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BOTANICAL MEDICINE IN THE SUPPORT OF ADRENAL FUNCTION

By Dr. Michael Murray, N.D.

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The adrenal glands are responsible for maintaining the natural balance of many bodily functions by secreting several important hormones. A wide variety of physiologic stimuli including stress, fasting, temperature changes, infections, drugs and exercise cause the adrenal gland to secrete its hormones. An abnormal adrenal response, either deficient or excessive hormone release, significantly alters an individual's response to these stimuli. This results in the adrenals becoming "exhausted" as a result of constant demands placed upon it. An individual with adrenal exhaustion may feel "stressed out," tired and be prone to allergies. The following formula is designed to offer support and enhancement of adrenal gland function, particularly the adrenal cortex,

Basic Anatomy and Physiology of the Adrenal Gland:

The adrenal glands lie just above the kidneys and are composed of two distinct parts, the adrenal medulla and the adrenal cortex. The adrenal medulla is functionally related to the sympathetic nervous system, and secretes the hormones epinephrine (adrenaline) and norepinephrine (noradrenaline). These hormones stimulate many body processes related to the fight or flight response. They also serve to maintain



normal nervous control over many involuntary bodily functions such as heart rate, respiration, digestion, etc.

The adrenal cortex secretes an entirely different group of hormones called corticosteroids. These hormones are all formed from cholesterol. Although all corticosteroids have similar chemical formulas, they differ in function. The three major types of corticosteroids are mineralcorticoids, glucocorticoids, and 17-ketosteroids (sex hormones). The glucocorticoids, mainly cortisol, corticosterone and cortisone, exert a profound effect upon the metabolism of glucose. These hormones can increase serum glucose levels and induce a state very similar to diabetes. These hormones also exert a catabolic effect on skin, muscle, and fat. Medicinally, glucocorticoids are used to suppress the immune system in the treatment of allergies and to reduce inflammation. The mineralcorticoids, of which aldosterone is the most important, have profound effect on minerals. Specifically, aldosterone increases the retention of sodium and the excretion of potassium by the body. The 17-ketosteroids (sex hormones) are also secreted by the adrenals. The primary sex hormone produced by the adrenal is the androgen (male hormone), dehydroepiandrosterone

(DHEA). This hormone has received some attention recently as a possible anti-aging hormone. In addition there is some evidence that it may have some therapeutic benefit in diabetes, obesity, and asthma

Herbal Therapy for Adrenal Support

The following herbal formula is truly a unique approach to enhancing adrenal function. It may be used alone or for even better results it may be used in combination with a raw adrenal complex, a glandular/nutritional product designed to nutritionally support the adrenal gland. Components in these formulas work synergistically to enhance all aspects of adrenal corticosteroid function including anti-allergy, anti-inflammatory, and anti-stress actions. The

formula I recommend is composed of *Bupleuri falcatum* (Chinese thorough-wax), *Glycyrrhiza glabra* (licorice), *Curcuma longa* (curcumin), *Panax ginseng* (Korean ginseng), *Eleutherococcus senticosus* (Siberian ginseng) and *Dioscorea mexicana* (Mexican yam).

Bupleuri falcatum (Chinese thorough-wax):

Bupleuri root is an important component in various prescriptions in Chinese traditional medicine, particularly in remedies for inflammatory conditions. Recently these formulas have been used alone and in combination with corticosteroid drugs like prednisolone and prednisone to relieve inflammation.² Bupleuri has also been shown to enhance the activity of glucocorticoids.

The active ingredients of bupleuri are steroid-like compounds known as saikosaponins. These compounds have diverse pharmacological activities including significant anti-inflammatory action.³ The anti-inflammatory activity of the saikosaponins is related to the increase in the release of glucocorticoid hormones by the adrenal and the resulting potentiation of their effects. The release of glucocorticoids by the adrenal is stimulated by the pituitary hormone adrenocorticotropic hormone (ACTH). Bupleuri increases the release of glucocorticoids by increasing the pituitary release of ACTH.⁴ This is very important as ACTH increases the functional ability of the adrenal cortex. In contrast, when corticosteroid drugs are given, the adrenal glands get smaller and lose much activity. Saikosaponins have been shown to prevent adrenal gland atrophy caused by corticosteroid drugs. If an individual is on corticosteroid drugs, they would greatly benefit by taking this formula along with



their medication.² Bupleuri saikosaponins have other therapeutic activities including lowering cholesterol levels, preventing liver damage, improving liver functions in chronic hepatitis, and mild sedative/pain relieving action.

Licorice (*Glycyrrhiza glabra*)

Licorice appears to enhance the action of bupleuri and the two are almost always used together in traditional Chinese herbal formulas. Licorice is used effectively in the treatment of Addison's disease, a condition of severe adrenal insufficiency. Licorice also has significant anti-inflammatory and anti-allergy activity. Licorice component, is able to bind to glucocorticoid receptors on cells and exert glucocorticoid-like effects.^{6,7} Perhaps licorice's major effect is its ability to inhibit the breakdown of adrenal hormones by the liver.^{6,7} When used in combination with bupleuri, the net effect is increasing the number of corticosteroids in circulation. This results from bupleuri promoting secretion of these hormones by the adrenal glands and licorice's ability to inhibit the breakdown of these hormones by the liver. Although licorice enhances many actions of cortisol there are several actions of cortisol that are inhibited by licorice. Licorice inhibits cortisol's ability to promote thymus atrophy, increase cholesterol levels, inhibit ACTH secretion, and its effect on several different enzymes.⁸ Licorice has been used historically in the treatment of inflammation, allergy, asthma, and other conditions that put added stress on the adrenals.^{5,6,7}

Curcumin (*Curcuma longa*)

Curcumin, the yellow pigment of *Curcuma longa* (turmeric), has significant anti-inflammatory action.^{9,10} Curcumin is thought to "prime" or sensitize cellular receptor sites to the adrenal hormones, thereby potentiating adrenal hormone action. This is demonstrated by animal studies where it was discovered that curcumin was not as effective an anti-inflammatory agent in animals that had their adrenal glands removed. Curcumin has also been shown to be as effective as cortisone or phenylbutazone in certain models of inflammation. Curcumin also exhibits many beneficial effects on liver functions.⁶

Korean ginseng (*Panax ginseng*)

Korean ginseng is referred to as an "adaptogen." Specifically an adaptogen is an agent that (1) protects against both mental and physical fatigue, (2) provides nonspecific resistance against stress, and (3) normalizes an abnormal state caused by some excess or deficient physiological factor." Much of ginseng's "adaptogenic" activity relates to its influ-

ence on the adrenal gland. Ginseng components have been shown to increase the release of ACTH, thus causing an increase in the release of adrenal hormones as well.^{11,12} It appears, based on extensive research, ginseng acts through nervous system control mechanisms to adjust metabolic and functional systems that maintain homeostasis during the challenge of stresses.^{11,12} This is very similar to the way a thermostat maintains temperature. Like bupleuri, ginseng potentiates adrenal gland function and counteracts any shrinkage of the adrenal gland by corticosteroid drugs.^{11,12} Many of the historical uses of ginseng, particularly as a tonic, relate to its ability to enhance adrenal gland function and improve reactions against a variety of stresses.

Siberian ginseng (*Eleutherococcus senticosus*)

Like Korean ginseng, Siberian ginseng is also an adaptogen. Generally regarded as an even more effective adaptogen than Korean ginseng, Siberian ginseng has also been shown to protect against the effect, of physical and mental stress.^{12,13} Siberian ginseng has also been shown to improve the ability of humans to withstand extremely stressful conditions (heat, noise, motion, work load increase, exercise, decompression): to increase mental alertness and work output; and to improve the quality of work under stress conditions and athletic performance.^{12,13} Many of these effects are thought to be a result of improved adrenal function.

Mexican yam (*Dioscorea mexicana*)

The Mexican yam is an extremely rich source of natural plant steroid compounds that are capable of being converted to steroid hormones.¹⁴ It also is a natural source of the adrenal hormone DHEA which has received some attention recently as a possible anti-aging hormone.¹⁵ In addition there is some evidence that DHEA may have some therapeutic benefit in diabetes, obesity, and asthma.^{16,17,18}

I would recommend the following formula: Adren-Comp

- Bupleuri falcatum (Chinese Thoroughwax)150 mg.
- Extr. Glycyrrhiza glabra (4:1) (Licorice root extract)50 mg.
- Extr. Curcuma longa (10:1) (Curcumin root extract)50 mg.
- Extr. Panax ginseng (3:1) (Korean Ginseng root extract).....100 mg.
- Extr. Eleutherococcus senticosus (5:1) (Siberian Ginseng root extract)100 mg.
- Extr. Dioscorea mexicana (10:1) (Mexican Yam extract)100 mg

Each capsule is equivalent to 2650 mg. from pure herbal extract.

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