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Stress Relief Through Dietary Support

by Alicia McWatters, Ph.D.
Edgewood, NM

Despite the fact that a variety of birds are becoming domesticated in captivity through proper handfeeding and nurturing techniques, they still carry many of their wild ancestral characteristics and instincts. Our birds' highly alert, sensitive, emotional personalities may cause them to experience stress at the drop of a hat. (No pun intended.)

When your birds encounter stress, you want to help them through those times in the safest, most gentle way possible. Some birds become stressed over what may seem like a minor change in their lives, i.e., having their cage moved to a new location or upon being offered a new toy, perch, or food.

These new items can seem like a foreign invader and a serious threat to your bird and may be avoided at first sight. A new location, even if it is for the betterment of your bird, may take the bird some time to accept. Each bird reacts differently to change in his or her life. What may affect one negatively may not faze another in the least. When change is considered a threat, it can be quite a traumatic experience for your bird.

Sometimes stress is initiated by a more dramatic change, like a new member to the household, a new cage mate, a loss of a companion, a move to a new home, or a traumatic event like being mishandled, abused by a former owner, or groomed roughly.

Knowledge of your bird's diet and care history will be very helpful for properly understanding the stress symptoms your bird may be experiencing today. For many breeder birds, the breeding season is a stressful time. Sometimes when eggs or babies are disturbed or removed, the parent birds become stressed and/or depressed. In

my experience, some parent birds are more tolerating than others of any human disturbances during the breeding preparation time, and the brooding and feeding of their young. Parent birds may fight with one another if they feel threatened or stressed by environmental disturbances. The parents, due to stress and anxiety caused from external interference, may even injure their babies in the nest.

While we can't prevent every stressful situation from occurring, we can help our birds to endure stress better by providing them with a healthy diet for a healthy mind and body. But what about the nutrients in natural foods? Can they help provide stability during harsh times?

Food selection can prove to be an important tool for reducing the symptoms of stress. A poor diet may play a major role in causing stress and optimal nutrition is an important facet of stress management. It is very difficult to relieve stress symptoms entirely when adequate nutritional support is lacking. A comprehensive nutritional program can help stabilize and calm your bird and promote optimum function of its immune system and digestive tract.

In addition to providing your birds with a nutritious diet, there are many herbs, which can also help relieve the symptoms of stress, add nutrients to the diet, and optimize your bird's health — all without drug intervention.

Reducing the stress in your bird's life through dietary measures may be simpler than you think.

Stress on the Immune System

Have you ever wondered how stress affects the immune system? Stress affects the immune system in a number of ways. First of all, the immune system is made up of white

blood cells called B cells and T cells. B cells produce antibodies that aid in the attack of bacterial or viral infections. T cells are responsible for cellular immunity against a variety of illness and disease, such as fungi, parasites, viruses and cancer.

Stress and Disease

Stress can cause many types of disease, as there is a link between emotional and physical illness. Often times, illness follows an extremely stressful event when opportunistic infections may arise from a weakened or failing immune system. Our birds and we are all carriers of yeast, bacteria and viruses, but they remain in small amounts and harmless under healthy conditions.

However, at stressful times when the immune system is weakened, these opportunistic microorganisms may proliferate and our birds then become more vulnerable to the development of an infection. These microorganisms are the *result* of disease, not the cause of it.

Stress, Diet, and Supplements

A proper diet is extremely important as disorders, which can arise from stress, are often the result of nutrient deficiencies; the body does not metabolize nutrients well at these times. Stress increases the metabolism of proteins, fats, and carbohydrates. There is an increased excretion of protein, potassium, and phosphorus and a decreased storage of calcium. Vitamin C and other important nutrients are also excreted at a faster rate. During stress, nutrients are depleted from the body rapidly and the immune system becomes depressed. In essence, when our birds are under stress, the whole body is affected.

Stress may also manifest itself inward to one of the organ systems, such as the nervous system, circulatory, or digestive system. Stress also leads to hormonal imbalances – adrenal, pituitary, thyroid, thymus and others that further interfere with immune function. Chronic stress can harm the nervous system, thereby causing digestive and intestinal upsets. Respiratory infections, allergies, eating disorders, skin and feather problems are a few of the outward symptoms of stress, therefore

additional supplements may be useful.

Diet alone is usually not enough when a bird is experiencing full blown stress. Nutritional supplements are often needed in addition to a healthy diet because nutrients are eliminated from the body faster during stressful times and so need to be replenished daily. It must be emphasized that serving your bird a nutritious diet along with adding supplements is vital. However, one should never feel that the supplements are an excuse to continue to feed a poor diet.

When incorporating the proper foods, vitamins, minerals and specific medicinal herbs we increase the activity and/or number of T and B cells which keep our bird's body healthy and strong. By implementing the above items along with a clean, comfortable environment, we greatly improve our bird's constitution, help relieve stress and build better function of their immune system.

Vitamins/Minerals

Many vitamins and minerals are useful in the treatment of stress and exert a calming effect. The most important ones are listed below.

B Complex

All of the B-vitamins are water-soluble and can be cultivated from bacteria, yeasts, molds, or fungi. There are eight B vitamins: B1 (thiamine), B2 (riboflavin), B3 (niacin), B5 (pantothenic acid), B6 (pyridoxine), B12 (cobalamin), folic acid, and biotin.

The B vitamins are necessary for healthy nerves, thyroid function, heart, muscles, immune system, eyes, skin, feathers, liver, red blood cell formation, cell growth and reproduction, and promotes proper digestion. The B vitamins work as a team and are codependent upon one another for effectiveness. They provide the body with energy by assisting enzymes in the metabolism of carbohydrates, fats and proteins.

Some factors, which deplete the B vitamins from the body, are stress, antibiotics or sulfa drugs, and excess sugar.

Deficiencies of this vitamin may include dry skin and feathers, maldigestion, appetite loss, fatigue, constipation, cataracts (B2), and

weakness in the bird. These vitamins may be easily obtained by feeding whole-grains, seeds, nuts, legumes. Brewer's yeast, green vegetables, eggs, and yogurt, and intestinal bacteria produce the B vitamins as well. Beneficially therapeutic for gout, blood sugar disorders and stress.

Vitamin C - (ascorbic acid)

Vitamin C is a natural anti-inflammatory, antihistamine, antioxidant, and anti-stress nutrient. It assists in collagen production, iron absorption, red blood cell formation, proper function of the adrenal glands, and strengthens immune system function. Vitamin C also helps with allergies, sinusitis, diabetes, heart disease, cataracts, gout, cancer prevention, and kidney disorders.

Since birds are known to manufacture vitamin C in sufficient amounts, many feel it is not necessary in their diet. I have noticed at times of stress (and that includes at breeding times) my birds consume larger amounts of foods containing this vitamin, thus, I feel it to be especially useful at these times. Also, a bird may have a dysfunction of the enzyme which produces vitamin C, therefore individual requirements may vary. This vitamin is known to prevent *C. albicans*, viral and various bacterial infections.

Some factors, which deplete vitamin C from the body, are stress, cortisone, antihistamines, and tetracyclines.

Deficiencies: malabsorption of iron causing anemia, decrease resistance to infections, stress, and dry skin and feathers.

Vitamin C is found in citrus fruits, green leafy vegetables, berries, potatoes, tomatoes, peppers, garlic, and most fresh uncooked fruits and vegetables.

Bioflavonoids

Bioflavonoids include hesperetin, quercetin, and rutin and are sometimes referred to as vitamin P. Bioflavonoids have antioxidants properties and often occur with vitamin C in fruits and vegetables as they work in conjunction with vitamin C to enhance its absorption. Bioflavonoids are found in the pulp and white rind just beneath the peel of citrus fruits, along with cher-

ries, blackberries, blueberries, apricots, grapes, peppers, soybeans, and buckwheat.

Bioflavonoids are helpful in reducing pain, healing bruises, help protect the structure of the capillaries, possess antibacterial properties, and aids in the prevention of cataracts and cancer.

Vitamin E

Vitamin E is a fat-soluble vitamin, used as a natural anti-allergic and anti-histamine remedy. Vitamin E is comprised of a group of compounds called tocopherols. As an antioxidant, this vitamin protects the cells of the body against free radical damage from adverse environmental conditions. Vitamin E is known to speed healing, strengthen the immune system, helps to alleviate anxiety, may prevent blood clotting, is helpful for the utilization of oxygen and for the promotion of muscle and nerve maintenance.

It has been recognized for its beneficial therapeutic effects against many health conditions such as cancer, heart and lung disease, diabetes, skin disorders, gout, cataracts, and infections. It may also be an effective fertility vitamin.

The most biologically active form is the natural d-alpha tocopherol. The synthetic form dl-alpha has less nutritional value. Water-soluble E is available for those birds that have a liver or pancreas disorder or a fat malabsorption problem. Vitamin E is required in larger amounts if you live in an air-polluted area. Tocopherols occur in the highest concentrations in wheat germ oil, whole grains, raw seeds and nuts, green leafy vegetables, berries, tomatoes, eggs, and soybeans.

A deficiency of this vitamin may cause intestinal disorders, dry skin and feathers, infertility, muscle weakness.

Magnesium

Magnesium aids mainly in bone growth, the function of nerves, blood sugar metabolism, muscles, the regulation of normal heartbeat, enzymes activation, acid-alkaline balance, protein synthesis, and energy reactions. Magnesium is located mostly in the bone with phosphorus and calcium with smaller amounts in cellular fluids and soft tissue. It helps with calcium, phosphorus, sodium, and potassium

absorption and metabolism.

Some factors, which inhibit absorption of magnesium, are stress, sugar, and tetracyclines.

Deficiencies: weakness, muscle tremors, weight loss, nervousness, feather loss.

Assists with vitamin B, C and E utilization. Food sources: whole grains, legumes, leafy greens, kelp, garlic, nuts, bananas, apricots, seeds.

Calcium

The major function of calcium is to work in conjunction with magnesium and phosphorus for building and maintaining strong bones and in the metabolism of vitamin D.

The ratio of calcium to phosphorus in bones is roughly 2.5 to 1. Calcium also aids in enzyme function, fat metabolism, nerve transmission, hormonal secretion, blood clotting, mus-

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cle growth and contraction, helps maintain a healthy heart and facilitates the passage of nutrients in and out of the cell walls. A deficiency could lead to the drawing of mineral from bone and as a result, a serious bone deformity called rickets in youngsters, a reduction in bone density leading to weakness, bone softening, and fragility in adult birds, muscle spasms and joint pain (tetany), seizures, heart disorders, and nervousness.

When purchasing a calcium supplement there are a few things to consider. Both dolomite and bone meal contain high concentrations of calcium, however, they are not the easiest forms to absorb and may both be contaminated with lead residues. Calcium gluconate, calcium lactate, and calcium citrate are lower in strength, but they are readily absorbed.

Some factors which may deplete calcium in the body are lack of exercise, aging, stress, tetracyclines, a parathyroid gland disorder, insufficient vitamin D, or an excess of refined sugar, protein, fat, phosphorus, or magnesium, and large amounts of foods containing oxalic acid or phytic acid.

Food sources of calcium are yogurt, oats, buttermilk, legumes, nuts, some seeds (i.e. sunflower, sesame, pumpkin, almond), kelp, oranges, berries, parsley, dried figs, and green leafy vegetables.

Potassium

This mineral is an electrolyte and it works together with sodium and chlorine to maintain water balance, acid-base balance, and assists in muscle, nerve, heart, adrenal, liver, and kidney function. Potassium is the major intracellular electrolyte. Potassium and sodium regulates the transport of nutrients to the cells. It assists in the metabolism of proteins and carbohydrates and activates certain enzymes. Potassium may help treat diarrhea, blood sugar disorders, and heart disease.

Excess sugar, stress, and cortisone may deplete potassium from the body. A deficiency may cause skin and feather problems, weakness, nervousness, respiratory distress, appetite loss, weight loss, impaired digestion, sleepiness, decreased resistance to infection.

Food sources of potassium include

oranges, bananas, potatoes, seeds, legumes, yogurt, grains, chayote, yellow vegetables, parsley, yams, apricots, and dates.

Zinc

Zinc assists with enzymatic reactions, carbohydrate digestion, facilitates the action of the B vitamins, circulation, liver function, immune system function, protein synthesis and cell growth, skin, bone, joint health, and the growth of reproduction organs.

A deficiency may cause growth impairment, blood sugar disorders, fatigue, poor appetite, reproduction disorders, infection, and skin problems.

Food sources: peas, legumes, nuts, leafy vegetables, seeds (sesame/sunflower/pumpkin), egg yolks, wheat germ and whole grains (sprouted).

Chromium

Chromium maintains stable blood sugar levels, glucose metabolism, and is important in the synthesis of fats, cholesterol and protein.

A deficiency may lead to anxiety, inadequate protein metabolism, susceptibility to infection, blood glucose imbalances and fatigue.

Food sources: brewer's yeast, whole grains, eggs, corn, potatoes, legumes, grapes, apples, bananas, green leafy vegetables, nuts, raisins, and root vegetables.

Manganese

Manganese aids in reproduction and growth, tissue respiration, bone development, a healthy immune system, vitamin B1 and vitamin E utilization, glucose regulation, fat and carbohydrate metabolism, energy production, and enzyme reactions.

Deficiencies may lead to ataxia, muscle weakness, blood sugar disorders, increased fat deposition.

Food sources: eggs, grains, nuts, legumes, vegetables, blueberries, pineapple, and seeds.

Vegetables

Vegetables are nutrient-dense, can contribute significantly to your bird's health and are outstanding foods for stress reduction. Many vegetables are high in minerals like calcium, magnesium, and potassium which have been

Commercial Members

shown to have a relaxant effect on the nervous system. Kale, mustard greens, collards, peas, parsley, celery, broccoli, and spinach are all excellent sources of minerals.

Many vegetables are high in vitamin C, an important anti-stress nutrient that promotes healthy adrenal gland function. Broccoli, kale, parsley, peas, peppers, potatoes, and tomatoes are all good sources of vitamin C.

Vitamin A deficiency is common in birds. Symptoms may include allergies, sinus trouble, sneezing, susceptibility to infection, rough dry skin, as well as abnormal hormone activity, possibly creating reproduction problems. Vitamin A aids in the growth and repair of body tissues and helps maintain smooth disease-free skin. Internally it helps protect the mucous membranes of the mouth, throat, lungs, and gastrointestinal tract, thereby reducing the chance of infection.

You can find this valuable vitamin in carrots, sweet potatoes, dandelion, collards, kale, parsley, squashes, and mustard greens.

Vegetables are very easily digested. They may be served raw or lightly steamed to retain their nutrients. The key to good nutrition is offering your birds a wide variety of foods. Vegetables supply nearly all of the vitamins and minerals required for good health and should be a large part of a healthy bird's diet.

Fruits

Fruits also contain a wide range of nutrients that can relieve stress. Like many vegetables, fruits are excellent sources of vitamin C and bioflavonoids, especially berries, melons, and citrus fruits. Some fruits are rich in calcium, magnesium and potassium such as raisins, bananas and blackberries. All fruits contain appreciable amounts of potassium. Legumes and peas are excellent sources of calcium, magnesium, potassium and B-complex vitamins, which are all known to be stress reducers. They are useful as a protein source and when combined with grains become a complete protein meal. Soybeans and peanuts are high in L-tryptophan, which aids in stress reduction.

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Whole Grains

Whole grains are excellent sources of nutrients and are helpful in reducing stress. They are rich in B-complex vitamin, vitamin E, many essential minerals, protein, and essential fatty acids. Along with legumes they provide a complete protein meal.

Starches

Starches: Potatoes, sweet potatoes and yams are all good sources of A, B, and C vitamins and also provide an additional easily digested source of protein, included with a variety of other fresh vegetables can help to reduce stress.

Seeds and Nuts

Seeds and Nuts are the best sources of B-complex vitamins, vitamin E, and are also excellent sources of protein and essential fatty acids. The best sources of fatty acids are sunflower, flax, pumpkin, and sesame seeds. Essential fatty acids (EFAs) are a very important part of a stress reduction program. EFAs – both linoleic (Omega 6) and linolenic acid (Omega 3) – are the raw materials

from which the beneficial hormone-like chemicals called prostaglandins are made. Prostaglandins have muscle-relaxant and blood-vessel properties that can reduce tension and have a calming effect on the emotions.

However, seeds/nuts are very high in calories and can be difficult to digest, especially if salted and roasted. Raw seeds/nuts are recommended instead. Like vegetables, seeds/nuts, particularly sesame and sunflower, pistachios, almonds, and pecans are very high in calcium, magnesium, and potassium.

Pumpkin seeds, sesame seeds, sunflower seeds and almonds are high in L-tyrosine and L-tryptophan which is known to aid in reducing anxiety and stress. The oils in all seeds/nuts are very perishable, so avoid exposing them to light, air or heat. Refrigerate them for the best protection.

Nutritional Supplements

Nutritional supplements: Flax seed oil is one of the best sources of essential fatty acids. EFAs are not made by a bird's body and must be supplied daily

through food or supplements. We provide this supplement mixed into our birds' daily seed ration. Flax seed oil is rich in linoleic acid, linolenic acid (essential fatty acids), vitamins A (beta carotene source), E and promotes healthy feathers, skin, bones, and nails. We recommend 1 tbs. per lb. of seed mix. It must be kept refrigerated; the oil is subject to rancidity if allowed exposure to light, air, and heat.

Herbs


Herbs, which exert a calming effect on the central nervous system, are chamomile, passionflower, kava kava, skullcap, valerian, peppermint (digestive aid), oat straw, lemon balm, and Siberian ginseng (an adaptogen).

I have successfully used these herbs at times when one of my birds is undergoing a stressful experience. I use them on a temporary basis, no more than two weeks at a time, either as a preventive or after the onset of stress symptoms.

The echinacea herb is highly regarded for its use as a natural antibiotic and immunity enhancer by its ability to increase the mobility of leukocytes (white blood cells).

By far the quickest and simplest way to provide an herb to your bird's diet is in capsule form. An alcohol-free liquid-form is also available. We use a combination herbal preparation consisting of: echinacea and goldenseal. Again, these herbs should not be used routinely and only when needed under the supervision of an experienced natural health professional experienced with birds and herbal medicine.

All of the foods and supplements mentioned in this article may be purchased at a quality health food market or from natural health professionals. Remember that during stressful times, nutrients are depleted quickly from the body, therefore an increase in nourishing, high quality foods is essential.

Alicia McWatters resides in New Mexico with her family and two pet birds: Congo Grey "Tiffany" and African Red-bellied Parrot "Lucy." She was a breeder of Greys and Pionus for a number of years and currently works as a holistic avian nutrition and health consultant. She can be reached for a private consultation at (505) 281-5168. 

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