

Depression

What Is Depression?

Everyone experiences some unhappiness, often as a result of a change, either in the form of a setback or a loss, or simply, as Freud said, "everyday misery." The painful feelings that accompany these events are usually appropriate, necessary, and transitory, and can even present an opportunity for personal growth. However, when depression persists and impairs daily life, it may be an indication of a depressive disorder. Severity, duration, and the presence of other symptoms are the factors that distinguish normal sadness from a depressive disorder.

Depression has been alluded to by a variety of names in both medical and popular literature for thousands of years. Early English texts refer to "melancholia," which was for centuries the generic term for all emotional disorders. Depression is now referred to as a mood disorder, and the primary subtypes are major depression, chronic and usually milder depression (dysthymia), and atypical depression. Other important forms of depression are premenstrual dysphoric disorder (PDD) and seasonal affective disorder (SAD). (The other major mood disorder, not discussed in this report, is bipolar disorder, or manic-depressive illness, which is characterized by periods of depression alternating with episodes of excessive energy and activity. [See *Bipolar Disorder, Comprehensive Version*.])

Major Depression

In major, or acute, depression, at least five of the symptoms listed below must occur for a period of at least two weeks, and they must represent a change from previous behavior or mood. Depressed mood or loss of interest must be present.

1. Depressed mood on most days for most of each day. (Irritability may be prominent in children and adolescents.)
2. Total or very noticeable loss of pleasure most of the time.
3. Significant increases or decreases in appetite, weight, or both.
4. Sleep disorders, , either insomnia or excessive sleepiness, , nearly every day.
5. Feelings of agitation or a sense of intense slowness.
6. Loss of energy and a daily sense of tiredness.
7. Sense of guilt and worthlessness nearly all the time.
8. Inability to concentrate occurring nearly everyday.
9. Recurrent thoughts of death or suicide.

In addition, other criteria must be met: the symptoms listed above should not follow or accompany manic episodes (such as in bipolar or other disorders); they should impair important normal functions (such as work or personal relationships); they are not caused by drugs, alcohol, or other substances; they are not caused by normal grief [see *below*]. One long-term study found that episodes of major depression usually last about twenty weeks. Between 30% and 40% of depressed patients experience sudden attacks of anger that they describe as uncharacteristic and inappropriate.

Symptoms of depression in children may differ from those in adults. Symptoms include persistent sadness, an inability to enjoy favorite activities, increased irritability, complaints of physical problems such as headaches and stomach aches, poor performance in school, persistent boredom, low energy, poor concentration, or changes in eating or sleeping patterns or both. In

one study, depressed children had a greater tendency to bully others, while anxious children were more often bullied.

Dysthymia (Chronic Depression)

Dysthymia, or chronic depression, is characterized by many of the same symptoms that occur in major depression but they are less intense and last much longer, at least two years. The symptoms of dysthymia have been described as a "veil of sadness" that covers most activities. Typically, there are no disturbances in appetite or sexual drive. Suicidal thoughts are not usually present. Possibly because of the duration of the symptoms, patients who suffer from chronic depression do not exhibit marked changes in mood or in daily functioning, although they have low energy, a general negativity, and a sense of dissatisfaction and hopelessness. They may suffer from episodes of major depression; in such cases, the condition is known as double depression.

Atypical Depression

People with atypical depression generally overeat, oversleep, have a general sense of heaviness, and have strong feelings of rejection.

Seasonal Affective Disorder

Seasonal affective disorder (SAD) is characterized by annual episodes of depression during fall or winter, which remit in the spring or summer, and which may be replaced by a manic phase. Other symptoms include fatigue, a tendency to overeat, particularly carbohydrates, and to oversleep in winter. (A minority of individuals with SAD has the more common depressive symptoms of *under* eating and being sleepless.) SAD tends to last about five months in those who live in the northern part of America. It should be noted that seasonal changes effect *everyone's* mood, regardless of gender and whether or not they have SAD. Simply being mildly depressed during the winter does not mean that one has SAD.

Premenstrual Dysphoric Disorder

The syndrome of severe depression, irritability, and tension before menstruation is known as premenstrual dysphoric disorder (PDD) (also called late-luteal dysphoric disorder). It affects an estimated 3% to 8% of women in their reproductive years. A diagnosis of PDD depends on having five symptoms of depression [see *above*] that occur during most menstrual cycles, with symptoms worsening a week or so before the menstrual period and resolving afterward.

Grief

The symptoms of grief (bereavement) and depression have much in common; indeed, it may be difficult to separate the two. Grief, however, is considered to be a healthy and important emotional response for dealing with loss, and it normally has a limited duration. In people without any co-existing emotional disorder, bereavement usually lasts between three and six months. The grieving person endures a succession of emotions that include shock and denial, loneliness, despair, social alienation, and anger. The recovery period following bereavement, during which the individual becomes re-involved with life, takes about the same amount of time. If the grief is still severe after this period, however, it may affect a person's health or increase the risk for on-going depression. Some experts suggest that this severe persistent grieving state be categorized as a separate psychologic diagnosis, termed complicated grief disorder, which would be related to post-traumatic stress syndrome and require special treatment.

What Causes Depression?

The causes of depression are complex. Often a combination of genetic, biologic, and environmental factors are at work. The biologic causes of depression are strongly linked to abnormalities in neurotransmitters (chemical messengers in the brain), most importantly, serotonin, acetylcholine, and a group of neurotransmitters known as catecholamines (which consist of dopamine, norepinephrine, and epinephrine, also called adrenaline). The degree to which these chemical messengers are disturbed is determined by other factors such as light, structural abnormalities in the brain, sleep disorders, or genetic susceptibility. For example, researchers have identified a defect in the gene known as SERT, which regulates serotonin, which has been linked to depression.

The role of hormones in depression is not clear, but female hormones play roles in premenstrual dysphoria, postpartum depression, and SAD. These forms of depression recede or stop after menopause. Abnormal levels of certain stress hormones in the brain may also play some role in depression.

Who Becomes Depressed?

About 17 million Americans are estimated to develop depression each year. Depression is an illness that can afflict anyone, regardless of age, race, class, or gender, and it is sometimes referred to as the common cold of mental illness.

Gender

Women, regardless of nationality or socioeconomic level, have significantly higher rates of depression than men. In one study, nearly half of all women surveyed had experienced depression at some point in their lives and over half of those who suffered from it had sought treatment. Premenopausal women (between the ages of 20 and 45) were most susceptible to depression, with 22% of this age group reporting symptoms of major depression. The incidence decreased with age. One interesting report suggested that men are more apt than women to mask their depression by using alcohol, which may result in a lower reported (but not actual) incidence of depression in men. Studies of Amish and Orthodox Jewish communities, in which alcohol is not used, report an equal incidence of depression in men and women.

Hormonal Changes. All women are at risk for emotional swings when they experience extreme hormonal shifts. Girls who go through puberty early (reaching the midpoint at 11 years or younger) are more likely to experience depression during adolescence than girls who mature later. Premenstrual dysphoric disorder (severe depression before a period) affects an estimated 3% to 8% of women in their reproductive years. [See *Premenstrual Syndrome, Comprehensive Version.*] Research indicates that an abrupt drop in stress hormones follows birth, which could play a major role in postpartum depression. Nearly every new mother experiences a short period of mild depression following childbirth (known as the "baby blues"). It is not considered postpartum depression, however, unless it persists beyond a week or two and is very severe. Studies have reported that between 8% and 20% of women have diagnosable postpartum depression within three months of delivery, with 5% in one study having suicidal thoughts. Women who have had prior depressive episodes and new mothers whose infants have early medical problems appear to have a much higher risk for postpartum depression. (It should be noted that many male partners of new mothers also suffer from depression surrounding the birth of a child.) Miscarriage poses a very high risk for depression, particularly in the first month after the loss. Older women with no previous successful pregnancies and those with a history of depression are at particular risk during this time. Depression often occurs around menopause

(the perimenopausal period), when, in addition to hormonal changes, other factors (cultural pressures favoring young women, sudden recognition of aging, and sleeplessness) are involved. In one study, over half of perimenopausal women were diagnosed with major depression. Women taking hormone replacement therapy during this period were just as likely to become depressed as those not on hormonal therapy, but the depression tended to be less severe. Fortunately, one study suggested that average depression scores in women who were past menopause were nearly as low as those in premenopausal women. In fact, many women report that after menopause, previous bouts of depression, particularly when caused by seasonal changes or premenopausal syndrome, recede or stop completely.

Marriage, Children, and Work. The role that work and children play in a woman's depression is complex. Many women feel that they must be everything to everyone and at the same time feel as if they are no one at all. Such a self-image is common and should be strongly considered as a major cause of depression in many women, particularly those who work and have small children. In a report issued by the World Health Organization in 1996 on women worldwide, married women with children had a higher risk for depression than did married childless women, single women, or single or married men. (Losing a spouse through divorce or death is a major risk factor for depression in anyone anywhere, however.) Other studies in the US have reported that grandmothers who care for their grandchildren and mothers of toddlers, regardless of whether they worked or not, have a very high risk for depression. A recent survey of women in the Boston area reported, however, that women between the ages of 36 and 44 who had children were significantly less likely to be depressed than childless women. And the more children they had, the less depressed they tended to be. Because the study targeted older premenopausal women, the difference between this study and the others may indicate that older children add a supportive emotional network while dependent toddlers do not. The perceived low status and isolation accompanying the role of housewife may play a role in a young mother's depression. A European study reported that depression increased in men and fell in women between 1980 and 1995, a period coinciding with more women entering the work force. Work outside the home that fails to provide social support, however, will not help protect against depression.

Children and the Elderly

Children and Teenagers. Experts estimate that 2% of children and between 4% and 8% of teenagers suffer from depression. The highest incidence occurs in girls after puberty. Symptoms for depression in children may differ from those in adults and may be evident only from reports of problems in school. Early diagnosis is important; one study reported that major depression persists beyond two years in 6% to 10% of young patients and 70% have a recurrence of depression within five years of treatment.

Elderly. Depression is very common in the elderly, although the aging process itself is unlikely to be the cause. An Italian study found that people who lived beyond 90 years old were no more likely to be depressed than younger adults. (The rate was 10% in both groups, which can be compared to results from other studies indicating that in the general elderly population a third are depressed.) The severity of depression in elderly patients may be closely associated with their ability to function. In one study of older adults undergoing rehabilitation, nearly half were depressed, but as their function improved so did their mood. Interestingly, in one study suggested that the more pessimistic an elderly person is, the less likely he or she is to experience depression. Such individuals may be more able to accept the negative experiences that come with age than those with an optimistic personality. However, anyone who experiences cumulative negative life events, physical illness, the death of a loved one, impaired functioning, or loss of independence can become deeply depressed.

Social Status and Economic Considerations

People at any income level are likely to be depressed if they have poor health and are socially isolated. Being in a low socioeconomic group, however, is a major risk factor for depression. Money, of course, allows greater access to good medical care, but this factor does not fully explain the higher rates of depression in impoverished people. Western cultural attitudes that hinge income to social status may play a significant role in the connection between poverty and depression. In one British study, actual poverty or unemployment increased the duration of any existing depression, but it did not appear to play any important causal role. Feelings of financial insecurity, however, both caused and prolonged depression. A European study reporting higher rates of depression in men and lower rates in women over a period of time that coincided with more women entering the work force suggested that the depression men experienced derived from a reduction in their social status. Another study reported that Mexican adults living in California who immigrated to America had half the psychiatric illnesses as native-born Mexican-Americans regardless of their income. But, the longer the immigrants lived in the US the greater their risk for psychiatric problems. Traditional Mexican cultural effects and social ties, then, appear to protect newly arrived immigrants from mental illness, even when they are poor. Eventually, however, the consequences of Americanization added to poverty may lead to feelings of alienation and inferiority.

Consequences of Loss

Patients who have had serious bouts of depression usually cite a stressful life event as the precipitating factor for their illness. Recent loss of a loved one is the most frequently reported precipitant of acute depression, but all major (and even minor) losses cause grief. Traumatic events, such as a sudden loss of a loved one, abuse, or even natural events such as earthquakes, can cause severe immediate or delayed depression, from which recovery takes a long time. Most people are able to cope with the emotional pain and eventually move beyond it without becoming chronically depressed. People who do develop acute or chronic depression after loss may have predisposing factors, including genetic or biologic ones, that make them more vulnerable. The existence or absence of a strong social network of family, friends, or both also has a major positive or negative effect, respectively, on recovery.

Accompanying Medical or Emotional Disorders

Severe or Chronic Medical Conditions. Depression follows, or is caused by, many medications or serious medical problems. Thyroid disease can cause depression; it may even be misdiagnosed as depression and go undetected. One study reported that nearly half of people with chronic tension headaches met criteria for either anxiety or depression; it wasn't clear whether the psychologic disorder preceded or followed the onset of headaches. Some experts believe that a syndrome of migraine headaches, anxiety, and depression, which occurs in some people, is caused by a single genetic defect that regulates dopamine, a chemical messenger in the brain. A number of drugs taken for chronic problems cause depression; among them are pain relievers for arthritis, cholesterol-lowering drugs, medications for high blood pressure and heart problems, and bronchodilators used for asthma and other lung disorders.

Emotional and Personality Disorders. Chronic depression is a frequent companion to anxiety disorders. In one study, up to 96% of patients with depressive disorders experienced concurrent anxiety. Research also indicates that depressed patients with severe anxiety are at a greater risk for suicide. More than two-thirds of people with obsessive-compulsive disorder also suffer from depression. Personality disorders, such as borderline and avoidant personalities, appear to strongly predispose people not only to a first episode of depression, but to relapses. (Personality disorders, as opposed to emotional disorders, are abnormal behavioral patterns. A person with a borderline personality disorder is one who acts impulsively and has a poor self-image and unstable relationships. An avoidant person is abnormally dependent and avoids strangers and unfamiliar situations.)

Substance Abuse. It is estimated that 25% of people with alcohol or drug abuse problems also have major depression.

Sleep Disorders. Sleep abnormalities are an integral part of depressive disorders, with more than 90% of depressed patients experiencing insomnia. A study of male medical students found that young men who experience insomnia are twice as likely to suffer from depression at middle age. Genetic factors may play a role in the association between sleep disorders and depression. In one study of patients diagnosed with depression, family members with certain sleep abnormalities were found to be at greater risk for depression than those with normal sleep patterns. Abnormal sleep patterns also often preceded the first episode of depression. Individuals with normal sleep patterns who are from families with abnormal sleep habits also appear to have an increased risk for mood disorders.

Family History

A family history of mental illness, especially mood disorders, such as bipolar disorder, major depression, and chronic depression, appears to predispose a patient to the development of depression. Children of depressed parents are at high risk for depression and other emotional disorders.

Risk Factors for Seasonal Affective Disorder

Seasonal affective disorder (SAD) affects about one in 20 adults. About 80% of those who suffer from SAD are women. Obviously, people who live in the North are more apt to experience seasonal affective disorder than are Southerners.

How Serious Is Depression?

Risk for Suicide

Depression is estimated to contribute to 50% of all suicides. Suicidal preoccupation or threats of suicide, especially from someone known to be depressed, should always be treated seriously. In one study, depression was the major factor in overdose among adolescents. (Impulsivity was the other major contributor to self-poisoning.) A parent should seek help as soon as possible for any child with signs of severe depression or who expresses suicidal thoughts. Suicide in the elderly is the third-leading cause of death related to injury; men account for 81% of these suicides, with divorced or widowed men at highest risk.

Effect on Physical Health

Major depression in the elderly or in people with serious illness seems to shorten their survival rates, even independently of any accompanying illness. In one study, even minor depression was associated with a higher risk for a shorter life in men (although not in women). Depression is now known to play a major role in exacerbating existing medical conditions and may even predispose people to serious disease, including heart disease and stroke. Decreased physical activity and social involvement certainly play a role in the association between depression and the severity of serious illnesses, but researchers are also finding links between depression and biologic mechanisms. Studies indicate that depression may have adverse biologic effects on the immune system, blood clotting, blood pressure, blood vessels, and heart rhythms. (There does not appear to be an association between depression and cancer, however.)

Heart Disease and Heart Attacks. Many studies have now shown strong associations between depression and an increase in the incidence and severity of strokes, heart attacks, and death after a heart attack. A recent example is a 1999 study reporting that after a heart attack 8.3% of depressed women died of heart-related events compared to only 2.7% of nondepressed women. The rates were similar in men (7% of depressed men who died compared to 2.4% of nondepressed men). Women patients were twice as likely to be depressed as male patients, however. Depression may even impair a patient's response to medication for heart disease. The more severe the depression, the more dangerous to the health, although some studies have indicated that even mild depression, including feelings of hopelessness, experienced over many years, may harm the heart, even in people with no early signs of heart disease. Depression also appears to increase the risk for stroke in both women and men. Researchers speculate that depression and stroke might have common patterns of development. Brain scans in the elderly, for example, have reported greater atrophy in the brains of depressed individuals than in those of nondepressed ones.

Neurologic Decline. Depression in the elderly is associated with a decline in mental functioning, regardless of the presence of dementia.

Other Diseases. Some studies have linked past and current major depression with bone-density loss in women. One explanation for this association is that depressed women have higher levels of the stress hormone cortisol, which may contribute to bone density loss. Depression coincides with high pain scores in people with chronic diseases, such as rheumatoid arthritis.

Impact on Others

Effects on the Health of Offspring. One study has found that children of depressed parents are at greater risk for many medical conditions (eg, urinary and genital disorders, headaches, lung problems) and hospitalizations. The association between depression in children and medical disorders was apparent only when either one or both parents were depressed. (In other words, depressed children whose parents did not suffer from mood disorders were at no higher risk for medical disorders.)

Increased Risk for Addictions. Severely depressed people are at high risk for alcoholism, smoking, and other forms of addiction. Pregnant women who drink may be increasing their child's risk for a future mental illness, as well as increasing their risk for delivering children with birth defects.

Effects on Marriage. In one survey, nearly half of people who suffered from psychiatric disorders before or during their first marriage were divorced, compared to a divorce rate of 36% in those who never suffered from emotional disorders.

Job Bias. In one British study, 60% of personnel directors said that they would never hire anyone for an executive position who had been previously diagnosed with depression. About a quarter of these professionals felt that formerly depressed people couldn't even handle clerical or manual jobs. (As a comparison, only 3% of personnel directors said that they thought diabetes would impair anyone's performance.) This strong bias against psychiatric disorders may be higher in England than in some other countries, but it is still indicative of the prejudices present in many cultures that inaccurately and unfairly separate psychology from physical conditions when assessing capability.

How Is Depression Diagnosed?

A mental health specialist, such as a psychiatrist, social worker, or psychologist, is the best source for a diagnosis of depression. Such health professionals may administer a screening test, such as the Beck Depression Inventory or the Hamilton Rating Scale, which consists of about 20 questions that assess the individual for depression. Studies are finding that computerized phone interviews are valuable as screening tools for depression. It is important to note, however, that these tests are limited, and psychologists generally diagnose depression based on symptoms and other criteria.

Most people who are depressed, however, do not seek psychiatric help and must rely on their family doctor. Unfortunately, one study reported that only 25% of family physicians accurately diagnose depression. Patients themselves may be unable to sense or admit to their own depression. In one study, although 21% of patients who visited their family physicians were depressed, only one percent described their problem as depression. To compound the problem, half the physicians in one study admitted to deliberately diagnosing a different problem, such as fatigue, anxiety, insomnia, or headache, in some of their patients who had depression. Reasons for doing this included uncertainty about the diagnosis, a concern that insurers wouldn't reimburse the patient for a diagnosis of depression, or because of the stigma attached to such a diagnosis.

In elderly people, because of the complex relationship between depression, drug interactions, and serious physical illness, it is especially important to obtain an accurate diagnosis. The characteristic symptoms of depression are not always present or readily apparent in older people, however. Some may be aware of their depression but believe that nothing can be done about it. Many elderly people who are depressed may report only physical symptoms (aches and pains) or other mood states (confusion, agitation, anxiety, and irritability) related to depression rather than depression itself. Often they are unable or unwilling to express their feelings or are even unaware that they are depressed. Their symptoms are often ignored or confused with other ailments common in the elderly, including Parkinson's or Alzheimer's disease, dementia, thyroid disorders, arthritis, stroke, cancer, heart disease, and other chronic conditions. Depression may even be a predictor of Alzheimer's disease or an impending physical illness before the symptoms of the disease itself become evident. Depression is also a side effect of many drugs that are commonly prescribed for the elderly. It is often very difficult, then, to determine if the patient's depression is a psychologic reaction to the illness, caused by the disease itself, or completely independent from the medical condition. Both physical and emotional conditions should be considered in making a diagnosis in older people.

People from nonwestern countries are also more apt to report physical symptoms related to the depression, such as headache, constipation, weakness, or back pain rather than mood-related symptoms.

What Are The General Guidelines For Treating Depression?

In spite of the effectiveness of treatments, more than two-thirds of people with depression do not receive any therapy for it. In fact, one study indicated that only 3% of older depressed people were being treated.

Choosing a Therapist

Sometimes the level of dysfunction may be serious enough to warrant hospitalization in order to provide protection from further deterioration or self-harm. In most people, however, depression can be treated in an office setting by a psychiatrist or other therapist. Patients can locate a mental

health professional in their areas by asking their doctor for a referral or contacting one of the mental health organizations. [See Where Else Can Help be Obtained for Depression, *below*.] Psychiatrists have a medical degree; these professionals, medical physicians, and some psychiatric nurse clinicians are the only ones who can prescribe medication. Although other mental health professionals cannot prescribe drugs, most therapists have arrangements with a psychiatrist for providing medications to their patients. Psychoanalysts have a degree in psychiatry, psychology, or social work as well as several years of training at a psychoanalytic institute. Psychologists have graduate-level training, including an internship in a mental healthcare facility. A clinical social worker has a master's degree and two years of supervised experience in mental health and human services. Advanced-practice psychiatric nurses have a master's degree and can provide therapeutic services. The patient should describe problems briefly but specifically over the phone to any prospective therapist to get a sense of whether he or she will suit the patient's needs. An advanced degree does not necessarily guarantee quality therapy. The patient's belief in his or her health provider may be the most important component in recovery, as indicated by studies reporting that placebos relieve depression in about half of patients and in some cases actually work better than psychotherapy. Patients should, therefore, not be shy about considering a change in their therapist if they lack confidence in their current one.

Selecting the Optimal Therapeutic Approach

Patients with depression have a number of options, including psychotherapy, antidepressants, or both. Among the various psychotherapies, cognitive-behavioral therapy is turning out to be the most effective approach. In a major analysis of four randomized comparative studies, cognitive behavior therapy was as effective as antidepressants in treating severe depression. Cognitive therapy may be particularly helpful for patients with atypical depression, adolescents with mild symptoms of major depression, women with non-psychotic postpartum depression, and for preventing later depression in children of parents with the disorder. In this latter case, therapy should involve the whole family. Cognitive therapy does not appear to be as beneficial as antidepressants for most patients with dysthymia. Much of the success of psychologic therapy, in any case, depends on the skill of the therapist. In general, a number of studies indicate that a combination of antidepressants and therapy is more effective than either treatment alone for most patients, possibly because patients are more likely to take their medications regularly when they are also undergoing therapy. For those who fail medications and psychotherapy, other techniques, such as electroconvulsive therapy (ECT), are safe and effective. In severe cases that do not respond to any conservative treatment, psychosurgery may be beneficial.

Drug Treatment Guidelines

Major Classes of Antidepressants. Antidepressants are very effective; one study reported that up to 90% of patients with major depression will improve with good compliance and adequate doses of the right antidepressant drug. The major antidepressant drug classes are the selective serotonin-reuptake inhibitors (SSRIs), tricyclics, and monoamine oxidase inhibitors (MAOIs). A new group of drugs generally referred to as designer-antidepressants have been developed to target specific brain chemicals believed to be involved in depression. Research has revealed that SSRIs and some of these newer antidepressants may also be beneficial in treating other disorders, including anxiety and certain subtypes of depressive disorders previously unresponsive or poorly responsive to treatment, including premenstrual dysphoric disorder, seasonal affective disorder, atypical depression, and recurrent brief depression. A great deal of leeway exists in choosing an appropriate antidepressant; overall, they seem to be equally effective, although cost, individual responses, and side effects vary widely.

Duration of Treatment. Recent guidelines recommend that therapy with antidepressants last for at least 4 to 6 months after a patient first takes an antidepressant. Patients who improve within two

weeks of taking medications may not require lengthy treatment. Recurrence of depression, however, is very common. One study reported that 85% of patients relapsed after treatment of an initial episode, and even among patients who recovered and remained well for at least five years, over half had a later recurrence of depression. Many, then, may need maintenance therapy. Among those at highest risk for relapse and who may require on-going antidepressants are those with at least two major episodes of depression for two years or longer before initial treatment and those who continued to have low-level depression for seven months after starting antidepressant treatments. Experts disagree, however, on the optimal length of maintenance therapy. In one study, a third of patients who stopped maintenance treatment still had a recurrence of depression within a year. There is an indication that many, if not most, patients do not receive the recommended dosage of antidepressants during maintenance to prevent relapse. It should be noted that there is no risk for addiction with current antidepressants, and many of the common antidepressants, including most standard SSRIs, have been proven to be safe when taken for a number of years.

Common Side Effects. No matter how well a drug treats depression, the ability of the patient to tolerate its side effects strongly influences his or her compliance to therapy. Lack of compliance is probably the major barrier to success; according to one study, as many as 70% of elderly depressed patients did not adhere to antidepressant drug regimens. The new designer antidepressants have overall advantages in tolerability compared with the older tricyclic compounds and even some SSRIs, although long-term side effects are not fully known in this group. Side effects can be avoided or moderated if the regimen is started at low doses and built up over time. Although specific side effects are discussed under individual drugs, there are a few that are common to many of them.

An increased risk of oral health problems caused by dry mouth is associated with long-term use of all antidepressants. The risks appear to be highest with some of the new designer antidepressants, with multiple drug use, and with the presence of oral infections. Patients can increase salivation by chewing gum, taking vitamin C tablets, using saliva substitutes, and rinsing the mouth frequently.

Sexual dysfunction is a common side effect of nearly all the standard antidepressants, including the tricyclics, monoamine oxidase inhibitors (MAOIs), selective serotonin-reuptake inhibitors (SSRIs), and venlafaxine (Effexor), one of the newer drugs. For patients suffering acute depression, long-term relief provided by these medications is usually more important than their effect on sexual function. This side effect can be distressing, however, for patients on maintenance treatment who otherwise feel well. Some of the designer antidepressants, such as mirtazapine, bupropion, or nefazodone, may be effective alternatives. A few small studies are indicating that the drug sildenafil (Viagra) used for erectile dysfunction in men will help reverse sexual dysfunction from antidepressants in women. More research is in progress. One small study reported that the herbal remedy ginkgo biloba was associated with improved sexual function in patients taking antidepressants.

Virtually all antidepressants have side effects as well as complicated interactions with other drugs, some very serious. A few are mentioned in the individual drug discussions below, but many are not, and patients should inform the physician of any drugs they are taking, including over-the-counter-medications. Abrupt withdrawal from many antidepressants can produce severe side effects; no antidepressant should be stopped abruptly without consultation with a physician.

Treatment Guidelines for Specific Patient Groups

Pregnant Women. A 1999 study of women who took antidepressants during pregnancy reported that neither Prozac, a selective serotonin reuptake inhibitor (SSRIs), nor tricyclic antidepressants posed a higher than normal risk for birth defects or miscarriage. In a study of nursing mothers

who took the SSRI Paxil, only very small amounts were found in the breast milk. More research is needed, however, and women should still avoid any medications during pregnancy and nursing, if possible. This is hopeful news, however, for women with severe depression who are pregnant or wish to conceive.

Children and Adolescents . Studies indicate that children and adolescents with major depression respond to placebos as well as they do to tricyclic antidepressants. Although they tend to respond better to SSRIs, some experts believe teenagers with mild to moderate depression should receive psychotherapy, especially cognitive-behavioral therapy or supportive therapy, before medications are tried. The American Academy of Child and Adolescent Psychiatry now recommends SSRIs for children and adolescents with very severe depression that does not respond to psychotherapy. These drugs should be combined during the early acute phase with a mixture of psychotherapies, including cognitive-behavioral, interpersonal, and psychodynamic therapies. Initial drug treatments should continue for at least six months, and a maintenance phase should last another year or longer.

Elderly Adults. Ideally, elderly depressed patients should be treated with a combination of psychotherapy and antidepressants. In many cases, however, psychotherapy is not available to elderly patients. SSRIs are often prescribed in this age group because it is commonly believed that they pose a lower risk for falls than the older tricyclic antidepressants. Recent studies, however, have no difference in risk between the two drug classes. (Whether all of the newer designer antidepressants pose a risk for falls is not yet known.) In any case, one study found that the SSRIs and the so-called designer drugs were only modestly helpful in elderly patients with mild depression. Some of the newer drugs, such as venlafaxine (Effexor), may even have adverse effects on the heart in elderly patients. Parkinson patients may want to avoid SSRIs because they increase the risk for tremor and other symptoms of the disease. Some experts recommend tricyclic antidepressants, particularly nortriptyline, for elderly patients with severe depression. These drugs are effective and relatively inexpensive. They have a higher risk than SSRIs however, for adverse effects on the heart and possibly the lungs, and the older tricyclics amitriptyline (Elavil) and imipramine (Tofranil) have other severe side effects in older adults. Some experts recommend only psychotherapy or attention intervention for elderly patients with mild depression. In some older patients, a regular exercise program may even be sufficient to improve mood.

What Are The Drugs Used For Depression?

Selective Serotonin-Reuptake Inhibitors and Other Designer Antidepressants

Selective serotonin-reuptake inhibitors (SSRIs) are now the first-line treatment of major depression. They work by increasing levels of serotonin in the brain. SSRIs include fluoxetine (Prozac), sertraline (Zoloft), paroxetine (Paxil), fluvoxamine (Luvox), and citalopram (Celexa).

Benefits of SSRIs. Because they act on serotonin specifically, they have fewer side effects than the older antidepressants, which affect a number of chemicals in the body. SSRIs appear to help people with most forms of depression, including mild to moderately severe major depression, seasonal affective disorder, and dysthymia. They are also proving to be effective for severe premenstrual syndrome and premenstrual dysphoric disorder. In fact, in such cases, intermittent therapy (taking the SSRI only during the 14-day premenstrual period) may be as effective as continuous therapy and have fewer adverse effects. (Antidepressants that do not affect serotonin do not appear to be beneficial for menstrual-related depression.) SSRIs also help people with other disorders, including obsessive-compulsive disorder, panic disorder, and bulimia. They also reduce impulsive aggressive behavior in both psychiatric patients and in people with no mental

health problems. Patients taking SSRIs report not only relief of depressive symptoms but also a higher level of efficiency, more energy, and better relationships with other people. Studies are indicating the SSRIs may be safe for pregnant and nursing women.

Duration of Effectiveness and Use. It takes two to four weeks for SSRIs to be effective in most adults and longer, up to 12 weeks, in the elderly and those with dysthymia. By 14 weeks, depression should be in remission in everyone who responds to the drugs. Unfortunately, recurrence is common once the drugs are stopped. Some patients may need to be on indefinite long-term maintenance, although it is unclear what the duration of treatment should be. Studies to date have indicated that the standard SSRIs are probably safe for this purpose.

Side Effects of SSRIs. The most common side effects are nausea and gastrointestinal problems. These effects usually wear off over time. Between 10% and 20% of people who take SSRIs experience agitation, insomnia, mild tremor, and impulsivity, which may be particularly problematic in patients who also suffer from anxiety, sleeplessness, or both. Such side effects may persist. On the other hand, about 20% of patients experience drowsiness with SSRIs, which may be counteracted by taking the medication at bedtime.

Dry mouth is common and can increase the risk for cavities and mouth sores.

During the first few weeks of treatment, some patients lose a small amount of weight, but over time patients on maintenance treatment typically return to their pretreatment weight.

Sexual dysfunction, including delayed or loss of orgasm and low sexual drive, occurs in 30% to 40% of patients on SSRIs and accounts for a substantial amount of noncompliance. (Citalopram, a newer SSRI, may pose a lower risk than other SSRIs for this side effect.) Taking a supervised drug "holiday" on the weekend may improve sexual function during that time. (Withdrawal symptoms may develop and include return of depression, sleep problems, exhaustion, and dizziness. Prozac, with its longer duration of action, appears to be associated with a lower risk for withdrawal symptoms than shorter-lasting SSRIs, but a weekend off this drug may not be long enough to restore sexual function.) The physician may recommend other possible strategies to circumvent sexual dysfunction, including reducing the antidepressant dosage, switching antidepressants, or adding medication to curtail the side effect.

Elderly people taking these drugs should take the lowest dose possible, and those with heart problems should be monitored closely. Over the years, some patients taking SSRIs have reported a group of side effects, known as *extrapyramidal* symptoms, which are similar to those in Parkinson's disease and affect the nerves and muscles controlling movement and coordination. They are uncommon and when they develop they tend to occur within the first month of treatment.

High doses or interactions with other drugs may cause hallucinations, confusion, changes in blood pressure, stiffness, and irregular heart beats. Death from overdose is extremely rare. A recent eight-year study has helped lay to rest very early reports of an association between Prozac and an increased risk for suicidal thoughts and behavior. In the new study, there was actually a nonsignificant reduction in suicidal risk. Serious interactions can occur with other antidepressants, such as tricyclics and, of particular note, MAOIs [see *below*]. Other serious interactions have occurred with Demerol, illegal substances such as LSD, cocaine, or "ecstasy." People who take SSRIs may drink alcohol in moderation, although the combination may compound any drowsiness experienced with SSRIs, and some SSRIs increase the effects of alcohol.

Designer Antidepressants

A number of drugs have now been developed that target other neurotransmitters, such as norepinephrine, alone or in addition to serotonin. These drugs tend to have fewer adverse effects on sexual function than SSRIs, and people have reported enhanced sexuality with some of them. They may be more effective for severely depressed patients than the SSRIs. Some, such as mirtazapine and nefazodone, may also provide relief for insomnia and anxiety, important co-disorders in many depressed patients. (SSRIs and antidepressants that increase uptake of both serotonin and norepinephrine pose a higher risk for insomnia.) They also share side effects with other antidepressants, including dizziness and dry mouth.

Bupropion. Bupropion (Wellbutrin) is particularly effective for a number of conditions and is also used as a treatment for quitting smoking (Zyban). It causes less sexual dysfunction than SSRIs. Side effects include restlessness, agitation, sleeplessness, headache, rashes, stomach problems, and in rare cases, hallucinations and bizarre thinking. Initial weight loss occurs in about 25% of patients. High doses may cause seizures; this side effect is uncommon and tends to occur in patients with eating disorders or those with risk factors for seizures.

Venlafaxine. Venlafaxine (Effexor) is another designer antidepressant known as a serotonin-noradrenaline reuptake inhibitor. It is similar to fluoxetine (Prozac) in effectiveness and tolerability for most patients. In a group who required higher doses of an antidepressant in order to obtain a response, venlafaxine was slightly more effective than Prozac. As with the SSRIs, and unlike other newer antidepressants, venlafaxine impairs sexual function. Although clinical trials have shown that the drug is safe and effective in most people, of concern are recent reports of changes in blood pressure and heart conduction abnormalities, which may cause serious problems in elderly patients. Some patients report severe withdrawal symptoms, including dizziness and nausea.

Nefazodone. Nefazodone (Serzone) is more rapidly effective and has fewer distressing side effects, including sexual dysfunction, than SSRIs. The drug can also be combined with SSRIs. It may cause an abrupt drop in blood pressure after standing up suddenly.

Mirtazapine. Mirtazapine (Remeron) is a unique antidepressant known as a 5-HT₂ blocker. It affects both serotonin and norepinephrine (also called noradrenaline). Compared to some common SSRIs, studies are indicating that it becomes effective more rapidly and has stronger early actions against anxiety in patients who suffer both disorders. It causes less sexual dysfunction than other drugs as well. It interacts with histamine, a chemical involved in allergic responses; these actions can cause drowsiness, which may make it a useful drug for depressed patients who suffer from insomnia. It also causes blurred vision. The drug has been associated with weight gain, although in one study it was not significant. It does not appear to have the adverse acute effects on the heart that other newer antidepressants have, although it may elevate cholesterol and triglyceride levels slightly.

Reboxetine. Reboxetine (Edronax) is yet another promising unique antidepressant, known as a selective noradrenaline reuptake inhibitor. Early studies reported that it was more effective than Prozac in reducing depression and improving social functioning, although in one study more patients taking reboxetine dropped out (12% versus 7% for Prozac) because of side effects. It is not yet available in the US.

Tricyclic Antidepressants

Before the introduction of SSRIs, tricyclics had been the standard treatment for depression. Some of the most frequently prescribed tricyclics are amitriptyline (Elavil, Endep), desipramine (Norpramin), doxepin (Sinequan), imipramine (Tofranil), amoxapine (Asendin), nortriptyline (Pamelor, Aventyl), protriptyline (Vivactil), and trimipramine (Surmontil). Two other investigative tricyclics are mianserin (Bolvidon) and dothiepin (Prothiaden).

Benefits of Tricyclics. Tricyclics are as effective as SSRIs and may still offer benefits for many people with dysthymia, who generally do not respond to SSRIs.

Side Effects of Tricyclics. Side effects are fairly common with these medications, and those most often reported include dry mouth, constipation, blurred vision, sexual dysfunction, weight gain, difficulty in urinating, disturbances in heart rhythm, drowsiness, and dizziness. (One study reported that mianserin actually reversed sexual dysfunction caused by SSRIs when taken with one.) Blood pressure may drop suddenly when sitting up or standing. The tricyclic protriptyline (Vivactil) is associated with weight loss and causes less drowsiness than does Elavil. It can, however, cause insomnia and nightmares if the drug is taken too close to bedtime. Protriptyline also causes sun sensitivity, and people who take this should take precautions against sunlight when they go outdoors.

Tricyclics can have serious, although rare, side effects and can cause fatal overdose. Tricyclics may pose a danger for some patients with certain heart diseases. One study comparing nortriptyline with paroxetine, an SSRI, reported nine times more adverse cardiac events with the use of the tricyclic than with the SSRI. Also of concern is a study reporting that tricyclics, particularly imipramine, may be responsible for 10% of cases of a lung disease called idiopathic pulmonary fibrosis (IPF), which can cause lung inflammation and scarring. Initial symptoms are breathlessness and dry cough. The two newer tricyclics, mianserin and dothiepin, also increased the risk.

Monoamine Oxidase Inhibitors (MAOIs)

Monoamine oxidase inhibitors (MAOIs) are usually indicated when other antidepressants prove ineffective. They may be effective for atypical depression and for people with eating disorders, post-traumatic stress disorder, and borderline personality. MAOIs include phenelzine (Nardil), isocarboxazid (Marplan), and tranylcypromine (Parnate). A patch form of a MAOI works much faster than an oral form, which takes up to six weeks to be effective. MAOIs commonly cause orthostatic hypotension (a sudden drop in blood pressure upon standing), drowsiness, dizziness, sexual dysfunction, and insomnia. The most serious side effect is severe hypertension, which can be brought on by eating certain foods having a high tyramine content. Such foods include aged cheeses, most red wines, sauerkraut, vermouth, chicken livers, dried meats and fish, canned figs, fava beans, and concentrated yeast products. MAOIs may also cause birth defects and should not be taken by pregnant women. MAOIs can have serious interactions with a number of drugs, including some common over-the-counter cough medications, psychostimulants (such as Ritalin), and decongestants. Very dangerous side effects can occur from interactions with other antidepressants, including SSRIs. There should be at least a two to five-week break between taking MAOIs and other antidepressants. (A European MAOI, moclobemide, appears to be safe when used with an SSRI, but it is not yet available in the US.) Unlike other MAOIs, moclobemide may be effective for patients with dysthymia.

Other Drug and Herbal Treatments

Estrogen. Estrogen replacement therapy (ERT) may relieve menopausal-associated depression and even relieve depression in elderly women who do not respond to standard antidepressants. ERT has other health benefits and risks, which a physician should discuss with the patient. (Hormone replacement therapy that contains both progesterone and estrogen may cause mild depression.) One study showed that estrogen given under the tongue (sublingually) successfully relieved the symptoms of postpartum depression.

St. John's Wort. St. John's Wort (*Hypericum perforatum*) is an herbal remedy that is helping mild to moderate depression in many patients. It is widely prescribed in Germany, and one short-term British study reported that it was effective and had fewer side effects than standard

antidepressants. A long-term trial is now underway in the US to determine its safety and effectiveness. One analysis of clinical trials suggests that St. John's Wort is similar in effectiveness to and had fewer side effects than low-dose tricyclic antidepressants. However, more well-designed trials are needed before definitive conclusions can be made about the benefits of this herbal remedy as an antidepressant. Even those with mild depression should not use St. John's Wort without consulting a physician. This herbal substance is not regulated and there is no guarantee of quality in any brands currently available. The product should contain at least 0.3% hypericin, the active substance in St. John's Wort. Although no dose levels have been established, trials indicate that 300 milligrams taken three times a day may be effective. It takes between two and three weeks for the drug to have an effect. Common side effects include gastrointestinal problems, dry mouth, allergic reactions, and fatigue. Some people have reported temporary nerve damage after sun exposure, specifically pain and tingling on sun-exposed areas. People taking this drug should avoid sunlight or cover up when going outdoors. People with severe depression, children, and pregnant or nursing women should not take this substance. It should never be combined with other antidepressants. Studies indicate that the herbal substance may be similar to MAOI inhibitors. Some experts, then, suggest avoiding high amounts of foods and substances that have tyramine, such as red wine, meat, and aged cheese.

Substance-P. Substance-P is a brain chemical that is believed to have a role in mood disorders; agents that inhibit it have been found to have both antidepressant and anti-anxiety effects. In one investigative trial of patients with major depression, a substance-P blocker termed MK-869 was as effective as an SSRI and had similar side effects although less sexual dysfunction. It also reduced anxiety, independent of its effect on depression.

Augmentation Strategies

Augmentation strategies generally involve the use of drugs not typically thought of as antidepressants in combination with a standard antidepressant. Such strategies are being used for patients who fail standard therapies or who need to quickly speed up the response of the antidepressant. Augmentation therapies include use of lithium, newer antipsychotic drugs (such as risperidone), psychostimulants, thyroid hormones, beta-blockers, and anti-anxiety drugs. In one small study, high doses of thyroid hormone combined with an antidepressant had very mild side effects and were very effective in half of severely depressed treatment-resistant patients. Another study reported good results when thyroid hormone was followed by small doses of lithium. The anti-anxiety drug clonazepam (Klonopin) plus fluoxetine (Prozac) produced greater early improvement than Prozac alone in one study. Pindolol (Visken), a beta-blocker normally used for heart disease, was effective against depression in another study when combined with the anti-anxiety drug buspirone (BuSpar). In another study, it was used with the SSRI paroxetine (Paxil) to hasten response. After ten days, depression in nearly half the patients taking the combination was in remission compared to 25% of patients taking Paxil only.

What Are Psychotherapeutic Techniques For Depression?

Cognitive-Behavioral Therapy

Cognitive behavioral therapy focuses on identification of distorted perceptions that patients may have of the world and themselves, changing these perceptions, and discovering new patterns of actions and behavior. These perceptions, known as schemas, are negative assumptions developed in childhood that can precipitate and prolong depression. Cognitive therapy works on the principle that these schemas can be recognized objectively and altered, thereby changing the response and eliminating the depression. First, the patient must learn how to recognize

depressive reactions and thoughts as they occur, usually by keeping a journal of feelings about and reactions to daily events. Then, the patient and therapist examine and challenge these entrenched and automatic reactions and thoughts. As the patient begins to understand the underlying falseness of the assumptions that cause depression, he or she can begin substituting new ways of coping. The patient is often given "homework" that tests old negative assumptions against reality and demands different responses. Over time, such exercises help build confidence and eventually alter behavior. Cognitive therapy is a time-limited treatment lasting three to four months. Patients may take either group or individual cognitive therapy.

Psychodynamic Psychotherapy

Based on Freudian theory, psychodynamic psychotherapy concentrates on working through unresolved conflicts from one's childhood. Depression is viewed as a grieving process for the loss of a parent or other significant person or for the loss of their love. Freud theorized that the depressed individual can only express rage at this loss by turning it against her or himself and transforming it into depression. The therapeutic goal of the patient is to interpret and understand these early feelings by re-experiencing them. In recent years what used to be a long-term course of therapy is now often shortened to several months.

Interpersonal Therapy (IPT)

Based in part on psychodynamic theory, interpersonal therapy acknowledges the childhood roots of depression, but focuses on symptoms and current issues that may be causing problems. IPT is not as specific as cognitive or behavioral therapy, and all work is done during the sessions. The therapist seeks to redirect the patient's attention, which has been distorted by depression, toward the daily details of social and family interaction. The goals of this treatment method are improved communication skills and increased self-esteem within a short period (three to four months of weekly appointments) of time. Among the forms of depression best served by IPT are those caused by distorted or delayed mourning, unexpressed conflicts with people in close relationships, major life changes, and isolation.

Supportive Psychotherapy or Attention Intervention

The intent of supportive psychotherapy or attention intervention is to provide the patient with a nonjudgmental environment by offering advice, attention, and sympathy. Supportive therapy appears to be particularly helpful for improving compliance with medications by giving reassurance, especially when setbacks and frustration occur; one study, in fact, found that it offered no other benefits.

What Surgical And Other Procedures Are Available For Depression?

Electroconvulsive Therapy

Electroconvulsive therapy (ECT), commonly called shock treatment, has, unfortunately, received bad press since it was introduced in the 1930s. ECT has been refined over the years and now successfully treats more than 90% of patients suffering from mood disorders. A muscle relaxant and short-acting anesthetic are administered, and a small amount of electric current is sent to the brain, causing a generalized seizure that lasts for about 40 seconds. Most patients receive six treatments spaced every two to five days; others receive up to 15 treatments, which are followed by six to 12 additional treatments spaced every other week or longer for another two to four

months. Hospitalization is not necessary for the treatment. Side effects of ECT may include temporary confusion, memory lapses, headache, nausea, muscle soreness, and heart disturbances. Administering the drug naloxone immediately before ECT may help reduce its effects on concentration and some (but not all) forms of memory impairment. Many experts urge that ECT be used earlier in the course of major depression, although most insurers or HMOs will not pay for early treatment. ECT may be beneficial for patients who cannot, for any reason, take antidepressant drugs, for suicidal patients, and for elderly patients who are psychotic and depressed. Some physicians feel it is safer to use ECT than many antidepressants for patients who are pregnant or have certain heart problems, and it may also be helpful for young patients who fit the adult criteria for ECT.

Phototherapy

Phototherapy is recommended as the first line treatment for seasonal affective disorder (SAD). The patient sits a few feet away from a box-like device that emits very bright fluorescent light (10,000 lux) for about 30 minutes every day. Studies now indicate that it is best performed immediately after waking in the morning. Some people report mood improvement as early as two days after treatment; in others depression may not lift for three or four weeks. (If no improvement is experienced after that, then the depression is probably caused by other factors.) Side effects include headache, eye strain, and irritability, although these symptoms tend to disappear within a week. Patients taking light-sensitive drugs (eg, those used for psoriasis), certain antibiotics, or antipsychotic drugs should not use light therapy. Patients should be examined by an ophthalmologist before undergoing this treatment.

Cingulotomy

A surgical technique called cingulotomy interrupts the cingulate gyrus, a bundle of nerve fibers in the front of the brain, by applying heat or cold. A recent variation of this procedure using MRI scans to guide the surgeon produced long-term improvement in 53% of patients with severe depression. The procedure is generally safe with few serious complications; it does not affect either intellect or memory.

Transcranial Magnetic Stimulation

Transcranial magnetic stimulation (TMS) employs high frequency magnetic pulses that target affected areas of the brain. One recent study found that after one year, relapse rates were significantly lower after TMS than after ECT. A 1999 study reported, however, that, although TMS improved mood after two weeks, a sham treatment that mimicked TMS was equally effective in another group for the same period of time. TMS was continued for two more weeks and patients reported progressive improvement. A previous Israeli study had found TMS superior to sham treatment. It is not yet clear if TMS has real value beyond the placebo effect.

Acupuncture

One small study reported that acupuncture was effective in relieving depression in 64% of women, a result comparable to medications or psychotherapy. Larger studies are required to confirm this result.

Sleep Deprivation

Research shows that therapy that involves sleep deprivation has an antidepressant benefit in about a third of patients with depression. Patients that benefit appear to have higher than normal metabolic rates in parts of their brain that then decline after sleep deprivation.

What Lifestyle Changes Can Help Depression?

Diet

Some people report relief from depression by eating foods or diet supplements that boost levels of tryptophan, an amino acid involved in the production of serotonin. Vitamin B3 (niacin) is important in the production of tryptophan and is produced from processing vitamin B3 (niacin). Dietary sources of niacin include oily fish (such as salmon or mackerel), pork, chicken, dried peas and beans, whole grains, seeds, and dried fortified cereals. The omega-3 polyunsaturated fatty acids found in fish oil may independently reduce depression. (There's no definite proof that any of these foods improve depression but, in any case, they are all healthful.) A high-carbohydrate drink available over the counter called PMS Escape increases tryptophan level and may alleviate depression from PMS for about three hours. It should be strongly noted that impurities found in L-tryptophan diet supplements have been associated with eosinophilia-myalgia syndrome (EMS), a disorder that elevates certain white blood cells and causes muscle pain. An epidemic of EMS with some reported fatalities occurred in 1989; recently similar impurities have been detected in diet supplements containing 5-hydroxy-1-tryptophan (5HTP), a form of tryptophan.

Vitamin B12 and calcium supplements may help reduce depression that occurs before menstruation. Studies have found an association between drinking caffeinated beverages and a lower incidence of suicide, indicating that coffee or tea might help reduce depression.

Exercise

Exercise may reduce mild to moderate depression and, in many cases, may be as effective as psychotherapy. A 1999 study on exercise in the elderly reported that after 26 weeks, exercise was as effective as antidepressants. (Antidepressants relieved depression earlier, however.) One study found that teenagers who were active in sports have a greater sense of well being than their sedentary peers; the more vigorously they exercised, the better was their emotional health. Either brief periods of intense training or prolonged aerobic workouts can raise chemicals in the brain, such as endorphins, adrenaline, serotonin, and dopamine, that produce the so-called runner's high. Rhythmic aerobic and yoga exercises help combat stress and anxiety. And, of course, weight loss and increased muscle tone can boost self-esteem.

Social Support

A strong network of social support is both important for prevention and recovery from depression. Support from family and friends must be healthy and positive; one study of depressed women showed, however, that overprotective as well as very distant parenting was associated with a slow recovery from depression. Studies indicate that people with strong spiritual faiths have a lower risk for depression. Such faith does not require an organized religion. People with depression might find solace from less structured sources, such as those that teach meditation or other methods for obtaining spiritual self-fulfillment.

Where Else Can Help Be Obtained For Depression?

National Foundation for Depressive Illness, P.O. Box 225720, New York, NY 10116.

Call (212-268-4260) or (800-239-1265) or on the Internet (<http://www.depression.org/>)

National Depressive and Manic-Depressive Association, 730 N. Franklin St., Suite 501, Chicago, Ill. 60610.

Call (800) 826-3632) on the Internet (<http://www.ndmda.org/>)

Makes referrals to local support services and offers a free information package.

National Institute of Mental Health, 5600 Fishers Lane, Parklawn Building, Rockville, MD 20857.

Call (800-64-PANIC) or on the Internet (<http://www.nimh.nih.gov/>)

National Alliance for the Mentally Ill (NAMI), 200 N. Glebe Rd., Arlington, VA 22203-3754.

Call (800-950-6264) or on the Internet (<http://www.nami.org/>)

NAMI is a national grass roots organization providing ways for self-help and support organizations to individuals and families of people with psychologic disorders.

American Institute for Cognitive Therapy

call (212-308-2440)

Association for the Advancement of Behavior Therapy

call (212-647-1890) or (800-685-AABT)

The American Psychiatric Association

call (202-682-6000) or on the Internet (http://www.psych.org)

The American Psychological Association

call (800-964-2000) or on the Internet (http://www.apa.org) and (<http://helping.apa.org/>)

The National Association of Social Workers

call (202-408-8600) or on the Internet (http://www.naswdc.org)

The American Psychiatric Nurses Association

call (202-857-1133) or on the Internet (http://www.apna.org)

National Mental Health Association, 1021 Prince St., Alexandria, VA 22314-2971.

Call (800-969-6642) or on the Internet (http://www.nmha.org)

This organization gives names and numbers of regional chapters and provides information on 200 mental health topics.

Society for Light Treatment and Biological Rhythms, 842 Howard Avenue, New Haven, CT 06519, USA.

Fax: (203-764-4324) or on the Internet (<http://www.websciences.org/sltbr/>)

Emotions Anonymous, PO Box 4245, St. Paul, MN 55104.

Call (612-647-9712) or on the Internet (<http://www.mtn.org/EA/>)

Offers a 12-step program to help people experiencing emotional difficulties. Has 1,400 groups worldwide.

National Organization for SAD, PO Box 40133, Washington DC 20016.

This organization supplies the names of light box companies and other information on seasonal affective disorder.

On the Internet

Mental Health Net (<http://www.cmhc.com/>)

American Academy of Child and Adolescent Psychiatry (<http://www.aacap.org/>)

Information on cognitive therapy (<http://www.cognitivetherapy.com/>)

Internet Mental Health (<http://www.mentalhealth.com/>) is a free encyclopedia of mental health information.

Special Instructions: