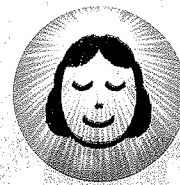


to find out more
about the science of
faith, visit www.time.com
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MIND

&

BODY

CAN HEAL

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Years of additional life associated with regular church attendance

SPEAK UP

More than 85% of cancer patients would not be offended if their doctors asked them about their spiritual needs—but doctors don't ask

The Biology Of Belief

Science and religion argue all the time, but they increasingly agree on one thing: a little spirituality may be very good for your health

BY JEFFREY KLUGER

MOST FOLKS PROBABLY couldn't locate their parietal lobe with a map and a compass. For the record, it's at the top of your head—aft of the frontal lobe, fore of the occipital lobe, north of the temporal lobe. What makes the parietal lobe special is not where it lives but what it does—particularly concerning matters of faith.

If you've ever prayed so hard that you've lost all sense of a larger world outside yourself, that's your parietal lobe at work. If you've ever meditated so deeply that you'd swear the very boundaries of your body had dissolved, that's your parietal lobe. There are other regions responsible for making your brain the spiritual amusement park it can be: your thalamus plays a role, as do your frontal lobes. But it's your parietal lobe—a central mass of tissue that processes sensory input—that may have the most transporting effect.

Needy creatures that we are, we put the brain's spiritual centers to use all the time. We pray for peace; we meditate for serenity; we chant for wealth. We travel to Lourdes in search of a miracle; we go to Mecca to show our devotion; we eat hallucinogenic mushrooms to attain transcendent vision and gather in church basements to achieve its sober opposite. But there is nothing we

pray—or chant or meditate—for more than health.

Health, by definition, is the sine qua non of everything else. If you're dead, serenity is academic. So we convince ourselves that while our medicine is strong and our doctors are wise, our prayers may heal us too.

Here's what's surprising: a growing body of scientific evidence suggests that faith may indeed bring us health. People who attend religious services do have a lower risk of dying in any one year than people who don't attend. People who believe in a loving God fare better after a diagnosis of illness than people who believe in a punitive God. No less a killer than AIDS will back off at least a bit when it's hit with a double-barreled blast of belief. "Even accounting for medications," says Dr. Gail Ironson, a professor of psychiatry and psychology at the University of Miami who studies HIV and religious belief, "spirituality predicts for better disease control."

It's hard not to be impressed by findings like that, but a skeptic will say there's nothing remarkable—much less spiritual—about them. You live longer if you go to church because you're there for the cholesterol-screening drive and the visiting-nurse service. Your viral load goes down when you include spirituality in your fight against HIV because your levels



ABOUT THE ART

Artist Christian Northeast trolls the Internet scavenging prayers left on blogs, in chat rooms and on message boards. He illustrated some of them for his new book, *Prayer Requested*, to be published in June by Drawn & Quarterly

THINK
POSITIVE
THOUGHTS

LET US ALL
JOIN HANDS

He's in a
better place

I PRAY
SHE GETS
THROUGH
THIS

I KNOW
HE'S WATCHING
OVER US

I WON'T LET THIS
DEFEAT ME

I'm at peace
with this

I'M
ON
THE
MEND

This is part of his plan
for me

POWER OF HUNGER

Food restriction can lead to feelings of clarity and bliss—good for a religious faster, bad for an anorexic

82%
Blacks who say they are church members

92%
Blacks who say religion is very important in their lives

55%
Whites who say the same



94%

Share of patients who said it was perfectly all right for doctors to ask them about their religious beliefs. Plenty of doctors have no quarrel with this—though they are less sure how to raise the topic. Still, they agree that if health-care providers suggest complementary care like acupuncture to some patients, why not faith and prayer to others?

of cortisol—a stress hormone—go down first. “Science doesn’t deal in supernatural explanations,” says Richard Sloan, professor of behavioral medicine at Columbia University Medical Center and author of *Blind Faith: The Unholy Alliance of Religion and Medicine*. “Religion and science address different concerns.”

That’s undeniably true—up to a point. But it’s also true that our brains and bodies contain an awful lot of spiritual wiring. Even if there’s a scientific explanation for every strand of it, that doesn’t mean we can’t put it to powerful use. And if one of those uses can make us well, shouldn’t we take advantage of it? “A large body of science shows a positive impact of religion on health,” says Dr. Andrew Newberg, a professor of radiology, psychology and religious studies at the University of Pennsylvania and co-founder of Penn’s Center for Spirituality and the Mind. “The way the brain works is so compatible with religion and spirituality that we’re going to be enmeshed in both for a long time.”

It’s All in Your Head

“ENMESHED IN THE BRAIN” IS AS GOOD A way as any to describe Newberg’s work of the past 15 years. The author of four books, including the soon-to-be-released *How God Changes Your Brain*, he has looked more closely than most at how our spiritual data-processing center works, conducting various types of brain scans on more than 100 people, all of them in different kinds of worshipful or contemplative states. Over time, Newberg and his team have come to recognize just which parts of the brain light up during just which experiences.

When people engage in prayer, it’s the frontal lobes that take the lead, since they govern focus and concentration. During very deep prayer, the parietal lobe powers down, which is what allows us to experience that sense of having loosed our earthly moorings. The frontal lobes go quieter when worshippers are involved in the singular activity of speaking in tongues—which jibes nicely with the speakers’ subjective experience that they are not in control of what they’re saying.

Pray and meditate enough and some changes in the brain become permanent. Long-term meditators—those with 15 years of practice or more—appear to have thicker frontal lobes than nonmeditators. People who describe themselves as highly

spiritual tend to exhibit an asymmetry in the thalamus—a feature that other people can develop after just eight weeks of training in meditation skills. “It may be that some people have fundamental asymmetry [in the thalamus] to begin with,” Newberg says, “and that leads them down this path, which changes the brain further.”

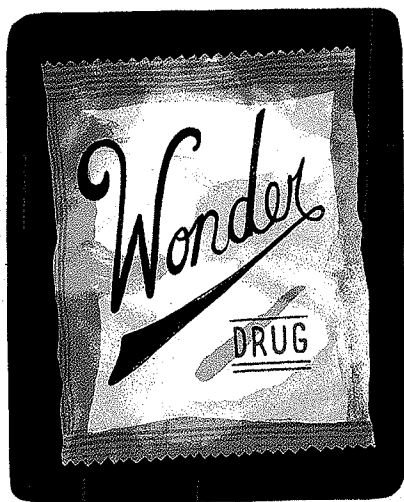
No matter what explains the shape of the brain, it can pay dividends. Better-functioning frontal lobes help boost memory. In one study, Newberg scanned the brains of people who complained of poor recall before they underwent meditation training, then scanned them again after. As the lobes bulked up, memory improved.

Faith and health overlap in other ways too. Take fasting. One of the staples of both traditional wellness protocols and traditional religious rituals is the cleansing fast, which is said to purge toxins in the first case and purge sins or serve other pious ends in the second. There are secular water fasts, tea fasts and grapefruit fasts, to say nothing of the lemon, maple-syrup and cayenne-pepper fast. Jews fast on Yom Kippur; Muslims observe Ramadan; Catholics have Lent; Hindus give up food on 18 major holidays. Done right, these fasts may lead to a state of clarity and even euphoria. This, in turn, can give practitioners the blissful sense that whether the goal of the food restriction is health or spiritual insight, it’s being achieved. Maybe it is, but there’s also chemical legerdemain at work.

The brain is a very energy-intensive organ, one that requires a lot of calories to keep running. When food intake is cut, the liver steps into the breach, producing glucose and sending it throughout the body—always making sure the brain gets a particularly generous helping. The liver’s reserve lasts only about 24 hours, after which, cells begin breaking down the body’s fats and proteins—essentially living off the land. As this happens, the composition of the blood—including hormones, neurotransmitters and metabolic by-products—changes. Throw this much loopy chemistry at a sensitive machine like the brain and it’s likely to go on the blink. “There are very real changes that occur in the body very rapidly that might explain the clarity during fasting,” says Dr. Catherine Gordon, an endocrinologist at Children’s Hospital in Boston. “The brain is in a different state even during a short-term fast.” Biologically, that’s not

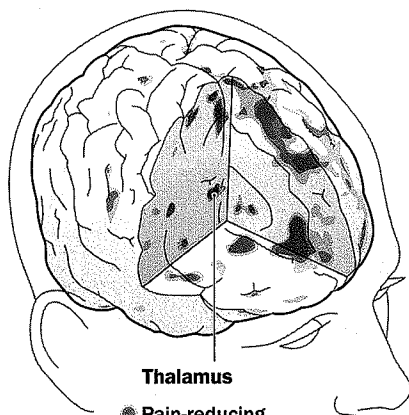
HELPER'S HIGH
Exhilaration following an altruistic act. In one study, 90% of people said it helps relieve stress and pain too

CORTISOL
Stress hormone released by adrenal gland. Lower it and you can reduce blood pressure, regulate blood sugar and boost immunity



THE PLACEBO EFFECT

Believing in a cure leads to real bodily changes. The brain opens opiate receptors in response to faux pain pills, boosts dopamine in response to sham Parkinson's surgery and even prods tumors to shrink if a patient has faith in an ineffective drug



Thalamus

● Pain-reducing chemicals released after placebo is given

good, but the light-headed sense of peace, albeit brief, that comes with it reinforces the fast and rewards you for engaging in it all the same.

How Powerful Is Prayer?

FOR MOST BELIEVERS, THE ELEMENT OF RELIGIOUS life that intersects most naturally with health is prayer. Very serious theologians believe in the power of so-called intercessory prayer to heal the sick, and some very serious scientists have looked at it too, with more than 6,000 published studies on the topic just since 2000. Some of them have been funded by groups like the John Templeton Foundation—part of whose mission is to search for overlaps of religion and science—but others have come from more dispassionate investigators.

As long ago as 1872, Francis Galton, the man behind eugenics and fingerprinting, reckoned that monarchs should live longer than the rest of us, since millions of people pray for the health of their King or Queen every day. His research showed just the opposite—no surprise, perhaps, given the rich diet and extensive leisure that royal families enjoy. An oft discussed 1988 study by cardiologist Randolph Byrd of San Francisco General Hospital found that heart patients who were prayed for fared better than those who were not. But a larger study in 2005 by cardiologist Herbert Benson at Harvard University challenged that finding, reporting that complications occurred in 52% of heart-bypass patients who received intercessory prayer and 51% of those who didn't. Sloan says even attempting to find a scientific basis for a link between prayer and healing is a "fool's errand"—and for the most basic methodological reason. "It's impossible to know how much prayer is received," he says, "and since you don't know that, you can't determine dose."

Such exactitude does not dissuade believers—not surprising, given the centrality of prayer to faith. But there is one thing on which both camps agree: when you're setting up your study, it matters a great deal whether subjects know they're being prayed for. Give them even a hint as to whether they're in the prayer group or a control group and the famed placebo effect can blow your data to bits.

First described in the medical literature in the 1780s, the placebo effect can work all manner of curative magic against all manner of ills. Give a patient a sugar pill but

call it an analgesic, and pain may actually go away. Parkinson's disease patients who underwent a sham surgery that they were told would boost the low dopamine levels responsible for their symptoms actually experienced a dopamine bump. Newberg describes a cancer patient whose tumors shrank when he was given an experimental drug, grew back when he learned that the drug was ineffective in other patients and shrank again when his doctor administered sterile water but said it was a more powerful version of the medication. The Food and Drug Administration ultimately declared the drug ineffective, and the patient died. All that may be necessary for the placebo effect to kick in is for one part of the brain to take in data from the world and hand that information off to another part that controls a particular bodily function. "The brain appears to be able to target the placebo effect in a variety of ways," says Newberg. There's no science proving that the intercessions of others will make you well. But it surely does no harm—and probably helps—to know that people are praying for you.

Faith and Longevity

IF BELIEF IN A PILL CAN BE SO POWERFUL, belief in God and the teachings of religion—which touch devout people at a far more profound level than mere pharmacology—ought to be even more so. One way to test this is simply to study the health of regular churchgoers. Social demographer Robert Hummer of the University of Texas has been following a population of subjects since 1992, and his results are hard to argue with. Those who never attend religious services have twice the risk of dying over the next eight years as people who attend once a week. People who fall somewhere between no churchgoing and weekly churchgoing also fall somewhere between in terms of mortality.

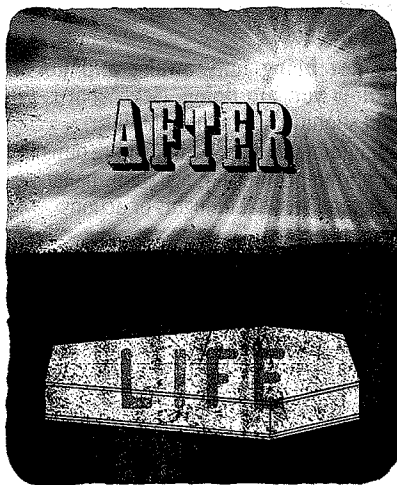
A similar analysis by Daniel Hall, an Episcopal priest and a surgeon at the University of Pittsburgh Medical Center, found that church attendance accounts for two to three additional years of life. To be sure, he also found that exercise accounts for three to five extra years and statin therapy for 2.5 to 3.5. Still, joining a flock and living longer do appear to be linked.

Investigators haven't teased out all the variables at work in this phenomenon, but Hummer, for one, says some of the factors are no surprise: "People embedded in reli-

6,000+
Studies of intercessory
prayer since 2000

52%
Patients prayed for who
fared badly in one study

51%
Patients receiving no
prayers who fared badly



HOW RELIGIONS VIEW THE BEYOND

Medicine and religion share at least one trait—both can be seen as responses to the prospect of death. But while science is quiet on a possible afterlife, religious practices are shaped by their conception of that undiscovered country:

JUDAISM Jewish texts have little to say about a possible afterlife, placing more focus on the proper actions in this life, not the one to come

CHRISTIANITY The vast majority of Christians believe in heaven and hell—and that your destination depends on your deeds and faith during life

ISLAM Similar to Christians, Muslims believe in a day of judgment in the afterlife, when the dead will be divided between paradise and damnation

BUDDHISM Though specific beliefs vary by sect, Buddhists hold fast to the doctrine of reincarnation, ending only in the final liberation known as Nirvana

HINDUISM Like Buddhists, Hindus believe in reincarnation and karma, with the status of your next life depending on your actions in this one

TAOISM Life and death are flip sides of the Tao, and death is a transformation from being to nonbeing, with no heaven or hell

religious communities are more likely to rely on one another for friendship, support, rides to doctor's appointments."

But even hard scientists concede that those things aren't the whole story and that there's a constellation of other variables that are far harder to measure. "Religious belief is not just a mind question but involves the commitment of one's body as well," says Ted Kaptchuk, a professor of medicine at Harvard Medical School. "The sensory organs, tastes, smells, sounds, music, the architecture of religious buildings [are involved]." Just as the very act of coming into a hospital exposes a patient to sights and smells that are thought to prime the brain and body for healing, so may the act of walking into a house of worship.

Neal Krause, a sociologist and public-health expert at the University of Michigan, has tried to quantify some of those more amorphous variables in a longitudinal study of 1,500 people that he has been conducting since 1997. He has focused particularly on how regular churchgoers weather economic downturns as well as the stresses and health woes that go along with them. Not surprisingly, he has found that parishioners benefit when they receive social support from their church. But he has also found that those people who give help fare even better than those who receive it—a pillar of religious belief if ever there was one. He has also found that people who maintain a sense of gratitude for what's going right in their lives have a reduced incidence of depression, which is itself a predictor of health. And in another study he conducted that was just accepted for publication, he found that people who believe their lives have meaning live longer than people who don't. "That's one of the purported reasons for religion," Krause says. "The sign on the door says, 'Come in here and you'll find meaning.'"

African-American churches have been especially good at maximizing the connection between faith and health. Earlier in American history, churches were the only institutions American blacks had the freedom to establish and run themselves, and they thus became deeply embedded in the culture. "The black church is a different institution than the synagogue or mosque or even the white church," says Ken Resnicow, a professor of health and behavior education at the University of Michigan

School of Public Health. "It is the center of spiritual, community and political life."

Given the generally higher incidence of obesity, hypertension and other lifestyle ills among African Americans, the church is in a powerful position to do a lot of good. In the 1990s, Marci Campbell, a professor of nutrition at the University of North Carolina, helped launch a four-year trial called North Carolina Black Churches United for Better Health. The project signed up 50 churches with a goal of helping the 2,500 parishioners eat better, exercise more and generally improve their fitness. The measures taken included having pastors preach health in their sermons and getting churches to serve healthier foods at community events.

The program was so successful that it has been renamed the Body and Soul project and rolled out nationally—complete with literature, DVDs and cookbooks—in collaboration with the National Cancer Institute and the American Cancer Society. To skeptics who conclude that the churches have played a secondary role in the success of the programs—as a mere venue for secular health counseling—Campbell points out that in her studies, the most effective pitches came not from the nutritionists but from the pulpit. "The body is a temple, and the connection was made between the physical body and religious and spiritual well-being," she says.

Joining Hands

MANY SCIENTISTS AND THEOLOGIANs WHO study these matters advocate a system in which both pastoral and medical care are offered as parts of a whole. If a woman given a diagnosis of breast cancer is already offered the services of an oncologist, a psychologist and a reconstructive surgeon, why shouldn't her doctor discuss her religious needs with her and include a pastor in the mix if that would help?

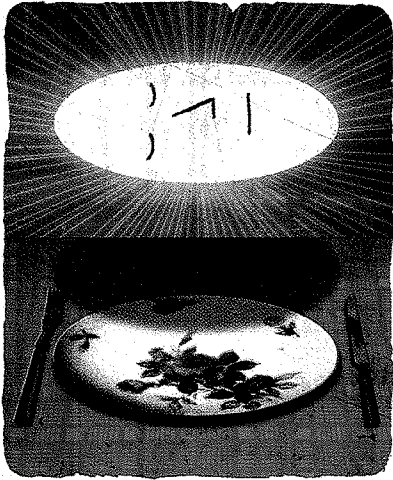
While churches are growing increasingly willing to accept the assistance of health-care experts, doctors and hospitals have been slower to seek out the help of spiritual counselors. The fear has long been that patients aren't interested in asking such spiritually intimate questions of their doctors, and the doctors, for their part, would be uncomfortable answering them. But this turns out not to be true. When psychologist Jean Kristeller of Indiana State University conducted a survey

BLOOD SENTINELS

HIV patients who say they're spiritual have higher levels of CD4 immunity cells

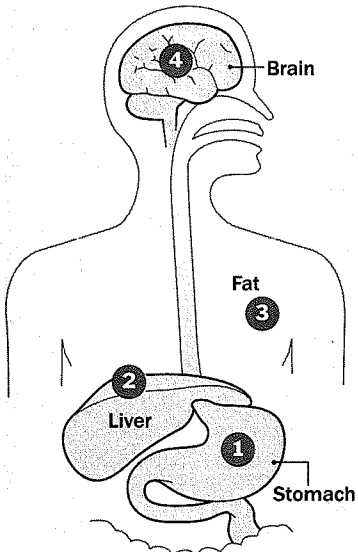
ONE SCAN, TWO VIEWS

Nuns who saw a brain image of a person in prayer said it proves the power of God; atheists said it proves that religion is just biology



FASTING

When the body is deprived of calories (1), first the liver (2) and then fat and protein deposits (3) compensate for the deficit, providing energy for needy cells. This altered body chemistry can affect the brain (4), leading some to feel an otherworldly connection



of oncologists, she found that a large proportion of them did feel it was appropriate to talk about spiritual issues with patients and to offer a referral if they weren't equipped to address the questions themselves. They didn't do so simply because they didn't know how to raise the topic and feared that their patients would take offense, in any event. When patients were asked, they insisted that they'd welcome such a conversation but that their doctors had never initiated one. What both groups needed was someone to break the ice.

Kristeller, who had participated in earlier work exploring how physicians could help their patients quit smoking, recalled a short—five- to seven-minute—conversation that the leader of a study had devised to help doctors address the problem. The recommended dialogue conformed to what's known as patient-centered care—a clinical way of saying doctors should ask questions then clam up and listen to the answers. In the case of smoking, they were advised merely to make their concern known to patients, then ask them if they'd ever tried to quit before. Depending on how that first question was received, they could ask when those earlier attempts had been made, whether the patients would be interested in trying again and, most important, if it was all right to follow up on the conversation in the future. "The more patient-centered the conversations were, the more impact they had," Kristeller says.

The success of that approach led her to develop a similar guide for doctors who want to discuss religious questions with cancer patients. The approach has not yet been tested in any large-scale studies, but in the smaller surveys Kristeller has conducted, it has been a roaring success: up to 90% of the patients whose doctors approached them in this way were not offended by the overture, and 75% said it was very helpful. Within as little as three weeks, the people in that group reported reduced feelings of depression, an improved quality of life and a greater sense that their doctors cared about them.

Even doctors who aren't familiar with Kristeller's script are finding it easier to combine spiritual care and medical care. HealthCare Chaplaincy is an organization of Christian, Jewish, Muslim and Zen Buddhist board-certified chaplains affiliated with more than a dozen hospitals and clinics in the New York City area. The group

routinely provides pastoral care to patients as part of the total package of treatment. The chaplains, like doctors, have a caseload of patients they visit on their rounds, taking what amounts to a spiritual history and either offering counseling on their own or referring patients to others. The Rev. Walter Smith, president and CEO of the chaplaincy and an end-of-life specialist, sees what his group offers as a health-care product—one that is not limited to believers.

What patients need, he says, is a "person who can make a competent assessment and engage a patient's spiritual person in the service of health. When people say, 'I'm not sure you can help because I'm not very religious,' the chaplains say, 'That's not a problem. Can I sit down and engage you in conversation?'"

Patients who say yes often find themselves exploring what they consider secular questions that touch on such primal matters of life and death, they might as well be spiritual ones. The chaplains can also refer patients to other care providers, such as social workers, psychologists and guided-imagery specialists. The point of all this isn't so much what the modality is; it's that the patient has a chance to find one that works. "People say you tell the truth to your doctor, your priest and your funeral director," says Smith, "because these people matter at the end." It's that truth—or at least a path to it—that chaplains seek to provide.

Smith's group is slowly going national, and even the most literal-minded scientists welcome the development. Says Sloan, the author of *Blind Faith*: "I think that a chaplain's job is to explore the patient's values and help the patient come to some decision. I think that's absolutely right."

Sloan's view is catching on. Few people think of religion as an alternative to medicine. The frontline tools of an emergency room will always be splints and sutures, not prayers—and well-applied medicine along with smart prevention will always be the best ways to stay well. Still, if the U.S.'s expanding health-care emergency has taught us anything, it's that we can't afford to be choosy about where we look for answers. Doctors, patients and pastors battling disease already know that help comes in a whole lot of forms. It's the result, not the source, that counts the most.

—WITH REPORTING BY ALICE PARK AND BRYAN WALSH/NEW YORK

Faith and Healing: A Forum

Three experts—the Rev. George Handzo, a chaplain with the HealthCare Chaplaincy of New York City; Dr. Andrew Newberg, a radiologist and psychiatrist at the University of Pennsylvania; and Dr. Richard Sloan, a psychiatrist at Columbia University—discuss the role that belief should play in science

BY ALICE PARK

What role does religion play in health, and health in religion?

Dr. Richard Sloan: Spirituality and religion play a substantial role in helping patients overcome discomfort. But I don't think that it's any business of medicine, and I think it's extremely difficult for science to study. I am greatly supportive of the role of health-care chaplains for patients who have spiritual or religious concerns. But I don't think it's the doctor's job to be involved in that, other than to refer to a professional.

So doctors should not be taking spiritual histories?

Sloan: I don't think they should be taking spiritual histories.

The Rev. George Handzo: Dr. Sloan and I are pretty much in agreement, but it's important how one defines spiritual history and what actually goes into that. There's been a

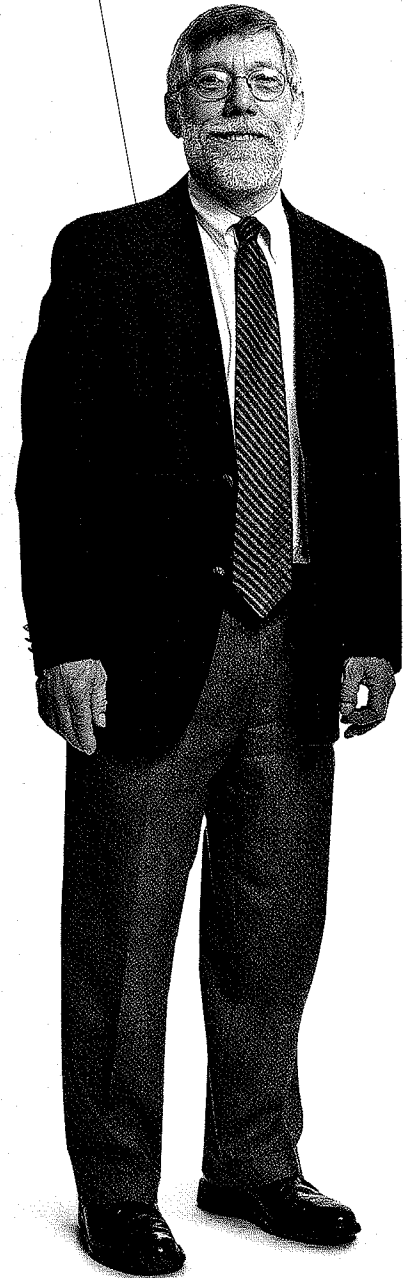
lot of fuzzy talk about what's screening, what's history, what's assessment. I would like to differentiate a history, and call that screening, and say that's the doctor's job. The physician's job, as Dr. Sloan pointed out correctly, is to discover where the problem is and get it pointed in the right direction. An assessment, a full [spiritual] assessment, would be the chaplain's job.

Dr. Andrew Newberg: My primary area of research has been looking at the neurobiology of different religious and spiritual practices, and one of the things I try to advocate is that we need to learn more about the best ways of enabling doctors to find out the questions that they need to ask. We need to learn how best to ask those questions, when to ask those questions and how often to ask those questions.

A lot of people have concerns about physicians playing too much of a role in

'I think society has made a judgment that science trumps religion.'

—THE REV.
GEORGE HANDZO



'We can bring science and religion together in a dialogue that may ultimately benefit them both.'

—DR. ANDREW NEWBERG



the religious and spiritual beliefs of patients, so we need to understand what both the doctor's and the patient's motivations are and try to understand when it shouldn't be done and why it shouldn't be done.

I felt woefully unprepared to deal with those kinds of issues when I found myself having to tell a patient that they now had cancer or that they were going to die soon, or talking about a family member who's going to die soon when the family brought up religious and spiritual issues. I didn't even know who to refer to. And I think there's been some movement to at least help with that education, but I think we need to learn more about it.

Dr. Newberg, you are careful not to talk about humans as being hardwired for religion, because hardwiring implies a hardwired, and science hasn't yet established that.

Newberg: The real issue for us is to try to look at data and to interpret it carefully. If you're doing a brain scan of somebody who experiences being in God's presence, we have to know what that means. Basically, the scan is showing you what is happening in the brain when they have the experience. It doesn't necessarily reduce it to just what is going on in the brain, and it also doesn't necessarily prove that the person was actually in God's presence.

So I think we have to be cautious about what we do with the information that we have right now. I think we have a long way to go in terms of really learning what the nature of those kinds of experiences actually is. That's why even though I think the research shows that there are a lot of different changes that go on in the brain when people engage in religious and spiritual practices, that doesn't mean that there was somebody who came in and did the hardwiring.

'It's a fatal flaw to think that you can use the methods of science to learn something meaningful about religion.'

—DR. RICHARD SLOAN



Dr. Sloan, how do you react to the idea of a divine interventionist?

Sloan: Well, that conception is antithetical to science. Science doesn't deal in supernatural explanations, and that's a supernatural explanation. Religion and science address different concerns, and it's perfectly plausible, I think, as Dr. Newberg has suggested, to be a scientist and still believe in divine presence. But that doesn't mean that your belief in the divine presence finds its way into your science. Those are different things. Religion deals with a different domain.

Handzo: Yes, I would say that's right. I think part of the reason this whole debate has raised some hackles in the religious community is the perception that we're trying to prove the existence of God. And, of course, religious people, and I think rightfully so, say, No, no, no, that's a matter of faith. You are now crossed over, and you are trying to take science into the realm of religion and use scientific method and methodology to say that my faith is right or wrong. That's just not going to work, and I'm going to push back on that as a religious person.

I started out as an undergraduate as a scientist and only went to religion later, and there are those people who said to me that I couldn't

DR. RICHARD SLOAN:

✓ The doctor should "find out enough to know how to refer" a patient for spiritual guidance.

✓ Doctors should not be "taking spiritual histories."

✓ "Science doesn't deal in supernatural explanations."

be ordained because I had been a scientist, and that polluted my thinking.

Science and religion have different ways of thinking about reality that are both helpful, and both need to be accounted for. And I think in terms of health, the issue is how do we account for—in the health-care system and in the practice of health—the process of faith? And how does that integrate into how medicine gets practiced or how chaplaincy gets practiced or psychology gets practiced?

Sloan: I frankly think there is nothing that science can do that can contribute to religion, and I think it's a fatal flaw to think that you can use the methods of science to learn something meaningful about religion.

But can't the tools of science be used to teach us about the subjective experience of religion—as Dr. Newberg is describing, with brain scans and the like—and teach us something about how we process it?

Sloan: Let me ask you a different question. Would it be meaningful if we did a brain scan of someone before and after eating cheese? I don't understand the value of developing beautiful images, very appealing, aesthetic images of brain scans and people engaged in various religious experiences. I don't see the value any more than imaging people while eating cheese.

We explore what the brain looks like in depressed people, in people struggling with memory issues ...

Sloan: But why? To understand how the brain works so we can develop interventions to treat depression and to treat memory loss. And that's absolutely appropriate. Are there interventions that will come from [imaging religious experiences]?

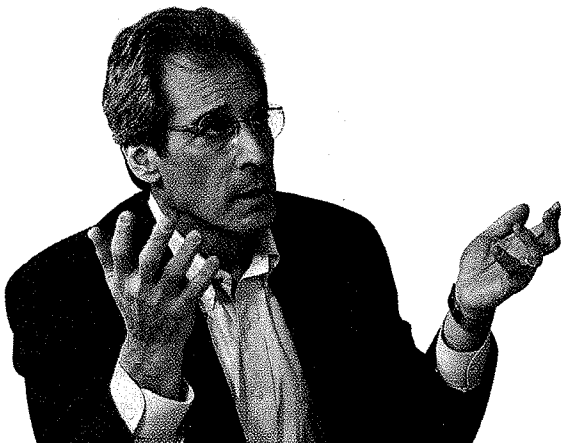
Handzo: Well, certainly some work is pure research in order to fathom things better. There are no particular interventions that come from picking up rocks on the moon, but we do it because it teaches us more about the world around us.

Sloan: Fair enough, but there's a seductive appeal about neuroscience explanations, that there must be something significant here because you can see it in the brain scan. We're infatuated with neuroscience because of the very beautiful images that we can see, but the real question is, What do those images tell us that's of any value, whether it's basic science or applied?

Handzo: Neuroscience may be a smaller case of a larger reality. We live in a culture where I think science, the evidence of science, trumps the evidence of faith. If you give a drug that's supposed to work in six months, and three years later you get a remission, that's called delayed effect. And I've said to my oncologist colleagues, Why is that not a miracle? What evidence do you have, because you have no evidence that this is delayed effect—it's just what you're calling it. Tell me that that's not a miracle?

And the same thing in psychiatry. To be ordained in most religions, at least in Christian religions, you have to prove to a group of other people that God has spoken to you. This in psychiatry is called thought insertion. It's a diagnosis. So if I believe God has spoken to me, in the religious world I get to stand for ordination; in the scientific world, I could be diagnosed. Maybe both are right.

If you walk into my hospital room, and I say I don't believe in God, and you still provide a service, is this really spiritual at all? Could the care be the equivalent of such secular practices as meditation or yoga, and how would you distinguish that?



Handzo: Well, I think it's important to differentiate and to define spirituality and religion. Religion has to do with an organized set of beliefs. So I'm a Lutheran; I adhere to a set of beliefs that has been defined as Lutheran, and I identify with a community that's Lutheran.

Spirituality, I think, is a much broader concept, and it has to do with probably a personal quest. Lutheran is what some other people have said Lutheran is. Your spirituality is what you say it is, and so my job as a chaplain is to discover what you say it is and to help that spirituality be helpful to you in coping with the illness or whatever is going on in your life.

Newberg: I think trying to define it is absolutely one of the areas that we really need to get a handle on, because one of the mistakes that is often made in the medical context can be that, oh, somebody is this particular religion, so they believe in these things. We have to be careful about how we define and slot everybody into these different categories. Atheists as well.

Getting back to brain structure—Dr. Sloan, would you see the varying degrees of spirituality in people as being rooted in something as simple as brain architecture?

Sloan: Well, all our experience in some way derives from the brain—everything we experience, from meditation to eating cheese. So in some way, it's rooted in the brain. The concern I have is that science operates in a reductionist way, and if you try to understand a spiritual experience or a religious experience from the science perspective, ultimately you are going to reduce it to the coursing of neurochemicals in the brain. And while that may be satisfying to a scientist, it's anathema to a theologian, which illustrates the limits of

science. There are some questions for which science can't provide an adequate answer.

So, Rev. Handzo, how do you give that coursing of neurochemicals meaning? If you are counseling a patient, someone who has received a diagnosis of terminal cancer, what do you say?

Handzo: The secret is, we say as little as possible. There's nothing you can say. I mean, that alludes to this whole theological question of why does this happen—and we simply do not know. I agree with Dr. Sloan: I don't think that I want to know why God does it that way. Maybe God has nothing to do with it. I'm not sure any of those things are things I want to know, being a person of faith.

My job is to help them discover the meaning for themselves. What is the meaning for you? An example of that: I remember a mother of a child with cancer who said, "God is going to heal my son." Well, the doctors knew that God wasn't going to heal her son—I still held out—but eventually she came to the understanding that God was not going to heal her son. She said, "Well, you know, I didn't listen to God well. God has another plan for my son, a greater plan." For her, the fact that she could feel that God was still in control

and understand that what God does is good—that was enough.

Sloan: So this is an issue that is periodically in the news. What do physicians—what does the health-care system—do for the patient if the mother assumes a religious stance that interferes with treatment?

Handzo: I think ethically we as a society have some duties to people who are unable to make judgments for themselves, and we have to make some judgments, right or wrong. And so I think we've done the right thing in saying sometimes, for whatever reason it is, whether it's faith or psychopathology or whatever, people who have responsibility for minor children don't make right decisions, are not fit to make right decisions—I don't care why—and the state has an interest in preserving that life.

Just as free speech has a limit, freedom of religion has a limit. There are limits in our society. And that's the way we've set society up.

Newberg: I'll be idealistic for a moment. I would love to see the practice of medicine be a team event. In a hospital setting, you can have a team where you can bring in somebody from pastoral care to talk to them about that, you can bring in a social worker to deal with the social issues, a therapist if need be. And then just as you hope that they as a family are going to make a decision, you as a team can make a decision, and then that way you have the best way of optimizing what I think are really the four dimensions of the person—the biological, the social, the psychological and the spiritual. I think we as a society, and the medical profession in general, need to really think through these issues, because it would be great to function as a team, to really take care of the whole person and to heal that person in whatever way that means. ■

THE REV. GEORGE HANDZO:

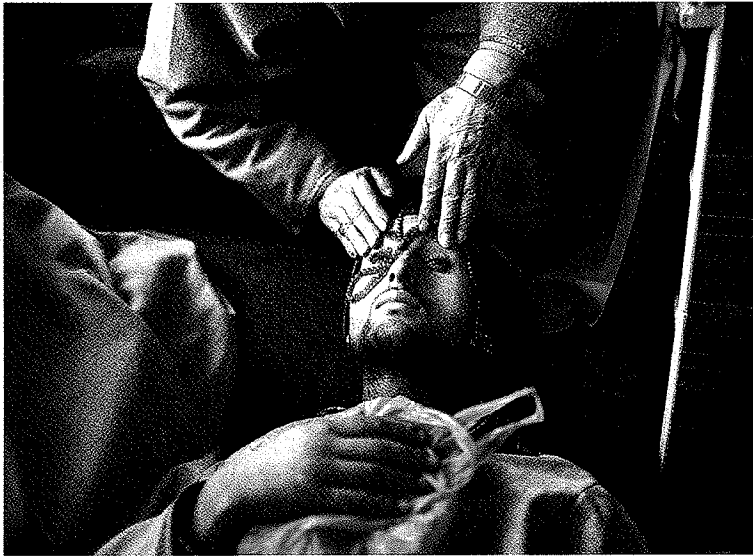
- ✓ "Science and religion have different ways of thinking about reality."
- ✓ Chaplains help patients discover meaning "for themselves."
- ✓ "Freedom of religion has a limit."



KASHMIR, INDIA

KORANIC HEALING

In some sects of Islam, the verses of the Koran are thought to have healing properties. In Srinagar, the capital of the Indian-controlled section of Kashmir, Peer Munshi Syed Hussain Kazmi treats a man suffering from temporary blindness with prayers and restorative Koranic verses



LAC, ALBANIA

SHNA NDO HOLY ROCK

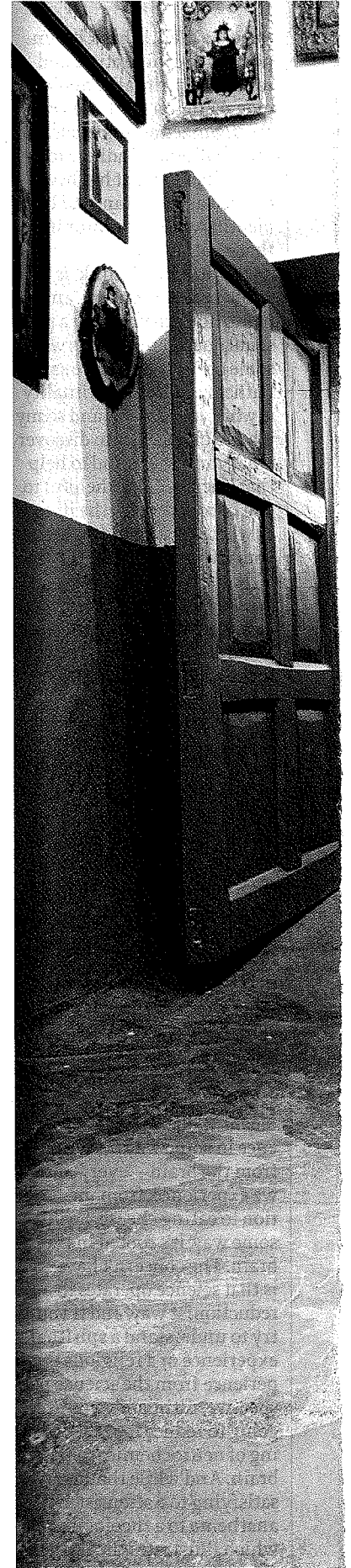
Shna Ndo was a pilgrim on his way to Jerusalem who stopped in the town of Lac, Albania, and performed miracles. Today, followers believe that touching the rock, as the boy above is doing, can heal sickness



SIBERIA, RUSSIA

SHAMANIC RITUAL

The shamans of Siberia believe the world is divided into a visible realm and an invisible one populated by spirits. It is the shaman's role to communicate with those spirits—and persuade them to provide a better life for humans. A shamanic healer summons the spirits using the bodhran, a kind of drum



How The World Heals

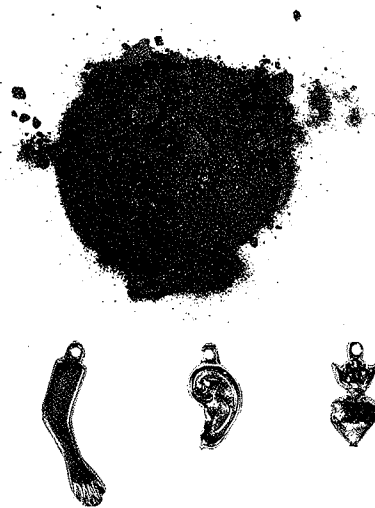
Across countries and faiths, the devout believe the power of the spirit can heal the ills of the flesh. Science might question the Santeria practitioners of Cuba or the shamans of Siberia, but to believers around the world, religion can offer comfort even when modern medicine falls short

BY BRYAN WALSH

SANTUARIO DE CHIMAYO, N.M.

ROOM OF MIRACLES

At this rural church 30 miles (48 km) north of Santa Fe, the sick come to touch the holy dirt, which is said to have healing powers. Some kneel and kiss the ground; others rub the dirt on their body or even eat some of it. Family members rub the dirt on photographs of those too ill to make the trip themselves





HAVANA

SANTERIA CEREMONY

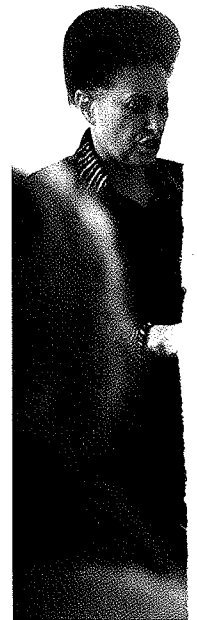
A blend of African, Native American and Roman Catholic religious practices, Santeria involves the worship of Santos, an amalgam of African gods and Christian saints. High priest Victor Betancourt prepares a rooster for sacrifice, in a ceremony for the recovery of ailing Cuban leader Fidel Castro



BALI, INDONESIA

MELASTI CLEANSING

The Hindu residents of the Indonesian island of Bali are known for their elaborate spiritual practices. A man participates in Melasti, the holiest event of the Balinese calendar, a purifying ceremony that prepares not only the individual but the entire community for the new year





**QUIBAYO,
VENEZUELA**

VELACION

In the velación, or candle ceremony, the patient lies on an oracolo, a drawing of esoteric symbols made on the ground with talcum, and is surrounded by candles and fruit and showered with flower petals meant to impart energy



SUDAN

**HEALING
WORDS**

Sudanese refugees prepare the mihaya, a traditional healing drink. Verses from the Koran are written on a wooden plate with a special ink and pen, the plate is then washed with water, and this holy fluid is drunk by the sick



KIEV, UKRAINE

**EMBASSY
OF GOD**

Founded 12 years ago by the Nigerian pastor Sunday Adelaja, the Embassy of God is a charismatic Protestant sect. Followers believe certain among them are selected to receive the Holy Spirit, which allows them to speak in tongues and heal with their hands. One such woman uses the spirit to elicit a trance and cure an ill church member



LOURDES, FRANCE

**HOLY
WATER**

Catholics believe the Virgin Mary appeared to a peasant girl in Lourdes in 1858, and the location has become one of the world's most popular for religious pilgrimages. Water from a spring at the site of the apparition is believed to have curative properties, and sick pilgrims drink it in hopes of a healing miracle



RESEARCH



READ



TRAVEL



LOG ON

Keeping (Or Finding) The Faith

Research Institutes. The study of religion and medicine is clearly a growth market

NOT ALL THAT LONG AGO, YOU'D HAVE had a hard time finding a research institute, an academic department or even a decent conference exploring the link between spirituality and health. And with good reason. Health is science, spirituality is something else entirely, and people who say otherwise clearly need to sit down with a medical journal or two.

But that's all changing. Everyone's got a stake in getting human health right—whether families and

individuals simply trying to stay well or governments trying to build a functioning health-care system that doesn't break the bank. With so much on the line, no one can afford to take options off the table.

For that reason, investigators around the world backed by both public and private money are studying the faith factor in all manner of diseases and conditions. They have examined the spiritual-care needs of children with terminal

illnesses and looked at how religion and superstition affect schizophrenia in China and how spirituality influences the well-being of college students in Malta and nuns in India. They have probed the links between religion and psychological woes too: neuroticism in Dutch twins, obsessive-compulsive symptoms in Italians, death anxiety among Egyptian nursing students and substance abuse in adolescents in Jerusalem. They have tried to measure the benefits of Bible therapy for patients with Alzheimer's disease, as well as the impact of religious guilt and congregational criticism on doubting members of the flock. They've looked at the health effects of psychoactive sacramentals (think peyote) and the spiritual preferences of neo-pagans (think Wiccans and druids).

The fact that what began as a trickle of studies has become a torrent doesn't mean that everyone is happy, and many scientists will continue to have nothing to do with what they see as fluff. Still, the movable feast of institutes, academic treatises, self-help books, websites, healing centers and luxury spas with a spiritual bent grows steadily larger. Here is just a sampling of what's available.

—BY DAVID BJERKLIE

Center for Spirituality and The Mind

University of Pennsylvania

Brain Scans

A workshop for high-tech imagery: this is your brain on prayer—or meditation or speaking in tongues. Researchers also study changes in blood pressure, hormones and immune-system function during spiritual practices.

www.uphs.upenn.edu/radiology/csm/index.html

Center for Spirituality & Healing

University of Minnesota

Shaman Outreach

Fifty faculty members from a dozen academic areas conduct research into alternative medicine and healing traditions, including those of shamans serving the local community of Hmong immigrants from Southeast Asia.

www.csh.umn.edu

Center for Spirituality, Theology and Health

Duke University

Community of Scholars

Academic powerhouse that promotes research to improve our understanding of "spirituality, health and human flourishing." Aims to push the interdisciplinary field into a "new era of significance, visibility and impact."

spiritualityandhealth.duke.edu/index.html

National Center for Complementary And Alternative Medicine

National Institutes of Health

Federal Faith

Alternative medicine established this beachhead with the Federal Government in 1991. NCCAM funds research and serves as a clearinghouse for consumer information on acupuncture, herbs, hypnosis and more.

nccam.nih.gov

Templeton Foundation

West Conshohocken, Pa.

Private Philanthropy

Family foundation established by the late philanthropist Sir John Templeton. Its mission is to address big questions and foster dialogue between science and religion through grants, prizes and book publishing.

templeton.org

ILLUSTRATIONS FOR TIME BY CHRISTIAN NORTHEAST

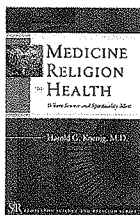
Books. Reads that range from self-help to scholarly



How God Changes Your Brain

By Andrew Newberg and Mark Robert Waldman; Ballantine

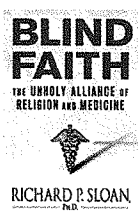
AUTHORS NEWBERG AND Waldman have written a self-help field guide to the health benefits of spirituality. Just minutes of daily meditation can slow the aging process, build intimacy with family and friends and provide broader rewards even for nonbelievers. It appears that positive thinking is one of the many names of God.



Medicine, Religion And Health

By Harold G. Koenig; Templeton Foundation Press

KOENIG IS A CO-DIRECTOR OF Duke's Center for Spirituality, Theology and Health. His latest book on the subject offers an overview of research into faith's effect on mental health, cardiovascular disease and mortality, as well as guidelines for health-care professionals on how they can integrate spirituality into the care they offer patients.



Blind Faith: The Unholy Alliance of Religion And Medicine

By Richard P. Sloan; St. Martin's Griffin

DRAGGING RELIGION INTO clinical medicine, argues Sloan, is bad for both. Too much of the research is sloppy and funded by folks who have a stake in finding that belief is good for us. The result is bad science, bad medicine—and even bad religion when faith is trivialized by being treated like just another item in the health-care system's bag of tricks.



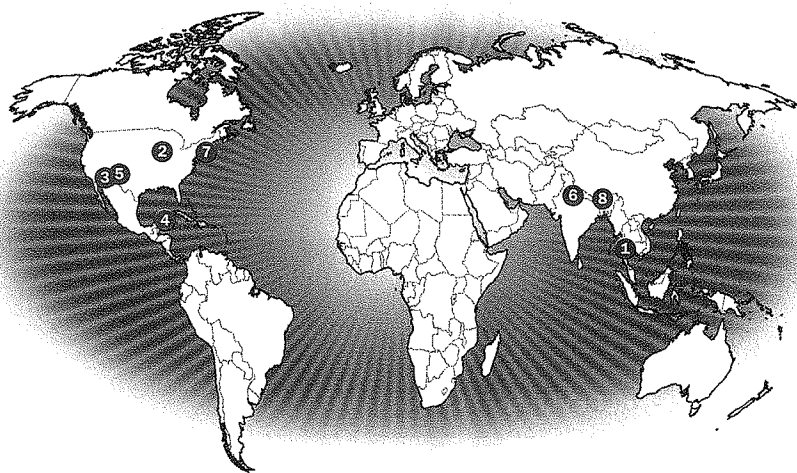
Religion and Healing In America

Edited by Linda L. Barnes and Susan S. Sered; Oxford University Press

THIS RICH COLLECTION addresses the multicultural world of spirituality that immigration has created in the U.S. The authors explore healing traditions usually left out of mainstream research into belief and health, such as those with roots in the Caribbean, Mexico and South Asia.

Pilgrimages. When a spa is spiritual enough, thank you very much

- ① Chiva-Som, Hua Hin, Thailand
- ② The Raj Maharishi Ayurveda Health Spa, Fairfield, Iowa
- ③ Mii Amo Spa at Enchantment Resort, Sedona, Ariz.
- ④ Mandarin Oriental Riviera Maya, Playa del Carmen, Mexico
- ⑤ Ten Thousand Waves, Santa Fe, N.M.
- ⑥ Ananda in the Himalayas, Rishikesh, India
- ⑦ Canyon Ranch, Lenox, Mass.
- ⑧ COMO Shambhala Retreat, Uma Paro, Bhutan



Websites. Online sources for seekers

nccam.nih.gov/health/atoz.htm

The Government on Health

Washington weighs in with a guide that includes an A-to-Z index of topics, including spirituality and health.

beliefnet.com

One-Stop Faith Shop

Explore your faith, and check out tips on health, finance, love and more. Also has blogs, prayers, news, and guidance for contacting your guardian angel.

spirituality-health.com/spirit

Onscreen Magazine

A bimonthly that celebrates the "Soul/Body Connection" and "reports on the people, the practices and the ideas of the current spiritual renaissance." Polls and self-tests too.

webmd.com

The Doctors Speak

Medical site that also covers prayer, spirituality and health topics.