

# The Emotional Impact of Worship

*Ruth loved her synagogue. A grandmother of three, she was an active member of the same congregation that she had belonged to most of her life. For so many years, every time there was an event at temple—a Shabbat service, a special celebration for the children, a committee meeting—Ruth would be there. Besides her family, of course, her Jewish faith and her love of Torah and temple were the center of her life.*

*Ruth especially looked forward to worship services. She loved the peace, the stillness as she sat holding her siddur, praying with others and experiencing the presence of God. Worship gave her a sense of calm and contentment, and a relaxed feeling of wholeness.*

*As Ruth got on in years, she began having health problems. Most were self-limiting—they would come and go—and none of them kept her away from temple for too long. Over time, though, her health problems became more serious, and they began to interfere with her synagogue activities. She started to have some rheumatological symptoms that made it increasingly difficult to get around. This condition made it painful to hold or carry things or be on her feet for long periods of time. Still, she persevered in her temple activities.*

*One day Ruth felt an intense pain. Her doctor checked her out and sent her for a lengthy series of tests. The doctor was honest with her; it might be cancer. There would be many more tests, and they would prove to be tiring, painful, and nerve-racking. Ruth was terrified, and for a while was too exhausted even to go to temple.*

*During the time she spent at home, Ruth began reading books on the role of feelings and emotions in promoting health and hastening recovery from illness.*

*She truly believed that a positive outlook was important, but it was hard to stay upbeat. Her preexisting conditions were difficult enough without having to deal with the threat of cancer. And without temple, she felt especially cut off from a source of deep joy. She became sad and depressed.*

*Fortunately, the tests came back negative; Ruth did not have cancer. Soon she was able to return to temple and take part in worship and other activities once more. Remembering what she had read, Ruth tried to be especially aware of her body and her feelings while at worship. Her sadness lifted, and that old feeling of calm and peace returned. She now has found that she can maintain these feelings even after services. All she has to do is close her eyes and silently pray, imagining herself sitting in temple, and she is flooded once more with a warm relaxation. For a moment, her heart beats slower, her joints and muscles ache less, her tension fades away, and she rejoices in the knowledge that she has heeded the biblical call to “be still and know that I am God” (Psalms 46:10).*

“Consider your soul,” suggested *Reader’s Digest* in its article “Eight Easy Ways to Look—and Feel—Years Younger.” Citing my work as evidence, the article named frequent churchgoing as the final key to “help you stay healthy, look and feel younger and live longer.” Yet just as reporting a religious affiliation does not guarantee active religious participation, neither does frequent religious attendance necessarily imply anything more than sitting passively in a pew. As the previous chapter indicates, there is strong evidence from numerous studies that going to church or synagogue is associated with positive health outcomes, and we have a good idea why; but these studies do not tell us what goes on inside people’s hearts once they walk through the door.

Not all people who attend services do so to worship collectively, to connect with God or a higher power, or to receive spiritual sustenance. For some, attendance is motivated by a desire to please their family; for others, a perceived need to appear socially acceptable; for still others, loneliness or boredom. For these people, the social support benefits of attendance may still be present. That is, even if active religious participation is motivated by reasons other than making some kind of connection with God or the divine, there are still considerable gains to be derived from fellowship with others.

But for people whose churchgoing or synagogue experience is motivated by a desire to experience the joy of worship, practicing religion may offer health benefits beyond those resulting from the effects of healthy habits and supportive networks. The worship experience may produce feelings such as hope, forgiveness, catharsis, and love, which science tells us can affect our physiology, promoting health and relieving distress. Just as research studies report benefits of religious affiliation and organized religious participation, so is there solid evidence that worshipping God has a positive influence on our health.

## The Demography of Prayer

Research confirms that prayer is the most common form of worship. Among adult Americans, rates of prayer, both collectively and privately, have been uniformly high for decades.

Data from the authoritative General Social Survey reveal that over half of us pray at least daily, a trend that has held steady for nearly thirty years. Data from various surveys show that the proportion of us who report ever praying to God has held consistently at around 90 percent for over fifty years. If anything, levels of very frequent prayer seem to have increased. Sociologist Dr. Andrew M. Greeley notes that the number of people who reported praying more than once a day—certainly a good indicator of an active devotional life—rose from about a quarter of the population in the early to mid-1970s to nearly one-third a decade later.

Using a nationally representative sample of nearly 1,500 adults, my colleague Dr. Taylor and I explored in considerable depth the patterns of prayer among Americans. We analyzed data from the annual General Social Survey, the same source used by Dr. Greeley, to update and expand on his findings. We made several important observations:

1. Counting both public and private prayer, considerably more people pray at least daily than attend weekly religious services.

This includes over 43 percent of those ages eighteen to thirty, over 45 percent of those ages thirty-one to forty, over 57 percent of those ages forty-one to sixty, and nearly three-quarters of those over age sixty.

2. Hardly anyone reports that they never pray. Less than 1 percent of respondents said that they never engaged in prayer. This is consistent with other studies that have found this number to vary between 2 percent at the highest, and zero.
3. Prayer is more frequently practiced in successively older age groups. This could reflect higher rates of prayer in earlier generations, or it could mean that we pray more as we get older. Or it could mean both.
4. Women pray more often than men, throughout life, and African Americans pray more often than Caucasians.
5. The strongest determinant of frequent prayer is active participation in religious services.

Naturally, folks who go to church or synagogue regularly will have more opportunities, on average, to pray than those who do not. But many of us pray privately, for reasons unrelated to participation in formal worship liturgies. Other strong determinants of frequent prayer in our study were a feeling of closeness to God and a history of mystical or transcendent experiences.

Prayer is a natural part of most of our lives. It is a component of organized religious worship across religions and religious denominations, and also reflects and is motivated by very personal feelings and experiences. Prayer, whether public or private, is often used for “expressive” purposes—a term used by social scientists to mean “for its own sake.” But it may also be used “instrumentally”—as a means to an end.

## Do Religious Worship and Prayer Influence Health?

According to a study by my colleagues, Drs. Christopher G. Ellison and Robert Joseph Taylor, people also turn to prayer to deal with

personal crises and issues. They do so for many reasons. Some of us pray out of a need for help with such personal problems as finances, the law, or conflicts with others. Others pray as a way to cope with bereavement. Others pray to seek healing. The use of prayer for purposes of coping depends upon the availability and closeness of others to pray with us or for us.

Regardless of whether prayer is used expressively or instrumentally, the consequences of an active prayer life for health and well-being are clear. Frequent prayer, whether public or private, is associated with better health and emotional well-being and lower levels of psychological distress. My colleagues and I have observed this relationship irrespective of ethnic group or religious denomination in a variety of longitudinal studies.

- Participants in a study of more than 500 older Mexican Americans and Anglo Caucasians, predominantly Catholics, were asked how often they prayed when not in church. Frequent private prayer strongly influenced well-being. The more often folks prayed, the greater their well-being *over eight years later*.
- We replicated these findings in over 2,000 adult African Americans, mostly Baptists and Methodists. Once again, there was a longitudinal effect: frequent prayer led to greater life satisfaction and happiness *over a decade later*.
- My colleague Dr. Ellison, along with his associates, investigated the effect of religious devotion in a nationally representative sample. Religious devotion was assessed by combining data on the frequency of prayer and feelings of connection to God. The intensity of devotion was a strong determinant of life satisfaction, regardless of one's level of religious attendance, religious affiliation, social interaction with others, health, or experience of traumatic life events in the past year.

This is a startling and important finding, and there is more here than meets the eye. According to these results, the benefit of religious devotion for well-being extends above and beyond any benefit attributable to religious affiliation or organized religious

participation. Further, this benefit does not simply reflect the known health advantages of social support, nor does it disappear in the presence of traumatic life stress.

## Replicating the Prayer-Health Connection at Duke

Other well-regarded scientists have confirmed that regular worship and prayer exhibit beneficial effects on health and well-being. Research conducted at Duke University has replicated a prayer-health connection in a variety of populations, age groups, ethnicities, and religious denominations.

A provocative study examined effects of religious devotion in more than 4,000 adult participants in the North Carolina EPESE study. Religious devotion was assessed by frequency of private religious activities such as prayer, meditation, and Bible study. The investigator, sociologist Dr. Marc A. Musick, was a graduate student at Duke at the time. He is now at the University of Texas, and is both a former student and current colleague of Dr. Ellison. Dr. Musick's results are quite interesting. He found that the more frequently people participated in devotional activities, the healthier they rated themselves. This held after controlling for other aspects of religiousness, key personal characteristics (age, sex, marital status), both healthy behavior and satisfactory social ties, and even objective measures of health such as previously diagnosed chronic diseases and functional impairment.

This landmark study is important for two reasons. First, it identifies an effect of religious devotion on what researchers term "subjective health." This is typically assessed by a single question (e.g., "In general, how would you rate your health: excellent, good, fair, or poor?"), which is commonly asked in epidemiologic studies. Subjective health is considered a reliable indicator of one's overall state of health, and one of the best predictors that we know of for mental health, level of functional disability, rates of physician use, and even longevity. Establishing a connection between religious worship and this key indicator is a sign that worship has very real consequences for our health.

Second, and more important, Dr. Musick's results demonstrate the robustness of a prayer-health connection. As with Dr. Ellison's findings for religious devotion and well-being described above, we now know that private devotion influences health *above and beyond* the benefits attributable to other dimensions of religious involvement and to practicing healthy behavior or receiving social support. However it is that religious worship impacts our health for the better, these findings tell us that it apparently does so in ways that religious affiliation and organized religious participation alone cannot.

Another notable Duke study explored the impact of prayer and religious devotion among older adults, a group well known to sociologists of religion for their more frequent private religious activities. Results were similar to Dr. Musick's, and showed that religious worship has implications for the well-being of the elderly as well as for younger adults.

This study of 1,100 people from Illinois drew on five groups of older adults: geriatric outpatients, participants in a state-sponsored seniors' lunch program, members of several conservative Protestant churches, participants in a Jewish seniors' lunch program, and retired Dominican and Franciscan nuns. The main study factor, "nonorganizational religious activity," was measured by combining data on several activities such as private prayer and devotional reading. Researchers, led by Dr. Harold G. Koenig, a geriatric psychiatrist at Duke University and the world's preeminent clinical scientist in the area of religion and health, found that frequent worship was associated with higher morale; less agitation, loneliness, and dissatisfaction with life; and greater ability to cope with tension. This was found overall, as well as in women, younger folks, older folks, sick folks, and healthy folks, regardless of religious affiliation.

Drs. Musick and Koenig have since joined forces for a longitudinal study of the effects of religious devotion on mental health. Using data from the North Carolina EPESE study, a composite measure of prayer, meditation, and Bible study was analyzed in relation to four dimensions of the well-regarded Center for Epidemiologic Studies Depression scale: depressive symptoms, positive affect (a happy mood), somatic-retarded activity (low energy, poor

appetite), and poor interpersonal relations. The investigators were interested in whether religious devotion, assessed in 1986, would have any effect on the mental health of cancer patients in 1989. Among African Americans, effects of devotion on depressive symptoms, somatic-retarded activity, and poor interpersonal relations were as anticipated—suggesting a protective effect—but of insufficient magnitude to attain statistical significance. A significant effect was found, however, on emotions. Among African American cancer patients, frequent prayer, meditation, or Bible study led to a happy and contented mood *three years later, despite experiencing cancer*.

### Links in a Chain:

#### *Religious Worship*→*Positive Emotions*→*Health*

We once again need to identify the “active ingredient” that connects religious worship to health. We must identify a factor that, like the link in a chain, is both an outcome of religious worship and a determinant of health. In Chapter 1, we observed how religious affiliation sanctions and reinforces healthy behaviors that protect against disease and death. In Chapter 2, we saw how organized religious participation provides social support that lessens the disease-making impact of life stress. What do we know about prayer and devotion that suggests how they might influence health?

I propose that the health benefits of worship and prayer are due to the health-promoting effects of the positive emotions that they engender. Religious worship produces and is characterized by distinct emotions, regardless of what spiritual path one follows. These run the gamut from healthy feelings ideally sought through devotion—peace, joy, trust, love—to destructive feelings sometimes unexpectedly encountered along the way—guilt, fear, anger, hatred. Regardless of the polarity of our feelings, positive or negative, scientific studies tell us that our emotions have a lot to say about our health.

From cutting-edge research in new fields such as psychophysiology and psychoneuroimmunology, we have learned that emotions are “hardwired” into our autonomic nervous, endocrine, and immune systems. As a consequence, what we feel can affect the

physiological functioning of our bodies. Whatever affects what and how we feel therefore has a clear path, physiologically speaking, to influence our body and our mind. Whatever elicits heartfelt emotional responses is a potentially protective factor, epidemiologically speaking, and deserves our scrutiny. In this regard, religious worship has few equivalents.

## Religious Worship and Emotional Attachments

Dr. Susan H. McFadden and I recently described how religious worship works to influence the feelings that we experience in our daily lives. Dr. McFadden, a psychologist at the University of Wisconsin at Oshkosh, is one of the preeminent figures in the field of religious gerontology. She was selected to write the chapter on religion and spirituality in the *Encyclopedia of Gerontology*, a sign of her considerable stature in this field.

In our chapter in the *Handbook of Emotion, Adult Development, and Aging*, we presented a perspective on the interconnections among religion, emotions, and health. At best, worshipping publicly with others elicits feelings of interpersonal trust, mutuality, and intimacy. Group rituals, such as prayer, give structure and context to our encounters with God or the divine. Worship activates what psychologists call “attachment” processes that connect people both to one another and to their conception of a spiritual force or to God. Holding to an image of God as a loving heavenly father, as in Judaism, Christianity, and Islam, or as a divine mother, as in neopaganism and some New Age spiritual paths, is an example of a loving attachment nurtured by worshipping with others.

Private observance, too, may reinforce similar emotional attachments. Through home-based prayer, daily devotions, and meditation, feelings may be produced that serve to connect us with fellow believers, now and throughout history, and with God or one’s “higher self.” For older adults especially, worship experiences emphasize the intrinsic and enduring meaning of life, fostering a sense of feeling blessed by God. This may be vital for elderly people struggling to “preserve the self” in the face of circumstances

that may prevent them from maintaining their lifelong patterns of worship in church or synagogue.

## How and Why We Pray

Not all worship is the same. According to Dr. Margaret M. Poloma, a sociologist and professor at the University of Akron and one of the world's foremost experts on how and why people pray, prayer can be divided into four categories. Ritual prayer includes reading from prayer books or reciting memorized prayers, like those found in the Jewish *siddur* or Catholic missal. Conversational or colloquial prayer is characterized as informally talking with God. Petitionary prayer requests that spiritual or material needs be filled by God or the universe. Meditative prayer entails thinking about God or the divine, listening for God's voice, or in the words of sixteenth-century Carmelite monk Brother Lawrence, "practicing the presence of God."

To quote one of my papers: "These types of prayer are not mutually exclusive; for instance, many individuals who utilize ritual prayer also engage in more informal conversational prayer. If there is a *sine qua non* to these disparate styles of prayer, it may be, as James long ago noted, the seeking of an 'inward communion' with the divine, leading the pray-er 'into the presence of the ultimate mystery of God.'"

Prayer and worship are means to connect us to God or the eternal, whether directly, as some religions believe, or through participation in a fellowship of believers. Among observant Jews, for example, certain prayers are recited at prescribed times daily (the *shema*, *birkhat hamazon*), weekly (the *berakhab* for the *Shabbat* candles), monthly (*rosh chodesh*), and yearly (at Yom Kippur), or as circumstances arise (*yizkor*, *mi shebayrach*, *shehecheyanu*). Some of these prayers are a part of public worship liturgies conducted in a *minyan* at *shul*; others are privately recited at home, alone or with one's family. In both cases, these prayers connect the pray-er to all others throughout the world who are praying the same thing at the same time. Prayer is therefore a powerful means to enhance one's feelings

of connection to others “horizontally,” extending bonds of solidarity across a community of believers; “vertically,” linking those who pray to God; and throughout time, forging bridges to fellow worshipers across history.

In *How I Pray*, journalist Jim Castelli interviewed over two dozen people from many of the world’s faith traditions. Their stories are testament to the power of prayer to evoke emotions that connect us to God through connecting us to fellow worshipers. One interviewee, a Jewish woman, described how her prayer life had changed as she grew and matured. As a teenager, she had participated in a Reform Jewish youth group that experimented with unstructured and contemporized prayers mixing liturgy with poetry or creative reading. As an adult, she found that this was no longer enough for her.

I’ve since grown out of that type of prayer—although I still see its importance for the high school students with whom I work. I used to pray that way, but during my college career I learned more Hebrew and became comfortable praying in an Orthodox atmosphere where it was all Hebrew. I was drawn to the traditional Jewish prayers because I like the feeling that the words I’m saying out of the prayer book are words that Jews all around the world are saying. There is time for personal prayer in the liturgy, but I’ve become very connected to the idea of the tradition that goes on, and that is that all Jews on Friday evenings are saying the same thing, with their own personal additions.

## Worship, Prayer, and Mood

According to the late Dr. Joachim Wach, University of Chicago historian of religions, worship works “to bind together and unite those animated by the same central experience.” Besides formal or informal prayer, other worship experiences—“cultic acts,” in the language of religious scholars—also strongly influence our moods and attitudes and thus work to integrate people. These essential functions of religion include festivals, pilgrimages, purifications, lustrations, vows, offerings, sacrifices, and processions. Participation in

such acts of worship can produce commonly experienced emotional responses among fellow believers that reinforce their mutual ties.

The nineteenth-century philosopher and psychologist Dr. William James, in his classic *The Varieties of Religious Experience*, explained that expressions of religiousness may reflect or contribute to two types of religious feelings. People who adhere to “healthy-minded” religion experience the world as good, feel harmoniously connected to all things, and gain immediate happiness through their spiritual life. By contrast, the religion of “sick souls” leads them to see the world as sinful and evil, to feel mostly guilt and fear, and to derive sadness and melancholy from the practice of their faith. James saw some value in these “morbid-minded” emotions. At least such responses were not blind to the evil that exists in the world. Healthy-minded religion, in its extreme form, is a faith of rose-colored glasses. The most balanced type of religiousness, for James, would be neither overly optimistic nor overly pessimistic. It would see reality as it is; worshipers, in turn, would experience neither extreme highs nor extreme lows.

## Salutary Emotions: The Case of Norman Cousins

In 1964, Norman Cousins, well-known editor of *The Saturday Review*, was overcome by a crippling illness that landed him in the hospital in a state of constant pain. Cousins, an avid reader of scientific and medical literature, suspected that he was suffering from adrenal exhaustion and a general dysfunction or shutdown of his endocrine system. As he wondered what he would do next, a thought came to his mind:

I remembered having read, ten years or so earlier, Hans Selye’s classic book, *The Stress of Life*. With great clarity, Selye showed that adrenal exhaustion could be caused by emotional tension, such as frustration or suppressed rage. He detailed the negative effects of the negative emotions on body chemistry.

The inevitable question arose in my mind: what about the positive emotions? If negative emotions produce negative chemical changes in the body, wouldn’t the positive emotions produce positive chemical changes? Is it possible that love, hope, faith,

laughter, confidence, and the will to live have therapeutic value?  
Do chemical changes occur only on the downside?

In consultation with his physician, Cousins formulated a program of action to mobilize these positive emotions. His first objective was to reduce the constant pain that kept him awake. He began by viewing episodes of the old television show *Candid Camera*, as well as old Marx Brothers films. The results were immediate.

It worked. I made the joyous discovery that ten minutes of genuine belly laughter had an anesthetic effect and would give me at least two hours of pain-free sleep. When the pain-killing effect of the laughter wore off, we would switch on the motion-picture projector again, and, not infrequently, it would lead to another pain-free sleep interval. Sometimes, the nurse read to me out of a trove of humor books.

Eventually Cousins improved enough to return to work. By 1979, when he published the best-selling *Anatomy of an Illness as Perceived by the Patient*, he reported that he had become pretty much pain-free. Cousins's explanation for his experiences was straightforward: "The will to live is not a theoretical abstraction, but a physiologic reality with therapeutic characteristics.... What we are talking about essentially, I suppose, is the chemistry of the will to live."

## Body-Mind Health: The Psychophysiology of Emotions

Since publication of Cousins's book, investigation of the neurochemistry of emotions has emerged as a major scientific venture. Research in the new hybrid fields of psychophysiology, psychoneuroimmunology, and neuroendocrinology has begun to map the physiological and biochemical connections that link our emotions and the operation of the several bodily systems.

In *The Psychobiology of Mind-Body Healing*, Dr. Ernest Lawrence Rossi detailed the scientific basis for "mind modulation" of the autonomic nervous, endocrine, immune, and neuropeptide systems, and their complex interactions as they work to produce

“mind-body healing.” According to Dr. Rossi, there are three distinct levels of mind-body communication: between mind and brain, between brain and body, and between cell and gene. Interestingly, the connecting links along these communication pathways do not consist solely of nerves.

The nerves are there, to be sure . . . but the nervous system is only the “Johnny-come-lately” in the evolution of mind-body communication. Before life invented nerves to specialize in rapid communication between brain and body in large-size organisms, messenger molecules were the original form of communication. Even today the activity of every single nerve in our body and brain is modulated by messenger molecules. This is the new and profoundly deep insight that makes a modern science of mind-body communication possible.

These “messenger molecules” have also been called “molecules of emotion” by Dr. Candace B. Pert, neuroscientist and pharmacologist at Georgetown University. They comprise the neurotransmitters of the autonomic nervous system, the hormones of the endocrine system, the cytokines of the immune system, and the neuropeptides of the neuropeptide system. These work in tandem in various ways, connecting our feelings and moods with the physiology and functioning of our body and bodily systems.

Scientists have identified pathways between what are called “affective disturbances”—state and trait anxiety, depression—and the onset, progression, and severity of physical disorders. Emotions influence interactions among the nervous, endocrine, and immune systems in response to infection, inflammation, and tissue injury. Psychological conditioning, personality, coping styles, and emotional responses to stress modulate our immunity, up or down, with implications for disease. Commenting upon the wealth of new evidence, an article in the *American Psychologist*, journal of the American Psychological Association, noted that “the study of the psychological modulation of immunity has only scratched the surface of the relationships that probably exist.”

## Emotions, Health, and Disease

This new science of emotions and health is not just a matter of arcane facts that could interest only a laboratory scientist. There are important implications for each of us—things we can do to improve our emotional state and influence our health for the better.

In *Minding the Body, Mending the Mind*, former Harvard scientist Dr. Joan Borysenko outlined practical means to understand the “emotional mind traps” that subvert our well-being. These traps, which Dr. Borysenko called “the dirty tricks department of the mind,” include negative personal beliefs, social beliefs (“shoulds”), insistence on being right, rationalizing, disillusionment, and despair. Each has negative consequences for our emotions or—as is the case with the last two—is itself a negative emotion. Dr. Borysenko’s book is a treasure trove of wisdom on how to understand our own emotional style and begin to reframe our responses to things that happen. In so doing, we can develop healthier emotions and attitudes that ensure “freeing the inner physician.”

The possibility of using our emotions as allies in promoting health and preventing illness is intriguing and exciting. But the consequences of an established link between emotions and health are serious. There is a dark side to this connection. If emotions can heal and keep us well, they can also make us ill.

Dr. James W. Pennebaker, psychologist at Southern Methodist University, identifies inhibition of emotions as a major health threat. In *Opening Up*, Dr. Pennebaker explained that holding inside the terrible emotional consequences of traumatic events—incest, sexual abuse, a serious accident, widowhood—increases one’s risk of serious health problems. But there are things we can do to cope better with such emotions so that they are not automatically translated into physiological and functional declines. According to Dr. Pennebaker, freely expressing our emotions through confiding in others can be a powerful catharsis and aid in recovering from illness. This includes praying—a powerful means of confiding.

## Love and Health

Other experts have singled out love as foremost among the human emotions capable of promoting and maintaining health and achieving healing. *The Complete Guide to Your Emotions and Your Health*, published by *Prevention* magazine, explained: “It seems something deep inside our cells responds positively when we feel love. Love appears capable of sparking healthy biological reactions in much the same way as good food and good fitness.”

This sounds very much like the language used earlier to describe how positive emotions stimulate mind-body communications that are key to beneficial immunologic responses. The experience of love—given and received—apparently is good for our health.

Dr. Leonard Laskow, physician and author, has discussed the importance of feeling and expressing love for attaining “holoenergetic healing.” This he describes as a transformational process that can bring harmony and balance down to the deepest recesses of the self. In *Healing with Love*, Dr. Laskow stated:

Emotions impel us to express our feelings through our actions, though sometimes we repress our actions. In a healthy state, our thoughts and feelings are aligned and integrated to guide our actions....Our emotional health depends on our ability to be in touch with our emotions, feelings, and thoughts. Having an awareness of their origins and of their effects on us and on others enhances our sense of self.

Dr. Laskow also described how emotions can influence health through psychoneuroimmunologic mechanisms, as well as through effects on the human bioenergy system. This hypothetical network of energy centers and circulatory channels is believed to contain and direct the movement of a vital life force capable of maintaining health and preventing and healing illness. The existence of this system is controversial; the question is explored in greater depth in Chapter 8.

Dr. Bernie Siegel, Yale physician and author of the best-selling *Love, Medicine and Miracles*, has affirmed, “Unconditional love is the most powerful stimulant of the immune system. The truth is: love heals.” Through his Exceptional Cancer Patients (ECaP) program,

Dr. Siegel has worked with individuals to help them experience love and other emotions, such as forgiveness, that can mobilize the immune system and engender health.

Research on the direct health effects of love and forgiveness is still in its infancy. The John Templeton Foundation recently funded more than two dozen research studies of forgiveness. Many of these are investigations of physical and mental health. I recently completed data collection for a small clinical study of the health effects of love, funded by the Institute of Noetic Sciences. Results are not yet published, but I found that dimensions of love—such as feeling love for or feeling loved by God or a higher power—was associated with greater self-esteem, higher levels of self-efficacy or sense of mastery, less depression, less physical disability, and greater self-rated health. These results have led me in a recent scholarly article to propose the “epidemiology of love” as a new scientific field.

## Love, Worship, and Prayer

A principal means of experiencing positive emotions, especially feelings of love and forgiveness, is by religious worship and prayer. Through the experience of public and private rituals, religion may ease dread and anxiety, reduce tension and aggression, allay fear, and moderate loneliness, alienation, and feelings of inferiority. Many of these negative affects, or feelings, have been found to be risk factors for illness. Religious rituals characteristically use confession, emotional arousal, and other processes to instill feelings of peacefulness, escape, purification, empowerment, or catharsis.

In a review of scientific findings on religious factors in the prevention of hypertension published several years ago, I elaborated on this point: “These positive affects may serve as sorts of psychic beta-blockers or emotional placebos which mitigate the body’s attempt to elevate blood pressure. Rituals from pre-modern, Western, and Eastern traditions encompass mental and physical healing rites or procedures which are associated ethnographically with such cardiovascular benefits.”

Dr. Michael E. McCullough, psychologist and faculty member at Southern Methodist University, concurs. In a comprehensive review of published research on the health benefits of prayer, he outlined physiological and psychophysiological pathways by which prayer influences health. Dr. McCullough reviewed evidence that prayer may “facilitate improvements in mood tone...leading to a state of peace and calm during prayer and extending into other areas of the life of the pray-er.” These emotional benefits, he suggested, may lead to neuroimmunological, cardiovascular, and brain electrical changes—physiological changes that may promote health.

Of course, religion just as easily can, and does, engender less-savory emotions: dread, fear, anxiety, self-loathing. But just as these emotions and states may be risk factors for illness and psychological distress, so the positive emotional effects of religion may be protective against a wide range of negative health outcomes. Such emotional responses to worship, especially feelings of loving and being loved and forgiven, may be powerful sources of health and healing. Through bolstering our resistance to disease and strengthening the body’s immunity and ability to maintain a healthy homeostasis or balance, the positive emotions resulting from religious worship can help us to negotiate and overcome the stresses of daily life.

## Lessons to Consider

The evidence in this chapter gives rise to our third principle of theosomatic medicine:

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### *PRINCIPLE 3*

Participation in worship and prayer benefits health through the physiological effects of positive emotions.

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What do these scientific studies linking devotion and prayer to better health tell us about the value of regular worship? What can we learn from research showing that the positive emotions engendered

by prayer affect our physiology, even immunity? Are there health consequences of finding ourselves trapped in uncomfortable religious settings or on an unfulfilling spiritual path?

As we have seen, the most personal aspects of our spiritual life have a direct impact on the workings of our body and mind. How we connect to God or the divine, when and where we worship, how and how often we pray—these issues have implications for our happiness and life satisfaction, our ability to physically function, and our capability of coping with life changes, especially as we grow old. Because prayer and devotion create emotional responses within us, our usual patterns of worship go a long way toward shaping our emotional life. Our relationship with God influences how we get along with others, how we respond to stress, how we deal with daily events, and how we feel about ourselves.

Keeping the lines of communication open with whatever or whomever we conceive God to be is among the healthiest things we can do. Naturally, this means different things to different people. We all have our own ways of conceiving of God and relating to God. But no matter how orthodox or unique our style of expressing devotion to the sacred in life, each of us has an innate need for conveying gratitude to the source of all being. Most religious traditions recognize this by providing liturgies replete with structured prayers, poems, and songs of praise. For many people, devotion is best accomplished without words. They express their thankfulness through silent prayer and meditation, allowing feelings of gratitude to wash over them in very personal ways.

Structured or unstructured, public or private, worship marshals emotions that strengthen what epidemiologists call “host resistance.” Also known as “constitution,” this refers to our innate ability to withstand illnesses to which otherwise we would be susceptible. Finding a style of worship that we are comfortable with can provide us with inner resources that help us to cope with problems, to buffer stress, and to fend off or recover more quickly from illness. Prayer can steel us to better withstand the biological, psychological, and interpersonal threats to our health and well-being. But this ability of worship to engender strong emotional responses can also be our undoing.

Just as positive worship experiences can flood us with feelings of peace, joy, contentment, belonging, and acceptance, undesirable experiences can fill us with fear, dread, and guilt. For some of us, prayer and devotion are not undertaken to express our love of God or out of longing for union with the holy, but for other reasons. These include fear of chastisement by an angry deity, desire to appease a spouse or parent, guilt over real or imagined sins, or a wish to appear socially acceptable. In some theologies, these may be perfectly justifiable reasons to pray and participate in worship. I do not mean to disparage them. But such motivations may be driven more by the hope of fooling God or other people or ourselves than by the desire to unburden a contrite heart. If we give in to negative emotions during this type of prayer, there may be harmful consequences for our health and for our functioning and well-being. We may think we are fooling someone, but we are not fooling our body or mind.

My own perspective is that worship should be an uplifting experience. This is not to say that it is always purely joyous. Sometimes we come to God in thanksgiving for wonderful blessings that have already filled us with contentment. In these instances, it is easy to see how prayer can be emotionally fulfilling, even ecstatic. Sometimes, however, we come to prayer or meditation burdened with a heavy heart or broken spirit. We may be in the depths of despair, lower than we imagined possible. But when we are sincerely motivated and willing to “let go and let God,” worship ought to leave us feeling emotionally better off than when we started. One worship service or a single prayer or twenty minutes of quiet reflection may not leave our spirit soaring with the eagles, but God willing, it should not send us sinking any lower. If we find that how we worship is only making us more miserable, then it may be time to find a new way to pray.

## Questions to Reflect On

This chapter began with the story of Ruth. Various infirmities and functional problems prevented her from taking part in the worship

services she so adored. Sad and depressed over her inability to attend services, she wisely chose to spend her time reading about the importance of a positive outlook for meeting health challenges. Eventually she was able to return to synagogue and once again experience the joy of worshiping with her friends.

Ruth's experiences should resonate with many of us. Older adults, especially, may derive special benefit from regular religious worship, as it may offer a sense of continuity in the face of increasingly difficult life changes, such as functional declines and disengagement from other activities. Public and private devotion and prayer may also provide a source of hope for the future, which could otherwise be uncertain.

Duke University psychiatrist Dr. Harold G. Koenig, in his book *Aging and God*, outlined the benefits of an active religious life for older adults and throughout life. Religion may exert a protective function, epidemiologically speaking, against mental health problems such as depression, anxiety, and attempted suicide. It may also serve as a means of coping with already existing illness, and may hasten recovery from medical problems and from the psychological pain of bereavement.

Maintaining a familiar style of religious devotion is key to preserving one's emotional stability as physical and other changes occur with age. For younger and middle-aged adults, patterns of worship may serve a similar nurturing and conserving function throughout such life changes as marriage, parenthood, moving to a new community, and changing jobs. Prayer and worship may be old friends that trigger in us the same wonderful feelings that have sustained us before in times of need or radical change. Reinforced over many years, these familiar ways of relating to God, the positive emotions they trigger, and their resultant physiological benefits may become as much a part of our life as our physical characteristics and personality.

Reflecting on my own worship experiences, I recognize how going back as an adult to the religious tradition I had drifted from as a teenager reinvented familiar and comforting feelings back into my life. Once I met my wife, I felt especially drawn to return in earnest to a more active spiritual life, both communally and personally. I felt

I had something big to be thankful for, and I also felt, as do many Jews of my generation, a responsibility to help preserve our traditions. Each time I reconnected with one of the various prayers, synagogue rituals, and annual holiday worship activities, I was flooded with emotions—joy, awe, excitement, reverence—that I recalled from childhood. Today, many years after reestablishing a regular pattern of prayer and devotion in my life, I still experience the same emotions, and some new ones. Worshiping God is, for me, an essential part of daily life and a source of inestimable comfort. In trying times, especially, I know that it has helped to keep me balanced and well.

A lot of people surely can relate to what I have described. My experiences are not unique to myself or to newly observant or recommitted adults of any particular faith or spiritual path. Worshiping God or connecting to the divine presence naturally evokes strong feelings in people. These powerful emotions, in turn, can influence us in various ways—mentally and physically—from making us rethink things we thought we knew to heightening particular sensations. The questions that follow can help us explore how our patterns of prayer and devotion can produce feelings that affect our physical and mental well-being.

1. All religious and spiritual paths have their own unique traditions for expressing devotion to God or to the holy. Both across and within particular faiths, individual followers are called to pray and worship in many different ways. How many ways do you find to worship God or your conception of the divine? Through ritual prayer? Through extemporaneous prayer? Through silence and clearing the mind of all words and thoughts? Do you prefer to worship with others or by yourself? Do you have set times for seeking God in this way, or do you talk to God spontaneously throughout the day?
2. What emotions do you experience during prayer? Are they different depending upon whether you have prayed with others, as in a formal service, or by yourself? What kind of feelings do you have when you participate in other types of sacred rituals or activities, such as singing, chanting, lighting candles, or washing the hands? After you have finished praying or meditating, do

you feel differently than before you began? Are you more contented or relaxed? Or are you more restless? Are you happier? Do you have greater peace of mind? How long do these feelings last? Do you look forward to the feelings you get when you pray or meditate?

3. Do you have physical sensations when you pray or engage in worship? Do parts of your body tingle? If you have any ongoing pain, does the pain level diminish? If you practice meditation, have you ever felt awareness of your body fade away, as if you were pure mind or spirit? Do you ever feel God's spirit wash over you or fill you during worship? Do you lose consciousness? Do you experience any unusual feelings, such as ecstasy or perfect joy? When you pray or meditate, do you ever notice any changes in your breathing or your pulse? Afterward, do you feel less bothered by the daily stresses that are usually present in your life? Have you ever noticed any changes in an existing physical condition during or following personal prayer or worship?

