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Health Tips

*Repeating This Phrase May
Improve Your Health
Make Up Your Own Mantra
for Changing Behaviors*



Managing Stress

*Biofeedback
Progressive Muscle Relaxation
Relaxation with Music*



Wellness Guide

*Using Your Mind to
Heal Your Body
Using Your Mind to
Improve Health*

Mind–Body Communications Maintain Wellness

Learning Objectives

1. Describe three ways the mind and body communicate biologically.
2. Define psychosomatic illness.
3. Describe and give examples of the placebo effect.
4. Describe how faith, religion, and spirituality affect health.
5. Explain hypnotherapy.
6. Describe meditation and image visualization.

Many people believe that good health is related primarily to proper nutrition and physical fitness. Although both are vital to health, another important factor affecting health is what goes on in your mind.

Life is not measured by the number of breaths we take, but by the moments that take our breath away.

George Carlin

Positive thoughts about yourself and others and positive emotions such as happiness and love contribute to vitality, optimism, and joy, which can motivate living healthfully, aid healing and recovery from illness and injury, and increase longevity (Dockray & Steptoe, 2010). Negative thoughts and emotions contribute to depression, pessimism, and decreased health and longevity.

In Western culture, we are accustomed to thinking of health and healing in terms of drugs, medical treatments, and surgery. In other cultures, past and present, health and healing are accomplished by mental processes such as faith, magic, and spiritual practices. Even in our culture we recognize that attitudes play an important role in promoting health and recovering from illness. Most physicians are aware that a person's attitude greatly affects the probability of recovery from illness. We've all heard of the patient's "will to live."

The mind affects health and well-being because the mind and body make up a single, unified organism. No body exists without a mind; no mind exists without a body. The mind and body communicate with each other by means of the nervous, endocrine (hormone), and immune systems, allowing thoughts, beliefs, and feelings to change body chemistry and physiology.

There are ways to focus the mind to promote health, prevent disease, and foster healing in times of illness. Among them are biofeedback, relaxation, hypnosis, guided imagery, autogenic training, and meditation (Table 2.1). Modern Western medicine has begun to utilize mind-body techniques, and researchers are elucidating the biological mechanisms that underlie mind-body communications and their effects on health and wellness. In this chapter we discuss mind-body interactions and how they affect health and well-being.

Mind–Body Communication

Advances in identifying the biological mechanisms of mind-body communication confirm that the mind can affect health in powerful ways. Joy, creativity, and contentment lead to a state of mind-body harmony, which we experience as bodily health and subjective well-being. Fear, anxiety, stress, and depression contribute to mind-body disharmony, which increases risks for a variety of illnesses, impedes healing, and fosters a sense that life is difficult and unpleasant.

Nerve cells in the brain's thought and feeling centers connect to other nerve cells in the brain and body, hor-

Table 2.1

Mind–Body Methods for Promoting Health and Preventing and Recovering from Illness

Method	Description
Autogenic training	Silent repetition of one of six autogenic phrases to produce a state of deep relaxation
Biofeedback	Using an electronic device to "feed back" information about the activity of a particular region of the body to alter that activity
Guided imagery	Using mental images suggested by a "guide" to produce relaxation and/or develop a skill
Hypnosis	Focusing attention and lessening awareness of surroundings to produce a relaxed state that is open to suggestion
Image visualization	Using self-generated mental images to produce relaxation and/or develop a skill
Meditation	Focusing awareness on a self-produced inner sound ("mantra") or an external sound, or image, or one's breathing to lessen attentiveness to external stimuli
Progressive muscle relaxation	Progressive tensing and relaxing of muscles in the body to produce relaxation

mone-producing tissues and organs, and immune cells throughout the body. In this way, mental activity is able to influence many of the body's physiological processes and thereby affect health.

A classic method for using the mind to alter bodily functions is **biofeedback**. This method employs a recording device to facilitate learned self-control of physiological activities (see the Managing Stress feature "Biofeedback"). The recording device is connected to a region of the body (e.g., forehead, arm), and information about biological activity in that region is "fed back" on a screen or by means of a sound to the person in whose body the activity is taking place. Using this visual or auditory information about the activity, the person can learn to control the activity in a desired way. Biofeedback has been used successfully to treat more than 150 medical conditions, including high blood pressure, back pain, panic attacks, asthma, and headaches (Mayo Clinic, 2010). Biofeedback also can be used to produce changes in the brain's electrical activity (*alpha waves*) to bring about a state of relaxation.

The Autonomic Nervous System

A major pathway by which the mind and body communicate is through the **autonomic nervous system** (ANS), a group of nerves that regulate many of the body's physiological processes, such as heart rate, blood pressure, constipation, sweating, and incontinence (Figure 2.2). Centers in the brain, principally in the brain stem and hypothalamus, receive information about the state of the body and, in response, activate the nerve fibers of the ANS to maintain



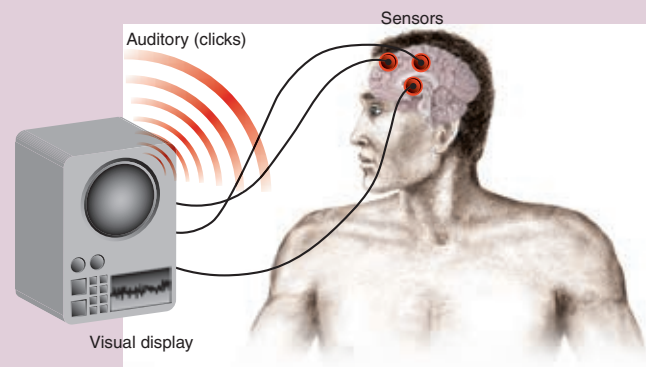
Biofeedback

Dan was a first-year graduate student who experienced frequent headaches, for which he sought help from the Student Health Center. Medical tests showed no brain pathology, such as a tumor, or brain infection or injury. Diagnosis: Dan's headaches were related to the stress and anxiety about doing well in graduate school.

Dan's therapy involved meeting with a counselor to discuss ways to manage the stress of graduate school and biofeedback training to deal specifically with his headaches. In biofeedback sessions, three small sensing devices, which monitored the activity of the forehead's frontalis muscle, were attached to Dan's forehead (Figure 2.1). The frontalis and certain muscles in the neck involuntarily contract during times of stress, which impedes blood flow to the head, resulting in a headache. Wires from the three sensors were connected to a biofeedback unit, which was placed on a table directly in Dan's view. Whenever Dan's frontalis muscle contracted, the biofeedback unit produced audible clicks. A very tense frontalis produced rapid clicks. A relaxed frontalis produced infrequent, irregular clicks.

Dan was instructed by his biofeedback therapist to try to reduce the number of clicks, a skill that required several train-

ing sessions to attain. Paradoxically, not trying to relax his frontalis produced the best results. The therapy proved successful. Dan seldom got headaches. And when he did, he could relieve them by relaxing the muscles in his forehead.



■ Figure 2.1

Biofeedback

The biofeedback device measures muscle tension in the head region. The speaker produces rapid audible clicks when muscles are tense, and infrequent and irregular clicks when head muscles are relaxed.

appropriate physiological balance. For example, when you exercise, the ANS stimulates the heart's pacemaker cells to increase your heart rate, thus increasing the amount of blood pumped to moving muscles.

The autonomic nervous system derives its name from the fact that its activities normally operate without conscious control. Thus, you do not think about how fast your heart should beat or whether you should sweat to cool yourself when jogging. Even though the ANS functions without conscious control, the signals it sends to the body can be affected by thoughts and feelings. For example, nearly all students are familiar with the nervous stomach and sweaty palms that accompany taking an important exam. Realizing that it is possible to do poorly on an exam (a thought) leads to anxiety (an emotion), which activates the ANS to produce symptoms. Panic has an immediate effect on breathing and heart rate, and stress can constrict blood vessels, causing headaches or high blood pressure.

Many students live fast-paced, hectic lives that are full of time pressures and stress. Besides doing school assignments, many students work at jobs, and nearly all try to maintain harmonious social relationships with family and friends, which take time and attention. Moreover, the modern environment is filled with cell phones, tablets, the Internet, TV, video games, iPods, and other stimuli that compete for one's attention. Trying to accommodate all of life's demands produces near continuous physiologic arousal mediated by the sympathetic nerves of the ANS, causing, among other things, sleep disturbances, muscle tension, gastrointestinal symptoms, and an increased risk for cardiovascular disease.

Quieting the Autonomic Nervous System

It is possible to counteract ANS-mediated arousal by putting 20 to 30 minutes or more of quiet time into your life each day. (If you must, schedule it in your day-planner.) You can employ any of a number of techniques designed to lessen ANS arousal and create a sense of mind–body harmony (see Table 2.1). Or, you can find a quiet spot in a park or a room where you can comfortably and silently reflect on the good things in your life and let go, for a time, of the problems of the world and what you need to accomplish that day and in your life. Two methods with a body of research to support their effectiveness are the relaxation response and autogenic training.

The Relaxation Response

The **relaxation response** is an automatic physiological response that is the opposite of autonomic nervous system activation (Benson & Klipper, 2000). The relaxation

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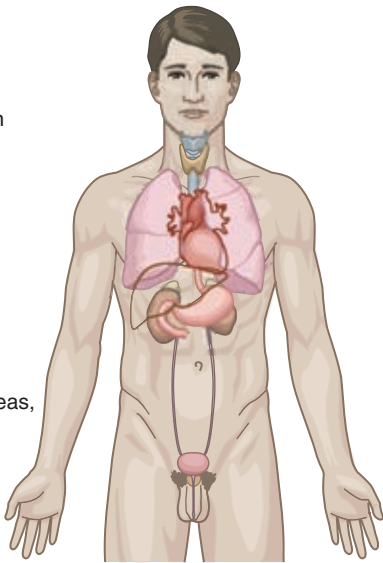
autonomic nervous system: the special group of nerves that control some of the body's organs and their functions

biofeedback: using an electronic device to “feed back” information about the body to alter a particular physiological function

relaxation response: the physiological changes in the body that result from mental relaxation techniques

Sympathetic

Dilates pupils
 Inhibits salivation
 Dilates bronchi (lungs)
 Stimulates heartbeat
 Stimulates adrenal gland
 Inhibits digestion (stomach, pancreas, liver, spleen)
 Dilates bladder

**Parasympathetic**

Constricts pupils
 Stimulates salivation
 Constricts bronchi (lungs)
 Slows heartbeat
 Inhibits adrenal gland
 Stimulates digestion (stomach, pancreas, liver, spleen)
 Contracts bladder

■ **Figure 2.2****Functions Controlled by the Autonomic Nervous System**

The sympathetic nerves and the parasympathetic nerves regulate functions that normally are not under conscious control, such as breathing, digestion, and heart rate.

response decreases oxygen consumption, respiratory rate, heart rate, blood pressure, and muscle tension. A variety of mind-body methods can produce the relaxation response, such as mantra meditation, progressive muscle relaxation, and guided imagery. For example, at the Harvard Medical School, patients are taught to sit quietly and silently repeat the word “one.” Methods that elicit the relaxation response share these features:

- A quiet environment
- A focusing of the mind’s attention, such as silently repeating a word or phrase, or focusing one’s breathing
- A passive, accepting mental state
- A comfortable physical position

Practicing the relaxation response regularly for 10–15 minutes per day increases feelings of well-being and decreases depression, anxiety, and hostility, which is correlated with improved cardiovascular and immune health (Chang et al., 2010).



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Autogenic Training

Autogenic training uses autosuggestion to establish a balance between the mind and body through changes in the autonomic nervous system. The method has been shown to be effective in relieving anxiety (Miu, Heilman, & Miclea, 2009) and improving the quality of life in people with chronic medical conditions (Sutherland, Anderson, & Morris, 2005).

Autogenic training involves learning to concentrate on one of six basic autogenic phrases for a few minutes each day over a week or more. After weeks or months of practice, one is able to attain a deep sense of relaxation, often within seconds, which can result in healthful physiological changes. The six basic autosuggestions are as follows:

- My arms and legs are heavy.
- My arms and legs are warm.
- My heartbeat is calm and regular.
- My lungs breathe for me.
- My abdomen is warm.
- My forehead is cool.

The exact phrasing of any autogenic suggestion is not critical to its effectiveness. The words carry no particular power. Any suggestion can be rephrased so that it becomes comfortable, believable, and acceptable to the practitioner’s mind.

Hormones

Besides the autonomic nervous system, the mind can affect physiology via the endocrine (hormone) system. **Hormones** are chemicals produced by special organs and tissues in the body. Each hormone regulates specific biological functions (**Figure 2.3**). Hormones notify the body of changes outside and inside the body that must be responded to in order to maintain health.

Many hormones respond to changes in thoughts and feelings. For example, if the mind interprets a situation as



Using Your Mind to Heal Your Body

Everyone has accidentally cut or burned his or her hand at one time or another. Perhaps you were chopping vegetables and the knife slipped, or perhaps you reached for a pan on the stove, forgetting that the handle was hot. The usual response to such accidents is anger at being careless or forgetful and anger at the sudden pain. We jump around, curse, and generally act in ways that exacerbate the injury and delay healing. A much better response to minor accidental injuries that do not require immediate medical attention is the following.

In case of a cut, place a clean cloth over the wound and press gently to help stop the bleeding. Then sit or lie down.

Close your eyes and allow yourself to become mentally and physically quiet. Visualize the injured part with your mind and see it as it was just before the accident. See the skin coming back together. Feel the pain recede. Notice that there is no bleeding. Continue doing this for five minutes or longer until you feel calm. If the accident caused a burn, place an ice bag or cool, wet cloth over the wound. Then lie down and visualize the skin becoming cooler and looking like the normal skin around the burn.

By immediately calming the mind after an injury, inflammation and other harmful physiological reactions in the area are reduced. Healing processes begin immediately when you send positive, calming thoughts and images to the injured area. Continue to visualize healing in the injured area.

threatening or frightening, regardless of whether the danger is real or imagined, centers in the brain responsible for emotions signal other parts of the brain and body to release hormones, such as adrenaline and cortisol, into the bloodstream. These hormones circulate to several of the body's organs and tissues to make the body alert and ready to deal with the danger.

Hormones manufactured in the brain can affect other areas of the brain; however, most hormones that originate in the brain are released into the circulatory system and travel throughout the body. Certain brain hormones have been associated with increases or decreases in particular feelings and behaviors (see [Table 2.2](#)). Thus, the environment, the brain (mind), and hormones (chemical messengers) are intricately interconnected and, ultimately, can determine health, feelings, and behaviors.

The Immune System

Besides the ANS and endocrine system, the mind communicates with the body via the immune system. The immune system (discussed in detail in Chapter 12) is

responsible for combating infections and ridding the body of foreign organisms and toxic substances. Immune system cells, tissues, and organs are located throughout the body. The immune system can be influenced by the mind via the nervous and endocrine systems. Nerves of the sympathetic nervous system connect to certain immune tissues. Many immune cells respond to the presence of the hormone cortisol as part of the stress response (see Chapter 3). Moreover, the immune system releases special chemicals called cytokines, which can affect the nervous and endocrine systems.

That the mind can affect the workings of the immune system is illustrated in a study of the effects of mindfulness meditation on immune function in a work environment with healthy employees (Davidson et al., 2003). Volunteers were trained in mindfulness meditation for eight weeks, and at the end of training they were vaccinated with influenza vaccine. Compared to nonmeditating volunteers, antibody levels to the influenza vaccine were higher among meditators, demonstrating that mindfulness meditation produces measurable effects on the immune system.

Table 2.2

Hormone Levels Can Affect Moods, Thoughts, Feelings, and Behaviors

Hormone	Effects of High Levels
Cortisol	High blood levels of cortisol increase stress and alertness, decrease sensitivity to pain, impair memory processing, and increase depression.
Dopamine	High blood levels of dopamine increase pleasure and motivation and decrease sadness.
Oxytocin	High blood levels of oxytocin increase trust and feelings of attachment and decrease fear.
Vasopressin	High blood levels of vasopressin increase sexual arousal and attention but decrease anxiety.
Serotonin	High blood levels of serotonin increase aggression and obsessive thoughts.

The Mind Can Create Illness or Wellness

That thoughts and feelings can alter physiological processes means that individuals have the power to influence their health for ill or for well-being.

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autogenic training: the use of autosuggestion to establish a balance between the mind and body through changes in the autonomic nervous system

hormones: chemicals produced in the body that regulate body functions

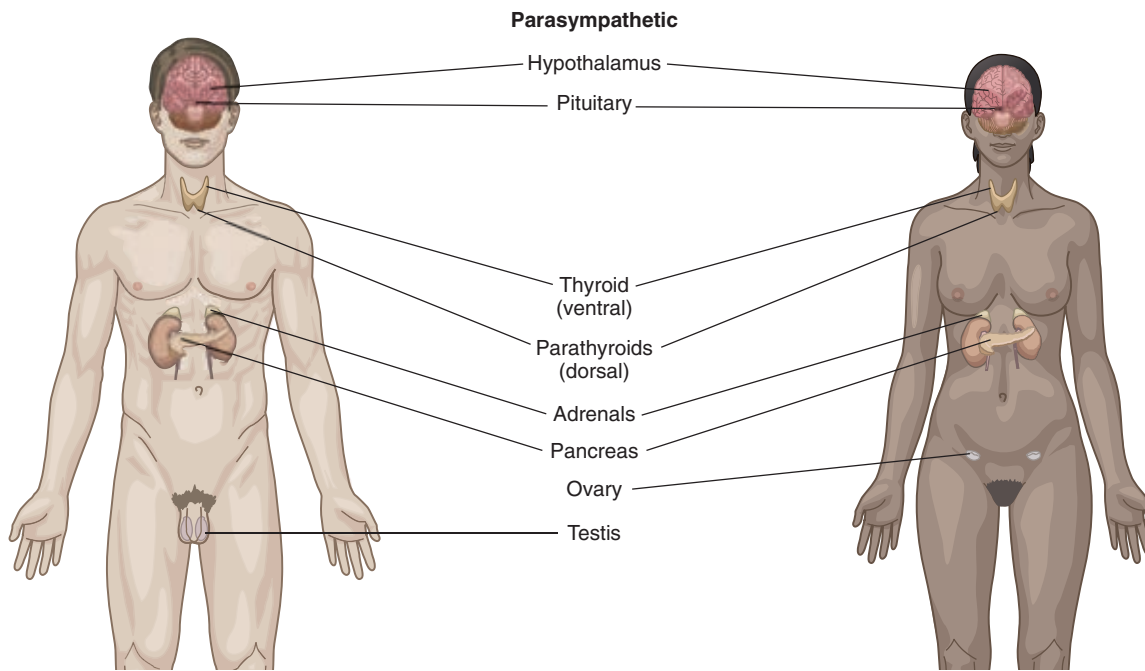


Figure 2.3

Where Hormones Are Released

Hormones are released from different glands throughout the body. The synthesis and release of these hormones are regulated by the mind and autonomic nervous system. Hormones carry chemical messages that tell organs in the body how to respond to stimuli.

Psychosomatic Illnesses

The power of the mind to cause illness is borne out by a long list of **psychosomatic illnesses** (Figure 2.4). These conditions are caused, in large measure, by mental states and attitudes such as persistent anxiety, depression, and stress that produce unhealthy physiological changes. That is why these illnesses are called psychosomatic, a term derived from the Greek (*psych*, mind; *soma*, body).

Many people believe that psychosomatic means imaginary, that “it’s all in the head.” This is not the case. The damage to the gastrointestinal tract in someone with stress-related irritable bowel syndrome is just as real as the damage caused by an infection or injury. Psychosomatic means that thoughts and feelings are at the root of the physiological abnormalities causing the symptoms.

Modern medicine (see Chapter 19) tends not to treat psychosomatic illnesses directly. Physicians prefer to use drugs that suppress symptoms, but rarely do they address the underlying mental states that cause the illness. This is caused in part by their training, which focuses on biological causes of disease, and in part by doctors not having time to probe the lifestyle of a patient with a psychosomatic illness; also, the patient’s health insurer is not likely to pay for the doctor to do so.

Somatization Disorders

Somatization refers to the occurrence of physical symptoms without the presence of medically detectable injury or disease. Psychological and social problems such as depression or anger may cause pain, fatigue, nausea, diarrhea, and sexual problems. It is estimated that 25% to 75% of all patients who visit primary care physicians suffer from somatization disorders. These are difficult to treat,

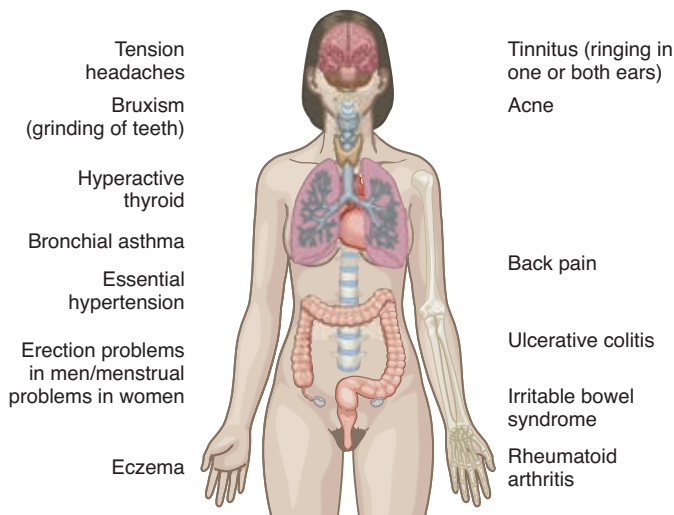
time-consuming for physicians to diagnose, and expensive for the healthcare system. The diagnostic criteria for a somatization disorder are shown in Table 2.3; the chief complaint is pain of long duration in several parts of the body that cannot be explained by any medical condition or injury.

The lives that many people choose to live or are forced to live by financial or family circumstances can cause mind–body disruption that eventually produces pain and sickness. People suffering from somatization disorders are not feigning sickness; they have lost mind–body harmony to a serious degree.

The Mind Can Create Wellness

The power of the mind to create wellness is illustrated by studies that show that positive emotions are associated with healthful biological changes. For example, a group of English civil service workers were asked to rate their state of happiness several times during a typical work day while researchers measured blood pressure, heart rate, and stress hormone (cortisol) levels (Steptoe, Wardle, & Marmot, 2005). Those with the highest happiness ratings showed the lowest heart rate and stress hormone levels (there was no effect of happiness on blood pressure).

The role of humor in maintaining health has a long history. Plato advocated humor as a means to lighten the burdens of the soul and to improve one’s health. From medieval court jesters to modern circus clowns, laughter has been used to help people forget their problems, to restore mind–body harmony, and to foster health and healing. In 1979, Norman Cousins, a well-known magazine editor, described how he had cured himself of a rare



■ **Figure 2.4**
Psychosomatic Illnesses

Many diseases and disorders of the body are partly caused by thoughts and feelings.

untreatable disease (ankylosing spondylitis) by watching humorous movies for months until he had laughed himself well (Cousins, 1979). Cousins's account was highly influential in advocating the use of humor and laughter in modern medicine as a way to cure many serious diseases.

Over the past several decades, scientific studies have confirmed the beneficial effects of humor, laughter, and happiness on health and healing by restoring mind–body harmony. Humor has a positive effect on the immune system by increasing levels of natural killer cells that help prevent infections (Bennett et al., 2004). Humor elevates pain thresholds by activating endorphins (hormones released in the brain) that affect pain responses. Humor reduces stress and anxiety in cancer patients, thereby helping to reduce pain (Christie & Moore, 2005). Humor is a powerful adjunct to medicines in the healing process.

Dr. Madan Lal Kararia, an Indian physician who has been dubbed the Guru of Giggling, has developed a set of laughter exercises that are likened to yoga poses (Khatchadourian, 2010). Dr. Kararia recommends that people learn to laugh without jokes or funny videos on a regular schedule as a means to better health. He has established laughter clubs all over the world with an estimated 250,000 members. Perhaps, if more people laughed more often, many of the world's conflicts would be solved.

Mind–Body Healing

Placebo Effect

The **placebo effect** (from the Latin “I shall please”) refers to the lessening of symptoms or the curing of disease by a person's belief in the curative power of an inert medicine (called a sugar pill or placebo). Although the curative pow-

Table 2.3

Diagnostic Criteria for Somatization Disorder

- A. A history of many physical complaints beginning before age 30 years that occur over a period of several years and result in treatment being sought or significant impairment in social, occupational, or other important areas of functioning.
- B. Each of the following criteria must have been met, with individual symptoms occurring at any time during the course of the disturbance:
1. Four pain symptoms: A history of pain related to at least four different sites or functions (e.g., head, abdomen, back, joints, extremities, chest, rectum, during menstruation, during sexual intercourse, or during urination)
 2. Two gastrointestinal symptoms: History of at least two gastrointestinal symptoms other than pain (e.g., nausea, bloating, vomiting other than during pregnancy, diarrhea, or intolerance of several different foods)
 3. One sexual symptom: A history of at least one sexual or reproductive symptom other than pain (e.g., sexual indifference, erectile or ejaculatory dysfunction, irregular menses, excessive menstrual bleeding, vomiting throughout pregnancy)
 4. One pseudoneurological symptom: A history of at least one symptom or deficit suggesting a neurological condition not limited to pain (conversion symptoms such as impaired coordination or balance, paralysis or localized weakness, difficulty swallowing or lump in throat, aphonia, urinary retention, hallucinations, loss of touch or pain sensation, double vision, blindness, deafness, seizures; dissociative symptoms such as amnesia; or loss of consciousness other than fainting)
- C. Either (1) or (2):
1. After appropriate investigation, each of the symptoms in Criterion B cannot be fully explained by a known general medical condition or the direct effects of a substance (e.g., a drug of abuse, a medication)
 2. When there is a related general medical condition, the physical complaints or resulting social or occupational impairment are in excess of what would be expected from the history, physical examination, or laboratory findings
- D. The symptoms are not intentionally produced or feigned (as in Factitious Disorder or Malingering).

Source: American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. text revision). Washington, DC: Spitzer, RL, et al. © 2000, American Psychiatric Association. Reprinted with permission.

ers of placebos are based on the recipient's belief in them, that does not mean that the placebo effect (or the healing) is imagined. Placebos work because the expectation of

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placebo effect: healing that results from a person's belief in a treatment that has no medicinal value

psychosomatic illnesses: physical illnesses brought on by negative mental states such as stress or emotional upset

somatization: occurrence of physical symptoms without any bodily disease or injury being present

effectiveness brings about real physiological changes in the body that lead to healing.

The placebo effect is so common and powerful that the U.S. Food and Drug Administration requires that a new drug undergo a *double-blind, placebo-controlled* trial. This means comparing one group of patients' responses to a new drug with a different, matched group's responses to a placebo (the control group). So as to minimize bias, people in the test-drug group and the placebo group do not know which substance they are receiving; that is, they are "blind." Furthermore, none of the scientists administering the test drug or the placebo knows what the patients are receiving; that is, they also are "blind." Only the project administrator knows who is receiving what. The efficacy of the new drug is determined by its performance compared to the placebo.

The placebo effect is effective in the treatment of many diseases including the following: ulcers, irritable bowel syndrome, colitis, chronic pain, headache, hay fever, asthma, depression, warts, and high blood pressure. The number of patients responding to placebos for almost any disease or symptom ranges from 30% to 70%; most placebo-controlled drug studies find that about half of all patients respond to placebo pills. This is a remarkable finding. It means that, regardless of what ails you, you have a 50–50 chance of being cured simply by taking a pill that you believe will make you better.

Depression is a condition in which the placebo effect can account for as much as 75% of any relief experienced. **Figure 2.5** shows the results of a study comparing two antidepressant drugs with a placebo pill. Notice that during the first month of the study, depressed individuals got as much relief from the placebo as from the antidepressant drugs. Why the benefits of the placebo did not increase after that time could be a result of differences in the rates at which the antidepressants and the placebo were eliminated from the body or subtle chemical effects in the brain produced by the antidepressant drugs. Nevertheless, as demonstrated in this study, the placebo effect is as beneficial as a drug for half of depressed individuals.

To determine how the placebo effect could be operating to relieve depression, researchers used positron emission tomography (a PET scan) to visualize the activity in different regions of the brain when depressed individuals received antidepressant medication or placebo (Mayberg et al., 2002). The results showed that the pattern of brain activity of patients receiving placebo was almost the same as those receiving antidepressants. Apparently, the expectation that their symptoms would improve caused biological changes in the brain that contributed to relief of depression.

Pain responds exceptionally well to the placebo effect (**Figure 2.6**). As with depression, pain relief from placebo can occur from biological changes in the brain. For example, researchers used functional magnetic resonance imaging (fMRI) to map changes in blood flow in the brains of volunteers (Wager et al., 2004). The volunteers were subjected to harmless but occasionally painful

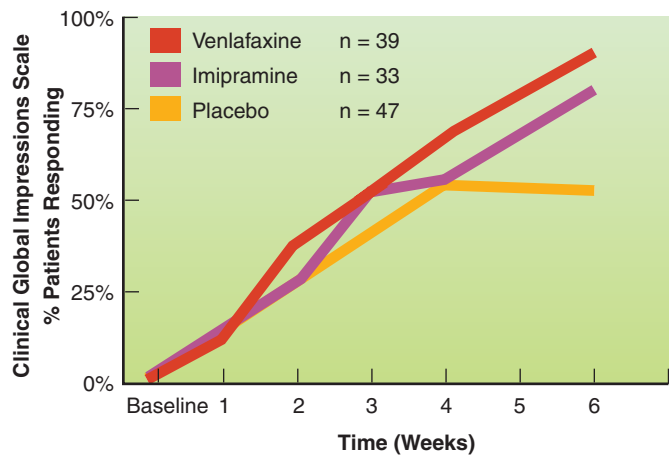


Figure 2.5

Placebo Study

A double-blind, placebo-controlled study comparing two antidepressant drugs, venlafaxine and imipramine, with placebo in reducing the symptoms of clinical depression. (n is the number of patients in each group.) Even after almost four weeks, just as many patients experienced relief of their symptoms with a placebo as with either antidepressant drug.

Adapted from Schweizer, E., et al. (1994). Comparison of venlafaxine and imipramine in the acute treatment of major depression in outpatients. *Journal of Clinical Psychiatry*, 55, 104–108.

electric shocks or heat. When they believed an antipain cream had been applied to their arm, they rated the pain as less intense. Moreover, placebo pain relief was related to decreased brain activity in pain-sensitive brain regions and was associated with increased activity during anticipation of pain in other brain regions, providing evidence that placebos alter the experience of pain.

Other studies show that placebo-induced pain relief likely occurs because the expectation of relief might change the body's manufacture or release of its own internal pain-relieving chemicals, called endorphins (Benedetti, 2007). For example, after having wisdom teeth removed, adults were given morphine or placebo for pain relief; about 33% of those receiving placebo experienced pain relief. Then, a chemical that blocks the effects of morphine and endorphins, called naloxone, was given to any patient who had experienced pain relief, either from morphine or placebo. All patients receiving naloxone experienced return of their pain. Thus, it would appear that the expectation of pain relief can stimulate the manufacture and release of endorphins.

Why, if placebos are so effective in healing, are they not used more by physicians in treating patients? One reason is an ethical dilemma for physicians: A placebo might work for one patient but not for another. Although the same could be true for a prescribed drug, the physician is protected legally by prescribing a drug that has been clinically tested and approved by the FDA. However, no legal protection exists for a physician prescribing a placebo if the patient decides to sue, claiming that the treatment did not meet accepted medical standards.

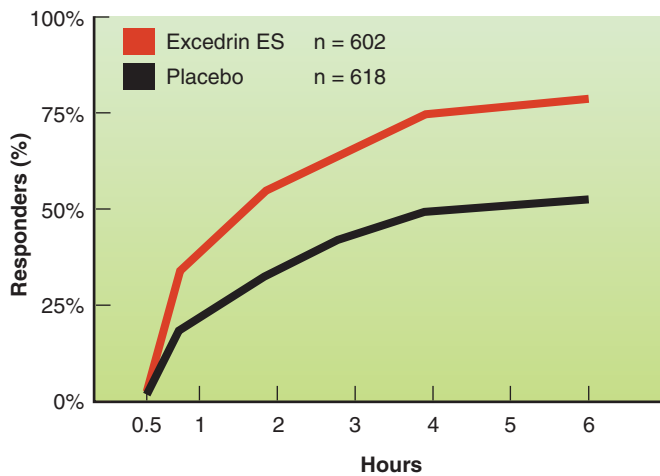


Figure 2.6

Double-blind, placebo-controlled study comparing Excedrin and placebo in relieving the pain of migraine headache. A responder is a patient with moderate or severe pain whose pain was reduced to mild or none following treatment. Note that more than half of over 600 patients with migraine headache had mild or no pain after taking a placebo pill.

Adapted from Lipton, R. B., et al. (1998). Efficacy and safety of acetaminophen, aspirin, and caffeine in alleviating migraine headache pain: Three double-blind, randomized, placebo-controlled trials. *Archives of Neurology*, 55, 210-217.

However, if the results of experiments carried out at the Harvard Medical School are confirmed, doctors may eventually supply patients with substances labeled PLACEBO (Pimentel et al, 2011). Scientists studied whether patients with irritable bowel syndrome who received placebos had to be deceived into thinking that they were receiving an active drug in order for the placebo to be effective. The results showed that 59% of the patients taking the placebo pills said that their symptoms had been “adequately relieved.” Thus, the placebo effect seems to work even if patients are not deceived into thinking that they have received an active drug.

Who knows what might work as a placebo? Perhaps consuming a couple of M&Ms twice a day can cure pain and many other symptoms that people suffer. Often the safest and best path to relief of suffering is to engage the power of the mind.

The Nocebo Effect

A negative, harmful placebo effect is called a **nocebo effect** (from the Latin “I shall harm”), and it is another reason placebo pills are not used in medical practice. Placebos can be dangerous, just as drugs can be dangerous. Patients can become addicted to placebo pills used for pain relief and suffer withdrawal symptoms when they stop using them. Also, like prescription drugs, placebo pills can cause side effects. In one experiment, 40 volunteer asthmatic patients were asked to inhale a placebo spray, which they were told contained an allergen. Twelve of the volunteers had full-blown asthma attacks, and seven had lesser symptoms. The asthma attacks were

reversed by inhalation of another placebo spray, which they were told would relieve the symptoms.

Words can produce a placebo effect in the same way as a pill. Because of this fact, you should always seek out health practitioners whom you trust and who use positive, constructive healing suggestions and who encourage you to become involved in self-healing practices. Avoid health practitioners who voice negative and pessimistic recommendations. No one needs to hear negative suggestions such as “You’ll probably have to take these pills for the rest of your life,” or “I doubt that you’ll be able to move around much after an accident like that.” In the presence of a physician, many patients become very open to suggestions, both positive and negative, because their minds are intently focused on what the doctor is saying. Such a focused state of mind is similar to that obtained in meditation or hypnosis. It is more helpful to practice being alert and critical when discussing your health concerns or diagnostic test results with a health professional. Of course, this is not always easy to do, especially when the information being conveyed causes distress or fear.

A tragic, but dramatic, example of a nocebo effect involved a patient who died apparently from reading a single word (Hewlett, 1994). This person had a history of chronic lymphatic leukemia, a form of blood cancer that usually is easily controlled with drugs. The patient had been well for more than three years with only intermittent need for medication. However, he had never actually been informed of the original diagnosis of his condition.

One day he was in his physician’s office on a routine visit and happened to read the physician’s notes, which were lying on the desk. He saw the word *leukemia* in his file. He missed his next scheduled office visit and shortly thereafter showed up in the hospital’s emergency room. Within three weeks he died in the hospital. No cause of death could be discovered at autopsy, and his leukemia was still in remission. The patient apparently *believed* that he had terminal cancer just from seeing the word *leukemia* in his medical records. The mind *does* heal; the mind *does* kill.

Faith and Healing

Thousands of years ago the priest–healers of ancient civilizations and the shamans of native tribes used the beliefs of their people to heal by incantation, to exorcise evil spirits, and to vanquish demons who were thought to cause disease. The existence of shamans, faith healers,

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nocebo effect: the opposite of placebo effect; a harmless substance that has harmful, undesirable, and adverse effects on health

and medicine men and women in cultures throughout human history suggests that their healing methods must have been generally successful. Egyptian papyri show that although the priest-physicians of ancient Egypt prescribed herbs and performed surgeries, their treatments relied on the belief of the people in the healing power of the gods. Priests would put patients into a trance in a temple and tell them that when they awakened, they would be healed. And often they were.

The Greeks and Romans also had gods, oracles, and temples of healing. Their priests also used trance and sleeplike mental states to impart healing suggestions to receptive minds. Sometimes “miraculous cures” resulted. Greek and Roman emperors and priests also healed by the “laying on of hands”; people were healed because they believed that their rulers had divine powers. King Pyrrhus of Epirus is reputed to have cured sick patients solely by the touch of his big toe.

All religions teach that divine persons have the power to heal. The New Testament recounts many examples of the healing power of Jesus.

Faith. You can do little with it and nothing without it.

Samuel Butler

Is any sick among you? Let him call for the Elders of the church and let them pray over him, anointing him with oil in the name of the Lord; and the prayer of faith shall save the sick.

—James 5:14–15

That evening they brought him many who were possessed with demons, and he cast out the spirits with a word, and healed all who were sick.

—Matthew 8:14

And he said to her, “Daughter, your faith has made you well; go in peace and be healed of your diseases.”

—Mark 5:34

Over the centuries, faith and prayer have healed many people. Some ascribe healing to the power of God; others explain it simply by the power of belief to produce a placebo effect.

Today’s patients have faith in the knowledge of their physicians and the drugs they prescribe just as people of ancient civilizations believed in their priests and herbs. The improvement in any patient’s condition probably is a combination of faith in the healer and the efficacy of the treatment.

For years, scientists have attempted to evaluate the power of prayer to heal either oneself or others. Because there is no experimental way to measure the effects of personal prayer on a person’s condition, studies focus on the therapeutic effects of *intercessory prayer*, in which groups of people pray for the health and recovery of patients either with or without the patients’ knowledge. Some studies have claimed that prayer does help healing; other studies have found no effect. To try to resolve whether intercessory prayer has a positive effect on healing others, six major U.S. hospitals participated in a large-scale experiment. In this study, some patients about to undergo coronary artery bypass surgery (see Chapter 14) were told that they would be prayed for; another group of patients were not informed that they were being prayed for. The conclusion of this study was that intercessory prayer had no effect on recovery or complications from the bypass surgery (Benson et al., 2006). Will this scientific study resolve the question of whether prayer benefits health? It certainly will not shake the convictions of people of faith who believe in the power of prayer.



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Repeating This Phrase May Improve Your Health

In the early 1900s, a French pharmacist named Emile Coué (1857–1926) became famous for using autosuggestion to cure people of all kinds of ailments. His most famous autosuggestion, which millions of people recited to themselves, was: “Every day, in every way, I’m getting better and better.”

Try this autosuggestion or make up one of your own to fit a particular situation you want to improve. Repeat the suggestion in your mind as often as feels comfortable. Do it without effort or expectation. Autosuggestion is a powerful tool for improving health and for healing.

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Spirituality, Religion, and Health

Many people believe that spirituality—finding meaning, hope, comfort, and inner peace through religion, a connection with Nature, or some force larger than oneself—plays a role in health and illness. Many individuals want their physicians to be aware of their spiritual or religious beliefs. At the same time, most patients do not want their physicians to be directly involved in their health-related spiritual experiences. Most doctors believe that a patient's spiritual outlook is important to handling health difficulties and that physicians should ask patients about spiritual and religious issues, although few physicians believe that it is appropriate for them to recommend prayer and religious activities to patients (Sulmasy, 2009).

Many people believe in the healing power of prayer and the capacity of faith to help them prevent and recover from illness. Research shows that religiosity/spirituality is associated with reduced mortality among relatively healthy individuals, but not those who are ill (Chida et al., 2009). The protective effect of religiosity/spirituality among relatively healthy people is related primarily to attending religious activities and belonging to religious organizations and not to living healthfully (e.g., not smoking or drinking, exercising); socioeconomic status; depression, anxiety, and other unpleasant mood states; or social support.

For centuries, science and religion provided separate ways of understanding the world. By definition, religious experience or the claims of religions cannot be tested by science because they are not subject to experimentation or reproducibility. With the development of new brain imaging techniques, however, spiritual experiences and brain electrical activity have become accessible to scientific investigation. The new field, called neurotheology, has shown that in brains of persons deep in prayer or meditation, visible biological changes occur (Lutz et al., 2008). When people experience a “cosmic unity, loss of self, or perception of God,” brain activity is altered, particularly in a region called the temporal lobe. On reflection, it is not surprising that a strong spiritual experience is reflected in altered brain activity, just as a strong emotional experience is. What probably will never be answered is whether brain activity *creates* the mystical experience or whether the mystical experience has a reality of its own that occasionally is perceived by a human brain. As the Buddhist koan asks, “If a tree falls in the forest and no one hears it, does the fallen tree make a sound?”

Spiritual experiences tend to engender feelings of compassion and empathy; peace of mind; relatedness and communion with a force, power, or set of values larger than oneself; and harmony with the environment. These feelings are believed to be a cornerstone of health because they represent a balance between the inner and outer aspects of human experience. For some, the spiritual dimension of life is embodied in the practice of a specific religion. For others, the spiritual dimension is

nonreligious and simply part of a personal philosophy. Many practices can help people experience the spiritual realms of existence—prayer, meditation, yoga, musical and artistic endeavors, and helping others are but a few common ones.

Becoming more spiritually aware, regardless of the chosen path, can lead to a healthier life. Being in touch with your spiritual feelings helps you handle life's ups and downs with understanding and compassion for yourself and others. You become open to love in the highest sense of its meaning, which is acceptance and tolerance. You begin to love yourself despite your problems and hang-ups. You love your family and friends when relations are strained. You see beauty and harmony in more and more aspects of living. And occasionally—however fleetingly—you may experience the truly wondrous feeling of being completely and joyfully alive.

Hypnosis and Healing

The modern use of hypnosis as a medical technique began with the Viennese physician Franz Anton Mesmer, who practiced in the late eighteenth and early nineteenth centuries. History has preserved the term *mesmerism* for the trancelike state that Mesmer produced in his patients (Galdos, 2009). Many years later, a Scottish physician, James Braid, introduced the term *hypnosis* (from the Greek *hypnos*, meaning sleep) and began to practice **hypnotherapy**, the use of hypnosis to cure sickness.

Mesmer called his technique for healing “animal magnetism” because he had his patients hold onto metal rods that supposedly transmitted healing energy while the patients were in trance. Mesmer was so successful that other physicians in Vienna forced the authorities to order him to stop using his unorthodox methods. In 1778, Mesmer moved to Paris, where he again was successful in attracting patients. Eventually, the French authorities appointed a scientific panel, which included Benjamin Franklin (U.S. ambassador to France at the time), to investigate Mesmer and his methods. The panel concluded that there was no scientific basis to animal magnetism and that Mesmer was a fraud. This conclusion was reached even though the panel did not dispute Mesmer's success in curing many patients. Discredited by physicians and scientists, Mesmer died in obscurity in 1815.

Despite being officially discredited, mesmerism (now called hypnotism) flourished throughout England, Europe, and the United States in the nineteenth century. In 1847, J. W. Robbins, a Massachusetts physician, reported using hypnotherapy to treat eating disorders and to help people stop smoking. Dr. Robbins used aversive suggestions

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hypnotherapy: the use of hypnosis to treat sickness

We do not see things
as they are. . . . We see
things as we are.

Talmud

while patients were in trance and also gave them posthypnotic suggestions. Many of the same procedures are used today in treating these and other behavioral disorders.

In the late nineteenth century, two French physicians showed that healing could be accomplished solely by suggestion and that cures resulted from the patient's expectation of being cured. Hippolyte-Marie Bernheim, who used hypnotherapy successfully with thousands of patients, argued that almost all healing resulted from suggestions he gave receptive patients while they were in trance.

Effective use of suggestion in healing seems to depend on the degree of mental relaxation involved. For reasons that are not entirely clear, a mind engaged in the conscious thoughts of daily living is not as open to suggestion as one that is internally relaxed by hypnosis, meditation, or other mental relaxation techniques.

Understanding Hypnosis May Help You Relax

To study hypnosis, researchers must have a way of measuring the hypnotic state. A series of suggestibility tests that consist of a 12-point scale was developed by psychologists at Stanford University in the 1950s. A low score means that the subject does not enter a state of hypnosis; a high score means that the subject is highly susceptible to hypnosis. Most people score between 5 to 7 on the Stanford test, which is still used by hypnosis researchers.

Many people have fears about being hypnotized, and many myths about hypnosis still exist. Perhaps the greatest fear people have is that they can be forced to do something terrible or evil if they are hypnotized. This view was greatly reinforced by the popular film *The Manchurian Candidate*, which showed hypnotized people who were programmed to kill when given a verbal command by the hypnotist. Other people feel that they will lose their moral values if they become hypnotized, but this also is not true. Some of the misconceptions and apprehensions about hypnosis are summarized in [Table 2.4](#).

Hypnotherapy is potentially a valuable adjunct to medical practice and has a long and successful history. It is not used widely because of time constraints and the almost universal belief that the right pill will cure everything. Physicians have to take time to develop a rapport with patients and be willing to take as much time as necessary to answer all questions and make sure the patient is comfortable with being hypnotized. Modern medical practice does not allow for this in an age of managed care and HMOs (see Chapter 19). Time is money in modern medical practice.

Virtual Reality Therapies

It has been known for many centuries that *distraction* is a very effective treatment for pain. That is why meditation,

hypnotherapy, prayer, and other methods that focus the mind's attention on something other than pain or other symptoms are so effective. Many Buddhist monks and devout individuals of many faiths learn to focus their attention so completely on a mantra, mandala, breathing, or exalted inner state that they are, quite literally, "out of their bodies." Modern medical researchers are using this aspect of mind to create **virtual reality therapies (VRT)** to treat burns, pain, and phobias (e.g., fear of flying, insects, or heights). A very important use of VRT is in the treatment of posttraumatic stress disorder (PTSD; see Chapter 3), which was experienced by many survivors of the 9/11 attack in New York and more recently by soldiers who served in Iraq (Thacker, 2003). Examples of environments simulated are virtual Iraq, virtual airplane, virtual nicotine, and virtual 9/11. Patients using VRT can manipulate the virtual environments to lessen their fears and stress. Some manage to reduce their overall anxiety and arousal response so that they become relatively free of PTSD.

Anyone who has seen the film *Matrix* or plays video games knows that virtual reality involves focusing one's attention on a computer-generated imaginary world. A medical application of VRT exposes burn patients to virtual realities of glaciers, ice, snow, snowmen, and other features of a cold, cold world to distract them from their pain. Another application is to expose a person with a fear of flying to virtual reality flight experiences (Hoffman, 2004). While in the fearful virtual world patients are, at the same time, safe in their therapist's office and know that they can remove the headset at any time. Because part of their mind knows they are safe, patients can confront their fears in the virtual world and learn to overcome them.

The software for virtual reality therapies is costly to develop, and so is the equipment to deliver the therapeutic treatments. Nevertheless, virtual reality therapy has enormous potential to help people overcome a variety of fears and symptoms of fear.

Meditation

Meditation has been associated with both Eastern and Western religions for centuries. Meditation is simply focused awareness. If you examine what is going on in your mind at any given moment, odds are you will find it flitting from one thought to another: "Did I remember to turn off the stove before I left the house?" "My feet are killing me; I shouldn't have worn these shoes." "I wonder what mood she's going to be in tonight?" "Did the kids say something about going to a sleepover this weekend?" Our minds are generally constantly active and often involved in worrying or thinking about emotional upsets, financial concerns, or the tasks and pressures of daily activities.

Quieting the mind is healthy, and meditation is a way to accomplish that. Focused awareness can be achieved in a number of ways, and there are many different kinds



Progressive Muscle Relaxation

In the technique called progressive relaxation, you lie on your back in quiet, comfortable surroundings with your feet slightly apart and palms facing upward. Before beginning the exercise, allow the thoughts of the day and any worries to leave your mind. Then you are ready to begin.

1. Close your eyes; squeeze your lids shut as tightly as you can. Hold them shut for a count of five, then slowly release the tension. Notice how your eyes feel as they relax. Keep your eyelids lightly closed; breathe slowly and deeply.
2. Turn your palms down. Bend your left hand back at the wrist, keeping your forearm on the floor. Bend your hand as far as it will go until you feel tension in your forearm muscles. Hold for a count of five, then release the tension. Notice the warm, relaxed sensation that enters your wrist. Repeat with your right hand.

3. With palms up, make a tight fist in your left hand by tightening the muscles of the arm and fingers. Hold for a count of five; release the tension. Notice the tingling, relaxed sensation in your hand and arm. Repeat with your right hand.
 4. Focus your attention on your left leg; slowly bring the top of your foot as far forward as you can while keeping your heel on the floor. Notice the tension in the muscles of your lower leg. Hold for a count of five; release the tension. Repeat with your right leg.
 5. Point the toes in your left foot away from you as far as you can. Notice the tension in your calf muscles. Release the tension slowly. Repeat with your right foot.
- Similar exercises can be performed to tense and relax other muscles.

Table 2.4

Myths About What Happens During Hypnosis

Myth: While under hypnosis you lose control of your mind and the hypnotist can make you do anything that he or she wants.

Fact: Despite what is portrayed in movies, a hypnotist cannot control your mind or make you do something against your will or beliefs. A hypnotized person can decide to become “unhypnotized” at any time. Ultimately, all hypnosis is self-hypnosis. The stage hypnotist selects people from the audience who *want* to be hypnotized and be part of the act. People do funny things on the stage because they agree in their minds that it is OK to do them. Similarly, a person follows a therapist’s suggestions because of trust and a desire to be helped. No one can control your mind if you do not agree to cooperate voluntarily.

Myth: Hypnosis is like falling asleep. You become unconscious and are unaware of what is happening around you. When you wake up you do not remember what was going on around you while you were hypnotized.

Fact: In hypnosis you do not lose consciousness, and most hypnotized subjects report that they feel very aware. Hypnosis is like focused attention in which you are aware of specific thoughts to the exclusion of others. Just as with deep meditation, you are always in touch with reality and choose to remain in the meditative state or “wake up.”

Myth: Hypnotists have special psychic or occult powers, which explains why they can control other people’s minds.

Fact: Hypnotists have trained their powers of observation and are skillful at giving suggestions. Those who claim to have special powers should be avoided because they harbor hidden motives and should not be trusted. Always remember that all hypnosis is self-hypnosis.

Myth: Only people with “weak minds” or of low intelligence can be hypnotized.

Fact: Everyone can be hypnotized, although people vary in that ability as they do in all abilities. People with above average intelligence usually enter a state of hypnosis more easily than others. Consider what happens in a movie theater. People laugh, cry, or are terrified by what is happening on the screen. But the images that affect them so powerfully are, in reality, light on the screen. Most moviegoers are in a state of hypnosis and, by adopting the role of “moviegoer,” have agreed to allow their emotions to be manipulated by the images. Nevertheless, everyone is in control of their minds. Witness the sudden “unhypnotizing” if someone yells “fire” or if the lights are turned on abruptly. Again, it is worth emphasizing that all hypnosis is self-hypnosis.

Myth: Hypnosis is not useful or effective in improving health or harmful behaviors.

Fact: Hypnosis, or hypnotherapy as it is called when used by trained health professionals, may be very useful in treating a wide range of symptoms. In 1957, the American Medical Association approved hypnotherapy as a valid therapeutic technique. Many physicians and clinical psychologists use hypnotherapy to treat a wide range of physical, emotional, and behavioral problems such as pain, panic attacks, smoking, alcoholism, and posttraumatic stress disorder.

Meditation is not what you think.

Krishnamurti

of meditation. *Zen meditation* (zazen) involves sitting still with legs crossed while trying to empty the mind of its chatter. *Transcendental meditation* teaches practitioners to focus on a particular phrase (called a **mantra**) that is repeated internally; focusing the mind’s attention on a single phrase excludes other random thoughts. *Insight meditation* (Vipassana) teaches med-

TERMS

mantra: a sound or phrase that is repeated in the mind to help produce a meditative state

virtual reality therapy (VRT): use of computer programs to create virtual worlds that engage the mind in order to overcome pain and fear and to treat symptoms of posttraumatic stress disorder



Meditation can be done anywhere, any time.

itators simply to observe the flow of thoughts that pass through the mind with detachment. Buddhists, especially Tibetan Buddhists, often meditate by focusing their attention on a religious image (called a **mandala**). Prayer is a



A mandala is a complex visual image used to focus attention and facilitate meditation. ("Green Tara," an original painting by Maile Yawata.)

© iStockphoto/Thinkstock

form of meditation in that it focuses awareness on God. Thus, meditation is something that everyone has experienced even if they have not called it meditation.

Meditation does not have to be done in a religious setting, nor is it complicated.

- Choose a quiet place in your home or outside.
- Find a comfortable sitting position with your back straight. (Lying down is not recommended because it is strongly associated with sleep.)
- Be sure that you have at least 10 to 30 minutes during which you will not be disturbed.
- Busy people often find that meditating before bedtime works best (privacy, quiet).

A good way to begin meditation is to focus your attention on breathing. Begin by becoming aware of the way you are breathing. Is it slow and deep? Is it quick and shallow? Is it through one nostril or both?

As you focus your awareness on your breathing, your mind is highly likely to wander to various thoughts that stream by. When you notice your mind wandering, simply say to yourself, "My mind is wandering," and refocus your awareness on your breathing. Perhaps count your breaths from 1 to 10 to help you focus (counting is similar to a mantra). After some time, it is highly likely that your mind will wander again. When you notice this, do not become frustrated or angry with yourself ("This isn't working!"; "I'm a bad meditator"). The mind's job is to think, and wandering to thoughts in meditation is simply demonstration of that. So, when your mind wanders to thought, simply notice and refocus your awareness on your breathing. Meditation is often repeating cycles of focus and wandering (loss of focus). With some practice (Remember: You are good at what you practice), you will

Courtesy of Gordon Folin



Make Up Your Own Mantra for Changing Behaviors

Use the power of a mantra to change some aspect of performance or behavior. Choose some behavior or activity that you would like to change or improve. Then create your own mantra. It should not be something complicated, but a small thing that you feel you can achieve. It should be as specific as possible. For example:

- | | |
|------------|---|
| Sports: | I feel my body getting stronger. |
| | I feel my body moving more swiftly through the water. |
| | I become less tired each time around the track. |
| Behaviors: | I will stop eating when I feel full. |
| | I will not speak until the anger passes. |
| | My mind will stay alert during classes and exams. |

Be creative in designing your own mantra and spend time each day reciting it internally while in a quiet state. You can be a skeptic and the mantra will still work.

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Relaxation with Music

Many people know that listening to or playing music can be relaxing. Music can focus the mind just as meditation, hypnosis, and prayer do. Thus, listening to or playing music can reduce stress. In medical settings, music can help patients lessen anxiety and stress. One study found that patients undergoing surgery were just as likely to be calmed by music as by sedative drugs (Berbel, Moix, & Quintana, 2007). Music can help reduce the chronic pain that accompanies rheumatoid arthritis, herniated discs, or fibromyalgia. Music can help those who have experienced stroke, Alzheimer's, and other neurological diseases.

The kind of music that people find helpful varies according to individuals' preferences. In general, soft music is preferred to loud; gentle rhythms and moderate beats that approximate the heart rate (65–75 beats per minute) are preferred to vigorous

or complex rhythms and fast beats. The “background music” found in doctors' and dentists' offices is known to reduce heart and breathing rates and reduce anxiety.

To use music as a therapy for insomnia, pain, stress, anxiety, or other problem, use the following guidelines:

- Choose music that you enjoy and find relaxing. Many types of classical music, soft jazz, Celtic and Native American music, and chants are suitable. Most people prefer music with flowing rhythms.
- Pick a time and place where you will not be disturbed and can let go of daily concerns. Plan to spend at least an hour in a relaxed state.
- You can listen at low volume or may feel more comfortable using ear-cupping headphones that reduce outside noise and distractions.
- Consider consulting a music therapist for additional advice and help.

become more skilled at focusing on breathing and the calm state of being that it brings, and will be able to let your thoughts stream in the background of your mind without paying much attention to them.

Contrary to what some people think, having a quiet mind is not being zoned out, without thoughts (“clearing your mind”), or deadening your feelings. Instead, a quiet mind is observing what your senses sense, what your mind thinks, and what it is like to observe. Practicing meditation almost every day can help you manage burn-out and stress, increase your sense of well-being, lessen risks of a variety of illnesses and infections, deal with pain, increase your sense of harmony with your social and physical surroundings, get a good night's sleep, improve performance on tasks, and become aware of how your mental processes affect your life. College students take note! A mere four days of meditation training for 20 minutes a day can improve cognition and working memory (Zeidan et al., 2010).

Practice this meditation twice a day, particularly if you are upset, tired, or in pain. Once you are comfortable with a breathing meditation, you may want to explore other forms of meditation. Meditation has many documented health benefits—lowered blood pressure, decreased heart rates, less stress, increased blood flow, reduced pain, and relief of many chronic conditions such as asthma, arthritis, and irritable bowel syndrome.

The faster the world becomes, the more we need to slow down.

The Power of Suggestion

Any time the mind becomes focused and relaxed, it also becomes more open to suggestion. This can be very beneficial or it can create problems, depending on the kind of suggestions being received by the mind. Suggestions given as warnings, especially to children, who are par-

ticularly vulnerable to suggestion, can affect behaviors and cause health problems throughout life. For example, here are some common admonitions given to children that can cause health problems because young children believe what they are told.

- Put on your boots when you go out in the snow or you will catch cold.
- If you keep eating cookies, you'll get fat.
- If you don't try harder, you'll be a failure in life.
- If you climb those trees, you'll fall and get hurt.
- If you go out at night, the ghosts will get you.

Each of these suggestions predicts a negative outcome. To a child's mind, which is usually in a trancelike, suggestible state, these negative suggestions become fixed in the unconscious mind and may have a harmful effect even many years later.

The mind can be made more open to suggestion by many things we are exposed to in daily life. For example, movies and television focus attention with both images and sound. As a consequence, they can induce a trance-like state and cause us to cry, laugh, and become angry or upset; they can actually manipulate our emotions through light and sound. No one dies on a movie screen, but we often react as if they did. The violence and horror people watch in movies and on TV often do affect both physical and emotional states. As a result of watching some frightening scene, people may actually become sick days, weeks, or years later when something reminds the subconscious mind of the scene and brings back the fear.

Advertisers know how to take advantage of viewers' suggestible, hypnotic states of mind. Television programs

TERMS

mandala: an artistic, religious design used as an object of meditation



Using Your Mind to Improve Health

- Become more aware of the power your mind has to improve health, hasten healing, and help you perform better in school and in other activities. Belief in yourself, in prayer, or in a particular treatment can facilitate healing and help prevent sickness.
- Use mental images that feel right to you to reduce exam anxiety and to improve performance in sports or other activities. Avoid negative mental images and thoughts such as “I feel lousy,” or “I’m too tired to run,” or “I just know I

can’t do that.” Use your mind to create positive images and thoughts. You can reverse what seems to be a “bad” day by suggesting to yourself that things are going to change and improve.

- Practice a daily mental relaxation technique in a place that is comfortable and quiet. Use the time to “talk” to your body to promote healing or to change behaviors. Visualize scenes from the past or the future that you know are healthy and constructive. As you become more adept at using your mind, you will find new ways to use mental relaxation in all aspects of your life. (Notice how we inserted a positive suggestion.)

usually are interrupted at an emotional peak in the story by advertising a product while viewers are still in a suggestible state of mind. Many people believe they are not influenced by advertising, but marketing studies indicate otherwise. Most advertisers try to persuade people to buy products they usually do not need. It is important to become more aware of how suggestible you are and to protect yourself from both obvious and subtle suggestions that can damage your health and peace of mind.

Image Visualization

One of the most effective ways to promote wellness and change undesirable behaviors is through the use of **image visualization**. Many mind-body healing techniques employ some form of image visualization. For example, frightening scenes from the past, especially from early childhood, can be reexperienced while a person is in a state of mental relaxation brought on by hypnosis or some other technique. As the scenes and emotional upsets are visualized in the mind, they can be reinterpreted and reprogrammed to change their negative effects on health and behaviors. Mental imagery can also be used to reduce pain; hasten healing; improve performance in sports; change smoking, drinking, or eating behaviors; and help control compulsive urges to gamble. At one time or another in our lives, we all daydream or run an “internal movie,” fantasizing our hopes and fears. During such fantasies we visualize experiences and create feelings. Image visualization can change body temperature, blood flow, heartbeat, breathing rate, production of hormones, and other body processes regulated by the brain.

Most psychologists who work with athletes to improve physical performance use image visualization. The so-called inner games of tennis, golf, skiing, and skating are based on image visualization. Baseball players in a batting slump use relaxation and visualization to “see” themselves getting hits. Basketball players use the technique to “see” their free throws going cleanly through the hoop.

Image visualization is also the secret to improved sexual responses and enjoyment. Sexual arousal begins in the mind, and negative thoughts or fears can stifle the

sexual responses. The sex organs are particularly sensitive to images generated in the mind. Most sex therapists use relaxation techniques and image visualization to help clients improve their sexual experiences. Tension related to sexual performance is usually the main reason for not experiencing the desired sexual sensations. In all areas of your life, begin to use your mental powers more to enhance health and improve performance in daily tasks.

Taking Time Out to Quiet the Mind

Most of us live pretty hectic lives that are full of time pressures and mental stress. Most young people either go to school, work at a job, or do both. In addition to school and work, students engage in extracurricular activities, sports, concerts, cell phone conversations, computer chat rooms, video games, movies, television—the list goes on and on. To do all these things requires a healthy mind and body. Usually, health is something young people take for granted until it disappears. But staying healthy, even when you are young, means finding time to be quiet, to silence stressful thoughts, and to alleviate tensions in the body.

There are many ways to quiet down, and some suggestions and techniques have been presented in this chapter. But the best ones are the ones that you discover for yourself. Find a quiet spot in a park or in your yard where you can sit and reflect on the good things in your life. Forget for a time the problems of the world and what you need to accomplish in life. Just notice things around you, especially the small things. Watching an ant carry a bit of food twice its size is a good thing to do. Looking at the pattern of stars in the night sky is a good thing to do. Experiencing the freshness of new snow and the taste of rain is a good thing to do. Just be quiet as often as you can. It’s good for your mental and physical health.

TERMS

image visualization: use of mental images to promote healing and change behaviors

Critical Thinking About Health

1. Identify one time in your life when you have been seriously ill (not counting colds or minor injuries). Describe the nature of the illness and the time it took to become well again. Discuss all of the factors that you think may have contributed to your becoming sick, including stress, emotional problems, poor nutrition, and so forth. Then discuss all of the factors that you believe contributed to your becoming well again, including medical care, prayer, alternative medicines, and other factors. What were the most important factors that led to your becoming sick? What were the most important ones in the healing process?
2. Find a selection of medical journals in the library and look at the drug company advertisements. Try to locate ones that show a comparison of the drug's effectiveness with a placebo. Determine how effective the placebo was from the data given (usually shown in a graph). Then compare the effectiveness of the drug with the placebo. If the placebo was effective, explain why you think it was so effective in this instance. Give your views on whether doctors should prescribe a placebo pill for some conditions before prescribing an active drug.
3. What is the role of religion/spirituality in health? To what degree should religion/spirituality be part of the clinical encounter between patient and physician?
4. Describe any experiences you have had with meditation, hypnosis, yoga, *qigong*, image visualization, or any other form of mental focusing and relaxation. Describe how you became involved with this activity and for what purpose you used it. Did it help you solve a particular health or emotional problem? Would you recommend this technique to others?

Health in Review

- The human mind can cause changes in body chemistry through thoughts and feelings, which may have a positive or negative effect on your health.
- Optimal health is achieved when the mind and body communicate harmoniously.
- The unconscious regulation of all vital processes in the body is called homeostasis.
- Disease can be regarded as disruption of homeostasis or disruption of the harmonious interaction of mind and body.
- The mind and organs of the body communicate continuously via the autonomic nervous system, which maintains vital body functions such as heart rate, level of blood sugar, and temperature.
- Psychosomatic illnesses are physical symptoms caused by stress, anxiety, and emotional upsets.
- Somatization disorders are caused by psychosocial problems.
- The placebo effect often is almost as powerful as drugs in treating symptoms of illness.
- Religious activity is often associated with a healthier lifestyle.
- Hypnosis and meditation can play a positive role in healing illnesses.
- Belief, faith, and suggestion all have the power to heal because the mind can change disturbed body functions and reestablish homeostasis.
- A key to maintaining or improving health and wellness is to learn and practice a mental relaxation technique.
- Image visualization can be used to reduce anxiety and stress, modify behaviors, and enhance performance.
- Virtual reality therapies use computer software to treat phobias and severe pain.

Health and Wellness Online

The Web contains a wealth of information about health and wellness. You can gain a new perspective on many topics presented in *Health & Wellness, Eleventh Edition*

by accessing the Jones & Bartlett Learning website at go.jblearning.com/Edlin11eCWS.

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Suggested Readings

- Benedetti, F. (2007). Placebo and endogenous mechanisms of analgesia. *Handbook of Experimental Pharmacology*, 17, 393–413.
- Benson, H. (2011). *Harvard Medical School stress management: Approaches for preventing and reducing stress*. Cambridge, MA: Harvard Medical School. The founder and former director of Harvard's Cardiac Wellness Programs and Institute for Mind Body Medicine teaches how to identify stress warning signs and to better manage stressful situations using a variety of stress relief techniques.
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- LeShan, L. (1999). *How to meditate*. Boston: Back Bay Books. A good introduction to the practice of meditation and its benefits.
- Nash, M. R. (2001, June). The truth and hype of hypnosis. *Scientific American*, 37–54. A good introduction to our scientific understanding of hypnosis.
- Scott, R. A. (2010). *Miracle cures: Saints, pilgrims, and the healing powers of belief*. Berkeley, CA: University of California Press. An academic sociologist examines the evidence for miracle cures over the centuries.
- Thompson, G. (2005). *The placebo effect and health: Combining science and compassionate care*. Amherst, NY: Prometheus Books. The author provides a comprehensive examination of the placebo effect.

Recommended Websites

Please visit go.jblearning.com/Edlin11eCWS for links to these websites.

Audio Relaxation CDs and MP3s

Dr. Emmett E. Miller presents articles on mental well-being and sells CDs and mp3s on image visualization, self-hypnosis, and many aspects of wellness and healing.

Meditation

Descriptions of several kinds of meditation practices.

Study Help

The University of Toronto's suggestions for mastering academic skills and reducing stress from classes and studying.