Part II

EVERYDAY CONTRIBUTORS TO CHEMICAL IMBALANCE AND LOW MOODS

Whether healthy or depressed, active or sedentary, whether we’re eighteen, thirty-eight or sixty-eight, all of us are affected by the same principles of health maintenance. Some of the hearty ones can get by with poor nutrition and unhealthy habits for many years before the cumulative negative results begin to manifest. This makes it easier for us to deny the connection between our lifestyles and our health. Yet, in the final analysis, we cannot avoid the simple fact that what goes into our bodies absolutely affects our overall health, quality and quantity of life, and mood.

Everyone has stories about exceptions, like uncle Jack who drank three whiskies a day and lived relatively well and happily until age ninety-four. My own grandfather drank one to two bottles of wine daily for all the years I knew him and then died suddenly and peacefully at home when he was eighty-three, without obvious suffering or illness. My grandmother likes to boast he had no gray hair and all of his original teeth, with no cavities. She fed him well—and regularly—and I say good genes contributed, because his smoking but non-drinking sister recently died at one hundred three and another sister died at ninety-

I will apply dietetic measures for the benefit of the sick according to my ability and judgment;
I will keep them from harm and injustice.

—from The Hippocratic Oath, translation by Ludwig Edelstein
Ares Publishers, New York, 1979
Very often people who feel depressed when they are ill believe their feelings are only a psychological reaction to their sickness. However, medically ill people who become depressed and remain that way beyond the initial discomfort, fear and frustration of the first three to four weeks of their illness may also have brain amine changes that are adding to their mood disturbance. People who are depressed need to be screened for physical illness and those who are physically ill need to be evaluated for depression.

The stress and disturbance caused by disease can rapidly deplete your body of nutrients at the time you need them most. A number of studies have measured nutrients in post-surgical and severely ill patients and have found significant deficiencies. Also, any illness that decreases the amount of oxygen circulating through your body can increase the likelihood of depression. Research has shown that the enzymes which initially break down tyrosine and tryptophan (tyrosine and tryptophan hydroxylase) are regulated by oxygen. Thus, low oxygen can inhibit brain amine synthesis.

While virtually any illness can coincide with de-
pression, some illnesses are far more likely to create mood problems than others. Though all sick people are dealing with the psychological stress of illness, only some have the distinct constellation of neurochemical imbalances which adversely affect mood.

The physical conditions that most often predispose a person to mood disorders are low thyroid, premenstrual syndrome, chronic candidiasis (fungal infections), viral infections, high blood pressure, stroke, other cardiovascular diseases and Parkinson's disease. Because of the chemical imbalances involved, patients with some of these illnesses have benefited a great deal from the nutritional program in conjunction with the medical attention their condition may require.

**The Thyroid Connection**

The neurotransmitters directly influence hormone levels. For this reason, people who are depressed often have associated hormone changes. Likewise, a primary hormone disorder or glandular malfunction can lead to depression.

There is a delicately balanced system of hormonal regulation originating from your hypothalamus, an area deep in the bottom center of your brain. It regulates your pituitary, the part of your brain that controls the glands and their hormone production. Your hypothalamus responds to the chemical environment of your body and prompts your pituitary to stimulate your glands to secrete. Your glands, in turn, must have the necessary ingredients for hormone formation; these include essential fatty acids, amino acids, vitamins and minerals. Once formed, these hormones then feed messages back to your hypothalamus and other brain parts, directly affecting your neurotransmitter mechanisms.

We know that neurotransmitter depletion is the biochemical cause of depression, and one of the areas of the brain most depleted is the hypothalamus. Therefore, besides affecting mood, deficient neurotransmitters can create hormonal and metabolic imbalances and also disrupt normal biological rhythms.

The most consistent, best documented hormonal changes associated with depression are related to the thyroid, adrenal and ovarian hormones. In my practice, I find low thyroid function in a number of those who are depressed.

A forty-eight-year-old woman who came to my office said, “I’ve had depression all my life.” She had been hospitalized on numerous occasions over the previous nineteen years, had had many doctors and years of psychotherapy, so she knew the psychological jargon and the psychological answers. She had tried to kill herself repeatedly, once by wrist cutting and nine times by drug overdose. She said, “I feel I can’t even succeed at killing myself, so I don’t try anymore. But I think, wouldn’t it be nice if I would just die?”

At the time of our first meeting she was taking the antidepressant medication Elavil, the major tranquilizer Navane, Cogentin to counteract the side effects of the Navane, Catapres for her high blood pressure, and the diuretic hydrochlorothiazide for her high blood pressure. She also had a history of heavy drinking. Beyond these physiological pollutants, she had been an abused child and had led a chaotic life. Family history revealed she had a schizophrenic sister who was also a drug addict, a schizophrenic brother and two alcoholic brothers.

On an initial health questionnaire she indicated the following huge list of symptoms: headaches, faint-
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On an initial health questionnaire she indicated the following huge list of symptoms: headaches, faint-
ness, imbalance, sleepiness soon after eating, insomnia, sneezing, watery itchy eyes, blurred vision, hearing loss, chronic cough, gagging, canker sores, frequent yawning, sensitivity to light and sound, tight feeling in her chest, sudden changes in blood pressure, severe constipation, bloating, belching, feeling of fullness long after finishing a meal, abdominal pains and cramps, skin rashes, itching, sweating, chronic fatigue, weakness, muscle cramps, swelling of hands, feet and ankles, binge eating, severe depression, mental lethargy, confusion and suicidal thoughts.

Initial laboratory tests showed low thyroid, low magnesium, low potassium, extremely high cholesterol and triglycerides, slightly elevated blood sugar and high uric acid (gout).

We began treatment with thyroid, a multivitamin mineral, vitamin B complex, vitamin C, bioflavonoids, an extra calcium-magnesium-zinc preparation, another 400 mg of magnesium orotate, 3200 mg a day of tyrosine and 3000 mg a day of tryptophan. She was instructed to eliminate sugar, red meat, milk, eggs, and cheese from her diet in order to treat the gout and high blood sugar.

Within two months this patient was able to stop her medications for blood pressure because her pressure had normalized. Within three months she was able to stop all other medications she was taking at our first visit and to remain on only our treatment program. Her depression was completely cleared and she was feeling much better in every way. It is now two years later, and she continues to have a totally normal mood and normal blood pressure. She is, in every respect, a “changed woman.”

The literature indicates that 15 to 20 percent of depressed people are also hypothyroid. This is no surprise because the thyroid hormone regulates metabolism in all of your body cells, including your brain cells. Very slight shifts toward a lowered thyroid state can affect our very responsive brain cells, which seem to be more reactive to subtle thyroid lack than are other body cells.

Depression is the major mental manifestation of those with hypothyroidism. In fact, 40 percent of those diagnosed as hypothyroid also suffer depression. They may also experience other mental changes such as poor memory and concentration, and overall slowing of mental processes. At times, paranoia and even psychosis can result. Other possible symptoms are:

- Chronic fatigue, especially in the morning
  - Muscle weakness and lethargy
  - Excess sleepiness
  - Menstrual changes or problems
  - Weight gain with swelling and puffiness
  - A deepened or hoarse voice
  - Constipation and other digestive symptoms
  - Cold intolerance
  - Decreased sweating
  - Hair or eyebrow loss
  - Dry, coarse rough skin
  - An average morning underarm temperature below 97.2 degrees

As if we need more to complicate the diagnosis, thyroid dysfunction may not readily be discovered by doing the usual thyroid blood tests measuring so-called T3, T4 and TSH. Studies have shown that approximately 20 percent of depressed patients have antithyroid antibodies in their blood. This condition is called autoimmune thyroiditis and some now believe it is the most frequent thyroid disorder in our population. It is like an allergic inflammation of the
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thyroid gland. It occurs eight to ten times more often in women than in men, primarily between the ages of thirty to fifty years, although it can appear at any age. Most of these same patients have normal T3 and T4 and TSH blood levels.

Another blood test that may reveal thyroid problems is called the TRH test. You can request it if you suspect you have thyroid problems that the usual tests have not revealed.

Tyrosine and iodine are required for the formation of thyroxine, the thyroid hormone. When tyrosine becomes depleted, our bodies may first use tyrosine for thyroid formation before it is used for norepinephrine formation. This seems to be the case because low thyroid is less common than depression.

I have not seen research evidence on the use of tyrosine to treat these instances of subtle low thyroid, but some investigators have reported lower tyrosine blood levels in hypothyroid patients. In my practice, I have successfully used tyrosine in several patients with borderline low thyroid, and the thyroid levels have increased to the midnormal range. This approach certainly makes sense when used in conjunction with 75 to 200 mcg of iodine daily. If, however, the levels of thyroid are clearly below normal, then thyroid hormone should be added as well.

Many different circumstances can predispose a person to low thyroid. First of all, there is a strong genetic component to thyroid disease. Additionally, chronic stress and pain can inhibit the release of thyroid hormone, so people experiencing these would do well to ensure sufficient tyrosine and iodine in their bodies. Other conditions which contribute to decreased thyroid formation are aging, and excess vitamin A, iodine, fluoride, chloride and bromide. Those who have excess thyroid in their bodies al-

ready have too much tyrosine in their systems and should not take extra amounts.

If you suspect thyroid disorder in yourself, see your doctor for complete evaluation and also read the excellent book called Hypothyroidism, The Unsuspected Illness, by Broda Barnes, M.D.

PMS—Premenstrual Syndrome

We know now that PMS is a condition of biochemical disequilibrium which can be related to increased activity of monoamine oxidase (the enzyme that breaks down the neurotransmitters), nutritional deficiencies, antibodies to ovarian tissue, chronic fungal infections, estrogen and progesterone imbalances, thyroid disorders and other possible contributing factors.

Now that PMS is finally receiving the validating attention it deserves, we are able to discover more about its impact on America. Studies indicate that between 30 and 50 percent of women from twenty to fifty years of age are affected, and most studies are toward the 50 percent figure. This can have staggering consequences in many areas besides the approximate one hundred billion dollar yearly loss to the work force because of PMS-related absenteeism.

By definition, the sufferers from PMS must have at least one symptom-free week per month, and a somewhat consistent pattern of increased symptoms anywhere from three weeks to one day before the onset of menstruation, which then abate with menstrual flow. The severity of the symptoms can and does vary from month to month.

Depression and anxiety are common aspects of PMS, and some researchers believe there is a relationship between PMS and mood disorders. Studies
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PMS has been treated with tranquilizers, antidepressants, diuretics, progesterone, oral contraceptive pills and amphetamines. None of these have had the clear-cut positive results we would hope for.

Guy Abraham, M.D., has been a major contributor to the understanding of what he calls PMTS (Premenstrual Tension Syndrome), especially as it relates to nutritional factors. He and others in the field believe that malnutrition and stress are common factors underlying PMS. In general those with PMS should avoid sugar, caffeine, chocolate, nicotine, alcohol, salt, fatty and fried foods, and excess dairy products. Women with PMS need to eat plenty of fresh fruits and vegetables, lean meats, beans and whole grains.

Estrogens are central nervous system stimulants, while progesterones are central nervous system depressants. The balance of these two hormones has a profound effect on moods and this balance can be nutritionally influenced. The nutritional treatment in this book should significantly help with most cases of PMS. When this basic program does not completely eliminate PMS, the magnesium supplement can be doubled or tripled, the vitamin B complex doubled or tripled, and the vitamin B₆ doubled or tripled. When breast tenderness is a problem, additional vitamin E up to a total of 1600 IU daily may be useful. Extra vitamin E should only be used in those women who have no problems with hypertension. It is contraindicated otherwise. In those cases where nutrients are not completely effective, there should be an evaluation for the presence of yeast overgrowth.

**FUNGUS INFECTIONS**

In my practice, the infection I have found to be most commonly associated with depression and other psychiatric symptoms is the condition of yeast, or fungal overgrowth. The favorite places for this growth are the mucous surfaces of the body. The infection is called monilia when in the vagina, thrush when in the mouth, and candidiasis when it is more widespread, such as in the gastrointestinal or genitourinary tracts.

Coyotes and rabbits may coexist in a certain balance in the neighboring hills. But if someone comes along and kills the coyotes, we’ll have a rabbit population explosion. Likewise, this yeast lives in all of us and usually coexists in proper balance with its other normal neighboring microorganisms. Under certain conditions this internal environmental balance is disturbed and there is a yeast population explosion.

Antibiotics can create this imbalance because while they are killing unwanted harmful organisms, they can also kill the friendly bacteria that help to keep the yeast in balance. This especially occurs with repeated antibiotic use. These normal bacteria can be reintroduced by eating yogurt or taking lactobacillus acidophilus capsules, especially if this is begun at the onset of antibiotic usage.

Certain other conditions help sustain the yeast either by feeding it or by providing an optimum growth environment. This particularly occurs after the overgrowth process has already begun. Excess sugar in the blood and other alterations in the internal environment related to hormones, such as cortisone or birth control pills, can promote proliferation of yeast cells. After they are established,
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the yeast organisms are often very resistant to attempts to control their population. Once an individual has developed this tendency, the yeast seems to be ready and waiting for the slightest opportunity to multiply. It may only take the help of a few days of eating sugar or breads high in yeast, drinking yeast-filled alcohol, or returning to antibiotics to cause a flare-up. Once the fungal infection has taken hold, it creates chemical imbalances, including amino acid imbalances that predispose to depression.

Though this nutrient program will contribute to the general well-being of people with persistent and serious yeast infections, they need additional antiyeast nutrients or medications and must follow a specific antiyeast diet.

Yeast overgrowth has become such a major problem that I discover it relatively often in those who come to me for treatment. If they score high on the candida questionnaire, I then order a blood test for what are called anticandida antibodies, for confirmation. When this test is abnormal, we proceed with appropriate treatment.

**Viral Infections**

I have seen and known a number of patients who had a totally normal mood when physically well but could progress to a severe depression with any viral episode. The exact mechanism by which this occurs is unknown, but it clearly tips the scale in those with already delicately balanced systems. Be alert to any mood swings accompanying viruses and treat them with this program. Depression is known to accompany or follow viruses such as mononucleosis, hepatitis or influenza.

**HIGH BLOOD PRESSURE AND HEART DISEASE**

Hypertension is the second most common illness after depression, and often the two coexist. This isn’t surprising, since many drugs used to treat this condition cause depression. There is also increasing evidence that low vitamin B₆ and low magnesium contribute to high blood pressure as they do to depression.

A complicating situation is that some traditional antidepressants should only be used with caution in those with hypertension or on antihypertensive medication. There are even precautions to be followed when giving amino acids to severe hypertensives. (See page 71.)

Those who have suffered heart attacks or who have other forms of heart disease often suffer from depression. In studies on patients with heart attacks, 60 percent are depressed during their hospitalization, 20 to 30 percent are still depressed one year later, and 15 to 20 percent never return to work. Again, one reason for such statistics may be that many of the common heart medicines can actually create depression as a side effect. But there are also nutritional and biochemical mechanisms involved in this process that can be ameliorated by the food supplement program.

**STROKE**

People who have suffered from strokes experience mood disorder more commonly than other patients with equally disabling medical illnesses. Depression in these patients cannot be fully explained by the severity of their impairment. Rather, it seems to be the result of physiological changes in the brain in
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response to the localized injury of the stroke. The incidence of depression is highest when the damage is to the anterior left portion of the brain. Also, the closer the damage is to the left front, the more severe will be the depression. In contrast, when the stroke is in the right frontal area, the patient may become indifferent and, conversely, even tend toward jocularity.

Some investigators have surmised that the injured brain cells may switch from producing neurotransmitters to synthesizing protein for regeneration of the damaged cells. This would suggest that depletion of the amines following injury to certain brain areas could contribute to causing some post-stroke mood disorders and additionally supports the entire biochemical theory of depression.

Because of the statistics and because many people with strokes can't talk or otherwise express themselves well, it might be especially prudent and highly beneficial to proceed with the safe, antidepressant amino acid treatment that is the subject of this book.

**Organic Ailments and Depression**

Because of the frequent simultaneous occurrence of depression and certain physical illnesses, we cannot be certain that an intrinsic biochemical vulnerability to depression does not in some way predispose people to certain organic ailments and vice versa. It does become apparent that costs, severity and duration of illness, and mortality can be reduced by appropriate evaluation and treatment for depression. Otherwise, normal healing processes may be compromised, the immune system may be altered and an already ill person may become more vulnerable to infection as well as many other complications.

A side effect of the nutritional treatment of depression is overall improved general health as well as improved moods. Such a promotion of healing and wellness is far more desirable than the emotional, social and monetary costs of being ill.

**Parkinson's Disease**

Parkinson's disease is often related to depression, which is especially interesting because it is a disorder caused by neurotransmitter deficiencies of certain areas of the brain that relate primarily to movement.

Depressed people with Parkinson's disease can benefit from the nutritional program in this book, but if they are taking L-dopa they must not supplement extra vitamin B6. L-dopa lowers tryptophan levels, so when depression is present these people should supplement tryptophan as well as tyrosine.
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Stress and Traumatic Life Events

Many studies clearly indicate that traumatic life events can trigger biochemical depressions—as well as numerous other physical disorders. In fact, stress precedes most episodes of illness and is associated with the onset of 70 to 80 percent of depressions.

Since severe stress can create both physical and emotional problems, we cannot assume an illness evolving from psychological stress is necessarily purely psychological. Each of us has our genetically inborn body system vulnerability—the part of the dam which cracks first. The same degree of stress may give Joe an ulcer, and make Mary wheeze from asthma; it may overwhelm your best friend with feelings of inadequacy and leave you feeling challenged and alive.

Loss and Death

Life events scales have been devised which list all the stressful events in our lives and rate them according to severity and the likelihood of precipitating illness. The most weighty and potentially damaging stress of all is when someone we love dies, especially if we are quite dependent on them, such as in a long-term marriage or a child's loss of a parent.

Other potentially incapacitating stresses are divorce, illness, and various losses such as failure of a business, loss of money, a demotion in position or importance, and consequent losses of self-esteem. When the person suffering the loss does not have enough support from her family and friends, the damage is multiplied.

We all have problems with loss and need to work to prepare ourselves not to overreact to it. We have numerous other options besides breakdown, but we need to understand them before we can use them.

Because of its finality, the most devastating loss we can sustain is the death of someone we love. This loss is also the most complex to work through because we can no longer interact with the real person but must interact with our memories of her, with what we have been able to incorporate into our psyche.

Approximately eight million Americans will experience the death of an immediate family member this year and 10 to 20 percent of their grief reactions will progress to depression. Loss is the bottom line for all the psychological explanations of depression. There is nothing about which we feel more helpless and immobilized, and no change we may more innately want to resist. Nothing challenges our adaptive and coping capabilities more than loss by death. By its very nature of engendering our sense of helplessness, it sets us up for extreme stress reactions.

Attachment and bonding are powerful forces, and the pain of severing any emotional bond can be hard to bear, but the brutality of the experience is directly related to our philosophy about life, about continuing on and about losses. Those who believe in reincarnation or who have strong spiritual beliefs in the conti-
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nuity of life after death do seem to deal with loss better than those without such belief systems. Those prone to extreme dependency, bitterness and a sense of victimization, or to spiritual doubt and disbelief are vulnerable to exaggerated, prolonged loss reactions.

Yet no matter how you may prepare yourself, when loss comes through the death of a loved one it can be temporarily overwhelming. The key word is “temporary.” It must be temporary to avoid a total erosion of your life and health. You must reach out for support and help. You must not withdraw and isolate yourself. If you have no close friends or family to turn to, you must find support organizations, telephone hot lines, church groups, whatever and whoever will lend you an understanding, supportive, caring ear, along with positive suggestions for how you may get through this period without too much damage. (You will also find some reading suggestions in the bibliography.)

Remember that any temporary destructive escapes will only make you feel worse in the end. Alcohol, drugs and other self-abusive behavior will directly deplete your brain’s chemical resources for fighting stress or depressed feelings. Force yourself to eat well, and make sure to use the supplements recommended in this book.

We always have choices—we can eat or starve, we can sleep or wake, we can wallow or win, we can emotionally lie down and give up or we can keep searching until a new life line is cast our way.

**MOURNING OR DEPRESSION?**

Pure grief is temporary. Initially intense and seemingly overwhelming, it remits as time goes by. Thebereaved may be consumed with sadness and tears, disbelief, thoughts of the lost one, and so on. This can be constant to begin with, but as regular life continues, the grieving feelings will begin to come and go. Your basic mood improves between bouts of acute feelings of grief. In time, these intense feelings of loss come less and less frequently as a new life is developed. This normal grieving process can take anywhere from six months to two years.

“Uncomplicated bereavement” is the psychiatric label given to this normal grief response, even though, temporarily, it can look like a full depressive syndrome with poor appetite, weight loss and insomnia.

Grieving is abnormal when it gets worse with time or is prolonged and protracted. The grief periods exceed the relief periods. Feelings of worthlessness, prolonged or marked impairment in functioning and slowed activity indicate that depression has set in.

The psychological process of grieving is important to experience. That is why we have funerals, wakes, shivas. These procedures are for the survivors, not for the departed. It is healthy to immerse oneself in the feelings of loss in order to express and gradually release them. Unexpressed, unacknowledged grief cannot be released.

Because they have avoided clear acknowledgment of their loss, many of my patients progress to later depression. They have not attended the funeral, they have never visited the gravesite (if there is one), they have refused to “release” the lost one. This holding on keeps them emotionally bound and leads to depression.

One person in particular comes to mind. Janet was young, intelligent, beautiful, happily married, with everything going her way. She was also depressed. As an only child in white South Africa, Janet had
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As an only child in white South Africa, Janet had
developed an intensely loving and dependent bond with her mother. Her mother had died six years earlier. Janet did not attend the funeral and on some level continued to hold on to her mother. She desperately wanted a child but had two miscarriages. As the problem became more evident, I asked her to confront the situation by writing a "goodbye letter" to her mother. She was to say everything she would want to say if her mother were sitting right before her for the last time. At the end, she was to say goodbye and to let go. She first responded with horror, cried and said she couldn't do it.

Finally, after a few weeks, at my urging she spent several painful days writing the goodbye letter. At last she truly mourned and it had a remarkable effect on her. The depression lifted. She soon became pregnant and was able to carry the baby to term. She had finished therapy by then, and it was wonderful later to receive a photo and announcement of the birth of her beautiful baby girl.

Saying goodbye does not mean erasing the person from your mind. It involves holding onto your loving, good thoughts about him, and giving up your own feeling of loss and of being torn apart.

The grief reaction is one of the most stressful psychological events we endure. There is some suggestion that even in a "normal" grief reaction biochemical changes occur in the brain. We know, for example, that grieving infant monkeys who were separated from their mothers recovered from their grief when treated with an antidepressant drug.

**Unique Response to Trauma**

We all have traumas in our lives, and each of us has different ways of responding emotionally to these unfortunate events. We are stressed in varying degrees by all painful experiences, but some of us react more intensely than others.

One of the most positive persons I have ever known responded to the death of a loved one by sitting and watching television for two solid days and nights—after which she miraculously bounced back to being her usual cheerful self.

Another, very negative person decided she loved a man from her past with whom she had had no contact for years and who had subsequently married. She built up a fantasy about their undying love and proceeded to pursue him. When he did not respond similarly, she slid into a deep depression and entertained ideas of suicide.

We don’t yet completely understand the myriad factors which determine the intensity and type of response each individual may have to stress, but flexibility and adaptability are significant parameters in determining our ability to cope with the vicissitudes of life.

Researchers believe we are born with certain patterns of reaction, some of which make life harder and others which make life easier. Studies on newborn babies have clearly indicated extreme variations of reaction to the same stressful stimuli, such as unpleasant noise. This is not a learned response, but something inherent. Perhaps these reactions to unpleasant noise (that is, to stress) are mediated at a purely biochemical level. If this is so, the intensity of the reaction might then be determined by the intensity of the electrochemical discharge which is created by stressful stimuli, and by the subsequent imbalance created by these biochemical changes brought on by the stress reaction. Perhaps the ultimate degree of reactivity and sub-
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sequent chemical disruption is genetically determined.

In an interesting study, a group of rats was subjected to the stress of immobilization for thirty minutes. During and following the stress, their amino acids were measured. Some of the amino acids were decreased and others were increased by the stress, and the patterns of response were consistent from animal to animal. But the magnitude of the responses varied considerably, with some rats having much greater chemical changes than others, suggesting the possibility of individual biochemical patterns of reaction to stress.

Optimum nutrition, healthy habits of living, and cultivated “right thinking” dramatically help to protect us from the potentially damaging effects of stress by decreasing the magnitude of our biochemical stress reactions within the framework of our own body systems.

What Is a Biochemical Stress Reaction?

Emotion per se is the experience of physiological and psychological arousal. You not only experience fear in your thoughts—you sweat, your heart pounds, your stomach turns and your muscles tense. Fear, hate, love, loneliness—virtually any emotional state can and does cause biochemical changes in your body. The critical factor is whether the emotion is positive or negative.

Technically, a stress response is a physiological event during which your bodily chemistry and reactions change in response to your environment. So really any emotion constitutes some kind of stress. But the intensity of any stress or emotional reaction is created by how we personally and uniquely perceive what happens to and around us as well as by our individual biochemistry.

Two young American women, along with two Indonesian boatmen, were lost on a small boat in the South Seas for twenty-one days. When they were rescued, the women only needed a good meal and a full night’s sleep to recover, while the men were treated for shock and dehydration. What made the difference? The men had been convinced they were going to die, and lived in a state of panic for most of the time at sea. The women were certain of their eventual rescue. Fear changed the men’s chemistry and, in essence, poisoned their systems with stress chemicals.

Even though it has been researched intensively, the biochemical stress reaction is too complex yet to be fully understood. We do know there is no “single” stress hormone, but that, in stressful situations, our body temporarily produces more of certain chemicals. Three of the most important are epinephrine, norepinephrine and cortisol.

Epinephrine (adrenaline), the “fight or flight” hormone, accounts for the feeling you get following a near accident in your car, sounds of trespassers in your backyard at night, and so on. It is secreted by your adrenal glands. Your body requires a certain optimum release of adrenaline for best functioning; either too much or too little will interfere with your mental and physical performance. Any arousal by either pleasant or unpleasant stimulation will increase your adrenaline levels as compared to a neutral non-arousing condition.

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When it acts as a neurotransmitter, it is secreted by certain brain cells in the area where it exerts its action, and when it functions as a hormone, it is secreted by the adrenal glands.

When you experience chronic stress, your body is constantly creating and utilizing extra amounts of norepinephrine. And when there are not enough precursors available for this continuous replacement, depletion with subsequent low moods or depression can follow.

Besides affecting norepinephrine levels, stress has been found to deplete your brain levels of tryptophan directly, by changing how tryptophan binds to a substance called albumin, which carries tryptophan into your brain.

Cortisol (cortisone) is a multifunctioning hormone also secreted by your adrenal glands. Among other things, it increases the excitation of your brain and causes the release of other body hormones. The chronic excess cortisol produced by sustained stress will increase the amount of tryptophan used by your body. This makes less available for the creation of serotonin in your brain and can indirectly lead to the biochemical disturbance of mood disorders.

NOREPINEPHRINE VERSUS EPINEPHRINE

Under normal, nonstress conditions norepinephrine production is four to five times greater than epinephrine (adrenaline) production. In other words, they exist in an approximate four to one ratio.

Your body’s ability to produce norepinephrine increases with physical fitness. Physically fit people also release less norepinephrine per workload, but can attain overall much higher levels during increased exercise than can those who are sedentary. This supports the obvious: a fit person responds better physiologically to stress than an unfit person does.

Some research indicates that physical work or exercise causes a 200 percent increase in norepinephrine and a 50 percent increase in adrenaline. This is one reason physical activity can elevate your mood. Conversely, psychological stress causes only a 50 percent increase in norepinephrine but a 100 percent increase in adrenaline. Thus psychological stress reverses the usual normal ratio from four to one to two and upsets the normal balance of these substances.

Perhaps norepinephrine is more important to daily bodily processes than is epinephrine, because it exists in greater supply under normal nonstress conditions and because it is conserved by our bodies—unlike adrenaline, which is entirely metabolized and excreted in the urine.

Research has shown that the better you secrete norepinephrine and adrenaline in response to acute threat or challenge, the greater is your well-being and performance efficiency—up to a point. If you are regularly stressed and secreting these chemicals on an ongoing basis, you will have more sickness and earlier death. Also, animal studies have shown increases of norepinephrine release following acute stress and an ensuing depletion of stores after chronic stress. It is as if intermittent stress is okay, even desirable—but continuous stress can spell disaster. If you are going through a period of consistent stress in your life, but are not depressed, using the basic vitamins and minerals mentioned in Chapter 5 and a balanced amino acid preparation can help protect you from some of the physical and psychological consequences of that stress.
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CONTROL VERSUS HELPLESSNESS

Even if you are exposed to chronic adverse events, you will have less adrenaline response to them when you feel “in control.” The damaging chronic adrenaline responses occur when you are feeling helpless and not in control.

If I’m moving to a different house because I love it and have chosen to live there, it’s very different from moving to a different house because my husband has left me, the bank has foreclosed on the mortgage and I am unable to think of any other resources. But even in this situation it’s important for me to exercise my choices and to get help in creatively recognizing all my positive alternatives, if I’m unable to think of them on my own—in other words, to take some control of the situation.

Compared to those who never get depressed, the person prone to depression is more inclined to emotional passivity and to not taking control, even when not depressed. This behavior can be extremely hazardous to your health. In recent research it was found that those who felt helpless showed little or none of the normal expected changes in brain norepinephrine and adrenaline when they were challenged with a difficult situation. They were probably already chemically depleted and depressed in the first place. We’ve seen that when rats are put in a situation where they are helpless, their brain norepinephrine will eventually decrease. But first the levels elevate as the rats attempt to escape and to cope. On the other hand, if the brain norepinephrine is artificially depleted in rats first, they display totally helpless behavior from the onset of their stress.

Psychotherapy and psychological methods can help teach you how to assume control over your life, even if you have been surrounded by those who be-

have helplessly. Helplessness is learned, and so, too, can a sense of control be learned. Take the attitude that something can always actively be done to take control. Certainly you do not have to be in control of all areas of your life—but the overall balance must tip in that direction for you to avoid the biochemical changes caused by chronic helplessness.

PROTEST VERSUS DESPAIR

Along with control or helplessness go the concepts of protest and despair. Protesting isn’t complaining but taking control. Despair is the opposite, a passive submission. When baby monkeys are separated from their mothers but still able to see them, they fuss and vocally protest but their body chemistry shows no stress changes. When they are separated from and unable to see their mothers, they seem to despair, are very quiet and show high biological stress responses in their bodies.

I am certainly not urging all of you to go around being cranky and demanding, but studies have indicated that more outspoken, demanding people have tendencies toward longer life spans than passive, dependent types. Those with cancer and other life-threatening illnesses tend to have a better prognosis when they are vocal in and actively participate in the decision-making processes rather than being swept along by the medical machine.

A person who is willing to take some control is usually open to changes. The helpless person, of course, feels change is impossible. If you work to positively change your attitudes, behavior or life in any way great or small, it is well worth your time. The more you know about health and about maximizing your life potentials, the more you are able to imple-
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ment what is necessary for you. The more you know about yourself and your illness—the more control you have. This mobilizes healing forces.

If you are physically or mentally suffering, you are usually bound to that plane of existence. Taking care of your body and mind machine on the physical plane provides the foundation or launching pad for movement into other spiritual and psychological realms.
This chapter will deal with the psychological aspects of depression. When we use the word "psychological" we are really referring to how you think and how you react emotionally and physiologically to your thoughts.

Some people refuse to consider psychological contributions to illness, others attribute everything to those causes. Either extreme makes understanding impossible. For example, when a highly intelligent forty-year-old woman came for treatment, she told me she had the following symptoms: "I'm rigid and controlling. I can't make any commitments. I avoid all relationships. And I have a lot of trouble getting out of bed in the morning." Testing revealed she suffered from severe depression.

When I explained the biochemical nature and treatment of depression, I could see she didn't buy it at all. She was convinced her problems were purely "psychological," even though her brother had committed suicide, and three other brothers, one uncle and her maternal great-grandfather were alcoholic. This strong family history of depressive symptoms and alcoholism highlighted her own genetic vulnerability, yet despite the evidence and her intelligence
she wanted to approach her problems only psychologically. Months later, when her symptoms persisted, she finally agreed to combine biochemical nutrient treatment with our psychotherapeutic efforts. Within a few weeks she felt considerably better.

Before psychiatry understood the biochemical causes and changes in depression, the origin of depression was believed to be purely psychological. Some of the numerous psychological theories developed do have some validity, but by no means do they provide all the answers. Psychological factors are only one of numerous variables contributing to mood disturbance. Otherwise, we would expect each person faced with a major loss to become depressed, and this is not the case at all.

Our mental state—everything from general outlook to how we react to everyday stress—can aggravate the development of low moods and depression in those who are vulnerable. But the actual link between psychological reactions and mood changes has not been as distinctly clarified as has the link between biochemistry and mood changes. The only clear psychological link is how we perceive, think and react to stressful events, especially loss.

An article in the June 1986 issue of Clinical Psychiatry News proposed a link between psychology and biochemistry. Dr. Paul C. Mohl was quoted as having told the American Psychiatric Association, “Psychotherapy is a biologic treatment that acts through biologic mechanisms on biologic problems.” And also, “Medication, dream interpretations and empathy simply become different ways to alter different neurotransmitters, presumably in different parts of the brain.”

An effective psychotherapeutic experience may indeed gradually alter brain neurotransmitters, but doesn’t it make sense to facilitate the process by directly raising the neurotransmitter concentrations? Psychotherapy can be used simultaneously to provide support, to learn self-care, and to change ingrained negative patterns that otherwise continue to create stress and imbalance.

Theories Explaining Depression

The psychological theories explaining depression actually sound like a partial description of some of the symptoms of depression. This raises the classic chicken/egg question, because those with a proven biochemical depression can display the same psychological picture after the onset of the depression that others claim was there and caused the depression in the first place. It usually isn’t as critical to know which comes first as it is to know they feed into each other. After all, we are complex organisms with all parts interacting and with circular feedback mechanisms operating throughout our bodies.

I have always been struck by how the various psychological schools seem to use different words to express the same basic phenomena. The psychoanalytic approach describes abnormal grief reaction to loss, individuals with low self-esteem and unrealistic expectations of themselves, and negative feelings about life, the future and the self. Behaviorists believe that people learn helplessness, low energy, dependence and fear of new experiences. Such people are insecure and hypersensitive and have the habit of “learned” negative thinking. Those who take an existentialist view feel that for depressed people there is
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a loss of meaning in living, often accompanied by a sense of nihilism.

Most of these approaches are connected to loss of one kind or another, but since we all experience loss, the important question is: What makes some people more reactive than others to a real loss? And why are some people depressed who have not sustained a real loss at all? We can only conclude that other factors are operating: an inherited biochemical proclivity, nutrient deficiencies, the level of general physical and emotional health, and the amount of support from family and friends.

The same person with the same set of stresses can one day feel well and reasonably happy and a few days later, under the same circumstances, feel down and miserable. The difference has to be caused from a change inside, not outside—a biochemical shift that decreases the communication between the brain cells in the “reward” centers and increases the communication in the “punishment” centers.

The behaviorist approach appeals most to me, professionally, because it holds that we learn or adopt psychological states from others. And once we learn helpless, negative or loss oriented ways of interpreting life we do experience far more stress. But what makes it easier for some people to learn negativity? Are they biologically prone to depression? Why will one child imitate the negative depressive behavior of a parent while two other children in the same family will not? Can all the difference be only psychological? Very unlikely.

LACK OF SOCIAL SUPPORT

The intensity of our stress reactions to upsetting events is powerfully affected by the support we get from other people. Our biochemistry determines whether we’ll feel high or low, but life patterns that increase stress will enhance whatever predispositions to depression we may have. By the same token, certain conditions will help us handle the stress and its accompanying biochemical changes much better. If, for example, you have several close loving friends and a supportive family, you are going to be able to handle the death of your spouse far better than if you lead an isolated life. Older depressed people whose family and friends have died and who are isolated by their age are at greater risk for death than those who have loving connections with other people—or even with pets. Studies of the elderly have indicated that good social support systems lower cholesterol and uric acid levels and improve immune function—regardless of the degree of psychological stress. This support, obviously, also helps stave off low moods and depression.

My own Granny lost all of her brothers and sisters and then lost her husband of “fifty-nine years, nine months and five days.” She grieved severely and one week later was literally floored when she fell and broke her hip and arm. She recovered until her only son died four years later. Again, in her grief, she fell and broke her thigh. She insisted on returning home to live independently, but was very lonely and didn’t know what to do with herself.

Though it seems difficult to believe, when we brought her a dog who needed her love, she was brought back to life. With an artificial steel hip and a steel rod through her leg, she manages to drive around in her 1962 “stick shift” Studebaker and seems younger now at eighty-four than she seemed in the previous seven years.
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NEGATIVE ENVIRONMENT

All the influences affecting you at any given moment contribute to your mood by altering your chemistry. Unless you are selective about your environment, much of the input can be stressful. Many people tolerate negative input because they have become desensitized. They’ve “thickened their skin,” so to speak. Sometimes we notice this when we’ve gotten “away-from-it-all” on vacation and have then felt absolutely bombarded upon returning to our regular daily existence—which we tolerated before.

Some people are highly attuned to the most minute shifts in their surroundings and can adjust the situation when they feel they are responding adversely. Others, who are unaware of all the compounding influences, only experience the end state of a terrible mood and jangled nerves.

HABITUAL NEGATIVE THOUGHT

If you have been depressed for a long time or if you are constantly exposed to someone who is fearful and depressed, you can get into the “habit” of pessimistic negative thinking. This is especially true for children, who are more likely to imitate those around them.

I had one patient who suffered from chronic depression and was also a habitual complainer and fault finder. He’d managed to channel those characteristics into a very successful business but he certainly wasn’t happy. We adjusted his nutrients at each monthly appointment, but he continued to complain until his sixth-month visit, when I finally asked him whether the program had helped him at all.

He answered, “Oh, the difference is like night and day! I wouldn’t keep coming if it hadn’t helped.”

This patient, who came from a family with a negative life view, was superstitious and fearful about allowing himself to feel good. This kind of attitude can create depressive character and predispose to depressive illness.

The fact is that research evidence shows that thoughts and emotions influence neurotransmitter production. They absolutely affect the body’s secretions, excretions, metabolism, hormones and immune function. Habitual stressful, worrisome thoughts eventually alter the chemistry of the brain and the body to produce physical and psychological symptoms. If you worry about being bitten by a snake, your body’s mechanisms will respond accordingly. If your fantasies shift to happy or sexy thoughts, your body responds much more healthily.

An experiment I’d like to conduct is to take baseline measurements of the brain chemicals in a sample of people and then divide the group so that half would be given affirmations and positive thoughts and the other half would focus on all the things that were wrong in their lives. I’ll bet that if the brain chemistry was to be reassessed at the end of the study, you would see some startling changes.

In my practice I have found that in order to extricate yourself from the habit of negativity, you must combine chemical and psychological intervention.

For the same reasons, you need to pay attention to the things in the environment that affect you negatively. That does not mean that you have to avoid responsibilities or put your head in the sand. However, a constant diet of murder movies or demoralizing television programs is bound to have an influence on the mechanisms we’ve been discussing. Taking the responsibility for your own well-being does in-
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volve paying attention to what irritates and agitates you and to what calms and elevates you. Restructuring your life toward those positive influences will have valuable physical and biochemical results.

**Past Focus**

Closely related to this is what I see as the futility of rerunning in your mind, over and over again, past traumas and bad experiences. Rethinking and reliving such life events re-creates and perpetuates the biochemical stress responses in our bodies. If you can’t voluntarily release these fixations on the past, you may need professional and spiritual guidance. To end our stress responses to the bad events of our life, we need to let go of what happened or else we will be stuck with the destructive pattern of reliving the past.

**Anger and Guilt**

The guilty person shoulders all the blame—and the power—for the events of daily life and is angry at herself for not measuring up. The angry person feels himself a victim of life’s events and is angry with others for putting him in that position. Both these attitudes have biochemical results that seriously affect mood. It’s important to release that anger, not necessarily by expressing it but by acknowledging it and then letting it go. Where possible, avoid anger-inducing people and encounters. If you can’t, do everything you can to avoid a feeling of helplessness by finding outside supports and fulfillment. In these circumstances, it is particularly important to make sure that the nutrient program is very carefully followed, so as to counteract some of the deleterious effects of the stress of being with difficult people or in situations that add to the burdens of your life.

**Resistance to Change**

Accepting, even welcoming, change is another way to avoid physical and psychological stress. Even when such changes seem traumatic, it’s important to try to steer the change in positive directions so as to exert whatever control you can over your life at stressful times.

People in low moods seem stuck in a rut. They feel that there is no way out of their current problems or their feelings of depression. Resisting change is, for them, a way of prolonging their illness. Major healing is preceded by a willingness to make necessary changes. Try to list the things that you wish were different and use that list as a guide for growth.

Psychological patterns such as these are common in depressed people. Obviously, you should avoid them if you want to keep yourself out of depression. Nevertheless, the person with normal brain biochemistry will not be mired in these psychological or social difficulties—no matter what. Our behavior and our feelings are clearly contingent upon our brain functions. We have fluctuating brain chemistry that is subject to all sorts of impinging variables. In order to be able to control and direct our thoughts and our lives, it’s important that this chemistry be balanced.
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