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## IV. MENTAL HEALTH

### A. OBJECTIVES

At the end of this course, the primary care nurse will be able to:

1. Define stress
2. Define anxiety
3. Define depression
4. List two physical manifestations of stress
5. List two causal factors for anxiety
6. List two nursing interventions for depression

## B. CURRICULUM OUTLINE

- I. Introduction
  - A. Limits of Workshop
  - B. Role of Primary Care Nurse
  - C. Definitions
  - D. Self Analysis
    - 1. Administer Behavioral/Self Analysis Profile i.e. Disc. MMPT
    - 2. Strength Development Inventory, etc.
- II. Stress
  - A. Definition
  - B. Biological Mechanisms of Acute Stress
  - C. Conditions with Same Symptoms as Stress
    - 1. Anxiety disorders
    - 2. Depression
    - 3. Post-traumatic Stress Symptoms
  - D. Dr. Rahe Life Changes Stress Test or Other Stress Assessment Tool
  - E. General Risk Factors
    - 1. Age
    - 2. Caregivers
    - 3. Angry Personalities
    - 4. Lack of Social Network
    - 5. Work Risk Factors
    - 6. Absent or Inadequate Relaxation Responses
    - 7. Biological Factors
  - F. Negative Effects of Stress
    - 1. Physiologic Effects
      - a. Heart Disease
      - b. Stroke
      - c. Susceptibility to Infections
      - d. Cancer
      - e. Gastrointestinal Problems
      - f. Weight Problems
      - g. Diabetes
      - h. Pain
      - i. Sleep Disorders
      - j. Sexual and Reproductive Disorders
      - k. Memory, Concentration, Learning

1. Allergy-like Symptoms
      - m. Self Medication
    - G. Methods for Reducing Stress Including Relaxation Methods
      1. General Guidelines
      2. Cognitive Behavior Strategies
      3. Professional Help and Medications
      4. Relaxation Techniques
- III. Anxiety Disorders
  - A. Definition
  - B. Symptoms
    1. Generalize Anxiety Disorder SX (GAD)
    2. Panic Disorder SX
    3. Phobic Disorders SX
    4. Obsessive Compulsive Disorder SX
    5. Post Traumatic Stress Disorder SX
  - C. Causes
    1. Biochemical
    2. Family Background
    3. Other Factors
  - D. Who Gets Anxiety Disorders
    1. Age
    2. Gender
    3. Socioeconomic Factors
    4. Risk Factors for Post Traumatic Stress Disorder
  - E. How Serious Are Anxiety Disorders
    1. Increased Risk for Suicide
    2. Effects on Physical Health
    3. Effects on Mood and Relationships
    4. Outlook for Post Traumatic Stress Disorder
  - F. Confirmation of a Diagnosis
    1. Physical Examination and Treatment
    2. Other Conditions that Resemble Anxiety
    3. Diagnostic Tests
  - G. Treatment
    1. Drug Therapy
    2. Cognitive Behavioral Therapy
    3. Other Forms of Psychotherapy
    4. Healthy Lifestyle

## IV. Depression

### Hands Screening Tool

- A. Definition
  - 1. Major Depression
  - 2. Chronic Depression
  - 3. Atypical Depression
  - 4. Seasonal Affective Disorder
  - 5. Premenstrual Dysphoric Disorder
  - 6. Grief
- B. Diagnosis of Depression
- C. Helpful Lifestyle Changes for Depression
  - 1. Diet
  - 2. Exercise
  - 3. Social Support
- D. Drug Treatment
  - 1. General Guidelines
  - 2. Selective Serotonin Reuptake Inhibitors
  - 3. Tricyclic Antidepressants
  - 4. Monoamine Oxidase Inhibitors
  - 5. Other Promising Treatments
- E. Causes
  - 1. Psychosocial Factors
  - 2. Biologic Factors
    - a. Neurotransmitters
    - b. Loss and Trauma
    - c. Hormones
    - d. PMS
    - e. Post Partum
    - f. Endocrine Disorders
    - g. Puberty
    - h. Menopause
    - i. Heart Disease
    - j. Migraine
    - k. Heredity
    - l. Biological Rhythms
    - m. Seasonal Affective Disorder
    - n. Drugs
- F. Who Gets Depressed
  - 1. Women
  - 2. Children

3. Adolescents
4. Elderly

V. Summary – WHO Plan

1. Provide Treatment in Primary Care
2. Make Psychotropic Drugs Available
3. Give Care in the Community
4. Educate the Public
5. Involve Communities, Families and Consumers
6. Establish National Policies, Programs and Legislation
7. Develop Human Resources
8. Link and Other Sectors
9. Monitor Community Mental Health
10. Support Research

## C. CURRICULUM

### Stress, Anxiety, and Depression

#### I. Introduction

A. Limits of the Workshop Not intended to prepare mental health nurses, but to provide skills useful to nurses working in primary care environment.

B. Role of the primary healthcare nurse in assessment intervention and referral of clients/patients and stress.

Anxiety or Depression

#### C. Definitions

1. Stress – Stress describes the biological responses of an organism to adverse stimuli, physical, mental or emotional, internal or external, or some combination of these. Such responses can disrupt normal bodily states.

2. Anxiety – Anxiety is excessive or inappropriate arousal characterized by feelings of apprehension, uncertainty, and fear. The word is derived from the Latin, *angere* which means to choke or strangle. It is often not attributable to a real or appropriate threat and can paralyze the individual into inaction or withdrawal. Anxiety can also be a symptom of other psychologic or medical problems, such as depression, substance abuse, or thyroid disease.

3. Depression – lasting feelings of sadness, helplessness, hopelessness, unworthiness and guilt, inability to feel pleasure, declining school work, changes in eating or sleeping habits

D. Administer Behavioral Assessment Tool of Choice: DISC, MMPI, and Strength Deployment Inventory

1. Administer DISC

2. Score Test

3. General Discussion of Results

## II. Stress – Definition

A. The stress response of the body is somewhat like an airplane readying for take-off. Virtually all systems (e.g., the heart and blood vessels, the immune system, the lungs, the digestive system, the sensory organs, and brain) are modified to meet the perceived danger. Under most circumstances, once the threat has passed, the response becomes inactivated and levels of stress hormones return to normal, a condition called the relaxation response. Life is filled with stress, which can be short-term or long-term (chronic).

1. Acute Stress – Acute stress is the reaction to an immediate threat, commonly known as the *fight* or *flight* response. The threat can be any situation that is experienced, even subconsciously or falsely, as a danger. Common acute stressors include:

- Noise
- Crowding
- Isolation
- Hunger
- Danger
- Infection
- Imagining a threat or remembering a dangerous event

2. Chronic Stress – Frequently, however, modern life poses on-going stressful situations that are not short-lived and the urge to act (to fight or to flee) must be suppressed. Common chronic stressors include:

- On-going highly pressured work
- Relationship problems

### B. **What are the Biological Mechanisms of Acute Stress?**

The best way to envision the effect of acute stress is to imagine oneself in a primitive situation, such as being chased by a bear.

1. The Brain's Response to Acute Stress:

In response to seeing a bear, a part of the brain called the *hypothalamic-pituitary-adrenal* (HPA) system is activated.

2. Release of Steroid Hormones: The HPA systems trigger the production and release of steroid hormones (glucocorticoids), including the primary stress hormone **cortisol**. Cortisol is very important in marshalling systems throughout the body

(including the heart, lungs, circulation, metabolism, immune systems, and skin) to deal quickly with the bear.

3. Release of Catecholamines: The HPA system also releases certain neurotransmitters (chemical messengers) called **catecholamines**, particularly those known as **dopamine**, norepinephrine, and epinephrine (also called adrenaline).

4. Response by the Heart, Lungs, and Circulation to Acute Stress: As the bear comes closer, the heart rate and blood pressure increase instantaneously.

- Breathing becomes rapid and the lungs take in more oxygen.
- Blood flow may actually increase 300% to 400%, priming the muscles, lungs, and brain for added demands. (Such as running away from the bear).
- The spleen discharges red and white blood cells, allowing the blood to transport more oxygen.

5. The immune System's Response to Acute Stress

The effect on the immune system from confrontation with the bear is similar to marshaling a defensive line of soldiers to potentially critical immune factors (including important white blood cells) can be redistributed. These immune-boosting troops are sent to the body's front lines where injury or infection is most likely, such as the skin, the bone marrow, and the lymph nodes.

6. The Acute Response in the Mouth and Throat

As the bear gets closer, fluids are diverted from nonessential locations, including the mouth. This causes dryness and difficulty in talking. In addition, stress can cause spasms of the throat muscles, making it difficult to swallow.

7. The Skin's Response to Acute Stress

The stress effect diverts blood flow away from the skin to support the heart and muscle tissues. (This also reduces blood loss in the event that the bear catches up.) The physical effect is a cool, clammy, sweaty skin. The scalp also tightens so that the hair seems to stand up.

8. Metabolic Response to Acute Stress

Stress shuts down digestive activity, a nonessential body function during short-term periods of physical exertion or crisis.

9. The Relaxation Response: the Resolution of Acute Stress

Once the threat has passed and the effect has not been harmful (i.e., the bear has not eaten or seriously wounded the human), the stress hormones return to normal. This is known as the **relaxation response**. In turn, the body's systems also normalize.

C. What Other Conditions Have the Same Symptoms as Stress?

You may think you're just stressed out, but your symptoms might actually be caused by another condition such as anxiety.

1. Anxiety Disorders

The physical symptoms of anxiety disorders mirror many of those of stress, including a fast heart rate, rapid, shallow breathing, and increased muscle tension. Anxiety is an emotional disorder, however, and is characterized by feelings of apprehension, uncertainty, fear, or panic. Unlike stress, the triggers for anxiety are not necessarily or even usually associated with specific stressful or threatening conditions. Some individuals with anxiety disorders have numerous physical complaints, such as headaches, gastrointestinal disturbances, dizziness, and chest pain. Severe cases of anxiety disorders are debilitating, and interfere with career, family, and social spheres.

2. Depression

Depression can be a disabling condition, and, like anxiety disorders, may result from untreated chronic stress. Depression also mimics some of the symptoms of stress, including changes in appetite, sleep patterns, and concentration. Serious depression, however, is distinguished from stress by feelings of sadness, hopelessness, loss of interest in life, and, sometimes, thoughts of suicide. Acute depression is also accompanied by significant changes in the patient's functioning. Professional therapy may be needed in order to determine if depression is caused by stress or if it is the primary problem.

3. Post-Traumatic Stress Disorder Symptoms

Post-traumatic stress disorder (PTSD) is a reaction to a very traumatic event; it is actually classified as an anxiety disorder. The event that precipitates PTSD is usually outside the norm of human experience, such as intense combat or sexual assault. The patient struggles to forget the traumatic event and

frequently develops emotional numbness and event related amnesia. Often, however, there is a mental flashback, and the patient re-experiences the painful circumstance in the form of intrusive dreams and disturbing thoughts and memories, which resemble or recall the trauma. Other symptoms may include lack of pleasure in formerly enjoyed activities, hopelessness, irritability, mood swings, sleep problems, inability to concentrate, and an excessive startle-response to noise.

D. Does the occurrence of events correlate with illness?

What is the relationship between stressful life experiences and disease?

Dr. Holmes and Dr. Rahe developed, *the Social Readjustment Rating Scale* (SRRS). They had hypothesized that stressful events would be positively correlated with illness. The SRRS demonstrated a positive correlation between people who reported stressful events and their increased chances of becoming ill. Take the inventory below and calculate your score manually which is found below.

<i>Death of Spouse</i>	<i>100</i>	<i>Divorce</i>
<i>Marital separation</i>	<i>65</i>	<i>Jail term</i>
<i>Death of close family member</i>	<i>63</i>	<i>Personal injury or illness</i>
<i>Marriage</i>	<i>50</i>	<i>Fired at work</i>
<i>Marriage reconciliation</i>	<i>45</i>	<i>Retirement</i>
<i>Change in health of family member</i>	<i>44</i>	<i>Pregnancy</i>
<i>Sexual dysfunction</i>	<i>39</i>	<i>Gain of new family member</i>
<i>Business readjustment</i>	<i>38</i>	<i>Change in financial status</i>
<i>Death of a close friend</i>	<i>37</i>	<i>Change of different line of work</i>
<i>Change in number of arguments with spouse</i>	<i>35</i>	<i>Mortgage over \$10,000</i>
<i>Foreclosure of mortgage or loan</i>	<i>30</i>	<i>Change in responsibilities at work</i>
<i>Son or daughter leaving home</i>	<i>29</i>	<i>Trouble with in-laws</i>
<i>Outstanding personal achievement</i>	<i>28</i>	<i>Spouse begins or stops work</i>
<i>Begin or end school</i>	<i>26</i>	<i>Change in living conditions</i>
<i>Revision of personal habits</i>	<i>24</i>	<i>Trouble with boss</i>
<i>Change in work hours or conditions</i>	<i>20</i>	<i>Change in residence</i>
<i>Change in schools</i>	<i>20</i>	<i>Change in recreation</i>
<i>Change in Church activities</i>	<i>19</i>	<i>Change in social activities</i>
<i>Mortgage or loan less than \$10,000</i>	<i>17</i>	<i>Change in sleeping habits</i>
<i>Change in number of family get-togethers</i>	<i>15</i>	<i>Change in eating habits</i>
<i>Vacation</i>	<i>13</i>	<i>Christmas</i>
<i>Minor violation of the law</i>	<i>11</i>	

To find your score, check the events applying to you during the past 12 months. Then add up the total value.  
Your total score \_\_\_\_\_

Some stress is necessary for life, but too much may be harmful according to the Holmes-Rahe scale developed by Dr. Thomas Holmes and Richard H. Rahe at the University of Washington Medical School. The scale suggests that a person scoring less than 150 on a scale has only 50 percent chance of becoming ill during the next two years. A score of 150 and above raises the odds of illness to 90 percent

What does this index suggest for you? Does it seem accurate to your? Why or why not? What do you think that the duration and intensity of the event have to do with stress? What does an individual's perception have to do with the stress? What are the strengths in attempting to develop a stress scale and what are some of the pitfalls? What research questions, does the scale raise?

#### E. General Risk Factors

At some point in their lives virtually everyone will experience stressful events or situations that overwhelm their natural coping mechanisms. In one pool, 89% of respondents indicated that they had experienced serious stress in their lives. Many factors influence susceptibility to stress. Studies indicate that the following people are most vulnerable to the effects of stress:

- Younger adults.
- Women in general. (Women, in fact, may be at higher risk than men are from stress-related chest pain, although men's hearts may be more vulnerable to adverse effects from long-term stress, such as from their jobs.)
- Working mothers. (Working mothers, regardless of whether they are married or single, face higher stress levels, not so much in the work place but at home. Such stress may also have a domino and harmful effect on their children.)
- Less educated individuals.
- Divorced or widowed individuals. (A number of studies indicate that unmarried people generally do not live as long as their married contemporaries.)
- The unemployed.
- Isolated individuals.
- People who are targets of racial or sexual discrimination.
- People who live in cities.

## 1. Age: The Very Young and the Elderly

*Children.* Children are frequent victims of stress because they are often unable to communicate their feelings accurately or their responses to events over which they have no control. One study suggested that the probability of childhood behavioral difficulties in a boy is increased with the number and type of family stressors encountered in the home. Depressed or aggressive mothers are particularly powerful sources of stress, even more important than poverty or overcrowding. Adolescent boys and girls experience equal amounts of stress, but from different causes. Girls tend to become stressed from interpersonal situations and boys from events, such as changing schools or poor grades. Stress is more likely to lead to depression in girls than in boys.

*Elderly.* As people age, the ability to achieve a relaxation response after a stressful event becomes more difficult. Aging may simply wear out the systems in the brain that respond to stress, so that they become inefficient. The elderly, too, are very often exposed to major stressors such as medical problems, the loss of a spouse and friends, a change in a living situation, and financial worries.

## 2. Caregivers

*Caregivers of Family Members.* Studies show that caregivers of physically or mentally disabled family members are at risk for chronic stress. Spouses caring for a disabled partner are particularly vulnerable to a range of stress-related health threats including influenza, depression, heart disease, and even poorer survival rates. Caring for a spouse with even minor disabilities can induce severe stress. (Intervention programs that are aimed at helping the caregiver approach the situation positively can be very helpful at reducing stress and helping the caregiver maintain a positive attitude.) Wives experience significantly greater stress from caregiving than husbands, and, according to a 2000

study, tend to feel more negative about their husbands than caregiving husbands feel about their wives. (Interestingly, 1999 research suggested that women caregivers taking hormone replacement therapy experienced significantly less stress [and risk for cardiovascular disease] than other caregivers.)

Specific risk factors that put caregivers at higher risk for severe stress or stress-related illnesses include the following:

- Having a low income.
- Being African American. African Americans tend to be in poorer physical health than Caucasians and so face greater stress as caregivers to their spouses than their Caucasian counterparts.)
- Living alone with the patient.
- Helping a highly dependent patient.
- Having a difficult relationship with the patient.  
*(Some of these factors are applicable to people living in the U.S.)*

*Health Professional Caregivers.* Caregiving among the health professionals is also a high risk factor for stress. One 2000 study, for example, found that registered nurses with low job control, high job demands, and low work-related social support experienced very dramatic health declines, both physically and emotionally.

### 3. Angry Personalities

An angry or hostile response to stressful situations may be dangerous. Studies in 1998 and 2000 have reported an association among women between anger, irritability, and hostility and narrowing of the arteries, a major risk factor for heart disease. The 1998 study reported that being self-conscious in public and suppressing anger were also associated with this risk. A 1999 study further reported a link in older women between long term anger and the development of abnormal obesity (the so-called apple shape), and important risk factor for heart diseases.

Although the anger effect has been mostly observed in women, some experts suggest that men may be less likely to express or talk about anger in front of their physicians.

#### 4. Lack of Social Network

The lack of an established network of family and friends predisposes one to stress disorders and stress-related health problems, including heart disease and infections. And, a 2000 study reported that older people who maintain active relationships with their adult children are buffered against the adverse health effects of chronic stress-inducing situations, such as low income or lower social class. One study suggested this may be because people who live alone are unable to discuss negative feelings and so relieve their stress.

#### 5. Work Risk Factors

Among the intense stressors at work are the following:

- Having no participation in decisions that affect one's responsibilities.
- Unrelenting and unreasonable demands for performance.
- Lack of effective communication and conflict-resolution methods among workers and employers.
- Lack of job security.
- Long hours.
- Excessive time spent away from home and family.
- Office politics and conflicts between workers.
- Wages not commensurate with levels of responsibility.

#### 6. An absent or Inadequate Relaxation Response

In some people, stress hormones remain elevated instead of returning to normal levels. This may occur in highly competitive athletes or people with a history of depression.

## 7. Biologic Factors

In a 1999 study scientists reported the discovery of a small protein in the brain (orphanin FQ/nociceptin) that plays an important role in the stress response. Animals with a genetic deficiency in this protein are unable to manage stress response and exhibit over-anxious behavior in response to new situations. Future research may reveal similar findings in humans.

### F. What are the Negative Effects of Stress?

In prehistoric times, the physical changes in response to stress were an essential adaptation for meeting natural threats. Even in the modern world, the stress response can be an asset for raising levels of performance during critical events such as a sports activity, an important meeting, or in situations of actual danger or crisis.

If stress becomes persistent and low-level, however all parts of the body's stress apparatus (the brain, heart, lungs, vessels and muscles) become chronically over or under-activated. This may produce physical or psychologic damage over time. Acute stress can also be harmful in certain situations. Circumstances that are most likely to produce negative physical effects include:

- An accumulation of persistent stressful situations (for example, high-pressured work plus an unhappy relationship).
- Persistent stress following a severe acute response to a traumatic event (such as an automobile accident).
- An inefficient or insufficient relaxation response.
- Acute stress in people with serious illness, such as heart disease.

### 1. Physiological Effects of Stress

Studies suggest that severe stress is associated with the onset of depression or anxiety. In one study, subjects who experienced a stressful situation had nearly six times the risk of developing depression within that month. (In about a third of cases, however, the stress itself was not the cause of the depression. Experts guess that people genetically predisposed to depression also may have a tendency to become involved in high-stress

situations.) Certainly, stress diminishes the quality of life by reducing feelings of pleasure and accomplishment, and relationships are often threatened.

a. Heart Disease

Mental stress is as major a trigger for angina as physical stress. Incidents of acute stress have been associated with a higher risk for serious cardiac events, such as heart rhythm abnormalities and heart attacks, and even death from such events in people with heart disease.

Stress may negatively affect the heart in several ways:

- Sudden stress increases the pumping action and rate of the heart and causes the arteries to constrict, thereby posing a risk for blocking blood flow to the heart.
- Emotional effects of stress alter the heart rhythms and pose a risk for serious arrhythmias in people with existing heart rhythm disturbances.
- Stress causes blood to become stickier (possibly in preparation of potential injury), increasing the likelihood of an artery-clogging blood clot.
- Stress may signal the body to release fat into the bloodstream, raising blood-cholesterol levels, at least temporarily.
- Stress may lead to increased levels of homocysteine in the blood, a factor now strongly associated with heart disease.
- In women, chronic stress may reduce estrogen levels, which are important for cardiac health.
- Stressful events may cause men and women who have relatively low levels of the neurotransmitter serotonin (and therefore a higher risk for depression or anger) to produce more of certain immune system proteins (called *cytokines*), which in high amounts cause inflammation and damage to cells, including possibly heart cells.
- Stress causes a sudden and temporary increase in blood pressure, although long-term effects are not completely known. In one 20-year study, men

who periodically measured highest in the stress scale were twice as likely to have high blood pressure as those with normal stress. The effects of stress on blood pressure in women were less clear. People who regularly experience sudden increases in blood pressure caused by mental stress may, over time, develop injuries in the inner lining of their blood vessels.

More research is needed to confirm the actual harm of stress on the heart. For example, one study of people who work under demanding conditions suggested that heart disease, including high blood pressure, attributed to work stress may simply be due to the way people cope with the stress. People who are trying to deal with stress often resort to unhealthy habits including high-fat and high-salt diets, tobacco use, alcohol abuse, and a sedentary lifestyle. In one study, men were more apt to use alcohol or eat less healthily in response to stress, while women tended to have healthier ways of coping.

b. Stroke

One survey revealed that men who had a more intense response to stressful situations, such as waiting in line or problems at work, were more likely to have strokes than those who did not report such distress. In some people prolonged or frequent mental stress causes an exaggerated increase in blood pressure. Over time, this effect has been linked to thickening of the carotid arteries, which carry blood to the front half of the brain. Blockage and injury in these arteries are primary causes of stroke.

c. Susceptibility to Infections

Chronic stress appears to blunt the immune response and increase the risk for infections. (In some studies, stressful events most linked with a higher incidence of infections were interpersonal conflicts, such as those at work or in a marriage.) A number of studies have shown that subjects under chronic stress have low white blood

cell counts and are vulnerable to colds. And once any person catches a cold or flu, stress can exacerbate symptoms. Even more serious, some research has found that HIV-infected men with high stress levels progress more rapidly to AIDS when compared to those with lower stress levels. (Support groups can help reduce this stress.)

d. Cancer

The weight of current evidence does not support to the idea that stress causes cancer. Nevertheless, some animal studies suggest that the negative effects of stress on immune function may contribute to increasing the severity of existing cancers.

e. Gastrointestinal Problems

General Gastrointestinal Symptoms. Over the long term, prolonged exposure to stressors may cause diarrhea, constipation, cramping, and bloating. Excessive production of digestive acids in the stomach may cause a painful burning.

1. *Irritable Bowel Syndrome.* Irritable bowel syndrome (or spastic colon) is strongly related to stress. With this condition, the large intestine becomes irritated, and its muscular contractions are spastic rather than smooth and wave like. The abdomen is bloated and the patient experiences cramping along with constipation, diarrhea, or alternating periods of each. Sleep disturbances due to stress can further exacerbate irritable bowel syndrome.

2. *Peptic Ulcers.* It is now well established that most peptic ulcers are either caused by the *H. pylori* bacteria or by the use of nonsteroidal anti-inflammatory (NSAID) medications (such as aspirin and ibuprofen).

Nevertheless, studies still suggest that stress may predispose someone to ulcers or sustain existing ulcers. Some experts, in fact, estimate that social and psychologic factors play some contributing role in 30% to 60% of peptic ulcer cases, whether they are caused by *H. pylori* or NSAIDS. In any case, some experts believe that the anecdotal relationship between stress and ulcers

is so strong that attention to psychological factors is still warranted.

3. *Inflammatory Bowel Disease.* Although stress is not a cause of inflammatory bowel disease (Crohn's disease or ulcerative colitis), there are reports of an association between stress and symptom flare-ups. One study, for example, found that while short term (past month) stress did not significantly exacerbate ulcerative colitis symptoms, long term perceived stress tripled the rate of flare-up compared to patients who did not report feelings of stress.

f. Weight Problems

1. *Weight Loss.* Some people suffer a loss of appetite and lose weight. In rare cases, stress may trigger hyperactivity of the thyroid gland, stimulating appetite but causing the body to burn up calories at a faster than normal rate.

2. *Weight Gain.* Others, however, develop cravings for salt, fat, and sugar to counteract tension and, thus, may gain weight. And the weight gained from such stress-related eating is often abdominal fat, a predictor of diabetes and heart problems. Even with a healthy diet, stress appears to be associated with abnormal obesity.

g. Diabetes

Chronic stress has been associated with the development of insulin-resistance, a condition in which the body is unable to use insulin effectively to regulate glucose (blood sugar). Insulin-resistance is a primary factor in diabetes. Stress can also exacerbate existing diabetes by impairing the patient's ability to manage the disease effectively.

h. Pain

1. *Muscular and Joint Pain.* Chronic pain caused by arthritis and other conditions may be intensified by stress. Back pain is also a common complaint. Some studies have clearly associated job dissatisfaction and depression to back problems, although it is still unclear if stress is a direct cause of the back pain.

2. *Headaches.* Tension-type headache episodes are highly associated with stress and stressful events.

(Sometimes the headache doesn't even start until long after a stressful event is over.) Some research suggests that tension-type headache victims may actually have some biological predisposition for translating stress into muscle contraction. Among the wide range of possible migraine triggers is emotional stress (although the headaches often erupt after the stress has eased). One study suggested that women with migraines tend to have personalities that over-respond to stressful situations.

i. Sleep Disturbances

The tensions of unresolved stress frequently cause insomnia, generally keeping the stressed person awake or causing awakening in the middle of the night or early morning.

j. Sexual and Reproductive Dysfunction

1. *Sexual Function.* Stress can lead to diminished sexual desire and an inability to achieve orgasm in women. Stress response can also cause temporary impotence in men. Part of the stress response involves the release of brain chemicals that constrict the smooth muscles of the penis and its arteries. This constriction reduces the blood flow into and increases the blood flow out of the penis, which can prevent erection.

2. *Premenstrual Syndrome.* Some studies indicate that the stress response in women with premenstrual syndrome may be more intense than in those without the syndrome.

3. *Fertility.* Stress may even affect fertility. Stress hormones have an impact on the hypothalamus gland, which produces reproductive hormones. Severely elevated cortisol levels can even shut down menstruation. One interesting small study reported a significantly higher incidence of pregnancy loss in women who experienced both high stress and prolonged menstrual cycles. Another reported that women with stressful jobs had shorter periods than women with low-stress jobs.

4. *Effects on Pregnancy.* Old wives' tales about a pregnant woman's emotions affecting her baby may have some credence. Maternal stress during pregnancy has been linked to a 50% higher risk for miscarriage. It is

also associated with lower birth weights and increased incidence of premature births, both of which are risk factors for infant mortality. One study suggested that stress experienced by expectant mothers can even influence the way in which the baby's brain and nervous system will react to stressful events. Stress may cause physiologic alterations, such as increased adrenal hormone levels or resistance in the arteries that may interfere with normal blood flow to the placenta.

k. Memory, Concentration, and Learning

Stress has significant effects on the brain, particularly on memory. The typical victim of severe stress suffers loss of concentration at work and at home and may become inefficient and accident-prone. Severe stress may even break down the blood-brain barrier, a physiological mechanism that helps protect the brain from toxins, bacteria, and other potentially harmful substances that may be carried in blood.

1. *Effect of Acute Stress on Memory.* Studies indicate that the immediate effect of acute stress is to impair short-term memory, particularly verbal memory. In one interesting 2000 study, subjects took pills containing either cortisone, a stress hormone, or a placebo (a dummy pill). Those taking the cortisone performed significantly worse on memorization tests than those taking the placebo pill did. In an earlier study, when individuals were subjected to four days of stress, verbal memory was also impaired. Fortunately, in such cases, memory is restored after a period of relaxation.

2. *Effect of Chronic Stress on Memory in Adults.*

Although some memory loss occurs with age, stress may play an even more important role than simple aging in this process. In one study older people with low stress hormone levels tested as well as younger people in cognitive tests: those with higher stress levels tested between 20% and 50% lower. Prolonged exposure to cortisol (the major stress hormone) is now believed to actually damage brain cells in the hippocampus. Two studies reported that groups who suffered from post-traumatic stress disorder (Vietnam veterans and women

who suffered from sexual abuse) displayed up to 8% shrinkage in the hippocampus. It is now yet known if this shrinkage is reversible.

### 3. *Effect of Chronic Stress on Learning in Children.*

In children, the physiologic responses to stress can clearly inhibit learning. A 1999 study of middle school children found that training in stress and anger management led to significant improvements in the children's emotional balance, focus, and relationships.

#### l. Allergy-Like Reactions

Research suggests that stress, not indoor pollutants, may actually be a cause of the so-called sick-building syndrome, which produces allergy-like symptoms, such as eczema, headaches, asthma, and sinus problems, in office workers. Stress plays a role in exacerbating a number of skin conditions, including hives, psoriasis, acne, rosacea, and eczema. Unexplained itching may also be caused by stress

#### m. Self-Medication with Unhealthy Lifestyles

People under chronic stress frequently seek relief through drug or alcohol abuse, tobacco use, abnormal eating patterns, or passive activities, such as watching television. The damage these self-destructive habits cause under ordinary circumstances is compounded by the physiologic effects of stress itself. And the cycle is self-perpetuating; a sedentary routine, an unhealthy diet, alcohol abuse, and smoking promote heart disease, interfere with sleep patterns, and lead to increased rather than reduced tension levels. Drinking four or five cups of coffee, for example, can cause changes in blood pressure and stress hormone levels similar to those produced by chronic stress. Animal fats, simple sugars, and salt are known contributors to health problems.

## G. METHODS FOR REDUCING STRESS

### 1. General Guidelines

Perhaps the best general approach for treating stress, can be found in the elegant passage by Reinhold Niebuhr, "Grant me the courage to change the things I can change, the serenity to accept the things I can't change, and the wisdom to know the

difference.” The process of learning to control stress is life-long, and will not only contribute to better health, but a greater ability to succeed in one’s own agenda.

In choosing specific strategies for treating stress, several factors should be considered.

- First, no single method is uniformly successful: a combination of approaches is generally most effective.
  - Second, what works for one person does not necessarily work for someone else.
  - Third, stress can be positive as well as negative. Appropriate and controllable stress provides interest and excitement and motivates the individual to greater achievement, while a lack of stress may lead to boredom and depression.
  - Finally, stress may play a part in making people vulnerable to illness. A physician or psychologist should be consulted if there are any indications of accompanying medical or psychologic conditions, such as cardiac symptoms, significant pain, anxiety, or depression.
- a. *Overcoming Obstacles to Treatment.* Often people succeed in relieving stress for the short-term but resort to previous ways of stressful thinking and behaving because of outside pressure or entrenched beliefs or habits.
- One major obstacle to reducing stress is the strong biologic urge for fight or flight itself. The very idea of relaxation can feel threatening, because it is perceived as letting down one’s guard. For example, an over-demanding boss may put a subordinate into a psychologic state of fighting-readiness, even though there is no safe opportunity for the subordinate to fight back, or even express anger. Stress builds up, but the worker has the illusion, even subconsciously, that the stress itself is providing safety or preparedness, so does nothing to correct the condition.
  - Many people are afraid of being perceived as selfish if they engage in stress-reducing activities that benefit only themselves. The truth is that self-sacrifice may be

inappropriate and even damaging if the person making the sacrifice is unhappy, angry, or physically unwell.

- Many people believe that certain emotional responses to stress, such as anger, are innate and unchangeable features of personality. Research has shown, however, that with cognitive behavioral therapy, individuals can be taught to change their emotional reactions to stressful events.

It is essential to remember that reducing stress and staying relaxed clears the mind so it can initiate appropriate actions to get rid of the stress.

- b. *Healthy Lifestyle.* A healthy lifestyle is an essential companion to any stress-reduction program. General health and stress resistance can be enhanced by a regular exercise, a diet rich in a variety of whole grains, vegetables, and fruits, and by avoiding excessive alcohol, caffeine, and tobacco.
- c. *Stress Reduction and Disease Management.* It should be strongly noted that treating stress cannot cure medical problems. Any stress management program is not a substitute for standard medical treatments, but it can be a very important component in a medical regimen. Some evidence exists, for example, that stress management programs may reduce the risk of heart events (e.g., heart attack) by up to 75% in people with heart disease. One study found that stress management programs are even more effective than exercise in reducing heart risks (although exercise is also protective).

## 2. Cognitive-Behavioral Techniques

Cognitive-behavioral methods are the most effective ways to reduce stress. They include identifying sources of stress, restructuring priorities, changing one's response to stress, and finding methods for managing and reducing stress.

- a. *Identifying Sources of Stress.* It is useful to start the process of stress reduction with a diary that keeps an informal inventory of daily events and activities. While

this exercise might itself seem stress producing (and yet one more chore), it need not be done in painstaking detail. A few words accompanying a time and date will usually be enough to serve as reminders of significant events or activities.

- The first step is to note activities that put a strain on energy and time, trigger anger or anxiety, or precipitate a negative physical response (e.g., a sour stomach or headache).
- Also note positive experiences, such as those that are mentally or physically refreshing or produce a sense of accomplishment.
- After a week or two, try to identify two or three events or activities that have been significantly upsetting or overwhelming.

b. *Questioning the Sources of Stress.* Individuals should then ask themselves the following questions:

- Do these stressful activities meet their own goals or some else's?
- Have they have taken on tasks that they can reasonably accomplish?
- Which tasks are in their control and which ones aren't?

c. *Restructuring Priorities. Adding Stress Reducing Activities.* The next step is to attempt to shift the balance from stress-producing to stress-reducing activities. Eliminating stress is rarely practical or feasible, but there are many ways to reduce its impact. One study indicated, in fact, that adding daily pleasant events has more positive effects on the immune system than reducing stressful or negative ones. In most cases, small daily decisions for improvement accumulate and reconstruct a stressed existence into a pleasant and productive one.

Consider as many relief options as possible. Examples include the following:

- If the source of stress is in the home, plan times away, even if it is only an hour or two a week.
- Replace unnecessary time-consuming chores with pleasurable or interesting activities.

- Make time for recreation. (This is as essential as paying bills or shopping for groceries.)
- d. *Discuss Feelings.* The concept of communication and “letting your feelings out” has been so excessively promoted and parodied that it has nearly lost its value as good psychologic advice. Nevertheless, feelings of anger or frustration that are not expressed in an acceptable way may lead to hostility, a sense of helplessness, and depression.

Expressing feelings does not mean venting frustration on waiters and subordinates, boring friends with emotional minutia, or wallowing in self-pity. In fact, because blood pressure may spike when certain chronically hostile individuals become angry, some therapists strongly advise that just talking, not simply venting anger, is the best approach, especially for these people.

The primary goal is to explain and assert one’s needs to a trusted individual in as positive a way as possible. Direct communication may not even be necessary. Writing in a journal, writing a poem, or composing a letter that is never mailed may be sufficient.

Expressing one’s feelings solves only half of the puzzle. Learning to listen, empathize, and respond to others with understanding is just as important for maintaining the strong relationships necessary for emotional fulfillment and reduced stress.

e. *Keep Perspective and Look for the Positive*

Reversing negative ideas and learning to focus on positive outcomes helps reduce tension and achieve goals. The following steps using an example of a person who is alarmed at the prospect of giving a speech may be useful:

- First, identify the worst possible outcomes (forgetting the speech, stumbling over words, humiliation, audience contempt).
- Rate the likelihood of these bad outcomes happening (probably very low or that speaker wouldn’t have been selected in the first place).

- Envision a favorable result (a well-rounded, articulate presentation with rewarding applause).
- Develop a specific plan to achieve the positive outcome (preparing in front of a mirror, using a video camera or tape recorder, relaxation exercises).
- Try to recall previous situations that initially seemed negative but ended well.

*f. Use Humor.* Keeping a sense of humor during difficult situations is a common recommendation from stress management experts. Laughing releases the tension of pent-up feelings and helps keep perspective. Research has shown that humor is a very effective mechanism for coping with acute stress. It is not uncommon for people to recall laughing intensely even during tragic events, such as the death of a loved one, and to remember this laughter as helping them to endure the emotional pain.

*g. Benefits for the Stressed Person.* Exercise in combination with stress management techniques is extremely important for many reasons:

effective distraction from stressful events.

Employees who follow an active lifestyle need fewer sick and disability days than sedentary workers.

And most importantly, stress itself poses significantly less danger to overall health in the physically active individual.

The heart and circulation are able to work harder for longer stretches of time, and the muscles, ligaments, bones, and joints become stronger and more flexible.

*h. Best Exercises for Stress.* Usually, a varied exercise regime is more interesting, and thus easier to stick to. Start slowly. Strenuous exercise in people who are not used to it can be very dangerous and any exercise program should be discussed with a physician. In addition, half of all people who begin a vigorous training regime drop out within a year.

The key is to find activities that are exciting, challenging, and satisfying. The following are some suggestions:

- Sign up for aerobics classes at a gym.

- Brisk walking is an excellent aerobic exercise that is free and available to nearly anyone. Even *short* brisk walks can relieve bouts of stress.
- Swimming is an ideal exercise for many people including pregnant women, individuals with musculoskeletal problems, and those who suffer exercise-induced asthma.
- Yoga or Tai Chi can be very effective, combining many of the benefits of breathing, muscle relaxation, and meditation while toning and stretching the muscles. The benefits of yoga may be conditions in which stress is an important factor, such as anxiety, headaches, high blood pressure, and asthma. It also elevates mood and improves concentration and ability to focus.

As in other areas of stress management, making a plan and executing it successfully develops feelings of mastery and control, which are very beneficial in and of themselves. Start small. Just 10 minutes of exercise three times a week can build a good base for novices. Gradually build up the length of these every-other-day sessions to 30 minutes or more.

Strengthen or establish a support network.

Studies of people who remain happy and healthy despite many life stresses conclude that most have very good networks of social support. One study indicated that support even from strangers reduced blood pressure surges in people undergoing a stressful event. Many studies suggest that having a pet helps reduce medical problems aggravated by stress, including heart disease and high blood pressure.

### 3. Professional Help and Medications

Stress can be a factor in a variety of physical and emotional illnesses, which should be professionally treated. Many stress symptoms are mild and can be managed by over the counter medications, e.g., aspirin, acetaminophen, or ibuprofen for tension headache and antacids, and anti-diarrhea medications or laxatives for mild stomach distress. A physician should be consulted, however, for physical symptoms that are out of the ordinary, particularly those which progress in severity or

awaken one at night. A mental health professional should be consulted for unmanageable acute stress or for severe anxiety or depression. Often short-term therapy can resolve stress-related emotional problems.

4. **Relaxation Techniques**

Since stress is here to stay, everyone needs to develop methods for invoking the relaxation response, the natural unwinding of the stress response. Relaxation lowers blood pressure, respiration, and pulse rates, releases muscle tension, and eases emotional strains. This response is highly individualized, but there are certain approaches that seem to work. Combinations are probably best. For example, in a study of children and adolescents with adjustment disorder and depression, a combination of yoga, a brief massage, and progressive muscle relaxation effectively reduced both feelings of anxiety and stress hormone levels. No one should expect a total resolution of stress from these approaches, but if done regularly, these programs can be very effective.

**EXERCISE**

<b>Relaxation Methods</b>	<b>Specific Procedure</b>
<p><b>Deep Breathing Exercise.</b> During stress, breathing becomes shallow and rapid. Taking a deep breath is an automatic and effective technique for winding down. Deep breathing exercises consciously intensify this natural physiologic reaction and can be very useful during a stressful situation, or for maintaining a relaxed state during the day.</p>	<p>Inhale through the nose slowly and deeply to the count of ten</p> <p>Make sure that the stomach and abdomen expand but the chest does not raise up.</p> <p>Exhale through the nose slowly and completely, also to the count of ten.</p> <p>To help quiet the mind, concentrate fully on breathing and counting through each cycle.</p>

	<p>Repeat five to ten times and make a habit of doing the exercise several times each day, even when not feeling stressed.</p>
<p><b>Muscle Relaxation.</b> Muscle relaxation techniques, often combined with deep breathing, are simple to learn and very useful for getting to sleep. In the beginning it is useful to have a friend or partner check for tension by lifting an arm and dropping it; the arm should fall freely. Practice makes the exercise much more effective and produces relaxation much more rapidly.</p>	<p>After lying down in comfortable position without crossing the limbs, concentrate on each part of the body.</p> <p>Maintain a slow deep breathing pattern throughout this exercise.</p> <p>Tense each muscle as tightly as possible for a count of five to ten and then release it completely.</p> <p>Experience the muscle as totally relaxed and lead-heavy.</p> <p>Begin with the top of the head and progressing downward to focus on all the muscles in the body.</p> <p>Be sure to include the forehead, ears, eyes, mouth, neck, shoulders, arms and hands, fingers, chest, belly thighs, calves, and feet.</p> <p>Once the external review is complete, begin tensing and releasing internal muscles.</p>

**Meditation.** Meditation, used for many years in Eastern cultures, is now widely accepted in this country as a relaxation technique. The goal of all meditative procedures, both religious and therapeutic, is to quiet the mind (essentially, to relax thought). With practice, meditation reduces stress hormone levels and elevates mood. The practiced mediator can achieve a reduction in heart rate, blood pressure, adrenaline levels, and skin temperature while meditating.

Some recommend meditating for no longer than 20 minutes in the morning after awakening and then again in early evening before dinner. Even once a day is helpful. (One should probably not meditate before going to bed: some people who meditate before sleep wake up in the middle of the night alert and unable to return to sleep.)

New practitioners should understand that it can be difficult to quiet the mind, and should not be discouraged by lack of immediate results.

A number of techniques are available. A few are discussed here.

*Mindfulness Meditation.* Mindfulness is a common practice that focuses on breathing. It employs the basic technique used in other forms of meditation.

Sit upright with the spine straight, either cross-legged or sitting on a firm chair with both feet on the floor, uncrossed.

With the eyes closed or looking a few feet ahead, observe the exhalation of the breath.

As the mind wanders, one simply notes it as a fact and returns to the “out” breath. It may be helpful to imagine one’s thoughts as clouds dissipating away.

Transcendental Meditation™. TM uses a mantra (a word that has a specific changing sound but no meaning). The mediator repeats the word while you silently let thoughts come and go.

*Mini-Meditation.* The method involves heightening awareness of the immediate surrounding environment.

	<p>Choose a routine activity when alone. For example:</p> <p>While washing dishes concentrate on the feel of the water and dishes.</p> <p>Allow the mind to wander to any immediate sensory experience (sounds outside the window, smells from the stove, colors in the room).</p> <p>If the mind begins to think about the past or future, abstractions or worries, redirect it gently back.</p> <p>This redirection of brain activity from your thoughts and worries to your senses disrupts the stress response and prompts relaxation. It also helps promote an emotional and sensual appreciation of simple pleasures already present in a person's life.</p>
<p><b>Massage Therapy.</b> Massage therapy appears to slow down the heart and relax the body. Rather than causing drowsiness, however, massage actually increases alertness. A number of massage therapies are available and some are listed here.</p>	<p><i>Swedish massage</i> uses muscle manipulation. It is the standard massage technique and is widely available.</p> <p><i>Shiatsu</i> applies intense pressure to parts of the</p>

	<p>body. It can be painful, but people report deep relaxation afterward.</p> <p><i>Reflexology</i> manipulates acupuncture points in the hands and feet.</p>
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### III. Anxiety Disorders

#### A. What are Anxiety Disorders?

Anxiety disorders are the most common psychiatric condition in the United States. About 25 million Americans experience anxiety disorders at some time during their lives; the lifetime risk for an anxiety disorder is nearly 25%. Nevertheless, only about a quarter of those who experience this problem seek help. In recent years, a number of different anxiety disorders have been classified; the two primary ones are generalized anxiety disorder (GAD), which include phobias, performance anxiety, obsessive-compulsive disorder (OCD), and post-traumatic stress disorder (PTSD). Anxiety disorders are usually caused by a combination of psychological, physical, and genetic conditions, and treatment is, in general, very effective.

#### B. What are the Symptoms of Anxiety Disorders?

Physically, anxiety is usually expressed through a series of responses that include a rise in blood pressure, a fast heart rate, rapid breathing, and an increase in muscle tension; intestinal blood flow decreases, sometimes resulting in nausea or diarrhea. Specific anxiety disorders are diagnosed based on the severity and duration of symptoms and on additional behavioral characteristics that accompany the symptoms of anxiety.

##### 1. Generalized Anxiety Disorder Symptoms

Generalized anxiety disorder (GAD), which affects about 10 million Americans, is characterized by a more-or-less constant state of tension and anxiety over various situations; this state lasts more than six months despite the lack of an obvious or specific stressor. It is very difficult to control worry. (For a clear diagnosis of GAD, the worries are not those of other anxiety disorders, such as fear of panic attacks or appearing in public, nor are they obsessive as in obsessive-compulsive disorder. It should be noted, however, that over half of those with GAD also have another anxiety disorder or depression.)

Given these conditions, a diagnosis of GAD is confirmed if three or more of the following symptoms are present (only one for children): feeling on edge or very restless; feeling tired; having difficulty with concentration; feeling irritable; having muscle tension; experiencing sleep disturbances. Some of these symptoms occur on most days for six months. Symptoms should cause significant distress and impair normal

## 2. Panic Disorder Symptoms

Panic disorder is characterized by periodic attacks of anxiety or terror, which usually last 15 to 30 minutes, although residual effects can persist much longer. The frequency and severity of acute states of anxiety determine the diagnosis. During a panic attack, a person feels intense fear or discomfort with at least four or more of the following symptoms: rapid heart beat, sweating, shakiness, shortness of breath, a choking feeling, dizziness, nausea, feelings of unreality, numbness, either hot flashes or chills, chest pain, fear of dying, and fear of going insane. A diagnosis of panic disorder is made when a person experiences at least two recurrent, unexpected panic attacks followed by at least one month of fear that another will occur. Frequency of attacks can vary widely. Some people have frequent attacks (for example, every week) that occur for months; others may have clusters of daily attacks followed by weeks or months of remission. Panic attacks may occur spontaneously or in response to a particular situation. If the patient associates fear with harmless circumstances surrounding the original attack, similar circumstances later on may recall the anxiety and trigger additional panic attacks. Panic attacks that include only one or two symptoms, such as dizziness and heart pounding, are known as limited-symptom attacks; these may be either residual symptoms after a major panic attack or precursors to full-blown attacks. (It should be noted that panic attacks occur with other anxiety disorders, including phobias and posttraumatic stress disorder.

## 3. Phobic Disorders Symptoms

Phobias – overwhelming and irrational fears – are common, but they vary in severity. In most cases, people can avoid or at least endure phobic situations, but in some cases, as with agoraphobia, the anxiety associated with the feared object or situation can be incapacitating.

*Agoraphobia.* About half of people with people with panic disorders develop agoraphobia, which has been somewhat misleadingly described as fear of open spaces – the term having been derived from the Greek word *agora*-meaning marketplace. In its severest form, agoraphobia is characterized by a paralyzing terror of being in places or situations from which the patient feels there is no escape or accessible help in case of an attack. (One patient described the terror of going outside as opening a door onto a landscape filled with snakes.) Consequently, agoraphobias confine themselves to places in which they feel safe, usually at home. The patient with agoraphobia often makes complicated plans in order to avoid confronting feared situations and places.

*Social Phobia and Performance Anxiety.* Social phobia is the fear of being publicly scrutinized and humiliated. The associated symptoms vary in intensity, ranging from mild and tolerable anxiety to a full-blown panic attack. Usually, the fear is directed at a particular activity, such as writing in the presence of others or urinating in a public bathroom. Sometimes social phobia is manifested by extreme shyness and discomfort in social settings; frequent blushing, trembling, sweating are typical symptoms. Performance anxiety, or stage fright, is a subset of social phobia that occurs when a person must perform in public; symptoms include pounding heart, dry mouth, and tremor.

*Simple Phobias.* A simple phobia is an irrational fear of specific objects or situations. The most common phobias are fear of animals (usually spiders, snakes, or mice), flying (pterygophobia), heights (acrophobia), water, public transportation, confined spaces (claustrophobia), dentists (odontiatophobia), storms, tunnels, and bridges. When confronting the object or situation, the phobic person experiences panicky feelings, sweating, rapid heart beat, avoidance behavior, and difficulty breathing. Most phobic individuals are aware of the irrationality of their fear, and many endure intense anxiety rather than disclose their disorder. Simple phobias are among the most common medical disorders;

in many mild cases, however, they are not significant enough to require treatment.

#### 4. Obsessive-Compulsive Disorder Symptoms

Obsessive-compulsive disorder (OCD) has been described as hiccups of the mind. Obsessions are recurrent or persistent mental images, thoughts, or ideas, which may result in compulsive behaviors – repetitive, rigid, and self-prescribed routines that are intended to prevent the manifestation of the obsession. Although individuals recognize that the obsessive thoughts and ritualized behavior patterns are senseless and excessive, they cannot stop them in spite of strenuous efforts to ignore or suppress the thoughts or actions. Obsessions and compulsions do not always coexist; however, over half of OCD sufferers have obsessive thoughts without ritualistic behavior.

OCD is time-consuming, distressing, and can disrupt normal functioning. The obsessive thoughts or images can range from mundane worries about whether one has locked a door to bizarre and frightening fantasies of behaving violently toward a loved one. The compulsive acts triggered by such obsessions might include repetitive checking for locked doors or unlit stove burners or calls to loved ones at frequent intervals to be sure they are safe. Some people are compelled to wash their hands every few minutes or spend inordinate amounts of time cleaning their surroundings in order to subdue the fear of contagion. Certain other obsessive disorders, including body dysmorphic disorder (BDD), trichotillomania, and Tourette's syndrome, may be part of the OCD spectrum. In BDD, people are obsessed with the belief that they are extremely ugly. People with trichotillomania continually pull their hair, leaving bald patches. Symptoms of Tourette's syndrome include jerky movements, tics, and uncontrollably uttering obscene words. OCD should not be confused with obsessive-compulsive *personality*, which defines certain character traits (e.g., being a perfectionist, excessively conscientious, morally rigid, and preoccupied with rules and order). These traits do not necessarily occur in people with obsessive-compulsive *disorder*, which is a psychiatric condition.

#### 5. Post-Traumatic Stress Disorder Symptoms

Although post-traumatic stress disorder (PTSD) is primarily a reaction to a traumatic event, it is classified as an anxiety disorder because of the similarity of symptoms. The event that precipitates PTSD is usually thought to be outside the norm of human experience, such as sexual assault or combat. Studies indicate, however, that the condition may be very common. It may develop in people who witness accidents, who are involved with rescues, or who lose loved ones suddenly. It may also occur in people who have serious illness and receive aggressive treatments or who have close family members or friends with such conditions. Symptoms can occur weeks, months, or even years after the traumatic event. The patient struggles to forget the traumatic event and frequently develops emotional numbness and event-related amnesia. Often, however, the PTSD patient suffers a mental flashback and re-experiences the painful circumstance in the form of intrusive dreams or disturbing thoughts and memories, which resemble or recall the trauma. They are often quick to startle or be angry, even from minor matters. Other symptoms may include emotional withdrawal, hopelessness, mood swings, sleep disorders, guilt over surviving the event, inability to concentrate, and an excessive startle response to noise.

C. What Causes Anxiety Disorders?

A person's genetics, biochemistry, environment, and psychologic profile all seem to contribute to the development of anxiety disorders. Most people with these disorders seem to have a biological vulnerability to stress – making them more susceptible to environmental stimuli than the normal population.

1. Biochemical Factors

a. *Abnormalities in the Brain.* Studies suggest that an imbalance of certain substances called neurotransmitters (chemical messengers in the brain) may contribute to anxiety disorders. Advanced imaging techniques have revealed over-activity in the locus ceruleus – the part of the brain important in triggering a response to danger - - in people experiencing anxiety, indicating that some people's brains may be more vulnerable to the disorder. Scientists are now beginning to identify the different areas of the brain associated with specific anxiety responses. For example, mechanisms causing OCD may

be generated in part of the striatum, the portion of the brain involved with motor control. Generalized anxiety and panic disorder, however, are associated with the amygdala, a part of the brain that regulates fear, memory, and emotion and coordinates them with heart rate, blood pressure, and other physical responses to stressful events.

- b. *Chemical Hypersensitivity.* Some people have panic attacks after exposure to certain foods or chemicals, such as those contained in perfumes or hair sprays. Some studies have indicated that many children and adults with anxiety disorders may have a hypersensitive response to high levels of carbon dioxide, which can occur in crowded spaces, such as airplanes or elevators. Injections of lactic acid have also been known to set off panic attacks in people with anxiety, but not in people without it.
- c. *Genetic Factors.* About 20% to 25% of close relatives of people with panic disorder or obsessive-compulsive disorder experience these disorders. Researchers have identified a gene associated with people who have personality traits that include anxiety, anger, hostility, impulsiveness, pessimism, and depression. The gene produces reduced amounts of a protein that transports serotonin, an important neurotransmitter for maintaining positive emotions. (This gene, however, would account for only a very small fraction of people with anxiety disorders.) Genetic mutations that affect other neurotransmitters have also been identified that contribute to obsessive-compulsive disorder. The importance of genetics in GAD is still being investigated. Some experts have identified a genetic defect that affects dopamine, another important neurotransmitter, which appears to cause a syndrome that includes migraine headaches, anxiety, and depression.

## 2. Family Background

- a. *Panic Disorder and Family Influence.* Psychodynamic theories suggest that panic disorder is caused by the inability to solve the early childhood conflict of dependence versus independence. (This theory is backed up by one study reporting that young adults who had

experienced childhood anxiety were more likely to live with their parents until their early to mid-twenties.) Many people with panic disorder perceive their parents as being frightening and extremely controlling. One study reported, however, that the incidence of inconsistent, neglectful, or abusive parenting was higher than average in panic disorder patients only if they also had agoraphobia. In fact, people who have severe agoraphobia with or without panic disorder generally report less parental affection and more strictness, overprotection, and encouragement of dependence than those without these disorders.

- b. *Phobias and Family Influence.* Several studies show a strong correlation between a parent's fears and those of the offspring. Although an inherited trait may be present, some researchers believe that many children can even "learn" fears and phobias just by observing a parent or loved one's phobic or fearful reaction to an event.
- c. *Obsessive Compulsive Disorder and Family Influence.* One recent study found that parental influence played no part in obsessive-compulsive disorder when the patient was also not suffering from depression. (Patients who had both OCD and depression reported lower levels of parental care and over protectiveness.)

### 3. Other Factors

Specific traumatic events in childhood, including abuse – sexual, physical, or both – can later on cause anxiety and other emotional disorders. Some individuals may even have a biological propensity for specific fears, for instance of spiders or snakes, that can be triggered and perpetuated after a single first exposure. A number of studies have reported a strong link between childhood rheumatic fever, which is caused by a streptococcal infection, and the development of tic-related disorders, including OCD and Tourette's syndrome. The effects of alcohol on the developing fetus now appear to increase the risk for mental disorders as well as birth defects.

### D. Who Gets Anxiety Disorders?

Anxiety disorders affect more than 23 million Americans, and as many as 25% of all American adults experience intense anxiety at

sometime in their lives. Anxiety disorders run in families and genetic or biological factors play a role in most forms.

1. Age

Worry is very common among children and is often intense, but only about 5% have anxiety that can be classified as a disorder; moreover, depression is a common companion in such children. Studies have suggested that extremely shy children and those likely to be the target of bullies are at higher risk for developing anxiety disorders later in life. One study suggests that such children could be identified as early as two years of age and possibly treated to avoid later anxiety disorders. Prolonged television viewing also puts children at risk for anxiety, depression, and behavioral problems. Panic disorders tend to begin in late adolescence and peak at around 25 years of age. Signs of obsessive-compulsive disorder (OCD) can occur in childhood but usually develops fully in adulthood. The risk for generalized anxiety disorder spans a lifetime although it appears to be the most common form of anxiety at older ages. One study reported that depression in adolescence was a strong predictor of generalized anxiety disorder (GAD) in adulthood.

2. Gender

Women have twice the risk for most anxiety disorders than men do, although obsessive-compulsive disorder occurs equally in both genders. A number of factors may increase the risk in women, including hormonal factors, cultural pressures to meet everyone else's needs except their own, and less self-restrictions on reporting anxiety to physicians.

3. Socioeconomic Factors

A study of Mexican adults living in California reported that native-born Mexican-Americans were three times more likely to have anxiety disorders (and even more likely to be depressed) as those who had recently immigrated to America. And the longer the immigrants lived in the U.S. the greater was 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 lead to depression and anxiety – probably resulting from feelings of alienation and inferiority – not only in many Mexican Americans, but also in other impoverished

minority groups. While the experience of Mexican Americans is not Transferable to other cultures and groups, it is appropriate to look for increased anxiety in ethnic minority in refugee population.

4. Risk Factors for Post-Traumatic Stress Disorder

Simply experiencing a traumatic event does not predict post-traumatic stress disorder. Studies estimated that between 6% to 28% of trauma survivors develop PTSD. A number of factors increase vulnerability to catastrophic events, include having a psychiatric illness, drug or alcohol abuse, a family history of anxiety, a history of physical or sexual abuse, and an early separation from parents. One study reported that having a pre-existing emotional disorder, particularly depression, before the traumatic event most often predicted PTSD in women. IN a study of female veterans, sexual harassment was four times more likely to cause PTSD than was exposure to military action. Some research suggests that having higher heart rates after a traumatic event may be an indicator of future PTSD.

E. How Serious Are Anxiety Disorders?

1. Increased Risk for Suicide

Studies report that 25% to 30% of people with panic disorder harbor suicidal thoughts at some point. Studies have also reported that 18% of people with panic disorder, 12% of those with social phobias, and 13% of patients with OCD had attempted suicide. Often, these patients had major depression along with their anxiety disorders. Adolescent girls with panic disorders have nearly three times the risk of those without anxiety.

2. Effects on Physical Health

People with panic disorder perceive their own physical and emotional well being as poor and seek medical help more often than do those in the general population. Studies, in fact, have reported that between 25% and 60% of patients with chest pain who see a physician for possible heart problems suffer instead from panic disorder. Any causal connection between anxiety and medical disorders is unclear. Although a 1998 study found no association between coronary artery disease and anxiety in either men or women, anxiety itself may trigger acute events, such as asthma or chest pain. In fact, panic disorders and phobias have been associated with a higher rate of sudden death

from cardiac events. Some researchers speculate that intense anxiety might trigger an abnormal and dangerous heart rhythm, called ventricular fibrillation. Another study indicated that people who experience anxiety are more likely to develop high blood pressure than are those who are not anxious. Both anxiety and depression have been associated with a poor response to treatment in heart patients. Anxiety frequently accompanies medical conditions; for example, half the cases of irritable bowel syndrome are related to anxiety. One study reported that 32% of people with chronic tension headaches met criteria for anxiety; it isn't clear whether the psychologic disorder preceded or followed the onset of headaches. Similarly, another study reported that young girls with anxiety disorder were three times more likely to have chronic headaches than those without the disorder. (Headaches in both these studies were also strongly associated with depression.) No hard evidence exists, however, that anxiety causes these physical problems or that treating anxiety alone will benefit the patient's physical health.

People with obsessive-compulsive disorders can experience skin problems from excessive washing, injuries from repetitive physical acts, and hair loss from repeated hair-pulling, a specific OCD known as trichotillomania.

### 3. Effect on Mood Relationships

People with untreated anxiety are at risk for severe depression and for self-medication with alcohol or drugs. More than two-thirds of OCD patients also suffer from depression. In one survey, 40% of OCD sufferers reported that they had to stop working because of the disorder; only 40% worked full-time, and only half were married. In another, nearly half of those 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.

### 4. Outlook for Post-Traumatic Stress Disorder

The long-term impact of a traumatic event is uncertain. In one study of people who survived a mass killing spree in Texas, nearly less than half of those who suffered PTSD (28% of all survivors) had recovered after a year. Survivors of natural catastrophes, such as earthquakes and hurricanes, appear to have an impaired immune response, which may cause problems

over time. Some studies on people, including military veterans, who have endured major traumatic events have found a higher risk for health problems. A recent study of Vietnam veterans reported that PTSD was associated with greater physical limitations, poorer physical health, and a lower quality of life than in those in the normal population, regardless of other accompanying emotional or medical disorders. One study of twins, however, reported that among those who had served in Vietnam, combat stress increased some hearing and skin problems but had no major impact on health. Certainly PTSD in adolescence poses real dangers, particularly increasing the risk for drugs, alcohol, and eating disorders. Of additional concern is recent study reporting that most adolescents at risk for PTSD are not treated. PTSD may cause actual physical changes in the brain. Two studies reported that Vietnam veterans and women with PTSD who had been sexually abused displayed a 7% to 8% shrinkage in the hippocampus – the part of the brain important for memory and learning. Studies of animals indicate that such damage may result from long-term exposure to cortisol – the major stress hormone. Groups who had suffered severe trauma also scored 40% lower in tests of verbal memory than the general population. There was no difference in IQ or in scores of other types of memory.

F. What Will Confirm a Diagnosis of an Anxiety Disorder?

1. Physical Examination and History

Because anxiety accompanies so many medical conditions, some serious, it is extremely important for the physician to uncover any medical problems or medications that might underlie or be masked by an anxiety attack. A physical examination and medical and personal history is essential. The patient should describe any occurrence of anxiety disorders or depression in the family and mention any other contributing factors, such as excessive caffeine use, recent life changes, or stressful events. It is very important to be honest with the physician about all conditions, including excessive drinking, substance abuse, or other psychologic or mood states that might contribute to or result from the anxiety disorder.

2. Other Conditions That Accompany or Resemble Anxiety Disorders

Anxiety attacks can mimic or accompany nearly every acute

disorder of the heart or lungs, including heart attacks and angina. One study reported that 25% of patients entering the emergency room with chest pain were actually suffering from panic attacks, which were diagnosed correctly by cardiologists in only 2% of cases. It is often difficult to distinguish between a heart condition and a panic attack. Mitral valve prolapse, a common and usually mild heart problem, may have symptoms that are nearly identical to those of panic disorder and the two conditions frequently occur together. Two-thirds of people with a heart-rhythm disturbance called paroxysmal supraventricular tachycardia have the same symptoms as those with panic attacks. Women who are having actual heart events are much more likely to be misdiagnosed as having an anxiety attack than men with similar problems. Asthma attacks and panic attacks have similar symptoms and can also coexist. In addition, anxiety-like symptoms are seen in many other medical problems, including epilepsy, hypoglycemia, adrenal-gland tumors, and hyperthyroidism. Women can also experience intense anxiety attacks with hot flashes during menopause.

Many drugs, including some for high blood pressure, diabetes, and thyroid disorders, can produce symptoms of anxiety. Withdrawal from certain drugs – often those used to treat sleep disorders or anxiety – can also precipitate anxiety reactions.

Overuse of caffeine or abuse of amphetamines can cause symptoms resembling a panic attack. People with anxiety disorders often drink alcohol or abuse drugs in order to conceal or ameliorate symptoms, but substance abuse and dependency can also cause anxiety. In addition, withdrawal from alcohol can produce physiologic symptoms similar to panic attacks. Clinicians often have difficulty determining whether alcoholism or anxiety is the primary disorder.

Depression affects as many as 40% of patients with panic disorder. It is sometimes difficult to distinguish from anxiety disorders because depression is often accompanied by anxious feelings, agitation, insomnia, and problems with concentration.

### 3. Diagnostic Tests

Although most family physicians can identify panic disorder, a very few (10% in one study) recognize social phobias.

Clinicians can use various tests to determine the causes, type, severity, and frequency of anxiety. Such tests include the Beck Anxiety Inventory – a self-administered test, the Hamilton Anxiety Rating Scale, and the Anxiety Disorders Interview Schedule.

It is also possible to detect correlates of anxiety by assessment of the autonomic nervous system functions, e.g., heart rate, blood pressure, muscle tension, and respiratory rate. These measurements can help gauge the severity of a person's anxiety.

### G. How Are Anxiety Disorders Treated?

Anxiety disorders require treatment; simply trying to talk oneself out of anxiety is as futile as trying to talk oneself out of a heart or stomach problem. Most anxiety disorders, especially the phobias, respond well to treatment. At present, the most effective approach for most anxiety disorders is a combination of cognitive-behavior therapy (CBT) and medication. The effects of CBT may be relatively short-lived, however, and it should be noted that most anxiety disorders are chronic and often recur after treatments. Treatments are equally effective in men and women, although women are at much higher risk for recurrence of panic attacks. Some studies indicate that between 30% and 82% of people with panic disorder and phobias have a recurrence of attacks at an average of nine months after successful short-term therapy. Obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD) are particularly hard to treat.

#### 1. Drug Therapy

Until recently, the anti-anxiety drugs known, as benzodiazepines were the primary medications for anxiety. Increasingly, antidepressants, particularly the selective serotonin-reuptake inhibitors (SSRIs), are being used as the initial treatment. They are proving to be effective, to be less addictive, and to have fewer side effects than the standard anti-anxiety drugs. No one should give up if one drug treatment fails; another may prove to be very effective – even a drug of a similar type. Drug combinations should be tried generally only if a single drug and cognitive-behavior therapy have failed.

Because many anxiety disorders are chronic, drug therapy sometimes is needed for prolonged periods – even years.

### Treatments for Anxiety Disorders

<b>ANXIETY DISORDER</b>	<b>DRUG TREATMENT OPTIONS</b>	<b>COGNITIVE-BEHAVIORAL AND OTHER NON-DRUG THERAPIES</b>
Generalized Anxiety Disorder	Benzodiazepines; buspirone; tricyclics (TCAs) for patients who also are depressed	Cognitive-behavioral, interpersonal therapy, stress management, biofeedback
Panic Attacks	SSRIs; benzodiazepines; TCAs, MAO inhibitors	Cognitive-behavioral therapy
Phobias	Benzodiazepines; beta-blockers; SSRIs	Cognitive-behavioral therapy (desensitization therapy), hypnosis
Obsessive Compulsive Disorder	SSRIs as first choice, except if tics are present (neuroleptics for tics); clomipramine (a tricyclic); MAO inhibitors for those who do not respond to other drugs	Cognitive-behavioral therapy  (Expose and response prevention)
Post-traumatic Stress Disorder	Antidepressants, particularly SSRIs; clonidine	Cognitive-behavioral therapy (Group Therapy)
<b>Note:</b> For anxiety disorders, the most effective treatments are usually combinations of drugs and behavioral techniques		

Antidepressants. Fluoxetine (Prozac), sertraline (Zoloft), paroxetine (Paxil), citalopram (Celexa), and fluvoxamine (Luvox) are antidepressant drugs known as selective serotonin reuptake inhibitors (SSRIs). They are recommended as the first line of treatment for obsessive-compulsive disorder, and appear to reduce symptoms by 25% to 35% in about half of all patients. Low-dose maintenance therapy may be sufficient for patients who respond well to initial therapy, although most patients do not have a fully adequate response and require high doses. (SSRIs are less effective in OCD patients with tics, for whom small doses of drugs known

as neuroleptics may be helpful.) Both fluvoxamine and sertraline are also beneficial in treating of patients with panic disorder and agoraphobia. SSRIs may be helpful for social phobias, particularly when combined with behavioral treatment. Studies have also indicated that fluvoxamine and paroxetine may even help some people with post-traumatic stress disorder (PTSD). (Victims of child abuse tend to respond poorly, whether or not the abuse was the specific trauma triggering PtS.) SSRIs can cause agitation, nausea, and sexual dysfunction, including delay in or loss of orgasm and low sexual drive. (Taking a supervised drug “holiday” on the weekend may improve sexual function during that time, although it may also cause dizziness, exhaustion, and depression.) Some patients, during the first few weeks of treatment, lose a small amount of weight but generally regain it. Elderly people taking these drugs should take the lowest effective dose possible, and those with heart problems should be monitored closely. Newer antidepressants are being specifically designed to target mechanisms that elevate serotonin and other neurotransmitters in the brain; some showing promise for anxiety are velafaxine (Effexor) and nefazodone (Serzone).

The antidepressant drugs known as tricyclic antidepressants (TCA) have also been effective in treating panic and obsessive-compulsive disorders. The most common TCA used for the treatment of panic disorder is imipramine (Tofranil, Janimine); it is also effective in treating agoraphobia. For people with a mix of generalized anxiety disorder and depression, doxepin (Adapin, Sinequan) has been beneficial. Clomipramine (Anafranil) has been approved for OCD; the drug causes significant reduction in symptoms for patients who can tolerate it. In one study, however, almost half of the patients dropped out because of side effects and even half of those who stayed on the drug experienced adverse effects. Anafranil has more adverse side effects than the SSRIs; both appear to be equally effective over time. (The other tricyclics do not appear to benefit OCD patients.) Elderly patients and those with a history of seizures, cardiac problems, closed-angle glaucoma, and urinary retention or obstruction should be closely supervised when taking tricyclics.

Monoamine oxidase inhibitors (MAOIs), typically phenelzine (Nardil) or tranylcypromine (Parnate), are antidepressants used for panic disorder or OCD that does not respond to other treatments. MAOIs commonly cause weight gain, drowsiness, dizziness, sexual dysfunction, and insomnia. They can also cause birth defects and should not be taken by pregnant women. Hypertension, a potentially serious side effect, can be brought on by eating certain foods, including cheese, red wine, vermouth, dried meats and fish, canned figs, and fava beans, that have a high tyramine content. MAOIs can have serious interactions with certain drugs,

including some common over-the-counter cough medications and decongestants. Fatal reactions have occurred when SSRIs and MAOIs were taken at the same time. There should be at least a two to three-week break if a patient is changing from one type of antidepressant to the other. (There should be a five-week break after taking Prozac and before taking an MAOI.)

Several antidepressants are useful in the treatment of post-traumatic stress disorder; still, this is the only anxiety disorder without an effective overall treatment strategy.

One problem with antidepressants is the long delay before they are fully effective – usually two to four weeks – and sometimes up to 12 weeks. People who take them may also experience a temporary period of increased anxiety. Consequently, about a third of patients stop taking antidepressants for anxiety disorders before the initial phase of therapy has been completed. A combination of the anti-anxiety drugs alprazolam (Xanax) or clonazepam (Klonopin) (see below) and an antidepressant is sometimes used to avoid the initial anxiety symptoms and to hasten control of panic symptoms. Sznax can then be withdrawn and the antidepressant, with its negligible chance for long-term abuse, is continued.

*Benzodiazepines.* Benzodiazepines have, until recently, been the standard treatment of most anxiety disorders; these drugs reinforce a chemical in the brain that inhibits nerve-cell excitability. Alprazolam (Xanax) and clonazepam (Klonopin) are effective for panic disorder, agoraphobia, and generalized anxiety disorder. Other benzodiazepines, including diazepam (Valium), lorazepam (Ativan), halazepam (Paxipam), and chlordiazepoxide (Librium), are used mainly for generalized anxiety.

Common side effects of benzodiazepines are daytime drowsiness and a hung-over feeling. Respiratory problems may be exacerbated. The drugs appear to stimulate eating and can cause weight gain. Benzodiazepines can interact with certain drugs, including cimetidine (Tagamet) and antihistamines. Benzodiazepines are potentially dangerous when used in combination with alcohol. Overdoses are serious, although very rarely fatal. Elderly people are more susceptible to side effects and should usually start at half the dose prescribed for younger people. Of great concern are studies showing automobile accidents and a high risk for hip fractures from falls in older people who take benzodiazepines. They are associated with birth defects, and should not be used by pregnant women or nursing mothers.

The primary problem with these drugs is their loss of effectiveness over time with continued use at the same dosage. As a result, patients may require increasing doses to prevent anxiety. Dependence is a common danger, which can occur after as short a time as three months. People who discontinue benzodiazepines after taking them for long periods may experience rebound symptoms – sleep disturbance and anxiety – which can develop within hours or days after stopping the medication. Some patients experience withdrawal symptoms, including stomach distress, sweating, and insomnia, that can last from one to three weeks.

*Azapirones.* Buspirone (BuSpar) is an azapirone, a class of drugs showing promise for generalized anxiety disorder. Unfortunately, it usually takes several days to weeks for the drug to be fully effective, and it is not useful against panic attacks. Unlike the benzodiazepines, buspirone is not addictive, even with long-term use, and it seems to have less pronounced side effects and no withdrawal effects, even when the drug is discontinued quickly. The drug does not produce any immediate euphoria or change in sensation, so some people believe, erroneously, that the drug doesn't work. Because it has a low potential for abuse, buspirone is useful in persons whose anxiety disorder coexists with alcoholism. Some experts also think it may be useful for adolescents and children. Common side effects include dizziness, drowsiness, and nausea. Patients who have recently been taking benzodiazepines may respond less well to buspirone than others. BuSpar should not be used with monoamine oxidase inhibitors (MAOIs).

*Beta-Blockers.* Beta-blockers, including propranolol (Inderal) and atenolol (Tenormin), block the nerves that stimulate the heart to beat faster. They affect only the physiologic symptoms of anxiety and are most helpful for phobias, particularly performance anxiety. Beta-blockers are less successful for other forms of anxiety.

*Clonidine.* Clonidine, a drug that relaxes blood vessels, has been used to treat children with post-traumatic stress disorder. Anxiety was reduced and behavior improved, and some experts believe it should be tried if other therapies fail. The drug can have severe side effects.

*Pagoclone.* Pagoclone is a new drug known as a gamma amino butyric acid (GABA) receptor modulator. It is showing promise in trials for significantly reducing panic attacks with few side effects.

*Substance P.* Substance P is a brain chemical that is believed to have a role in increasing mood disorders. In one investigative trial of patients with major

depression, a substance-P blocker termed MK-869 reduced anxiety as well as depression.

## 2. Cognitive-Behavioral Therapy

Combining medications, usually SSRIs, and cognitive-behavioral therapies (CBT) are proving to be the best treatment options for panic disorders, phobias, and obsessive-compulsive disorder (OCD). Behavioral therapy alone may be as effective as medications for some children with OCD. CBT and especially group therapy for children may even help people with post-traumatic stress syndrome. The goal is to regain control of reactions to stress and stimuli, thus reducing the feeling of helplessness that often accompanies anxiety disorders. A number of approaches have been designed to treat both the general symptoms of anxiety and specific disorders. Treatment usually takes about 12 to 20 weeks; additional treatments may be necessary to prevent relapse. Because there are not enough trained professionals, particularly in remote areas, researchers are investigating the use of a touch-tone telephone service that provides a voice response path, leading patients through behavioral methods for self-treatment. In one study, 71% of OCD patients said the service had helped them.

*Cognitive Therapy.* Cognitive therapy works on the principle that the thoughts that produce and maintain anxiety can be recognized objectively and altered, thereby changing the response and eliminating the anxiety reaction. First, the patient must learn how to recognize anxious reactions and thoughts as they occur. These entrenched and automatic reactions and thoughts must be challenged and understood. As the patient begins perceiving that false assumptions underlie the anxiety, he or she can begin substituting new ways of coping with the feared objects and situations. The essential goal of cognitive therapy is to understand the realities of an anxiety-provoking situation and to respond to reality with new actions based on reasonable expectations. A small study compared cognitive therapy with emotional supportive therapy; after two months, 70% of those using cognitive therapy but only 25% of the other group were free of panic attacks. It may even help OCD with compulsive thinking. Techniques for this disorder include

keeping a diary of repetitive thinking events, using an audio tape to “over-expose” the patient to repetitive thoughts, and self-observation to reduce unrealistic ideas – such as perfectionism – and to restructure thought process.

*Systematic Desensitization.* Systematic desensitization breaks the link between the anxiety-provoking stimulus and the anxiety response; this treatment requires the patient to gradually confront the object of fear. There are three main elements to the process: relaxation training; a list composed by the patient that prioritizes anxiety-inducing situations by degree of fear; and the desensitization procedure itself – confronting each item on the list, starting with the least stressful. This treatment is especially effective for simple phobias, social phobias, agoraphobia, and post-traumatic stress syndrome.

*Exposure and Response Treatment.* Unlike the desensitization process, which emphasizes a relaxed approach and allows the patient to gradually confront the sources of anxiety, exposure treatment purposefully generates anxiety. By repeatedly exposing the patient to the feared object or situation, either literally or using imagination, the patient experiences the anxiety over and over until the stimulating event eventually loses its effect.

Two variants of exposure treatments are flooding and graduated exposure. Flooding, which exposes the person to the anxiety-producing stimulus for as long as one or two hours, has been helpful for some patients with most types of anxiety disorders. Graduated exposure, which can also be successful, gives the patient a greater degree of control over the length and frequency of exposures. Both types of exposure treatment use the most fearful stimulus first, unlike systematic desensitization, which begins with the least fearful.

*Modeling Treatment.* Phobias can be treated successfully with modeling treatment; the patient observes an actor approach an anxiety-producing object or engage in a fear-provoking activity that is similar to the patient’s specific problem. The goal is to learn how to behave in comparable circumstances. Either a live

or video-taped situation may be used, but the live model is considered more effective. Recently, a psychologist used virtual reality (three-dimensional, computer-generated images) to cure a woman of arachnophobia (fear of spiders). More research is needed.

*Breathing Retraining.* Many people with panic breathing expel too much carbon dioxide, resulting in chest pain, dizziness, tingling of the mouth and fingers, muscle cramps, and even fainting. Hyperventilation is one of the primary physical manifestations of panic disorders. By practicing measured, controlled breathing at the onset of a panic attack, patients may be able to prevent full attacks. This technique is frequently used in conjunction with other treatments for anxiety disorders.

### 3. Other Forms of Psychotherapy

Other forms of psychotherapy – commonly called “talk” therapies – deal more with childhood roots of anxiety and usually, although not always, require longer treatments. They include interpersonal therapy, supportive psychotherapy, attention intervention, and psychoanalysis. All work is done during the sessions. Some experts believe that such therapies might be more useful for generalized anxiety, which may require more sustained work to process and recover from early traumas and fears.

### 4. Healthy Lifestyle

A healthy lifestyle that includes exercise, adequate rest, and good nutrition can help to reduce the impact of anxiety attacks. Rhythmic aerobic and yoga exercise programs lasting for more than 15 weeks have been found to help reduce anxiety. Strength or resistance training does not seem to help anxiety.

## IV. Depression

### A. 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.)

#### 1. 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.

- a. Depressed mood on most days for most of each day.  
(Irritability may be prominent in children and adolescents.)
- b. Total or very noticeable loss of pleasure most of the time.
- c. Significant increase or decrease in appetite, weight, or both.
- d. Sleep disorders – either insomnia or excessive sleepiness – nearly every day.
- e. Feelings of agitation or a sense of intense slowness.
- f. Loss of energy and a daily sense of tiredness.
- g. Sense of guilt and worthlessness nearly all the time.
- h. Inability to concentrate occurring nearly every day.
- i. 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; and they are not caused by normal grief (*see below*). One long-term

study found that episodes of major depression usually last about twenty weeks.

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.

2. **Chronic Depression (Dysthymia)**  
Chronic, but mild depression, or dysthymia, 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 have been described as a “veil of sadness” that covers most activities. Typically, there are no disturbances in appetite or sexual drive; mania, severe agitation, and sedentary behavior are not present. 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. The family life of such patients is often impaired because of their decreased level of emotional, psychic, and physical energies.
3. **Atypical Depression**  
People with atypical depression generally overeat, oversleep, have a general sense of heaviness, and have strong feelings of rejection.
4. **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.

5. 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.

6. 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; 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 includes 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.

**B. How is Depression Diagnosed?**

Most people who are depressed do not seek psychiatric help. Because depression is so common, even in the absence of dramatic symptoms, family physicians should check for signs of depression during any comprehensive physical examination. 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. 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.

### **C. What Lifestyle Changes Can Help Depression?**

#### **1. 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 cases, they are all healthful.)

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.

#### **2. Exercise**

Exercise may reduce mild to moderate depression and, in many cases, may be as effective as psychotherapy. 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. 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. Physical activity, particularly rhythmic aerobic and yoga exercises, helps combat stress and anxiety. And, of course, weight loss and increased muscle tone can boost self-esteem.

3. 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.

**D. What Are the Drug Treatments for Depression?**

1. General Guidelines

Antidepressants are very effective; one study reported that up to 90% of patients with major depression would improve with good compliance and adequate doses of the right antidepressant drug. Side effects can be avoided or moderated if the regimen is started at low doses and built up over time. Current antidepressants are not addictive. A great deal of leeway exists in choosing an appropriate antidepressant; overall, they seem to be equally effective, although individual responses vary. Lack of compliance is probably the major barrier to success; for example, according to one study, as many as 70% of elderly depressed patients do not adhere to antidepressant drug regimens. Some patients with accompanying problems, such as anxiety, may require additional drugs that treat those symptoms.

For people who have never been treated for depression, medications are usually maintained for six months or longer after depression has been resolved. Patients who improve within two weeks of taking medications may not require lengthy treatment. Some patients may require indefinite maintenance therapy. These patients include those who have had three or more recurrences of depression, people over 50 who have never had major depression before, those with two episodes and a family history of depression or bipolar disorder, and people who have had severe, sudden, or life-threatening depressions within the past five years. Most patients have a recurrence of depression within five years after treatment has stopped.

Virtually all antidepressants have side effects and complicated interactions with other drugs – some are very serious. Some 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. There is an increased risk of oral health problems caused by dry mouth associated with long-term use of all antidepressants. The risks appear to be highest with heterocyclic 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. Abrupt withdrawal from many antidepressants can produce severe side effects; no antidepressant should be stopped abruptly without consultation with a physician.

## 2. 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. Because they act on serotonin specifically, they have fewer side effects than tricyclic antidepressants, which affect a number of chemicals in the body. SSRIs include fluoxetine (Prozac), sertraline

(Zoloft), paroxetine (Paxil), fluvoxamine (Luvox), and citalopram (Celexa).

*Benefits of SSRIs.* SSRIs appear to help people with most forms of depression including mild to moderately severe major depression, seasonal affective disorder, and dysthymia. SSRIs are even proving to be effective for premenstrual dysphoric disorder. In fact, in such cases, intermittent fluoxetine therapy (taking the drug only during the 14-day premenstrual period) may be as effective as continuous therapy and be associated with few adverse effects. SSRIs also benefits people's 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 problem. 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. Fluoxetine appears to be safe for pregnant women and the developing fetus, although pregnant women should avoid any medications, if possible. Antidepressants have been detected in mother's milk, although one study found no adverse effects on one-year old infants whose mothers took SSRIs while nursing their young.

*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. One recent study of patients taking fluoxetine suggested that patients should continue taking Prozac for 38 weeks to prevent relapse. Another study examined patients using paroxetine and found that those who continued with the full dose of Paxil for 28 weeks had half the chance for relapse when compared to those who reduced their dose.

*Side Effects of SSRIs.* The most common side effects are nausea and gastrointestinal problems. Others include anxiety, drowsiness sweating, headache, difficulty sleeping, and mild

tremor. These effects usually wear off over time. During the first few weeks of treatment, some patients lose a small amount of weight, but, in general, they regain it.

Sexual dysfunction, including delayed or loss of orgasm and low sexual drive occurs in 30% to 40% of patients on SSRIs and account for a substantial amount of noncompliance.

(Citalopram, a new SRRI, 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.

Elderly people taking these drugs should take the lowest dose possible, and those with heart problems should be monitored closely. SSRIs can cause agitation, impulsivity, nausea, and dry mouth – which can increase the risk for cavities and mouth sores. The elderly are at increased risk for falling. (It has been thought that SSRIs posed less of a risk for falls and hip fractures than other antidepressants, but recent studies indicate that, in this regard, they are no safer.) 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 of interactions with other drugs may cause hallucinations, confusion, changes in blood pressure, stiffness, and irregular heart beats. Death from overdose is extremely rare. Serious interactions can occur with certain drugs including 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”, and the antihistamines terfenadine (Seldane) and

astemizole (Hismanal). (Seldane has been taken off the market). Any medication must be taken with caution during pregnancy. People may drink alcohol in moderation, although it may compound the drowsiness experienced with SSRIs; some SSRIs increase the effects of alcohol.

*Heterocyclic, and Other Designer Antidepressants.* A number of drugs are being designed that, like the SSRIs, target specific neurotransmitters that regulate depression. Most act on mechanisms that elevate both serotonin and noradrenaline and some may be more effective for severely depressed patients than are the SSRIs. Some are known as heterocyclic antidepressants. These drugs tend to have fewer adverse effects on sexual function than SSRIs, and some people have reported enhanced sexuality with some of them. It should be noted that most of these “designer” drugs are still new, and widespread use may increase reports of adverse effects. Common side effects include drowsiness, nausea, dizziness, and dry mouth, but drugs vary in others effects. Dry mouth is a particular problem with long-term use of heterocyclics.

*Bupropion.* Bupropion (Wellbutrin) is particularly promising for a number of conditions, including its use 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. Weight loss occurs in about 25% of patients. High doses increase the risk for seizures, particularly in those with eating disorders or those with other risk factors for seizures.

*Venlafaxine.* Venlafaxine (Effexor) is another designer antidepressant that is gaining popularity. In one comparison study, venlafaxine was 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. Venlafaxine has a variety of side effects, and high blood pressure and depressed central nervous system function can occur in high

doses. Some patients report severe withdrawal symptoms, including dizziness and nausea.

*Nefazodone.* Nefazodone (Serzone) has less severe side effects, including sexual dysfunction, than SSRIs. The drug can also be combined with SSRIs. However, it may cause an abrupt drop in blood pressure after standing up suddenly.

*Other Designer Antidepressants.* Mirtazapine (Remeron) and maprotiline (Ludiomil) are other effective antidepressants that have few side effects. In one trial of patients with a high incidence of severe depression, mirtazapine was more effective than fluoxetine and it had fewer side effects. Maprotiline increases the chance for seizures in high-risk people and may cause heart rhythm disturbances.

### 3. Tricyclic Antidepressants

Before the introduction of SSRIs, tricyclics had been the standard treatment of 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).

*Benefits of Tricyclics.* Tricyclics are as effective as SSRIs and may still offer benefits for many people with chronic depression who do not respond to SSRIs. Imipramine has been shown to be of particular benefit for those with dysthymia. The tricyclic protriptyline (Vivactil) appears to help people with tension headaches.

*Side Effects of Tricyclics.* Side effects are fairly common with these medications, and those most often reported include dry mouth, blurred vision, sexual dysfunction, weight gain, difficulty in urinating, disturbances in heart rhythm, drowsiness, and dizziness. 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 recent 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. (Two other investigative tricyclics, mianserin (Bolvidon) and dothiepin (Prothiaden), also increased the risk.)

#### 4. 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). One recent study reported that a patch form of an MAOI worked 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 also can 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 U.S.).

5. Other Promising Treatments

a. *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, whereas antidepressant therapy and counseling provided only temporary relief.

b. *St. John's Wort*. St. John's Wort (*Hypericum perforatum*) is an herbal remedy that is helping mild to moderate depression in my 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 U.S. to determine its safety and effectiveness. 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. It may also increase sensitivity to the sun, and some people

have reported temporary nerve damage after sun exposure. 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.

- c. *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.
- d. **Augmentation Strategies**  
Augmentation Strategies generally involve the use of drugs not typically thought of as antidepressants in combination with an 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, 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

9Paxil) 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.

## **E. What Causes Depression?**

### **1. Psychosocial Factors**

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.

### **2. Biologic Factors**

#### **a. Neurotransmitters**

The physiological basis of depression can be found in nerve cells in the part of the brain responsible for human emotions centered in the hypothalamus, a cherry-size structure that controls basic functions such as thirst, hunger, sleep, sexual desire, and body temperature. Each nerve cell in your brain is separated by tiny gaps; neurotransmitters communicate by ferrying messages across the gaps to a “receptor” on the other side. Each neurotransmitter has a special shape that helps it fit exactly into a corresponding receptor like a key in an ignition switch. When the neurotransmitter “key” is inserted into its mating receptor’s “ignition,” the cell fires and sends the message on its way. Once the message is sent, the neurotransmitter is either absorbed into the cell or burned up by enzymes patrolling the gaps.

When the levels of these neurotransmitters are abnormally low, messages can't get across the gaps, and communication in the brain slows down. It appears that depression occurs if you don't have enough of these neurotransmitters circulating in your brain or if your neurotransmitters can't fit into the receptors for some reason.

While there are as many as 100 different kinds of neurotransmitters, norepinephrine, serotonin, and dopamine seem to be of particular importance in depression. The pathways for these neurotransmitters reach deep into many of the parts of the brain responsible for functions that are affected in depression – sleep, appetite, mood, and sexual interest.

Scientists aren't sure whether depression is directly related to abnormal levels of these transmitters, or whether these neurotransmitters affect yet another neurotransmitter that's even more directly involved in depression. But it is clear that neurotransmitters are related to depression because medications that boost levels of these neurotransmitters also ease depression. Yet some of the new antidepressants don't affect the levels of all these neurotransmitters, though they still relieve depression. And other drugs (such as cocaine) that do interfere with neurotransmitter levels don't affect depression.

And here's the knottiest puzzle of all: Antidepressants can raise your neurotransmitter levels almost immediately, but your depression won't lift until weeks after drug therapy has begun. Depression appears to be far more than a simple problem with the amount of neurotransmitters in the synaptic cleft. Instead, it is probably influenced by a complex interplay of receptor "ignition" responses and the release of the neurotransmitter "keys." It also seems to depend not just on the number of neurotransmitter keys but on the quality and availability of the receptor ignitions.

Antidepressants appear to make certain receptors unreachable, which may explain the antidepressants' lag time. The inaccessibility of these receptors may trigger an increase in the production of neurotransmitters. These changes don't happen right after antidepressant treatment begins; they can take up to several weeks. This receptor change has been reported in almost all antidepressant drug treatment and also in electroconvulsive therapy.

b. Loss and Trauma

Most cases of depression seem to be triggered by a serious loss or unpleasant experience that pushes a person who may be genetically or psychologically susceptible into a depressive abyss.

In a study of 680 pairs of female twins, recent stress (a divorce, illness, bereavement, or legal problem) was the best predictor of depression. Other studies have found that as many as 86 percent of major depressions were set off by a life crisis.

At other times, a depressive disorder may seem to come out of the blue. It may be triggered by a physical illness, or it could be associated with hormonal changes after childbirth or during menopause. Some people become depressed after taking certain drugs (such as birth-control pills, steroids, or sleeping pills).

c. Hormones

For some time, scientists have noticed that depression and problems with hormone regulation appear to go hand in hand. This link isn't really surprising, since hormones affect neurotransmitter activity, and neurotransmitters affect the timing and release of hormones. You may have noticed that depression tends to crop up during events related to reproduction (menstruation, ovulation, pregnancy, and menopause). Altered hormone levels during these times can affect mood-regulating

neurotransmitters, but just how they accomplish this isn't clear.

d. PMS and Depression

Premenstrual syndrome (PMS) is usually associated with depression, irritability, exhaustion, sore breasts, bloating, and crying spells and affects most women in their twenties and thirties. Between 20 and 80 percent of women have some form of this problem, but according to the American Psychological Association Task Force on Women and Depression, only 5 percent experience significant discomfort and need professional treatment.

A woman's menstrual cycle is regulated by serotonin, dopamine, and norepinephrine, pituitary hormones, and ovarian hormones. We don't yet know exactly how the ovarian hormones interact with neurotransmitters or why the result varies so widely from one woman to the next, but it may have something to do with genetics. Your brain's ability to regulate neurotransmitters is strongly influenced by heredity.

Recent research at the University of California at San Diego found that some women who are depressed as a result of PMS have lower amounts of a brain chemical called melatonin when they sleep. Melatonin is released by the pineal gland to induce sleep and regulate circadian rhythms. Experts believe melatonin may suppress mood and mental quickness.

In fact, recent research has isolated serotonin as a possible culprit in PMS. In the late 1980s, several studies revealed that women who had PMS had lower serotonin levels right before their periods than women who don't have PMS.

There may also be a link between serotonin carbohydrate cravings, and PMS, according to similar studies at the Massachusetts Institute of Technology by neuroscientist Richard Wurtman and Judith Wurtman, a cell biologist

and nutritionist. They have found that depression, carbohydrate craving, and a few other PMS symptoms can be relieved by the drug D-fenfluramine, which affects serotonin.

If you experience one week during the month when you don't feel normal, you may be diagnosed as having PMS; if your negative emotions occur all month long but are aggravated premenstrually, your problem might more correctly be diagnosed as a mood disorder.

While there are no well-established treatments that work consistently for PMS, many doctors are now using antidepressants to treat severe cases; both Prozac and the tricyclic nortriptyline have been reported to be of particular benefit to women with severe symptoms. Lithium has also been used successfully in certain types of PMS.

Try keeping a daily rating scale for several months. It's the best way to establish a link between your mood and your periods. Of course, it could also be true that many women have mild depressions that respond well to antidepressants; once their depression is treated, the PMS-like symptoms disappear.

It's also important to realize that some cases of PMS may actually be an undiagnosed depression. In one study, two-thirds of the women with a history of major depression experienced more symptoms of PMS than those who were not chronically depressed. Even after menopause, many of these women still experienced PMS symptoms even though they didn't have the hormonal fluctuations that had supposedly triggered their PMS. This suggests that for some women, what appears to be PMS may in fact be an untreated depression.

e. **Postpartum Depression**

Up to 70 percent of all new mothers experience the "baby blues," a mild form of brief depression including crying

spells, restlessness, feelings of unreality and confusion, depersonalization, guilt, and negative feelings toward both the husband and the child. Symptoms often fade within a week.

While the symptoms are well documented, scientists aren't sure whether these feelings are simply the result of a profound life-role change or a true metabolic disruption. However, it's clear that five days after delivery, the levels of estrogen and progesterone drop, and a burst of prolactin occurs. The lower progesterone falls, the more likely it is that the mother will become depressed within 10 days after birth.

One or two out of every ten new mothers struggle with a more serious form of depression, which may last from six weeks to a year or more. These women worry constantly about their child's health and their own ability to have normal motherly feelings.

An even smaller number, just .01 percent to develop postpartum psychosis between the third and fourteenth day after birth. This frightening development can appear quickly, ballooning from a moderate depression to delusions and hallucinations. In most cases, there is no prior history of depression and its occurrence seems to have nothing to do with other events in the woman's life. This high-risk condition must be treated with hospitalization, medication, and sometimes electro-shock therapy.

In general, women with a history of depression or manic depression before pregnancy are at higher risk for developing postpartum depression.

f. Endocrine Disorders

There are several hormonal or endocrine diseases that may cause depression, including hypothyroidism (underactive thyroid gland), hyperthyroidism (overactive thyroid gland), Addison's disease (underactive adrenal

gland), Cushing's syndrome (overactive adrenal gland) and either under- or overactivity of the parathyroid gland. Hormonal drugs (including birth-control pills and steroids like cortisone and prednisone) may also cause depression.

g. Puberty

Puberty is the first of a series of reproduction-related events that appear to be strongly linked with depression. One study found that a woman's major depressive episode was most likely to occur around the age of 13 or 14. A study of 1,500 New York youngsters found that severe depression affects 7 percent of all girls. But it's not just young women who suffer with depression at this age. Boys, too, can experience hormonal changes together with the problems of emerging identity, peer pressure, sexual issues, and increasing adult responsibilities, all combining to cause depression during adolescence.

h. Menopause and Depression

The idea that menopause and depression are interrelated phenomena is a hot potato widely disputed by many feminists. It's a fact that women go through hormonal changes during menopause, but scientists have been able to prove no clear-cut relationship between depression and menopause. Some experts believe that you may experience mood changes once your estrogen levels drop. Others suggest that low thyroid levels that often occur at this time may also influence depression.

The reduction of estrogen following menopause causes several problems, including osteoporosis (thinning of the bones), dryness and thinning of the vaginal walls, and an increased risk of heart disease. According to Dr. Ellen McGrath, chair of the American Psychological Association National Task Force on Women and Depression, women are probably more likely to be depressed over these physical changes than over the ending of menstruation.

i. Heart Disease and Depression

People who are depressed are more than twice as likely as others to develop high blood pressure, a major cause of heart disease, according to a study by the National Center for Health Statistics of the Centers for Disease Control and Prevention in Atlanta. Even intermediate levels of anxiety and depression were associated with a 60 percent greater likelihood of developing high blood pressure. While the link between depression and heart disease is found in both black and white patients, the risk is especially high for blacks.

Moreover, depressed people are four times more likely to have a heart attack than those with more positive states of mind, according to a study at the Johns Hopkins School of Hygiene and Public health. In addition, people who are depressed are more likely to smoke, which is another known cause of heart disease.

Those with the highest levels of depression and anxiety were at greatest risk of developing high blood pressure. But even those with intermediate levels of anxiety and depression were also associated with hypertension.

Scientists suggest that the link between heart disease and depression may be due to biochemical changes that occur in depressed people, such as the secretion of stress hormones that weaken the immune system. Others believe depression leaves victims so unhappy that they neglect their health, forget to take medications like those that control high blood pressure, and thus become more vulnerable to heart attacks.

j. Migraines

The severe headache known as migraine, with accompanying symptoms of nausea, diarrhea and visual disturbances, attacks about 8 million Americans, 75 percent of them women. They are believed to be linked

to changes in the levels of estrogen and serotonin. Depression and stress also contribute to migraines.

Because of the suspected role of serotonin in migraine attacks, some doctors have been successful in treating them with a standard dose of one of the new SSRIs – Prozac, Zoloft or Paxil – which act exclusively on the serotonin system.

k. Heredity

Although there's no certain evidence that there is a single gene for depression, some families have an inherited vulnerability to depression. This is especially true in the case of manic depression, where up to 50 percent of manic-depressives have at least one parent with the disorder.

A 1992 study of female identical twins found that if one twin has a major depression, the other (who shares all her genes) is 66 percent more likely to suffer from the same problem than are unrelated children. But among fraternal female twins (who share no more genes than non-twin sisters), one twin had only a 27 percent higher chance of sharing the other's depression.

#### What Are Your Chances of Inheriting Depression?

- **Relatives:** Close relatives of depressed people have a 15 percent chance of inheriting major depression.
- **Twins:** If your identical twin is depressed, you're 67 percent more likely to be depressed.
- **Substance Abuse:** If your depressed relatives abuse alcohol or drugs as a symptom of depression, you're eight to ten times more likely to do the same.
- **Suicide:** If you become depressed, you're much more vulnerable to suicide if a close relative has committed suicide.

- **Women:** Close female relatives of depressed women have a one in four chance of inheriting major depression and a 90 percent chance of having mild depression.

Researchers have concluded that a person may not inherit depression solely as a result of one gene, the way you inherit hair or eye color. At most, say experts at the Medical College of Virginia, depression is probably only about 40 percent influenced by genes. People can inherit certain personality traits, collectively known as “depressive personality disorder,” that may make them prone to depression. People with the disorder tend to be pessimistic and brooding, with an overly critical attitude toward themselves and others. It’s also true that if you’re seriously depressed, you may have a different sort of biochemistry, with high levels of the stress chemical cortisol and low levels of the calming neurotransmitters serotonin and norepinephrine.

#### 1. Biological Rhythms

Your body’s internal rhythm waxes and wanes with the ticking of the clock. For example, your body temperature rises during the day and falls during the evening. Biological rhythms such as hormone secretion and sleep-wake patterns have a 24-hour cycle and are called circadian rhythms.

It’s not surprising that there may be a link between depression and biological rhythms, too. You may find your moods get better or worse in tune with the seasons or the time of day. Perhaps you’ve noticed that you tend to feel terrible in the morning but a bit better as the day wears on. Or maybe you feel worse and worse as the day proceeds.

Early-morning awakening is one of the hallmarks of clinical depression, and the continuing cycles of depression and mania are the hallmarks of manic depression.

m. Seasonal Affective Disorder

The syndrome of winter depression, called seasonal affective disorder (SAD), is specifically related to changes in the length of daylight across the seasons. While its exact cause is unknown, the disorder has been linked to a malfunction in the body's biological clock that controls temperature and hormone production.

A million Americans may suffer from this disorder, and up to 35 million others may experience milder forms. It's at least four times as common among women, usually beginning in the twenties and thirties (although it has been reported in some children and teenagers). Other estimates suggest that as many as half of all women in northern states experience pronounced winter depression, but very few receive the necessary treatment because their doctors don't know how to tell the difference between typical depressive symptoms and SAD.

The pineal gland appears to be particularly important in the development of SAD. Nestling near the center of the brain, the gland processes information about light through special nerve pathways and releases the sleep-inducing hormone melatonin, also responsible for regulating circadian rhythms. Melatonin is produced in the dark and peaks during the winter. Experts believe it may suppress mood and mental quickness. Interestingly, manic-depressives are extremely sensitive to light, and exposure to it causes their melatonin levels to plummet.

Your body is regulated by some sort of biological clock that sets the pace for everyday rhythms of sleep, activity, temperature, and cortisol and melatonin release. Most people maintain a certain flexibility in this system, allowing them to synchronize this biological clock to environmental changes. But experts suspect that some people – perhaps those prone to depression – don't synchronize their clocks so easily. It could be that their internal clock is out of step with the world's 24-hour

rhythm, so that melatonin is released too early (causing evening sleepiness and early-morning awakening) or too late (causing insomnia and trouble waking up).

In some cases, SAD eventually disappears, but in others it persists for a lifetime. The best treatment for this disorder is phototherapy – exposure to special types of light during the winter – which will reverse this type of depression in most people.

Animal research suggests that light therapy eases depression by helping to boost serotonin levels. Researchers found that when hamsters were subjected to pulses of light, the levels of available serotonin in their brains rose. These findings, published in the January 1997 issue of *Nature*, also suggest that light therapy might help those with other disorders associated with low serotonin levels, such as obsessive-compulsive disorder.

SAD can be effectively and inexpensively treated, but you must be sure to get an accurate diagnosis and the right kind of light box to provide enough high-intensity light for a certain time each day. After a few days of your sitting for several hours under special fluorescent lights, symptoms subside; they reappear if treatment stops. In general, patients must sit about three feet away from a bank of special lights of between six and eight fluorescent bulbs about three hours daily. Homemade versions can also be built. Ordinary room light is not bright enough to affect SAD.

While researchers are still studying this treatment, many physicians recommend it for this type of depression. *Treatment should be under the supervision of an expert.* Experts believe that the treatment works by increasing the secretion of melatonin in the brain, helping to regulate your circadian rhythms.

Because light therapy may be only partly successful in eradicating symptoms, treatment may be bolstered by the

use of antidepressants. Antidepressants may be used alone instead of light therapy for people with SAD, but the two treatments are usually combined, which often means that lower doses of antidepressants are needed.

If your doctor must adjust the dose of antidepressants with the changing seasons, increasing your dose as the days become shorter, decreasing it as the days lengthen.

More and more doctors are considering Prozac and the other SSRIs to be the drugs of choice for SAD, primarily because the serotonin system is believed to be part of the problem in this disorder. Desyrel has also been used successfully with SAD patients. Older antidepressants may also be beneficial, such as the tricyclics desipramine or imipramine. (Doctors often stay away from the more sedating tricyclics, such as amitriptyline and doxepin, since people with SAD tend to sleep too much as it is.)

A few depressed people with problems in their basic circadian rhythm appear to be helped – at least temporarily – by staying up all night then resuming their regular sleep-wake cycle, but others don't get any benefit from this treatment at all. While experts aren't sure why this works, they think it has something to do with shifting the basic circadian rhythm back to a normal 24-hour cycle. However, this treatment is experimental and should not be attempted by the patient without consultation with a physician.

n. **Drugs that Cause Depression**

Those now on the market may actually cause depression. These include blood-pressure medications such as Catapres, Aldomet, and Inderal; drugs used to treat Parkinson's disease such as L-dopa and bromocriptine; diet pills and medicines prescribed for arthritis, ulcers, or seizures; and hormones like estrogen, progesterone, cortisol, and prednisone.

Moreover, some commonly prescribed drugs such as Valium or Halcion, which are designed to calm you down, can on rare occasions stimulate violence, aggression, or depression.

**F. Who Gets Depressed?**

About 3 percent to 4 percent of Americans experience major depression. About 5 percent of Americans struggle with other forms of depression – dysthymic disorder (mild depression), chronic treatment-resistant depression, or depression caused by medical or other psychiatric disorders. Manic depression affects another 1 to 2 percent.

If you've had one episode of major depression, you've got a 50-percent chance of having another bout – sometimes four or five episodes during a lifetime. Some people have recurrent depressive episodes separated by years of relatively good mental health. Others experience clusters of depression over a short period with a few glimpses of normal function in between. Unfortunately, as many as 35 percent of depressed people experience a chronic form of the condition that never fades away without treatment.

The problem appears to be on the increase. In this century, each succeeding generation has experienced major depressions at earlier and earlier ages, and each generation that follows the next has a higher lifetime risk of experiencing the disorder.

1. **Women and Depression**

More than twice as many women as men are diagnosed with depression, although the reason why this occurs is still hotly debated. Today, experts predict that one in four women will experience a depressive episode sometime during her life. Some experts blame physiology -- heredity or hormonal imbalances. Others point to the different ways men and women lean to handle emotions, and the fact that health professionals more readily diagnose depression in women. Some blame social factors: a woman's lower economic status and susceptibility to abuse contribute to higher rates of depression. Physical and sexual abuse may also be major factors in women's depression, according to psychologist Ellen McGrath,

author of *When Feeling Bad Is Good*. Experts have estimated that between 37 percent and 50 percent of women have had a significant experience of physical or sexual abuse before age 21. For many women, McGrath believes, depression may actually be the effects of post-traumatic stress syndrome.

Careful epidemiological studies have shown that the higher depressive ratio for women is not due to a woman's greater willingness to report depressive episodes, women really do get depressed at a higher rate.

The typical depressed woman is between 25 and 40, married, and raising children. Research does suggest that depression is most likely to be found at both ends of the economic spectrum – in professional women and those with low income, as well as in those with little personal support and substance abusers.

What many have trouble accepting is that some of a woman's vulnerability to depression may be biological. In fact, one out of every ten women becomes seriously depressed after giving birth. Almost 90 percent report PMS symptoms, although they may not all be disturbed enough to qualify for a diagnosis of PMS. In women with PMS depression, serotonin levels are below those of women without PMS, and lower before their periods than afterward.

## 2. Depression in Childhood

Most children will get a bit sad now and then when something goes wrong at home or school. When youngsters get the blues, their sad feelings should pass within a few days. If the depression deepens or continues longer than two weeks, it could indicate a more serious problem.

While most people think of depression as a disorder of adulthood, in fact it can appear at any age – even in infancy. Depressed children may become clingy, tired, listless, or anxious. They may refuse to go to school and may try to hurt themselves (banging their head against a wall, for example). They may lose interest in normal activities and start having problems in school. If the child's depression is severe enough,

even a youngster no more than five or six may deliberately attempt suicide.

A 1982 study of 3,000 children found that almost 15 percent of them had symptoms of depression; the same study found that by age 15, one out of five children is depressed.

The average length of depression in childhood is about seven months, but the younger the child, the more serious the prognosis. Odds are great that a child who has experienced one major depression will have another episode.

If you take your child to the doctor because of your concern about depression, the doctor will probably first take a complete medical history, focusing on the child's feelings, psychological traits, and social background. The visit should include a thorough physical exam to rule out underlying physical disorders.

In recent years, more and more doctors have begun to realize that youngsters can suffer from a wide variety of mood disorders and that they can be just as sick as any adult. As a result, the use of antidepressants and lithium in childhood has become much more common.

Indeed medication may be an effective part of the treatment for several psychiatric disorders in childhood and adolescence, according to the American Academy of Child and Adolescent Psychiatry. If your doctor recommends medication for your child, he or she should be experienced in the treatment of psychiatric illnesses and should fully explain the reasons for the recommended drug, its benefits, side effects, and alternatives.

Parents must realize that medication should not be used alone but as part of a comprehensive treatment plan that usually includes some type of psychotherapy. In addition, your doctor should provide ongoing evaluation. When prescribed appropriately by an experienced psychiatrist, medication may help children and teenagers with psychiatric disorders feel better.

Psychiatric medication may be prescribed for a number of problems, including:

- **Depression** – lasting feelings of sadness, helplessness, hopelessness, unworthiness and guilt, inability to feel pleasure, declining school work, changes in sleeping and eating
- **Eating Disorder** – either anorexia nervosa or bulimia or a combination of the two
- **Manic depression** (bipolar disorder) – periods of depression alternating with manic periods, including irritability, happy moods, excessive energy, behavior problems, staying up late at night and grand plans

When a child is diagnosed with a full-blown major depression, an antidepressant such as imipramine may be considered in order to bring the child out of the depression, thereby avoiding harming the child's emotional growth and relationships.

Most experts think that children who have one episode of depression early in life are at risk for future episodes. Some studies have found that as many as 10 percent of children who have been hospitalized for a suicide attempt will make a successful attempt within the next five years.

The use of antidepressants in children and adolescents is not without controversy, however, according to Theodore Petti, M.D., child and adolescent psychiatrist at Indiana University. While double-blind placebo-controlled studies of hospitalized children have not found much difference in effectiveness between tricyclic antidepressants and placebos, psychiatrists in actual practice have found that tricyclics can help ease a child's depression.

The tricyclics are generally the first-choice antidepressants for youngsters because doctors have so much long-term experience with them.

While the new SSRIs carry less risk of side effects, there have been no controlled studies among this age group. The major concern that doctors have with using tricyclics in children is the

risk of death, presumably from heart problems, that has been associated with the tricyclic desipramine among hyperactive youngsters.

### 3. Depression in Adolescence

The picture of depression changes as the child enters adolescence. Many people experience their first bout with major depression during adolescence, although they may not know it. It commonly appears for the first time between ages 15 and 19; recent surveys reveal that as many as 20 percent of high-school students are deeply unhappy or have some kind of psychiatric problem. Suicide is a particular danger for this age group (see “Risk Factors for Teenage Suicide” below).

Depressed teenagers nearly always experience changes in thinking, such as low self-esteem and self-criticism. In this age group, depression is often disguised as substance abuse. It may be acted out in risk-taking or problems with authority.

Depressed teenagers may become antisocial, restless, negative, oversensitive, uncooperative, or aggressive; they may abuse drugs or alcohol and stop going to school. Because most of these symptoms are to some degree considered typical of adolescent behavior in our culture, teenage depression often goes undiagnosed and untreated.

Should a teenager you know be thinking of suicide, try to talk about these feelings immediately. Bringing up the subject won't plant ideas that weren't there, but it may help lessen feelings of isolation and entrapment. Ignoring suicidal thoughts or behavior will make suicide more likely to occur.

#### Risk Factors for Teenage Suicide

- **Previous attempts.** Youths who attempt suicide remain vulnerable for several years, especially for the first three months following an attempt.
- **Psychiatric history.** Studies have shown that inpatient psychiatric care is associated with far more suicide attempts.
- **Personal failure.** High standards (the teen's or the parents') that are not met, even after only one setback, may set off a downward spiral ending in suicide.

- **Recent loss.** Death of close friends or family, divorce, or a breakup with a boyfriend or girlfriend may leave a teenager so lost and alone that suicide seems the only option.
- **Substance abuse.** Some teens abuse drugs or alcohol to self-medicate overwhelming depression, a combination of depression, substance abuse, and lowered impulse control can end in a suicide attempt.
- **Family handguns.** A gun in the house may make it easy for a troubled teen to commit suicide; children of law-enforcement officers have a much higher rate of suicide because of the accessibility of guns.
- **Family violence.** Violence in the home teaches youths that the way to resolve conflict is through violence.
- **Communication lack.** The inability to discuss angry or uncomfortable feelings within the family can lead to suicide.

#### 4. Depression in the Elderly

While older people also suffer from major depression, their condition is often misinterpreted or ignored. Experts estimate that up to 20 percent of the more than 30 million people over age 65 in this country may be experiencing a major depression. In fact, depression is more than four times more common in this age group than in the general population, and the suicide rate for people over 65 is fifteen times higher.

Depression is not a normal part of aging, although it's widely assumed to be, since old age in this country is so often associated with deprivation and loss. In fact, older people are no more "entitled" to feelings of misery than the rest of us.

Because depression in the later years can cause distractibility, indifference, memory problems, and disorientation, the condition is often misdiagnosed as senility. About 12 percent of elderly people who are diagnosed with dementia are really depressed. (It's also possible to be both demented and depressed.)

Moreover, many of the diseases that elderly people tend to get may appear as depression. These include Cushing's or

Parkinson's disease, thyroid diseases, pulmonary disorders, vitamin deficiencies, cancer, and stroke. Inappropriate sedating drug treatment in nursing-home populations can also cause depression.

If you've been having some personality or mood changes, a doctor should give you a range of tests, including a CAT scan of the brain, blood tests (including thyroid-function tests), and perhaps an electroencephalogram. If these tests don't identify an underlying medical cause for your mood changes, there's a good chance that you may be depressed. If you or members of your family have ever been depressed before, this diagnosis is even more likely.

Because metabolism slows with age, elderly people often respond to smaller doses of antidepressants than younger people.

## SUMMARY – WORLD HEALTH ORGANIZATION PLAN (2001)

The ten recommendations for action are as follows:

### **1. Provide treatment in primary care**

The management and treatment of mental disorders in primary care is a fundamental step, which enables the largest number of people to get easier, and faster access to services. It needs to be recognized that many are already seeking help at this level. This not only gives better care; it cuts wastage resulting from unnecessary investigations and inappropriate and non-specific treatments. For this to happen, however, general health personnel need to be trained in the essential skills of mental health care. Such training ensures the best use of available knowledge for the largest number of people and makes possible the immediate application of interventions. Mental health should therefore be included in training curricula, with refresher courses to improve the effectiveness of the management of mental disorders in general health services.

### **2. Make psychotropic drugs available**

Essential psychotropic drugs should be provided and made constantly available at all levels of health care. These medicines should be included in every country's

essential drugs list, and the best drugs to treat conditions should be made available whenever possible. In some countries, this may require enabling legislation changes. These drugs can ameliorate symptoms, reduce disability, shorten the course of many disorders, and prevent relapse. They often provide the first-line treatment, especially in situations where psychosocial interventions and highly skilled professionals are unavailable.

### **3. Give Care in the Community**

Community care has a better effect than institutional treatment on the outcome and quality of life of individuals with chronic mental disorders. Shifting patients from mental hospitals to care in the community is also cost-effective and respects human rights. Mental health services should therefore be provided in the community, with the use of all available resources. Community-based services can lead to early intervention and limit the stigma of taking treatment. Large custodial mental hospitals should be replaced by community care facilities, backed by general hospital psychiatric beds and home care support, which meet all the needs of the ill that were the responsibility of those hospitals. This shift towards community care requires health workers and rehabilitation services to be available at community level, along with the provision of crisis support, protected housing, and sheltered employment.

### **4. Educate the public**

Public education and awareness campaigns on mental health should be launched in all countries. The main goal is to reduce barriers to treatment and care by increasing awareness of the frequency of mental disorders, their treatability, the recovery process and the human rights of people with mental disorders. The care choices available and their benefits should be widely disseminated so that responses from the general population, professionals, media, policy-makers and politicians reflect the best available knowledge. This is already a priority for a number of countries, and national and international organizations. Well-planned public awareness and education campaigns can reduce stigma and discrimination, increase the use of mental health services, and bring mental and physical health care closer to each other.

### **5. Involve communities, families and consumers**

Communities, families and consumers should be included in the development and decision-making of policies, programs and services. This should lead to services being better tailored to people's needs and better used. In addition, interventions should take account of age, sex, culture and social conditions, so as to meet the needs of people with mental disorders and their families.

## **6. Establish national policies, programs and legislation**

Mental health policy, programs and legislation are necessary steps for significant and sustained action. These should be based on current knowledge and human rights considerations. Most countries need to increase their budgets for mental health programs from existing low levels. Some countries that have recently developed or revised their policy and legislation have made progress in implementing their mental health care programs. Mental health reforms should be part of the larger health system reforms. Health insurance schemes should not discriminate against persons with mental disorders, in order to give wider access to treatment and to reduce burdens of care.

## **7. Develop human resources**

Most developing countries need to increase and improve training of mental health professionals, who will provide specialized care as well as support the primary health care programs. Most developing countries lack an adequate number of such specialists to staff mental health services. Once trained, these professionals should be encouraged to remain in their country in positions that make the best use of their skills. This human resource development is especially necessary for countries with few resources at present. Though primary care provides the most useful setting for initial care, specialists are needed to provide a wider range of services. Specialist mental health care teams ideally should include medical and non-medical professionals, such as psychiatrists, clinical psychologists, psychiatric nurses, psychiatric social workers and occupational therapists, who can work together towards the total care and integration of patients in the community.

## **8. Link with other sectors**

Sectors other than health, such as education, labor, welfare, and law, and nongovernmental organizations should be involved in improving the mental health of communities. Nongovernmental organizations should be much more proactive, with better-defined roles and should be encouraged to give greater support to initiatives.

## **9. Monitor community mental health**

The mental health of communities should be monitored by including mental health indicators in health information and reporting systems. The indices should include both the numbers of individuals with mental disorders and the quality of their care, as well as some more general measures of the mental health of communities. Such monitoring helps to determine trends and to detect mental health changes resulting in external events, such as disasters. Monitoring is necessary to assess the

effectiveness of mental health prevention and treatment programs, and it also strengthens arguments for the provision of more resources. New indicators for the mental health of communities are necessary.

#### **10. Support more research**

More research into biological and psychosocial aspects of mental health is needed in order to increase understanding of mental disorders and to develop more effective interventions. Such research should be carried out on a wide international basis to understand variations across communities and to learn more about factors that influence the cause, course and outcome of mental disorders. Building research capacity in developing countries is an urgent need.

#### TEACHING TOOLS

1. Behavioral Assessment Tool
2. Stress Assessment Tool
3. Depression Screening Tool
4. HANDS Screening Tool
5. Relaxation Music
6. Heat Sensitive Mood Dots for Measuring Stress
7. Squeezable Balls for Stress Reduction

## D. BIBLIOGRAPHY

Causal relationship between stressful life events and the onset of major depression. *AM J Psychiatry*. 1999 Jun;156(6):837-41.

Destabilizing effects of mental stress on ventricular arrhythmias in patients with implantable cardioverter-defibrillators. *Circulation*. 2000 Jan 18;101(2):158-64.

Evidence that stress and surgical interventions promote tumor development by suppressing natural killer cell activity. *Int J Cancer*. 1999 Mar 15;80(6):880-8.

One-year follow-up of survivors of a mass shooting. *American Journal of Psychiatry*. December 1997, Vol. 154, p. 1696

Panic attacks. *Harvard Men's Health Watch*, June 1997

Post-traumatic stress disorder and quality of life outcomes in a nationally representative sample of male Vietnam veterans. *American Journal of Psychiatry*, December 1997, Vol. 154, p. 1690

Shaking up immunity; psychological and immunologic changes after a natural disaster. *Psychosomatic Medicine* March/April 1997

The trauma of serious illness. *HealthNews*, 6/25/98, page 1

Sleep disturbance influences gastrointestinal symptoms in women with irritable bowel syndrome. *Dig Dis Sci*. 2000 May;45(5):952-9.

Anxiety and helplessness in the face of stress predisposes, precipitates, and sustains gastric ulceration. *Behav Brain Res*. 2000 June 1;110(1-2):161-74. Review.

The very model of a modern etiology: a biopsychosocial view of peptic ulcer. *Psychosom Med*. 2000 Mar-Apr;62(2):176-85. Review.

Stress and exacerbation in ulcerative colitis: a prospective study of patients enrolled in remission. *Am J Gastroenterol*. 2000 May;95(5):1213-20.

Anger, hostility, and visceral adipose tissue in healthy postmenopausal women. *Metabolism*. 1999 Sep;48(9):1146-51.

Headache in children in Dutch general practice. *Cephalalgia*. 1999 Apr;19(3):147-50.

Symptoms of stress and depression as correlates of sleep in primary insomnia. *Psychosom Med*. 2000 Mar-Apr;62(2):227-30.

Stress and pregnancy among African-American women. *Paediatr Perinat Epidemiol*. 2000 Apr;14(2):127-35.

Stress and pregnancy among African-American women. *Paediatr Perinat Epidemiol*. 2000 Apr;14(2):127-35.

Increasing identification of psychosocial problems: 1979-1996. *Pediatrics* 2000 Jun;105(6):127-35.

Increasing identification of psychosocial problems: 1979-1996. *Pediatrics*.2000 Jun;105(6):1313-21.

Intervention effects on dementia caregiving interaction: a stress-adaptation modeling approach. *J Aging Health*. 1999 Feb;11(1):79-95.

Gender differences in psychiatric morbidity among family caregivers: a review and analysis. *Gerontologist*. 2000 Apr;40(2):147-64. Review.

Physical and psychosocial correlates of hormone replacement therapy with chronically stressed postmenopausal women. *J Aging Health*. 1999 Feb;11(1):3-26.

Effects of caregiving, gender, and race on the health, mutuality, and social supports of older couples. *J Aging Health*. 2000 Feb;12(1):90-111.

Determinants of caregiving experiences and mental health of partners of cancer patients. *Cancer*. 1999 Aug 15;86(4):577-88.

Stress and psychiatric disorder in healthcare professionals and hospital staff. *Lancet*. 2000 Feb 12;355(9203):533-7.

Stress and burnout in forensic community mental health nurses: an investigation of its causes and effects. *J Psychiatr Ment Health Nurs*. 1999 Dec;6(6):433-43.

[Health status and its effects on the work of national education nurses]. *Sante Publique*. 1999 Dec;11(4):493-501. French.

Association between psychosocial work characteristics and health functioning in American women: prospective study. *BMJ*. 2000 May 27;320(7247):1432-6.

Anger, hostility, and visceral adipose tissue in healthy postmenopausal women. *Metabolism*. 1999 Sep;48(9):1146-51.

Epstein-Barr virus reactivation associated with diminished cell-mediated immunity in Antarctic expeditioners. *J Med Virol*. 2000 Jun;61(2):235-40.

Social contact, socioeconomic status, and the health status of older Malaysians. *Gerontologist*. 2000 Apr;40(2):228-34.

Social isolation stress enhanced liver metastasis of murine colon 26-L5 carcinoma cells by suppressing immune responses in mice. *Life Sci*. 2000 Mar 31;66(19):1827-38.

Does job stress affect injury due to labor accident in Japanese male and female blue-collar workers? *Ind Health*. 2000 Apr;38(2):246-51.

Association between psychosocial work characteristics and health functioning in American women: prospective study. *BMJ*. 2000 May 27;320(7247):1432-6.

Persistent high job demands and reactivity to mental stress predict future ambulatory blood pressure. *J Hypertens*. 2000 May;18(5):581-6. [MEDLINE record in process]

[Occupational stress in health care personnel]. *Rev Med Chil*. 1999 Dec;127(12):1453-61. Spanish.

Targeted disruption of the orphanin FZ/nociceptin gene increases stress susceptibility and impairs stress adaptation in mice. *Proc Natl Acad Sci U S A*. 1999 Aug 31; 96(18): 10444-9.

Quinn, Brian P., The Depression Source Book 2<sup>nd</sup> ed., Lowell House, Los Angeles, 2000.

Cousins, Gabriel, Depression-free For Life. Harper Collins Publishers, 2000.

Gilbert, Paul, Overcoming Depression. Oxford Press, 2001.

Magruder KM, Norquist GS, et al. (1995). Who comes to a voluntary depression screening program? *Am J Psychiatry*, 152:1615-1622.

Greenfield SF, Reizes JM, et al. (1997). Effectiveness of community-based screening for depression. *Am J Psychiatry*, 154:1391-1397.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC, American Psychiatric Association.

Baer L, Jacobs D, Blais M, et al. (1998). Development of a brief screening instrument – the HANDS. Submitted manuscript.

First MB, Spitzer RL, Gibbon M, Williams JBW (1995). *Structured Clinical Interview for DSM-IV Axis I Disorders – Patient Edition (SCID-I-P, Version 2.0)*. New York: Biometrics Research Dept., New York State Psychiatric Institute.

Beck AT, Steer RA, Brown GK (1996). *Beck Depression Inventory – Second Edition: Manual*. San Antonio, TX: The Psychological Corporation.

World Health Organization (1990). *Composites International Diagnostic Interview, Version 1.0* Geneva: World Health Organization.

## References

1. Kessler RC, McGonagale KA, et al., Lifetime and 12-Month Prevalence of DSM-III-R Psychiatric Disorders in the United States: Results from the National Comorbidity Survey. *Arch Gen Psychiatry*, Jan. 1994, 8-19.
2. Murray CJ, Lopez AD. *The Global Burden of Disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Harvard School of Public Health on behalf of the World Health Organization. Harvard University Press, Cambridge, MA.
3. Fawcett, J (1993). The morbidity and mortality of clinical depression. *International Clinical Psychopharmacology*, 8: 217-220.

## E. PRE TEST EVALATION

### Mental Health

1. Define Stress

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2. Define Anxiety

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3. Define Depression

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4. List Two Physical Manifestations of Stress

1. \_\_\_\_\_
2. \_\_\_\_\_

5. List Two Causal Factors for Anxiety

1. \_\_\_\_\_
2. \_\_\_\_\_

6. List Two Nursing Interventions for Depression

1. \_\_\_\_\_
2. \_\_\_\_\_

## F. POST TEST EVALUATION

### Mental Health

1. Define Stress

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2. Define Anxiety

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3. Define Depression

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4. List Two Physical Manifestations of Stress

1. \_\_\_\_\_
2. \_\_\_\_\_

5. List Two Causal Factors for Anxiety

1. \_\_\_\_\_
2. \_\_\_\_\_

6. List Two Nursing Interventions for Depression

1. \_\_\_\_\_
2. \_\_\_\_\_

## G. INSTRUCTOR EVALUATION

**Instructor Evaluation:** Using a scale of One (lowest) to Five (highest), please rate the following:

The Instructor met the stated objectives.      1    2    3    4    5

The content was informative.                      1    2    3    4    5

The information was presented in an  
interesting and logical format.                      1    2    3    4    5

The most useful information in this lecture was

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## H. HANDOUTS

### Dr. Rahe's Life Changes Stress Test

Check the number next to any events which have happened to you over the past year.

Health	LCU	
An illness or injury which was:		
Very Serious	74	
Moderately Severe	44	
Less serious than above	20	

Work	LCU	
Change to a new type of work	51	
Change in your work conditions	35	
Change in work responsibilities	41	
Taking courses to help you	18	
Troubles at work	32	
Major business readjustment	60	
Loss of your job	74	
Retirement	52	

Home and Family	LCU	
Change in residence	40	
Major change in living conditions	42	
Change in family get-togethers	25	
Major change in health or behavior of a family member	55	
Marriage	50	
Pregnancy	67	
Miscarriage or abortion	65	
Birth (or adoption) of a child	66	
Spouse begins or stops work	46	
Change in arguments with spouse	50	
Problems with relatives or in-laws	38	
Parents divorce	59	
A parent remarries	50	

Separation from spouse due to work or marital difficulties	79	
Child leaves home	42	
Relative moves in with you	59	
Divorce	96	
Birth of grandchild	43	
Death of spouse	119	
Death of Child	123	
Death of parent or sibling	101	

Personal and Social	LCU	
Change in personal habits	26	
Beginning or ending school	38	
Change of school or college	35	
Change in political beliefs	24	
Change in religious beliefs	29	
Change in social activities	27	
Vacation	24	
New, close, personal relationship	37	
Engagement to marry	45	
Personal relationship problems	39	
Sexual difficulties	44	
An accident	48	
Minor violation of the law	20	
Being held in jail	75	
Major decision about your future	51	
Major personal achievement	36	
Death of a close friend	70	

Financial	LCU	
Major loss of income	60	
Major increase in income	38	
Loss/damage to personal property	43	
Major purchase	37	
Minor purchase	20	
Credit difficulties	56	
Score		

GRAND TOTAL		
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Your Life Change Units (LCU) indicates a HIGH RISK for near-future illness.

A Grand Total between 0 and 200 Life Change Units (LCU indicates a LOW risk for near-future illness.

Grand Totals between 201 and 300 LCU connote a MODERATE risk.

Grand Totals between 301 and 450 LCU signify an ELEVATED risk.

A Grand Total greater than 450 LCU indicates a HIGH risk for near-future illness.

## The HANDS™ SCREENING TOOL

Instructions: Indicate how you feel about each of the following statements.

Over the past two weeks, how often have you:

0 = none or little of the time

1 = some of the time

2 = most of the time

3 = all of the time

been feeling low in energy, slowed down? —

been blaming yourself for things? —

had a poor appetite? —

had difficulty falling asleep, staying asleep? —

been feeling hopeless about the future? —

been feeling blue? —

been feeling no interest in things? —

had feelings of worthlessness? —

thought about, or wanted to commit suicide? —

had difficulty concentrating or making a decision? —

TOTAL SCORE: \_\_\_\_\_

A score of greater than 9 indicates the individual is at high risk for a major depressive episode.

# THE HANDS™ DEPRESSION SCREENING TOOL

## Impetus for Development of the HANDS™

Clinical depression is a highly prevalent illness. Studies indicate that between 17 and 20 million Americans may suffer from depression during the course of a year.<sup>1,2</sup> Internationally, depression is an illness of tremendous cost. The World Health Organization's Global Burden of Disease study revealed that clinical depression will be the second most burdensome illness in the world by the year 2020.<sup>3</sup> In addition to long-lasting disability, depression is associated with significant mortality through suicide, medical illness, and increased risk of accidental death.<sup>4,5,6,7</sup>

Despite this tremendous prevalence, morbidity, and mortality, depression is under diagnosed and under treated. The reasons for this are varied and complex, but include stigma and denial, ignorance of symptomatology, uncertainty as to where or how to seek help, lack of insurance and/or treatment resources, lack of or miscommunication between patient and caregiver, and misdiagnosis. Public education campaigns, such as National Depression Screening Day<sup>8,9</sup> (initiated as part of the American Psychiatric Association's Mental Illness Awareness Week), the National Institute of Mental Health's Depression, Awareness, Recognition and Treatment (D/ART) program<sup>10</sup> and the Campaign on Clinical Depression spearheaded by the National Mental Health Association, have worked to address some of these issues by providing accurate information about signs, symptoms, and treatments to both the public and health professionals. It is clear, however, that additional work needs to be done.

One area in which greater strides can be made is to increase the number of people screened for depression.

### Purpose of the HANDS™

The HANDS is designed to be a brief, easy-to-score, self-report depression screening scale applicable to a variety of settings. It performs at least as well as longer, more complicated scales, and addresses the critical issues of sensitivity and specificity (probabilities of false-negatives and false-positives). The HANDS has been validated for detecting the likelihood of clinical depression based on criteria for a major depressive episode from the Diagnostic and Statistical of Mental Disorders, Fourth Edition (DSM-IV).<sup>11</sup>

The HANDS addresses how **likely** the respondent is to be suffering from depression ranging from **not likely** to **very likely**. Comparisons with other scales, however, indicate that these categories are roughly equivalent to *no symptomatology, mild to moderate symptomatology, and moderate to severe symptomatology*.

### Scale Development

The 10 items comprising the scale were derived from a pool of questions from a large number of existing rating scales for depression. The final items included in the HANDS were selected using the modern test construction method called “item response theory”<sup>12</sup> (IRT) which produces a unitary scale with the fewest necessary items.

Specifically, the HANDS was developed and tested in two studies of adults, ages 18-75. In Study 1, we wanted to recruit a general audience comprised of depressed and non-depressed people. We placed two ads; one recruiting depressed subjects, the other non-depressed subjects. We administered the Structured Clinical Interview for DSM-IV<sup>13</sup> (SCID) to qualified respondents to confirm the presence or absence of major depressive episode. Those who answered the ‘depressed’ ad and were found to be depressed by SCID (N=40) and those who answered the “normal” ad and were found not to be depressed by SCID (N=55) were accepted into the study. We administered a pool of 70 items, generated from a compilation of existing screening questionnaires, and were thus able to reduce our pool of items to 19 by eliminating harder-to-understand items and combining redundant items.

In Study 2, we wanted to simulate the self-selected population that attends National Depression Screening Day. We placed an ad with language similar to those ads used to publicize National Depression Screening Day and recruited 45 subjects. We administered the 19 items from Study 1, along with the 21 –item Beck Depression Inventory, Second Edition (BDI-2)<sup>14</sup>, the 20-item Zung Self-Rating Depression Scale<sup>15</sup>, the 15-item Hopkins Symptom Checklist<sup>16</sup>, and the 25-item modified Composite International Diagnostic Interview (CIDI-Short Form)<sup>17</sup> to all 45 subjects, without knowing whether or not any of these subjects truly were depressed by DSM-IV criteria. Later, 29 of these subjects were found to be depressed by SCID. Utilizing these results and guided by IRT analysis and clinical judgment, we then selected the 10-item scale which best identified depression in this self-selected group.<sup>12</sup>

We then retrospectively calculated a score for each subject in Study 1 on this 10-item scale (which we named the HANDS) and examined the validity statistics,

which compared favorably with longer scales, and supported the HANDS utility in screening a general audience as well as a self-selected one.

Depending upon the population being assessed by the HANDS, the various cutoff scores have slightly different diagnostic implications, and can be used to maximize sensitivity or specificity, depending on the particular application. *Sensitivity* refers to the ability of the scale to correct detect individuals who are *truly depressed* and to minimize the chance of incorrectly categorizing someone as not depressed (i.e., false-negatives). Specificity refers to the ability of the scale to rule out those individuals who are *truly not depressed* (i.e., false-positives).

Study	Subject	Cutoff Score	Sensitivity	Specificity
1	General Audience	9+	.95	.94
2	Self-Selected	9+	.93	.64

These statistics indicate that for a general audience, a cutoff total score of 9 or more correctly *detected* 95% of those who met DSM-IV criteria for major depressive episode, and correctly *ruled out* 94% of those who did not meet criteria. For the self-selected population, a cutoff total score of 9 points or more correctly *detected* 93% of those who met DSM-IV criteria for major depressive episode, and correctly *ruled out* 64% of those who did not meet criteria. (This is because some of the individuals scoring above a cutoff total score of 9 points or more *did not* meet criteria for major depressive episode, but *did* meet criteria for one or more anxiety disorders with depressive features.) No other scale we tested had higher sensitivity or specificity I the self-selected sample of Study 2. If a clinician has a particular concern about specificity, in a desire to minimize false positives, a higher cutoff score is recommended. A score of 17 or greater on the HANDS improved specificity in Study 2 to 100%, but it decreased sensitivity to 41%.

The HANDS has good internal consistency, as shown by its coefficient Alpha of .87, and the median correlation of each item with the total score (minus that item) was .61, with a range of 0.37 (suicide item) to 0.83 (been feeling blue?).

For the purpose of validating this scale, the authors and consultants agreed on an operational definition of “clinical depression” as the presence of what is termed in the DSM-IV as a “major depressive episode.”<sup>11</sup> According to the DSM-IV, individuals who meet criteria for a major depressive episode are considered to have a major mood disorder, probably requiring treatment, regardless of whether the

precise diagnosis is determined to be major depressive episode, bipolar depressive disorder, or depressive disorder caused by organic factors.

The HANDS™ is a copyrighted form used for National Mental Illness Screening Project programs. It was developed by Screening for Mental Health in collaboration with the Harvard Telepsychiatry Project. For more information on using the HANDS™, please contact SMH office at One Washington Street, Suite 304, Wellesley Hills, MA 02481-1706.

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