15 Stress-related Conditions

This guideline is intended to help occupational physicians and primary care practitioners manage employed patients with acute stress-related conditions of relatively short duration. This guideline recognizes that factors inherent in the workplace can contribute to the development of stress. Topics covered in this chapter include the initial assessment and management of patients with acute stress-related conditions, identification of red flags requiring urgent mental health-care referral, work relatedness, and modified duty and return to work.

General Approach and Basic Principles

Stressors may be any life event or circumstance that exerts a physical, emotional, or cognitive demand on the individual. The lifetime prevalence of major stressful life events is 100%, so associated stress-related symptoms may be considered a normal condition of human existence.

- Stress is not a diagnosis, disease, or syndrome. It is a nonspecific set of emotions or physical symptoms that may or may not be associated with a disease or syndrome. Whether or not stress contributes to a disease or syndrome depends on the vulnerability of the individual; the intensity, duration, and meaning of the stress; and the nature and availability of modifying resources.
- The initial assessment of patients with acute stress-related conditions focuses on detecting potentially serious psychopathology, or red flag conditions, requiring urgent specialty referral. The majority of patients with stress-related conditions will not have red flags and can be safely and effectively managed by occupational or primary care physicians.
- Relief of stress depends on its precipitants, which are often multifactorial. Psychosocial, workplace, or socioeconomic issues can be explored with the patient to facilitate early identification of precipitating factors and appropriate interventions that may prevent delayed recovery or

relapse. An open, honest discussion of the underlying factors often results in an increase in the patient's insight and coping skills, which itself helps alleviate many stress-related symptoms.

- Worksite interventions may be helpful in mitigating or eliminating inciting stressors, depending on the source of the complaints.
- Medications generally have a limited role. Limit use of anti-anxiety agents to short periods of time, i.e., periods when overwhelming anxiety limits the patient's ability to work or effectively perform the activities of daily living. Antidepressant or antipsychotic medication may be prescribed for major depression or psychosis; however, this is best done in conjunction with specialty referral.
- Patients are encouraged to enhance their individual coping skills and to decrease or discontinue maladaptive coping mechanisms such as excessive use of alcohol, tobacco, or other drugs, or excessive food intake. Patients are counseled to redirect their energy to regular aerobic exercise, relaxation techniques, and cognitive coping mechanisms.
- For uncomplicated cases, absence from work should not exceed one work week. Referral for mental health professional assessment may be considered for patients whose anticipated absence from work will exceed one week.
- If symptoms become disabling despite primary care interventions or persist beyond three months, referral to a mental health professional is indicated.

Symptoms attributable to stress are common problems for patients presenting to occupational and primary care physicians. Up to 60% of patient visits are due to somatic manifestations of emotional states, and workers with job-related stress, anxiety, and depression miss an average of 16 days per year. The National Institute for Occupational Safety and Health (NIOSH) ranks psychological problems as one of the ten most important health problems affecting workers. Complaints of stress may be nonspecific physical or emotional manifestations or may be a clue to underlying psychiatric disorders. This guideline will help clinicians identify patients who need urgent referral for psychiatric care and provide a framework for treating the majority of patients who do not.

Models and Definitions

The word stress has been used extensively in lay and scientific literature to describe any or all parts of a complex and dynamic interaction of intrapersonal, interpersonal, organizational, community, and social factors or outcomes. It follows that "stress research" can focus on any of these levels. It is well beyond the scope of this guideline to review in detail the many models, constructs, and methodologic issues in the vast stress research literature, which includes cognitive and occupational psychology, health promotion, organizational dy-

namics, physiology, occupational medicine, psychiatry, and other medical specialties.

Common to most stress models is that the individual perceives distress when a mismatch between perceived demands and resources occurs. This model offers a practical framework physicians and patients can use to explore the patient's symptoms and develop a treatment plan.

Perceived demands can include any external or internal stressors, either work related or personal. One perceives demands through a "personal filter"—attitudes, values, and beliefs—that modify actual demands. Cognitive therapy techniques are designed to act at this level. Resources can be further defined as personal factors (e.g., coping skills, physical health), and external supports (e.g., family and other social supports, skills/knowledge, financial resources). Gender, ethnicity, and religion can act at all levels of this model.

The acuity of the stressor and the physical or psychological reaction can vary. An acute occupational stressor, such as reorganization, may have either an acute effect (e.g., increased heartburn or sleep disturbances) or exacerbate a chronic medical condition (e.g., difficulty with blood pressure control in hypertensive patients or relapse in individuals with duodenal ulcer) or both. Chronic stress, such as poor relations with a supervisor or an aging parent, may increase one's susceptibility to transient health effects (e.g., catching more colds) or affect chronic conditions (e.g., increase in frequency of migraine headaches) or both. Furthermore, stress indirectly can affect existing medical conditions. For example, an individual may postpone seeking personal medical care or be less likely to take medications regularly if he or she feels stressed. Not everyone who is stressed becomes ill, and not everyone who is ill seeks help. Emotional stress and mental health problems are associated with higher accidents and injury rates for workers.

A. Physiological Reactions

Autonomic and neuroendocrine responses to physical and psychological stressors have been extensively studied. The fight or flight response, first described by Cannon in 1914, refers to a short-lived physical reaction to an acute perceived threat. The cerebral cortex perceives a threat, and via the hypothalamus, activates the autonomic nervous system and stimulates the adrenal medulla to secrete epinephrine and norepinephrine, resulting in the classic fight or flight reaction. The General Adaptation Syndrome, described by Hans Selye in 1936, describes a more complex physiologic reaction to sustained stress, involving three phases:

- The alarm phase is essentially the fight or flight adrenergic response.
- The resistance phase is characterized by a remission of the adrenergic response and a concomitant increase in cortisol secretion, as the cerebral cortex also stimulates the pituitary to release adrenocorticotropic hormone (ACTH). Metabolism and muscle strength are heightened

during this phase to allow maximal physical resistance to the threat, but at the expense of physical resources.

- The exhaustion phase occurs when prolonged cortisol secretion no longer results in physical resistance, but rather depletes physical resources such as decreased immunity.

These early models have proved too simplistic and mechanistic to explain the negative and positive effects of stress in everyday life or to determine the effect of mediators such as meaning and individual factors on the outcome of stress in people. As research in psychoneurology has increased, more sophisticated models of psychophysiologic reactions to stress have been described.

Medical conditions reported to be affected by stress include asthma, autoimmune diseases, dermatitis, duodenal and peptic ulcer disease, eczema, heart disease (angina, myocardial infarction), irritable bowel disease, migraine and tension headache, mucous colitis, paroxysmal tachycardia, systemic lupus erythematosus, ulcerative colitis, and urticaria. Psychosocial variables also are correlated with musculoskeletal disorders and delayed recovery.

B. Role of Social Factors

Key elements of one's psychosocial milieu have been found to be associated with health parameters and outcomes. Holmes and Rahe demonstrated an association between both positive and negative major life events and health outcomes. The positive impact of social supports on mental health and chronic disease was demonstrated in large-population cachement studies. Marital status, family integrity, community involvement, and self-perceptions of social support are studied most often, but aspects of religious life also have been found to be positively associated with health outcomes.

C. Role of the Workplace in Stress

A Swedish sawmill study was the first to show a difference in a health parameter (an increase in norepinephrine levels) associated with the degree of control over a job among workers in the same mill. Subsequent research demonstrated that the psychosocial work environment is a risk factor for certain health outcomes and modifies certain medical conditions.

The three main models of occupational stress focus on the duration of stress and the resulting chronic effects. These are the person-environment fit, demand-control, and effort-reward models.

- The person-environment fit model posits that poor job fit, or perceived incongruence between skills and job demands or between career goals and actual opportunities, results in emotional distress.
- Demand-control has been, by far, the most extensively studied occupational stress model since the early 1980s. This model proposes that

high job demands and low decision latitude (or ability to exert control over job demands) interact to result in job strain. Job strain consistently has been linked with cardiovascular mortality and heart disease as well as with effects on intermediate parameters proximal to health outcomes, such as hypertension and left ventricular mass. Recent modifications of the demand-control model allow for the influence of personal traits and learning from psychosocial job experience accrued over a lifetime.

- The effort-reward model integrates social and biologic factors with psychological factors. This model posits that high effort without social rewards elicits strong recurrent feelings of anger, depression, and demoralization, which results in sustained autonomic arousal and consequent adverse health outcomes, such as hypertension and myocardial infarction.

Table 15-1 summarizes specific risk factors identified from the large body of research evaluating specific factors inherent in the job or work organization and associated with employees' health outcomes and mental health. It is important to recognize that specific occupations in the service sector or others with unique demands may carry inherent risk for work-related stress disorders (e.g., nurses, caregivers, teachers, firefighters, law enforcement officers).

Initial Assessment

The initial assessment of patients presenting with stress-related complaints seeks to screen for potentially serious psychiatric disorders, to assess the patient's physical and psychosocial situation, and to establish an effective treatment plan. It is important to adequately evaluate and document the presenting complaint, any prior medical or psychiatric illness, and immediate safety concerns. Attributing symptoms to stress often indicates a diagnosis of exclusion and requires a more thorough assessment, which can be achieved through a short-term plan that includes initial counseling and education and a plan for reassessment. Good communication skills as well as observing confidentiality and boundaries of privacy are vitally important, and are essential to obtain the information for correct diagnosis and establish a basis for treatment. Privacy means considering other sources of help and information with the patient's knowledge and understanding. The patient must also understand who initiated the assessment and who will be privy to any or all of the results.

The initial assessment is a critical tool for detecting potential emotional problems that require the attention of a psychiatrist or other mental health professional to assure safe and optimal treatment. The initial screening should be focused more on recognizing indications for urgent mental health referral (red flags) than on specific psychiatric diagnosis (see Table 15-2). Red-flag indicators include impairment of mental functions, overwhelming symptoms, or signs of substance abuse. The practitioner performing the assessment is advised to keep a high index of suspicion for depression, which is a prevalent

Table 15-1. Potential Stressors

Personal	Interpersonal	Job	Organizational	Societal
Chronic illness	Relationship with peers, supervisor, or subordinates	High demands and low control	Lack of advancement opportunities	Unemployment
Inadequate skills or training	Marital discord, divorce, or other relationship issues	Work overload or underload	Threat of downsizing or mergers	Crime (or fear of)
Bereavement	Emotional labor	Role ambiguity Role conflict	Survivor guilt	Poor economy
Child or elder care issues	Violence (or threat of)	Lack of recognition or reward	Fear of redundancy	War, civil unrest
Personality factors (Type A, hostility, cynicism)	Sexual or other harassment	Insufficieint or excessive supervision		
Stage-of-life issues	Litigation	Shiftwork issues		
Stage-of-career issues	Lack of social support	Work pace		
Job satisfaction		Physical hazards		
Personal values and goals				

and underdiagnosed condition. Absence of red-flag indicators rules out the need for urgent referral or inpatient care.

Medical History

The medical history is fundamental to assessment, triage, and counseling patients with stress-related conditions. Presenting complaints often include multi-system, diffuse, or vague symptom complexes; however, many of the symptoms associated with stress also may be symptoms of other physical or major psychiatric disorders. The history includes physical and emotional symptoms, perceived causes of stress and their meaning to the patient, coping mechanisms, and perceived level of functioning.

Active listening skills are of paramount importance to help the patient identify symptoms, psychosocial stressors, coping mechanisms, and other re-

Table 15-2. Red Flags for Potentially Serious Psychiatric Conditions

Disorder	Medical History	Physical and Mental Status Examination
Thought disorder	Paranoia Hallucinations Bizarre beliefs Delusions	Thought disorder Delusions Impaired reality testing
Affective disorder	Loss of interest in life Sleep, appetite disturbance Change in libido Low self-esteem Suicidal ideation Impaired functioning	Depressed affect Psychomotor retardation
Post-traumatic stress syndrome	History of traumatic event Flashbacks	Increased arousal after re-experience
Possible harm to self or others	Suicidal or homicidal ideation Threats of violence to self or others Has a plan and the means Child or spouse abuse	Thoughts or feelings of violence Feelings of being out of control
Cognitive disorganization or dysfunction	Cognitive impairment Impaired impulse control Impaired social judgment Impaired functioning	Disoriented to time or place Inability to comprehend or follow directions Acute cognitive changes
Substance abuse	Increased alcohol or drug intake Preoccupation with obtaining and using substance Impairment of social or work role Disruptive behavior History of withdrawal Desire for detoxification	Intoxication Tolerance Withdrawal symptoms Elevated liver function studies Agitation Hallucinations Diaphoresis
Overwhelming emotional state	Overwhelming emotions Inability to make decisions Impaired functioning (activities of daily living)	Emotional affect Withdrawal behavior

sources. Open-ended questions are helpful in constructing a semi-structured interview. By asking open-ended direct questions and remaining nonjudgmental, the practitioner helps engender trust, which is critical to the patient's revealing important information. Often, the patient may be embarrassed to divulge the most disturbing symptoms and stressors. Asking direct, detailed questions about difficult situations (e.g., thoughts of suicide, domestic abuse) and specific areas of functioning indicates the practitioner's comfort with the subject, gives the patient permission to reveal this information, and helps him or her trust that it will be received in a nonjudgmental way.

A. Symptoms

The medical history includes the patient's description of current symptoms, their duration, and perceived stressors as well as a recounting of any previous episodes. The patient's estimate of functional impairment is a means to assess the severity of the problem and may guide treatment and the timing of other individual or organizational interventions. When a patient presents with a complaint of stress, it is important to evaluate his or her needs, risks, and strengths before dealing with external factors. Not all stressed individuals will seek help even if they are having trouble with work or difficulty adapting or are physically and/or emotionally ill. It is always important to know why, or at whose direction, the patient is seeking help. The patient may initiate the request or may be referred by a supervisor, human resources manager, medical personnel, union, or a representative of the employer's employee assistance program (EAP). The physician may need to enlist the help of these individuals to gather information and develop a treatment plan after evaluating the patient.

B. Stressors

Effective counseling rests on clearly eliciting biopsychosocial stressors and understanding what they mean to the patient. Patients rarely describe irrelevant events or factors. Frequently, however, patients do not describe the most disturbing stressors and symptoms unless specific direct questions are asked. For this reason, initial assessment of stress-related problems may include a standardized interview format and an informal mental status examination that provides the basic observations needed to evaluate impairment of mental functioning. Only by attempting to identify all principal areas of stress and dysfunction can the clinician make specific diagnoses and treatment recommendations. While it is important to recognize and acknowledge organizational and situational factors, it is not always possible to quickly or easily modify or eliminate an external stressor.

Physicians need to be attuned to symptoms of burnout which, like stress, is not a specific diagnosis or disease. It is characterized by depersonalization, emotional exhaustion, and a reduced sense of personal accomplishment. Burnout may be expressed in nonspecific physical or emotional symptoms or may lead to psychiatric illness or impairment, such as depression or dissociation.

C. Coping Mechanisms

Before a clinician can help the patient enhance his or her coping skills, it is important to understand how he or she has characteristically coped with stressful situations. Again, asking direct questions about the patient's means of coping with stressful situations will be revealing. Coping mechanisms can be active or passive. Examples of active coping skills include proactively confronting issues and requesting assistance from supervisors, coworkers, or others (e.g., EAP personnel). Passive coping mechanisms are escape behaviors, such as

denying or avoiding issues or focusing on escape mechanisms (e.g., weekends, retirement), or engaging in behaviors that provide symptom relief but do not directly address the stressor. Remember, however, that changing one's focus may be an escape or a way to develop new adaptations. Good judgment and careful self-evaluation are part of making any change to deal effectively with a problem. Alcohol and drugs are dysfunctional ways to reduce stress and may contribute to unrealistic self-evaluation; therefore, it is very important to ask specifically about the frequency and amount of alcohol, tobacco, or other drug use. The CAGE questions ("have you ever tried to cut down," "ever been angry when confronted," "ever felt guilty about your drinking," or "needed an eye-opener") can be useful in screening for alcohol dependency. With women patients in particular, it is important to ask about eating habits; weight changes; and changes in eating, cooking, and shopping behaviors because these also may reveal maladaptive coping mechanisms.

D. Other Resources

Asking the patient direct questions is helpful in identifying resources. Asking the patient to assess what other resources are available for support is often helpful. Some patients may effectively manage their problems alone, while others may not, particularly those who avoid asking others for help because they distort the meaning of help or are too embarrassed to ask others. The process of identifying to whom or where the patient may turn for additional support, and what that means to the patient, will help develop a treatment plan. This is also likely to increase the patient's sense of control and compliance with the plan and ultimately improve the outcome. Support may include family, a trusted friend, resources in the religious community, or formal support groups.

Physical Examination

The focus of the physical examination will be based on the presenting symptoms. However, it always includes a general assessment of the patient's current mental and physical state. The clinician needs to maintain a high index of suspicion for underlying depression and for other underlying medical disorders that might present with psychosomatic symptoms, including substance abuse, withdrawal, and evidence of domestic violence.

A standardized mental status examination allows the clinician to detect clues to an underlying psychiatric disorder, assess the impact of stress, and document a baseline of functioning. All aspects of a mental status examination can be routinely incorporated into an informal interview rather than having a set list of questions. It is especially important to address inconsistencies between the patient's presenting complaints or answers to questions and observed behaviors, and to address those inconsistencies in a curious, positive

Table 15-3. Mental Status Examination

General observations	Appearance and demeanor Behavioral activity	Eye contact Motor behavior (psychomotor retardation or excitement)
Mood and affect	Depression, anxiety, anger Anhedonia, loneliness, euphoria Mood swings	Range of affect Inappropriate affect Emotional liability
Thought processes	Quality and/or fluency of speech Coherence and relevance Evasiveness	Loose associations Concrete thinking Neologisms, echolalia, etc.
Thought content	Delusions (and type) Phobias Guilt, self-reproach	Obsessive ideas Thoughts of suicide or death
Somatic functioning	Appetite Energy levels Sleep functioning	Libido Sensory impairment Somatic concerns
Perceptions	Hallucination (and type) Illusions	Depersonalization Derealization
Sensorium	Orientation to person, place, time Clarity of consciousness	Dissociation
Cognitive functions	Disturbance of memory or attention	Intelligence
Judgment	Estimate judgment in areas of family and other social relations, work situation, and future plans	
Insight	Estimate degree of awareness of self, contribution to problems, and solutions	
Potential for harm	Ask about thoughts and plans for self-injury, suicide, violence toward others	

manner. Table 15-3 presents the major areas to cover in the mental status examination.

Diagnostic Testing

A. General Approach

Always exercise sound medical judgment and evaluate for potentially life-threatening or other serious diseases that the history and physical examination may suggest, including ischemic cardiac disease, dysrhythmias, thyroid or other

endocrine disorders, asthma, and depression. On the other hand, avoid the temptation to perform exhaustive testing to exclude the entire differential diagnosis of the patient's physical symptoms because such searches are generally unrewarding. Testing for use of illicit drugs or steroids can be considered if the presentation is suggestive and the remainder of the history and physical examination does not offer other possibilities. Consider specialty referral if persistent symptoms are not consistent with clinical findings. In general, neuropsychological testing is not indicated early in the diagnostic evaluation. Rather, it is most useful in assessing functional status or determining workplace accommodations in individuals with stable cognitive deficits.

B. Diagnosis and Coding

If the primary reason for the patient's health care visit is a somatic manifestation, the practitioner can code the presenting symptom or the medical condition exacerbated by stress. The *International Classification of Diseases,* 9th Edition (ICD-9) also allows for V-codes to indicate psychosocial stressors. Examples include bereavement (V62.82), academic problems (V62.3), occupational problems (V62.2), acculturation problems (V62.4), and phase-of-life problems (V62.89). Unfortunately, reimbursement policies often dictate coding practices, and this type of information may be lost.

If the primary reason for the patient's visit is emotional manifestations of stress, it may be coded according to the criteria set forth in the *Diagnostic and Statistical Manual of Mental Disorders,* 4th Edition (DSM-IV), provided the symptoms and signs meet the full criteria for diagnosis. The following require that specific criteria be met:

- Anxiety disorder NOS, 300.00
- Acute stress disorder, 308.3
- Somatoform disorder, 300.81
- Adjustment disorder, 309
- Physiologic malfunction arising from mental factors and (coded by organ system), 306

If specific criteria are not met, it may be best to code the event as an adjustment disorder or simply as a V-code in order to assure a realistic treatment approach and avoid labeling of the patient, which may be detrimental.

DSM-IV allows for coding of psychosocial and environmental stressors on Axis 4. Axis 1 is reserved for coding clinical disorders; Axis 2 is reserved for personality disorders and mental retardation. Comorbid medical conditions are coded on Axis 3, and the global assessment of functioning (GAF) score is coded on Axis 5. In reality, the GAF often is not coded accurately. This score is composed of both symptom and functional dimensions, but often the examiner assigns a code only on the basis of the patient's presentation of symptoms and perceived distress.

The diagnosis, pattern, and severity of symptoms and the need for referral will determine treatment. All of the following can be explored as initial treatment, as helpful adjuncts to psychotherapy, or as interim relief measures while the patient is waiting for the initial visit with a mental health care provider. For most patients without a concomitant psychiatric disorder, recovery is expected during the first few weeks provided that stressors are mitigated and/or resources and coping mechanisms are enhanced. Because there is no concrete way to determine how treatment is progressing, it is suggested that patients keep a written journal of their progress, including details on sleeping and eating habits, exercise schedule, and handling of workload. Other things worth mentioning are any identifiable barriers to progress and how they are approached.

A. Patient Education

Education is a cornerstone of effective treatment. Patients may find it therapeutic to understand the mechanism and natural history of the stress reaction and that it is a normal occurrence when their resources are overwhelmed. Education also provides the framework to encourage the patient to enhance his or her coping skills, both acutely and in a preventive manner by regularly using stress management techniques. Physicians, ancillary providers, support groups, and patient-appropriate literature are all education resources.

B. Referral

Specialty referral may be necessary when patients have significant psychopathology or serious medical comorbidities. Some mental illnesses are chronic conditions, so establishing a good working relationship with the patient may facilitate a referral or the return-to-work process. Treating specific psychiatric diagnoses are described in other practice guidelines and texts.

It is recognized that primary care physicians and other nonpsychological specialists commonly deal with and try to treat psychiatric conditions. It is recommended that serious conditions such as severe depression and schizophrenia be referred to a specialist, while common psychiatric conditions, such as mild depression, be referred to a specialist after symptoms continue for more than six to eight weeks. The practitioner should use his or her best professional judgment in determining the type of specialist. Issues regarding work stress and person-job fit may be handled effectively with talk therapy through a psychologist or other mental health professional. Patients with more serious conditions may need a referral to a psychiatrist for medicine therapy.

C. Management of Medical Conditions

All new medical conditions or exacerbations of chronic medical conditions should be evaluated and treated according to the best clinical practices.

D. Modification of Maladaptive Coping Mechanisms

Patients can be educated on the adverse effects of maladaptive coping mechanisms, their current symptoms, and their ability to develop new, adaptive coping mechanisms. Be aware that it is often counterproductive to encourage a patient to abandon a coping mechanism until new coping mechanisms are established. Nonetheless, counseling to reduce or discontinue tobacco, alcohol, or drugs does communicate appropriate concern.

Nicotine is an antidepressant that functions much like an MAO (monoamine oxidase) inhibitor; and its usage may be difficult to stop until the patient's health crisis has stabilized and/or a new coping mechanism has been learned. Alcohol and drugs, on the other hand, can actively interfere with learning new ways of coping. In some cases, abstinence is a necessary precondition to learning. Furthermore, alcohol and hypnotics themselves may produce an anxiety state that is difficult to distinguish from a psychiatric disorder for at least four to six weeks. Patients with these kinds of complex issues often require referral.

The physician can encourage adaptive coping mechanisms such as reducing intake of caffeine (a sympathomimetic), refined sugar, and high-fat foods and increasing their intake of complex carbohydrates. Patients also can be counseled on proper sleep and sleep hygiene.

E. Aerobic Exercise

The clinician can be of significant assistance by helping the patient design a graded exercise program appropriate to his/her fitness level. Exercise can be both curative and preventive because evidence suggests that conditioned individuals are better able to resist the physiologic consequences of stress. Aerobic exercise metabolizes glucose, fatty acids, and other metabolites of the stress hormones that are released as part of the neuroendocrine response. Such activity may act in another way by increasing endorphin levels, thus positively influencing mood.

F. Stress Management Techniques

The majority of stress research has focused on stress management techniques for individuals. The following techniques can be offered as a way to help reduce the symptoms of stress and give the patient control over stressful situations and offer a measurable and concrete result; they also may curb the patient's desire to increase use of tobacco, alcohol, or other drugs, or excessive eating. The choice of technique may be influenced by the patient's presenting symptoms. For example, relaxation techniques may be particularly effective for individuals manifesting muscle tension. The psychology literature contains much information about meditation, relaxation techniques, and biofeedback for stress and anxiety, with considerable debate on the theories and mechanism of action (e.g., placebo, operant conditioning). To complicate matters, some

techniques are offered alone or in conjunction with other modalities (e.g., hypnosis) or are modifications of techniques.

1. RELAXATION TECHNIQUES

The goal of relaxation techniques is to teach the patient to voluntarily change his or her physiologic (autonomic and neuroendocrine) and cognitive functions in response to stressors. Using these techniques can be preventive or helpful for patients in chronically stressful conditions, or they even may be curative for individuals with specific physiologic responses to stress. Relaxation techniques include meditation, relaxation response, and progressive relaxation. These techniques are advantageous because they may modify the manifestations of daily, continuous stress. The main disadvantages are that formal training, at a cost, is usually necessary to master the technique, and the techniques may not be a suitable therapy for acute stress.

Transcendental meditation (TM) is the most widely practiced form of meditation in the West. Other forms of meditation are associated with Eastern religions or philosophies, which may limit their appeal in the West. Transcendental meditation has been studied extensively as an adjunct treatment for hypertension as well as a stress-reduction technique. It has been shown to result in sustained and improved scores on the Hamilton and Beck Anxiety and Depression inventories three years after initial training in a group of patients with anxiety disorders.

Autogenic training and biofeedback are other relaxation methods designed to empower individuals to self-regulate physiologic responses. Both require training and practice.

Other relaxation techniques focus on simple, every day destressors, such as going for a walk, playing with children or pets, spending time alone, or talking with a friend or counselor. Integrating these activities into a stressful time can help create the more stable life balance that is better suited for coping with demanding external stimuli.

2. BEHAVIORAL TECHNIQUES

Time management, conflict resolution, or assertiveness training may be appropriate, depending on the assessment of demands facing the patient as well as his or her coping mechanisms and skills. Often, these programs are offered as employee training by the employer at little or no cost.

3. COGNITIVE TECHNIQUES AND THERAPY

Fundamental to cognitive therapy is the premise that the individual plays an important role in how he or she perceives or modifies his or her situation. Cognitive therapy can be problem-focused, with strategies intended to help alter the perception of stress; or emotion-focused, with strategies intended to alter the individual's response to stress. Familiarity and fluency with the many cognitive theories, therapies, and techniques is beyond most physicians' set

of skills without specialized training. Studies on the effectiveness of cognitive therapy performed by psychologists exist, but studies evaluating attenuated cognitive techniques have not been done.

Nevertheless, for patients who do not merit a mental health referral or who refuse it, reviewing some basic techniques may be helpful. Increasing self-awareness and helping the individual find a way to reframe the stimulus or respond differently is common to many cognitive techniques. One commonly employed practice in primary care is to encourage the patient to keep a diary of his or her symptoms and stressors. This may help the patient link stressors with symptoms and offers the added advantage of measuring the frequency of symptoms. Other techniques focus on the patient's identifying and re-characterizing situations, stopping distorted thinking, or choosing his or her response to stress. Clarifying values may be helpful for patients who feel torn between roles and responsibilities. In a brief relationship with a patient, it is usually more useful to help him or her consider alternative thinking, behaviors, and plans than to confront dysfunctional thinking.

4. STRESS INOCULATION THERAPY

Stress inoculation therapy is another cognitive technique that bears special mention because it may be useful on an individual level or for specific occupational groups. This technique involves identifying sources of predictable stress, then preparing and practicing a plan to deal with the stressors. The results of limited studies performed in occupational groups (law enforcement, caregivers to mentally retarded clients) have been encouraging.

G. External Resources and Referrals

Employee assistance programs (EAPs) are comprehensive worksite-based programs designed to assist in the early identification and resolution of productivity problems associated with employees who are impaired or likely to be impaired by behavioral problems. Employee assistance programs have evolved to provide counseling for many types of common problems.

Employee assistance programs generally are funded by the employer and may be in-house or external. Some EAPs have little or no understanding of the workplace. Their primary function is to provide referral to external resources. If an occupational health professional has employers as clients, it is very helpful to have some understanding of the scope of, and how to access, their EAPs as well as other mental health benefits.

Many EAPs offer a management referral as an intervention tool for the employer concerned about employee-performance issues. This allows the employer to formally request that a professional associated with the EAP evaluate an employee if that employee demonstrates problems with job performance that may result from a mental health, substance abuse, or psychosocial problem. The EAP will give the employer some feedback, ranging from confirmation that an appointment was kept to on-going feedback as to whether the employee

is making a good-faith effort with therapy or other interventions. It is often helpful when the referring physician receives feedback from the EAP.

H. Pharmacotherapy

1. ANXIOLYTICS

Anxiolytics are not recommended as first-line therapy for stress-related conditions because they can lead to dependence and do not alter stressors or the individual's coping mechanisms. They may be appropriate for brief periods in cases of overwhelming symptoms that interfere with daily functioning or to achieve a brief alleviation of symptoms that allow the patient to recoup emotional or physical resources. If medication is requested or is needed for a longer time, physicians may consider psychiatric disorders and appropriate referral.

2. ANTIDEPRESSANTS

Brief courses of antidepressants may be helpful to alleviate symptoms of depression; but because they may take weeks to exert their maximal effect, their usefulness in acute situations may be limited. Antidepressants have many side effects and can result in decreased work performance or mania in some people. Incorrect diagnosis of depression is the most common reason antidepressants are ineffective. Long-standing character issues, not depression, may be the underlying issue. Given the complexity and increasing effectiveness of available agents, referral for medication evaluation may be worthwhile.

3. ANTIPSYCHOTICS

Continuing an established course of antipsychotics is important, but they can decrease motivation and effectiveness at work. If a referral is made, it is still important to plan how the patient using these drugs will manage at work or return to work even after being referred for specific psychiatric treatment.

I. Modified Work and Accommodations

Occupational physicians are expected to offer specific instructions about work ability or job accommodations to facilitate successful return to work. Patients with acute stress-related conditions may not be viewed as having disabilities under the Americans with Disabilities Act (ADA). Nonetheless, it may be appropriate to suggest workplace modifications if they will facilitate the patient's reentry and retention in the work environment. Examples of accommodations include: 1) working with the patient and his or her supervisor or human resources manager to clarify the patient's responsibilities and performance expectations; 2) clarifying the frequency and degree of feedback from supervisor; or 3) temporary reassignment of specific stressful tasks. All job modifica-

tions should be limited in duration. As the patient improves, the clinician can work with the patient and the supervisor on job redesign and/or task redistribution to increase efficiency and reduce stressors. Other examples of accommodations include flexible hours, job sharing, reassigning tasks between workers, reassigning the patient to a vacant position, physical changes in the work environment to reduce stimuli (noise, visual, people), providing laptop computers to allow the patient to work at home, increasing supervisory sessions, and offering additional training and skill building. Further assistance on designing accommodations can be obtained from the Job Accommodation Network at 800-ADA-WORK, and from other resources.

J. Organizational Interventions

Physicians who provide services to an employer are in a unique position to counsel the employer on all aspects of occupational health, including occupational stress. Crisis interventions can be helpful for acute events such as downsizing or a catastrophic workplace event. Assessments and interventions are also available to help organizations with chronically high-stress levels, as manifested by high turnover, absenteeism, and other indicators that employees are under stress, such as increased EAP use and increased medical claims.

The occupational physician can consider adding to worksite audit tools those psychosocial characteristics of the work environment linked with stress. This may be helpful in objectively framing work-related stress as a health issue to management or to human resources personnel and identifying risk factors.

Organizational stress assessment tools have been developed, validated, and used effectively worldwide. Examples include the Pressure Management Indicator (PMI), Occupational Stress Inventory (OSI), and Generic Job Stress Questionnaire developed by NIOSH. These are usually administered to a work group or an entire organization to assess sources of organizational stress, individual stressors, and individuals' coping mechanisms. Such tools often are followed with a group intervention, such as a focus group, to further explore the sources and potential remedies for the organizational stress. Potential remedies include increased employee participation, redesigning the work group or job, consultation on management and supervisory skills and styles, implementing flexible schedules, reorganization, information exchange, changing rewards, or changing organizational norms (e.g., change in corporate "culture"). Organizational development, a human resources specialty area that assesses and implements organizational change programs, traditionally has "ownership" of this area within large companies. Organizational psychologists and psychiatrists are potential resources for assessing and "treating" organizational stress.

K. Disability Duration

The ultimate goal of therapy is to preserve the patient's functioning at work and in social relationships. Patients can be encouraged to use time off from

work appropriately (e.g., bereavement leave, vacation, personal days, time that may be available under the provisions of the Family and Medical Leave Act, etc.) to address stressors outside of work if they are otherwise medically able to work. Returning a patient to work without actively addressing the underlying problem and providing appropriate treatment may lead to increased stress with resultant depression, insecurity, and/or jeopardized employment.

The duration of disability for patients whose medical condition warrants an absence will vary with the diagnosis, severity of current symptoms, and any comorbid conditions. There is no gold standard for stress-related disability durations. According to the Occupational Safety and Health Administration (OSHA), 23 days is the median number of days away from work for acute reactions to stress precipitated by discrete catastrophic events (ICD-9 308). Observed disability for anxiety disorders (ICD-9 308.3, 308.4, 308.9) in national databases is zero to five days, which is consistent with recommended disability durations in major duration guidelines (*Official Disability Guidelines*, Reed). Referral for mental health assessment may be considered if anticipated absence from work is expected to be more than one week.

Work-Relatedness

From a purely medical and psychological standpoint, stress involves the complex dynamics of the many factors and modifiers. The workers' compensation process in the United States is largely a legal and not a medical process. Determining what role the workplace played in causing or exacerbating a stress-related complaint involves careful analysis, review of the scientific evidence, and considered professional judgment.

The workers' compensation system generally classifies injuries according to the nature of the injury and its proximal cause, as follows:

- **Mental-mental:** a psychological or psychosocial stressor causes psychological injury
- **Mental-physical:** a psychological or psychosocial stressor causes physical injury
- **Physical-mental:** a physical event (e.g., assault, trauma) causes psychological injury (e.g., post-traumatic stress disorder)
- **Physical-physical:** a physical stressor causes physical injury

Compensation for stress-related disorders varies by state. Some states stipulate that the stressful event or circumstances must be unusual. For example, California allows compensation for psychiatric injuries that can be shown to be predominately caused by employment. Similarly, North Dakota allows compensation for mental injuries that are causally related to employment with a medical degree of certainty. If stress aggravates physical illnesses, such as coronary artery disease, conduction disturbances, hypertension, asthma, and other diseases, it is compensable in some systems if the stress is medically

determined to be significant. In some states, psychological or physical disorders can be regarded as stress-related or stress-induced if reasonably believed to have been incited by a stressor. The necessary proportion of contribution varies and is often determined by statute. In some cases, the proportions are different if physical violence is involved or a specific disease is at issue. Case law and statutory changes prove this area of workers' compensation is rapidly evolving and the local workers' compensation commission can provide the most recent guidance.

Follow-up Visits

Frequency of follow-up visits may be determined by the severity of symptoms, whether the patient was referred for further testing and/or psychotherapy, and whether the patient is missing work. These visits allow the physician and patient to reassess all aspects of the stress model (symptoms, demands, coping mechanisms, and other resources) and to reinforce the patient's supports and positive coping mechanisms. Generally, patients with stress-related complaints can be followed by a midlevel practitioner every few days for counseling about coping mechanisms, medication use, activity modifications, and other concerns. These interactions may be conducted either on site or by telephone to avoid interfering with modified- or full-duty work if the patient has returned to work. Follow-up by a physician can occur when a change in duty status is anticipated (modified, increased, or full duty) or at least once a week if the patient is missing work.

Failure to Improve

Failure to improve may be due to an incorrect diagnosis, unrecognized medical or psychological conditions, or unrecognized psychosocial stressors. Again, it bears repeating to maintain a high index of suspicion for the prevalent but underdiagnosed condition of depression. If a patient expresses chronic dissatisfaction with work or has experienced significant dissatisfaction for several months, referral for psychiatric assessment or vocational counseling may be appropriate.

References

GENERAL REFERENCES

Cummings N, Vanden Bos G. The twenty-year Kaiser-Permanente experience with psychotherapy and medical utilization: implications for national health policy and national health insurance. *Health Policy Q.* 1981;1:159-74.

Kahn JP, Langlieb AM, eds. *Mental Health in the Workplace: A Handbook for Organizations and Clinicians.* San Francisco, Calif: Jossey-Bass; 2003.

Olfson M, Broadhead E, Weissman M, et al. Subthreshold psychiatric symptoms in a primary care group practice. *Arch Gen Psychiatry.* 1996;53:880-6.

U.S. Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research Publication. *Clinical Practice Guideline Number 5, Depression in Primary Care: Volume 1, Detection and Diagnosis; Volume 2, Treatment of Major Depression.* No. 93-0550 and -0551; April 1993.

U.S. Department of Health and Human Services, Public Health Service. *Healthy People 2000 Midcourse Review and 1995 Revisions.* Washington, DC; 1995.

DIAGNOSIS AND CODING

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders.* 4th ed. Washington, DC. American Psychiatric Association; 1994.

World Health Organization. *The International Classification of Diseases.* 9th Revision. Geneva, Switzerland: World Health Organization; 1997.

DISABILITY AND WORKERS' COMPENSATION

Denniston PL Jr, Ranavaya MI, Kennedy CW, et al. Return-to-work best practice guidelines. In: Denniston PL Jr, ed. *Official Disability Guidelines 2003.* 8th ed. Encinitas, Calif: Work Loss Data Institute; 2002.

Mancuso L. *Case Studies on Reasonable Accommodations for Workers with Phychiatric Disabilities.* Washington, DC: The Washington Business Group on Health; 1992.

Reed, P. The *Medical Disability Advisor: Workplace Guidelines for Disability Durations.* 4th Ed. Boulder, Colo: Reed Group, Ltd; 2001.

Schulman B. Stress. In: Demeter S, Anderson G, Smith G, eds. *Disability Evaluation.* St. Louis, Mo: Mosby; 1996.

1996 Analysis of Workers' Compensation Laws. Washington, DC: U.S. Chamber of Commerce; 1996.

OCCUPATIONAL STRESS

Anderzen I, Arnetz BB. Psychophysiological reactions to international adjustment. Results from a controlled, longitudinal study. *Psychother Psychosom.* 1999;68(2):67-75.

Arnetz BB. Technological stress: psychophysiological aspects of working with modern information technology. *Scand J Work Environ Health.* 1997;23 Suppl 3:97-103.

Burton WN, Conti DJ, Chen C-Y, et al. The role of health risk factors and disease on worker productivity. *J Occup Environ Med.* 1999;41(10):863-77.

Holmes S. Work-related stress: a brief review. *J R Soc Health.* 2001;121(4): 230-5.

Hurrell JJ Jr, Nelson DL, Simmons BL. Measuring job stressors and strains: where we have been, where we are, and where we need to go. *J Occup Health Psychol.* 1998;3(4):368-89.
Johnson JV, Johansson G, eds. *The Psychosocial Work Environment: Work Organization, Democratization and Health.* Amityville, NY: Baywood Publishing; 1991.
Kasl S. The influence of the work environment on cardiovascular health: a historical, conceptual, and methodological perspective. *J Occup Psychol.* 1996;1(1):42-56.
Karasek R, Theorell T. *Healthy Work: Stress, Productivity and the Reconstruction of Working Life.* New York, NY: Basic Books; 1990.
Kawakami N, Araki S, Kawashima M, Masumoto T, Hayashi T. Effects of work-related stress reduction on depressive symptoms among Japanese blue-collar workers. *Scand J Work Environ Health.* 1997;23(1):54-9.
Keita GP, Hurrell J, eds. *Job Stress in a Changing Workforce: Investigating Gender, Diversity, and Family Issues.* Washington, DC: American Psychological Association; 1994.
Kompier M, Cooper C, eds. *Preventing Stress, Improving Productivity: European Case Studies in the Workplace.* London and New York, NY: Routledge; 1999.
Nordstrom CK, Dwyer KM, Merz CN, Shircore A, Dwyer JH. Work-related stress and early atherosclerosis. *Epidemiology.* 2001;12(2):180-5.
Peterson M, Wilson JF. The culture-work-health model and work stress. *Am J Health Behav.* 2002;26(1):16-24.
Sauter S, Murphy L, eds. *Organization Risk Factors for Job Stress.* Washington, DC: American Psychological Association; 1995.
Smith A. The scale of perceived occupational stress. *Occup Med (Lond).* 2000;50(5):294-8.
Tennant C. Work-related stress and depressive disorders. *J Psychosom Res.* 2001;51(5):697-704.
Theorell T, Karasek R. Current issues relating to psychosocial job strain and cardiovascular disease research. *J Occup Psychol.* 1996;1(1):9-26.
Theorell T. How to deal with stress in organizations? A health perspective on theory and practice. *Scand J Work Environ Health.* 1999;25(6):616-24.
Seigrist J. Adverse health effects of high effort/low-reward conditions. *J Occup Psychol.* 1996;1(1):27-41.
Schwartz J, Pickering T, Landsbergis P. Work-related stress and blood pressure: current theoretical models and considerations from a behavioral medicine perspective. *J Occup Health Psychol.* 1996;1(3):287-310.
van der Klink JJ, Blonk RW, Schene AH, van Dijk FJ. The benefits of interventions for work-related stress. *Am J Public Health.* 2001;91(2):270-6.

DEPRESSION

ACOEM Occupational Mental Health Committee. A screening program for depression. *J Occup Environ Med.* 2003;45(4):346-8.
Dewa CS, Goering P, Lin E, Paterson M. Depression-related short-term dis-

ability in an employed population. *J Occup Environ Med*. 2002;44(7):628-33.
Druss BG, Schlesinger M, Allen HM. Depressive symptoms satisfaction with health care, and 2-year work outcomes in an employed population. *Am J Psychiatry*. 2001;158(5):731-4.
Moncrieff J, Wessely S, Hardy R. Active placebos versus antidepressants for depression (Cochrane Review). In: *The Cochrane Library*. Issue 2; 2002. Oxford: Update Software.
Pignone MP, Gaynes BN, Rushton JL, et al. Screening for depression in adults: a summary of the evidence for the US Preventive Services Task Force. *Ann Intern Med*. 2002;136(10):765-76.
US Preventive Services Task Force. Screening for Depression: Recommendations and Rationale. *Ann Intern Med*. 2002;136(10):760-4.
Westen D, Morrison K. A multidimensional meta-analysis of treatments for depression, panic, and generalized anxiety disorder: an empirical examination of the status of empirically supported therapies. *J Consult Clin Psychol*. 2001;69(6):875-99.

POST-TRAUMATIC STRESS DISORDER

Suzanna R, Bisson J, Wessely S. Psychological debriefing for preventing post traumatic stress disorder (PTSD) (Cochrane Review). In: *The Cochrane Library*. Issue 2; 2002. Oxford: Update Software.

TREATMENT

Cotton D. *Stress Management: An Integrated Approach to Therapy*. New York, NY: Brunner/Mazel; 1990.
Ezoe S, Morimoto K. Behavioral lifestyle and mental health status of Japanese factory workers. *Prev Med*. 1994;23(1):98-105.
Gorman JM. Treatment of generalized anxiety disorder. *J Clin Psychiatry*. 2002;63(Suppl)8:17-23.
Harris JS. Home study program. Stressors and stress in critical care. *Crit Care Nurse*. 1984;4(1):83-97.
Hawton K, Townsend E, Arensman E, et al. Psychosocial and pharmacological treatments for deliberate self harm (Cochrane Review). In: *The Cochrane Library*. Issue 2; 2002. Oxford: Update Software.
Ivanevich J, Matteson M, Freedman S, et al. Worksite stress management interventions. *Am J Psychol*. 1990;45(2):252-61.
Keyes J. Stress inoculation training for staff working with persons with mental retardation: a model program. In: Murphy L, Hurrell J, Sauter S, et al, eds. *Job Stress Interventions*. Washington, DC: American Psychological Association; 1995:45-56.
McCann I, Holmes D. Influence of aerobic exercise on depression. *J Pers Soc Psychol*. 1984;46(5):1142-7.
Miller JJ, Fletcher K, Kabat-Zinn J. Three-year follow-up and clinical implications of a mindfulness meditation-based stress-reduction intervention in the treatment of anxiety disorders. *Gen Hosp Psychiatr*. 1995;17(3):192-200.

Muchnick-Baku S, Traw K. *Employee Assistance Programs: An Evolving Human Resource Management Strategy.* Washington, DC: Washington Business Group on Health; 1992.

Murphy L, Hurrell J, Sauter S, et al, eds. *Job Stress Interventions.* Washington, DC: American Psychological Association; 1995.

Pittler MH, Ernst E. Kava extract for treating anxiety (Cochrane Review). In: *The Cochrane Library.* Issue 2; 2002. Oxford: Update Software.

Quick JC, Murphy L, Hurrell J, eds. *Stress and Well-Being at Work: Assessments and Interventions for Occupational Mental Health.* Washington, DC: American Psychological Association; 1992.

Roskies E, Seraganian P, Oseahon R, et al. The Montreal type A intervention project: major findings. *Health Psychol.* 1986;5(1):45-69.

Srisurapanont M, Jarusuraisin N. Opioid antagonists for alcohol dependence (Cochrane Review). In: *The Cochrane Library.* Issue 2; 2002. Oxford: Update Software.

Williams S. *Managing Pressure for Peak Performance: The Positive Approach to Stress.* London: Kogan Page; 1994.

ORGANIZATIONAL INTERVENTIONS

Cartwright S, Cooper C, Murphy L. Diagnosing a healthy organization: a proactive approach to stress in the workplace. In: Murphy L, Hurrell J, Sauter S, et al, eds. *Job Stress Interventions.* Washington, DC: American Psychological Association; 1995:217-34.

Cooper C, Sloan S, Williams S. *Occupational Stress Indicator (Pressure Management Indicator) Management Guide.* Windsor, England: NFER-Nelson; 1988.

Ganster D. Interventions for building healthy organizations: suggestions from the stress research literature. In: Murphy L, Hurrell J, Sauter S, et al, eds. *Job Stress Interventions.* Washington, DC: American Psychological Association; 1995:323-36.

Goetzel RZ, Ozminkowski RJ, Sederer LI, Mark TL. The business case for quality mental health services: why employers should care about the mental health and well-being of their employees. *J Occup Environ Med.* 2002;44(4):320-30.

Goetzel RZ, Anderson DR, Whitmer RW, et al. The relationship between modifiable health risks and health care expenditures: an analysis of the multi-employer HERO health risk and cost database. *J Occup Environ Med.* 1998;40(10):843-54.

Osipow S, Spokae A. *A Manual for Measure of Occupational Stress, Strain and Coping.* Odessa, Fla: Par, Inc; 1983.

SOCIAL SUPPORT AND HEALTH

Berkman L. Social networks, support and health: taking the next step forward. *Am J Epidemiol.* 1986;123:559-62.

Berkman L, Syme L. Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents. *Am J Epidemiol.* 1979;109:186-204.

Cassel J. The contribution of the social environment to host resistance. *Am J Epidemiol.* 1976;104:107-23.
Cromwell BA, George L, Blazer D, et al. Psychosocial risk factors and urban/rural differences in the prevalence of major depression. *Br J Psychiatry.* 1986;149:304-14.
Gardner J, Lyon J. Cancer in Utah Mormon men by lay priesthood level. *Am J Epidemiol.* 1982;116:243-57.
Gardner J, Lyon J. Cancer in Utah Mormon women by church activity level. *Am J Epidemiol.* 1982;116:258-65.
Holmes T, Rahe R. The social readjustment rating scale. *J Psychosom Research.* 1967;11:213-8.
House J, Landis K, Umberson D. Social relationships and health. *Science.* 1988;241:540-5.
Levin J, Vanderpool H. Is frequent religious attendance really conducive to better health? Toward an epidemiology of religion. *Soc Sci Med.* 1987; 24(7):589-600.
Levin J. Religion and health: is there an association, is it valid, and is it causal? *Soc Sci Med.* 1994;38(11):1475-82.
Vilhjalmosson R. Life stress, social support and clinical depression: a reanalysis of the literature. *Soc Sci Med.* 1993;37(3):331-42.
Wilson I, Cleary L. Linking clinical variables with health-related quality of life: a conceptual model of patient outcomes. *JAMA.* 1995;273:59-65.

STRESS AND MEDICAL CONDITIONS

Alfredsson L, Karasek R, Theorell T. Myocardial infarction risk and psychosocial work environment: an analysis of the male Swedish working force. *Soc Sci Med.* 1982;16:463-7.
Anda R, Williamson D, Escobedo L, et al. Self-perceived stress and the risk of peptic ulcer disease: a longitudinal study of U.S. adults. *Arch Intern Med.* 1992;152:829-33.
Armstrong D, Arnold R, Classen MA, et al. RUDER—A prospective, two-year multicenter study of risk factors for duodenal ulcer relapse during maintenance therapy with ranitidine. *Dig Dis Sci.* 1994;39(7):1425-33.
Bush DE, Ziegelstein RC, Tayback M, et al. Even minimal symptoms of depression increase mortality risk after acute myocardial infarction. *Am J Cardiol.* 2001;88:337-41.
Ellard K, Beaurepaire J, Jones M, et al. Acute and chronic stress in duodenal ulcer disease. *Gastroenterology.* 1990;99:1628-32.
Ferketich MA, Schwartzbaum JA, et al. Depression as an antecedent to heart disease among women and men in the NHANES I study. *Arch Intern Med.* 2000;160:1261-8.
Ford DE, Mead LA, Chang PP, Cooper-Patrick L, Wang NY, Klag MJ. Depression is a risk factor for coronary artery disease in men. *Arch Intern Med.* 1998;158:1422-6.
Frasure-Smith N, Lesperance F, Talajic M. Depression following myocardial infarction: impact on 6-month survival. *JAMA.* 1993;270:1819-25.

Holtman G, Armstrong D, Poppel E, et al. Influence of stress on the healing and relapse of duodenal ulcers: a prospective, multicenter trial of 2109 patients with recurrent duodenal ulceration treated with ranitidine. *Scand J Gastroenterol.* 1992;27:917-23.

Hui M, Shui P, Lok SF, et al. Life events and daily stress in duodenal ulcer disease: a prospective study of patients with active disease and in remission. *Digestion.* 1992;52:165-72.

Karasek R, Theorell T, Schwartz J, et al. Job characteristics in relation to the prevalence of myocardial infarction in the U.S. Health Examination Survey (HES) and the Health and Nutrition Examination Survey (HANES). *Am J Public Health.* 1988;78(8):910-8.

Karasek R, Baker D, Marxer F, et al. Job decision latitude, job demands, and cardiovascular disease: a prospective study of Swedish men. *Am J Public Health.* 1981;71:694-705.

Kawakami N, Haratani T, Araki S. Effects of perceived job stress on depressive symptoms in blue-collar workers of an electrical factory in Japan. *Scand J Work Environ Health.* 1992;18(3):195-9.

Knox S, Theorell T, Svensson J, et al. The relation of social support and working environment to medical variables associated with elevated blood pressure in young males: a structural model. *Soc Sci Med.* 1985;21(5):525-31.

Landsbergis P, Schnall P, Warren K, et al. Association between ambulatory blood pressure and alternative formulations of job strain. *Scand J Work Environ Health.* 1994;20:349-63.

Lerner D, Levine S, Malspeis S, et al. Job strain and health-related quality of life in a national sample. *Am J Public Health.* 1994;84:1580-5.

Lindquist TL, Beilin LJ, Knuiman M. Effects of lifestyle, coping and work-related stress on blood pressure in office workers. *Clin Exp Pharmacol Physiol.* 1995;22(8):580-2.

Maschewsky W. The relation between stress and myocardial infarction: a general analysis. *Soc Sci Med.* 1982;16:455-62.

Pieper C, LaCroix A, Karasek R. The relation of psychosocial dimensions of work with coronary heart disease risk factors: a meta-analysis of five United States data bases. *Am J Epidemiol.* 1989;129(3):483-94.

Richter JE. Stress and psychological and environmental factors in functional dyspepsia. *Scand J Gastroenterol.* 1991;26(S182):40-6.

Schnall P, Pieper C, Schwartz J, et al. The relationship between "job strain," workplace diastolic blood pressure, and left ventricular mass index: results of a case-control study. *JAMA.* 1990;263(14):1929-35.

Vanitallie TB. Stress: a risk factor for serious illness. *Metabolism.* 2002;51(6 Suppl 1):40-5.

OTHER

The following references, compiled by C. Donald Williams, MD, were kindly provided by the Academy of Organizational and Occupational Psychiatry for inclusion in this chapter.

Azima F. Group psychotherapy with personality disorders. In: Kaplan H, Sadock H, eds. *Comprehensive Group Psychotherapy.* 3rd ed. Baltimore, Md: Williams & Wilkins; 1993:393-406.

Bonnie RJ, Monahan, eds. *Mental Disorder, Work Disability, and the Law.* Chicago, Ill: University of Chicago Press; 1996.

Bruce ML, Seeman TE, Merrill SS, Blazer DG. The impact of depressive symptomatology on physical disability: MacArthur studies on successful aging. *Am J Public Health.* 1994;84:1796-9.

Druss BG, Rosenheck RA, Sledge WH. Health and disability costs of depressive illness in a major U.S. corporation. *Am J Psychiatry.* 2000;157(8):1274-8.

Dubovsky SL, Thomas M. Psychotic depression: advances in conceptualization and treatment. *Hosp Community Psychiatry.* 1992;43(12):1189-98.

Duckro PN, Chibnall JT, Tomazic TJ. Anger, depression, and disability: a path analysis of relationships in a sample of chronic posttraumatic headache patients. *Headache.* 1995;35:7-9.

Dworkin RH, Handlin DS, Richlin DM, Brand L, Vannucci C. Unraveling the effects of compensation, litigation, and employment on treatment response to chronic pain. *Pain.* 1985;23:49-59.

Eells TD. Can therapy affect physical health? *J Psychother Pract Res.* 2000;9(2)100-4.

Gallagher RM. Referral delay in back pain patients on worker's compensation. *Psychosomatics.* 1996;37:270-84.

Grant BL, Robbins DB. Disability, workers compensation, and fitness for duty. In: Kahn JP, ed. *Mental Health in the Workplace: A Practical Psychiatric Guide.* New York, NY: Van Nostrand Reinhold; 1993.

Hall HV, Pritchard DA. *Detecting Malingering and Deception.* New York: St. Lucie Press; 1996.

Hendler NL, Kozikowski JG. Patients involved in litigation. *Psychosomatics.* 1993;34:494-501.

Johnson P, Indvik J. The impact of unresolved trauma on career management. *Internl J Career Manag.* 1994;6(2):12-8.

Kouzis A, Eaton W. Psychopathology and the initiation of disability payments. *Psychiatric Services.* 2001;51:908-13.

Langer CS. Title I of the Americans with Disabilities Act. In: Snyder JW, Klees JE, eds. *Law and the Workplace: Occupational Medicine: State of the Art Reviews.* 1996;11:1-16.

Leig JP, Markowitz SB, Fahs M, Shin C, Landrigan PJ. Occupational injury and illness in the United States. *Arch Intern Med.* 1997;157:1557-68.

Minnesota Department of Labor and Industry. *State Workers' Compensation Anti-Fraud Activity: Survey Results*; 1995.

Mischoulon D. An approach to the patient seeking psychiatric disability benefits. *Acad Psych.* 1999;22:128-36.

Modlin HC. Compensation neurosis. *Bull Am Acad Psychiatry Law.* 1986;14(3):263-71.

Oldham JM, Skodol AE, Kellman HD, et al. Comorbidity of axis 1 and axis 2 disorders. *Am J Psychiatry.* 1995;152:571-8.

Porter K. Combined individual and group psychotherapy. In: Kaplan H, Sadock H, eds. *Comprehensive Group Psychotherapy.* 3rd ed. Baltimore, Md: Williams & Wilkins; 1993.

Rogers R, ed. *Clinical Assessment of Malingering and Deception*. New York, NY: The Guilford Press; 1988.

Schouten R. Pitfalls of clinical practice: the treating clinician as expert witness. *Harv Rev Psychiatry.* 1993;1:64-5.

Schouten R. Approach to the patient seeking disability. In: Stern TA, Herman JB, Slavin PL, eds. *The MGH Guide to Psychiatry in Primary Care*. New York, NY: McGraw Hill; 1998:121-6.

Schouten R, Williams CD. Psychiatric assessment and management of chronic disability syndromes. In: Stoudemire A, Fogel BS, Greenberg D, eds. *Psychiatric Care of the Medical Patient*. 2nd ed. New York, NY: Oxford University Press; 2000.

Sederer L, Clemens N. The business case for high-quality mental health care. *Psychiatric Serv.* 2001;53:143-5.

Strasburger LH, Gutheil TG, Brodsky A. On wearing two hats: role conflict in serving as both psychotherapist and expert witness. *Am J Psychiatry.* 1997;154:448-56.

Walker EA, Gelfand MD, Gelfand AN, Creed F, Katon WJ. The relationship of current psychiatric disorder to functional disability and distress in patients with inflammatory bowel disease. *Gen Hosp Psychiatry.* 1996;18:220-9.

Williams CD. Group psychotherapy in the treatment of injured workers. Paper presentation. APA Annual Meeting. 1997.

Zuckerman D. Reasonable accommodations for people with mental illness under the ADA. *Mental Physical Disability Law Reporter.* 1993;17:311-20.

Zwerling C, Whitten PS, Davis CS, Sprince NL. Occupational injuries among workers with disabilities. *JAMA.* 1997;278:2163-9.