinthium* (wormwood) *Coptis trifolia* (goldenthread) *Juglans nigra* (black walnut) *Szygium aromaticum* (clove)
Anticatarrhal	*Baptisia tinctoria* (wild indigo) *Echinacea spp.* (echinacea), *Hydrastis canadensis* (goldenseal) *Sambucus nigra* (elderberry and flower).
Antidepressant	*Bacopa monnieri* (bacopa, brahmi), *Centella asiatica, Hydrocotyl asiatica* (gotu kola, brahmi) *Hypericum perforatum* (St. John's wort) *Lavandula spp.* (lavender) *Matricaria recutita* (German chamomile) *Mucuna pruriens* (velvet bean) *Rosmarinus officinalis (*rosemary)
Antiemetic	*Filipendula ulmaria* (meadowsweet) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Mentha piperita* (peppermint) *Zingiber officinalis* (ginger)
Anti-inflammatory	*Allium sativum* (garlic) *Betula alba* (silver birch) *Boswellia serrata* (frankincense *Curcuma longa* (turmeric) *Filipendula ulmaria* (meadowsweet) *Harpagophytum procumbens* (devil's claw) *Matricaria recutita (*German chamomile) *Salix alba (*willow) *Uncaria tomentosa (*cat's claw) *Zingiber officinalis* (ginger)

Key Herbal Actions Chart

Herb Classification	Herb Examples
Antifungal	*Allium sativum* (garlic) *Calendula officinalis* (marigold) *Cinnamonum zeylanicum* (cinnamon) *Origanum vulgare (*oregano) *Sida acuta* (wireweed) *Szygium aromaticum* (clove) *Tabebuia impetiginosa* (lapacho)
Antimicrobial	*Allium sativum* (garlic) *Berberis vulgaris* (barberry) *Commiphora molmol* (myrrh) *Coptis trifolia* (goldenthread) *Echinacea spp.* (echinacea) *Hydrastis canadensis* (goldenseal) *Lavandula spp.* (lavender) *Origanum vulgare* (oregano) *Pistacia lentiscus* (mastic) *Rosmarinus officinalis* (rosemary) *Thymus vulgaris* (thyme)
Antispasmodic	*Achillea millefolium* (yarrow) *Dioscorea villosa* (wild yam) *Lavandula spp.* (lavender) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Mentha piperita* (peppermint) *Petroselinum crispum* (parsley) *Thymus vulgaris (*thyme) *Zingiber officinalis* (ginger)
Anxiolytic	*Centella asiatica, Hydrocotyl* asiatica (gotu kola, brahmi) *Lavandula spp.* (lavender) *Leonorus cardiaca* (motherwort) *Matricaria recutita* (German chamomile) *Melissa officinalis* (lemon balm) *Nepeta catita* (catnip) *Piper methysticum* (kava) *Scutellaria lateriflora* (skullcap) *Stachys officinalis (*wood betony) *Verbena officinalis* (vervain)

Key Herbal Actions Chart

Herb Classification	Herb Examples
Astringent	*Agrimonia eupatoria* (agrimony) *Alchemilla vulgaris* (lady's mantle) *Betula alba* (white birch) *Camellia sinensis* (green tea) *Capsella bursa-pastoris* (shepherd's purse) *Hamamelis virginiana* (witch hazel) *Quercus spp.* (oak) *Ribes nigrum* (astringent) *Rosa spp.* (rose) *Rubus idaeus* (red raspberry)
Bitter	*Achillea millefolium* (yarrow) *Angelica archangelica* (angelica) *Artemisia absinthium (*wormwood) *Berberis aquifolium, Mahonia aquifolium* (Oregon grape) *Berberis vulgaris* (barberry) *Coptis trifolia* (goldenthread) *Cynara scolymus* (artichoke) *Eschscholzia californica* (California poppy) *Gentiana lutea* (gentian) *Humulus lupulus* (hops) *Hydrastis canadensis* (goldenseal) *Juglans nigra* (black walnut) *Lactuca virosa* (wild lettuce*)* *Matricaria recutita (*German chamomile) *Rumex crispus* (yellow dock) *Taraxacum officinalis (*dandelion)
Carminative	*Cinnamonum zeylanicum* (cinnamon) *Coriandrum sativum* (coriander) *Elettaria cardamomum* (cardamom) *Foeniculum vulgare* (Fennel) *Matricaria recutita* (German chamomile) *Mentha piperita* (peppermint) *Melissa officinalis* (lemon balm) *Petroselinum crispus* (parsley) *Pimpinella anisum* (anise) *Rosmarinus officinalis* (rosemary) *Zingiber officinalis* (ginger)
Cholagogue, Choleretic	*Berberis aquifolium, Mahonia aquifolium* (Oregon grape) *Berberis vulgaris* (barberry) *Cynara scolymus* (artichoke) *Taraxacum officinalis* (dandelion)

Key Herbal Actions Chart

Herb Classification	Herb Examples
Demulcent	*Aloe barbadensis* (aloe) *Althaea officinalis (*marshmallow) *Avena sativa* (oat) *Glycyrrhiza glabra* (liquorice) *Plantago major* (plantain) *Pulmonaria officinalis (*lungwort) *Ulmus fulva* (slippery elm)
Depurative, Alterative	*Allium sativum* (garlic) *Arctium lappa* (burdock) *Berberis aquifolium, Mahonia aquifolium* (Oregon grape) *Echinacea angustifolia* (echinacea) *Plantago major* (plantain) *Rumex crispus* (yellow dock) *Taraxacum officinalis* (dandelion) *Trifolium pretense* (red clover)
Diuretic	*Agrimonia eupatoria* (agrimony) *Apium graveolens* (celery) *Betula alba* (silver birch) *Juiperus communis* (juniper) *Petroselinum crispus* (parsley) *Taraxacum officinalis* (dandelion) *Urtica dioica* (nettle) *Zea mays* (cornsilk)
Hepatic	*Agrimonia eupatoria* (agrimony) *Berberis vulgaris* (barberry) *Chionanthus virginicus* (fringe tree) *Hydrastis canadensis* (goldenseal) *Rumex crispus* (yellow dock) *Schisandra chinensis* (Schisandra) *Taraxacum officinalis* (dandelion)
Hypoglycemic	*Berberis vulgaris* (barberry) *Cinnamonum zeylanicum* (cinnamon) *Coptis trifolia* (goldenthread) *Eleutherococcus senticosus* (eleuthero) *Galega officinalis* (goat's rue) *Gymnema sylvestre (*gymnema) *Momordia charantia* (bitter melon)
Immunomodulator	*Astragalus membranaceus* (astragalus) *Codonopsis pilosula,* (codonopsis) *Echinacea spp.* (echinacea) *Eleutherococcus senticosus* (eleuthero, Siberian ginseng) *Panax ginseng* (Korean ginseng) *Withania somnifera* (ashwagandha, winter cherry)

Key Herbal Actions Chart

Herb Classification	Herb Examples
Lymphatic	*Ceonanthus americanus* (red root) *Calendula officinalis* (marigold) *Echinacea spp.* (echinacea) *Galium aparine* (cleavers) *Phytolacca decandra (*poke root) *Trifolium pretense* (red clover)
Nervine - Relaxing	*Agrimonia eupatoria* (agrimony) *Avena sativa* (oat) *Eschscholzia californica* (California poppy) *Lavandula spp.*(lavender *Matricaria recutita* (chamomile) *Melissa officinalis* (lemon balm) *Passiflora incarnata* (passionflower) *Piper methysticum* (kava) *Scutellaria lateriflora* (skullcap) *Tilia spp.* (linden) *Verbena officinalis* (vervain)
Neuroprotective	*Crocus sativus* (saffron) *Curcuma longa* (turmeric) *Panax ginseng* (Korean ginseng) *Phyllanthus emblica* (amla) *Polygonum cuspidatum* (Japanese knotweed) *Salvia militorrhiza (*red sage) *Scutellaria baicalensis* (Baikal skullcap)
Nootropic	*Bacopa monnieri* (bacopa or brahmi) *Centella asiatica, Hydrocotyl asiatica* (gotu kola, brahmi) Ginkgo biloba (ginkgo) *Melissa officinalis* (lemon balm) *Rhodiola rosea* (rhodiola) *Rosmarinus officinalis* (rosemary)
Nutritive	*Astragalus membranaceus* (astragalus) *Avena sativa (*oat) *Medicago sativa* (alfalfa) *Urtica dioica* (nettle)
Stimulant	*Allium sativa* (garlic) *Armoracia Rusticana* (horseradish) *Brassica nigra* (mustard) *Capsicum minimum* (cayenne) *Piper nigrum* (black pepper) *Mentha piperita* (peppermint) *Szygium aromaticum* (clove) *Rosmarinus officinalis (*rosemary) *Zingiber officinalis* (ginger)

Key Herbal Actions Chart

Herb Classification	Herb Examples
Tonic	**Adrenal tonics** *Rehmannia glutinosa* (rehmannia) *Rhodiola rosea* (rhodiola) *Withania somnifera* (ashwagandha) **Cardiovascular tonics** *Crataegus spp.* (hawthorn) *Tilia spp.* (linden) **Immune tonics** *Astragalus membranaceus* (astragalus) **Liver and gall bladder tonics** *Curcuma longa* (turmeric) *Cynara scolymus* (artichoke) *Silybum marianum (* milk thistle) **Mucus membrane tonics** *Echinacea spp.*(echinacea) *Filipendula ulmaria* (meadowsweet) **Venotonics** *Aesculus hippocastanum* (horse chestnut) *Ruscus aculeatus* (butcher's broom)
Trophorestorative	**Nervotrophorestorative** *Avena sativa* (oat) **Cardiac trophorestorative** *Crataegus spp. (h*awthorn)
Vulnerary	*Aloe barbadensis* (aloe) *Centella asiatica, Hydrotocyl asiatica* (gotu kola) *Hamamelis virginiana* (witch hazel) *Plantago major* (plantain)

Prescription Builder Worksheet

Patient History:	
Main Concern	
Underlying Health Issues	
Mediations, Supplements, and Timing	
Observations (recurrent pathology, underlying emotional factors, or stressors)	
Energetics	
Organ and System Affinities	
Primary Herbal Actions	
Secondary Actions	
Best Form of Herbs To Use (consider patient preference, restrictions, sensitivity)	

Prescription Builder Worksheet

Prescription	
Foundational Herbs	
Synergistic Herbs	
Supportive Herbs	
Symptomatic Relief	
Emunctory Support	
Dosing	
Dosage (including starting dose)	
Timing of Dosages	
Proposed Duration of Treatment	
Timing of Dosages	
Proposed Duration of Treatment	

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About the Author

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Carolina Brooks is a certified functional medicine practitioner who uses a systems biology and science-based approach to healthcare involving nutrition, genetics, herbal medicine, endobiogeny, and orthomolecular medicine. She has also trained in Ayurveda and Chinese medicine, ear acupuncture, coaching, neuro-linguistic programming, and hypnotherapy.

Brooks runs her own clinic, Anthrobotanica, based in London, and works to educate, support, and empower clients to take responsibility for optimizing their health. She has first-hand expertise in managing stress and chronic disease, especially for those working in high-pressure working environments.

She consults clinics, wellness start-ups and sits on advisory boards, formulates supplements and specialized food products, and has created herbal products for both the wellness and hospitality sectors. She runs corporate wellness programs and has developed educational courses for practitioners and the general public. She started her career in investment banking before establishing her consultancy practice in the wellness sector.