Kava Kava
By Steven Horne and Mark Montgomery

If you’re like most people, when you think of the Polynesian cultures, you picture a laid-back, relaxed people eating tropical fruits and ocean fish and lying on the beach. Well, kava may be one of the reasons we have this image. Kava has a centuries-old history of use in the South Pacific Islands and continues to be used today. It was traditionally prepared by chewing (a job left to virgins) and then mixed with water or coconut milk. Both common people and chiefs used kava ceremonies to foster goodwill, strengthen social cohesion and resolve conflicts.

In Polynesia today, kava has a social and ceremonial function much like coffee or alcohol does in America. Just as people in our country might sit around and discuss a business deal or socialize over a cup of coffee or a drink, Polynesians are likely to socialize or discuss business over kava. Isn’t it interesting that hard-driving, competitive Americans socialize over a stimulant that puts us on edge or a depressant that dulls rational thought. Kava would be a better choice, because its sedative and anxiolytic (anxiety-reducing) properties produced a relaxed, semi-euphoric state, that doesn’t dull rational thought. As such, it helps people feel more relaxed and clear-headed at the same time—a great way to start business negotiations or conflict resolution.

Modern science has identified some of the constituents responsible for kava’s actions. Fifteen chemically related constituents called kavalactones have been found that have muscle relaxant, analgesic (pain-relieving), antispasmodic, soporific (sleep inducing) and anti-inflammatory properties. Results have shown that two of them, dihydrokawain and dihydromethysticin, have an analgesic power equivalent to aspirin when taken together. But the real power of kava seems to come in the way in which the various kavalactones act together to produce chemical effects that are greater—and more varied—than any of the single chemicals acting alone.

Clinical trials which have compared the effects of kava with that of pharmaceuticals like Valium®, Xanax® and Halcion® have found that kava is not only as effective, but also safer than these isolated, concentrated substances. Unlike most commercial tranquilizers, kava is not addictive and doesn’t impair mental functioning. In fact, the only side effect noted in many clinical trials investigating kava’s tranquilizing abilities was that participants’ mental functions improved.

According to Dr. James A. Duke, kava can also help “almost any achy, inflammatory urinary disorder…bladder inflammation, urethral inflammation, vaginitis, gonorrhea, cystitis, pyelitis, and burning or pain upon going to the bathroom.” It is also helpful for menstrual cramps, dysmenorrhea (painful menstruation) and migraines. It is a diuretic and urinary antiseptic (an excellent remedy for urinary tract infections), but oddly enough, may also be helpful for incontinence.

In regards to ADD/ADHD Dr. Duke says, “I mention kava to every mother I meet whose child has been diagnosed with this elusive condition. I’d rather that any hyperactive child or grandchild of mine at least try kava before acquiescing to a Ritalin prescription. At the least kava seems better (and safer). At the most, it’s a safer (and more natural) lifesaver.”

It’s not a good idea to take kava with alcohol or other mind-altering drugs. Like alcohol, too much kava can result in a loss of muscle co-ordination, so don’t take large quantities when you’re driving or operating heavy machinery. There have been some arrests in Utah for driving under the influence of kava. Kava is sold by NSP as a concentrated extract in capsule form. For those of us who aren’t about to take a South Seas vacation any time soon, taking a little kava may be the next best thing.

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Feature Herb: Kava Kava. 1
Steven’s Ramblings & Ravings: Fat Facts, Part Two: The Omega-9 and Omega-6 Oils 2-3
Kimberly Balas’ Clinician’s Corner: Nerve Damage, Calcium, Slipped Disks and Adrenals 4-5
Product Handouts: Anxiety and Panic Attacks 6
Adrenal Support 7
Announcements/Publication Info 8
In the last issue of Nature’s Field, I wrote about fats, discussing saturation and indicating what a transfatty acid looks like. This issue, I continue the discussion by elaborating on the different types of fatty acids.

The chart above gives a simple breakdown of some of the major fatty acids. The first division is whether the fatty acid is saturated or unsaturated, which refers, as we discussed in our last issue, to whether all the carbon atoms in a chain are holding hydrogen atoms. We used the analogy of carbon molecule “shoppers” standing in a line holding hydrogen molecule “shopping bags.”

The four different fatty acids listed under saturated are differentiated by their length, in other words, how many carbon atoms are in the chain. Lauric acid is the shortest with only 12 “shoppers” in the chain. Myristic acid is longer with 14 carbon molecules in a line, while palmitic has 16 and stearic acid has 18. So, the length, not just the amount of saturation, is important in distinguishing fatty acids.

Besides the distinction of being monounsaturated or polyunsaturated, unsaturated fatty acids also fall into three more categories: Omega-3, Omega-6 and Omega-9. This distinction is made by the position of the unsaturated bonds.

Fatty acids have two ends, an omega end, which is oil soluble, and a delta end, which is water soluble. To determine whether a fatty acid is an omega-3, -6 or -9, you start at the omega end of the fatty acid and count the number of carbon molecule shoppers in the line until you reach the first pair of shoppers who are holding hands instead of holding hydrogen molecule shopping bags.

If you remember from last issue, the shoppers who are holding hands instead of shopping bags are called a double bond. So, if the first double bond is three carbon molecules down the line, it is an omega-3 fatty acid. If the first double bond is six carbon molecules down the line, then it’s an omega-6 and so forth.

**Monounsaturated Fatty Acids**

Omega-9 essential fatty acids aren’t considered essential because the body can make them out of omega-3 and omega-6 essential fatty acids. Oleic acid is the basic Omega-9 fatty acid. It is a monounsaturated fatty acid and is 18 carbon molecules long. It is found in foods like olive oil (virgin or extra virgin), olives, avocados, peanuts, sesame oil, and nuts like almonds, pecans pistachios, cashews, macadamias, etc. Studies have shown that oleic acid lowers heart attack risk and arteriosclerosis, and aids in cancer prevention. Here’s what an Omega-9 fatty acid looks like.

***Omega-6 Essential Fatty Acids***

The polyunsaturated fatty acids are considered essential because the body can’t manufacture them. The basic Omega-6 essential fatty acid (EFA) is linoleic acid. Here’s an example of an Omega-6 essential fatty acid.

The most common form of linoleic acid is alpha-linoleic acid, which the body converts to gamma linoleic acid (GLA). Linoleic acid is found in all vegetable oils and many other foods. There is, however, a special form of linoleic acid known as conjugated linoleic acid or CLA. Oddly enough, CLA is actually a naturally occurring transfatty acid. The structure of this is shown below. Notice that the double bonds are different from regular linoleic acid shown above. The red arrows point to the double bonds.

CLA is found in grass-fed meat and dairy products. CLA is converted to GLA and is more likely to be converted into good prostaglandins (the kind that reduce inflammation) than regular linoleic acid. When animals are allowed to graze on grass they will produce up to 500% more CLA. Animals fed commercial feed and grains in feed lots don’t produce as much CLA.

CLA appears to be a very healthy form of linoleic acid, in spite of its transfatty structure. Possible benefits of CLA include
increasing metabolic rate and stimulating thyroid activity, decreasing abdominal fat, balancing adrenal hormones, enhancing muscle development, lowering triglycerides and cholesterol, enhancing the immune system and reducing food-induced allergic reactions.

NSP has CLA available as a nutritional supplement. It's listed in the weight loss products. I took a bottle of it, just to see what it would do for me and didn't notice a big difference. However, it may be helpful for some people.

Supplementation with GLA has proven helpful for a wide variety of conditions. While it's true that most Americans get plenty of Omega-6 in their diets, many have problems converting it to GLA. This is because their diets are rich in sugar, alcohol, and transfatty acids. Smoking, stress, viral infections, diabetes, and even the aging process can also inhibit this conversion process.

GLA supplementation has been used for a wide variety of health problems, but some of its best uses are:

- Reducing inflammation in chronic inflammatory diseases, (such as arthritis, food and respiratory allergies, burning hands and feet, autoimmune disorders, eczema, psoriasis and dermatitis),
- Helping to repair damage in nerve and brain disorders (such as bipolar mood disorder, multiple sclerosis (MS), nerve damage, neuralgia, neuritis, neurosis, epilepsy, senility and Parkinson's disease)
- Easing female reproductive problems (breast lumps, enlarged breasts, cystic breast disease, endometriosis, uterine fibroids, PMS, leukorrhea, post partum weakness and menopause)
- Helping detoxification from chemicals, pesticides and heavy metals
- Resolving appetite problems (craving for fats, failure to thrive in infants and weight gain)

Other possible uses for GLA supplements include helping keep skin healthy (dry skin, wrinkle prevention, seborrhea, vitiligo, cradle cap), anemia, asthma, high blood pressure, cancer prevention, cystic fibrosis, type II diabetes, down syndrome, ligaments (torn or injured), Lupus, Lyme disease, and restless leg syndrome.

GLA is found in evening primrose oil, black currant oil and borage oil, all of which are found in NSP’s Super GLA blend. These oils also contain linoleic acid (Omega-6) and linolenic acid (Omega-3) in varying amounts. The percentages of these fatty acids in each oil are shown in the table below:

<table>
<thead>
<tr>
<th></th>
<th>GLA</th>
<th>Omega-3</th>
<th>Omega-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evening Primrose Oil</td>
<td>8-10%</td>
<td>trace</td>
<td>72-73%</td>
</tr>
<tr>
<td>Borage Oil</td>
<td>20-24%</td>
<td>trace</td>
<td>35-37%</td>
</tr>
<tr>
<td>Black Currant Oil</td>
<td>15-18%</td>
<td>13%</td>
<td>47%</td>
</tr>
</tbody>
</table>

Getting the Most from GLA

Supplementation with GLA doesn’t always work. There are several reasons for this. First, the body can’t use essential fatty acids properly if fat metabolism is impaired. The body has to be able to digest the fats, absorb them and metabolize them in the liver and other tissues. Secondly, the body converts CLA into other substances called eicosanoids. These are little chemical messengers (a primitive form of hormones) which are produced by every cell in the body.

Some of these eicosanoids reduce inflammation, enhance immune function, lower blood pressure and otherwise exert beneficial effects on the body. Others do the opposite, increasing inflammation, reducing immune function and increasing blood pressure. Borrowing an analogy from Star Wars (I’m a sci-fi fan), GLA is like a young Jedi knight who can stay on the light side or turn to the dark side of the eicosanoid force.

On the “dark side,” GLA is converted to arachidonic acid, which is then converted into eicosanoids like series 4 leukotrienes and lipoxins (which are pro-inflammatory) and series 2 prostaglandins and thromboxanes (which are pro-inflammatory, raise blood pressure, constrict arteries to raise blood pressure, promote blood clotting and do other dastardly deeds). On the “light side” GLA is converted to series 1 prostaglandins and thromboxanes (which reduce inflammation, reduce cell proliferation, reduce blood clotting, dilate blood vessels to reduce blood pressure and do other good deeds). If we want to get the benefits from any Omega-6 supplement (evening primrose oil, borage oil, black currant oil or Super GLA Oil, we have to keep it working on the “light side” of the eicosanoids force.

So, what is it that turns our healthy GLA and linoleic acid (Omega-6) to the “dark side?” The evil doers are high insulin levels and transfatty acids, coupled with a lack of another good guy to guide them, Omega-3 essential fatty acids. So, to get the best results with GLA or CLA supplements reduce refined carbohydrates and “bad” fats in the diet and make certain you get a good ratio of Omega-3 and Omega-6.

The basic Omega-3 EFA is linolenic acid. We’ll talk more about the Omega-3 group of essential fatty acids in our next issue.

Steven H. Horne is a professional member and past president of the American Herbalists Guild, a certified iridologist with the International Iridology Practitioners Association, and a gifted teacher and consultant in the field of natural health care. He is president of Tree of Light Publishing.
Kimberly Balas’ Clinician’s Corner

Nerve Damage, Calcium, Slipped Disks and Adrenals

Nerve Damage

What can be done to help nerve damage? Can you really reverse nerve damage from something like diabetes? Do the herbs actually regrow or do the herbs just act as a pain reliever? If herbs can repair the damage, how long does it take to see improvement? Are we talking about years and years, or is the pain going to go away and then the nerves regenerate?

Marie

Nerve Eight and St. John’s wort along with essential fatty acids and helichrysum essential oil can be used to help repair nerves. The time it takes depends on how bad the injury is, how long it has been since the injury and the recuperative power of the individual.

Everybody’s different, but as an example, I had one client who had shot herself. The bullet went into her spinal column, but it didn’t kill her; it just paralyzed her. Because of its location, they wouldn’t remove the bullet because it could kill her. She became a quadriplegic.

We gave her the Nerve Eight formula and Saint John’s wort. The nerves actually regrew around the bullet that was still lodged in her spine. She does walk now with the aid of a walker. So, it is possible to help nerves regenerate.

Calcification and Nerve Damage

Is time a factor when dealing with nerve damage? My dad has nerve damage on his left side due to calcium deposits that built up on his spinal column. (He walks like someone who has had a stroke.) It has been years since his surgery. The damage came because the doctor didn’t correctly diagnose him for several years. Is there still potential for the nerves to be restored?

Joan

Time is a factor in all injuries. Obviously, the longer a problem has been there, the more difficult it is to reverse. However, there is always the potential for improvement, and with herbs and nutritional supplement being non-toxic, there is nothing to lose. I would give him the Nerve Eight, the St. John’s wort and essential fatty acids along with Hydrangea to help break down the calcification.

Calcium Out of Solution

What are symptoms when someone's calcium is out of solution? What can be done for this problem?

Tonja

We’re talking about calcium that is not properly bound in the body. It’s called free calcium and can contribute to sore muscles, kidney stones, gall stones, bone spurs, blurry vision (ocular degeneration), acid reflux, osteoporosis, malabsorption, chronic lung congestion, high protein values in blood, lack of energy, rheumatoid arthritis, cancer, heart disease, demineralization and plaque on the teeth, just to name a few.

Excess free calcium can be caused by a suppression of or a deficiency in hydrochloric acid (HCl). It can also happen if there aren’t enough good fats in the diet to bind the calcium or if there isn’t enough B12 being produced in the intestines. I use HSN-W and magnesium when people have too much free or unbound calcium in their blood.

Which Calcium is Best?

Which of the NSP calcium products is the most easily absorbed? Is that randomly determined by muscle testing or is there actually one that is better than another?

Nolees

What calcium is best for someone depends on their lipid binding capacity and their ability to drive the calcium through the intestinal membranes. Calcium needs quality fats which have been properly broken down to be available for absorption. If we don’t have the right fats in our diet, we may need to supplement with fatty acids.

There are still a few spaces in Kim’s new course, A Simple Approach to Blood Chemistry: The Answers are In the Blood, being held before the NSP National Convention in Salt Lake City, UT (August 30, 2005 from 9:00 AM - 5:00 PM) Cost is $150. Call 888-707-4372 to register or register online at: www.treelite.com.
absorbed properly. This requires essential fatty acids and vitamin B12.

I find that the Herbal CA is the best calcium supplement because it contains other nutrients that help the body absorb, bind and utilize calcium. It isn’t about how much calcium gets absorbed, either. It’s about how much of it becomes bound so the body can use it.

The unbound calcium is dangerous, because too much free calcium will cause calcifications, bone spurs, kidney stones and increase plaque formation on the arteries.

**Slipped Disks**

I have a client who has two slipped or herniated disks in his cervical spine and is in great pain. He has a crook in his neck most of the work day. I started him with Magnesium Complex, noni, kava kava at night, and Deep Relief and Tei Fu Oils topically. The recipe cards I have suggest Liver Cleanse formula (8-10 capsules per day) when the problem is in the upper back. What other things would help him? Should I add yucca, licorice root or IF-C for inflammation?

Rosie

I would use the Bone Skin Poultice internally, PLS II in one large dose (15-20 caps) per day and use 2 teaspoons of Nature’s Fresh internally. Stick with the magnesium, the kava and the essential oils. I also find the Distress Remedy and Inflammation homeopathics to work well for these kinds of problems. Self-massage and posture adjustment, using the materials in Deanna Hansen’s Love Your Body Beautiful course (which she is co-authoring with Steven), can also help.

**Weaning Off Prednisone**

I have a client who has been on prednisone for MS since 1998. She is coming off the medication because the doctor paid attention to the iridology information she got! Wow. That’s cool.

Anyway, her adrenals and kidneys show up as very weak with blood chemistry evaluation. Her iris shows her kidneys are weak and her highly inflamed gastrointestinal tract is overloaded with chemicals.

Is Adrenal Support the best choice for rebuilding after long-term steroid use? What is best for kidney support? Would Chinese Kidney Activator be useful here or Kidney Drainage or is there something better? She can swallow pills, but is in a nursing center at the age of only 42.

S.

Prednisone always weakens the adrenals because it impairs their ability to produce their own natural corticosteroids. Since prednisone mimics the corticosteroids, it shuts down the mechanism in the hypothalamus and pituitary which trigger the adrenals to produce more corticosteroids. Yucca will help to rebalance this and is one of the best herbs to use as an alternative to corticosteroid drugs like prednisone. I would also use the Adrenal Support to strengthen the adrenal function.

For the gastrointestinal tract I would start with Gastro Health. I find this product highly beneficial for MS most of the time.

Support the kidneys by using Kidney drainage in water and sipping it all day. Antioxidants are also important for reducing inflammation. I would consider taking a higher dose of Thai Go.

**Supporting the Adrenals with the Thyroid**

You have suggested to people that they should support the adrenals when working on the thyroid using thyroid support. What symptoms might one experience if one did not support the adrenal glands?

Jennifer

Symptoms can range from fatigue to anxiety and perhaps a mixture of both at various times. Problems with the adrenals can be involved in many health problems and symptoms, including the inability to break down proteins well, irregular blood sugar levels, osteoporosis, hormone imbalances, headaches, inflammation, stress, pulsating pupils, sluggishness, lack of energy or energy fades fast, quivering tongue, and rapid, but weak pulse. These are not all the problems that could manifest, either.

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When we hear the word anxiety, many of us don’t think of it as a major medical problem. After all, everyone feels anxious sometimes, whether it’s before a business meeting, a public presentation or even just talking to a spouse about finances. But for some, anxiety is a serious concern, which hampers their ability to lead normal lives. When anxiety becomes a persistent pattern, psychologists call it Generalized Anxiety Disorder (GAD)—and estimate that nine to 12 million Americans suffer from it every year. People suffering from chronic anxiety often experience several or more of the following symptoms:

- twitching or trembling, particularly of the hands
- muscle tension and headaches
- sweating
- dry mouth and difficulty swallowing
- abdominal pain (especially in children)
- dizziness
- rapid or irregular heartbeat
- rapid breathing
- diarrhea or frequent urination
- fatigue
- irritability and difficulty controlling one’s temper
- sleeping difficulties and nightmares
- difficulty concentrating
- sexual dysfunction

With this many possible symptoms, it’s easy to see why chronic anxiety can be difficult to diagnose and separate from other health problems. Some people’s anxiety is so severe it triggers a more intense reaction—something psychologists call panic disorder, also known as panic attacks. These affect another two percent of the population, or five to six million people. Occurring periodically, panic attacks involve many of the symptoms of anxiety on a more intense level, as well as some of the following:

- sensation of shortness of breath/impression of smothering
- feeling of choking
- fear of dying/losing control/going crazy
- feelings of unreality or detachment

In addition to these symptoms people suffering from panic attacks sometimes experience other anxiety or mood disorders. For instance, they sometimes develop phobias about places or situations where panic attacks have occurred.

The most common response to anxiety or panic in this culture, unfortunately, is to grab for the pills, usually medications in the benzodiazepine category, like Valium®, Xanax® and Halcion®. Unfortunately, these drugs have been shown to create both dependence and addiction, and all three have been linked to impaired mental function.

The good news is that there are very effective alternatives for those who are willing to try them. The first is: eat a good diet. Meals high in refined sugars and simple carbohydrates cause blood sugar fluctuations which directly and immediately contribute to stress and can trigger or intensify anxiety and panic. Caffeine, alcohol, nicotine and recreational drugs can do the same by wreaking havoc with various chemical balances in the body.

Other lifestyle aids include getting sufficient sleep and exercising regularly. Balancing work and responsibilities with time for play and fun activities will also help. Keeping a journal to record one’s moods and what triggers them can be very helpful, both in identifying anxiety triggers and in taking action to change them. Finally, learning relaxation techniques like guided imagery, progressive relaxation, yoga, tai chi and meditation can help people to move from feeling out of control back to feeling “in the groove.”

When it comes to nutrition, it is very important to take care of the adrenal glands. These glands produce the stress hormones involved in anxiety and panic attacks, and a constant state of anxiety will deplete them over time. NutriCalm helps support both the adrenals and the nerves with B vitamins, vitamin C and various herbs. It feeds the adrenals and nerves and helps to reduce feelings of stress and restlessness. Adaptagens like Eleuthero root, Suma Combination and Adaptamax can help to reduce adrenal output of stress hormones.

NSP’s Adrenal Support can help to nourish and rebuild adrenal glands depleted by chronic stress, especially where chronic stress and/or frequent use of caffeine is involved. Where there is fatigue, coupled with restless sleep patterns and sensations of pressure over the heart, Nervous Fatigue Formula is often helpful.

To relax the nerves, nervines like Kava Kava and Lobelia work wonders. These can be taken during an anxiety episode or panic attack to help calm nervous functions and restore a sense of inner peace. In between attacks, Stress-J can be taken to help keep the nerves calm. Magnesium is also helpful for calming nerves. Finally, essential oils like chamomile, lavender, pine, sandalwood and marjoram can have a powerful effect in easing feelings of stress, anxiety and panic. They can be diluted in a carrier oil and used for a relaxing massage or added to a warm Epsom salt bath.

Given these natural therapies’ lack of ill effects, it would be ridiculous not to try them before reaching for the medicine cabinet to pop one of the more problematic pharmaceuticals. For help in determining what supplements and lifestyle changes are right for you, consult your local herb specialist or The Comprehensive Guide to Nature’s Sunshine Products by Tree of Light Publishing.
Adrenal Support
Nutritional support for overworked adrenal glands

The adrenal glands, located on top of the kidneys, are extremely important to maintaining energy, stamina and strength. They help the body adapt to the stresses of life by producing stress-regulating hormones, such as epinephrine, norepinephrine and cortisol. These are three of the primary hormones responsible for regulating the body’s fight-or-flight mechanism. The adrenals also help to maintain fluid and mineral balance in the body.

In modern society, the adrenals often take a severe hit because of constant stress from excessive workloads, financial problems, relationship issues, lack of sleep and just fast-paced modern life. This, coupled with poor nutrition, and the consumption of alcohol, caffeine, nicotine and various pharmaceuticals and recreational drugs, can cause the adrenals to become severely depleted and even exhausted.

Exhausted, underactive adrenals can result in feelings of frequent or constant fatigue, coupled with difficulty sleeping. Anxiety, restlessness, difficulty concentrating, emotional sensitivity, loss of short-term memory, depression, moodiness, nightmares, sensations of pressure above the heart and craving for sweets and alcohol, blood sugar imbalances, difficulty breathing, allergic reactions, asthma, and tension headaches are just some of the symptoms that may involve adrenal exhaustion. Adrenal weakness is often involved in autoimmune disorders, hypoglycemia, chronic fatigue syndrome, generalized anxiety disorder, panic attacks, digestive problems and poor bowel function.

Some of the best indicators of adrenal exhaustion include: dark circles under the eyes, quivering tongue or hands, dryness of the mouth and excessive thirst, fatigue coupled with restless sleep and disturbing dreams and chronic inflammation. In Chinese medicine, the kidneys are also associated with a person’s power, courage and ability to master fear. So, frequent fear and excessive worry may also be signs of adrenal fatigue.

Adrenal Support feeds overworked and exhausted adrenal glands, helping to rebuild them. It may be helpful in overcoming some of the disorders listed above and builds strength and stamina to help one stand up to the stresses of life. It can even be effective for some people in overcoming inordinate fear and excessive worry. Adrenal Support contains the following ingredients:

Bovine Adrenal Substance is the most important ingredient in this formula. Derived from cattle raised in New Zealand, a largely pollution-free part of the world, this freeze-dried adrenal tissue is very powerful in helping to rebuild weakened glandular tissue. In hunter-gatherer cultures of the world, people typically consumed the adrenals and other glandular tissues from animals they killed finding it helped improve health and endurance because of the rich amount of nutrients present in these tissues.

Licorice Root has been used for centuries in Chinese medicine and Western medicine. It helps stabilize blood sugar, increase energy and improve stamina and endurance. In addition, Licorice Root specifically supports and builds up the adrenals by prolonging the life of cortisol and aldosterone, two important adrenal hormones, so that they are not broken down too rapidly.

Schizandra berries are a well-known adaptagen used as a general tonic in Oriental medicine. By inhibiting the production of pituitary hormones that stimulate the adrenals, they lower the baseline stress level and allow the adrenals to rest. They are also used in Oriental medicine to balance and harmonize organ function and increase energy and stamina.

B-Complex Vitamins and Vitamin C are also a part of this formula. Vitamin C is critical to healthy adrenal glands, which have the largest store of Vitamin C in the body. The production of epinephrine and norepinephrine requires both Vitamin C and Vitamin B6. Along with these two vitamins, Vitamins B1 and B2 are included in this formula because of the critical role they play in the production of other adrenal hormones. Pantothentic Acid, another nutrient critical to adrenal function, is included in this formula because it is depleted from the adrenals under long-term stress.

The minerals zinc and magnesium are depleted by regular use of caffeine and are needed to produce hormones and enzymes in the body. Zinc is also used at the body’s adrenal hormone receptor sites. Other ingredients included in this formula are potassium, which is depleted from the body under stress, and borage oil powder, which supplies essential fatty acids.

Recommended dosage of Adrenal Support is one capsule two times daily with a meal for 2-3 months, but under the advice of a qualified health practitioner more can be taken and for longer periods of time. Caffeine should be eliminated and refined sugar avoided when trying to rebuild the adrenals. This product is typically used for short periods of time (2-3 months), but again, can be taken longer in some cases. After using Adrenal Support, it is often helpful to follow up with an herbal formula which provides milder, long-term adrenal support, such as Nervous Fatigue Formula, Suma Combination or Energ-V.

Selected References
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The Encyclopedia of Medicinal Plants by Andrew Chevallier
Herbal Therapy and Supplements by Merrily A. Kuhn and David Winston

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