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## part 4

# CATEGORIES OF HERBAL MEDICINES

BEFORE diving into some of the most commonly prescribed herbal medicines in Part 5 and herbal recommendations for common health conditions in Part 6, let's take a look at some general categories of herbal medicines to describe their actions in the body. Some of these actions will be familiar (astringents and laxatives) and some less familiar (carminatives and demulcents). Herbs in the adaptogen and antioxidant categories affect a broad spectrum of actions in the body.

These categories give you a framework for the way groups of herbal medicines act in the body. For example, if you're having trouble properly digesting food and suffer a lot of bloating after a meal, you may want to consider a digestive bitter such as yellow dock. If you're run down from stress and overwork, adaptogenic herbs such as eleuthero (Siberian ginseng) or astragalus are extremely useful. These categories are widely accepted and used by health care professionals who prescribe herbal medicines.

Remember that herbs like to defy labels. Some will end up in more than one category. For a more thorough review of herbal categories (including those applicable to traditional herbalism), I highly recommend Chapter 3 in David Hoffman's *The Herbal Handbook: A User's Guide to Medical Herbalism* (Healing Arts Press, 1998).

## ADAPTOGENS

It's fitting to begin a discussion of herbal categories with a term that embodies herbal medicine's amazing diversity. An *adaptogen* is a substance that increases the body's resistance to stress and exerts a balancing effect on various systems of the body, including the immune, nervous, and cardiovascular systems.

Adaptogens can trace their descent from the herbal tonics commonly used in the traditional herbal healing systems of China and India. A prime example is Asian ginseng (*Panax ginseng*), which we'll cover in Part 5. Two Russian scientists, I. I. Brekhman and I. V. Dardymov, first applied the term *adaptogen* to Asian ginseng and later to its Russian relative eleuthero (*Eleutherococcus senticosus*, Siberian ginseng).<sup>1</sup> Their expanded definition of an adaptogen includes the following three criteria:

- An adaptogen must show a nonspecific effect and raise the powers of resistance to toxins of a physical, chemical, or biological nature.
- An adaptogen effects a normalizing or balancing action independent of the type of pathological condition.
- An adaptogen must be harmless and must not influence normal body functions more than necessary.

The following herbal medicines qualify as adaptogens:

Asian ginseng	Schizandra
Eleuthero (Siberian ginseng)	Ashwagandha
Astragalus	Codonopsis ("Dangshen")

While most of these herbs have an illustrious career in traditional herbal medicine, they may be even more applicable in today's stress-filled world than they were hundreds of years ago. Adaptogens enhance health by performing the following actions:

- Stress reduction (support normal function of the hypothalamic–pituitary–adrenal [HPA] axis)
- Enhancement of brain and central nervous system activity
- Immunomodulation

- Antioxidant activity
- Liver protection and antitoxin activity
- Improved blood sugar metabolism
- Increased stamina and endurance

The core of an adaptogen's diverse actions is its ability to help the body deal more effectively with stress.<sup>2</sup> The key here is support for the HPA axis. This rather ominous-sounding name is really the part of our endocrine system that is responsible for regulating the body's response to stress. Proper function of the HPA axis depends on healthy communication between the three control centers. When overly large amounts of stress—mental or physical—override this normal communication, we begin to see symptoms of fatigue, anxiety, and even soft-tissue pain. The burden of this dysregulation appears to fall on the adrenal glands. We'll discuss this further in Part 6 under chronic fatigue immunodeficiency syndrome and stress and fatigue.

The adrenals, which sit atop the kidneys, are responsible for helping us respond to stress. They also help us rebound from stress. When the adrenals become overwhelmed, we lose this edge, and different systems in the body begin to break down.

If you're experiencing chronic stress, the number one condition you'll probably notice is fatigue. You may also experience problems with blood sugar metabolism, sluggish immune function, and even general aches and pains in the muscles and joints. Chronic fatigue immunodeficiency syndrome may be the end result of exhausted adrenals.

Adaptogens serve to help reinstate normal HPA axis communications and recharge exhausted adrenal glands. When this task is completed, they continue to support normal HPA axis function and optimize our ability to deal with stress in its many forms.

I'll let the chapters on eleuthero and Asian ginseng in Part 5 serve as an introduction to some of the potential health care applications for adaptogenic herbal medicines. The actions of adaptogens also make them ideal for resisting illness. They should be an important consideration for any supplement regimen aimed at optimizing health.

## ANTIOXIDANTS

A popular topic in health care today is the role that free radicals play in many diseases. Particular attention has been focused on age-related conditions such as atherosclerosis, Alzheimer's disease, and macular degeneration. Free radicals may also play a role in other diseases that afflict our society, including cancer.

Free radicals are highly reactive groups of atoms that repeatedly undergo chemical reactions without change to themselves. We all produce them and have substances in the body known as *antioxidants* to keep them in check. When free radicals form in excess, naturally occurring antioxidant substances produced by the body (e.g., glutathione, superoxide dismutase) can be overwhelmed. Damage to cells ensues.

Modern society produces a lot of contributors to free radical formation. These include pesticides, environmental pollution, and secondhand cigarette smoke. Free radicals also rise with overexposure to ultraviolet rays produced by the sun. Stress can raise the level of free radicals, as can chronic illnesses, such as human immunodeficiency virus (HIV) infection. Also, as we get older, our defense systems become less aggressive and free radicals have more opportunity to cause harm.<sup>3</sup>

Unless you've been living in seclusion on some deserted island (although the *New York Times* probably has delivery there), you know that antioxidant nutrients can help counter free radical production in the body. Vitamin C, vitamin E, selenium, and a variety of carotene-like substances provide this antioxidant support.<sup>4</sup>

Many herbal medicines also offer antioxidant support. The herbal constituents that shine in this area are the *bioflavonoids* (usually referred to as *flavonoids*). Occurring in a wide variety of edible plants (including herbs) and common foods, flavonoids are one of nature's most potent antioxidants. In fact, some flavonoids are several times more potent in this regard than vitamin E.<sup>5,6</sup>

Start adding flavonoids to your free radical defense program by way of your diet. Apples, green tea, onions, cherries, and blueberries are excellent sources of flavonoids. High consumption of flavonoids in the diet is associated with lowering the risk of cardiovascular disease.<sup>7</sup> New data

Table 4.1  
TISSUE-SPECIFIC BIOFLAVONOIDS

Herbal Medicine	Bioflavonoids	Body System
Bilberry	Anthocyanosides	Eyes, circulatory system
Hawthorn	Oligomeric procyanidins	Heart, circulatory system
<i>Ginkgo biloba</i>	Ginkgo flavone glycosides	Brain, nervous system, cardiovascular system
Milk thistle	Silymarin	Liver and gallbladder

have extended this to cancer prevention as well, an area in which the flavonoids in green tea really shine.<sup>8</sup> As we'll note in Part 6 in our discussion of menopause, foods and herbs high in isoflavones (sometimes called *phytoestrogens*) such as soy and red clover, exert health benefits that may hold an eventual key to offering women an alternative to hormone replacement therapy after menopause.

The health-promoting benefits of flavonoids have been known to herbal medicine for years. Many herbal medicines have complex flavonoid structures as medically active constituents. Examples discussed in Part 5 include bilberry, chamomile, hawthorn, ginkgo, and milk thistle. Owing to research on the way these particular flavonoids work in the body, we've also been able to establish a "tissue-specific" effect for many of them. Table 4.1 lists herbal medicines, their active flavonoids, and the body systems they support. All of these are discussed in greater detail in Part 5.

Flavonoids have become a priority of mainstream medical research. These important dietary and herbal constituents promise to lead the way in further unlocking the preventive and therapeutic potential for antioxidants, particularly in the prevention of cardiovascular disease and cancer.

## ASTRINGENTS

If you drink straight black tea, you'll notice a tightening sensation inside your mouth. This is because of substances known as *tannins* in the black

Table 4.2  
HEALTH CARE APPLICATIONS FOR ASTRINGENTS

Herbal Astringent	Application
Horse chestnut	Varicose veins, hemorrhoids, leg ulcers, postoperative swelling, and hematomas
Witch hazel	Eczema, hemorrhoids, and varicose veins
Tormentil	Diarrhea

tea. In fact, milk is commonly added to tea to counteract the activity of tannins.

Tannins are the primary component of herbal medicines commonly labeled “astringents.” Tannins actually get their name from their use in tanning hides (animal, not human!). When tissue comes in contact with tannins, proteins coagulate, causing a tightening effect. This creates a protective barrier and also helps add “tone” to the tissue.

Tannin-containing herbs are useful in treating inflammation of the skin and mucous membrane (another name for the lining inside the respiratory and gastrointestinal tracts). Inflammation occurs in topical conditions such as eczema and leg ulcers. Topically, tannins are also useful to speed wound healing. Internally, tannins add tone to the gastrointestinal (GI) tract, helping stop diarrhea and soothing irritated tissue. They’ve also been employed in traditional herbal medicine to help stop bleeding in the GI tract.

Commonly used astringent herbs include witch hazel leaves, oak bark, American cranesbill, and English walnut leaves (see Table 4.2 for some of the health care applications of these herbs).

*Note:* Internal use of astringents is contraindicated during pregnancy.

## CARMINATIVES

Carminative (from the Latin *carminare*, to cleanse) herbs soothe and tone the digestive system. Typically high in volatile oils, these herbs are used in cases of GI upset, irritation, and cramping. They help relieve excess gas and bloating.

Two classic examples of carminative herbs are peppermint and chamomile. As we will note in Part 5, chamomile is revered in Europe and is one of the most commonly prescribed herbs for digestive tract problems. Health care applications for these herbs include indigestion, heartburn, infant colic, and sometimes irritable bowel syndrome. Other carminative herbs include anise, caraway, and fennel. On the basis of our discussion in Part 5, ginger may also be considered a carminative.

The key to the gastrointestinal actions of carminatives is their volatile oil content. Since volatile oils are not water soluble, the typical teacup of peppermint or chamomile is medicinally weak. Unless you're brewing a highly concentrated tea of dried chamomile flowers or fresh peppermint leaves, you're better off using concentrated fluid extracts or alcohol-based tinctures. These will offer a more reliable source of medically active volatile oils.<sup>9</sup>

## CHOLAGOGUES

An area that has long been the focus of natural medicine is healthy liver function. The liver, as we will note in the chapter on milk thistle in Part 5, is the primary organ of detoxification in the body. In addition, it works with the gallbladder to digest and assimilate fats. One key to proper fat digestion is *bile*: When bile production in the gallbladder and flow from the liver become impaired, many people experience a sense of fullness or bloating following the consumption of fats in the meal.

Herbs classified as *cholagogues* have two primary actions. The first is to stimulate the production of bile. The second is to stimulate the proper flow of bile. Some herbal texts refer to the second action as *choloretic*. By improving bile production and flow, these herbs also reduce the risk of gallstone formation. They are also associated with improving fat digestion and promoting healthy liver function.<sup>10</sup>

Listed here are commonly prescribed cholagogues:

Dandelion root	Milk thistle
Turmeric	Artichoke
Goldenseal root	Chelidonium

Note again the overlap of categories. Many digestive bitters (see the section “Digestive Bitters”) can also be classified as cholagogues.

## DEMULCENTS

Demulcents are herbs that are high in *mucilage* (a slimy, soothing substance). These herbs are noted for their ability to soothe or protect irritated mucous membranes inside the body. When applied topically to the skin, a demulcent herb is commonly referred to as an *emollient*. These herbs have demulcent properties:

Marshmallow root	Slippery elm
Mullein flowers	Aloe leaves (only the mucilaginous part)
Plantain leaves	Fenugreek seeds

The slimy mucilage in these herbs produces remarkable effects on the body. A demulcent<sup>11</sup>

- eases irritation in the bronchioles secondary to a cough;
- reduces irritation in the GI tract secondary to diarrhea;
- relaxes and eases urinary tract irritation; and
- soothes skin irritation and inflammation, speeding wound healing.

Traditional herbalists and some naturopaths prescribe demulcent herbs to ease the following conditions:

- Sore throats/coughs
- Diarrhea
- Irritable bowel syndrome
- Inflammatory bowel conditions
- Urinary tract irritation (e.g., following an infection)
- Burns

Note that some herbal texts list comfrey and coltsfoot as commonly prescribed demulcents. These herbs contain a group of constituents known as pyrrolizidine alkaloids, which are potentially harmful to the liver.<sup>12,13</sup> Internal consumption of comfrey and coltsfoot is not recommended.

## DIGESTIVE BITTERS

My son would argue that all herbs are bitter and taste like something intended to poison him. His perspective is clouded by the fact that his dear old dad used to try out different vile-tasting herbal tinctures on him during naturopathic training.

The bitter taste associated with many herbs (particularly the root or rhizome portion) is the basis for using them to stimulate digestion. When a bitter substance hits your tongue, taste buds tell the brain to signal the mouth to produce more saliva and the stomach to release more acid to help break down food. Some research on bitters also suggests a stimulating effect on the pancreas and increased production of digestive enzymes. As mentioned previously (see “Cholagogues”), these herbal bitters also stimulate bile flow. The bottom line is that one feels hungrier and digests better after consuming an herbal bitter.

If your digestion is sluggish due to poor production of stomach acid, you’ll find bitters particularly useful. If you notice a lot of bloating and gas after eating a meal high in protein, try taking an herbal bitter immediately before eating. Stomach acid production also has a tendency to decrease as we age. Herbal bitters are frequently prescribed for elderly persons who produce less stomach acid and experience sluggish digestion.

Commonly prescribed herbal digestive bitters include the following:

Gentian root and rhizome	Dandelion root
Yellow dock	Blessed thistle
Centaury	Wormwood
Rue	Boldo

## IMMUNOMODULATORS

More attention is being paid to the effect that many herbs have on the immune system. Examples covered in Part 5 include echinacea, eleuthero (Siberian ginseng), and Asian ginseng.

*Immunomodulation* describes the ability of an herb, nutrient, or other substance to promote healthy immune function. The immune system is a

complex interplay of cells that dictate the body's resistance to infections. These include macrophages, lymphocytes (B and T), and other factors known as cytokines (e.g., interleukin, interferon, and tumor necrosis factor). Lymphocytes, the body's primary defense against viral infections, have been a primary area of focus with regard to HIV infection.

A common denominator among immunomodulating herbs is the presence of complex sugar molecules known as *polysaccharides*. Polysaccharides improve the activity of lymphocytes and other cells of the immune system, thus strengthening the overall immune response.<sup>14</sup>

Perhaps the most well-known example of an immunomodulating herb is echinacea. As we will note in Part 5, echinacea is thought to increase the immune response, which makes it valuable for strengthening a potentially healthy immune system to fight infections such as colds and flu more efficiently. It may also speed the body's recovery from infections and reduce the recurrence of bacterial and yeast infections. Echinacea is the perfect short-term boost that many immune systems require from time to time.

However, a "get busy" immune stimulant like echinacea is not for everybody. If your immune system is already overactive, as is the case in people with autoimmune diseases, echinacea may not be your first choice. It's also not recommended for progressive diseases such as multiple sclerosis. Finally, the jury is still out on whether echinacea should be used by persons with HIV infection.

In my opinion, these conditions are the domain of the adaptogenic herbs listed earlier. Adaptogens such as astragalus and eleuthero (Siberian ginseng) tend to enhance the immune system by way of a balancing approach, as opposed to the more nonspecific approach taken by echinacea. This means adaptogens can be used as potentially supportive therapy in conditions in which the immune system is either depressed or overactive. The following is a list of immune-related conditions for which herbal adaptogens might be considered:

- HIV infection
- Chronic fatigue immunodeficiency syndrome
- Chronic hepatitis
- Cancer recovery from radiation or chemotherapy

Keep in mind that with most of these conditions, immune-enhancing actions represent only one aspect of a complete health care program.

Some mushrooms, including shiitake, reishi, and maitake, contain a high concentration of polysaccharides. These polysaccharides, like those of immunomodulating herbs, affect the immune system. Traditionally employed as tonics, these mushrooms have many of the same applications as the herbal adaptogens.

## LAXATIVES

By the time you finish this book, you may be thinking laxative. From prunes to good ol' Ex-Lax, laxatives are among the most commonly sold over-the-counter remedies in both the United States and Europe. Herbal laxatives are sold most often.

Herbal laxatives are usually placed into two categories: stimulant or bulk-forming. Table 4.3 gives common examples of the two categories.

*Table 4.3*  
HERBAL LAXATIVES

Bulk-Forming	Stimulant
Psyllium seed	Senna leaves Cascara bark Aloe (latex from the leaves)

### **BULK-FORMING LAXATIVES**

Bulk-forming laxatives, which are high in fiber as well as mucilage, expand when they come in contact with water (try leaving some psyllium seeds in a bowl of water for a couple of days). As they increase in volume in the bowel, they stimulate a reflex contraction of the walls of the bowel, followed by emptying. This class of laxatives exerts a milder effect than stimulant laxatives and are most suitable for long-term use.

Since they are high in fiber, bulk-forming laxatives also contribute to keeping cholesterol in check. Research also suggests that diabetics can benefit from the dietary fiber in guar gum, psyllium, and fenugreek. The dietary fiber helps lower blood sugar in people with non-insulin-dependent diabetes (also known as *adult-onset* or *type 2 diabetes*).<sup>15</sup>

### **STIMULANT LAXATIVES**

Stimulant laxatives increase bowel movements, owing to the presence of active constituents known as *anthraquinones*. Anthraquinones increase the contraction of the muscles of the bowel wall primarily by acting as mild irritants. This reaction is not dissimilar to a cough in response to a throat irritant.

Stimulant laxatives are wonderful short-term cures for constipation. However, long-term use is not recommended without medical supervision. Long-term overuse of stimulant laxatives can cause dehydration and also create a dependence on laxatives for a normal bowel movement. Stimulant laxatives are normally not recommended for pregnant or lactating women (senna is the exception). These laxatives should be avoided if you have an inflammatory bowel disease such as ulcerative colitis or Crohn's disease.

The best researched and most widely used stimulant laxative is senna. One of the best products for treatment of chronic constipation in elderly people is a combination of senna (18 percent) and psyllium (82 percent). In a study of seventy-seven elderly patients in a nursing care home, the use of this combination was found to be far more effective and cost-efficient than a synthetic laxative (lactulose) in the treatment of chronic constipation.<sup>16</sup>

Cascara, another laxative, is milder in action than senna. Aloe is an extremely potent laxative and is usually employed only when senna or cascara are not effective.