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Nutrition

Relatively little has been written on the subject of nutrition and anxiety disorders. Yet if it is assumed that there is at least some biological basis for panic attacks and anxiety, the subject of nutrition becomes important. What you eat has a very direct and significant impact on your physiology and biochemistry.

In the last twenty years, the relationship between diet, stress, and mood has been well documented. It's known that certain foods and substances tend to create additional stress and anxiety, while others promote a calmer and steadier mood. Certain natural substances have a directly calming effect and others are known to have an antidepressant effect. You may not yet recognize connections between how you feel and what you eat. You simply may not notice that the amount of coffee or cola beverages you drink aggravates your anxiety level. Or you may be unaware of any connection between your consumption of sugar and your anxiety, depression, or PMS symptoms. This chapter may clarify some of these connections and help you to make positive changes in the way you feel.

The discussion of nutrition in this chapter covers three main topics:

- Foods, substances, and conditions that aggravate anxiety
- Dietary guidelines for reducing anxiety
- Supplements for reducing anxiety

The information in these sections is based on my personal experience and reading in the field of nutrition. It is intended to be suggestive only—not prescriptive. If you wish to make an in-depth assessment and reevaluation of your diet, I recommend that you consult a nutritionist, or a physician who is knowledgeable about nutrition.

Substances That Aggravate Anxiety

Stimulants: Caffeine

Of all the dietary factors that can aggravate anxiety and trigger panic attacks, caffeine is the most notorious. Several of my clients can trace their first panic attack to an excessive intake of caffeine. Many people find that they feel calmer and sleep better after they've reduced their caffeine consumption. Caffeine has a directly stimulating effect on several different systems in your body. It increases the level of the neurotransmitter norepinephrine in

your brain, causing you to feel alert and awake. It also produces the very same physiological arousal response that is triggered when you are subjected to stress—increased sympathetic nervous system activity and a release of adrenaline.

In short, too much caffeine can keep you in a chronically tense, aroused condition, leaving you more vulnerable to generalized anxiety, as well as panic attacks. Caffeine further contributes to stress by causing a depletion of vitamin B_1 (thiamine), which is one of the so-called antistress vitamins.

Caffeine is contained not only in coffee but in many types of tea, cola beverages, chocolate candy, cocoa, and over-the-counter drugs. Use the chart on the next page to determine your total daily caffeine consumption in milligrams (mg).

If you are prone either to generalized anxiety or to panic attacks, I suggest that you reduce your total caffeine consumption to *less than 100 mg per day.* For example, one cup of percolated coffee or one diet cola beverage a day would be a maximum. For coffee lovers, this may seem like a major sacrifice, but you may be surprised to find how much better you feel if you can wean yourself down to a single cup in the morning. The sacrifice may well be worth it if you have fewer panic attacks. If you are very sensitive to caffeine, eliminating it altogether would be advisable.

Please note that there are tremendous individual differences in sensitivity to caffeine. As with any addictive drug, chronic caffeine consumption leads to increased tolerance and a potential for withdrawal symptoms. If you have been drinking five cups of coffee a day and abruptly cut down to one a day, you may have withdrawal reactions including fatigue, depression, and headaches. It's better to taper off gradually over a period of a few months—for example, from five cups to four cups per day for a month, then two or three cups per day for the next month, and so on. Some people like to substitute decaffeinated coffee, which has about 3 mg of caffeine per cup, while others drink herbal teas. At the opposite extreme of the sensitivity continuum are people who are made jittery by a single cola or cup of tea. Some of my clients have found that even small amounts of caffeine predispose them to panic or a sleepless night. So it's important that you experiment to find out what your own optimal daily caffeine intake might be. For most people prone to anxiety or panic, this turns out to be less than 100 mg per day.

Nicotine

Nicotine is as strong a stimulant as caffeine. It causes increased physiological arousal, vasoconstriction, and makes your heart work harder. Smokers often object to this notion and claim that having a cigarette tends to calm their nerves. Research has proven, however, that smokers tend to be more anxious than nonsmokers, even when there are no differences in their intake of other stimulants, such as coffee and over-the-counter drugs. They also tend to sleep less well than nonsmokers. I have found that smokers, after quitting, not only feel healthier and more vital but are less prone to anxiety states and panic. In short, if you presently smoke, here is one more reason for stopping.

Caffeine Chart

Coffee	_____cups	@ _____mg =	_____mg
Tea	_____cups	@ _____mg =	_____mg
Cola drinks	_____cups	@ _____mg =	_____mg
Over-the-counter drugs	_____tablets	@ _____mg =	_____mg

Other sources (chocolate 25 mg per bar, cocoa 13 mg per cup) _____ mg

Daily Total _____ mg

Caffeine content of coffee, tea, and cocoa (milligrams per cup)

Coffee, instant	66 mg
Coffee, percolated	110 mg
Coffee, drip	146 mg
Teabag—five-minute brew	46 mg
Teabag—one-minute brew	28 mg
Loose tea—five-minute brew	40 mg
Cocoa	13 mg
Decaffeinated Coffee	4 mg

Caffeine content of cola beverages (milligrams per twelve-ounce can)

Coca-Cola	65 mg
Dr. Pepper	61 mg
Mountain Dew	55 mg
Diet Dr. Pepper	54 mg
Diet Coke	49 mg
Pepsi-Cola	43 mg

Caffeine content of over-the-counter drugs (per tablet)

Anacin	32 mg
Caffedrine	200 mg
Empirin	32 mg
Excedrin	65 mg
No-Doz	100 mg
Pre-mens Forte	100 mg
Vanquish	33 mg
Vivarin	200 mg

Stimulant Drugs

Over-the-counter drugs containing caffeine have already been mentioned. In addition to these medicines, you should be aware of prescription drugs that contain amphetamines, including Benzedrine, Dexedrine, Methedrine, and Ritalin. While these drugs used to be widely prescribed as appetite suppressants as well as antidepressants, they are rarely used today. Being strong stimulants, they are risky to use if you have a history of anxiety or panic attacks.

The same is especially true for cocaine, whose nonmedicinal use remains widespread. Cocaine use has been the initial cause of recurring panic attacks in countless people, including several whom I've treated personally. If you are at all concerned about panic, this is definitely a drug to avoid.

Substances That Stress the Body

Salt

Excessive salt (sodium chloride) stresses the body in two ways: 1) it can deplete your body of potassium, a mineral that's important to the proper functioning of the nervous system, and 2) it raises blood pressure, putting extra strain on your heart and arteries and hastening arteriosclerosis. You can reduce the amount of salt you consume by avoiding the use of table salt, using a natural salt substitute (such as tamari) both in cooking and on the table, and limiting, as much as possible, salty meats, salty snack foods, and other processed foods containing salt. As a rule of thumb, it's good to limit your salt intake to one gram or teaspoon per day. If you must buy processed foods, choose those that are labeled low sodium or salt-free.

Preservatives

There are presently about five thousand chemical additives used in commercial food processing. Common artificial preservatives include nitrites, nitrates, potassium bisulfite, monosodium glutamate (MSG), BHT, BHA, and artificial colorings and flavorings. Our bodies are simply not equipped to handle these artificial substances, and, in most cases, very little is known about their long-term biological effects. To date, some that have been thoroughly tested have been found to be carcinogenic and thus have been removed from the market. Others currently in use, especially monosodium glutamate, nitrites, and nitrates, produce allergic reactions in many people. It is known that traditional societies that eat strictly whole foods without additives have a lower incidence of cancer. You should try to eat whole, unprocessed foods as much as possible—the foods your body was designed to handle. Try to purchase vegetables and fruits that haven't been treated with pesticides (organically grown) if these are available in your area.

Hormones in Meat

Red meat, pork, and most commercially available forms of chicken are derived from animals that have been fed hormones to promote fast weight gain and growth. There is evi-

dence that such hormones stress these animals (steers and hogs sometimes die of heart attacks on the loading platform). While there is at present no conclusive evidence, many people believe that these hormones might also have harmful effects for the human consumers of meat and meat products. One particular hormone, diethylstilbestrol (DES), has come to the public's attention because it has been implicated in the development of breast cancer and fibroid tumors.

Try to reduce your consumption of red meat, pork, and commercially available poultry, replacing it with organically raised beef, poultry, and fish such as cod, halibut, salmon, snapper, sole, trout, or turbot.

Stressful Eating Habits

Stress and anxiety can be aggravated not only by what you eat but by the way you eat. In our modern, fast-paced society, many of us simply do not give ourselves enough time for eating. Any of the following habits can aggravate your daily level of stress:

- Eating too fast or on the run
- Not chewing food at least fifteen to twenty times per mouthful (food must be partially predigested in your mouth to be adequately digested later)
- Eating too much, to the point of feeling stuffed or bloated
- Drinking too much fluid with a meal, which can dilute stomach acid and digestive enzymes; one cup of fluid with a meal is sufficient

All of the above put a strain on your stomach and intestines in their attempt to properly digest and assimilate food. This adds to your stress level in two ways:

- Directly, through indigestion, bloating, and cramping
- Indirectly, through *malabsorption* of essential nutrients

If food is not properly digested in your mouth and stomach, much of it will pass undigested through your intestines and will subsequently putrefy and ferment—causing bloating, cramps, and gas. The result is that you will get only a limited portion of the nutrition potentially available in your food, leading to a subtle form of undernourishment that you're not likely to be aware of.

So, in addition to reconsidering what you eat, you can decrease stress and a probable malabsorption problem by giving yourself adequate time to eat, chewing your food thoroughly, and not overtaxing your body by eating excessive amounts.

Sugar, Hypoglycemia, and Anxiety

Among nutritionally conscious people these days, sugar has become somewhat of a dirty word. The fact is, however, that your body and brain need glucose—or naturally occurring sugar—in order to operate. Glucose is the fuel your body burns; it provides the energy that

sustains life. Much of this glucose is derived from carbohydrate foods in your diet such as bread, cereal, potatoes, vegetables, fruits, and pasta. The starches in these foods are broken down *gradually* into glucose.

Simple sugars, on the other hand, such as refined white sugar, brown sugar, and honey, break down very quickly into glucose. These simple sugars can cause problems because they tend to overload your system with too much sugar too quickly. Our bodies are simply not equipped to process large amounts of sugar rapidly, and, in fact, it was not until the twentieth century that most of us (other than the very wealthy) consumed large amounts of refined sugar. Today, the standard American diet includes white sugar in most beverages (coffee, tea, cola), sugar in cereal, sugar in salad dressings, and sugar in processed meat, along with one or two desserts per day and perhaps a donut or a cookie on coffee breaks. In fact, the average American consumes about *120 pounds* of sugar per year! The result of continually bombarding the body with this much sugar is the creation of a chronic disregulation in sugar metabolism. For some people, this disregulation can lead to excessively high levels of blood sugar, or diabetes (the prevalence of which has increased dramatically in this century). For an even larger number of individuals, the problem is just the opposite—periodic drops in blood sugar level *below* normal, a condition that is popularly termed *hypoglycemia.*

The symptoms of hypoglycemia tend to appear when your blood sugar drops below 50 to 60 milligrams per deciliter—or when it drops very rapidly from a higher to a lower level. Typically, this occurs about two to three hours after eating a meal. It can also occur *simply in response to stress,* since your body burns up sugar very rapidly under stress. The most common subjective symptoms of hypoglycemia are

- Light-headedness
- Anxiety
- Trembling
- Feelings of unsteadiness or weakness
- Irritability
- Palpitations

Do the symptoms look familiar? All of them are symptoms that can accompany a panic attack! In fact, for *some* people panic reactions may actually be caused by hypoglycemia. Generally, such people recover from panic simply by having something to eat. Their blood sugar rises and they feel better. (In fact, an informal, nonclinical way to diagnose hypoglycemia is to determine whether you have any of the above symptoms three or four hours after a meal and whether they then go away as soon as you have something to eat.)

The majority of people with panic disorder or agoraphobia find that their panic reactions do *not* necessarily correlate with bouts of low blood sugar. Yet hypoglycemia can aggravate both generalized anxiety and panic attacks that have been caused for other reasons.

What causes blood sugar to fall below normal is an excessive release of insulin by the pancreas. Insulin is a hormone that causes sugar in the bloodstream to be taken up by the cells. (Insulin is used in the treatment of diabetes to lower excessive blood sugar levels.) In

hypoglycemia, the pancreas tends to overshoot in its production of insulin. This can happen if you ingest too much sugar, with the result that you feel a temporary sugar high followed a half hour later by a crash. This can also happen in response to sudden or chronic stress. Stress can cause a rapid depletion of blood sugar. You then experience confusion, anxiety, spaciness, and tremulousness because 1) your brain is not getting enough sugar *and* 2) a secondary stress response occurs. When blood sugar falls too low, your adrenal glands kick in and release adrenaline and cortisol, which causes you to feel more anxious and aroused and also has the specific purpose of causing your liver to release stored sugar in order to bring your blood sugar level back to normal. So the subjective symptoms of hypoglycemia arise from *both* a deficit of blood sugar *and* a secondary stress response mediated by the adrenal glands.

Hypoglycemia can be formally diagnosed through a clinical test called the six-hour glucose tolerance test. After a twelve-hour fast you drink a highly concentrated sugar solution. Your blood sugar is then measured at half-hour intervals over a six-hour period. You will likely get a positive result on this test if you have a moderate to severe problem with hypoglycemia. Unfortunately, many *milder* cases of hypoglycemia are missed by the test. It's quite possible to have subjective symptoms of low blood sugar and to test negative on a glucose tolerance test. Any of the following subjective symptoms are suggestive of hypoglycemia:

- You feel anxious, light-headed, weak, or irritable several hours after a meal (or in the middle of the night); these symptoms disappear within a few minutes of eating.
- You get a high feeling from consuming sugar and this changes to a depressed, irritable, or spacey feeling twenty to thirty minutes later.
- You experience anxiety, restlessness, or even palpitations and panic in the early morning hours, between four and seven. (Your blood sugar is lowest in the early morning because you have fasted all night.)

How do you deal with hypoglycemia? Fortunately, it's quite possible to overcome problems with low blood sugar by 1) making several significant dietary changes and 2) taking certain supplements. If you suspect that you have hypoglycemia or have had it formally diagnosed, you may want to implement the following guidelines. Doing so may result in a calmer disposition—less generalized anxiety, less emotional volatility, and less vulnerability to panic. You may also notice that you are less prone to depression and mood swings.

Dietary Modifications for Hypoglycemia

- Eliminate as much as possible all types of simple sugar from your diet. This includes foods that obviously contain white sugar, such as candy, ice cream, desserts, Coke, or Pepsi. It also includes subtler forms of sugar, such as honey, corn syrup, corn sweeteners, molasses, and high fructose. Be sure to read labels on any and all processed foods to detect these various forms of sugar.
- Substitute fruits (other than dried fruits, which are too concentrated in sugar) for sweets. Avoid fruit juices or dilute them 1:1 with water.

- Reduce or eliminate simple starches such as pasta, refined cereals, potato chips, and white bread. Substitute instead complex carbohydrates such as whole-grain breads and cereals, vegetables, and brown rice or other whole grains.
- Have a complex carbohydrate or protein snack (nuts or whole-grain toast and cheese, for example) halfway between meals—around ten-thirty to eleven in the morning and especially around four to five in the afternoon. If you awaken early in the morning at four or five, you may also find that a small snack will help you to get back to sleep for a couple of hours. As an alternative to snacks between meals, you can try having four or five small meals per day no more than two to three hours apart. The point of either of these alternatives is to maintain a steadier blood sugar level.

Supplements

1. Vitamin B-complex: 50 to 100 mg of all eleven B vitamins once per day with meals.
2. Vitamin C: 1000 mg once or twice per day with meals.
3. Chromium (often called *glucose tolerance factor*): 200 mcg per day. This is available at your local health food store.
4. Glutamine: 500 mg once or twice per day.
5. A combination of glycogenic amino acids (including L-glycine, L-glutamic acid, L-tyrosine, L-leucine, L-alanine, L-methionine, L-lysine). These combinations are available at many health food stores under the name of *hypoglycemia balancer* or *glycemic factors*. Take it as recommended either on the bottle or by a qualified nutritionist.

Vitamin B-complex and vitamin C help to increase your resiliency to stress, which can aggravate blood sugar swings. The B vitamins also help regulate the metabolic processes that convert carbohydrates to sugar in your body.

The mineral chromium and the glycogenic amino acids have a direct, stabilizing effect on your blood sugar level. Glutamine, an amino acid, is quite helpful in reducing cravings for sweets. (If you have an alcohol problem, it helps reduce cravings for alcohol as well.)

If you're interested in exploring the subject of hypoglycemia in greater depth, you might want to read the book *Sugar Blues* by William Dufty.

Food Allergies and Anxiety

An allergic reaction occurs when the body attempts to resist the intrusion of a foreign substance. For some people, certain foods affect the body like a foreign substance, causing not only classic allergic symptoms, such as runny nose, mucus, and sneezing, but a host of psychological or psychosomatic symptoms, including any of the following:

- Anxiety or panic
- Depression or mood swings
- Dizziness
- Irritability
- Insomnia
- Headaches
- Confusion and disorientation
- Fatigue

Such reactions occur in many individuals only when they eat an excessive amount of a particular food, eat a combination of offending foods, or have excessively low resistance due to a cold or infection. Other people are so highly sensitive that only a small amount of the wrong food can cause debilitating symptoms. Often the subtler, psychological symptoms have a delayed onset, making it difficult to connect them with the offending foods.

In our culture, the two most common foods causing allergic reactions are milk or dairy products and wheat. It is casein in milk and gluten in wheat that tend to cause problems. Other foods that can be a source of allergic response include alcohol, chocolate, citrus fruits, corn, eggs, garlic, peanuts, yeast, shellfish, soy products, and tomatoes. One of the most telling signs of food allergy is addiction. You tend to crave and are addicted to the very foods you are allergic to! While chocolate is the most flagrant example of this, you might also take pause if you find yourself tending to crave bread (wheat), dairy products, or another specific type of food. Many people go for years without recognizing that the very foods they crave the most have a subtle but toxic effect on their mood and well-being.

How can you find out whether food allergies are aggravating your problems with anxiety? As in the case of hypoglycemia, there are both formal tests you can obtain from a nutritionally oriented doctor as well as informal tests you can conduct on your own.

Among formal clinical tests for food allergies, the RAST test (radioallergosorbent test) is probably the most reliable. This is a blood test that measures the presence of antibodies to a wide range of foods. Elevated levels of antibodies to specific foods suggest that you are allergic to those foods. Although expensive, the RAST test provides a detailed profile of all of the foods to which you're allergic and can be a very helpful diagnostic tool.

A less formal and expensive way to assess food allergies is to conduct your own elimination tests. If you want to determine whether you are allergic to wheat, simply eliminate all products containing wheat from your diet for two weeks and notice whether you feel better. Then, at the end of the two weeks, suddenly eat a large amount of wheat and carefully monitor any symptoms that appear in the next few hours. After trying out wheat, you might want to try out milk and milk products. It's important to experiment with only one potentially allergic type of food at a time so that you don't confound your results.

It's also a good idea to keep a diary of symptoms comparing how you feel before, during, and following the elimination of a particular food type. Many people feel worse immediately after they eliminate a food for a few days, as though their body is going through withdrawal

symptoms. This is a telltale sign of food allergy. In severe cases, such withdrawal symptoms may persist for several weeks, and the period for eliminating the food may need to be lengthened. If this happens, I suggest that you consult a nutritionist to assist you in conducting elimination tests.

An alternative way to test for food allergies is to take your pulse after eating a meal. If it is elevated more than ten beats per minute above your normal rate, it's likely that you ate something you're allergic to.

The good news is that you do not have to permanently abstain from a food to which you are allergic. After a period of several months away from a food, it is possible to eat it again occasionally without adverse effects. For example, instead of having bread at almost every meal, you'll find that you feel better having it only two or three times per week.

For some people, food allergies can definitely be a contributing factor to excessive anxiety and mood swings. If you suspect this to be a problem, try experimenting with the elimination method and/or consult a qualified nutritionist.

Note: Although the emphasis of this section has been on food allergies, some people have allergic symptoms to other environmental substances, both organic and inorganic, which can precipitate a host of psychological symptoms *including anxiety* and *panic*. Offending substances can include food preservatives, natural gas, synthetic fabrics, household cleaners and detergents, hydrocarbons in smog, gasoline fumes, insect sprays, molds, newspaper print, kerosene, turpentine, tar or asphalt, asbestos, cosmetics, shampoos, perfumes, colognes, and hair sprays, to name a few. If you suspect that you might be chemically sensitive to any of these substances, you might want to consult an allergy specialist.

Move Your Diet in the Direction of Vegetarianism

It has been frequently observed that vegetarians tend to be somewhat calmer and more easy-going than their meat-eating counterparts. It might be argued that low-stress, laid-back types are more attracted to vegetarianism in the first place. However, impressions from clients and personal experience suggest otherwise. A dietary change toward vegetarianism can definitely promote a calmer, less anxiety-prone disposition.

If you're used to eating meat, dairy, cheese, and egg products, it is not necessary—or even advisable—to give up *all* sources of animal protein from your diet. Giving up red meat alone, for example, or restricting your consumption of cow's milk (and using soy or rice milk instead)—can have a noticeable and beneficial effect.

How can vegetarianism lead to a calmer disposition? Earlier in this chapter, it was mentioned that steroid hormone residues in red meat can exert an effect not unlike the body's own steroid hormones, activating natural defenses against stress and suppressing immunity. Another reason, however, is that meat, poultry, dairy and cheese products, and eggs—along with sugar and refined flour products—are all *acid-forming* foods. These foods are not necessarily acid in composition, but they leave an acid residue in the body after they are metabolized, making the body itself more acid. This can create two kinds of problems:

When the body is more acid, the transit time of food through the digestive tract can increase to the point where vitamins and minerals are not adequately assimilated. This selective underabsorption of vitamins—especially B vitamins, vitamin C, and minerals—can subtly add to the body's stress load and eventually lead to low-grade malnutrition. Taking supplements will not necessarily correct this condition unless you are able to adequately digest and absorb them.

Acid-forming foods, especially meats, can create metabolic breakdown products that are congestive to the body. This is especially true if you are already under stress and unable to properly digest protein foods. The result is that you tend to end up feeling more sluggish or tired and may have excess mucus or sinus problems. Although it's true that this congestion is not exactly the same thing as anxiety, it can certainly add stress to the body, which in turn aggravates tension and anxiety. The freer your body is from congestion due to acid-forming foods, the lighter and more clear-headed you'll be likely to feel. Be aware, also, that many medications have an acid reaction in the body and may lead to the same types of problems as acid-forming foods.

To maintain a proper acid–alkaline balance in the body, it helps to decrease consumption of acid-forming foods—most animal-based foods, sugar, and refined flour products—and increase the amount of alkaline-forming foods in your diet. Prominent among alkaline foods are all vegetables; most fruits, except plums and prunes; whole grains such as brown rice, millet, and buckwheat; and bean sprouts. Ideally, about 50 to 60 percent of the calories you consume should come from these foods, although in the winter it is okay to eat a slightly higher percentage of animal proteins. Try including more of the alkaline foods in your diet and see if it makes a difference in the way you feel.

Increase Protein Relative to Carbohydrates

Until recently, many nutritionists advocated eating a high amount of complex carbohydrates (whole grains, pastas, bread)—as much as 70 percent of total calories. The prevailing idea was that too much fat promoted cardiovascular disease and too much protein led to excessive acidity and toxicity in the body. The ideal diet was thought to consist of 15 to 20 percent fat, 15 to 20 percent protein, and the rest carbohydrates.

In the past few years, however, evidence has mounted against the idea of eating high quantities of carbohydrates, especially by themselves. Carbohydrates are used by the body to produce *glucose,* the form of sugar the body and brain use for fuel. In order to transport glucose to the cells, your pancreas secretes insulin. Eating high levels of carbohydrates means your body produces higher levels of insulin, and too much insulin has an adverse effect on some of the body's most basic hormonal and neuroendocrine systems, especially prostaglandins and serotonin.

In brief, eating high amounts of cereals, breads, pastas, or even starches such as white rice, corn, and potatoes can raise your insulin levels to the point that other basic systems are thrown out of balance. The answer is not to eliminate complex carbohydrates but to reduce them *proportionately* to the amounts of protein and fat you consume, *without increasing the total number of calories in your diet.* By doing this, you won't end up eating a diet that is too high in fat or protein. Instead, you'll continue to eat fats and protein in moderation *while decreasing the*

amount of carbohydrate you have at each meal relative to the amount of fat and protein. The optimal ratio may be 40 percent carbohydrates, 30 percent protein, and 30 percent fat.

Dr. Barry Sears, in his book *The Zone,* presents considerable research supporting the value of reducing the proportion of carbohydrates relative to protein and fat. Many people report that they feel better and have more energy when they increase the ratio of protein to carbohydrates in their diets. Several clients of mine have noticed that increasing protein relative to carbohydrates at each meal had a favorable effect on both anxiety and depression. This isn't surprising because anxiety and mood disorders often involve deficiencies in neurotransmitters, especially serotonin. The body has no way to make neurotransmitters (and serotonin in particular) without a steady supply of amino acids, which are derived from protein. Whether or not you agree with Dr. Sears' approach or choose to adopt a 40:30:30 diet, I highly recommend you have some protein (preferably in the form of fish, organic poultry, eggs, protein powder, tofu, tempeh, or beans and grains) at every meal. On the other hand, aim not to exceed 30 percent of your calories as protein—especially in the form of meat, chicken, or fish—as this may tend to make your body overly acidic.

What to Do When You Eat Out

The pressures and constraints of modern life require that many of us eat lunch or dinner out. Unfortunately, most restaurant food, even at its best, provides too many calories, too much saturated fat, too much salt, and often food that has been cooked in stale or rancid oils. Much restaurant food is less fresh than what you can obtain on your own. For the most part, eating in restaurants is not optimal for taking care of your health.

If you need to eat in restaurants often, observe the following guidelines:

- Avoid all fast food or "junk food" concessions.
- Whenever possible, eat out at natural food or health food restaurants that use whole, preferably organic foods.
- If natural food restaurants are unavailable, go to high-quality seafood restaurants and order fresh fish, preferably broiled without butter or oil. Accompany the fish with fresh vegetables, potatoes or rice, and a green salad. On the salad, avoid creamy or dairy-based dressings.
- As a third choice, try a high-quality Chinese or Japanese restaurant and have a meal consisting of rice, vegetables, and fresh fish or tofu (bean curd). In Chinese restaurants, be sure to ask the waitress to leave off MSG (monosodium glutamate), a flavor enhancer to which many people are allergic.
- As a general rule, when eating out, have no more than one roll with one pat of butter, and minimize ordering cream-based soups, such as clam chowder. Get your salad dressings on the side, using oil and vinegar or a low-fat Italian dressing. Stick with simple entrees such as chicken or whitefish without elaborate sauces or toppings. If possible, try to avoid high-fat desserts. Don't hesitate to ask your server for assistance

in having food prepared according to your needs. Learn to enjoy the subtle tastes of simple foods. You'll find this becomes easier and desirable after a while when you omit rich, high-fat, and sugary foods.

As you think back over all of the guidelines for improving your nutrition, keep in mind that it's unnecessary to try to adopt them all at once. Begin by decreasing your caffeine and sugar consumption, which will have the most direct impact on reducing your vulnerability to stress and anxiety. Beyond these suggestions, go at your own pace in upgrading your diet. You're more likely to *maintain* a dietary change that you've decided you truly *want* to make—instead of pressuring yourself.

Summary: Low Stress/Anxiety Dietary Guidelines

As with the rest of the information in this chapter, the following guidelines are intended to be suggestive rather than prescriptive. These guidelines are not intended to take the place of a detailed dietary assessment, recommendations, and the creation of a meal plan by a competent nutritionist, dietician, or nutritionally oriented physician. Although all of the guidelines below are important, they are listed in order of their direct relevance to anxiety reduction.

1. Eliminate as far as possible the stimulants and stress-inducing substances described in the first section of this chapter—caffeine, nicotine, other stimulants, salt (down to one gram or teaspoon per day), and preservatives. (Elimination of caffeine and nicotine is the most critical for reducing anxiety.)

2. Eliminate or reduce to a minimum your consumption of refined sugar, brown sugar, honey, sucrose, dextrose, and other sweeteners such as corn syrup, corn sweeteners, and high fructose. Replace desserts, sugary beverages, and sweet snacks with fresh fruit and sugar-free beverages. Moderate alcohol consumption, since your body converts alcohol to sugar. Also eliminate artificial sweeteners such as aspartame (Nutrasweet) and saccharin. Aspartame, in particular, can aggravate panic attacks and may, over time, cause damage to the nervous system. For a natural sweetener with no proven adverse effects, try stevia.

3. Reduce or eliminate refined and processed foods from your diet as much as possible. Replace with whole and fresh foods (preferably organic). Even many apparent "health food" items, such as protein powder, are highly processed.

4. Eliminate or reduce to a minimum any food that you establish as an allergen. Notice particularly how you feel if you eliminate wheat and/or dairy products from your diet. Be mindful of any food that causes you to feel tired or produce mucus after eating it.

5. Reduce consumption of red meat as well as poultry containing steroid hormones and other chemicals. Replace these with organic poultry and/or seafood (fish such as halibut, salmon, snapper, sole, trout, and turbot are recommended). Avoid large sea fish such as swordfish, marlin, and tuna, which contain excessive levels of mercury.

6. Increase your intake of dietary fiber by eating whole grains, brans, and raw vegetables. (Note, though, that too much fiber can cause gas and bloating and interfere with the body's ability to absorb protein.)
7. Drink the equivalent of at least six eight-ounce glasses of bottled spring water or purified water per day. Reverse osmosis and activated carbon are good methods of filtration. When possible, avoid drinking water sold in plastic bottles. If you do, drink all of the water after opening the bottle—don't leave water in a plastic bottle for days (even in the refrigerator) to have later.
8. Increase your intake of raw, fresh vegetables. A mixed-vegetable salad every day is an excellent idea. Include one fresh (not frozen or canned) cooked vegetable in your diet each day.
9. Whenever possible, buy produce that is organic.
10. Reduce all fat in your diet (oils, nuts, salad dressings, and so on) to no more than 20 to 30 percent of your total calories. Animal fat and cholesterol-containing foods such as red meat, organ meats, gravy, cheeses, butter, eggs, whole milk, and shellfish should make up no more than 10 percent of your total calories. Avoid foods containing trans-fatty acids altogether (contained in deep fried foods, chips, mayonnaise, margarine, and all processed foods that contain partially hydrogenated oils.)
11. To avoid excessive weight gain, consume only as much energy (calories) as you expend. Decrease caloric intake and increase aerobic exercise if you're already overweight.
12. Select foods from the four major food groups: 1) fruits and vegetables (four to five servings daily), 2) whole grains, including whole-grain rice, cereals, and whole-grain breads (two to three servings daily), 3) animal proteins, emphasizing organic poultry, seafood, and eggs, or legume equivalents if you are vegetarian (two to three servings daily), and 4) dairy products, emphasizing low-fat or nonfat dairy products (one or two servings daily). If you are sensitive to cow's milk, try substituting soy, rice, or almond milk instead. Your diet should emphasize the first two categories and moderate amounts of the latter two. In general, it's a good idea to move your diet in the direction of vegetarianism and away from excess consumption of animal-based foods. At the same time, you should increase the ratio of protein to carbohydrates in your diet. Protein should make up approximately 20 to 30 percent of what you eat, fat 20 to 30 percent (or less if your cholesterol is above 220), and complex carbohydrates about 40 to 60 percent.

Use the *Food Diary* on the next page to monitor what you eat for at least three days. In what ways might you improve your dietary habits? What would you actually be willing to change in the next month?

Food Diary

Instructions: Use the following chart to evaluate your eating habits for three days. The areas in which your average daily consumption varies the most from the ideal are the areas in which you can make the greatest improvement in what you eat. Make copies of this form so that you can track your diet for one or two weeks.

For three days, keep track of how many servings you have of each of these food categories. For each category, divide the total servings by 3 to get your daily average for the period. Compare your eating pattern to the ideal.

Week of: _____ (dates)	Day one servings	Day two servings	Day three servings	Average servings per day	Ideal servings per day
Caffeine serving = 1 cup coffee or black tea, or caffeinated cola beverage					
Sweets serving = 1 candy bar, 1 piece of pie, 1 cup ice cream					
Alcohol serving = 1 beer, 1 glass of wine, or cocktail					
Vegetables and fruits serving = 1 cup string beans, 1 apple, 1 orange, medium potato					
Whole-grain breads and cereal serving = 1 slice of bread, ¾ cup cereal					
Milk, cheese, yogurt serving = 1 cup milk, 1 medium slice cheese					
Meat, poultry, fish, eggs, beans, and nuts serving = 3 oz. lean meat or fish, two eggs, 1¼ cup cooked beans, ¾ cup nuts					

Supplements for Anxiety

B Vitamins and Vitamin C*

It is widely known that during times of stress your body tends to rapidly deplete stores of B vitamins and vitamin C. I recommend to all of my clients that they take a high-potency B-complex vitamin and a high dose of vitamin C every day. Many of them find that doing so makes a noticeable difference in their energy level and resiliency to stress. The B vitamins are necessary to help maintain the proper functioning of the nervous system. Deficiencies, especially of vitamin B_1, B_2, B_6, and B_{12}, can lead to anxiety, irritability, restlessness, fatigue, and even emotional instability. It's best to take all eleven of the B vitamins together in a B-complex supplement, since they tend to work together synergistically. Vitamin C is well known for enhancing the immune system and promoting healing from infection, disease, and injury. Less well known is the fact that vitamin C helps to support the adrenal glands, whose proper functioning is necessary to your ability to cope with stress. Vitamin B_5 (pantothenic acid) also supports the adrenal glands, and many people find that it is helpful in dealing with excess stress. (A high dose—such as 1000 mg—of B_5 actually has a calming effect for many individuals.)

Based on personal experience and work with clients, I would suggest that you try a B-complex and vitamin C in the following doses on a regular basis:

- B-complex: 50 to 100 mg of all eleven B vitamins once a day (twice a day under high stress)
- Vitamin C: 1000 mg in a time-release form, twice a day (double this dose under high stress). Vitamin C in combination with bioflavonoids is preferred.

When under unusual stress, it is also a good idea to take extra B_5 (pantothenic acid). Up to 1000 mg in a time-release form may be needed to help mitigate the effects of pronounced anxiety and stress.

Please note that it is not possible to overdose on B vitamins, since they are water soluble. The one exception to this is vitamin B_6. It is important not to exceed 100 mg per day if you're taking B_6 on a long-term basis. (Higher doses of B_6 may be taken on a short-term basis to relieve premenstrual symptoms, however.) High daily doses of vitamin C are generally harmless and a good hedge against infections and colds. However, repeated daily doses in *excess of 8000 mg per day* have been associated with stomach complaints and even kidney stones in some people.

It's important that you take B vitamins, vitamin C, and other vitamins *with meals.* Stomach acids and enzymes produced while digesting food are necessary to help break down and assimilate vitamins. Do not take vitamins on an empty stomach (with the exception of amino acids, as discussed in the section on amino acids). Capsule forms of vitamins are probably easier on the stomach than tablets.

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* B vitamins include: thiamine (B_1), riboflavin (B_2), niacin or niacinamide (B_3), pantothenic acid (B_5), pyridoxine (B_6), biotin, folic acid, choline, inositol, cyanocobalamin (B_{12}), and PABA (para-aminobenzoic acid).

Calcium

It is widely known that calcium can act as a tranquilizer, having a calming effect on the nervous system. Calcium, along with neurotransmitter substances, is involved in the process of transmitting nerve signals across the synapse between nerve cells. Depletion of calcium can result in nerve cell overactivity, which may be one of the underlying physiological bases of anxiety. It's important that you get at least 1000 mg of calcium per day, either in calcium-rich foods, such as dairy products, eggs, and leafy vegetables, or by taking calcium supplements (chelates are preferred to calcium carbonate). If you take a calcium supplement, be sure to take it in combination with magnesium, as these two minerals balance each other and work in tandem. For some people, magnesium can have a relaxing effect equal to that of calcium. In your supplement, the ratio of calcium to magnesium should be either two to one or one to one. You may also want to try taking liquid calcium-magnesium, available in most health food stores, as a natural tranquilizer.

Note: You may want to have your nutritionist or doctor perform a hair analysis test if you are concerned about having a deficiency of calcium or other minerals. Utilizing a hair sample, the test detects deficiencies of a large number of different minerals. The presence of certain mineral deficiencies can be used to detect other conditions. For example, too little chromium suggests a problem in carbohydrate metabolism and possible hypoglycemia. Too little cobalt suggests a possible vitamin B_{12} deficiency. The test can also detect excesses of toxic metals such as aluminum, lead, or mercury in your body. High levels of mercury, in particular, have been associated with anxiety.

Relaxing Herbs

Herbs have been used for hundreds of years to promote calmness and relaxation. While usually not as potent as prescription tranquilizers, such as Xanax or Klonopin (with the exception of kava), they have few side effects and are nonaddictive. Many people benefit from using herbs for mild to moderate states of anxiety. The following herbs have been most helpful to my clients.

Kava: Relaxing Herb from the Pacific Islands

Kava (or kava kava) is a natural tranquilizer that has become quite popular in the United States in recent years. Several clients of mine have testified that it's as potent a relaxer as Xanax. A member of the pepper tree family, kava is native to the South Pacific. Polynesians have used it for centuries both in ceremonial rituals and as a social relaxer. Small doses produce a sense of well-being, while large doses can produce lethargy, incur drowsiness, and reduce muscle tension.

In European countries, such as Germany and Switzerland, kava has been approved for treatment of insomnia and anxiety. It appears from the limited research available that kava may tone down the activity of the limbic system, particularly the amygdala, which is a brain

center associated with anxiety (see chapter 2). Detailed neurophysiological effects of kava are not known at this time.

Kava's principal advantage over such tranquilizers as Xanax or Klonopin is that it's not addictive. It's also less likely to impair memory or aggravate depression as tranquilizers sometimes can. Research indicates that it is an effective treatment for mild to moderate anxiety (not panic attacks), insomnia, headaches and muscle tension, and gastrointestinal spasms and can even help relieve urinary tract infections.

When buying kava, it's preferable to obtain a standardized extract with a specified percentage of kavalactones, the active ingredient. The percentage of kavalactones can vary from 30 to 70 percent. If you multiply the total number of milligrams of kava in each capsule or tablet by the percentage of kavalactones, you get the actual strength of the dose. For example, a 200 mg capsule with 70 percent kavalactones would actually be a 140 mg dose.

Most kava supplements at your health food store contain on the order of 50 to 70 mg kavalactones per capsule. Research in Europe has found that taking three or four doses of this strength daily may be as effective as a tranquilizer.

At present, there is little hard data on the long-term effects of taking kava on a daily basis. In the Polynesian islands, where residents use kava in high doses daily for long periods of time, skin discoloration can occur. Sometimes this progresses to scaling dermatitis, which is relieved when kava is discontinued. If you notice any ill effects, please stop using kava immediately, and do not resume without consulting a naturopath or an informed physician. I would recommend that you not use kava on a *daily* basis for more than six months. On an intermittent basis, however, you can use it indefinitely.

In general, it's not a good idea to use kava in combination with tranquilizers. While not dangerous, such a combination can produce grogginess and even disorientation. Especially if you're taking a moderate to high dose of Xanax or Klonopin (more than 1.5 mg a day), refrain from using kava.

Kava should also not be taken if you have Parkinson's disease, are pregnant, or are breastfeeding. It should be used with caution before driving or operating machinery.

Several years ago there were widespread concerns that kava might cause liver problems. In Europe, some manufacturers used the stems and leaves of the kava plant, which contain a liver toxin, and a few people subsequently developed liver disease. American-based companies then used and now continue to use only the root of the plant (as the Polynesians have done for centuries), which is safe. Kava has never been banned in the United States. However, the FDA still warns that people with a history of liver problems should not use kava without first consulting with their physician.

Valerian

Valerian is an herbal tranquilizer and sedative that is widely used in Europe. In recent years, it has gained popularity in the United States. Clinical studies, mostly in Europe, have found it to be as effective as tranquilizers in alleviating mild to moderate anxiety and insomnia, as Jonathan Davidson and Kathryn Connor discuss in *Herbs for the Mind*. Yet it has fewer side effects and is nonaddictive.

Valerian is also not as likely as prescription tranquilizers to impair memory and concentration or cause lethargy and drowsiness. It will generally not cause a hangover the next day if used for sleep, though a few people have reported being affected that way. In general, valerian can work well for mild to moderate anxiety but may be less effective for more severe cases.

Derived from the plant *Valeriana officinalis,* valerian has numerous chemical constituents, including essential oil, iridoids, and alkaloids. No one of these constituents is responsible for its sedative properties; the overall impression is that all of the components work synergistically. It's therefore unlikely that a single component will be isolated and manufactured synthetically.

Valerian has a good reputation for promoting sleep. Numerous studies have shown that it can reduce the time it takes to get to sleep, as well as improve the quality of sleep. If you try valerian for sleep and it doesn't seem to work, don't give up. Some studies indicate that it may take from two to three weeks of regular use for the herb to achieve its full benefit, whether you're taking it for insomnia or anxiety.

Valerian can be obtained at any health food store in three forms: capsules, liquid extract, or tea. In treating anxiety or insomnia, try each of these forms to see which you like best, following the instructions given on the bottle or package. Capsules are the most convenient, but some people swear by the efficacy of the tinctures and teas. Frequently, you'll find valerian combined with other relaxing herbs such as passionflower, skullcap, hops, or chamomile. You may find these combinations to be more palatable or effective.

The effective dose for valerian ranges from 200 to 400 mg for anxiety relief during the day and 400 to 800 mg for help with sleeping at night. For sleep, it's best to take it about an hour before retiring. For mild to moderate anxiety during the day, you might take two or three doses in the 200 to 400 mg range.

Be sure to buy a valerian product with sufficient potency. Generally, a statement on the bottle indicating that the product has been standardized to at least 0.5 percent of *valerenic acid* is an indication that it has reasonable potency. Also note the expiration date, as older products tend to lose potency. If the product contains other herbs or ingredients besides valerian, it should offer a complete listing of these along with the amount in each recommended dose. Avoid products that don't provide a full listing of ingredients.

As a general rule, you should avoid using valerian daily for over six months. Long-term use at high doses has been associated with side effects such as headache, excitability, restlessness, agitation, and palpitations. You can use it three to four times per week, however, indefinitely. Also, valerian should not be taken together with benzodiazepine tranquilizers such as Xanax, Ativan (lorazepam), and Klonopin or sedatives such as Restoril (temazepam), Ambien (zolpidem), and Sonata (zaleplon). It can be combined with other herbs, such as kava, Saint-John's-wort, and especially hops or passionflower.

Long experience in Europe indicates valerian is an especially safe herb. Still, there are occasional reports of paradoxical reactions of increased anxiety, restlessness, or heart palpitations, possibly due to allergy. Stop using valerian or any other herb if it causes such reactions.

Saint-John's-Wort

Saint-John's-wort, or *hypericum,* has a long history of use. It was recommended by Hippocrates for anxiety more than two thousand years ago. Currently, it is being used widely in Europe and the United States to treat symptoms of mild to moderate depression, as well as anxiety. In Germany, it has outstripped even Prozac and accounts for over 50 percent of the antidepressant market. This fact alone testifies to its effectiveness.

Hypericum has a direct effect on relieving depression and appears to reduce anxiety as a secondary effect. European studies have found it to have antianxiety properties comparable to tranquilizers, although this finding has not yet been confirmed in the United States. There is evidence that hypericum enhances levels of all three neurotransmitters implicated in anxiety disorders: serotonin, norepinephrine, and dopamine. On this basis, it might be seen as preferable to SSRI antidepressants, which raise only serotonin levels.

Saint-John's-wort is available in health food stores and many drugstores. Be sure to obtain brands that are standardized to contain 0.3 percent hypericin, the active ingredient. The standard dose is three 300 mg capsules per day.

When starting out, you may want to try two capsules per day to get used to the herb, then raise the dose to three capsules, or 900 mg per day. If you find hypericum upsets your stomach, take each dose with a meal.

It's important to keep in mind that hypericum takes four to six weeks to reach therapeutic effectiveness. If you're not seeing any benefit in the first two to three weeks, don't get discouraged and stop; you need to stick with it for at least one month.

Hypericum has had a very good safety record over the hundreds of years it has been used. For some people, though, it can cause photosensitivity, an increased sensitivity to sunlight. If you are using hypericum and are in direct sunlight frequently, you may want to limit your exposure or use a sunscreen with 30 SPF or higher. Other side effects occasionally reported are stomach upset, dizziness, dry mouth, and mild allergic reactions. These reports are rare and, in general, side effects are less likely to occur with Saint-John's-wort than with SSRI and especially tricyclic antidepressants.

If you're already taking an SSRI or tricyclic antidepressant and want to switch to Saint-John's-wort, it's best to wean yourself off the prescription drug before starting to take the herb. In general, do not take an SSRI and Saint-John's-wort together without your doctor's approval.

It's okay to take Saint-John's-wort in conjunction with relaxing herbs such as kava or valerian. There is no strong evidence against combining Saint-John's-wort with tranquilizers, such as Xanax and Klonopin, though some doctors are wary of doing so. However, if you are taking an MAO-inhibitor antidepressant, such as Nardil or Parnate, do *not* take hypericum.

In conclusion, Saint-John's-wort is likely to be helpful if you're dealing with mild to moderate depression. It may also alleviate mild to moderate levels of anxiety after four to six weeks' use, although it is probably not effective in relieving panic attacks, obsessive-compulsive disorder, or symptoms of post-traumatic stress disorder. If you are suffering from more severe anxiety symptoms and have not obtained sufficient help from cognitive behavioral therapy and other natural strategies, consult a qualified psychiatrist and consider a trial of an SSRI medication (see chapter 17).

For further information on Saint-John's-wort, see the book *Hypericum and Depression* by Harold Bloomfield, Mikael Nordfors, and Peter McWilliams.

Other Helpful Herbs

Passionflower

Passionflower is a good natural tranquilizer considered by many to be as effective as valerian. In higher doses, it is often used to treat insomnia, as it both relieves nervous tension and relaxes muscles. It's available either in capsules or in liquid extract at your health food store. Sometimes you'll find products that combine it with valerian or other relaxing herbs. Use as directed on the bottle or package.

Gotu Kola

Gotu kola has been popular for thousands of years in India. It has a mildly relaxing effect and helps revitalize a weakened nervous system. It has also been found to help improve circulation and memory function, and it has been found to promote healing following childbirth. You can find it in most health food stores in capsules or extracts. I personally use gotu kola and find it to be beneficial.

Ginkgo Biloba

Derived from the ginkgo tree, ginkgo biloba can indirectly help reduce anxiety by improving concentration and mental clarity. It does this by increasing the flow of blood, oxygen, and nutrients to the brain. Studies have found that it can improve mental function in elderly people and also help tinnitus or "ringing in the ears." Available in 60 mg tablets, I recommend taking one to three 60 mg doses per day. If you're taking aspirin regularly, limit your use of ginkgo, since the combination can inhibit blood clotting.

In using any of the herbs described above, be sure not to exceed the recommended dose. For further information on herbs, consult the books by Harold Bloomfield, Michael Tierra, or Earl Mindell listed at the end of this chapter or see a doctor (usually a holistic physician or naturopath) who is well versed in the use of herbs.

SAM-e: Fast-Acting Natural Antidepressant

Unlike the herbs just described, S-adenosyl-methionine (abbreviated SAM-e, pronounced "Sammy") is a substance that occurs naturally in the body. Widely popular in Europe for over two decades, it first became available in the United States in 1999. Extensive research done in Europe has found it to be as effective in treating depression as prescription SSRI antidepressants. In Italy, in fact, it's more frequently prescribed for depression than Prozac.

SAM-e appears to work by increasing serotonin and dopamine activity in the brain. While healthy people manufacture enough of their own SAM-e, research has found that clinically depressed people are often deficient.

A major advantage of SAM-e is that it has almost no side effects. Since it occurs naturally in the body, adverse reactions are rare. Some people occasionally report nausea or queasiness when starting it, but this tends to go away after a few days. SAM-e also works very quickly. Unlike prescription antidepressants and Saint-John's-wort, the benefits are usually felt within a few days of starting to take it.

In addition to helping with depression, SAM-e has been found useful in the treatment of osteoarthritis and fibromyalgia. It appears to restore and maintain healthy joint function by contributing to regeneration of cartilage. SAM-e also has potent antioxidant properties. It's used by the body to help synthesize glutathione, an important antioxidant involved in protecting cells from free-radical damage. Finally, SAM-e is beneficial to the liver and can assist in detoxifying the body from alcohol, drugs, and environmental toxins.

At present, information on the use of SAM-e to treat anxiety is limited. Most available research has evaluated its effectiveness as an antidepressant. If it functions at all like the SSRIs, I would expect it to have antianxiety as well as antidepressant effects.

SAM-e is available in most health food stores and drugstores in 200 mg tablets. The recommended dose for depression is 400 to 1200 mg a day. Because it can cause nausea and gastrointestinal (GI) disturbances for some people, start with 200 mg per day at first (for this reason, enteric coated tablets are preferable). After two days, raise the dose to 200 mg twice per day. If you do not experience benefits after a week at this dose, you can raise the dose again to 800 to 1200 mg per day. If you're taking it primarily for arthritis or fibromyalgia, 800 mg per day is probably sufficient.

People with bipolar disorder (manic depressives) should take SAM-e only under the supervision of a knowledgeable physician, as it can aggravate manic states.

For detailed information on SAM-e, see the book *Stop Depression Now* by Dr. Richard Brown.

Amino Acids

In the past few years, amino acids, which are the natural constituents of protein, have come into use in the treatment of both anxiety disorders and depression. Many people prefer them to prescription drugs because they have fewer side effects and are nonaddictive. You may wish to talk to a holistic doctor, a naturopath, or the staff at your local health food store to expand on the information presented below.

Tryptophan

The amino acid tryptophan is a natural precursor to the neurotransmitter serotonin. Serotonin is involved in regulating many body functions, including mood, sleep, appetite, and pain threshold. It produces a feeling of calmness and well-being, and deficiencies have been linked to anxiety.

A number of studies have found tryptophan to be as effective as prescription antidepressants and sedatives in relieving insomnia, generalized anxiety, and depression.

Tryptophan is available in two forms: 5-hydroxytryptophan (5-HT) and L-tryptophan. You can find 5-HT in most health food stores. The recommended dose is 50 to 100 mg two to three times per day (or in a single combined dose at bedtime for insomnia), with or without food. L-tryptophan was widely used in the 1980s and then taken off the market in 1989 by the FDA: an impurity in the manufacturing process at a single company caused a rare blood disease that resulted in severe illness for several thousand people. In the mid-nineties, L-tryptophan was reintroduced in the United States under strict manufacturing standards and only by prescription. In the past two years, it has become available again to the public and can be obtained at some health food stores and over the Internet. Many people (including the author) find L-tryptophan to be more sedating than 5-HT and so prefer it for insomnia. The recommended dose is 1000 to 2000 mg at bedtime, taken with a carbohydrate snack or fruit juice. If you take either 5-HT or L-tryptophan, effectiveness can be improved by taking it along with vitamin B_3 (niacinamide) (100 to 500 mg) and vitamin B_6 (100 mg). If you are taking an SSRI, tricyclic, or MAO-inhibitor antidepressant, do not take either form of tryptophan except under the supervision of a physician.

Gamma-Aminobutyric Acid

As an alternative to tryptophan, you may want to consider trying gamma-aminobutyric acid (GABA, for short), an amino acid that is available at most health food stores. GABA has a mildly tranquilizing effect, and many people have used it as an alternative to prescription tranquilizers such as Xanax and Ativan. Although it is not as potent as prescription drugs, GABA does have the advantage of having few side effects and being nonaddictive.

The usual dose of GABA recommended for its calming effect is 200 to 500 mg. It is fine to take it in this dose once or twice per day (do not exceed 1000 mg in a twenty-four-hour period).

It's a good idea to take GABA either on an empty stomach or with a carbohydrate snack (such as a piece of toast, crackers, cereal, or rice cakes). Carbohydrate foods actually enhance the calming or sedative effect. Avoid taking GABA with protein. There is nothing harmful in doing so, but the protein (which is made up of many different amino acids) will tend to compete with absorption of GABA.

Phenylalanine and Tyrosine as Natural Antidepressants

Since depression frequently accompanies anxiety, it's important to consider two amino acids that have been used effectively to treat depression. Both DL-phenylalanine and tyrosine increase the amount of a neurotransmitter substance in the brain known as *norepinephrine,* a substance whose deficiency has been implicated as a contributing cause of depression.

Many mild to moderately depressed people benefit from taking one or the other of these amino acids. These supplements may allow you to feel better without resorting to prescription antidepressant drugs which, while effective, have numerous side effects.

DL-phenylalanine (DLPA) and tyrosine are available in 500 mg capsules or tablets in most health food stores. If you are interested in experimenting with either of them, please observe the following guidelines:

- Do not take either of them if you are pregnant, have PKU (a disease requiring a phenylalanine-free diet), or are taking an MAO-inhibitor medication (such as Nardil or Parnate). If you have high blood pressure, take them only under a doctor's supervision.
- Take them with a carbohydrate snack or at least one half hour before or after any meal containing protein. As with GABA, protein interferes with the absorption of DLPA and tyrosine.
- Start with a dose of 500 mg per day and increase it to 1500 mg per day over three or four days. If you experience no benefit, increase the dose to 2000 to 3000 mg per day after four days. Stay with one amino acid for at least two weeks (unless you experience an adverse reaction). If you experience no noticeable effect after two weeks, try the other one.
- It's likely that you'll experience some benefit from either tyrosine or DL-phenylalanine after a few weeks if taken at the right dosage. Do not exceed 3000 mg per day of either amino acid except under the supervision of a doctor who is familiar with the use of amino acid therapy for the treatment of depression. If you are severely depressed and/or have suicidal thoughts, do not rely on amino acids alone to deal with your problem. Please consult a professional.

An in-depth discussion of the use of amino acids in the treatment of depression can be found in the books by Joan Mathews Larson and Julia Ross at the end of this chapter.

Omega-3 Fatty Acids

Omega-3 fatty acids, especially DHA and EPA, are important for brain and neurological health. Without sufficient levels of omega-3 fatty acids, nerve cell membranes are less fluid and may cause nerve cells to react slowly and misfire. Recent studies have found omega-3 supplementation to be helpful in diminishing symptoms of depression. The best source of omega-3 fatty acids is wild fish (especially salmon and sardines), meat, and fowl. Taking fish oil in liquid (two tablespoons per day) or capsules (two or three per day, or a combined dose of 1000 to 2000 mg per day) may help alleviate depression and mood instability. Oils should be stored in the freezer or refrigerator to protect them from damaging oxidations. Taking 400 IU daily of vitamin E (mixed tocopherol form) can also provide protection from oxidation.

Hormone Supplements

A variety of hormones are available to supplement presumed deficiencies. You've probably seen many of them at your local drugstore or health food store. Some may promote relaxation and aid sleep. Two of the most common are discussed below.

Melatonin

Melatonin is a hormone secreted at night by the pineal gland to signal the brain that it is time to go to sleep. Supplemental melatonin can help regulate sleep cycles. It is taken in doses from 0.5 to 3 mg. While some people find it useful, others say that they get no benefit from it and that it leaves them feeling groggy in the morning. If you experience no benefit from 2 to 3 mg, try lowering your dose to 0.5 mg.

Summary of Things to Do

1. Evaluate the amount of caffeine in your diet, using the *Caffeine Chart* in this chapter, and attempt to gradually reduce your intake to less than 100 mg per day. If you are especially sensitive, you may want to eliminate caffeine altogether, substituting decaf coffee (or decaf teas) for regular coffee and decaf soft drinks for caffeinated ones.
2. Stop smoking. In addition to significantly reducing your risk for cardiovascular disease and cancer, you will lower your susceptibility to panic attacks and anxiety.
3. Reduce your consumption of substances that stress your body. Decrease your intake of salt to one gram per day. Replace processed foods containing preservatives with (preferably organic) vegetables and fruits and whole grains. If possible, substitute organic beef, poultry, and fish for commercially available meats. Avoid processed meats.
4. Allow eating to be a relaxing activity. Avoid eating on the run or eating excessively. Chew your food thoroughly and limit your fluid intake during a meal to eight ounces.
5. Evaluate whether you experience the subjective symptoms of hypoglycemia—such as light-headedness, anxiety, depression, weakness, or shakiness—three or four hours after a meal (or in the early morning hours) and whether they are quickly relieved by eating. You may want to follow this up with a formal six-hour glucose tolerance test. If you suspect that hypoglycemia is contributing to your problem with anxiety, strive to eliminate from your diet all forms of white sugar as well as brown sugar, honey, corn syrup, corn sweeteners, molasses, and high fructose. (Be careful also about aspartame, or Nutrasweet. A recent study found a link between this substance and panic disorder for certain people.) Most fresh, whole fruits (not dried) are fine if you're hypoglycemic, although fruit juices should be diluted with water. Observe the "Dietary Modifications for Hypoglycemia" recommended in this chapter and consider taking the suggested supplements. You may want to consult a qualified nutritionist to assist you in setting up an appropriate dietary and supplement regime.

6. Evaluate your susceptibility to food allergies. Take note of any types of food that you crave (paying attention particularly to wheat and dairy products) and try eliminating that food from your diet for two weeks. Then reintroduce the food and notice if you have any symptoms.

7. Work toward complying with the "Low Stress/Anxiety Dietary Guidelines" described in this chapter. Use the *Food Diary* to monitor your intake of caffeine, fats, sweets, and alcohol, and try for a balanced number of servings of each major food group for several weeks. *Avoid pushing yourself to radically change your diet all at once,* or you may end up rebelling against the idea of making any changes. Introduce one small change each week—or perhaps even each month—so that you gradually modify your dietary habits.

8. Consider taking the supplements recommended for anxiety and stress, especially the B vitamins, vitamin C, and calcium-magnesium. You may want to consult with a nutritionist or physician who is supportive of the idea of high-potency vitamins (not everyone is) to assist you in this.

9. You may want to try the herbs kava or valerian as a mild tranquilizer to relieve anxiety. Or you may want to try SAM-e or Saint-John's-wort as a treatment for mild to moderate depression. Fish oil capsules (high in omega-3 fatty acids) can also be helpful for depression. All of these substances can be found at your local drugstore or health food store. Avoid exceeding recommended levels unless you consult with a knowledgeable professional.

10. You may want to explore whether amino acids can be helpful—specifically, GABA or L-tryptophan for anxiety and tyrosine or DL-phenylalanine for depression. Consult the books by Joan Mathews Larson and Julia Ross listed below for in-depth information on the use of amino acids to treat anxiety and depression.

11. Of the many things your brain needs in order to function properly, the following three criteria are of particular importance to people who have panic attacks, phobias, and/or anxiety:

    - **An adequate level of serotonin**
      Adequate levels can be accomplished, if necessary, via the selective serotonin reuptake inhibitor medications, such as Prozac, Zoloft, or Paxil (see chapter 17). Natural alternatives for increasing serotonin include the use of the herb Saint-John's-wort, the enzyme S-adenosyl-methionine (SAM-e), or the amino acid L-tryptophan. You can also increase your serotonin levels by eating tryptophan-rich foods such as turkey, tuna, eggs, or milk, getting plenty of exercise, getting at least one hour per day of exposure to sunshine, and last, but not least, having that magic ingredient in your life known as love and affection.

    - **An adequate, stable level of blood sugar**
      Review the sections on hypoglycemia and dietary guidelines for hypoglycemia. Eliminate sweets other than fruits from your diet. Always have a nonsugar

snack with you (in your car, at work, and so on) such as unsalted nuts or crackers and cheese should you start to experience hypoglycemic symptoms. Be sure to take supplemental B-complex and chromium.

- **Sufficient light**
  Review the section in chapter 16 on seasonal affective disorder to determine whether light deficiency is an issue for you. If so, read the book by Norman Rosenthal cited below. In the meantime, increase your exposure to sunlight or bright light during fall and winter, if possible.

Further Reading

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