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Specific Indications: Herbs for Endocrine Conditions

Most of the folkloric and ancient herbal texts do not use the terms *thyroid* or *adrenal* when discussing symptoms and diseases. However, many such texts will describe the symptom picture such as cold hands and feet, with constipation and obesity, or heart palpitations with sweating and insomnia, suggesting recognition of hypo- and hyperthyroid states, well before an understanding of hormones and the roles that hormone-producing organs played in the body. The following herbs have been mentioned in herbal traditions throughout the world for symptom constellations matching endocrine disorders formally recognized today. Many of them have been researched and molecular mechanisms affecting the adrenal and thyroid systems have been identified.

Andrographis paniculata • King of Bitters

The entire plant—leaves, roots, and flowering tops—has been used in Ayurvedic medicine where *Andrographis* goes by the common name kalmegh or kalamegha. Include *Andrographis* in formulas for infections, whether acute, chronic, or lingering in hypothyroid and diabetic patients. *Andrographis* is thought to have a “cold property” in various energetic systems of herbal medicine, useful to rid the body of heat and fever and to dispel toxins. Consider *Andrographis* in formulas for thyroiditis suspected to be associated with underlying herpes or hepatitis infections and when acute viral infections cause a worsening of thyroid or metabolic symptoms. *Andrographis* is shown to improve the fatigue that often accompanies autoimmune diseases. *Andrographis* has been the subject of significant research, and many studies credit the labdane diterpene andrographolide with immune-modulating activity. *Andrographis* is credited with anti-inflammatory, antioxidant, antidiabetic, anticancer, immunomodulatory, sex hormone modulatory, antiangiogenic, and hepatorenal protective activities, all of which may benefit patients with thyroid and adrenal imbalance and metabolic dysfunction.

Arctium lappa • Burdock

Include *Arctium* root to support hepatic clearance of hormones, lipids, and carbohydrates, to help optimize the intestinal microbial ecosystem, and to prevent fatty degeneration in the liver. Arctigenin in the roots is shown to enhance energy uptake and utilization in skeletal muscle that may improve stamina and endurance in those with fatigue and poor exercise tolerance.

Artemisia annua • Sweet Annie

The aerial parts of *Artemisia annua* contain artemisinin, a sesquiterpene lactone, widely studied for malaria and other purposes. Artemisinin may also improve inflammatory and autoimmune diseases and is shown to suppress some hypersensitivity reactions. Artemisinin has shown immune regulatory actions via effects on T cell imbalances. It has been shown to reduce Graves' exophthalmia, and animal studies have shown immunosuppressive activity. *Artemisia annua* is known as qinghao in TCM and also goes by the common name sweet wormwood. Isolated artemisinin is referred to as qinghaosu in TCM and used to treat malaria, among other ailments.

Astragalus membranaceus • Milk Vetch

Astragalus roots have a starchy palatable flavor, making the powder useful to include in medicinal foods. Root decoctions and other preparations can be included in formulas for frequent common infections that linger and are associated with fatigue and exhaustion. *Astragalus* is in the legume family and the phytoestrogen isoflavones that legumes contain may improve hormonal balance. *Astragalus* has immune-modulating properties, making it useful for thyroiditis or instances when high viral loads trigger flare-ups of thyroid or metabolic symptoms. *Astragalus* may also reduce the risk of cancer in chronic thyroiditis. *Astragalus* may improve insulin response and is also useful for renal insufficiency. The roots are available as large slices that can be decocted in soups and removed at the time of serving. *Astragalus* can improve metabolic function.

Avena sativa • Milky Oats

The flowering tops of oats are gathered at the milky stage to make the best nerve-restoring medications. *Avena* is useful in formulas for nervous exhaustion and debility and to support recovery following exhausting illnesses, malnutrition, and addictions. *Avena* is specific for fatigue following overwork, loss of vital fluids such as acute hemorrhage, and as a supportive ingredient in formulas for adrenal dysfunction. Forty different phenolic compounds, the avenanthramides, have been identified in *Avena*, showing anti-inflammatory and antiatherogenic effects, decreasing plaque formation on endothelial cells via effects on adhesion molecules and proinflammatory cytokines. *Avena* can also, therefore, help protect against metabolic stress in hypothyroid disorders and other situations of metabolic stress.

Berberis aquifolium • Oregon Grape

Berberis is the source of berberine, found in the yellow inner root bark of this Pacific Northwest shrub, which is widely studied for numerous benefits to metabolism. Berberine improves hyperlipidemia and hyperglycemia, enhances insulin sensitivity, and is credited with thermogenic action due to effects on brown adipose cells. Include *Berberis* in formulas for fungal infection in diabetes and as a general antimicrobial and hepatotonic in cases of intestinal dysbiosis related to hyperglycemia or sluggish elimination in hypothyroidism. *Berberis* may also be included in formulas for thyroiditis, Hashimoto's disease, and hyperthyroidism. It can help control lipids as one aspect of metabolic syndrome therapy. This plant is also known as *Mahonia aquifolium*.

Bupleurum falcatum • Chinese Thoroughwax, Saiko

Bupleurum is used in numerous traditional formulas for inflammation and pain, and modern research has revealed numerous anti-inflammatory and antioxidant actions. The roots are available to decoct or use in tincture. Recent animal research shows *Bupleurum* to possibly reduce hyperthyroidism, improving oxidative stress and tissue changes in a manner equal to thyroid-suppressing drugs. *Bupleurum* has been used in Traditional Chinese Medicine to help the liver “smooth the chi” and is appropriate for acute inflammatory reactions in the body. *Bupleurum* may also be included in formulas to help protect the liver and kidneys in cases of Graves’ disease when oxidative stress is high. *Bupleurum* saikosaponins have immunomodulatory activity and may inhibit platelet activation while enhancing cortisol synthesis and corticosterone secretion, supporting the pituitary’s production of ACTH and offering hepatoprotective and nephroprotective effects in situations of oxidative stress in hyperthyroidism. Saikosaponins also inhibit the inflammatory prostaglandins and promote protein synthesis in the liver, contributing to anti-inflammatory and hepatoprotective effects. *Bupleurum* is specific for organomegaly, especially hepatomegaly, and abdominal pain associated with liver and digestive disease. *Bupleurum* is often combined with *Paeonia* to treat liver congestion and disease in Traditional Chinese Medicine. *Bupleurum chinense* is also used medicinally.

Calendula officinalis • Pot Marigold

Calendula flowers are a traditional medicine for skin wounds and lesions, both topically and internally. *Calendula* can be included in formulas for thinning and pigmentary changes in the skin associated with Cushing’s syndrome and to help treat itching and skin lesions that may occur with thyroid disease.

Camellia sinensis • Green Tea

Green tea leaves have broad antioxidant mechanisms and can be a gentle metabolic stimulant for hypothyroidism and deficiency states. Green tea can be part of a daily protocol to reduce oxidative stress in the liver and to reduce the risk of developing thyroid cancer in those with thyroiditis.

Centella asiatica • Gotu Kola

Centella leaves may help protect tissues including the liver, nerves, heart, and blood vessels from fibrotic changes due to inflammation. *Centella* may also prevent tissue proliferation behind the eyes in Graves’ exophthalmia and protect the connective tissue from excessive thinning in cases of Cushing’s disease.

Citrus sinensis • Orange

The peels of oranges and sometimes other citrus fruits are frequently used in TCM formulas for a broad variety of actions, including suppressive effects on the thyroid. *Citrus*, including orange juice, is shown to reduce T4 and T3 levels in animal studies, resulting in an increase in thyroid-stimulating hormones (TSH). *Citrus* may ameliorate hyperthyroid symptoms, improving both elevated thyroid hormones and protecting the tissue against oxidative stress, however, one should not expect too much effect from consumption of *Citrus* on its own.

Cnicus benedictus • Blessed Thistle

Cnicus leaves are specific for sluggish liver function. Like its Thistle-family relatives *Silybum* and *Cynara*, *Cnicus* may improve the liver’s processing of hormones and help protect the liver from fatty degeneration.

Coleus forskohlii • Coleus

The roots of *Coleus* are specific for atonic organ function, sluggishness of general metabolic functions, and excessive inflammatory responses. *Coleus forskohlii* extract has been used for centuries in Ayurvedic medicine to treat various diseases including hypothyroidism, and its use may support weight loss in obese patients with low metabolic rate or metabolic syndrome. *Coleus* has direct effects on cells by enhancing cyclic adenosine monophosphate (cAMP), often referred to as the “second messenger” due to its role in supporting cells’ signal transduction, helping to pass along cell membrane signals to the interior of the cell. Research on *Coleus* has mainly focused on forskolin, a uniquely structured labdane-type diterpenoid in roots of the plant. Because cAMP promotes the breakdown of stored fats in animal and human fat cells, regulates the body’s thermogenic response to food, increases the body’s basal metabolic rate, and increases utilization of body fat, *Coleus* may be helpful in weight loss formulas. Animal research suggests that *Coleus* has antiobesogenic and metabolic benefits to rats fed a poor diet, reducing food intake and blood lipids, and supporting weight loss. Limited human studies have shown *Coleus* to favorably impact changes to body composition, reducing body fat percentage in overweight and obese subjects. Another diterpene, coleonol, may stimulate the release of insulin and glucagon from pancreatic islets. When combined with a low-calorie diet and exercise, *Coleus* may improve insulin resistance and metabolic risk factors. *Coleus forskohlii* is also known as *Plectranthus forskohlii*, and some sources also list *Plectranthus barbatus* as an alternate name for *Coleus forskohlii*.

Commiphora mukul • Guggul

Guggul is a traditional medicine for obesity, diabetes, and hyperlipidemia used in Ayurvedic medicine for more than 2,000 years, and guggulsterones in the plant’s resin have been shown to have numerous direct effects on fat cells. The resin is collected from incisions in the trunk of guggul trees (which are related to myrrh trees) and ground down into a powder to use in medicine and in dressing wounds. Guggul is specifically indicated for elevated lipids due to hypothyroidism or slow metabolism, a sense of weight in the pelvis, tissue congestion, fat accumulation, and constipation. Guggul may support weight loss and lipid metabolism via enhancing thyroid uptake of iodine, supporting thyroxine output, and metabolic rate. Animal studies have shown guggul to increase T3 concentration and T3/T4 ratio, but this area of research has not matured in the 30 years since first reported. Guggul’s hypolipidemic effects have received more research attention in recent decades, and guggulsterones are shown to help improve fat

metabolism by the liver and to help resist or reverse insulin resistance due to dietary stressors. *C. myrrha* (myrrh) and *C. wightii* are also used medicinally. The plant is referred to as guggulu in Ayurvedic medicine.

Coptis trifolia • Goldthread

Coptis roots are high in berberine and related isoquinoline alkaloids, useful for chronic infections in mucous membranes. *Coptis* may be included in formulas for diabetic and hypothyroid patients who have frequent sore throats or other common infections, with slow recovery time. Due to its many metabolic effects, *Coptis* may help deter endothelial atherosclerotic plaque deposition and may help protect the brain against neurodegenerative effects due to metabolic syndrome. *Coptis* also supports liver metabolism, improving carbohydrate and lipid processing, and offers cardioprotection. *Coptis chinensis* is one of the 50 fundamental herbs used in TCM, where it is called duan e huang lian.

Crataegus species • Hawthorn

Various species of hawthorn trees are used medicinally, including *Crataegus monogyna*, *C. oxyacantha*, and *C. laevigata*. Both the young flower buds with their leaves and the ripe berries are used medicinally. *Crataegus* berries are high in flavonoids that may help protect the heart and blood vessels from inflammatory damage in situations of high oxidative stress with hypermetabolic syndromes such as Graves' disease.

Curcuma longa • Turmeric

The bright yellow tuberous roots of *Curcuma* are widely used for many medicinal as well as culinary purposes. Much of the research on *Curcuma* is focused on a group of golden-colored flavonoids known as curcuminoids, especially curcumin. *Curcuma* has antioxidant and anti-inflammatory properties that may help protect the liver from fatty degeneration in cases of hyperlipidemia and metabolic syndrome. It offers general hepatic support and may assist the liver in clearing hormones. *Curcuma* can improve lipid and carbohydrate metabolism in cases of diabetes and hyperlipidemia and may improve intestinal dysbiosis and propensity to fungal and other infections. *Curcuma* may also help protect connective tissue and organs from oxidative stress and fibrotic demise. In addition, it may help protect the liver from fibrosis in chronic thyroiditis, reduce the risk of emergent cancers, and protect the connective tissue from thinning in Cushing's syndrome.

Eleutherococcus senticosus • Siberian Ginseng

Eleutherococcus roots are a traditional medicine for relieving stress, treating mental and emotional disorders, and improving stamina and general energy in cases of chronic fatigue. It is also used for those recovering from debilitating illnesses. *Eleutherococcus* acts as an adrenal tonic in both hypo- and hyperfunction of the adrenal gland, and it is specifically indicated for long-term stress resulting in nervous symptoms, fatigue, poor sleep, and poor stamina, with easy exhaustion following minor exertion. *Eleutherococcus* may be a supportive ingredient in formulas for endocrine imbalances. Siberian ginseng, also called eleuthero, may help modulate the hypothalamic-pituitary-adrenal (HPA) axis response to stress, as indicated by an attenuated corticosterone response, and reduce mental-emotional consequences such as anxiety or depression. Animal research has shown *Eleutherococcus* to improve immune response when the immune system has been suppressed by chronic stress and to prevent metabolic syndrome in situations of metabolic stress, improving skeletal muscle energy metabolism. Numerous anti-inflammatory and tissue-protective mechanisms have been demonstrated, and *Eleutherococcus* may be helpful in protocols for hypothyroidism and hyperthyroidism where high levels of oxidative metabolites may damage tissues. The plant is also known as *Acanthopanax senticosus* and referred to by the common name ciwujia in China.

Epimedium grandiflorum • Horny Goatweed

Epimedium is a traditional Chinese herb whose leaves and roots are said to invigorate yang and often used in skin, bone, and reproductive hormonal-balancing formulas. Other *Epimedium* species are also used medicinally and go by the same common name in the West. *Epimedium* is said to be a kidney yang tonic in TCM, and kidney yang deficiency syndrome shares clinical similarities with glucocorticoid withdrawal. *Epimedium* may also protect against developing Cushing's syndrome in those who require long-term glucocorticoid therapy. Some of *Epimedium*'s immunomodulating and HPA axis-stabilizing effects may be via estrogen agonism. *Epimedium* has bone-building effects and may protect against thyroid-related bone disease, possibly by estrogenic effects on bone cells. *Epimedium* may reduce atopic dermatitis that frequently occurs with HPA axis dysfunction, particularly seen in those with low serum cortisol.

Equisetum arvense • Horsetail

Equisetum's aerial parts are an ancient medicine for wound healing, trauma recovery, and to support the excretory function of the urinary system. *Equisetum* is high in silica and other minerals, contributing to its reputation for healing fractures and alleviating musculoskeletal pain. Include *Equisetum* in formulas to support connective tissue; it may help wound healing in chronic diabetic ulcers or to strengthen the skin in patients with Cushing's syndrome. Many related species are used in the same manner, including *E. hyemale*. See also the *Equisetum arvense* entry on page 93.

Eschscholzia californica • California Poppy

Eschscholzia roots and young flower tops are indicated for symptoms of anxiety, muscular tension, and poor sleep, and the herb is appropriate to include in formulas for adrenal exhaustion due to long-term stress. Nervines such as *Eschscholzia* are often useful in protocols for adrenal dysfunction, helping to soothe mental anxiety and treat stress symptoms that lead to cortisol activation and contribute to adrenal dysfunction.

Fucus vesiculosus • Bladderwrack

Fucus is a genus of brown algae found in intertidal rocky seashores in temperate regions, especially the Pacific shores of North America. *Fucus* has been used as food and medicine for centuries, particularly in Asian cultures. *Fucus* also goes by the common name bladderwrack because the plant possesses small air-filled bladders or flotation devices that help keep it close to the water's surface. *Fucus* is also referred to as kelp, which was also

the name given to the alkaline ashes that were produced by burning various seaweeds and used as an alkali agent in soap making. *Fucus vesiculosus* contains the flavonoid fucoxanthin and is reported to have the greatest antioxidant activity of all the edible seaweeds tested. *Fucus* and other brown seaweeds are specifically indicated for symptoms of hypothyroidism, including obesity, goiter, exophthalmia, constipation, and flatulence. *Fucus* and other seaweeds are a natural source of iodine, important to thyroid function, and the fucoxanthins may reduce the risk of thyroid cancer and hormonal cancer in general. Folklore often reports that *Fucus* protects a poorly functioning thyroid from further inflammatory stress. See also “Dietary Seaweed for Thyroid and Metabolic Function” on page 27.

Ganoderma lucidum • Reishi

The entire woody reishi mushroom is used medicinally, processed into tinctures, powdered and encapsulated, and decocted in teas. Reishi and other medicinal and edible mushrooms contain β -glucans and immunomodulators credited with antiviral, tissue protective, and metabolic actions. These actions explain *Ganoderma*'s reputation as the “mushroom of immortality.” *Ganoderma* may help protect the nerves from oxidative stress and support the immune system in situations of poor immunity, including in adrenal and thyroid disease. *Ganoderma* may also protect the HPA axis from downregulation in Cushing's syndrome, protecting against weight gain, insulin resistance, and altered lipid metabolism. *Ganoderma* may also contain enzymes that metabolize cortisol into the less active corticoids. This may also help to attenuate aldosterone activation that drives fluid retention and hypertension in Cushing's syndrome, reducing cortisol from binding mineralocorticoid receptors. Bisphenol A and triclosan are known endocrine-disrupting chemicals, and *Ganoderma* species are shown to help metabolize these toxins in municipal water supplies employing water-filtering technologies. It is unknown how this ability of *Ganoderma* may benefit the human body, but it is plausible that the mushroom may similarly support the enzymatic breakdown of endocrine disrupters, supporting endocrine health.

Ginkgo biloba • Ginkgo, Maidenhair Tree

Ginkgo leaves are specifically indicated for oxidative stress in the blood, clotting, and circulatory insufficiency. *Ginkgo* may support circulation in heart disease and protect the heart in situations of metabolic syndrome and hyperlipidemia. Include *Ginkgo* in formulas for diabetic retinopathy, nephropathy, and neuropathy, as well to treat impotence due to diabetes and poor circulation. The research on *Ginkgo* is extensive and shows numerous antioxidant, antiallergy, vasodilating, vascular-protective and other tissue-protective anti-inflammatory effects. *Ginkgo* may also enhance circulation to the eye in a manner that reduces oxidative stress to treat Graves' exophthalmia. Include *Ginkgo* in formulas for hypertension and inflammation in Graves' disease and metabolic distress.

Glycine max • Soy

Soybeans have numerous tonifying effects on reproductive hormones and may improve many problems with metabolic distress ranging from diabetes to elevated lipids. Isoflavone phytoestrogens in soy are credited with numerous hormone-regulating effects on hormone sensitive tissues. Soy may interfere with the uptake of levothyroxine.

Glycyrrhiza glabra • Licorice

Licorice is among the most versatile, popular, and widely used of all plant medicines in all cultures. Licorice roots are specifically indicated for exhaustion, loss of strength, weight loss, and debility. Licorice may be included in formulas for PCOS, Addison's disease, Cushing's syndrome, insulin resistance, adrenal virilism, orthostatic hypotension, and postpartum declines in hormone output and balance. Licorice can enhance urinary excretion of cortisol in situations of elevated cortisol, as well as enhance adrenal production of cortisol when low. Licorice also has antiviral properties and may help limit inflammation in the thyroid when thyroiditis is associated with underlying viral auto-immune reactivity. Licorice may also replace the pharmaceutical spironolactone for those who tolerate it poorly. Licorice is among the plants known to impact hormonal balance and the HPA axis. There has been extensive research on the ability of licorice to improve adrenal fatigue and stress intolerance, via enhanced cortisol response. Licorice contains a cortisone-like constituent and also inhibits the breakdown of cortisone in the liver. A concomitant pseudoaldosterone action may cause retention of fluid and elevation of blood pressure, yet improve symptoms of mineralocorticoid insufficiency such as Addison's disease. Glycyrrhizic acid is a component of the roots shown to have hepatoprotective effects, preventing changes in cell membrane permeability by inhibiting phospholipase. Licorice extracts may also improve dyslipidemia. Licorice may improve insulin resistance, and licorice flavonoids are shown to suppress abdominal fat accumulation in obese mice and rats. The triterpenes in licorice roots are particularly credited with metabolic effects. For more information on *Glycyrrhiza*, see “Licorice: A Model Adaptogen” on page 53.

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